TOWN OF BLIND RIVER
REQUEST FOR TENDER
NEW BLIND RIVER WATER TREATMENT PLANT INTAKE AND LOW LIFT PUMPING STATION
CONTRACT NO. PS-2026-01

ADDENDUM #8
March 4th, 2026

This addendum shall form part of the Contract Documents. The Addendum issued shall be indicated in FT.05 ADDENDA of the FORM OF TENDER.

ADDENDUM NUMBERING

Due to a posting constraint on the MERX platform, Addendum #6 on MERX was referenced as #7, which conflicts with the information posted on the Town's website, ie. no addendum #7. For the purpose of bid submissions, Addendum #6 and #7 will be considered as duplicate documents, with this Addendum #8 restarting the proper sequencing.

PLAN TAKERS LIST

Attached is a plan takers list generated by MERX on March 4, 2026.

ADDITIONS & DELETIONS TO THE TENDER

Please note, the intake and carrier lines installation has been changed from Horizontal Directional Drilling (HDD) to Conventional Open Trenching. All references to HDD shall be removed from the tender and replaced with Open Trenching, per OPSS.MUNI 441. The intake and carrier lines shall be installed on concrete ballast blocks to the lines and grades indicated and the lakebed backfilled. Attached are updated design drawings C1 thru C6.

Please note the following changes to Section 9. SPECIFICATIONS of the tender:

1.1 DELETE: Division 1 – General Requirements, Section 01000 – General Requirements, Clause 1.2.3.6, and
REPLACE WITH: Division 1 – General Requirements, Section 01000 – General Requirements, Clause 1.2.3.6, below:

1.2.3.6 Where specification sections designate authorities such as "Engineer", "Consultant", or "Contract Administrator", these designations shall be taken to mean CIMA Canada Inc. Where standards designate "Owner", these designations shall be taken to mean The Corporation of the Town of Blind River.

1.2 DELETE: Division 1 – General Requirements, Section 01000 – General Requirements, Clause 1.3.3, and
REPLACE WITH: Division 1 – General Requirements, Section 01000 – General Requirements, Clause 1.2.3.6, below:

1.3.3 Where standards designate authorities such as "Engineer" or “Consultant”, these designations shall be taken to mean CIMA Canada Inc. Where standards designate "Owner" or other such designation, these designations shall be taken to mean The Corporation of the Town of Blind River.

1.3 DELETE: Division 8 – Doors and Windows, Section 08710 – Door Hardware, in its entirety, and REPLACE WITH: Division 8 – Doors and Windows, Section 08710 – Door Hardware, as attached.

1.4 DELETE Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.3.1, and
REPLACE WITH Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.3.1,

2.3.1 The stainless steel pipe and fittings to be applied to water main shall be Type 304L stainless steel ASTM A312, conforming to ANSI B36.19, Schedule 10S.

1.5 DELETE Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.3.10, and
REPLACE WITH Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.3.10,

2.3.10 Provide 304L SS couplings, joints and other components where possible if the pipe material is of SS 304L. Otherwise, provide epoxy coated components. Provide NSF 61 approved gaskets and 304L SS hardware.

1.6 DELETE Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.6.2, and
REPLACE WITH Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.6.2,

2.6.2 Stainless steel tubing shall be fully annealed Type 304 seamless hydraulic tubing to ASTM A269, A213 or equivalent. Tubing to be free of scratches and suitable for bending and flaring. Joints shall be made with Swagelock stainless steel compression fittings or reviewed equivalent as supplied by Avon Valve and Fitting Limited, Scarborough. Fittings must withstand a working pressure same as pipes, without leakage.

1.7 DELETE Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.10.2, and
REPLACE WITH Division 11 – Equipment, Section 11101 – Piping Valves and Fittings, Clause 2.10.2,

2.10.2 Process piping schedule is provided in the following table:

Service	Nominal Sizes	Exposure	Pipe Material	Operating Pressure (kPa)	Working Temp (°C)	Test Pressure (kPa)	PVC Insulation
LLPS Process Piping	100 150 250 300	Exposed	304L SS	500	0 - 25	750	No Insulation
Raw Watermain	300	Buried	PVC	500	0 – 25	750	No Insulation
Sampling Line	25	Exposed / Buried	HDPE	200	0 - 25	300	No Insulation
Compressed Air Line	3 inch	Exposed / Buried	304L SS	1,500	0 - 25	2,250	No Insulation
Note: For pressure test, H = Hydraulic test; P = pneumatic Test							

1.8 DELETE: Division 1 – General Requirements, Section 01120 – Coordination and Sequence of Construction, in its entirety, and
REPLACE WITH: Division 1 – General Requirements, Section 01120 – Coordination and Sequence of Construction, as attached.

1.9 DELETE Division 11 – Equipment, Section 11530 – Chemical Metering System and Storage, Clause 2.4.6, and
REPLACE WITH Division 11 – Equipment, Section 11530 – Chemical Metering System, Clause 2.4.6,

2.4.6 Tanks to include the connections listed below:

Tank Port	Number of Ports	Type / Location	Size	Connection Details
Chemical Suction	1	Threaded / Top of the tank	¾" NPT	Provide compression style fitting for sealing the tubing (e.g. PVC strain relief connector). Provide a threaded plug for the suction port not in use.
Chemical Filling	1	Flanged / Top of the tank	25mm	Provide a cam lock fitting.
Vent	1	Flanged / Top of the tank	100mm	As per contract drawings
Overflow	1	Flanged / Top of the tank (above 100% level)	100mm	As per contract drawings
Ultrasonic Level Sensor	1	Flanged / Top of the tank	100mm	Riser with flange for ultrasonic level control
Calibration Column Overflow / Pressure Relief Line	1	Flanged / Top of the tank	75mm	As per contract drawings

1.10 DELETE: Division 13 – Control & Instrumentation, Section 13100 – Control & Instrumentation, Clause 2.6.32, and
REPLACE WITH: Division 13 – Control & Instrumentation, Section 13100 – Control & Instrumentation, Clause 2.6.32, below:

2.6.32 Supply and install Hirschmann BRS30 Ethernet switch (BRS30-1604OOOOSFCY99HHSES) with uplink ports and SFP transceivers for

the IT Panel as shown on the drawings. CAT6/Fiber patch cables to be run as per the network drawing.

Please note the following changes to Section 10.1. PLANS of the tender:

2.1 DELETE: Text of Drawing D-022, Note 1,
and REPLACE WITH: “Raw water sample line, sodium hypochlorite line, and compressed air line installed within 125mm pipe attached to intake pipe”

2.2 DELETE: Label “Low Lift Pump (Existing) LP0111” on Drawing D-301
and REPLACE WITH: “Low Lift Pump LP0111”

2.3 DELETE: Label “Low Lift Pump (Existing) LP0121” on Drawing D-301
and REPLACE WITH: “Low Lift Pump LP0121”

2.4 DELETE: Label “PTFE” on Drawing D-022
and REPLACE WITH: “PVC”

2.5 DELETE: Drawing E-001 – Legend and General Notes,
and REPLACE WITH: Drawing E-001 – Legend and General Notes, as attached

2.6 DELETE: Drawing E-102A – Proposed Electrical Site Plan,
and REPLACE WITH: Drawing E-102A – Proposed Electrical Site Plan, as attached

2.7 DELETE: Drawing E-108A– Electrical Power and Systems Layouts,
and REPLACE WITH: Drawing E-108A– Electrical Power and Systems Layouts, as attached

2.8 DELETE: Drawing E-503– Electrical Details – Sheet 1,
and REPLACE WITH: Drawing E-503– Electrical Details – Sheet 1, as attached

2.9 DELETE: Drawing E-601– Single Line Diagram,
and REPLACE WITH: E-601– Single Line Diagram, as attached

2.10 DELETE: Drawing E-602– Electrical Panel Schedules,
and REPLACE WITH: E-602– Electrical Panel Schedules, as attached

2.11 DELETE: Drawing E-603– VFD Control Schematic,
and REPLACE WITH: Drawing E-603– VFD Control Schematic, as attached

2.12 DELETE: Drawing I-002– Instrumentation Legend & General Notes (2),
and REPLACE WITH: Drawing I-002– Instrumentation Legend & General Notes (2), as attached

2.13 DELETE: Drawing I-501– Instrument Control Panel Bill of Material,
and REPLACE WITH: Drawing I-501– Instrument Control Panel Bill of Material, as attached

2.14 DELETE: Drawing I-502– Instrument Control Panel Layout,

and REPLACE WITH: Drawing I-502– Instrument Control Panel Layout, as attached

2.15 DELETE: Drawing I-503– Instrument Control Panel Power Distribution (1),
and REPLACE WITH: Drawing I-503– Instrument Control Panel Power Distribution (1), as attached

2.16 DELETE: I-504– Instrument Control Panel Power Distribution (2),
and REPLACE WITH: I-504– Instrument Control Panel Power Distribution (2), as attached

2.17 ADD: Drawing I-509– IT Panel Layout, as attached

2.18 ADD: Drawing I-510– IT Panel Power Distribution, as attached

2.19 DELETE: I-603– Network Architecture,
and REPLACE WITH: I-603– Network Architecture, as attached

QUESTIONS & ANSWERS

Q1: Section 01000 – General Requirements, Item 1.3.3 last sentence makes reference to LA Development Inc. as the Owner. Please confirm if this is a typo.

A1: This is in error. Refer to Changes 1.1 and 1.2 above.

Q2: Door Hardware. Please provide a door hardware schedule as per specification section 08710

A2: Refer to revised Section 08710 – Door Hardware, as added per this addendum, Change 1.3.

Q3: As per drawing S-050, Note 5, can you tell me where I can find the specification for the coating on the Intake Pipe Crib Support.

A3: Drawing S-050, Note 5 does not reference a coating. Clarify question.

Q4: Please confirm that the hydro one work with the fibre lines is to be carried under this contract and not just coordination costs.

A4: Contractor shall coordinate with Hydro One to complete the installation of the communications fibre, including all approvals.

Q5: SLD requests a prime rated 150kW generator. Please confirm that a 175kW standby rated generator can be accepted as this meets the design intent of having a 150kW prime rating (+10% capacity = 165kW).

A5: No ruling on proposed alternate equipment as acceptable will be made prior to acceptance of a Bidder Submission. For further information Bidders shall refer to Specification Section 01200 – Alternatives.

Q6: Writing to submit a request for equals on the HVAC portion on project Blind River WTP & LLPS

A6: No ruling on proposed alternate equipment as acceptable will be made prior to acceptance of a Bidder Submission. For further information Bidders shall refer to Specification Section 01200 – Alternatives.

Q7: Please confirm supply of chemicals (Sodium Hypochlorite) is by Owner.

A7: Supply of chemicals is by Owner

Q8: Process Piping specifications call for 316 Stainless Steel Pipe, however Process Drawings indicate Process Pipe as 304 Stainless Steel Pipe. Please Clarify and provide any specifications needed.

A8: Process pipe shall be 304 Stainless Steel Pipe. Refer to Changes 1.4, 1.5, 1.6, and 1.7.

Q9: Please provide the required pipe material for the Compressed Air Line between Screen assembly and Hydroburst System as none is given.

A9: Pipe material for Compressed Air Line shall be schedule 10 stainless steel. Refer to Change 1.7.

Q10: Please confirm that the Compressed Air line size is to be 3" as shown on the drawings, as a 100mm carrier pipe containing the Raw Water Sample Line, Sodium Hypochlorite Line & the Air Line will not be sufficiently sized to house these lines (25mm, 20mm & 75mm respectively).

A10: Compressed Air Line is to be 3" diameter as per the drawings. Carrier pipe shall be 125 mm diameter, per Change 2.1 above.

Q11: Drawing D-301 labels the Low Lift Pumps existing. Please clarify.

A11: This was in error. Refer to Changes 2.2 and 2.3 above

Q12: Please clarify pipe material for the 100 mm Surge Relief line as no 100 mm line is included in the Process Piping Schedule.

A12: 100 mm Surge Relief Line material shall be 304L Stainless Steel. Refer to Change 1.7 above

Q13: What and where is the Source Water Transition Plan? Contractors are responsible for this, however aside from noting this, no other information has been provided about this. Please provide so contractors can correctly and efficiently price this work.

A13: The Contractor is not responsible for the plan itself, or for the administration of the Source Water Transition Plan; this process will be led by Operations staff. The Contractor shall coordinate closely with Operations to ensure the continuous delivery of safe water quality throughout the project duration. The Contractor shall provide all necessary support and coordination as directed by Operations during the transition. All project activities must be synchronized with Operations to ensure no lapse in water safety. Refer to Change 1.8 above.

Q14: Pre-engineered roof trusses – drawings show a note that says, "by others". Can you confirm that we do not include for the truss package?

A14: Design to be completed by roof truss manufacturer. Refer to Section 06310 for design performance requirements.

Q15: Monorail beam – drawings show a note that says, "by others". Can you confirm we are just to supply the monorail framing and not the rail itself?

A15: Design to be completed by monorail beam manufacturer. Refer to Section 14310 for design performance requirements.

Q16: Please confirm the requirement for spec section 01750 Disinfection of Water Structures as this is a low lift station, all water is raw water, not potable.

A16: Section 01750 is required to be followed.

Q17: Please clarify, as per the tender specification Section 11530 – 2.4.6 Tanks connections listed only 5 fittings, but on the drawing, we can identify 7.

A17: There are 6 fittings, as the calibration column overflow and pressure relief line shall share one port. Refer to Change 1.9 above.

Q18: Please clarify types and sizes of pipes for the Compressed Air, Raw Sampling, sodium hypochlorite and carrier pipe that are required to accompany the 400 mm intake pipe to the intake screen. Drawings indicate 100 mm carrier pipe containing the following: 75 mm (IPS HDPE – OD=3.5"), 25 mm (IPS HDPE – OD=1.3") and 20 mm (IPS HDPE – OD=1.05"). Depending on the pipe specs, all of these won't fit inside of a 100 mm HDPE DR17 ID pipe.

A18: Piping size and material shall be per Section 11101. Refer to Change 1.7 above for updated piping schedule.

Sodium Hypochlorite piping shall be PVC as specified in Section 11540. Refer to Change 2.4 above.

Carrier pipe to be 125 mm, per Change 2.1 above.

Q:19 Please clarify the bedrock elevations. There are discrepancies between the geotechnical and hydrogeological reports.

A:19 The rock elevations listed in each report are accurate based on field conditions encountered. The inferred bedrock surface identified on the plans has been interpolated based on these boreholes and has been updated on the revised plans attached.

End of Addendum 8

Encls.
Plan Takers List 03.04.2026 (3 pages)
Civil Drawings, C1-C6 REV1 (6 pages)
Sec01120 (5 pages)
Sec08710 (12 pages)
E-001 (1 page)
E-102A (1 page)
E-108A (1 page)
E-503 (1 page)
E-601 (1 page)
E-602 (1 page)
E-603 (1 page)
I-002 (1 page)
I-501 (1 page)
I-502 (1 page)
I-503 (1 page)
I-504 (1 page)
I-509 (1 page)
I-510 (1 page)
I-603 (1 page)

Project Audit

Created by: Katie Scott
Created on: 2026/03/04 02:24:15 PM EST
Project: PS-2026-01 - Blind River Water Treatment Plant Intake and Low Lift Pumping Station

Project Supplier Audit - All Suppliers

Organization Name	Org. Number	Main Contact	Document Order	Bid Submitted	Bid Submission Type
Accurate HD Ltd.	598107	Stan Dueck	Complete	No	
Aquatech Canadian Water Services Inc.	518439	Cyrielle LAMY	Partial (1/16)	No	
ASCO Construction Ltd.	460085	Jason Assaly	Complete	No	
AVERTEX Utility Solutions Inc.	526525	Steve Kottelenberg	Partial (15/16)	No	
Bantrel Co.	1138443	Zoran Stojanovic	Partial (1/16)	No	
Beaudoin Canada	1130698	Remi Roy	Partial (1/16)	No	
Bennett Construction Group Ltd.	953461	Colleen Harrison	Partial (1/16)	No	
Berfina Inc.	1538745	Berat Aydin	Partial (1/16)	No	
Brooklin Concrete Products Corp.	1161617	Sebastian Rimland	Partial (2/16)	No	
C & M Environmental Technologies Inc.	871393	CM Environmental	Complete	No	
Canadian Scientific Lab Systems Inc.	1102215	Lowri Davison	Partial (1/16)	No	
Canadian Underwater Inspection Services Ltd.	1143601	Aaron J Snyder	Complete	No	
Cantech Construction Ltd.	1651673	Andrew Roberts	Partial (1/16)	No	
Cast Construction Inc.	1111054	Gerry Castilloux	Complete	No	
CC Underground	948296	Scott Anderson	Partial (15/16)	No	
Cecchetto & Sons Ltd.	361661	Vaughn Blacklock	Complete	No	
Celco Controls Ltd	847115	Trey Rolland	Partial (2/16)	No	
Chandos Construction LP.	684639	Alberta Proposals	Partial (10/16)	No	
Clearway Construction Inc.	789815	George Vescio	Partial (5/16)	No	
Dalcon Constructors Ltd.	1143378	Ryder Wesley	Partial (13/16)	No	
Dominion Divers Marine Contractors	507383	Garth M Hiebert	Partial (5/16)	No	
Ernst Hansch Construction Ltd.	449413	Vivian Henry	Partial (1/16)	No	
Facca Incorporated	9841	Marco Gardonio	Complete	No	
First Nations Engineering Services Ltd.	490541	Kevin L Martin	Partial (1/16)	No	
Floval Equipment	1435664	Alex Popov	Complete	No	
GEMTEC Consulting Engineers and Scientists Limited	29650	Proposal Team	Partial (1/16)	No	
GeoPro Consulting Limited	1027112	David Liu	Partial (1/16)	No	

Organization Name	Org. Number	Main Contact	Document Order	Bid Submitted	Bid Submission Type
Greater City Concrete Works Ltd	945232	Troy Penney	Partial (9/16)	No	
Greysmith Concrete Restoration INC	1460158	Ravan Nanayakkara	Partial (1/16)	No	
Industra Construction Corp.	1068446	Aiden Wong	Complete	No	
Infrastructure United	1430164	Farah Salih	Partial (2/16)	No	
INSULCANA CONTRACTING LTD	31184	Amy Portelance	Partial (6/16)	No	
Intelligent Infrastructure Monitoring Inc.	1566705	Rob Behzadian	Complete	No	
ISCO Industries, Inc	1078876	Narendra Durgasi	Partial (3/16)	No	
J I Enterprises	396411	Joseph Iturregui	Complete	No	
Kingdom Construction Limited	586081	Matthew MacLeod	Partial (15/16)	No	
Layfield Group	257317	Jignesh Thakkar	Partial (2/16)	No	
Leblanc Works Ltd.	1547200	Matt Leblanc	Partial (15/16)	No	
Lignum Builders Limited	990263	Brant J Leclair	Partial (2/16)	No	
Maple Reinders Group	1005220	Reuben Scholtens	Partial (2/16)	No	
MARATHON UNDERGROUND CONSTRUCTORS CORP.	33612	Bob Watson	Complete	No	
Mid North Automation	1079617	Tiffanie Podstawka	Partial (11/16)	No	
Mike Witherell Mechanical Ltd.	552383	Mike s Witherell	Complete	No	
Milestone Environmental Contracting Inc.	793047	Estimating Department	Complete	No	
Moncrief Construction Limited	187522	Hilary Moncrief	Partial (1/16)	No	
NATT Safety Services	1134155	Mark Bloomfield	Partial (3/16)	No	
Nevtro Sales	1129739	Steve Foster	Complete	No	
North America Construction (1993) Ltd.	605897	Theresa Thomson	Partial (6/16)	No	
Northern Structure Ltd.	1329056	Jeremy Mailey	Partial (1/16)	No	
Nu-Style Construction Co. (1988) Limited	621107	Mauro Marcantognini	Partial (2/16)	No	
ODS Marine	9325	Jim Freeth	Partial (1/16)	No	
OZA Inspections Ltd	793759	Joanne Toulouse	Partial (13/16)	No	
Park Derochie Coatings (Saskatchewan) Inc	1064307	Doug Barker	Partial (13/16)	No	
PATRICK MECHANICAL LTD	190269	Ashley Champagne	Partial (14/16)	No	
PCL CONSTRUCTORS CANADA INC.	35783	Ken Benson	Partial (11/16)	No	
PDR Contracting Thunder Bay Ltd	951041	Pat Murphy	Partial (1/16)	No	
Phosphate Valley Technology	1535230	Toufik Sbai	Partial (1/16)	No	
Procon Constructors Inc	1134432	Greg Leone	Complete	No	
PULLMAN Services, Inc.	1089326	Matthew Hickey	Partial (3/16)	No	
R.F. Contracting	304005	Adam Carpenter	Complete	No	

Organization Name	Org. Number	Main Contact	Document Order	Bid Submitted	Bid Submission Type
RA Engineering Inc.	999756	Ragu Nathan	Partial (11/16)	No	
Renokrew	964552	Ontario Proposals	Complete	No	
Short Atlantic Industries Inc.	1050214	Daniel Short	Partial (1/16)	No	
Sibwest Building Restoration Inc.	1164491	Andrey Shurygin	Partial (11/16)	No	
SPD Sales Limited	240969	Deven Naik	Partial (4/16)	No	
Submerged Underwater Services Inc.	1140337	Dakota Gunderson	Partial (2/16)	No	
THE LANDSHARK GROUP	1538158	JAN FERGUSON	Partial (15/16)	No	
The Master Group	527013	Carey Belfry	Partial (8/16)	No	
Total Power Limited	1594730	Jason Ha	Partial (8/16)	No	
Tulloch Engineering	1094940	Janet Baker	Partial (2/16)	No	
Valley Integration Inc.	1110720	Nikin Panchal	Partial (1/16)	No	
Venasse Building Group Inc.	923455	Steven Venasse	Complete	No	
Wiigwaam Inc	1530683	Jesse Darby	Partial (1/16)	No	
Work By Others Construction Ltd.	1355664	Matthew McCue	Partial (3/16)	No	
Xylem Canada LP	31430	Canada W Sales	Partial (1/16)	No	

No bids have been submitted to this project and no document requests have been made.

LEGEND – EXISTING

INDEX CONTOUR (0.5m INTERVAL)	143
INTERMEDIATE CONTOUR (0.1m INTERVAL)	
PROPERTY LINE	
SURVEY MONUMENT	SIB
EDGE OF ASPHALT	
EDGE OF GRAVEL	
RAIL LINE	
FENCE LINE	
DITCH LINE	
EDGE OF WATER	
WOOD OUTLINE	
AERIAL HYDRO	HCA
AERIAL BELL	BCA
AERIAL BELL & HYDRO	B&H
UNDERGROUND GAS	G
UNDERGROUND BELL	BCU
UTILITY POLE	B&H
UTILITY ANCHOR	AN
MAINTENANCE HOLE	MH
CATCH BASIN	CB
TERMINAL BOX	TB
FIRE HYDRANT	
WATER VALVE	WV
WATERMAIN	W
SANITARY SEWER	SAN
STORM SEWER	ST
BOREHOLE	BH-23-04
MONITORING WELL	MW

LEGEND – PROPOSED

ASPHALT APRON/DRIVEWAY	
DITCH LINE	
WATER SERVICE	
RAW WATER LINE	
CURB STOP	
SANITARY SEVICE	
GRADING LIMITS	
SILT FENCE	
SUBDRAIN	
SLOPE ARROW	4.7%
SPOT ELEVATION	+180.20

LEGEND – PROFILE & SECTIONS

EXISTING GRADE	
INFERRED ROCK	
PROPOSED GRADE	
GRANULARS	
WATER SERVICE	
RAW WATER LINE	
SANITARY SERVICE	

GENERAL NOTES:

1. ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARD DRAWINGS TO APPLY UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL QUALITY CONTROL TESTING REQUIRED PER APPLICABLE OPSS.MUNI SPECIFICATION AND SHALL SUPPLY THE OWNER'S REPRESENTATIVE WILL COPIES OF ALL TEST RESULTS. THE OWNER MAY CARRY OUT QUALITY ASSURANCE TESTING AT THE OWNER'S COST.
3. CONSTRUCTION WORKS SHALL BE COMPLETED IN ACCORDANCE WITH GEOTECHNICAL MEMORANDUM, TITLED "OFFSHORE GEOTECHNICAL INVESTIGATION FOR THE NEW RAW WATER INTAKE PIPE, BLIND RIVER, ONTARIO", PREPARED BY TULLOCH, OCTOBER 20, 2025.
4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO PERFORMING ANY WORK AND MAKE THEMSELVES FULLY AWARE OF ALL EXISTING SITE CONDITIONS.
5. DRAWINGS ARE NOT TO BE SCALED.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
7. ALL MATERIAL THAT DOES NOT MEET SPECIFICATIONS, AS DETERMINED BY THE ENGINEER WILL BE REJECTED AND MUST BE REMOVED AND REPLACED. THIS SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
8. ALL EROSION AND SEDIMENT CONTROLS SHALL FOLLOW AND BE IN ACCORDANCE WITH GENERAL BEST MANAGEMENT PRACTICES PRIOR TO UNDERTAKING WORKS.
9. NOTIFY ALL UTILITY DEPARTMENTS 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. UTILITY PERSONNEL TO BE ON SITE WHEN EXCAVATING ADJACENT TO UNDERGROUND UTILITIES.
10. SUPPORT UTILITIES IN ACCORDANCE WITH THE DIRECTIONS AND GUIDELINES OF THE IMPACTED UTILITY.
11. THE LOCATION OF UTILITIES SHOWN ON DRAWINGS IS APPROXIMATE AND MAY BE INCOMPLETE. CONFIRM EXACT LOCATION OF UTILITIES WITH MINISTRY, MUNICIPALITY OR UTILITIES. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION AND WILL BE RESPONSIBLE FOR PROTECTING AGAINST DAMAGE. THE CONTRACTOR ASSUMES ALL LIABILITY FOR DAMAGE TO UTILITY AND ROAD WORKS.
12. COMPLETE ALL TRENCHING IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH & SAFETY ACT.
13. COMPLY WITH THE REQUIREMENTS OF THE TOWN OF BLIND RIVER IN REGARDS TO TRAFFIC FLOW ON MUNICIPAL STREETS. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES.
14. ALL INSTALLATIONS ARE TO BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE TOWN OF BLIND RIVER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
15. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT INCLUDING ALL LINES AND GRADES FROM PLANS.
16. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING, AS MAY BE REQUIRED TO FACILITATE THE WORKS.
17. THE CONTRACTOR SHALL DISPOSE OF EXCESS MATERIAL OFF SITE AS PER OPSS.MUNI 180. EARTHEN MATERIALS SHALL BE DELIVERED TO THE TOWN OF BLIND RIVER LANDFILL. ROCK MATERIALS SHALL BE DELIVERED OT THE TOWN OF BLIND RIVER BOOM CAMP ROAD PIT.
18. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE EXISTING SERVICING LOCATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE CONFIRMED BY THE ENGINEER PRIOR TO CONSTRUCTION.
19. THE CONTRACTOR SHALL NOT OPERATE ANY WATER VALVES. OPERATION OF THE WATER DISTRIBUTION SYSTEM WILL BE COMPLETED BY THE TOWN OF BLIND RIVER OR THEIR AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE MINIMUM 48 HRS NOTICE FOR OPERATION OF ANY WATER VALVES.
20. CIVIL GRADING AND DRAWINGS CEASE AT THE EXTERIOR OF THE BUILDING FOOTPRINT. ALL CONNECTIONS TO AND DESIGN OF WORKS WITHIN OR BELOW THE BUILDING FOOTPRINT ARE THE RESPONSIBILITY OF OTHERS. SEE ASSOCIATED DRAWINGS FOR DETAILS.
21. CONSTRUCTION SHALL ADHERE TO THE ASSOCIATE WORK WINDOWS FOR WORKS IN OR NEAR WATER BODIES AND WETLANDS.
22. COMPLETE ALL WORKS NEAR ENBRIDGE GAS LINE IN ACCORDANCE WITH ENBRIDGE THIRD-PARTY REQUIREMENTS IN THE VICINITY OF NATURAL GAS FACILITIES STANDARD, 2024.01.31.

EROSION & SEDIMENT CONTROL NOTES:

1. ALL REQUIRED SILTATION AND EROSION CONTROL MEASURES TO BE IN PLACE PRIOR TO CONSTRUCTION TO PREVENT EROSION AND THE MIGRATION OF SEDIMENT DURING CONSTRUCTION. ALL SILTATION AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL GROUND COVER IS RE-ESTABLISHED TO THE ORIGINAL CONDITION OR BETTER AS DETERMINED BY THE ENGINEER OR THE ENGINEER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND INSTALLING ALL REQUIRED EROSION & SEDIMENT CONTROL MEASURES BASED ON THEIR CONSTRUCTION ACTIVITIES. THE MEASURES LISTED ON THESE DRAWINGS ARE THE MINIMUM REQUIRED, HOWEVER ADDITIONAL MEASURES MAY BE NECESSARY.
3. ALL SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICATION PRECIPITATION EVENT AND MAINTAINED, REPAIRED OR REPLACED AS NECESSARY. THE CONTRACTOR OR CONTRACTOR'S REPRESENTATIVE SHALL MAINTAIN A WEEKLY REPORT ON SEDIMENT CONTROL MEASURES INCLUDING ALL CORRECTIVE ACTION TAKEN DURING THE REPORTING PERIOD TO ENSURE CONTROL MEASURES ARE WORKING EFFECTIVELY. IF THE SEDIMENT AND EROSION CONTROL MEASURES ARE NOT FUNCTIONING PROPERLY, THE CONTRACTOR WILL SUSPEND CONSTRUCTION UNTIL THE ISSUES ARE ADDRESSED.
4. SILT FENCING TO BE INSTALLED AT THE BOTTOM OF ALL FILL SLOPES AND DOWN GRADIENT OF ANY STOCKPILED MATERIAL WHEN THERE IS THE POSSIBILITY OF SEDIMENT MIGRATING TO ADJACENT PROPERTIES.
5. THE SITE SUPERVISOR WILL HOLD A MEETING OF ALL EQUIPMENT OPERATORS WORKING AT THE SITE TO MAKE THEM AWARE FOR MEASURES TO CONTROL SEDIMENT.
6. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SPILL RESPONSE PLAN AND HAVE AN EMERGENCY SPILL KIT ONSITE.
7. SOILS PRONE TO EROSION WILL BE RESTORED AS SOON AS POSSIBLE BY SEEDING AND IF NECESSARY SEEDING AND MULCHING OR INSTALLING EROSION CONTROL BLANKET.
8. WHEN WORK IS COMPLETED AND AREAS STABILIZED AS DEEMED ACCEPTABLE BY THE ENGINEER, TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED FROM THE WORK SITE.
9. LIGHT DUTY SILT FENCE BARRIER TO BE INSTALLED IN ACCORDANCE WITH OPSS 805 AND OPSD 219.110.
10. STRAW BALE CHECK DAMS TO BE INSTALLED IN ACCORDANCE WITH OPSS 805 AND OPSD 219.180.
11. STREET SWEEPING, CATCH BASIN CLEANING AND DUST CONTROL ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE KEPT UNDER CONTROL OF ALL ROADWAYS TO THE SATISFACTION OF THE ENGINEER AND THE TOWN OF BLIND RIVER.
12. WHEN POSSIBLE, THE CONTRACTOR SHALL MINIMIZE EARTHWORKS DURING WET WEATHER CONDITIONS.
13. THE CONTRACTOR SHALL KEEP DUST TO A MINIMUM BY USE OF DUST SUPPRESSANT AS PER OPSS 506.

STREET RECONSTRUCTION NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED. ADDITIONAL MEASURES MAY BE REQUIRED DURING CONSTRUCTION BASED ON SITE CONDITIONS.
2. ALL REMOVALS TO BE COMPLETED IN ACCORDANCE WITH OPSS.MUNI 510. LIMITS TO BE SAWCUT.
3. ROADWAY ASPHALT AND SIDEWALK SURFACES TO BE REMOVED SEPARATELY FROM GRANULARS.
4. EXCAVATION TO BE COMPLETED IN ACCORDANCE WITH OPSS.MUNI 206. EXCAVATIONS TO ALLOW FOR RECONSTRUCTION OF STREET TO EXISTING GRADES AND ELEVATIONS.
5. PLACE & COMPACT GRANULAR "B" AND GRANULAR "A" - OPSS.MUNI 314 & OPSS.MUNI 501.
6. PLACE 50MM HL3 SURFACE ASPHALT.
7. INSTALL TOPSOIL AND SOD TO ALL DISTURBED AREAS AND REINSTATE TO EXISTING CONDITIONS OR BETTER.
8. CONTRACTOR TO PREPARE TRAFFIC PLAN FOR REVIEW BY THE CONSULTANT AND TOWN OF BLIND RIVER IN ADVANCE OF CONSTRUCTION. SINGLE LANE CLOSURES DURING DAYTIME HOURS PERMITTED WITH MAXIMUM FIVE MINUTE WAIT TIME.

WATERMAIN INSTALLATION NOTES:

1. RAW WATER LINES SHALL BE INSTALLED ACCORDING TO OPSS.MUNI 441.
2. THE CONTRACTOR SHALL LOCATE THE EXISTING WATERMAIN AND SUPPLY THE NECESSARY MANUFACTURER APPROVED COUPLERS TO MAKE THE CONNECTIONS.
3. THE 300MMØ TWIN RAW WATER LINES SHALL BE INSTALLED WITH A MINIMUM OF 2.1M OF COVER.
4. PROVIDE INSULATION PROTECTION IN AREAS <2.1M COVER, AT THE DIRECTION OF THE ENGINEER. INSTALL 25MM THICKNESS OF DOW HI LOAD-60 ABOVE WATERMAIN OR WATER SERVICE FOR EACH 300MM OF COVER REQUIRED (OR PART THEREOF) TO ACHIEVE MINIMUM 2.1M EQUIVALENT COVER.
5. MAINTAIN MINIMUM CLEAR SEPARATION OF 2.5M HORIZONTAL BETWEEN SEWERS AND WATERMAIN. WHERE WATERMAIN SEPARATION TO SANITARY SEWER IS LESS THAN 2.5M HORIZONTALLY, INVERT OF WATERMAIN SHALL BE LOCATED A MINIMUM OF 0.5M ABOVE THE CROWN OF THE SANITARY SEWER. SUCH SEPARATION SHALL BE IN-SITU MATERIAL OR COMPACTED BACKFILL. WHERE VERTICAL SEPARATION CANNOT BE OBTAINED, THE SEWER SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION WITH THE LENGTH OF WATER PIPE TO BE CENTERED ON THE CROSSING.
6. WATERMAIN PIPE SHALL BE AWWA C900 PVC CLASS 235 DR18 AND BE CERTIFIED TO CSA 137.3. FITTINGS SHALL BE PVC CONFORMING TO AWWA C907.
7. A CONTINUOUS RWU NO. 12 SOLID COPPER HMWPE TRACING WIRE SHALL BE INSTALLED WITH PVC WATERMAIN, WATER SERVICE AND VALVES. TRACER WIRE SHALL EXTEND INSIDE THE BUILDING AND CONNECTED TO THE NEAREST FITTING, WITH TERMINATION VIA STRAPPING TO THE CAP OF THE RAW WATER LINE, OR BRINGING TO SURFACE AT THE CURB STOP FOR THE WATER SERVICE.
8. ALL JOINTS INCLUDING CONNECTIONS, CAPS, VALVES, TEES AND BENDS SHALL BE RESTRAINED BY MECHANICAL JOINTS.
9. INSTALL JOINT RESTRAINTS SHALL BE IN ACCORDANCE WITH THE RESTRAINED LENGTH TABLES. JOINT RESTRAINTS ON NEW PVC SHALL BE UNI-FLANGE SERIES 1390 OR APPROVED EQUIVALENT. ON EXISTING CAST IRON CLASS 250 PIPE USE NSF CERTIFIED CLAMP.
10. GATE VALVES SHALL BE MUELLER EQUIPPED WITH VALVE OPERATOR TO OPSD 1101.020. VALVE BOXES SHALL BE MUELLER FOR PVC PIPES.
11. ANODES SHALL BE ZINC ANODES Z-24-48. ANODES SHALL BE CADWELDED TO ALL IRON FITTINGS ACCORDING TO OPSD 1109.011.
12. EMBEDMENT AND COVER OF WATERMAIN AND SERVICE LINE ACCORDING TO OPSS 441 & OPSD 802.010. EMBEDMENT MATERIAL TO BE GRANULAR "A" OR 19MM CLEAR STONE TO SPRING LINE OF PIPE. COVER MATERIAL TO BE GRANULAR 'A' OR 19MMØ CLEAR STONE. BACKFILL TO SUBGRADE WITH SUITABLE NATIVE MATERIAL.
13. NO CONNECTION TO THE MUNICIPAL DISTRIBUTION SYSTEM SHALL BE MADE UNTIL THE NEW WATERMAIN AND SERVICE HAS PASSED REQUIRED TESTING. THE PVC WATER SERVICE WILL ALSO REQUIRE PRESSURE TESTING. CONNECTION OF NEW WATERMAIN TO EXISTING WATERMAIN SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE ALGOMA PUBLIC HEALTH UNIT AND THE TOWN OF BLIND RIVER.

SANITARY SERVICE NOTES:

1. SEWER SERVICE SHALL BE MINIMUM 150MMØ, DR35 PVC PIPE MATERIAL, INSTALLED IN ACCORDANCE WITH OPSD 1006.010, OPSS.MUNI 401, OPSS.MUNI 402 AND OPSS.MUNI 410.
2. MAINTAIN MINIMUM CLEAR SEPARATION OF 2.5M HORIZONTAL AND 0.5M VERTICAL BETWEEN SANITARY SERVICE AND WATER SERVICE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. SANITARY SEWER BEDDING FOR FLEXIBLE PIPE SHALL BE AS PER OPSD 802.010 & 802.013. GRANULAR 'A' OR 19MM CLEAR STONE BEDDING AND EMBEDMENT TO SPRINGLINE OF PIPE. COVER MATERIAL TO BE GRANULAR 'A' OR 19MMØ CLEARSTONE. BACKFILL IS TO BE SUITABLE APPROVED NATIVE MATERIAL TO SUBGRADE ELEVATION. BEDDING AND BACKFILL TO BE COMPACTED TO MINIMUM 98% STANDARD PROCTOR DENSITY.
4. THE CONTRACTOR SHALL LOCATE THE EXISTING SANITARY SEWERS AND SUPPLY NECESSARY MANUFACTURER APPROVED COUPLERS TO MAKE THE CONNECTIONS.
5. PROVIDE INSULATION PROTECTION IN AREAS <2.1M COVER, AT THE DIRECTION OF THE ENGINEER. INSTALL 25MM THICKNESS OF DOW HI LOAD-60 ABOVE SANITARY SEWER SERVICE FOR EACH 300MM OF COVER REQUIRED (OR PART THEREOF) TO ACHIEVE MINIMUM 2.1M EQUIVALENT COVER.

SITE GRADING:

1. ALL REMOVALS SHALL BE COMPLETED IN ACCORDANCE WITH OPSS.MUNI 510, ASPHALT LIMITS SHALL BE SAWCUT. ALL REMOVED ITEMS AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL OFFSITE. THE TOWN OF BLIND RIVER MAY ACCEPT CLEAN EARTH MATERIALS AT THE LANDFILL AND ROCK MATERIALS AT THE BOOM CAMP ROAD PIT.
2. ALL SITE GRADING IDENTIFIED ON THE DRAWINGS ARE TO TOP OF THE FINISHED SURFACE.
3. ALL EXCAVATIONS TO BE COMPLETED IN ACCORDANCE WITH OPSS.MUNI 180 AND OPSS.MUNI 206. EXCAVATIONS TO ALLOW FOR RECONSTRUCTION OF SITE TO DESIGN GRADES AND ELEVATIONS. ALL EXCESS SOILS SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL OFFSITE.
4. EXCAVATIONS ADJOINING MARTIN STREET SHALL BE COMPLETED WITH MAXIMUM 5:1 SUBGRADE TAPERS.
5. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IN ALL SUBGRADES, DITCHES AND SWALES.
6. INSTALL HDPE CULVERT IN ACCORDANCE WITH OPSS.MUNI 314, OPSS.MUNI 401, OPSS.MUNI 410, OPSS.MUNI 501, OPSS.MUNI 1840, OPSD 802.010 AND OPSD 803.030. GRANULAR A BEDDING, EMBEDMENT AND COVER REQUIRED.
7. PROOF ROLL SUBGRADE PRIOR TO PLACING GEOTEXTILE. SUBGRADE SHALL BE APPROVED IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS PRIOR TO PLACING GEOTEXTILE. UNSUITABLE MATERIALS SHALL BE EXCAVATED IN ACCORDANCE WITH OPSS.MUNI 206 AND REPLACED WITH APPROVED MATERIALS, ENSURING NO PONDING OF WATER IN THE SUBGRADE.
8. INSTALL 150MMØ SOCKED SUBDRAIN IN ACCORDANCE WITH OPSS.MUNI 401, OPSS.MUNI 405, OPSS.MUNI 410, OPSS.MUNI 501, OPSS.MUNI 1840 AND OPSD 206.050, COMPLETE WITH HDPE OUTLET PIPE AND RODENT GRATE. SUBDRAIN BOX TO BE WRAPPED IN NON-WOVEN GEOTEXTILE PER OPSS.MUNI 1860 COMPLETE WITH 19MMØ CLEARSTONE PER OPSS.MUNI 1004.
9. PLACE GEOTEXTILE AND GEOGRID PER OPSS.MUNI 1860. ADJACENT SECTIONS OF GEOTEXTILE OR GEOGRID SHALL BE OVERLAPPED A MINIMUM OF 1.0M.
10. PLACE AND COMPACT GRANULAR "B" AND GRANULAR "A" PER OPSS.MUNI 314, OPSS.MUNI 501 AND OPSS.MUNI 1010. MAXIMUM LIFT THICKNESS OF 200MM.
11. GRANULARS SHALL BE PLACED IN 200MM LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.
12. PLACE HL3 SURFACE COURSE ASPHALT, COMPLETE WITH TACK COATING AT ALL CONCRETE FACES, PER OPSS.MUNI 308, OPSS.MUNI 310, OPSS.MUNI 710, OPSS.MUNI 1101, OPSS.MUNI 1103 AND OPSS.MUNI 1150. MIX DESIGN SHALL BE CONTRACTOR MIX DESIGN PER OPSS.MUNI 150.04.01.02. ASPHALT CEMENT SHALL BE PGAC 58-34.
13. ASPHALT SHALL BE PLACED TO THE DESIGN GRADES AND ELEVATIONS SPECIFIED, ENSURING POSITIVE DRAINAGE WITH NO PONDING OF WATER ACCEPTED.

INTAKE LINE & STRUCTURE

1. THE INTAKE LINE AND CARRIER LINES CONDUIT SHALL BE INSTALLED TO THE LINES AND GRADES SHOWN ON THE PLANS. THE WORK WILL BE INSTALLED BY OPEN TRENCHING IN ACCORDANCE WITH OPSS.MUNI 441. INTAKE LINE SHALL BE INSTALLED COMPLETE WITH A CONTINUOUS RWU No. 12 SOLID COPPER HMWPE TRACING WIRE.
2. THE WORKS SHALL BE COMPLETED IN ACCORDANCE WITH THE REGULATORY AGENCY PERMITS, AS SECURED BY THE OWNER.
3. ISOLATION OF THE WORK AREAS SHALL BE COMPLETED VIA TURBIDITY CURTAINS OR OTHER APPROVED METHODS.
4. DEWATERING MAY BE REQUIRED FOR SHORELINE WORKS AND ROCK TRENCHING DEPENDING ON CONTRACTOR'S CONSTRUCTION METHODS.
5. BLASTING NEAR THE SHORELINE OR IN-WATER SHALL BE COMPLETED IN ACCORDANCE WITH REGULATORY AGENCY REQUIREMENTS.
6. THE INTAKE LINE SHALL BE 400mmØ HIGH DENSITY POLYETHYLENE WATERMAIN PER OPSS.MUNI 441.
7. THE CARRIER LINES CONDUIT SHALL BE 125mmØ HIGH DENSITY POLYETHYLENE.
8. THE INTAKE LINE SHALL BE CONNECTED TO THE BUILDING, AS WELL AS THE INTAKE STRUCTURE PER DETAILS SHOWN ON CIMA+ DRAWINGS.
9. THE INTAKE STRUCTURE SHALL BE COMPLETED PER CIMA+ DRAWINGS.
10. CLAY SEAL TRECH PLUG SHALL BE INSTALLED IN ACCORDANCE WITH OPSS.MUNI 1205 AND OPSD 802.095 TO ELEVATION 177.50m.
11. CONCRETE BALLAST BLOCKS TO BE MINIMUM 280LB BLOCKS, SET AT 15ft INTERVALS, WITH THE FOLLOWING ADDITIONAL PARAMETERS:
    - CONCRETE INTERIOR SURFACE SHALL BE SMOOTH.
    - CONCRETE SHALL NOT CONTACT THE PIPE SURFACE. APPROVED UNDERPAD MATERIALS, IE. RUBBER SHEETING OR NEOPRENE PADDING SHALL EXTEND 50mm BEYOND CONCRETE LIMITS.
    - CONCRETE BLOCKS SHALL BE SUITABLE REINFORCED TO PREVENT CRACKING DURING HANDLING AND INSTALLATION.
    - CONCRETE BLOCK DIMENSIONS AS DETAILED MAY BE ADJUSTED PROVIDED THE MANUFACTURED BLOCKS ARE IN GENERAL CONFORMANCE WITH SCLAIRPIPE RECOMMENDATIONS FOR BALLAST WEIGHTS, AND SUBJECT TO ENGINEER APPROVAL.

KEY PLAN

ENGINEER'S SEAL:

LICENSED PROFESSIONAL ENGINEER
MAR. 4/26
C.L. KIRBY
100111792
PROVINCE OF ONTARIO

DATE	REV.	REVISION	BY	APPD
26/03/04	1	Issued For Addendum #8	DAS	CLK
26/01/15	0	Issued For Tender	DAS	CLK

Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

DRAWING TITLE:

LEGENDS AND GENERAL NOTES

DRAWN	DESIGNED	CHECKED	APPROVED
DAS	DAS	CLK	CLK

SCALE	DATE
-	MAR. 4, 2026

PROJECT NO.	REVISION	DRAWING
250809	1	C1

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CAUTION

UNDER GROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. UTILITIES ARE TO BE LOCATED PRIOR TO CONSTRUCTION.

TOWN OF BLIND RIVER
SEWAGE TREATMENT PLANT

MW 100

BH-23-01

BH 700

9+920

9+940

9+960

9+980

10+000

10+020

CLOSE CUT CLEARING & GRUBBING

CLOSE CUT CLEARING & GRUBBING

MW 102

MW 101

BH-23-02

SAMH Z9-1

177.57

REMOVE ASPHALT AS NECESSARY TO ACCOMMODATE SERVICE CONNECTIONS

MARTIN STREET

BM Nail & Washers Set in Pole

UM GAS

AN

BH

Horizontal Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, UTM Zone 17, NAD83 (CSRS) (2010)

Vertical Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, Canadian Geodetic Vertical Datum of 1928 (CGVD1928), Geodetic Elevations

N

KEY PLAN

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MAR. 4/26
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PROVINCE OF ONTARIO

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Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

DRAWING TITLE:

REMOVALS PLAN

DRAWN	DESIGNED	CHECKED	APPROVED
DAS	DAS	CLK	CLK

SCALE	DATE
1:200	MAR. 4, 2026

PROJECT NO.	REVISION	DRAWING
250809	1	C2

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CAUTION

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MARINE FEATURE 'S5'

5m MARINE FEATURE PROTECTION ZONE

MARINE FEATURE 'S4'

5m MARINE FEATURE PROTECTION ZONE

INSTALL TURBIDITY CURTAIN OPSD 219.260

BH 708

BH 707

BH 706

BH 705

BH 704

BH 703

BH 702

BH 701

BH 700

PI STA:9+839.817
N-5116156.101
E-349179.508
DELTA = 35°48'07"
R = 177.721
L = 111.051

MATCH LINE 9+900 250809-C3
REFER TO DRAWING 250809-C4

INSTALL TURBIDITY CURTAIN OPSD 219.260

INSTALL 400mmØ HDPE RAW WATER INTAKE c/w CONCRETE BALLAST WEIGHTS AND CARRIER LINES CONDUIT VIA OPEN TRENCH

MARINE FEATURE 'S8'

5m MARINE FEATURE PROTECTION ZONE

NOTE: NO WORKS SHALL BE PERMITTED WITHIN THE MARINE FEATURE PROTECTION ZONES

INSTALL TURBIDITY CURTAIN OPSD 219.260

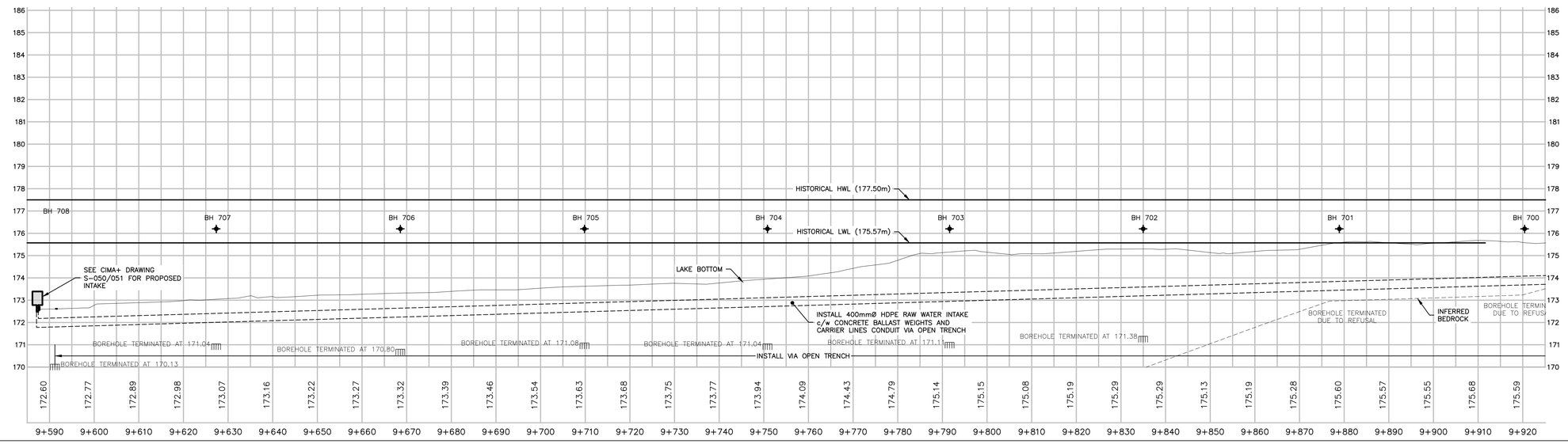
SEE CIMA+ DRAWING S-050/051 FOR PROPOSED INTAKE

B.O.P.
9+587.570
N - 5115903.944
E - 349186.229

LAKE HURON

Horizontal Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, UTM Zone 17, NAD83 (CSRS) (2010)

Vertical Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, Canadian Geodetic Vertical Datum of 1928 (CGVD1928), Geodetic Elevations



KEY PLAN

ENGINEER'S SEAL:

LICENSED PROFESSIONAL ENGINEER
MAR. 4/26
C.L. KIRBY
100111792
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Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

DRAWING TITLE:

PLAN & PROFILE
9+591.2 to 9+900

DRAWN	DESIGNED	CHECKED	APPROVED
DAS	DAS	CLK	CLK

HOR. 1:500
VER. 1:100

SCALE

MAR. 4, 2026

DATE

PROJECT NO.	REVISION	DRAWING
250809	1	C3

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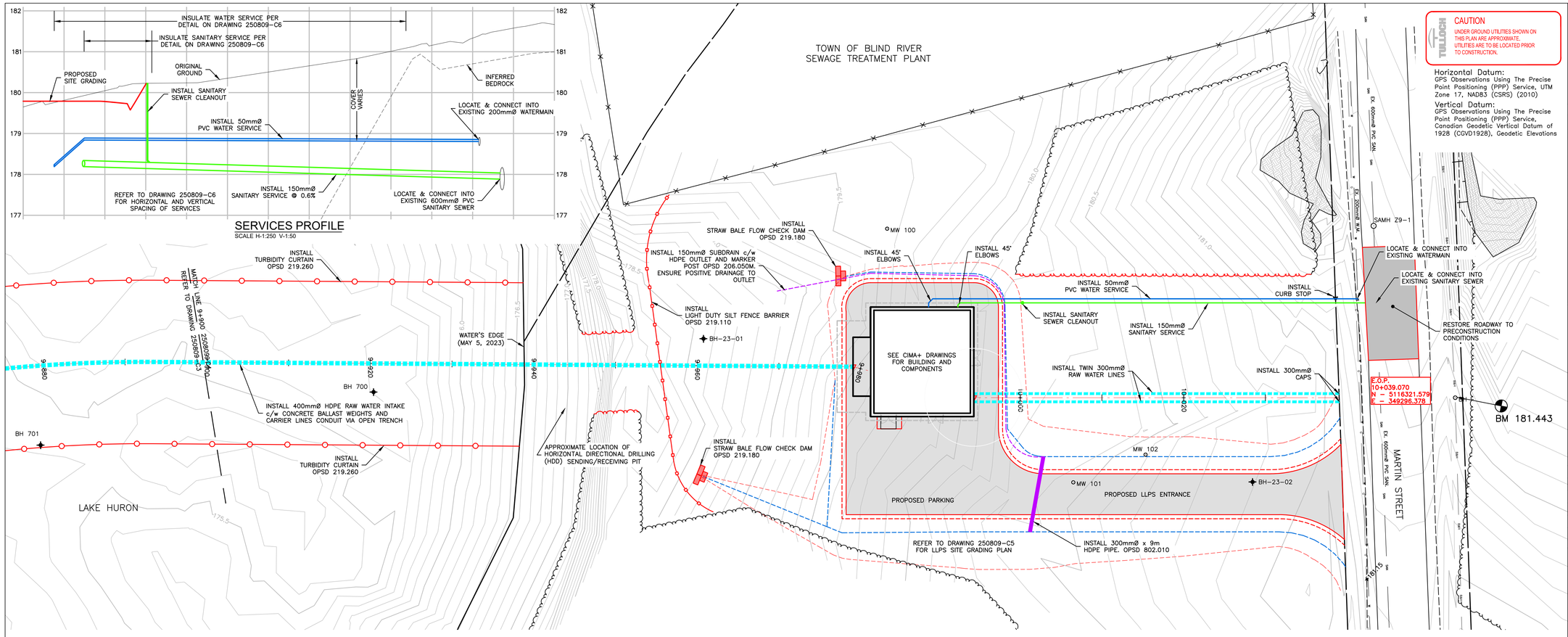
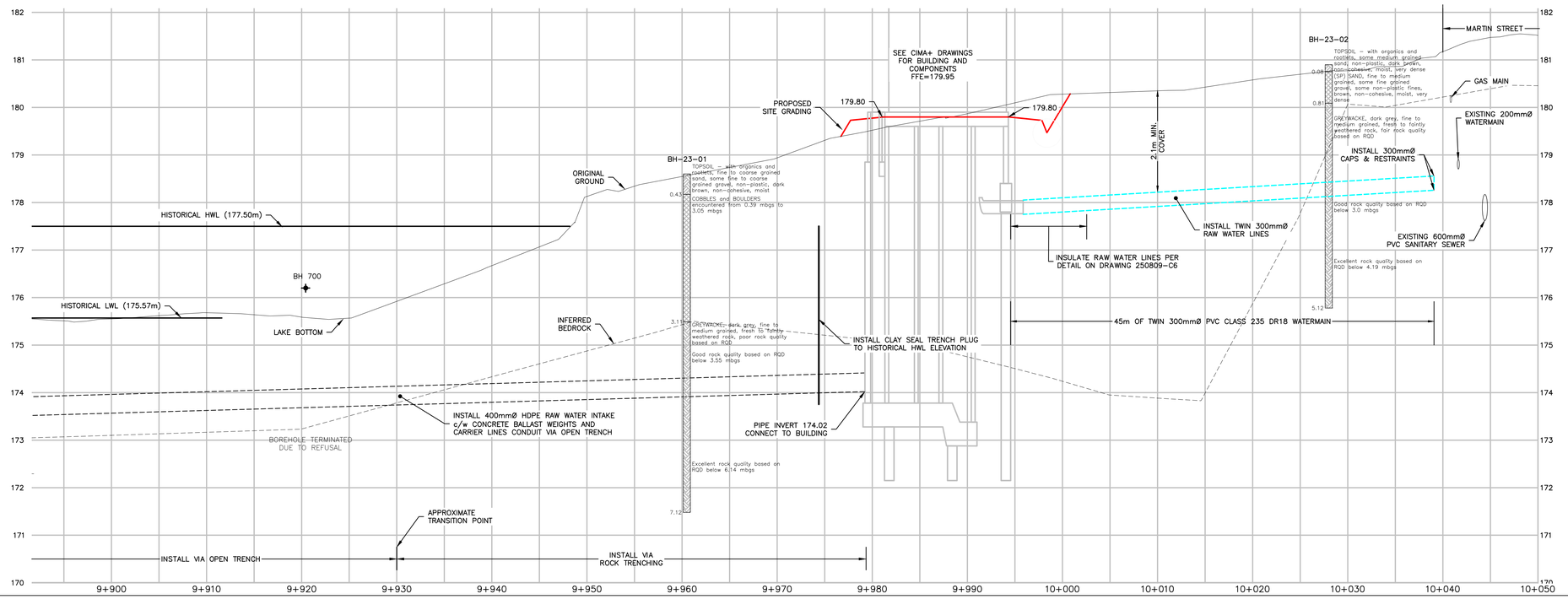
SERVICES PROFILE

SCALE H-1:250 V:1:50





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CAUTION
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Horizontal Datum:
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Vertical Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, Canadian Geodetic Vertical Datum of 1928 (CGVD1928), Geodetic Elevations

KEY PLAN

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LICENSED PROFESSIONAL ENGINEER
MAR. 4/26
C.L. KIRBY
100111792
PROVINCE OF ONTARIO

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26/01/15	0	Issued For Tender	DAS	CLK
DATE	REV.	REVISION	BY	APPD

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

DRAWING TITLE:

PLAN & PROFILE 9+900 to 10+070

DRAWN	DESIGNED	CHECKED	APPROVED
DAS	DAS	CLK	CLK

SCALE	DATE
HOR. 1:250 VER. 1:50	MAR. 4, 2026

PROJECT NO.	REVISION	DRAWING
250809	1	C4

Horizontal Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, UTM Zone 17, NAD83 (CSRS) (2010)

Vertical Datum:
GPS Observations Using The Precise Point Positioning (PPP) Service, Canadian Geodetic Vertical Datum of 1928 (CGVD1928), Geodetic Elevations

CAUTION
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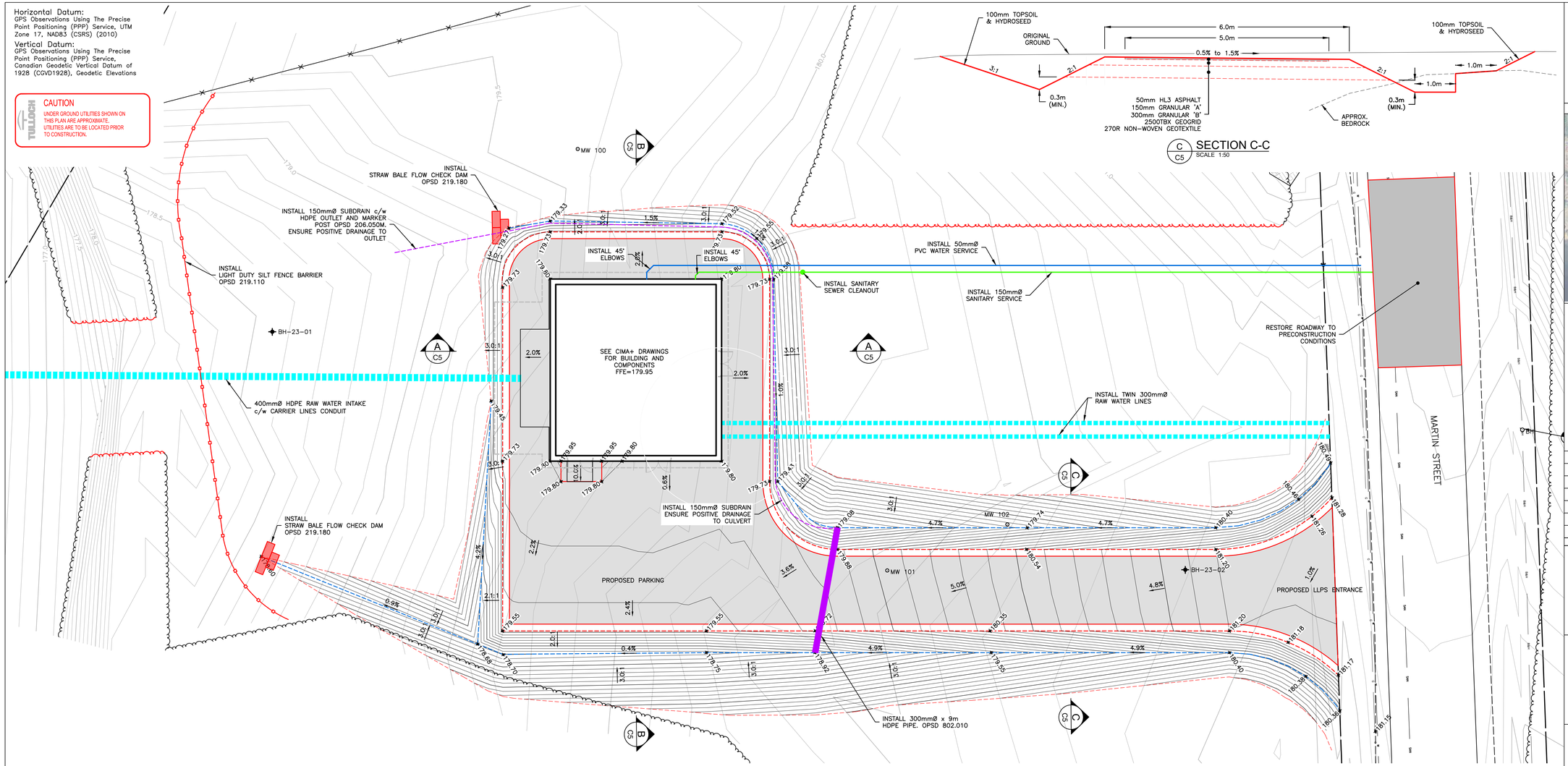
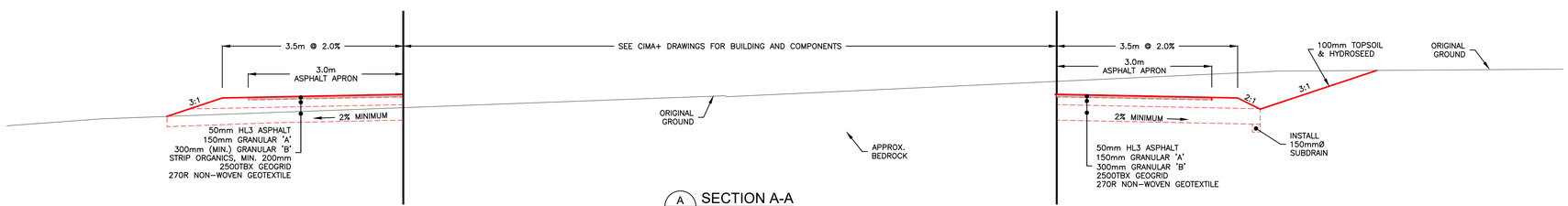
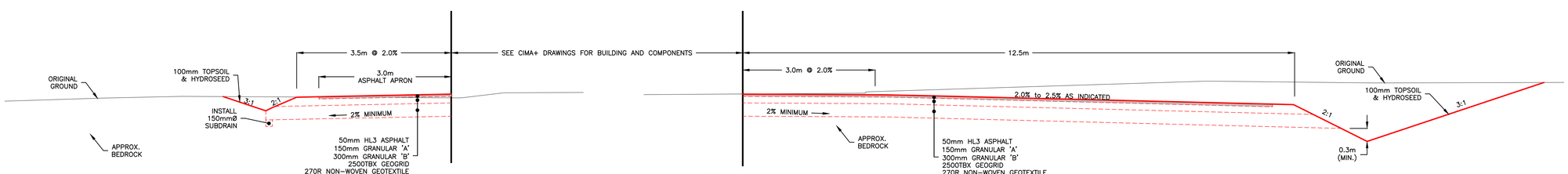


C/C5 SECTION C-C
SCALE 1:50



A/C5 SECTION A-A
SCALE 1:50



B/C5 SECTION B-B
SCALE 1:50

KEY PLAN

ENGINEER'S SEAL:

LICENSED PROFESSIONAL ENGINEER
MAR. 4/26
C.L. KIRBY
100111792
PROVINCE OF ONTARIO

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Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

DRAWING TITLE:

LLPS SITE GRADING DETAILS

DRAWN	DESIGNED	CHECKED	APPROVED
DAS	DAS	CLK	CLK

SCALE	DATE
1:250	MAR. 4, 2026

PROJECT NO.	REVISION	DRAWING
250809	1	C5

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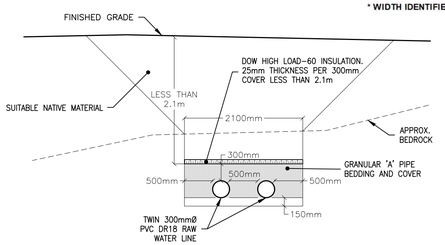
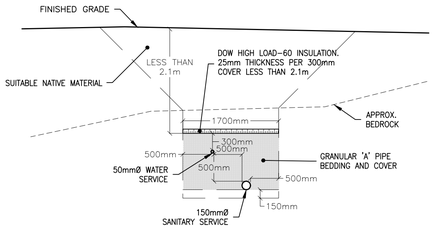
INSULATION REQUIREMENTS		
COVER DEPTH FINISHED GRADE TO TOP OF PIPE (m)	WIDTH OF INSULATION REQUIRED (m) *	THICKNESS OF INSULATION REQUIRED (mm)
2.1	0.00	0
2.0	0.53	25
1.9	0.80	25
1.8	1.04	50
1.7	1.26	50
1.6	1.48	50
1.5	1.70	75
1.4	1.91	75
1.3	2.12	75
1.2	2.32	100

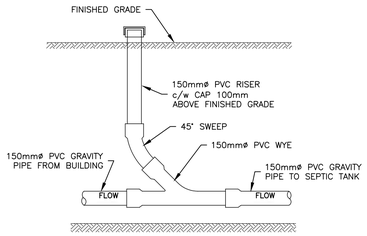
*** WIDTH IDENTIFIED SHALL BE CENTRED OVER THE PIPE.**



TYPICAL RAW WATER LINE INSTALLATION DETAIL
SCALE N.T.S.



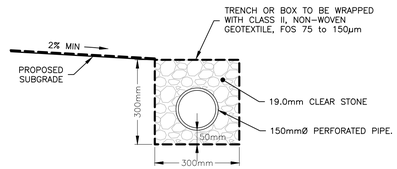
TYPICAL SERVICES INSTALLATION DETAIL - TRENCH
SCALE N.T.S.



SEWER CLEANOUT DETAIL
SCALE N.T.S.

SUMMARY OF BOREHOLE INFORMATION

Borehole No.	Easting (m)	Northing (m)	Lakebed Elevation (m)	Termination Elevation (m)
BH-25-01-700	349 232	5 116 228	175.52	173.23
BH-25-02-701	349 222	5 116 207	175.7	172.96
BH-25-03-702	349 207	5 113 174	175.04	171.38
BH-25-04-703	349 197	5 116 142	175.38	171.11
BH-25-05-704	349 187	5 116 102	174.09	171.04
BH-25-06-705	349 180	5 116 060	173.82	171.08
BH-25-07-706	349 177	5 116 011	173.54	170.80
BH-25-08-707	349 178	5 115 957	173.33	171.04
BH-25-09-708	349 181	5 115 905	173.03	170.13



SUBDRAIN DETAIL
SCALE N.T.S.

WATERMAIN JOINT RESTRAINT REQUIREMENTS

PLUG END

MAIN LINE DIAMETER (mm)	DEPTH OF BURY (m)	RESTRAINED LENGTH (m)
300	2.2	15

KEY PLAN

ENGINEER'S SEAL:

26/03/04	1	Issued For Addendum #8	DAS	CLK
26/01/15	0	Issued For Tender	DAS	CLK
DATE	REV.	REVISION	BY	APP'D

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

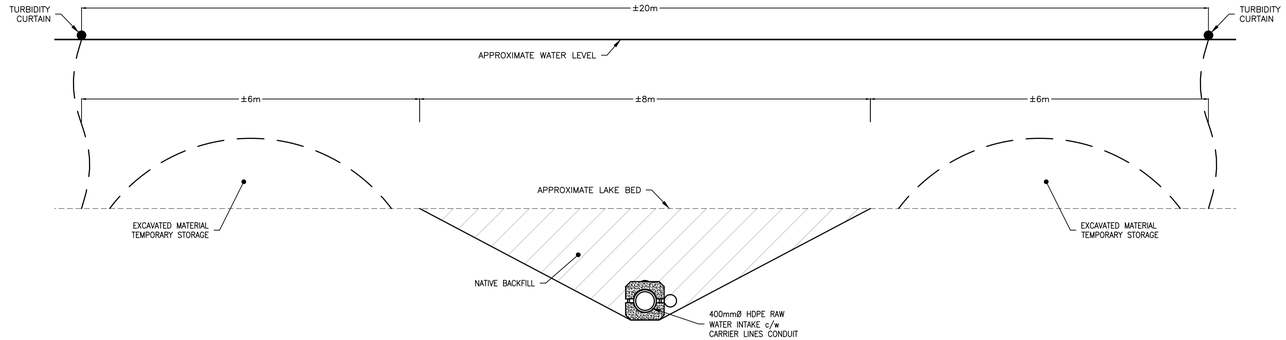
PROJECT TITLE:

NEW BLIND RIVER WTP INTAKE AND LLPS

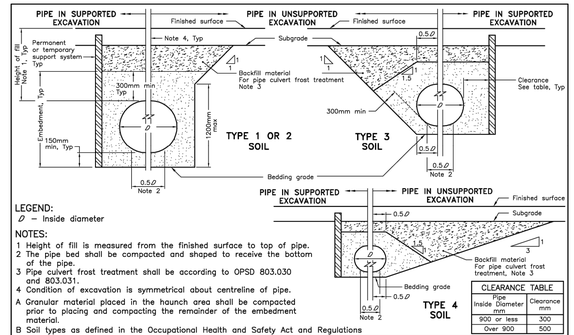
DRAWING TITLE:

TYPICAL SECTIONS AND DETAILS

DAS	DAS	CLK	CLK
DRAWN	DESIGNED	CHECKED	APPROVED
AS NOTED		MAR. 4, 2026	
SCALE		DATE	
250809	1	C6	
PROJECT NO.	REVISION	DRAWING	



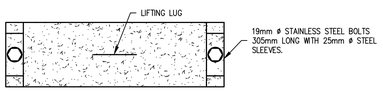
TYPICAL LAKE BED TRENCHING DETAIL
SCALE N.T.S.

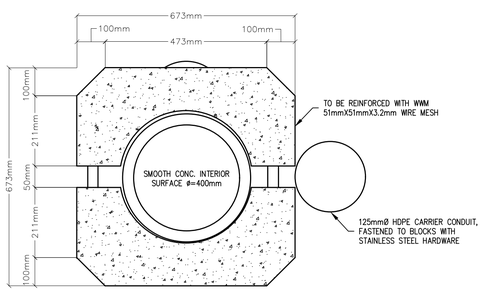


LEGEND:
Ø – Inside diameter

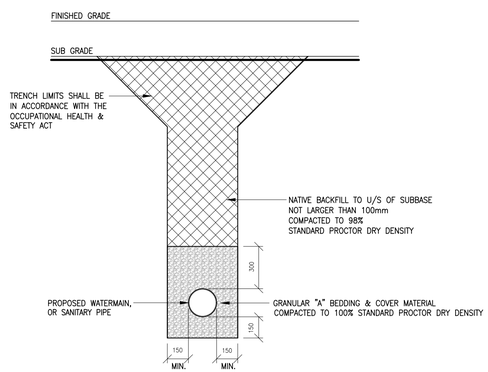
NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
3 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
4 Condition of excavation is symmetrical about centreline of pipe.
A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
C All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION		
	OPSD 802.010	

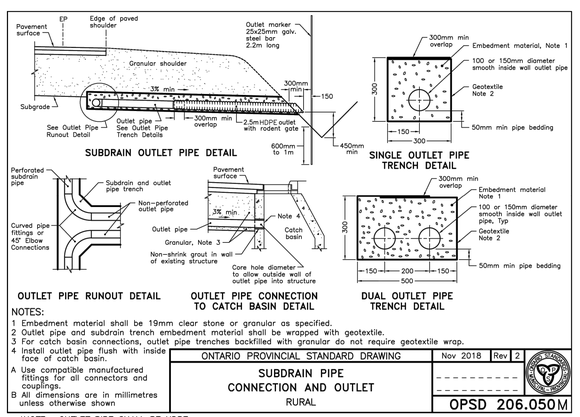




280lb CONCRETE BALLAST DETAIL
SCALE N.T.S.



TYPICAL PIPE TRENCH - WATERMAIN OR SANITARY SEWER
SCALE 1:50



NOTES:
1 Embedment material shall be 19mm clear stone or granular as specified.
2 Outlet pipe and subdrain trench embedment material shall be wrapped with geotextile.
3 For catch basin connections, outlet pipe trenches backfilled with granular do not require geotextile wrap.
4 Install outlet pipe flush with inside face of catch basin.
A Use compatible manufactured fittings for all connectors and couplings.
B All dimensions are in millimetres unless otherwise shown

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 2
SUBDRAIN PIPE CONNECTION AND OUTLET RURAL		
	OPSD 206.050M	

***NOTE: OUTLET PIPE SHALL BE HDPE**

P:\2025\250809\CIVIL\Drawings\250809-Rev1.dwg

1 GENERAL

1.1 General Coordination

1.1.1 The Contractor shall develop and finalize the construction sequence so as to minimize impact on operations and water quality, subject to approval of the Engineer and the Owner.

1.1.2 Construct Work in stages to accommodate the Owner's use of the premises during construction (the Wastewater Treatment Plant is located west of the proposed LLPS), as necessary. The raw water intake construction shall take place during permissible in-water works construction windows (refer to Clause 3.3).

1.1.3 Upon commissioning of the intake and Low Lift Pumping Station (LLPS), the Contractor shall coordinate the connection of new watermains to the existing feedermain. This coordination is critical to ensuring minimal disruption and a seamless transition from the Groundwater Under Direct Influence (GUDI) well system to the surface water source. All work must be executed expeditiously to protect water quality and minimize impacts on Water Treatment Plant (WTP) supply and ongoing operations.

1.1.4 The Contractor shall be responsible for comprehensive coordination between Water Treatment Operations, the Owner, and the Engineer. This includes aligning the construction and commissioning schedules to ensure all parties are synchronized throughout the project duration.

1.1.5 Any shutdowns shall be in strict accordance with the sequence in the Contractor's schedule and shall be carefully coordinated with the Owner, Engineer and Operating personnel to avoid unplanned impacts to the water supply and distribution system.

1.1.6 Prior to shutdown the Contractor must request in writing at least ten working days in advance of the required shutdown. Depending on demand the Owner may require the shutdown to be done at other than normal working hours or postponed to a time more suitable to system operation. The Contractor shall reschedule his work to suit system operation at no additional cost to the Owner.

1.2 Submittals for Review

1.2.1 Provide detailed plans and schedules for all work activities which will create a disruption to or require the participation of Owner Operations.

2 PRODUCTS (NOT APPLICABLE)

3 EXECUTION

3.1 General

3.1.1 The Contractor shall take responsibility for carefully coordinating all aspects of the work including all permanent and temporary connections whether identified on the Contract Drawings or not, to successfully complete the Works. Designate a fully qualified individual, as a General Superintendent, to be responsible for directing the progress of this Contract continuously, including the coordination and work of sub-contractors.

3.1.2 Coordinate Progress Schedule and coordinate with the Owner occupancy during construction.

3.1.3 Some equipment or supplies may require lengthy delivery times and as such must be ordered as soon as a notice to proceed is given by the Engineer. The Owner will not entertain extra claims or waive damages as a result of late delivery of such items.

3.1.4 Provide details of works required to implement tie-ins, detailing what services, temporary facilities etc., if any, will be provided by Owner and/or its staff. All other services to be provided by the Contractor.

3.1.5 Provide all necessary temporary pumps, blinds, valves, piping, electrical wiring, controls, and labour incidental to complete the Work. Any temporary equipment must be continuously monitored by the Contractor during construction and be replaced expeditiously upon failure so as to be able to continue with the Work.

3.1.6 Some shutdowns will have to take place outside normal working hours, i.e. nighttime and/or weekends in order to comply with shutdown limitations as described in this Section.

3.1.7 Coordinate scheduling, submittals, and work of the various Sections of the Project Specifications and other requirements of the Contract Documents to ensure efficient and orderly sequence of installation of interdependent construction elements.

3.1.8 Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such elements.

3.1.9 Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on the Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.

3.2 Monitoring and Emergency Response

3.2.1 Contractor shall supply appropriate rescue and emergency response resources and plans as required by O. Reg. 628/05.

3.3 Operation/Construction Constraints

3.3.1 The following operation/construction constraints to be considered in scheduling the work.

3.3.2 Construction Constraints:

.1 Permitted construction windows for in-water raw water intake section (DFO, July to August)

.2 Watermains construction: Railway crossing north across site and Trans Canada Highway

.3 Minimum disturbance to nearby commercial and residential area

3.4 Permitted Outages (Not Applicable)

3.5 Suggested Sequence of Construction

3.5.1 This Section is not intended to describe the full extent of the work to be done under this Contract. It is intended to outline the general construction sequence only. The Contractor will be responsible for scheduling the detailed construction of the works within the general sequence.

3.5.2 The Contractor shall schedule his work and conform with the intent of the following requirements, and ample allowance shall be made in the schedule to comply therewith. The following is not intended to imply the Contractor must carry out the work in the exact manner indicated but is intended to indicate the restrictions that shall be imposed **on construction work sequence and to set out the time duration of shutdowns**.

3.5.3 The following outlines the general chronological order in in which construction activities are proposed to take place, upon award of the Contract. This list is not intended to be comprehensive in all activities required to complete the works but is intended to identify the main constraints on the scheduling of construction activities. The construction of the works is proposed to proceed as follows:

.1 Submittal of shop drawings for all critical or long lead items such as, but not limited to low lift pumps, MCC's, standby generator, and control panels.

.2 Mobilization to site and commencement of general site work modification including clearing and grubbing of the site, installation of environmental controls and temporary construction fencing, and installation of temporary access driveway to the new LLPS location. Mobilization to site will also include equipment by the shoreline to undertake the construction of the raw water intake and intake structure.

.3 Construction of the intake and LLPS can be undertaken in parallel. The decisive factor will be the permitted construction windows in-water to minimize impacts on aquatic life.

.4 Cleaning and testing of raw water intake: refer to Intake Specification

.5 Construction of the Low Lift Pump Station (LLPS) building complete with wells, screens, sluice gates, pumps, piping valves and fittings, sodium hypochlorite system, motor control centre, electrical, PLC, heating, ventilation, lighting, and architectural finishes.

.6 Installation of a standby outdoor generator contained in a stand alone, weatherproof, noise attenuated enclosure.

.7 Construction of all yard piping, manholes, drains, and electrical duct banks on the site up to Martin Street.

.8 Construction of twin watermains from Martin Street to tie-in point upstream of existing WTP. Testing and disinfection as applicable. Stub ends for final connection closer to commissioning.

.9 Construction of new access driveway around the facility.

.10 Cleaning and disinfection of the intake well, screen wells, screened water well and low lift wells and associated piping and infrastructure.

.11 Testing and commissioning of the new Intake and LLPS

.12 Operational testing of the low lift pumps using raw water from the lake via intake. Initial water to be pumped to waste. Provide dechlorination and erosion / flood control as required.

.13 Upon successful testing of the low lift pumps, coordinate with Owner and Owner's Operator to make final watermains connection to the tie-in location at Martin Street.

.14 Testing and commissioning of twin watermains in accordance with AWWA Standards.

.15 Prior to delivering surface water from the new LLPS to the WTP, the Contractor shall coordinate with Operations to manage the transition from the current GUDI groundwater source to the Lake Huron surface water source. The Contractor is responsible for ensuring that this transition supports the production of safe, high-quality water and always maintains full regulatory compliance.

.16 Complete (14) fourteen day performance testing of the facility

.17 Make final watermains and electrical connections.

.18 Complete landscaping, hardscaping and restoration of all affected areas and pavement.

3.5.4 Prior to work directly affecting operations of the existing water system, the Contractor shall provide a plan and schedule of activities to occur during the work at least 15 working days before the planned work, for review and approval by the Engineer. The plan by the Contractor shall identify the anticipated durations for the activities that will be required and a schedule of proposed shutdowns. The decision to terminate work will be made, if in the opinion of the Engineer that work is not progressing according to the Contractors timelines, and/or it is evident the work will not be completed in the allowable time.

3.5.5 The Contractor shall develop a detailed construction sequence and work plan that identifies all key steps required to maintain a continuous supply of safe drinking water.

.1 Staging: The Contractor may be required to stage equipment shutdowns to meet the constraints identified herein.

.2 Scheduling: The post-award detailed schedule must specify the total number of proposed shutdowns and the duration of each.

.3 Owner Adjustments: The Owner and Engineer reserve the right to adjust the proposed construction sequence based on system water demands. Such adjustments shall be made at no additional cost to the Owner, provided they do not impose undue hardship on the Contractor.

3.6 Contractor Use of Premises and Restricted Areas

3.6.1 The Contractor shall arrange with the Owner for easements for construction, storage and access to all of the Works within the Owner's property line.

3.6.2 Make arrangements with property owners if additional areas are required. Obtain written agreements and submit copies to the Engineer.

3.6.3 Confine operations within easements for construction, storage and access.

3.6.4 Install and maintain adequate security or construction fencing and gates around storage areas or the construction site and maintain during the construction period.

3.6.5 Do not enter upon or occupy with workers, tools or materials any lands other than public streets, roadways, right-of-ways or easements shown on the Contract Drawings except after written consent has been received from the property owner.

3.6.6 The construction of the Works shall be carried out in such a manner that a minimum of inconvenience is caused to the Owner and occupants of properties adjacent to the Works.

3.6.7 Materials shall be stored separately on the Site at locations agreed upon with the Engineer and shall be suitably protected to prevent their deterioration or the intrusion of foreign matter. In the opinion of the Engineer, any material which has deteriorated or been damaged shall be removed immediately from the Site at the Contractor's expense.

3.6.8 The flow in existing drains and ditches shall be maintained by the Contractor at all times at no extra cost to the Owner. During construction of the facilities, the Contractor shall liaise with the Engineer to schedule work to ensure continual flow.

3.6.9 The Owner’s Operating staff will operate any valve, switch, or other control on existing facilities.

END OF SECTION

1 GENERAL

1.1 Intent

1.1.1 To establish the technical, functional, jurisdictional, or regulatory and quality requirements for the implementation of door hardware installed by trades including work in relation to doors and frames. These technical specifications define the supply and installation of the door hardware and identify approved manufacturers and models.

.1 Supply of finish hardware for all pedestrian doors, complete with all fixing and anchoring devices.

.2 Supply templates and information necessary for installation of hardware.

1.2 Scope of Work

1.2.1 Supply all labour, material, equipment and supervision necessary to complete the installation of door hardware.

1.3 Related Work

1.3.1 In addition to the general project requirements in Division 1, the following sections are referenced in this section:

.1	Section 05500	Metal Fabrications
.2	Section 07900	Joint Sealants
.3	Section 08110	Steel Doors and Frames
.4	Section 08200	FRP Doors and Frames

1.4 Code and Regulatory Requirements

1.4.1 Standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturer's Association.

1.4.2 American National Standards Institute (ANSI):

.1 ANSI/BHMA A156.1-2013 - Bored and Pre-assembled Locks and Latches

.2 ANSI/BHMA A156.2-2011 - Bored and Pre-assembled Locks and Latches

.3 ANSI/BHMA A156.3-2014 - Exit Devices

.4 ANSI/BHMA A156.4-2013 - Door Controls (Closers)

.5 ANSI/BHMA A156.36-2010 – Auxiliary Locks

.6 ANSI/BHMA A156.6-2010 - Architectural Door Trim

.7 ANSI/BHMA A156.7-2014 - Template Hinge Dimensions

.8 ANSI/BHMA A156.8-2010 - Door Controls – Overhead Stops and Holders

.9 ANSI/BHMA A156.12-2013 - Interconnected Locks and Latches.

.10 ANSI/BHMA A156.13-2012 - Mortise Locks and Latches

.11 ANSI/BHMA A156.15-2011 - Closer/Holder Release Device

.12 ANSI/BHMA A156.16-2013 - Auxiliary Hardware

.13 ANSI/BHMA A156.18-2012 - Materials and Finishes

.14 ANSI/BHMA A156.19-2013 – Power Assist and Low Energy Power Operated Doors

.15 ANSI/BHMA A156.21-2014 - Thresholds.

.16 ANSI/BMHA A156.22-2012 - Door Gasketing and Edge Seal Systems.

1.4.3 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA)

.1 CSDFMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.4.4 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

1.5 Quality Assurance

1.5.1 In addition to the requirements of 01450 – Quality Control, the following measures are required:

.1 Regulatory Requirements:

.1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

.2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 Submittals

1.6.1 General:

.1 Complete submittals in accordance with Specification Section 01330

1.6.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish, limitations and order code.

1.6.3 Samples:

.1 Submit for review and acceptance of each unit.

.2 Samples will be returned for inclusion into work.

.3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.

1.6.4 Hardware List:

.1 Submit contract hardware list.

.2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

1.6.5 Test Reports:

.1 Certified test reports showing compliance with specified performance characteristics and physical properties.

1.6.6 Closeout Submittals:

.1 Submit in accordance with Section 01780 – Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.

.3 Submit manufacturer’s installation instructions with operation manual.

1.6.7 Warranty:

.1 Submit manufacturer’s standard warranty.

1.7 Maintenance Materials

1.7.1 Extra Stock Materials:

.1 Supply maintenance materials in accordance with Section 01780 – Closeout Submittals.

.2 Tools:

.1 Supply 2 sets of wrenches for door closers, locksets and fire exit hardware.

1.8 Delivery and Storage

1.8.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

1.8.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

1.8.3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.8.4 Storage and Handling Requirements:

.1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect door hardware from nicks, scratches, and blemishes.

.3 Protect prefinished surfaces with wrapping and strippable coating.

.4 Replace defective or damaged materials with new.

.5 Clearly label cartons and packages designating contents and locations for which each item is intended. Indicate on packing memos carton in which each item is packed

2 PRODUCTS

2.1 Approved Manufacturers

2.1.1 Allegion, 11819 N. Pennsylvania St., Carmel, Indiana, United States 46032, Phone: (317) 810-3700, URL: www.allegion.com.

2.1.2 ASSA ABLOY Entrance Systems, 4020B Sladeview Crescent. Unit 3&4, Toronto, Ontario, Canada, L5L 6B1, Phone: (905) 608-9242, email: service.ca.aaes@assaabloy.com, URL: http://www.sargentlock.com

2.1.3 Best, 6161 East 75th Street, Indianapolis, IN, USA 46250, Phone: (855) 365-2407, e-mail, URL: www.bestaccess.com.

2.1.4 Canaropa, 1866 Kipling Avenue, Rexdale, Ontario, Canada M9W 4J1, Phone: (416) 241-4445, e-mail: salestor@canaropa.com, URL www.canaropa.com.

2.1.5 Door Security Solutions of Canada, 160 Four Valley Drive, Vaughan, Ontario, Canada V4K 4T9, Phone: (866)-243-9816, URL: www.pemko.com

2.1.6 Gallery Specialty, 676 Petrolia Road, Toronto, Ontario, Canada M3J 2V2, Phone: (416) 667-9593, e-mail: info@galleryspecialty.com, URL: www.galleryspecialty.com.

2.1.7 Hager, P.O. Box 124, Kitchener, Ontario, Canada N2C 1K1, Phone: (314) 772-4400, URL: www.hagerco.com.

2.1.8 Horton Automatics of Ontario, 1150 Blai Road, Unit 1N, Burlington, Ontario, Canada L7M 3T4, Phone: (905) 331-7491, email: brian@hortonontario.com, URL: www.hortonontario.com

2.1.9 K.N. Crowder MFG Inc., 1220 Burloak Drive, Burlington, Ontario, Canada L7L 6B3, Phone: (905) 315-9788, e-mail: paiken@dmbsales.ca, URL: www.kncrowder.com.

2.1.10 McKinney Products Company, 225 Episcopal Road, Berlin, Connecticut, USA 06037, Phone: (800)-888-2772, email: ed.soloski@assaabloy.com, URL: http://www.mckinneyhinge.com/en/site/mckinney-hinge/

2.1.11 Sargent Manufacturing Company, 100 Sargent Drive, New Haven, Connecticut, United States 06536-0915, Phone: (800) 727-5477, e-mail: webmaster@sargentlock.com URL: www.sargentlock.com.

2.1.12 Standard Metal Hardware Mfg Ltd., 29 Rangemore Road, Toronto, Ontario, Canada M8Z 5H8, Phone: (416)-744-1510, URL: www.smhardware.com

2.1.13 Stanley Hardware, 711 Ontario St., Cobourg, Ontario, Canada K9A 4L3, Phone: (800)-667-7466, email: HDW-NAT-CustomerService-CBG@spectrumhhi.com, URL: http://ca.stanleyhardware.com/

2.2 Hardware Items

2.2.1 Only door locksets and latches listed on CGSB Qualified Products List are acceptable for use on this project.

2.2.2 Use one (1) manufacturer's products only for all similar items.

2.3 Door Hardware

2.3.1 Provide new materials in perfect condition, free from defects impairing durability or appearance. In every case hardware shall be of high quality design, and finish suitable for the purpose for which it is intended.

2.3.2 Locks and latches

.1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2.

.2 Normal strikes: box type, lip projection not beyond jamb.

.3 Cylinders: key into keying system as outlined in section 2.6 Keying.

.4 Finishes: To ANSI/BHMA A156.18, finish to 630

.5 Lockset function: Storage Room (LS1)

.1 Acceptable products:

.1 Dorma C800 SERIES ("LR Lever)

.2 Schlage ND SERIES (Rhodes Lever with Vandlguard Feature)

.3 Arrow QL SERIES

2.3.3 Operators

.1 Exit devices: to ANSI/BHMA A156.3.

.2 Exterior Operators:

.1 Finish to 630 (US32D) Satin stainless steel

.2 Acceptable products:

.1 Exterior exit device with rim latch – (EO1)

.1 Sargent 8813 x ETJ 32D

.2 Von Duprin 98L x 996L-R/V 03 LEVER - 32D

.3 Precision 2108 x V4903C x 630

.3 Interior Operators:

.1 Finished to 626 (US26D) Satin Chromium plated.

.2 Acceptable product:

.1 Interior fire rated exit device with rim latch and lever trim (IO2)

.1 Sargent 80 Series 12-8815 x ETJ

.2 Von Duprin 98-L-BE-03-F

.3 Precision FL2114 x 4900C x 626

2.3.4 Butts and Hinges:

.1 As listed in Hardware Schedule.

.1 Butts and hinges: to ANSI/BHMA A156.1.

.2 Exterior doors to be with non-removable pins.

.3 Provide one (1) hinge for every 760 mm of door height and one (1) extra hinge for doors over 900 mm wide to 1200 mm width.

.4 Acceptable product:

.1 Hinges on locked doors: (H1)

.1 Hager BB1191 X 114 X 101 X NRP X 630

.2 Stanley FBB191 X 114 X 101 NRP X 32D

.3 McKinney TA2314 X 114 X 101 NRP X 32D

2.3.5 Door Closers and Accessories:

.1 As listed in Hardware Schedule.

.2 Door closers: to ANSI/BHMA A156.4.

.3 Door co-ordinator: surface for pairs of doors with overlapping astragal.

.4 Finished to 628.

.5 Acceptable products:

.1 Exterior Closers - (CL1)

.1	LCN	#4041 Series
.2	Stanley	D-4551
.3	Sargent	351 Series

.2 Interior Closers - (CL2)

.1	LCN	#1461 Series
.2	Stanley	D-3551
.3	Sargent	351 Series

2.3.6 Concealed vertical rod by same manufacturer as exit device.

2.3.7 2.3.6 Door Coordinators

.1 Required on all exterior double doors listed in door schedule: (DC1)

.1 Acceptable products:

.1	Dorma	SR 390
.2	Ives	COR9G

.2 Acceptable products for smoke and fire rated doors: (DC2)

.1	Dorma	SR 392

2.3.8 Architectural Door Trim:

.1 As listed in Hardware Schedule.

.2 Finished to 630 (US32D) Satin stainless steel.

.3 Length of Kick plate:

.1 25mm, less than door width on double doors.

.2 40mm, less than door width on single doors

.4 Door protection plates (Stainless steel_0.05” gauge):

.1 Kickplates (DT1)

.1	Hager	#190S X 203 X LENGTH
.2	Standard Metal	K10A 200 X LENGTH.

.3 IVES 8400 S 200 X B4E

.2 Mop plate - (DT2)

.1 Hager #224S X 100 X LENGTH

.2 Standard Metal K30

.3 IVES 8400 S 100 X B4E

2.3.9 Auxiliary Hardware: to ANSI/BHMA A156.16

.1 As listed in Hardware Schedule.

.2 Finished to 630 (US32D) Satin stainless steel.

.1 Door Stop

.1 Floor Stops - (DS1)

.1 Hager #259F & 259H.

.2 Standard Metal S108 & S107

.3 IVES FS17

.2 Flush bolts:

.1 Internally mounted – (FB1)

.1 Standard Metal F65UL

2.3.10 Thresholds - (TH1)

.1 101 mm wide x full width of door opening, extruded aluminum.

.2 Finished to 628 (US28) Satin aluminum, clear anodized

.3 Acceptable material:

.1 Crowder #CT-64.

.2 Pemko 270A.

2.3.11 Weatherstripping:

.1 Door head and jamb seal - (WS1)

.1 Extruded aluminum frame and closed cell neoprene insert.

.2 Acceptable material:

.1 Crowder #W13.

.2 Pemko 319_R.

.2 Door bottom seal - (WS2)

.1 Extruded aluminum frame and closed cell neoprene insert.

.2 Acceptable material:

.1 Crowder #W13S.

.2 Pemko 319_R

2.3.12 Astragal:

.1 Astragal - (AS1)

.2 Adjustable compensating, overlapping, extruded aluminum frame with vinyl pile insert, finished to match doors.

.1 Acceptable material:

.1 Crowder W-8P

.2 Pemko 355CP

.3 Fire Rated Astragal - (AS2)

.4 Extruded aluminum frame with nylon insert, finished to match doors

.1 Acceptable material:

.1 Crowder: W-25

2.4 Fastenings

2.4.1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.

2.4.2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

2.4.3 Exposed fastening devices to match finish of hardware.

2.4.4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices and install so pull can be secured through door from reserve side. Install push plate to cover fasteners.

2.4.5 Use fasteners compatible with material through which they pass.

2.5 Keying

2.5.1 Lay out the keying system for the building in consultation with the Engineer and Client. Keying shall match existing facility keying system.

2.5.2 Keying chart and related explanatory data shall be prepared and submitted to the Engineer for approval, and lock work shall not be commenced until written confirmation of keying arrangements is received from the Engineer.

2.5.3 Provide keys in duplicate for every lock in this contract.

2.5.4 Supply 3 master keys for each master key or grand master key group.

2.5.5 Stamp keying code numbers on keys and cylinders.

2.5.6 Supply construction cores.

2.5.7 Hand over permanent cores and keys to Client.

3 EXECUTION

3.1 Installation Instructions

3.1.1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.1.2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.

3.1.3 Supply manufacturer’s instructions for proper installation of each hardware component.

3.1.4 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).

3.1.5 Where door stop contacts door pulls, mount stop to strike bottom of pull.

3.1.6 Install key control cabinet.

3.1.7 Use only manufacturer's supplied fasteners.

.1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.

3.1.8 Remove construction cores when directed by the Engineer.

.1 Install permanent cores and ensure locks operate correctly.

3.2 Adjusting

3.2.1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.

3.2.2 Lubricate hardware, operating equipment and other moving parts.

3.2.3 Adjust door hardware to ensure tight fit at contact points with frames.

3.3 Cleaning

3.3.1 Progress Cleaning:

.1 Leave Work area clean at end of each day.

.2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.

.3 Remove protective material from hardware items where present.

.4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01740 Cleaning.

.5 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01740 Cleaning.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 Demonstration

3.4.1 Keying System Setup and Cabinet:

.1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.

.2 Place file keys and duplicate keys in key cabinet on their respective hooks.

.3 Lock key cabinet and turn over key to Engineer.

3.4.2 Maintenance Staff Briefing:

.1 Brief maintenance staff regarding:

.1 Proper care, cleaning, and general maintenance of projects complete hardware.

.2 Description, use, handling, and storage of keys.

.3 Use, application and storage of wrenches for door closers, locksets and fire exit hardware.

.2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.5 Protection

3.5.1 Protect installed products and components from damage during construction.

3.5.2 Repair damage to adjacent materials caused by door hardware installation.

3.6 Hardware Schedule

3.6.1 HG-1: Double exterior doors (D102, D103 & D104)

.1 Lockset (Operable door) (LS1)

.2 Exit Device (Operable door) (EO1)

.3 Butt Hinges (H1)

.4 Closer (Operable door) (CL1)

.5 Door Coordinator (DC1)

.6 Chain stop (Inoperable door) (OC1)

.7 Kickplates (DT1)

.8 Manual Flush Bolt (FB1)

.9 Threshold (TH1)

.10 Weatherstripping (WS1)

.11 Sweeps (WS2)

.12 Astragal (AS1)

3.6.2 HG-2: Double interior doors (D101)

.1 Lockset (Operable door) (LS1)

.2 Exit Device (IO2)

.3 Butt Hinges (H1)

.4 Closers (CL2)

.5 Door Coordinator (DC2)

.6 Mop plates (Both sides/Both doors) (DT2)

.7 Floor stops (DS1)

.8 Maual Flush Bolt (FB1)

.9 Astragal (AS2)

END OF SECTION

GENERAL ELECTRICAL LEGEND

HYDRO POLE

DRAWOUT OR PLUG TYPE CONTACTS

28KV LOAD BREAK ELBOW
BUILT TO IEEE-386, COOPER POWER
OR ELASTIMOLD. PROVIDE INTEGRAL
28KV CLASS SURGE ARRESTORS

POLE MOUNTED WEATHERHEAD

TRANSFORMER - VARIABLE
:DENOTES DELTA CONNECTION
:DENOTES WYE CONNECTION WITH RESISTANCE GROUND
:DENOTES WYE CONNECTION WITH SOLID GROUND

CURRENT XMR
X: QUANTITY (IF SHOWN)
Y: RATIO (IF SHOWN)
IF NOT INDICATED, PROVIDE QUANTITY & RATIO TO SUIT PHASING, COORDINATION STUDY REQUIREMENTS AND EQUIPMENT

ZERO SEQUENCE CURRENT XMR

STORED ENERGY CIRCUIT BREAKER
DRAWOUT TYPE COMPLETE WITH INTEGRAL SOLID STATE DIGITAL 50/51, 50/51G, OVERCURRENT, POWER METERING, AND ARC FLASH REDUCTION, ZONE SELECTIVITY

STORED ENERGY CIRCUIT BREAKER
FIXED TYPE COMPLETE WITH INTEGRAL DIGITAL 50/51, 50/51G, OVERCURRENT PROTECTION, POWER METERING, AND ARC FLASH REDUCTION, ZONE SELECTIVITY

CONTACTOR & OVERLOAD

FUSE

27.6KV FUSED INTERRUPTOR SWITCH

NON FUSED INTERRUPTER SWITCH

FUSED INTERRUPTOR LOAD BREAK SWITCH

FUSED CONTACTOR

CONTACTOR-XC
BC: BYPASS CONT.
CC: CAPACITOR CONT.
IC: INLINE CONT.

CIRCUIT BREAKER MOLDED CASE

CIRCUIT BREAKER
C/W THERMAL AND MAGNETIC TRIP

SOLID STATE OVERLOAD

POWER FACTOR CORRECTION CAPACITOR

MOTOR SYMBOL
"XX" DENOTES HORSEPOWER RATING

HEAVY DUTY SAFETY SWITCH
NON FUSED, 600V, 3P
X: DENOTES AMPACITY RATING AS FOLLOWS:
A = 30A (20HP)
B = 60A (50HP)
C = 100A (75HP)
D = 200A (150HP)
E = 300A
ALL DISCONNECTS TO INCLUDE A LATE MAKE, EARLY BREAK AUX. 120V, 2A STATUS CONTACT FOR VFD APPLICATIONS. WIRE THE CONTACT TO THE ENABLE INPUT OF THE RESPECTIVE VFD.
SS: DENOTES NEMA 4X STAINLESS STEEL ENCLOSURE
FRP: NOTES NEMA 4X FIBERGLASS REINFORCED POLYESTER

TYPE 'H' NON FUSED DISCONNECT
600V, 3P BRYANT MODEL 30003 IN A PVC BOX SCEPTRE TYPE FSC 15/10 C/W VSC 15/10 WEATHERPROOF TOGGLE COVER PLATE

CABLE SCHEDULE TAG

SURGE PROTECTION DEVICE

MOTOR CONTROL PANEL

JUNCTION BOX

AUTOMATIC TRANSFER SWITCH

SURGE ARRESTER STATION CLASS

BAS PUSHBUTTON STATION

TOGGLE TYPE LIGHT SWITCH

TRANSFORMER (SITE PLAN)

FUSED POTENTIAL TRANSFORMER
X: DENOTES QUANTITY

POINT OF TRANSITION FROM RIGID CONDUIT TO FLEXIBLE CONDUIT

REACTOR

COMBINATION MAGNETIC STARTER, FULL VOLTAGE NON-REVERSING BREAKER TYPE
PROVIDE EEMAC SIZE STARTER TO SUIT MOTOR HORSEPOWER APPLICATION

TWO SPEED STARTER
F=FAST
S=SLOW
PROVIDE EEMAC SIZE STARTER TO SUIT MOTOR HP AND RPM

REVERSING MOTOR STARTER
PROVIDE EEMAC SIZE STARTER TO SUIT MOTOR HP AND RPM

VFD MOTOR STARTER
NEMA RATED TO SUIT MOTOR HP.

DV/DT LOAD FILTER, MIRUS INVERSINE
600V, 3P, SIZED TO SUIT THE VFD APPLICATION

SOLID STATE SOFT STARTER
C/W BYPASS CONTACTOR, DIGITAL DISPLAY, AND PROGRAMMING LCD KEYPAD
PROVIDE EEMAC SIZE STARTER TO SUIT MOTOR HP AND RPM

DIGITAL POWER METER
C/W INTEGRAL ETHERNET COMMUNICATIONS

GENERATOR

THREE PHASE FOUR WIRE GENERATOR NEUTRAL DRAWOUT

KIRK KEY INTERLOCK

ELECTRICAL INTERLOCK

DUPLEX RECEPTACLE, 20A, NEMA 15-20R
120V U GND, COPPER ARC GUARD ENR TYPE.
WP: DENOTES WEATHER PROOF
GFCI: GROUND FAULT CIR INTERRUPTER

600V, 3PH RECEPTACLE

DIRECT CONNECTION TO EQUIPMENT

THREE PHASE MOTOR

SINGLE PHASE MOTOR

MOTOR SYMBOL

ATS CONTROLLER

3P SELECTOR SWITCH

ELECTRICAL HEATER DUCT UNIT

ENGINEERED CABLE BUS DUCT

POT HEAD

TEST POINT

MICROPROCESSOR ENGINE CONTROLLER

ELECTRONIC ARC FLASH DETECTION DEVICE

S&C SOLID STATE PROTECTION RELAY

MULTI FUNCTION RELAY
"X"= MODEL TYPE
X=1: GE MULTILIN L30 LINE
X=2: GE MULTILIN F35 LINE
X=3: GE MULTILIN SR850 FEEDER MANAGEMENT RELAY

ELAPSED TIME METER

INDUCTOR

AUTO TRANSFORMER

BUZZER

PRESSURE SWITCH

TEMPERATURE SWITCH

ULTRASONIC LEVEL ELEMENT

INDICATING LIGHT
(FOR SINGLE LINE DIAGRAM ONLY)

CONNECTION

CONCRETE ENCASED RIGID PVC DUCT
14.4/25kV AERIAL OVERHEAD LINE
UNDERGROUND CONDUIT
(SITE PLAN ONLY)

BUS CONTINUATION SYMBOL
X: DENOTES BUS/CONDUCTOR

REVERSE POWER RELAY DEVICE

THERMAL OVERLOAD RELAY DEVICE

TIMED/INST GROUND OVER CURRENT RELAY

INSTANTANEOUS OVER CURRENT RELAY DEVICE

TIMED OVER CURRENT RELAY DEVICE

TANK SUDDEN PRESSURE RELAY

LIQUID LEVEL RELAY

LOCKOUT RELAY DEVICE

DIFFERENTIAL PROTECTIVE RELAY DEVICE

LOAD SHARING & SPEED CONTROL

AUTOMATIC VOLTAGE REGULATOR

KILOWATT TRANSDUCER
BITRONICS MODEL POWERPLEX RTH
C/W MODBUS PLUS COMMUNICATIONS

VOLTAGE METER

AMMETER

FREQUENCY METER

POWER FACTOR METER

KILOWATT METER

NORMALLY OPEN PUSHBUTTON

NORMALLY CLOSED PUSHBUTTON

NORMALLY OPEN MUSHROOM HEAD PUSHBUTTON

NORMALLY CLOSED MUSHROOM HEAD PUSHBUTTON

TOGGLE SWITCH

SELECTOR SWITCH

TWO POSITION SELECTOR SWITCH
X: INDICATES CONTACT CLOSED POSITION FOR RESPECTIVE MODE

THREE POSITION SELECTOR SWITCH
X: INDICATES CONTACT CLOSED POSITION FOR RESPECTIVE MODE OFF: INDICATES ALL SWITCH CONTACTS OPEN

STARTER/CONTACTOR OPERATING COIL DESIGNATION
XX=M: STARTER COIL
XX=MR: MOTOR STARTER
XX=CR: CONTROL RELAY
XX=TR: ELECTRIC TIMER COIL WITH ADJUSTABLE TIMING RANGE

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT
O/L DENOTES THERMAL OVERLOAD CONTACT

NORMALLY OPEN TIME-CLOSED CONTACT
(TIME DELAY ON ENERGIZATION)

NORMALLY CLOSED TIME
DELAY OPENING

NORMALLY OPEN CONTACT TIME
DELAY OPENING

NORMALLY CLOSED CONTACT TIME
DELAY CLOSING

TEMPERATURE SWITCH (NO)
CLOSE ON RISE

TEMPERATURE SWITCH (NC)
OPEN ON RISE

INDICATING LIGHT (PUSH TO TEST, C: COLOR)
C=A: AMBER C=W: WHITE
C=Y: YELLOW C=B: BLUE
C=G: GREEN C=R: RED

SOLENOID VALVE
NX=NO: NORMALLY OPEN WHEN DE-ENERGIZED
NX=NC: NORMALLY CLOSED WHEN DE-ENERGIZED

EARTH GROUND

CHASSIS GROUND

NEUTRAL GROUNDING RESISTOR (NGL)

19mm x 3000mm GROUNDING ROD

LINE BREAK

HEAT DETECTOR/SMOKE DETECTOR

SINE WAVE FILTER

COMBINATION MAGNETIC MOTOR STARTER

DISCONNECT SWITCH

EXTERIOR LIGHTING FIXTURE MOUNTED ON POLE

LEGENDS FOR EMERGENCY LIGHTING AND EXIT

BATTERY UNIT, 120VAC INPUT, 24VDC OUTPUT, 2 LED HEADS, 10 MINUTE TIME DELAY.
(NEMA 12)

REMOTE EMERGENCY LIGHT FIXTURE WITH 2 LED HEADS.
(NEMA 12)

EXIT PICTOGRAM SIGN, 12VDC, SINGLE FACE. ARROW, IF SHOWN, INDICATES REQUIREMENT FOR PICTOGRAM WITH DIRECTION ILLUSTRATION AND ORIENTATION (I.E. DIRECTION)
(NEMA 12)

EXIT PICTOGRAM SIGN, 12VDC, DOUBLE FACES. ARROW, IF SHOWN, INDICATES REQUIREMENT FOR PICTOGRAM WITH DIRECTION ILLUSTRATION AND ORIENTATION (I.E. DIRECTION)
(NEMA 12)

THREE POLE - SWITCH
3: DENOTES 3 WAY SWITCH

OUTDOOR - PHOTOCELL

OCCUPANCY SENSOR
X: SENSOR NUMBER
HUBBELL, WASP SENSOR

POLE MOUNTED SINGLE PHASE TRANSFORMER

POLE MOUNTED THREE PHASE TRANSFORMER

ACCESS CONTROL SYSTEM LEGEND

DOOR CONTACT

JUNCTION BOX

OVERHEAD DOOR CONTACT

TELECOMMUNICATION LEGEND

ANALOG PHONE

TELEPHONE OR PAGING ENCLOSURE

PAGING ANNUNCIATOR ARROW, IF SHOWN, INDICATES ANNUNCIATOR DIRECTION

PHONE

HORN

ABBREVIATIONS

AA/FA	DRY TYPE SELF COOLED/FORCED AIR COOLED
ATS	AUTOMATIC TRANSFER SWITCH
CCTV	CLOSED CIRCUIT TELEVISION SECURITY SYSTEM
CPT	CONTROL POWER TRANSFORMER
DIS	LOCAL DISCONNECT AUXILIARY POSITION STATUS CONTACT 2A, 120VAC, LATE MAKE EARLY BREAK TO SUIT VFD APPLICATIONS.
	DISTRIBUTION PANEL
FCV	FLOW CONTROL VALVE
HV-SG	DENOTES HIGH VOLTAGE SWITCHGEAR
	LIGHTING PANEL
LA	LIGHTNING ARRESTER
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MFR	MULTI FUNCTION RELAY
MMR	MOTOR MANAGEMENT RELAY
	NORMALLY CLOSED
NO	NORMALLY OPEN
OESC	ONTARIO ELECTRICAL SAFETY CODE
ONAF	OIL (FLASH POINT BELOW OR EQUAL TO 300°C) IMMERSED, FORCED AIR COOLED
ONAN	OIL (FLASH POINT BELOW OR EQUAL TO 300°C) IMMERSED, SELF COOLED
KNAF	OIL (FLASH POINT ABOVE 300°C) IMMERSED, FORCED AIR COOLED
KNAN	OIL (FLASH POINT ABOVE 300°C) IMMERSED, SELF COOLED
PFCC	POWER FACTOR CORRECTION CAPACITOR
RVAT	REDUCED VOLTAGE AUTOTRANSFORMER STARTER
SDBC	SOFT DRAWN BARE COPPER GROUND CONDUCTOR
SLD	SINGLE LINE DIAGRAM
SPD	SURGE PROTECTION DEVICE
VFD	VARIABLE FREQUENCY DRIVE
XXXX#####	TAG FOR NEW EQUIPMENT

GENERAL NOTES:

1. REFER TO DIVISION 1, CONTRACTOR SHALL DEVELOP AND SUBMIT A SEQUENCE OF CONSTRUCTION AND A PROJECT PLANT TO ENGINEER PRIOR TO STARTING ANY WORK.
2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOUR, AND COORDINATION TO SET UP TEMPORARY POWER AND BELL SERVICE FOR PURPOSE OF CONSTRUCTION AND MAINTAINING A SITE OFFICE.
3. CONTRACTOR SHALL PROVIDE LABELS ON ALL EQUIPMENT PER SECTION 16090.
4. ALL CONTROL CONDUITS SHALL HAVE 20% SPARE CONTROL CONDUCTORS INSTALLED OR AT MINIMUM 1 PAIR OF EACH TYPE, WHICH EVER IS THE GREATER NUMBER.
5. ALL SAFETY SWITCHES SHALL BE HEAVY DUTY, NEMA 12 RATED FOR NON-CLASSIFIED AREAS. SAFETY SWITCHES LOCATED IN THE CHEMICAL ROOM SHALL BE HEAVY DUTY, NEMA 4X RATED.
6. ALL INDOOR ELECTRICAL AND CONTROLS CONDUIT SHALL BE RIGID PVC FOR UNLESS INDICATED OTHERWISE, SEE SECTION 16133.
7. ALL POWER DISTRIBUTION CABLE INSTALLED UNDER THIS PROJECT SHALL BE COPPER.
8. PROVIDE LIQUID TIGHT METAL ARMOUR FLEXIBLE CONDUIT FOR ALL MOTOR TERMINATIONS. FLEX CONNECTIONS NOT TO EXCEED MAX. ALLOWABLE LENGTH PERMITTED UNDER THE ONTARIO ELECTRICAL SAFETY CODE - LATEST REVISION.
9. REFERENCE P&I DRAWING LEGEND FOR DETAILED DESCRIPTION OF THE INSTRUMENTATION AND FIELD DEVICE SYMBOLS.
10. ALL NEW POWER DISTRIBUTION CABLES SHALL BE CONTINUOUS FROM PRIMARY OVER CURRENT PROTECTION SUPPLY POINT TO THE LOAD APPLICATION TERMINATION. NO SPLICES ARE PERMITTED UNLESS INDICATED OTHERWISE.
11. PROVIDE BUILDING GROUNDING AND GROUNDED CONDUCTORS TO SUIT METAL DISTRIBUTION EQUIPMENT, AS WELL AS BOND ARMORED CABLE SHEATHING AT BOTH ENDS IN ACCORDANCE WITH THE OESC LATEST REVISION.
12. THE CONTRACTOR MUST SUBMIT ELECTRICAL SHOP DRAWINGS AND COORDINATION STUDY TO THE ELECTRICAL SAFETY AUTHORITY (ESA) FOR REVIEW PRIOR TO COMMENCING WITH WORK.
13. ALL ELECTRICAL EQUIPMENT & INSTALLATION TO BE INSPECTED BY THE ESA.
14. ALL ELECTRICAL EQUIPMENT MUST BE CSA APPROVED. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ESA REVIEW AND SPECIAL INSPECTION TO FACILITATE EQUIPMENT APPROVAL INSPECTION.
15. ALL ELECTRICAL AND CONTROLS CONDUIT INSTALLED UNDER THIS PROJECT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
16. ALL CONDUIT ROUTES NOT SHOWN SHALL BE FINALIZED ON SITE.
17. CONTRACTOR IS REQUIRED TO PROVIDE A SHORT CIRCUIT, PROTECTION COORDINATION STUDY, IN ADVANCE OF ELECTRICAL DISTRIBUTION EQUIPMENT SHOP DRAWING SUBMISSIONS.
18. ELECTRICAL DISTRIBUTION EQUIPMENT SHOP DRAWINGS WILL BE ACCEPTED FOR REVIEW PENDING THE REVIEW OF THE SHORT CIRCUIT, PROTECTION COORDINATION STUDY BASED ON A "AS NOTED" OR "NO COMMENT" REVIEW STATUS.
19. DRAWINGS WILL BE SUBMITTED TO ESA AND ALL COMMENTS SHALL BE INCLUDED AS PART OF THE CONTRACT. CONTRACTOR IS TO ENSURE THAT ALL ESA COMMENTS IN SECTION 16010-S1 ESA PLAN REVIEW ARE ADDRESSED.
20. CONTRACTOR IS TO PROVIDE MOUNTING EQUIPMENT FOR ALL FIELD LOCAL CONTROL PANELS AND TRANSMITTERS SUCH AS PEDESTAL/SPOSTS, BRACKETS, AS REQUIRED. TRANSMITTERS AND FIELD LOCAL CONTROL PANELS SHOWN ON POWER LAYOUTS ARE FOR ILLUSTRATION ONLY, FINAL LOCATIONS ARE TO BE DETERMINED ON SITE WITH THE APPROVAL OF THE ENGINEER FIELD STAFF. THE CONTRACTOR IS TO CONFIRM LOCATIONS AND INSTALLATION/MOUNTING REQUIREMENTS ON SITE PRIOR TO PURCHASING ANY INSTRUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL MOUNTING HARDWARE BASED ON LOCATION FINALIZED ON SITE. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN mm.
21. CONTRACTOR IS TO PROVIDE HILTI OR APPROVED CERTIFIED EQUIVALENT FIRESTOP SEPARATION TO CORES ENTERING OR EXITING THE BUILDING AND WHEN CROSSING BETWEEN ROOMS LOCATED INSIDE THE BUILDING.
22. CONTRACTOR IS TO PROVIDE OPENINGS FOR THE MCCs, SWGRS, AND ALL FREESTANDING EQUIPMENT TO ENSURE THAT THE BOTTOM ENTRY CABLES, FIELD WIRING, AND COMMUNICATION CABLES ARE COORDINATED WITH THE RESPECTIVE VENDOR AND OTHER TRADES SUCH AS STRUCTURAL COLUMNS/REBARS, ETC.
23. CONTRACTOR IS TO PROVIDE TAGGING FOR ALL CONDUITS USING "CIRCULAR DISCS" AS SPECIFIED.
24. ALL RIGID PVC DUCTS TO BE BURIED MIN. 760mm BELOW FINISHED GRADE. ALL UNDERGROUND DUCTBANKS TO BE INSTALLED IN ACCORDANCE WITH OESC REQUIREMENTS.
25. RIGID PVC DBII DUCT FOR UNDERGROUND APPLICATIONS TO BE IPEX SUPER DUCT
26. ALL DUCTS TO BE TERMINATED AT BOTH ENDS WITH A "BELL END" COUPLING.
27. DUCTS TO BE JOINED TOGETHER WITH AN APPROVED COUPLING. INCLUDE EXPANSION COUPLING AS REQUIRED FOR APPLICATIONS THAT TRANSITION FROM A ONE MEDIUM TO ANOTHER (EXAMPLE BELOW GRADE TO ABOVE GRADE).
28. ADJACENT COUPLINGS SHALL BE STAGGERED BY AT LEAST 200mm.
29. WHEN COMPLETED THE DUCTS SHALL BE CLEANED AND ENDS PLUGGED WITH DUCT PLUGS. TEST DUCTS FOR CLEARANCE BY PULLING A STEEL WIRE BRUSH AND MANDRILL THROUGH THE COMPLETE LENGTH IN THE PRESENCE OF ENGINEER. MANDREL TO BE SIZED ACCORDING TO THE CONDUIT DIAMETER FOR UNDERGROUND CONDUITS THAT ARE 75mm OR GREATER.
30. EXACT LOCATION OF ALL NEW GROUND RODS SHALL BE DETERMINED ON SITE.
31. CONTRACTOR IS TO PROVIDE A LOCAL DISCONNECT SWITCH FOR EACH MOTOR POWERED FROM A SWGR, MCC, 600V DISTRIBUTION PANEL, OR A LIGHTING PANEL. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POWER FEEDS FROM THE SOURCE SUCH AS A LIGHTING PANEL TO THE DISCONNECT SWITCH AND FROM THE DISCONNECT SWITCH TO THE MOTOR. THE DISCONNECT SWITCHES ARE TO BE SIZED TO SUIT THE MOTOR RATINGS. THE DISCONNECT SWITCHES NEMA RATING SHALL BE NEMA 12. ALL DISCONNECT SWITCHES ARE TO BE MOUNTED ADJACENT THE RESPECTIVE MOTOR IN A LOCATION APPROVED BY THE SITE INSPECTOR.
32. CONTRACTOR IS REQUIRED TO COORDINATE WITH EACH VENDOR TO CONFIRM VENDOR REQUIREMENTS AND RECOMMENDATIONS FOR OVER CURRENT PROTECTION, CABLING, DISCONNECTS, SWITCH SIZE, JUNCTION BOXES, LOCATION, ETC. PROVIDE REQUIRED AND RECOMMENDED ITEMS NOTED BY THE VENDOR. THE ELECTRICAL CONTRACTOR IS REQUIRED AND RESPONSIBLE FOR REVIEWING VENDOR SHOP DRAWINGS TO CONFIRM POWER REQUIREMENTS, I/O REQUIREMENTS, POWER, FLA, ETC, TO ENSURE COMPLIANCE WITH THE POWER REQUIREMENTS SHOWN ON THE DRAWINGS. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE VENDOR TO ENSURE THAT ALL POWER AND FIELD I/O AVAILABILITY SUITS THE INTENDED DESIGN REQUIREMENTS.
33. ANY ABANDONED PENETRATIONS INCLUDING WALL, FLOOR, CEILINGS ARE TO BE FILLED/FIRE STOPPED. ALL NEW PENETRATIONS BE FIRE STOPPED.
34. ALL NEW ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE RATED FOR SEISMIC RESTRAINT IN ACCORDANCE WITH OBC REQUIREMENTS INCLUDING MCCS, SWGRS, CABLE TRAYS, RACEWAYS, PANELS, AND CABLE BUS.
35. EACH PACKAGED EQUIPMENT DISTRIBUTION CONTROL PANEL IS TO BE PROVIDED WITH A LOCAL OVERCURRENT/DISCONNECT DEVICE.
36. CONTRACTOR IS TO SIZE THE CABLE SIZE FOR VENDOR SUPPLIED EQUIPMENT BASED ON VENDOR INSTALLATION REQUIREMENTS. CONTRACTOR IS TO PROVIDE POWER CABLE AND CONDUIT IN ACCRODANCE WITH THE SPECIFICATIONS.
37. CONFIRM AND COORDINATE ALL DATA REQUIRED FOR THE PROTECTION COORDINATION STUDY INCLUDING BUT NOT LIMITED TOO: CT/PT RATIOS, MOTOR NAMEPLATE DATA, CABLE TYPE/LENGTH, EQUIPMENT WITHSTAND RATING, UTILITY CONTRIBUTION, AND OVER-CURRENT PROTECTION DEVICE RATINGS.
38. CONFIGURATION, QUANTITIES, AND SIZES FOR ALL INTERNAL COMPONENTS SHALL BE DETERMINED BY THE MCC MANUFACTURER BASED ON APPLICATION REQUIREMENTS.
39. PROVIDE A LOCAL DISCONNECT SWITCH THAT IS RATED IN ACCORDANCE WITH THE AREA OF THE RESPECTIVE MOTOR LOCATION. DISCONNECT SWITCHES LOCATED IN THE CHEMICAL ROOM SHALL BE NEMA 4X RATED, ALL OTHER DISCONNECT SWITCHES SHALL BE NEMA 12 RATED. THE LOCAL DISCONNECT SWITCH IS TO BE INSTALLED ADJACENT TO THE MOTOR IN A LOCATION THAT IS ACCESSIBLE BY AN OPERATOR. CONTRACTOR IS RESPONSIBLE FOR MOUNTING EQUIPMENT SUCH AS STAINLESS STEEL UNISTRUTS, ETC. FINAL LOCATION FOR EACH LOCAL DISCONNECT SWITCH IS TO BE APPROVED ON SITE BY THE ENGINEER.
40. PROVIDE A LOCAL CONTROL PANEL FOR EACH MOTOR AS SHOWN IN THE WIRING DETAIL DRAWINGS. THE LOCAL CONTROL PANELS ARE TO BE INSTALLED ADJACENT TO THE MOTOR IN A LOCATION THAT IS ACCESSIBLE BY AN OPERATOR. CONTRACTOR IS RESPONSIBLE FOR MOUNTING EQUIPMENT SUCH AS STAINLESS STEEL UNISTRUTS, ETC, INCLUDING BUT NOT LIMITED TO WIRING AND CONDUITS. FINAL LOCATION FOR EACH LOCAL CONTROL PANEL IS TO BE APPROVED ON SITE BY THE ENGINEER.
41. ALL VENDOR SUPPLIED EQUIPMENT OVERCURRENT DEVICE AND BRANCH CIRCUIT CONDUCTORS ARE TO BE SIZED AS PER THE RESPECTIVE MANUFACTURER RECOMMENDATIONS. CONTRACTOR SHALL CONFIRM ALL MOTOR NAMEPLATES WITH DIVISION 11 AND DIVISION 15 EQUIPMENT PRIOR TO MANUFACTURING THE MCC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POWER AND CONTROL WIRING FROM ANY VENDOR PANEL (DIVISION 11 AND 15) TO THE RESPECTIVE MOTOR INCLUDING BUT NOT LIMITED TO CONDUITS, JUNCTION BOXES, ETC. PROVIDE FIELD WIRING FOR THE VENDOR PACKAGED EQUIPMENT IN ACCORDANCE WITH VENDOR PACKAGE SHOP DRAWINGS AND INSTALLATION INSTRUCTIONS
42. HYDRO ONE TO PROVIDE UTILITY GRADE CT/PT FOR REVENUE METERING. CONTRACTOR TO COORDINATE WITH HYDRO ONE AND ENSURE THAT SUFFICIENT SPACE IS AVAILABLE FOR CT/PT INSTALL IN THE UTILITY METER SECTION OF THE NEW MCC.
43. CONTRACTOR TO PROVIDE AND INSTALL ALL POWER AND FIELD WIRING IN ACCORDANCE WITH THE VENDOR INSTALLATION REQUIREMENTS BETWEEN THE MCC AND THE LCP AS WELL AS BETWEEN THE LCP AND RESPECTIVE MOTORS/INSTRUMENTS.
44. REFER TO THE ELECTRICAL DETAILS. CONTRACTOR TO VERIFY ALL WIRING REQUIREMENTS WITH SODIUM HYPOCHLORITE DOSING SYSTEM VENDOR PROVIDED BY DIVISION 11.
45. CONTRACTOR TO PROVIDE A 120VAC, 15A CIRCUIT FOR ALL HVAC EQUIPMENT FROM THE RESPECTIVE LIGHTING PANEL AS SHOWN ON THE SLDS AND LIGHTING PANEL SCHEDULES.
46. FOR ALL CONDUITS, CONTRACTOR IS TO PROVIDE HOT DIP GLAVANIZED STEEL SUPPORTS AND/OR STRUTS AS REQUIRED. USE STAINLESS HARDWARE IN WET OR CORROSIVE AREAS.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT:

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

LEGEND AND
GENERAL NOTES

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

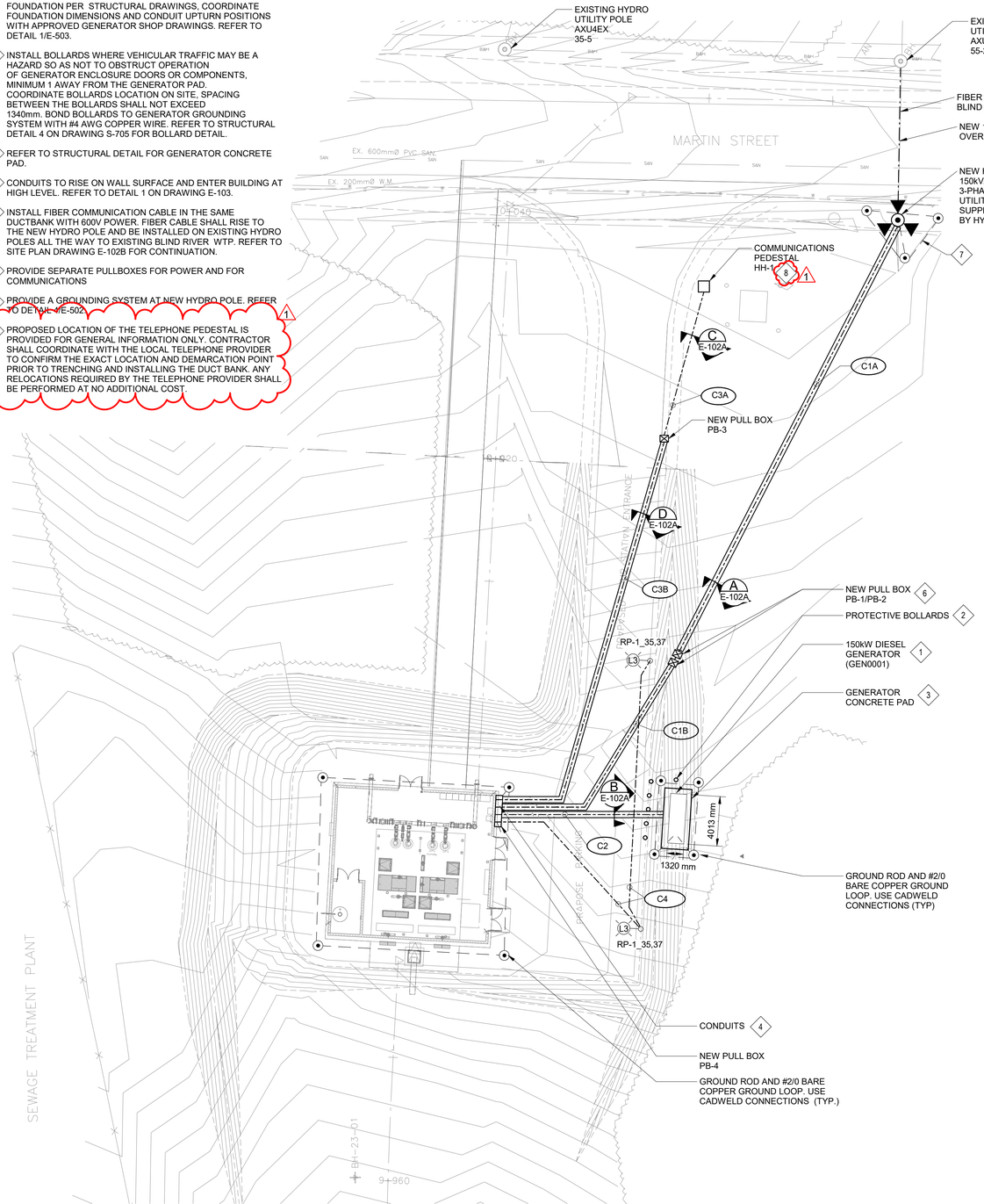
SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	E-001

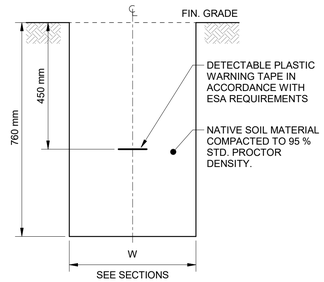
PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt

NOTES:

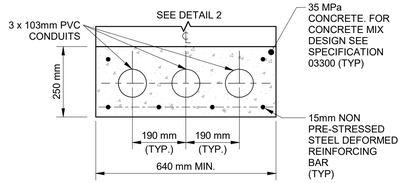
1. PROVIDE A NEW 150kW OUTDOOR GENERATOR IN SKIN TYPE SOUND ATTENUATED ENCLOSURE. PROVIDE GENERATOR FOUNDATION PER STRUCTURAL DRAWINGS, COORDINATE FOUNDATION DIMENSIONS AND CONDUIT UPTURN POSITIONS WITH APPROVED GENERATOR SHOP DRAWINGS. REFER TO DETAIL 1/E-503.
2. INSTALL BOLLARDS WHERE VEHICULAR TRAFFIC MAY BE A HAZARD SO AS NOT TO OBSTRUCT OPERATION OF GENERATOR ENCLOSURE DOORS OR COMPONENTS, MINIMUM 1 AWAY FROM THE GENERATOR PAD. COORDINATE BOLLARDS LOCATION ON SITE, SPACING BETWEEN THE BOLLARDS SHALL NOT EXCEED 1340mm. BOND BOLLARDS TO GENERATOR GROUNDING SYSTEM WITH #4 AWG COPPER WIRE. REFER TO STRUCTURAL DETAIL 4 ON DRAWING S-705 FOR BOLLARD DETAIL.
3. REFER TO STRUCTURAL DETAIL FOR GENERATOR CONCRETE PAD.
4. CONDUITS TO RISE ON WALL SURFACE AND ENTER BUILDING AT HIGH LEVEL. REFER TO DETAIL 1 ON DRAWING E-103.
5. INSTALL FIBER COMMUNICATION CABLE IN THE SAME DUCTBANK WITH 600V POWER. FIBER CABLE SHALL RISE TO THE NEW HYDRO POLE AND BE INSTALLED ON EXISTING HYDRO POLES ALL THE WAY TO EXISTING BLIND RIVER WTP. REFER TO SITE PLAN DRAWING E-102B FOR CONTINUATION.
6. PROVIDE SEPARATE PULLBOXES FOR POWER AND FOR COMMUNICATIONS
7. PROVIDE A GROUNDING SYSTEM AT NEW HYDRO POLE. REFER TO DETAIL 1/E-502.
8. PROPOSED LOCATION OF THE TELEPHONE PEDESTAL IS PROVIDED FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL COORDINATE WITH THE LOCAL TELEPHONE PROVIDER TO CONFIRM THE EXACT LOCATION AND DEMARCATION POINT PRIOR TO TRENCHING AND INSTALLING THE DUCT BANK. ANY RELOCATIONS REQUIRED BY THE TELEPHONE PROVIDER SHALL BE PERFORMED AT NO ADDITIONAL COST.



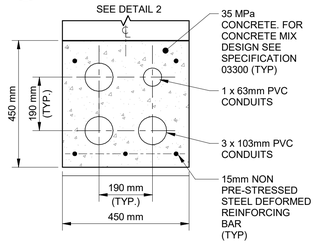
1 ELECTRICAL SITE PLAN
SCALE: 1 : 200



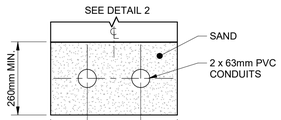
2 TYPICAL DUCT BANK TOP FILL DETAIL
SCALE: N.T.S.



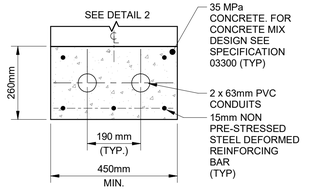
A CROSS SECTION
SCALE: N.T.S.



B CROSS SECTION
SCALE: N.T.S.



C CROSS SECTION
SCALE: N.T.S.



D CROSS SECTION
SCALE: N.T.S.

UNDERGROUND DUCT SCHEDULE:

TAG	DESCRIPTION	ORIGIN	DESTINATION	SECTION	COMMENTS
C1A	1 x 103mm (600V POWER) 1 x 103mm (SPARE) 1 x 103mm (COMMUNICATIONS/FIBER)	NEW MARTIN ST HYDRO ONE 150kVA UTILITY POLE-MOUNTED TRANSFORMER	NEW PULL BOX (PB-1)	A	CONCRETE ENCASED
C1B	1 x 103mm (600V POWER) 1 x 103mm (SPARE) 1 x 103mm (COMMUNICATIONS/FIBER)	NEW PULL BOX (PB-1)	NEW BUILDING	A	CONCRETE ENCASED
C2	1 x 103mm (600V POWER) 1 x 103mm (208/120V SHORE POWER & CONTROLS) 1 x 103mm (SPARE) 1 x 63mm (SPARE)	NEW GENERATOR GEN0001 ON CONCRETE PAD	NEW BUILDING	B	CONCRETE ENCASED
C3A	1 x 63mm (PHONE) 1 x 63mm (SPARE) 1	COMMUNICATIONS PEDESTAL (HH-1)	NEW PULL BOX (PB-2)	C	DIRECT BURIED
C3B	1 x 63mm (PHONE) 1 x 63mm (SPARE) 1	NEW PULL BOX (PB-2)	NEW MAN HOLE (MH-4)	D	CONCRETE ENCASED
C4	1 x 41mm 2 X 1/C #10 TECK90 (LIGHTING)	NEW BUILDING	LIGHTING POLE		DIRECT BURIED

SITE LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MODEL	SOURCE TYPE	MOUNTING HEIGHT	DRIVER VOLTAGE	WATTAGE	NOMINAL LUMENS	CRI	FINISH	COLOUR TEMPERATURE
L3	POLE MOUNT LED AREA LIGHT (SINGLE)	LITHONIA LIGHTING RSX3-LED-P3-30K-R4-MVOLT-SPA EGS-DBLXD	LED	7.5m POLE MOUNT	208V	266W	32593	80	BLACK	3000K
POLE	NOVA POLE 4" STRAIGHT SQUARE STEEL	NSS42MD LENGTH: 24FT, SINGLE HEAD POWDER COATED BLACK								

KEY PLAN

ENGINEER'S SEAL:

FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC
DATE	REV.	REVISION	BY	APP'D

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

PROPOSED
ELECTRICAL SITE
PLAN

RW	DT	DC	MG
DRAWN	DESIGNED	CHECKED	APPROVED
1:200		FEB 2026	
SCALE		DATE	
T001592B	1	E-102A	
PROJECT NO.	REVISION	DRAWING	

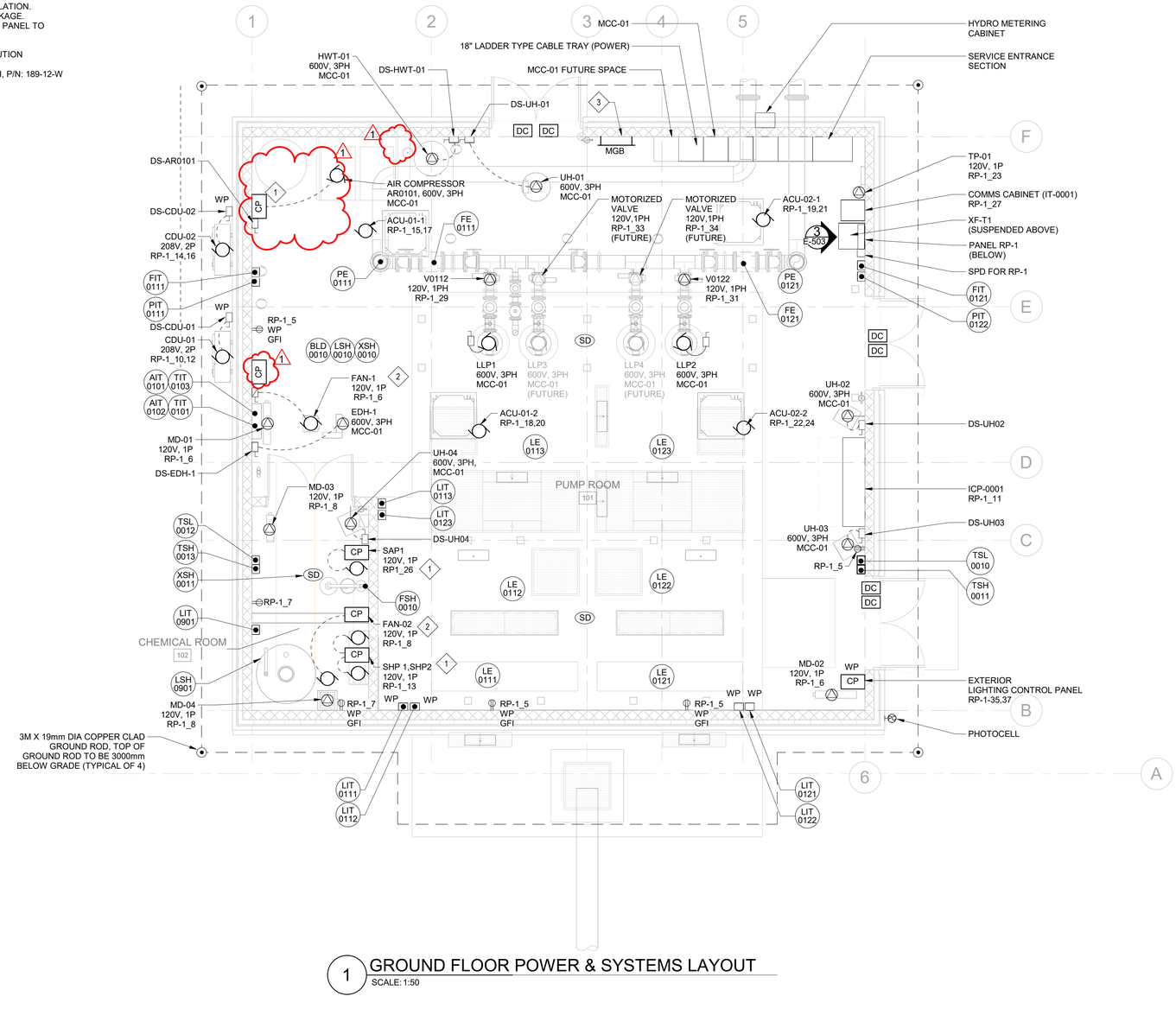
PATH: Autodesk Docs://C12 Blind River LLPS - T001592B\1592-E Blind River Elec.rvt

NOTES:

1. CONDUIT ROUTES FOR ALL LOW VOLTAGE 120/208V EQUIPMENT / INSTRUMENTS ARE NOT SHOWN ON ANY OF THE POWER LAYOUTS AND SHALL BE FINALIZED ON SITE.
2. LOCATION FOR ALL NEW INSTRUMENTS AND EQUIPMENT SHALL BE ADJUSTED AND FINALIZED ON SITE.
3. REFER TO MECHANICAL DRAWINGS FOR DETAILED MECHANICAL EQUIPMENT LOCATIONS.
4. PROVIDE A LOCAL DISCONNECT SWITCH AT EACH MOTOR LOCATION. THE LOCAL DISCONNECT SWITCH IS TO BE INSTALLED ADJACENT TO THE MOTOR IN A LOCATION THAT IS ACCESSIBLE BY AN OPERATOR. CONTRACTOR IS RESPONSIBLE FOR MOUNTING EQUIPMENT SUCH AS STAINLESS STEEL UNISTRUTS, ETC. FINAL LOCATION FOR EACH LOCAL DISCONNECT SWITCH IS TO BE APPROVED ON SITE BY THE ENGINEER.
5. THE PANELS SHALL NOT EXCEED THE NOTED DIMENSIONS GIVEN THE CONSTRAINTS OF THE SPACE.
6. CHLORINE ANALYZER ELEMENTS ARE TO BE INSTALLED IN THE MAIN FLOOR CLOSE TO THE TRANSMITTERS. LOCATION IS TO BE VERIFIED AND APPROVED BY THE ENGINEER.
7. REFER TO PROCESS DRAWINGS FOR LOCATION OF MOTORIZED VALVES AND OTHER PROCESS EQUIPMENT SUCH AS LEVEL/FLOW INSTRUMENTATION ETC.
8. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF OTHER HVAC EQUIPMENT. ALL HVAC EQUIPMENT INCLUDING HEATERS ARE SUPPLIED UNDER DIV 15 AND INSTALLED BY DIV 16.
9. PROCESS PIPING IS NOT SHOWN FOR CLARITY. REFER TO PROCESS DRAWINGS AND P&IDS FOR ADDITIONAL INFORMATION WHEN INSTALLING INSTRUMENTS.
10. VERIFY AND FINALIZE LOCATIONS AT ALL FIELD INSTRUMENTS ON SITE BEFORE INSTALLATION.
11. HYPO PUMP CONTROL PANEL IS PROVIDED BY DIV 11 AS PART OF THE HYPO PUMP PACKAGE. CONTRACTOR TO INSTALL POWER AND CONTROL WIRING TO THE PANEL. WIRING FROM PANEL TO HYPO PUMPS IS BY THE SUPPLIER.
12. DISCONNECT SWITCH LOCATIONS MAY BE ADJUSTED ON SITE AS REQUIRED.
13. PROVIDE A 100mm HOUSEKEEPING PAD FOR ALL FREE STANDING ELECTRICAL DISTRIBUTION EQUIPMENT AND PANELS.
14. CONTRACTOR TO PROVIDE AND INSTALL ONE (1) DOOR CONTACT (MANUFACTURER: ADI, P/N: 189-12-W SERIES OR APPROVED EQUAL) ON EACH HINGED DOOR.

DRAWING NOTES:

1. CONTROL PANEL IS SUPPLIED BY EQUIPMENT VENDOR AND INSTALLED AND WIRED BY DIV.16.
2. CONTROL PANEL IS PROVIDED BY DIV.16. REFER TO DRAWING E-505
3. PROVIDE WALL MOUNTED COPPER MAIN GROUND BAR, REFER TO DETAIL 2/E-502.



1 GROUND FLOOR POWER & SYSTEMS LAYOUT
SCALE: 1:50

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APPD
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

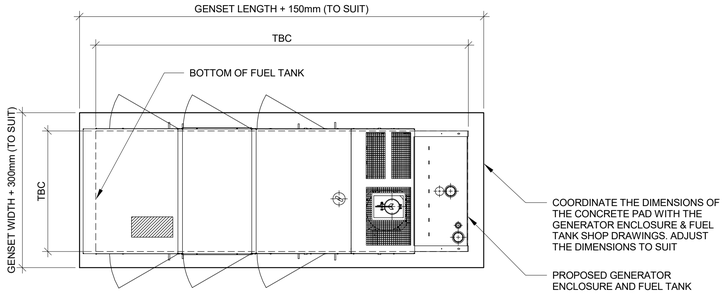
ELECTRICAL
POWER &
SYSTEMS
LAYOUTS

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
1:50	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	E-108A

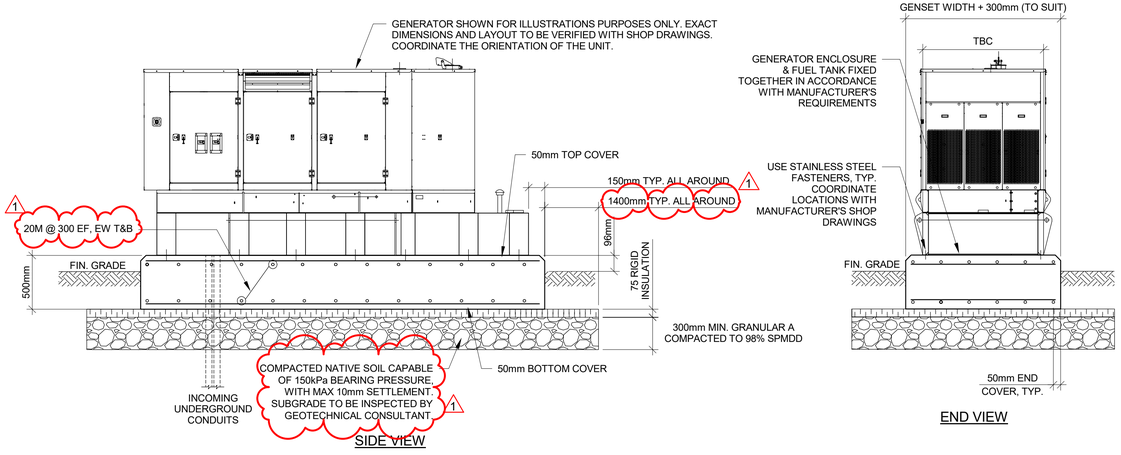
PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt



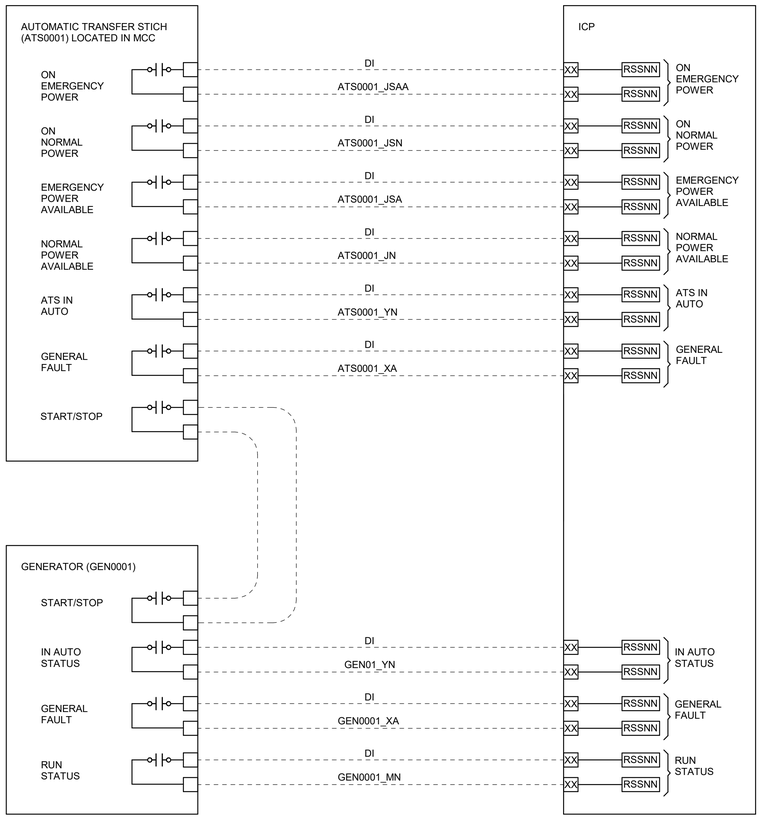
PLAN VIEW

NOTES:

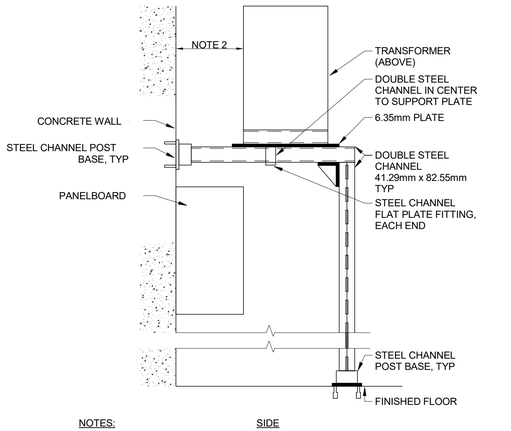
1. THE PAD MOUNTED, SOUND ATTENUATED DIESEL GENERATOR DIMENSIONS AND CONFIGURATION IS BASED ON A MTU 135 KW PRIME RATED GENERATOR WITH AN INTEGRAL 24-HOUR SUB-BASED FUEL TANK. THE CONTRACTOR IS REQUIRED TO COORDINATE THE LENGTH AND WIDTH OF THE GENERATOR CONCRETE PAD WITH THE SHOP DRAWING DIMENSIONS OF THE SPECIFIC PRODUCT SUPPLIED. ENSURE 150 MM OF EXPOSED CONCRETE PAD AROUND THE PERIMETER OF THE GENERATOR.
2. ROUGH IN ALL POWER AND CONTROL CONDUITS TO SUIT THE DIESEL GENERATOR PRIOR TO INSTALLATION OF THE CONCRETE PAD. COORDINATE ENTRY OF CONDUITS AND LOCATION IN CONCRETE SLAB WITH GENERATOR SHOP DRAWINGS TO SUIT POWER AND CONTROLS CONDUCTOR TERMINATIONS.
3. COORDINATE CONSTRUCTION OF CONCRETE PAD, INCLUDING REINFORCING BARS, WITH LOCATIONS AND ENTRY POINTS OF ELECTRICAL CONDUITS.
4. PROVIDE ALL CONDUIT ENTRY TO GENERATOR THROUGH CONCRETE PAD.
5. APPROXIMATE DIMENSIONS OF 150 KW GENERATOR IN A SOUND ATTENUATED ENCLOSURE ON UL LISTED FUEL TANK BASE ARE: L=4008 MM, W=1318 MM, H=1925 MM. FOR EXACT DIMENSIONS REFER TO APPROVED GENERATOR SHOP DRAWINGS.



1 GENSET DETAILS
SCALE: N.T.S.



2 GENERATOR/ATS CONTROLLER DETAIL
SCALE: N.T.S.



NOTES:

1. PROVIDE MINIMUM 1000mm WIDE AND 1980mm HIGH WORKING SPACE IN FRONT OF PANELBOARD.
2. SPACE PROVIDED BEHIND THE TRANSFORMER SHALL BE GREATER THAN THE DEPTH OF THE PANELBOARD.

3 TYPICAL TRANSFORMER MOUNTING
SCALE: N.T.S.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

ELECTRICAL
DETAILS - SHEET 1

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	E-503

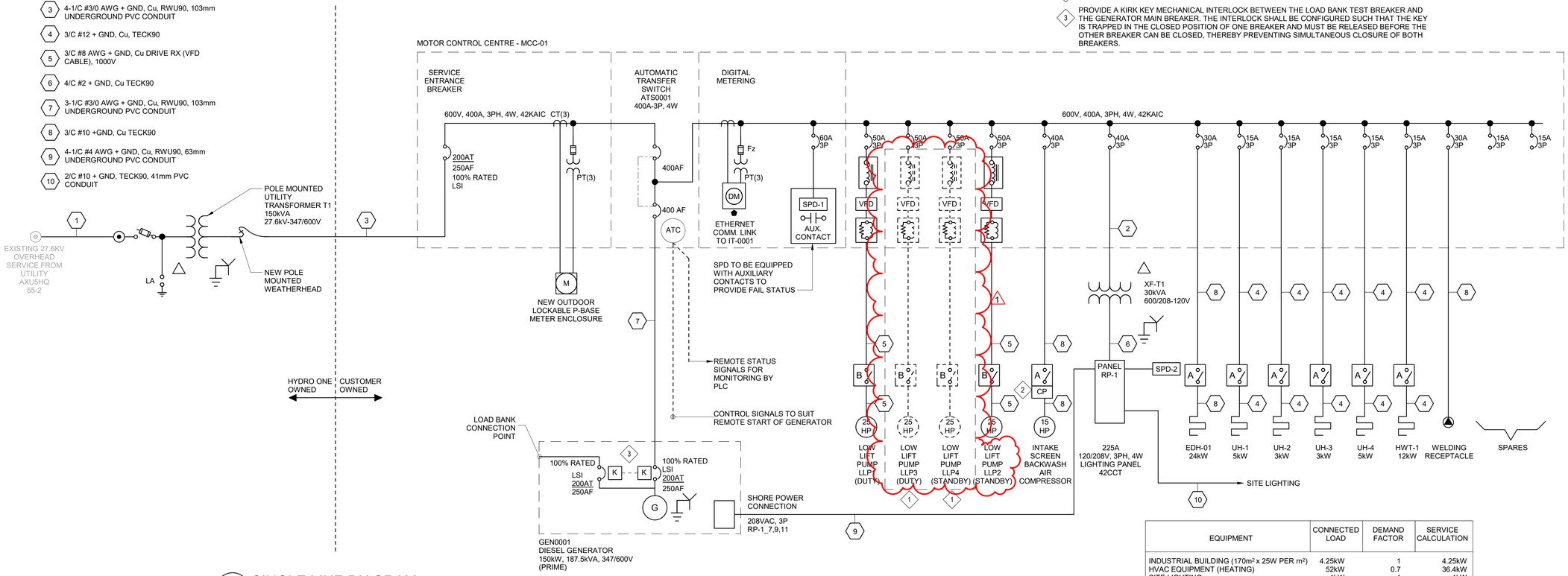
PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt

CABLE AND CONDUIT SCHEDULE:

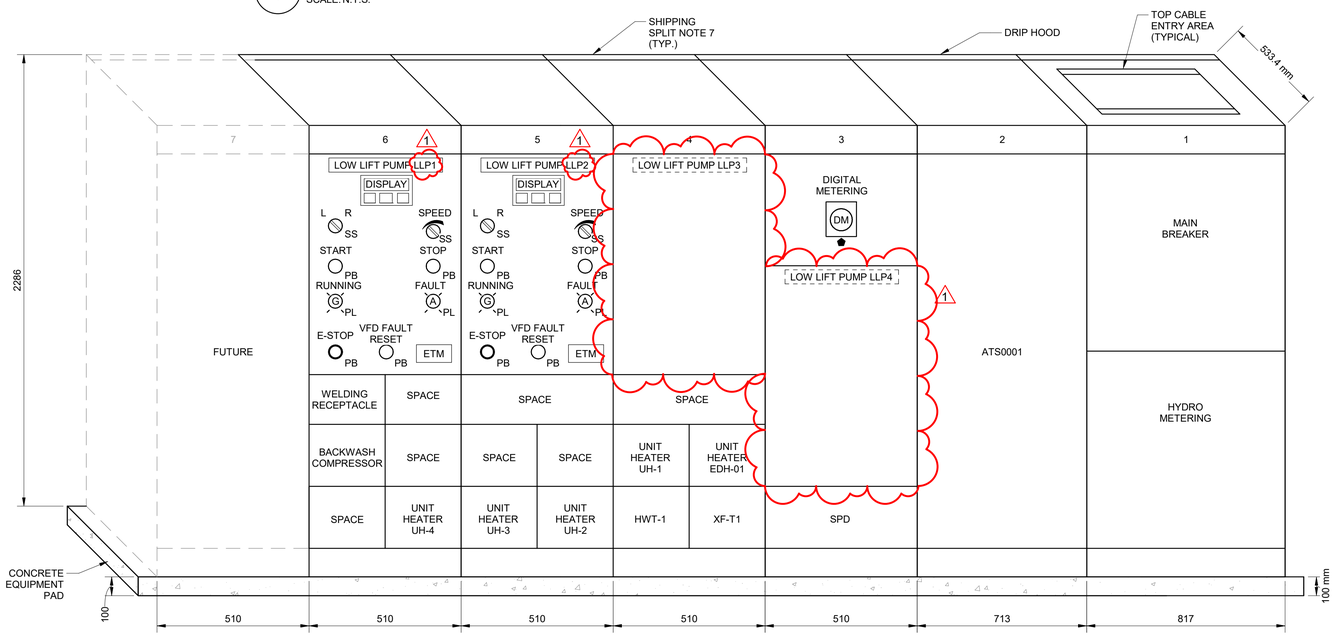
1. OVERHEAD UTILITY 14.4/25kV PRIMARY CABLE BY HYDRO ONE
2. 3/C #8 + GND, Cu TECK90
3. 4-1/C #3/0 AWG + GND, Cu, RWU90, 103mm UNDERGROUND PVC CONDUIT
4. 3/C #12 + GND, Cu, TECK90
5. 3/C #8 AWG + GND, Cu DRIVE RX (VFD CABLE), 1000V
6. 4/C #2 + GND, Cu TECK90
7. 3-1/C #3/0 AWG + GND, Cu, RWU90, 103mm UNDERGROUND PVC CONDUIT
8. 3/C #10 +GND, Cu TECK90
9. 4-1/C #4 AWG + GND, Cu, RWU90, 63mm UNDERGROUND PVC CONDUIT
10. 2/C #10 + GND, TECK90, 41mm PVC CONDUIT

NOTES:

1. PUMPS LLP3 AND LLP4 ARE INTENDED FOR FUTURE INSTALLATION AND ARE NOT TO BE INCLUDED IN THE BASE CONTRACT. NEW VFD STARTER, REACTOR AND DV/DT FILTER INCLUDING ALL CONTROL WIRING SHALL NOT BE PROVIDED AS PART OF THE CONTRACT.
2. THE CONTROL PANEL IS TO BE SUPPLIED BY COMPRESSOR VENDOR AND WIRED BY DIV 16.
3. PROVIDE A KIRK KEY MECHANICAL INTERLOCK BETWEEN THE LOAD BANK TEST BREAKER AND THE GENERATOR MAIN BREAKER. THE INTERLOCK SHALL BE CONFIGURED SUCH THAT THE KEY IS TRAPPED IN THE CLOSED POSITION OF ONE BREAKER AND MUST BE RELEASED BEFORE THE OTHER BREAKER CAN BE CLOSED, THEREBY PREVENTING SIMULTANEOUS CLOSURE OF BOTH BREAKERS.



1 SINGLE LINE DIAGRAM
SCALE: N.T.S.



2 MCC-01 ELEVATION
SCALE: N.T.S.

EQUIPMENT	CONNECTED LOAD	DEMAND FACTOR	SERVICE CALCULATION
INDUSTRIAL BUILDING (170m² x 25W PER m²)	4.25kW	1	4.25kW
HVAC EQUIPMENT (HEATING)	52kW	0.7	36.4kW
SITE LIGHTING	1kW	1	1kW
PUMPS (4 x 25HP)	95.2kW	0.5	47.6kW
COMPRESSOR (1 X 15HP)	15kW	1	15kW
TOTAL AT COMPLETION			104.25kW
AMPS = 104.25 x 1000 / 600V x 1.73 x 0.95 = 105.7 AMP			THEREFORE, A 200A SERVICE IS SUFFICIENT

HYDRO ONE (SCOPE OF WORK)	CONTRACTOR (SCOPE OF WORK) ALL WORK IS TO BE COORDINATED WITH HYDRO ONE PRIOR TO ANY INSTALLATION
PROVIDE NEW HYDRO POLE WITH POLE 150kVA 3-PH POLE-MOUNT TRANSFORMER. HYDRO ONE TO SUPPLY AND INSTALL TRANSFORMER. THE NEW HYDRO POLE WILL BE DESIGNATED AS THE DEMARCATION POINT.	COORDINATE WITH HYDRO ONE AND SUPPLY AND INSTALL NEW 600V UNDERGROUND DUCT BANK. MAN HOLES AND PULL BOXES FROM THE NEW HYDRO POLE TO THE BUILDING UTILITIES POINT-OF-ENTRY (MCC SERVICE ENTRANCE BREAKER). CONTRACTOR TO KEEP SUFFICIENT LOOPED CABLING AT THE POLE FOR HYDRO ONE TO INSTALL VIA THE RISER AND WEATHERHEAD ON THE POLE. COORDINATE INSTALLATION FOR ALL UNDERGROUND DUCT BANKS WITH OTHER DISCIPLINES AND UTILITIES TO AVOID INTERFERENCE FINAL. ADJUST FINAL LOCATIONS AS NECESSARY.
SUPPLY NEW 24" (H) x 16" (W) x 12" (D) NEMA 4X LOCKABLE P-BASE METER ENCLOSURE. SUPPLY AND INSTALL INSTRUMENT TRANSFORMERS IN THE MCC UTILITY METERING SECTION. WIRE INSTRUMENT TRANSFORMER TO EXTERIOR P-BASE METER ENCLOSURE.	COORDINATE WITH HYDRO ONE AND INSTALL A NEW 24" (H) x 16" (W) x 12" (D) NEMA 4X LOCKABLE P-BASE METER ENCLOSURE ON THE EXTERIOR OF THE BUILDING. CONTRACTOR TO PROVIDE AND INSTALL A 1 1/14" CONDUIT C/W PULL STRING FROM THE P-BASE METER ENCLOSURE TO THE MCC UTILITY METER SECTION. ONCE INSTALL IS COMPLETE, HAND OVER KEYS FOR THE P-BASE METER ENCLOSURE TO HYDRO ONE.
CONNECT THE PRIMARY CABLING TO THE NEW POLE-MOUNTED TRANSFORMER.	COORDINATE WITH HYDRO ONE TO MAKE THE NECESSARY SERVICE CONNECTION FROM SECONDARY SIDE OF THE NEW UTILITY TRANSFORMER.

NOTES:

1. NEW MCC DIMENSION IS BASED ON AN EATON PRODUCT. CONTRACTOR SHALL ENSURE THAT PRODUCTS FROM OTHER VENDORS FALL WITHIN THE DIMENSIONAL CONSTRAINTS SHOWN ON THIS DRAWING.
2. MINIMUM CONDUCTOR SIZE FOR ALL LOW VOLTAGE (120VAC, 1-PHASE) CIRCUITS SHALL BE #12AWG. CONTRACTOR SHALL SIZE WIRES/CONDUITS FOR ALL LOW VOLTAGE EQUIPMENT FED FROM DISTRIBUTION PANELS BASED ON MINIMUM ACCEPTABLE SIZES AND MANUFACTURERS REQUIREMENTS.
3. CONDUIT ROUTES FOR ALL LOW VOLTAGE (120VAC, 1-PHASE) FEEDERS SHALL BE DETERMINED ON SITE BY THE CONTRACTOR.
4. PROVIDE LOCAL DISCONNECT SWITCHES FOR ALL MOTORS LOADS.
5. PROVIDE LAMACOIDS FOR EACH BUCKET.
6. PROVIDE CONCRETE PAD DIMENSION FOR THE MCC. REFER TO DIVISION 3 FOR CONCRETE PAD DETAILS.
7. PROVIDE SHIPPING SPLITS FOR EACH MCC SECTION.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:
BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:
SINGLE LINE DIAGRAM

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG
N.T.S.		FEB 2026	
SCALE		DATE	
T001592B	1	E-601	
PROJECT NO.	REVISION	DRAWING	

PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt

Branch Panel: RP-1

VOLTS: 120/208 Wye
PHASES: 3
WIRES: 4

LOCATION: 120/208V

FEEDER:

A. BUSSING:
MAIN BKR: 225 A
MOUNTING: Recessed
NO. CIR: 84
IR: 10kA

CIRCUIT DESCRIPTION	LTG	REC	CIR	BKR	P	A	B	C	P	BKR	CIR	REC	LTG	CIRCUIT DESCRIPTION
LIGHTING - PUMP ROOM 1			1	15 A	1				1	15 A	2			LIGHTING - CHEMICAL ROOM
EMERGENCY LIGHTING EM-1			3	15 A	1				1	15 A	4			LIGHTING - OUTDOOR
RECEPTACLES - PUMP ROOM			5	20 A	1				1	15 A	6			EXHAUST FAN FAN-01 & DAMPERS MD-01,...
RECEPTACLES - CHEMICAL ROOM			7	20 A	1				1	15 A	8			EXHAUST FAN FAN-02 & DAMPERS MD-03,...
SPARE			9	20 A	1				2	30 A	10			AC OUTDOOR UNIT CDU-01 OUTSIDE
ICP-0001 PANEL			11	20 A	1						12			
CHEMICAL CONTROL PANEL FOR PUMPS 1 & 2			13	15 A	1				2	30 A	14			AC OUTDOOR UNIT CDU-02 OUTSIDE
AC INDOOR UNIT ACU-01-1 PUMP ROOM			15	15 A	2						16			
			17						2	15 A	18			AC INDOOR UNIT ACU-01-2 PUMP ROOM
AC INDOOR UNIT ACU-02-1 PUMP ROOM			19	15 A	2						20			
			21						2	15 A	22			AC INDOOR UNIT ACU-02-2 PUMP ROOM
TRAP SEAL PRIMER TSP-01 - PUMP ROOM			23	15 A	1						24			
SPARE			25	15 A	1				1	15 A	26			RAW WATER SAMPLE PUMP SAP1 - PUMP...
1 IT PANEL			27	15 A	1				3	60 A	28			GENERATOR GEN0001 SHORE POWER
MOTORIZED DISCHARGE VALVE V0112			29	15 A	1						30			
MOTORIZED DISCHARGE VALVE V0122			31	15 A	1						32			
MOTORIZED DISCHARGE VALVE (FUTURE)			33	15 A	1				1	15 A	34			MOTORIZED DISCHARGE VALVE (FUTURE)
EXTERIOR LIGHTING			35	15 A	2						36			
			37								38			
EXIT SIGNS			39	15 A	1						40			
			41								42			
			43								44			
			45								46			
			47								48			
			49								50			
			51								52			
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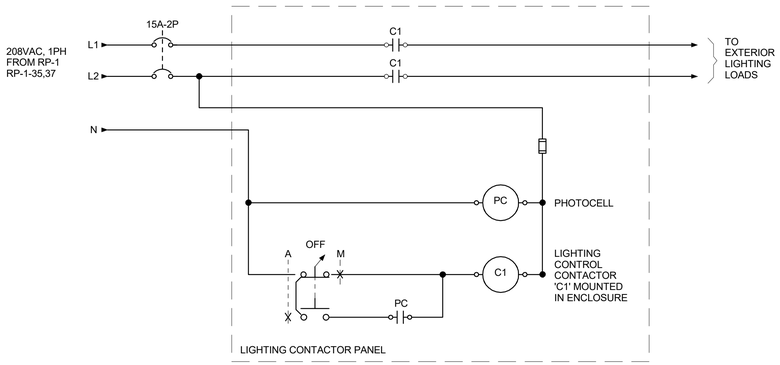
			59								60			
			61								62			
			63								64			
			65								66			
			67								68			
			69								70			
			71								72			
			73								74			
			75								76			
			77								78			
SPD (TOTAL PROTECTION SOLUTIONS TK-ST080-3Y208-FL OR EQUIVALENT)			79	20 A	3	0...					80			
			81				0...				82			
			83					0...			84			



1 EXTERIOR LIGHTING CONTROL SCHEMATIC
SCALE: N.T.S.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:
BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:
ELECTRICAL
PANEL
SCHEDULES

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	E-602

PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/11592-E Blind River Elec.rvt

MCC & FIELD

ICP-0001

600V, 3Ø FROM MCC

L1 L2 L3

REFER TO SINGLE LINE DIAGRAM FOR BREAKER SIZING

FU1 FU2 FU3 HIGH SPEED FUSES

LINE REACTOR

VFD T1 T2 T3

DV/DT FILTER

SHIELDED VFD CABLE

LOCAL DISCONNECT SWITCH

LOCATED ADJACENT TO THE MOTOR

SHIELDED VFD CABLE

25 HP LOW LIFT PUMP (LLP1)

DS-AUX LATE MAKE EARLY BREAK

FU4 FU5 600V 120V

FU6

1 x CAT6 CABLE TO NEW ICP-0001

POWER ON TIMER RELAY SET 2 SEC. — TR1

VFD RUN

MR — ELAPSED TIME METER — ETM

MR — P.T.T. G — RUNNING STATUS

TR2 — INSTANT ON DELAY OFF TIMER ADJUSTABLE 0-90 SEC.

TR2 — INTAKE FAN, EXHAUST FAN — DRIVE COOLING FANS

VFD FAULT, CR2, RESET, CONTINUE — CR2 — GENERAL FAULT

P.T.T. A — FAULT ALARM STATUS

ESR E-STOP RELAY ABB RT6 — A1 A2 — 41 42 — P.T.T. R — E-STOP ON

E-STOP — S13 S14 S34 S23 S24 — X1 S53 — TR1, RESET

LOCAL DISCONNECT AUX — DS-AUX

LOCAL REMOTE STOP START — CR1 — CR2 CR1

PLC START/STOP

(CONTINUED)

(CONTINUED)

SPEED FEEDBACK 4-20mA

SPEED CONTROL 4-20mA

PROVIDE SIGNAL ISOLATORS AND INSTALL IN ICP AS REQUIRED

AO — %AO SPEED CONTROL LLP1_SC

AI — %AI SPEED INDICATION LLP_SI

REFERENCE SIGNAL (HAND)

(CONTINUED) HS-1 — 0-100% MANUAL SPEED ADJUST POTENTIOMETER FLUSH MOUNTED ON THE DOOR

LOCAL REMOTE

START (HAND) — CR1

AUTO MODE

START (AUTO) — CR1

(CONTINUED) E-STOP

ENABLE — CR4 — DS-AUX

RIBBON CABLE KEYPAD

+24V

(CONTINUED) RESET — DOOR MOUNTED RESET BUTTON

ALARM RESET

MULTI FUNCTION OUTPUT RUN RELAY - R3 — TO AUX RELAY CR1

MULTI FUNCTION OUTPUT FAULT RELAY - R4 — TO AUX RELAY CR2

MR — DI RUNNING STATUS LLP1_MN

CR2 — DI GENERAL FAULT LLP1_XA

DI CONTROL MODE STATUS LLP1_YN

DI E-STOP TRIPPED LLP1_HAN

NOTES:

1. THE LOCAL SAFETY DISCONNECT SWITCH SHALL HAVE AN AUXILIARY CONTACT LEADING ON OPENING TO ENABLE VFD SHUTDOWN.
2. DIAGRAMS ARE INTENDED TO SHOW ELEMENTARY CONTROL FUNCTIONS. NOT ALL DEVICES OR CONNECTIONS NECESSARY FOR SAFE OPERATIONS ARE SHOWN. MANUFACTURER WIRING DIAGRAMS TO SUIT SUPPLIED EQUIPMENT. DEVICE NAMES (EXAMPLE TERMINALS, RELAYS), FIELD I/O TAGGING, ARE TO BE SHOWN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS/DRAWINGS.
3. PROVIDE AUXILIARY CONTACTS AS REQUIRED TO ACHIEVE THE INTENDED DESIGN.

1 TYPICAL CONTROL SCHEMATIC FOR LOW LIFT PUMPS (LLP1, LLP4 & FUTURE LOW LIFT PUMPS LLP2, LLP3)

SCALE: N.T.S.

BILL OF MATERIAL - MCC DOOR

ITEM	DESCRIPTION	QTY.
1	NAMEPLATE LAMACOID	1
2	LED PILOT LIGHT, 30mm	2
3	MOMENTARY PUSH BUTTON, 30mm	3
4	VFD DISPLAY KEYPAD	1
5	ELAPSED TIME METER	1
6	SELECTOR SWITCH, 30mm	1
7	POTENTIOMETER, 30mm	1
8	EMERGENCY STOP PUSH BUTTON C/W IEC YELLOW RING	1

LOW LIFT PUMP LLP1 (1)

DISPLAY (4)

L R — SS (6) — SPEED (7)

START (3) PB — STOP (3) PB

RUNNING (2) PL — FAULT (2) PL

E-STOP (8) PB — VFD FAULT RESET (3) PB — ETM (5)

MCC DOOR

LEGEND

- DEVICE TERMINAL
- TERMINAL BLOCK IN MCC
- TERMINAL BLOCK IN FIELD
- TERMINAL BLOCK IN ICP PANEL
- FIELD WIRING CONNECTIONS
- VENDOR SUPPLIED EQUIPMENT
- LOCAL CONTROL PANEL
- FUSES
- DIGITAL OUTPUT

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APPD
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE: BLIND RIVER INTAKE AND LLPS

DRAWING TITLE: VFD CONTROL SCHEMATIC

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE: N.T.S. DATE: FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	E-603

PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt

CONTROL WIRING LEGEND

- NORMALLY CLOSE SPRING RETURN PUSH BUTTON
- NORMALLY OPEN SPRING RETURN PUSH BUTTON
- SELECTOR SWITCH. POSITION TO SUIT APPLICATION
- P.T.T.
- INDICATING LIGHT
  C=A: AMBER C=W: WHITE C=Y: YELLOW
  C=B: BLUE C=G: GREEN C=R: RED
- ME — MOTION ELEMENT
- TD — TIME DELAY RELAY
- CR — CONTROL RELAY
- OFF / HAND / AUTO — 3 POSITION SELECT SWITCH HAND/OFF/AUTO 'X' INDICATES CONTACT CLOSED POSITION FOR RESPECTIVE MODE
- SOLENOID VALVE
- LIMIT SWITCH
- FLOW SWITCH
- LSH — LEVEL SWITCH
- TEMPERATURE SWITCH (NO) CLOSE ON RISE
- PDSH — HIGH PRESSURE DIFFERENTIAL SWITCH
- EMERGENCY STOP BUTTON
- NORMALLY OPEN RELAY CONTACT
- NORMALLY CLOSED RELAY CONTACT
- CIRCUIT BREAKER
- Fz — COMBINATION SWITCHED FUSE BLOCK
- TERMINAL BLOCK
- ANALOG CABLE SHIELD
- GROUND
- DUPLEX RECEPTACLE

ABBREVIATIONS

PLC	PROGRAMMABLE LOGIC CONTROLLER	CCI	FIBER OPTIC CLOSET CONNECTOR HOUSING PANEL
RPU	REMOTE PROCESSING UNIT	PTT	PUSH TO TEST
RIO	REMOTE INPUT & OUTPUT HARDWARE	Fz	FUSE
CP	CONTROL PANEL	L	LINE
ICP	INSTRUMENTATION'S CONTROL PANEL	N	NEUTRAL
		G	GROUND
		SH	SHIELD

VALVE & GATE SYMBOLS

- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- CHECK VALVE
- KNIFE GATE VALVE
- PRESSURE REDUCING VALVE - PILOT
- PRESSURE SUSTAINING VALVE
- SELF ACTUATING PRESSURE REDUCING VALVE
- SELF ACTUATING PRESSURE SUSTAINING VALVE
- SURGE VALVE
- DIAPHRAGM VALVE
- BACKFLOW PREVENTER
- GATE FLAP
- HOSE VALVE W/ HOSE NIPPLE
- MOTORIZED GATE VALVE
- M — STANDARD ELECTRIC
- VACUUM BREAKER
- SLIDE PLATE
- NEEDLE VALVE
- AIR PURGE
- AIR RELIEF VALVE
- STOP LOG
- DIAPHRAGM SEAL
- CONCENTRIC REDUCER
- CAP OR PLUG
- 'Y' STRAINER
- DUPLEX 'Y' STRAINER
- FLEXIBLE CONNECTOR - FLANGED
- BLIND FLANGE
- ARCH TYPE EXPANSION
- F — FLUSHING CONNECTION
- SLIDE GATE
- STOP GATE
- FINE BUBBLE DIFFUSERS
- CHANNEL AERATION ASSEMBLY
- M / P — MODULATING ELECTRIC

PUMP AND BLOWERS SYMBOLS

- SLUDGE PUMP
- SUMP PUMP
- M — ELECTRIC MOTOR
- BLOWER
- INLINE MIXER
- PROGRESSIVE CAVITY PUMP
- FE 36201 — PARSHALL FLUME

FLOW AND METERING SYMBOLS

- M — MAGNETIC FLOW METER
- TM — THERMAL MASS FLOW METER
- SONIC FLOW METER
- LEVEL SENSING FLOAT
- ULTRASONIC LEVEL ELEMENT
- FE — LEVEL SENSOR

AUTOMATION SYSTEM LEGEND

- CONTROL LOGIX 17 SLOT CHASSIS 1756-PA75
- ZZ / PP — PP YYYXX — ETHERNET PATCH PANEL CAT6 PANDUIT DP6 PLUS C/W ZZ 12 OF PORTS
  "PP" DENOTES ETHERNET COPPER PATCH PANEL
  "YYY" DENOTES PROCESS AREA NUMBER
  "XX" DENOTES PANEL NUMBER
  "ZZ" DENOTES NUMBER OF PATCH PORTS
- HMI — PANELVIEW PLUS 7 STANDARD TERMINAL, TOUCH SCREEN, 15 INCHES, TFT COLOR, SINGLE ETHERNET, MODEL: 2711P-T15C21D8S
- WAxx / YY — SURFACE/WALL MOUNT ETHERNET JACK MODULES, QUANTITY TO SUIT
  YY: DENOTES QUANTITY OF ETHERNET PORTS CONNECTED TO THE RESPECTIVE ORIGINATING SWITCH
  WAxx: WORK AREA OUTLET NUMBER/TAGS FOR EXAMPLE: WA01
- BRS30 — HIRSHMANN (BRS30-1604OOOO-SFCY99HHSES) MANAGED NETWORK SWITCH C/W ETHERNET PORTS AND UPLINK PORTS WITH SFP TRANSCEIVERS FOR EACH PORT. (1)
- UPS — UNINTERRUPTABLE POWER SUPPLY
- FPXX — FIBER CLOSET CONNECTOR HOUSING (CCH) PANEL
  "FP" INDICATES FIBER PTCH PANEL
  "XX" DENOTES PANEL NUMBER
- COMMUNICATION POLE
- ETHERNET PATCH PANEL CAT6 PANDUIT DP6 PLUS C/W 8 PORTS
- VFD STARTER C/W COMMUNICATIONS
- COMBINATION RECEPTACLE

LINE SYMBOLS:

- ETHERNET CABLE - CAT 6 10/100/1000 BASE T COMMUNICATIONS
- FIBER OPTIC PATCH CABLE 50mm/125mm
- FIBER OPTIC MULTI-STRAND BACKBONE CABLE 50mm/125mm
- PHONE CABLE - CAT3 (1)

ABBREVIATIONS

CCH	FIBER OPTIC CLOSET CONNECTOR HOUSING PANEL
CP	CONTROL PANEL
DRN	DRAINAGE
FRCL	FERROUS
Fz	FUSE
G	GROUND
ICP	INSTRUMENTATION'S CONTROL PANEL LINE
L	LINE
N	NEUTRAL
ODC	ODOUR CONTROL
PLC	PROGRAMMABLE LOGIC CONTROLLER
POLY	POLYMER
PREF	PRIMARY EFFLUENT
PRIN	PRIMARY INFLUENT
PRSC	PRIMARY SCUM
PRS	PRIMARY SLUDGE
PTT	PUSH TO TEST
RAS	RETURN ACTIVATED SLUDGE
RIO	REMOTE INPUT & OUTPUT HARDWARE
RPU	REMOTE PROCESSING UNIT
RWW	RAW WASTEWATER
SH	SHIELD
WAS	WASTE ACTIVATED SLUDGE

MATERIAL CODE

Cu	SCH. 10 COPPER
DI	DUCTILE IRON
PVC	SCH. 80 PVC
SS OR SS304	SCH. 10 304L STAINLESS STEEL
SS316	SCH. 10 316L STAINLESS STEEL

GENERAL NOTES:

1. IN GENERAL,THE P & ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INSTRUMENT SOCIETY OF AMERICA, STANDARD PRACTICE ISA-S5.1. SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
2. SOME CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P & ID DRAWINGS. SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC.,WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS HAVE ALSO BEEN OMITTED.
3. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
4. PIPING AND EQUIPMENT LEGEND APPLIES TO P & ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

INSTRUMENTATION
LEGEND &
GENERAL NOTES
(2)

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	I-002

PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt

INSTRUMENTATION CONTROL PANEL BILL OF MATERIAL

ITEM	TAG	QTY	MAKE	MODEL	DESCRIPTION	CERT.
1.0	ENCL	1	EUROBEX		NEMA 12 PAINTED STAINLESS STEEL, TWO-DOOR ENCLOSURE PHOSPHATIZED, PRIMED, AND PAINTED WITH ASA61 GRAY ENAMEL INSIDE AND OUT; 2286MM (H) X 1829MM (W) X 508MM (D), C/W PAD LOCKABLE HANDLES, 3-POINT LATCHING, WINDOWS & PLASTIC LITERATURE POCKET.	CSA
1.1	BP	1	EUROBEX		BACK PANELS, QTY 1 OF 1981MM(H) X 1726MM(W)	CSA
1.2	SHLF	1	EUROBEX	880 FS1818	FOLDING SHELF, METAL, 18"x18"	CSA
2	FL1	1	CFI	SB124-120SO	24" 120VAC LIGHT FIXTURE C/W LAMP	CSA
3	LS1	1	OMRON	A-20GQ-B7-K	PANEL DOOR ACTIVATED LIGHT SWITCH, 7.5A, c/w SWITCH COVER (PART #: AP-Z)	CSA
4	PS1,2	2	PHOENIX CONTACT	2866750	24VDC 5A POWER SUPPLY, QUINT-PS/1AC/24DC/5	CSA
5	EY	1	PHOENIX CONTACT	2320157	REDUNDANCY MODULE, 2 x 20A (INPUT)MAX, DIODE/12-24DC/2X20/1X40	CSA
6	S-S	1	PHOENIX CONTACT	2907918	120VAC IN/OUT SURGE PROTECTOR, 26A PLT-SEC-T3-120-FM-UT	CSA
7	CB1, CB2	2	ABB/ENTRELEC	SC261MZ20	120VAC 60HZ 20A 1 POLE CIRCUIT BREAKER	CSA
8			ABB/ENTRELEC	1SNA115661R2100	120VAC FUSE TERMINAL BLOCK WITH INDICATOR c/w FAST ACTING FUSE	CSA
9		AS REQ	ABB/ENTRELEC	1SNA115663R2300	24VDC FUSE TERMINAL BLOCK WITH INDICATOR c/w FAST ACTING FUSE	CSA
10	IL1	1	ALLEN BRADLEY	800T-QR1H2W	"POWER OK" WHITE PUSH-TO-TEST LED, PILOT LIGHT	CSA
11	IL2	1	ALLEN BRADLEY	800MP-LE4	"GENERAL FAULT" RED CAP EXTENDED PUSH-TO-TEST BUTTON	CSA
12	TB's (NOTE 1)	AS REQ	ABB/ENTRELEC	1SNA115116R0700	GREY SINGLE DECK TERMINAL BLOCK	CSA
				1SNA125116R0100	BLUE SINGLE DECK TERMINAL BLOCK	CSA
				1SNA115687R1400	SWITCH TERMINAL BLOCK WITH BLADE	CSA
				1SNA118368R1600	SINGLE DECK TERMINAL BLOCK END PLATE	CSA
				010300226	FUSE TERMINAL BLOCK END PLATE	CSA
				010300226	END STOP	CSA
13	DIN	AS REQ	PHOENIX CONTACT	1201730	TS 35x7.5 DIN RAIL. STEEL	CSA
14		AS REQ	PANDUIT	TYPE F	GRAY PVC WIRE DUCT & COVER, SIZE AS ON LAYOUT DRAWING	CSA
15.0	REC1	1	HUBBELL	HBL5262I	120VAC 15A DUPLEX RECEPTACLE, NEMA 5-15R, IVORY	CSA
15.1	REC2	1	HUBBELL	RR201	120VAC 20A SIMPLEX RECEPTACLE, NEMA 5-20R, BROWN	CSA
16	RBOX	2	IBERVILLE	BC1110	RECEPTACLE BOX	CSA
17		1	PHOENIX CONTACT	5500521	120VAC 5A RECEPTACLE WITH RJ45 CONNECTOR	CSA
18	UPS01	1	POWERWARE	9SX1500	120VAC/120VAC UPS,1500VA/1350W, ETHERNET COMPATIBLE	CUL
	EBM1	1	POWERWARE	9SXEBM48	EXTENDED BATTERY MODULE FOR 9SX1500	CUL
		1	POWERWARE	RELAY-MS	RELAY INTERFACE CARD UPS, CONTACT RATED 40VAC/50VDC, 1A (5 CONTACTS) 200mA (PER CONTACT)	CUL
19	MBM	1	POWERWARE	EHBPL1500R-PDU1U	MAINTENANCE BYPASS MODULE	CSA
20	PS1EA, PS2EA, XA, CRXX	17	OMRON	G2R-1-SN-DC24S	24VDC SPDT INTERPOSING RELAY WITH INDICATOR, CONTACT 10A	CSA
				P2RF-05-E	SCREW TERMINAL SOCKET SPDT INTERPOSING RELAY	CSA
21	PFR, CR-XA, DOs	50	OMRON	G2R-1-SN-AC120S	120VAC SPDT INTERPOSING RELAY WITH INDICATOR, CONTACT 10A	CSA
				P2RF-05-E	SCREW TERMINAL SOCKET SPDT INTERPOSING RELAY	CSA
22	ICP-0001	1	ALLEN BRADLEY	1756-A17	17 SLOT CHASSIS	CSA
		1	ALLEN BRADLEY	1756-PA75	120VAC 60Hz POWER SUPPLY, 100VA MAX @ INPUT	CSA
		1	ALLEN BRADLEY	1756-N2	EMPTY SLOT COVER	CSA
		1	ALLEN BRADLEY	1756-L83E	CONTROLOGIX CPU WITH 10MB USER MEMORY	CSA
		6	ALLEN BRADLEY	1756-IA16I	16 POINT ISOLATED DISCRETE INPUT MODULE, 120VAC	CSA
		3	ALLEN BRADLEY	1756-OA16I	16 POINT ISOLATED RELAY DISCRETE OUTPUT MODULE, N.O. CONTACT	CSA
		4	ALLEN BRADLEY	1756-IF8IH	8 POINT ISOLATED ANALOG INPUT MODULE WITH HART PROTOCOL, 4-20mA	CSA
		2	ALLEN BRADLEY	1756-OF8I	8 POINT ISOLATED ANALOG OUTPUT MODULE, 4-20mA	CSA
		2	ALLEN BRADLEY	1756-TBNH	REMOVABLE TERMINAL BLOCK HOUSING FOR DI & AO (20 PINS)	
		2	ALLEN BRADLEY	1756-TBCH	REMOVABLE TERMINAL BLOCK HOUSING FOR DO & AI (36 PINS)	
23		AS REQ	ILSCO	N-174	COPPER GROUND BAR 6-14 AWG	CSA
24		AS REQ	ILSCO	SLU-125	COPPER GROUND LUG 1/0-6 AWG	CSA
25						
26	HMI1	1	ALLEN BRADLEY	PANEL VIEW PLUS 7	15" HMI TOUCH C/W FACTORYTALK VIEW ME SOFTWARE	CUL
27		1	CUSTOM MADE		BREAKER AND FUSE TABLE WITH PLEXIGLASS COVER	CSA
28		1	PANDUIT	CDPP8RG	ETHERNET PATCH PANEL CAT6 PANDUIT DP6 PLUS C/W 8 PORTS	CSA

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

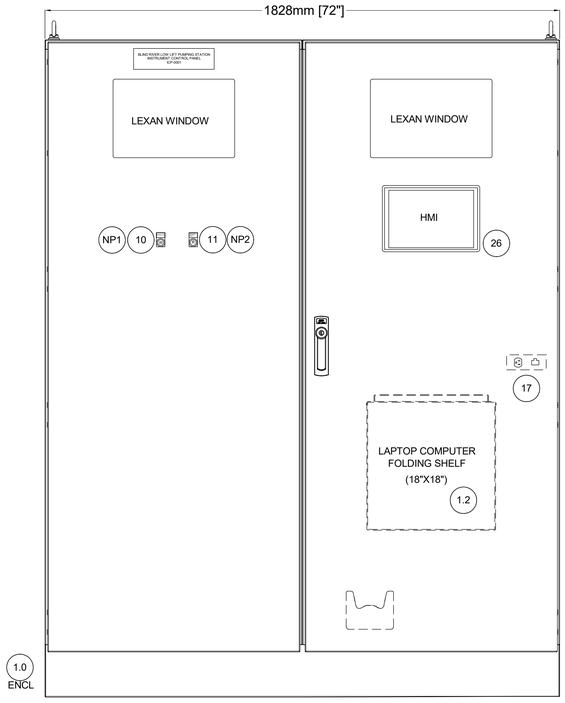
INSTRUMENT
CONTROL PANEL
BILL OF MATERIAL

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

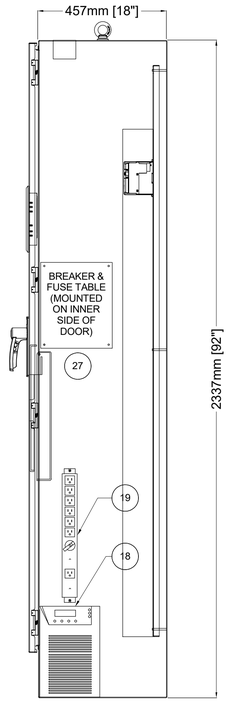
SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	I-501

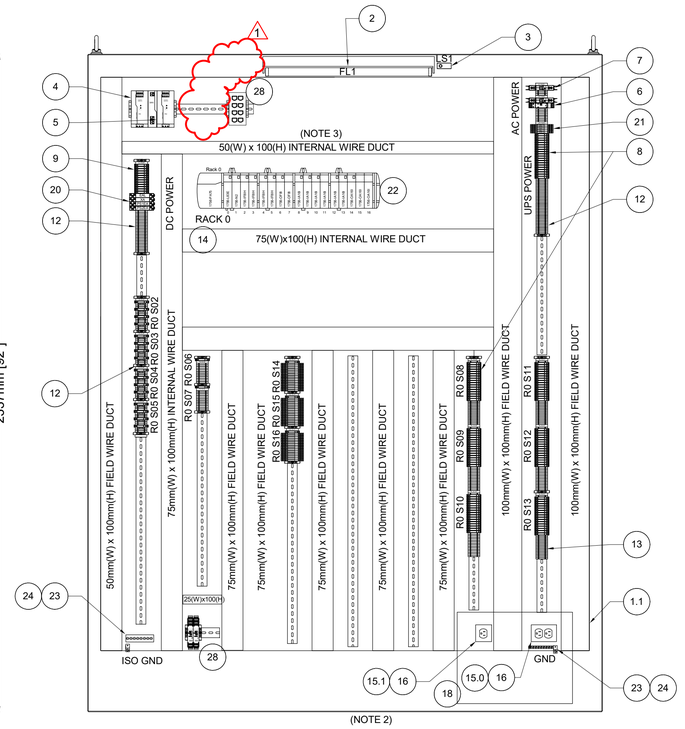
PATH: Autodesk Docs://C12 Blind River LLPS - T001592B/1592-E Blind River Elec.rvt



PANEL FRONT LAYOUT



SIDE VIEW



INTERNAL LAYOUT

1 INSTRUMENT CONTROL PANEL

SCALE: NTS

NAMEPLATE LEGEND

POWER ON	NP1
GENERAL FAULT	NP2

NOTES:

1. PROVIDE A CONCRETE HOUSE KEEPING PAD FOR EACH ICP.
2. CONTROL ENCLOSURES TO BE FULL DEPTH C/W BACK PLATE FOR MOUNTING.
3. PROVIDE VENTILATION FOR THE CONTROL PANEL AS REQUIRED TO MITIGATE TEMPERATURE RISE INSIDE OF THE RESPECTIVE PANEL. PANEL TEMPERATURE SHALL NOT EXCEED 29 DEGREES CELSIUS. ALL VENTILATION OPENINGS SHALL C/W REMOVABLE FILTERS.
4. PROVIDE CONTINUOUS CLEAR CONTROL PANEL FLOOR SPACE TO SUIT THE UPS INSTALLATION, INCLUDING A 50MM PERIMETER OF CLEAR FLOOR AREA BEYOND THE UPS FOOT PRINT.
5. PROVIDE 200 MM MINIMUM CLEARANCE TO SUIT THE FRONT UPS DISPLAY AND 150 MM CLEARANCE TO SUIT THE UPS REAR RECEPTACLES.
6. PROVIDE A FOLD DOWN SHELF AND COMBINATION RECEPTACLE ON THE INSIDE DOOR OF THE CONTROL PANEL.
7. ALL CONTROL SYSTEM COMPONENTS INCLUDING TERMINAL BLOCKS, WIRING, WIRE WAYS, PC, ETC. ARE TO BE MOUNTED ON THE BACK PLATE. PROVIDE ADDITIONAL CONTROL SECTIONS AS REQUIRED TO SUIT THE DESIGN OF THE CONTROL PANEL APPLICATION. DO NOT MOUNT ANY CONTROL SYSTEM COMPONENTS ON THE RESPECTIVE PANEL SIDE WALLS.
8. PANDUIT TYPE WIRE WAYS SHOWN ON LAYOUT ARE TO BE CONSIDERED MINIMUM REQUIREMENT. THE CONTRACTOR IS REQUIRED TO DESIGN THE PANEL LAYOUT TO SUIT THE SPECIFIC APPLICATION.
9. UPS POWER FEED RECEPTACLE COLOR TO BE ORANGE.
10. PROVIDE SUFFICIENT CLEARANCE HEIGHT FOR ALL COMMUNICATION'S SHELVING TO SUIT COMMUNICATION EQUIPMENT AS REQUIRED.
11. PROVIDE ADDITIONAL CONTROL PANEL SECTION AS REQUIRED IN TERMS OF WIDTH OF THE PANEL. ADDITIONAL SECTION TO BE PART OF A SINGLE MULTI DOOR PANEL ARRANGEMENT. THE MINIMUM IS A TWO-DOOR PANEL CONTRACTOR TO COORDINATE THE HOUSEKEEPING PAD DIMENSIONS AND FLOOR CORING REQUIREMENT WITH THE CONTROL PANEL DIMENSIONS.
12. THE CONTROL PANEL LAYOUT IS FOR ILLUSTRATION PURPOSES. CONTRACTOR IS TO DESIGN THE CONTROL PANEL LAYOUT BASED ON THE ILLUSTRATION DRAWING THAT HAS BEEN PROVIDED.
13. THE NEW ICP SHALL BE INSTALLED ON CONCRETE PAD. THE CONCRETE PAD IS TO MATCH THE HEIGHT OF THE MCC PAD.
14. EACH LOOP POWERED DEVICE SHALL USE ITS OWN POWER SOURCE FUSE. USING A COMMON BREAKER/FUSE FOR MORE THAN 1 LOOP POWERED DEVICE IS UNACCEPTABLE.
15. ALL OTHER ANALOG INSTRUMENTS ARE TO BE LOOP POWERED VIA THE IC POWER SUPPLY.
16. ALL WIRE LABELS SHALL BE HEAT SHRUNK PRIOR TO THE PANEL BEING SHIPPED.
17. CONTRACTOR TO REFER TO THE CONTRACT I/O LIST TO DETERMINE THE SIZE OF THE PANEL BASED ON RACK NUMBER AND SPARE SPACE AND I/O QUANTITY. THE PANEL LAYOUT IS SHOWN FOR ILLUSTRATION PURPOSES ONLY WITH ONE RACK AND ONE SPACE FOR FUTURE. THE I/O LIST MAY INCLUDE LESS RACKS OR MORE RACKS. THE ICP SHALL BE SIZES AND DESIGNED TO SUIT THE I/O LIST DESIGN.
18. INSTALL THE HMI 1.55m FROM THE FLOOR (INCLUDING CONCRETE PAD) TO THE CENTER OF THE HMI.

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT:

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

INSTRUMENT
CONTROL PANEL
LAYOUT

RW	DT	DC	MG
DRAWN	DESIGNED	CHECKED	APPROVED

N.T.S.	FEB 2026
SCALE	DATE

T001592B	1	I-502
PROJECT NO.	REVISION	DRAWING

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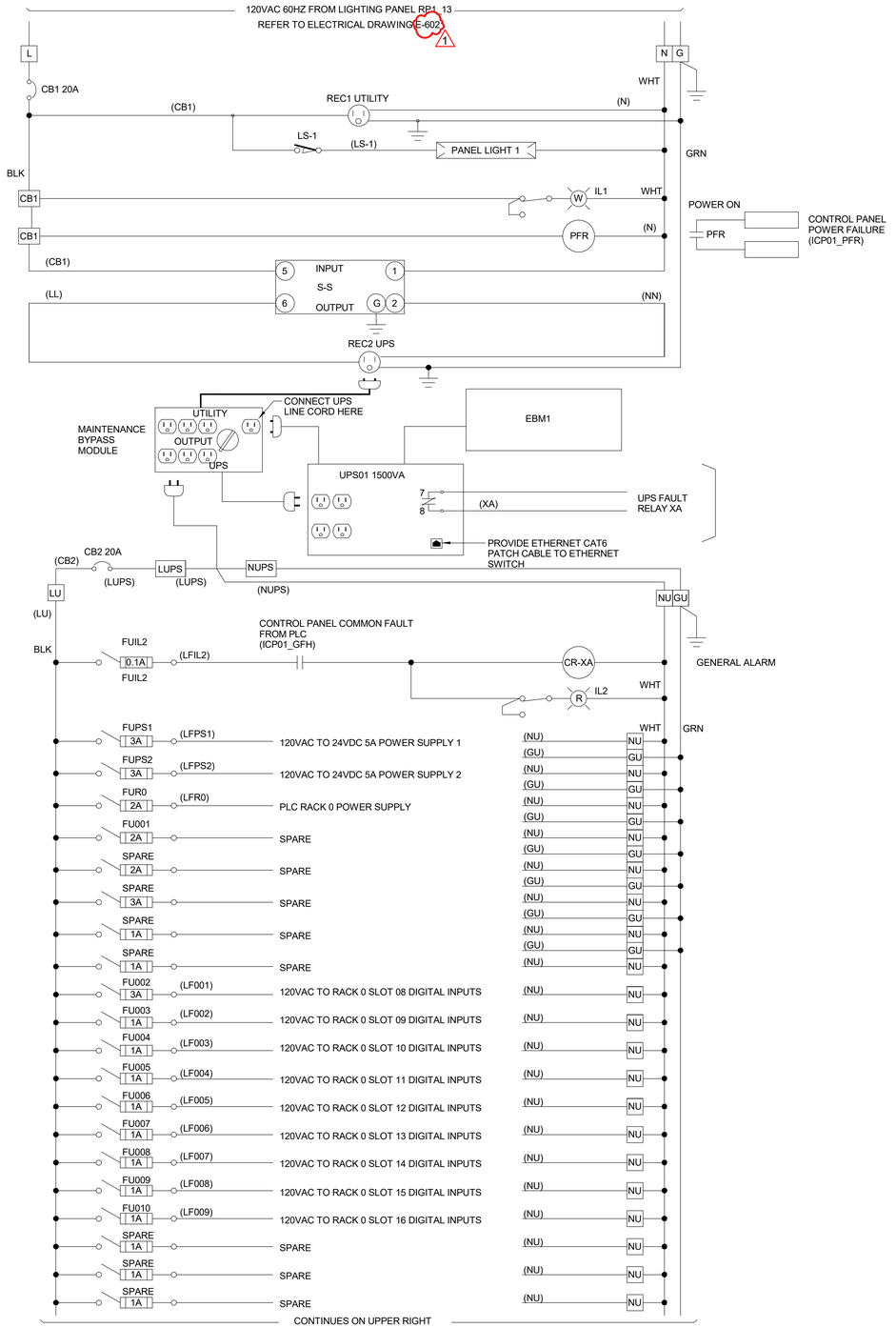

NOTES:

1. PROVIDE LOOP POWER TO ALL 24 VDC LOOP POWERED DEVICES SUCH AS ULTRASONIC LEVEL TRANSMITTERS AND PRESSURE TRANSMITTERS.
2. EACH LOOP POWERED DEVICE SHALL USE A DEDICATED FUSE FOR POWER. USING A COMMON FUSE FOR MULTIPLE DEVICES IS NOT ACCEPTABLE.
3. ALL WIRE LABELS SHALL BE HEAT SHRUNK PRIOR TO THE PANEL BEING SHIPPED.

KEY PLAN

ENGINEER'S SEAL:

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JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

INSTRUMENT
CONTROL PANEL
POWER
DISTRIBUTION (1)

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	I-503

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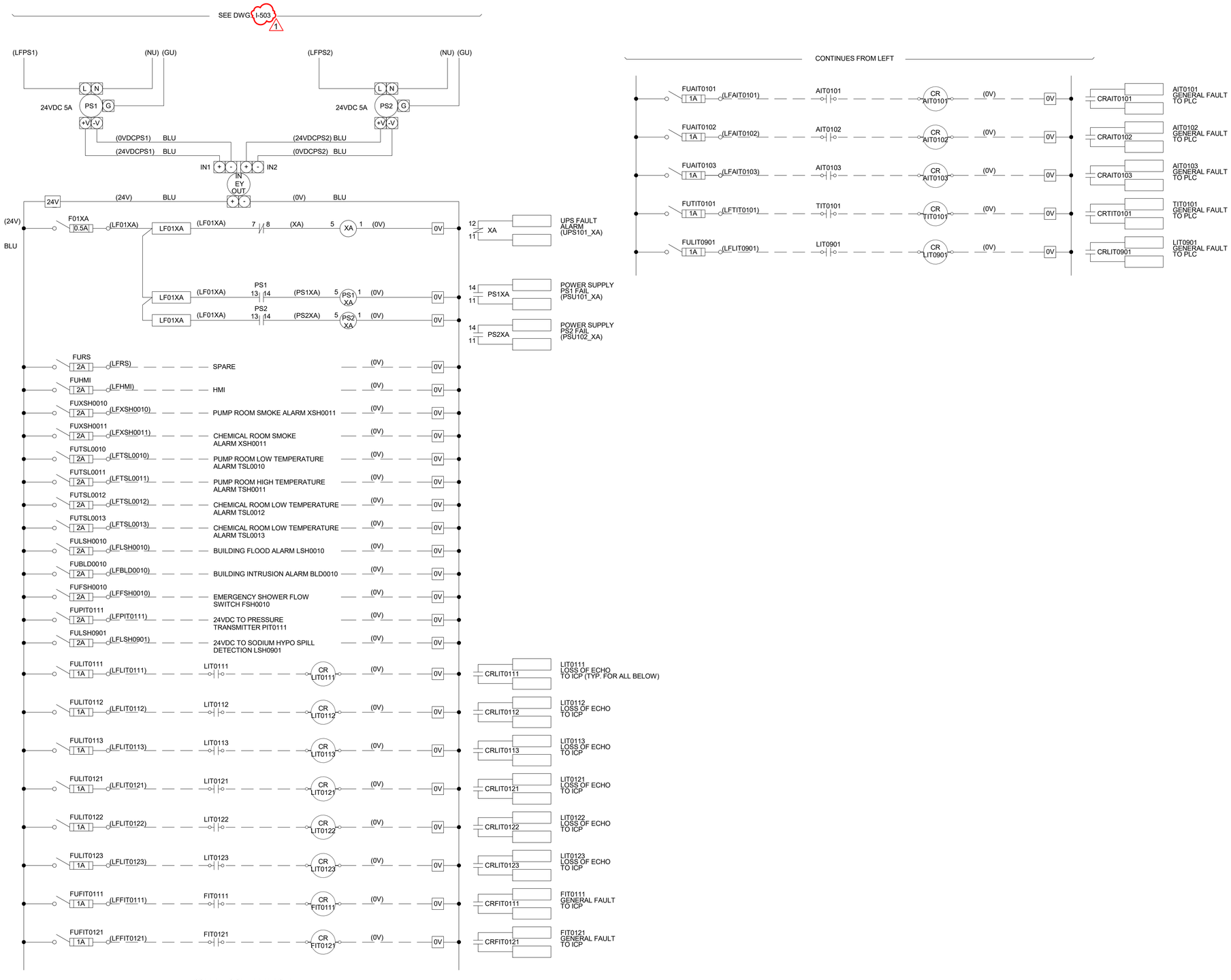

KEY PLAN

ENGINEER'S SEAL:

DATE	REV.	REVISION	BY	APP'D
FEB 2026	1	ISSUED FOR ADDENDUM No. 6	MG	DC
JAN 2026	0	ISSUED FOR TENDER	MG	DC

CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

INSTRUMENT
CONTROL PANEL
POWER
DISTRIBUTION (2)

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	I-504

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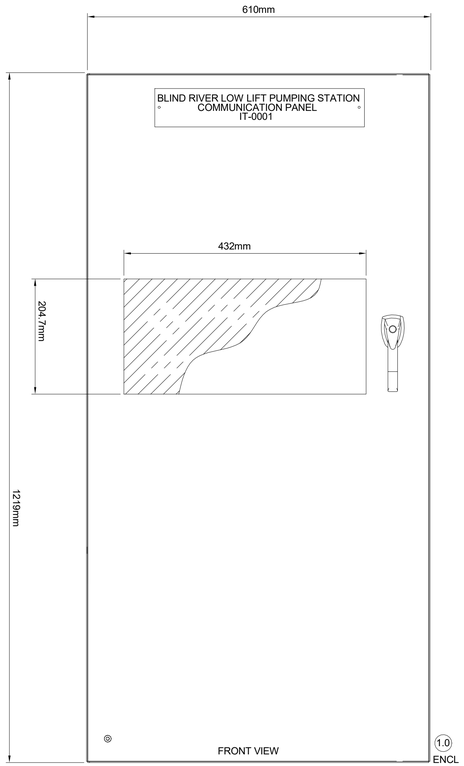

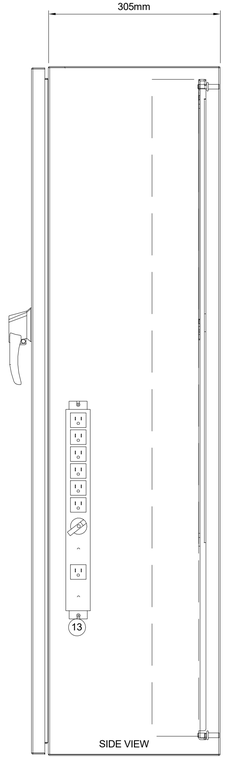

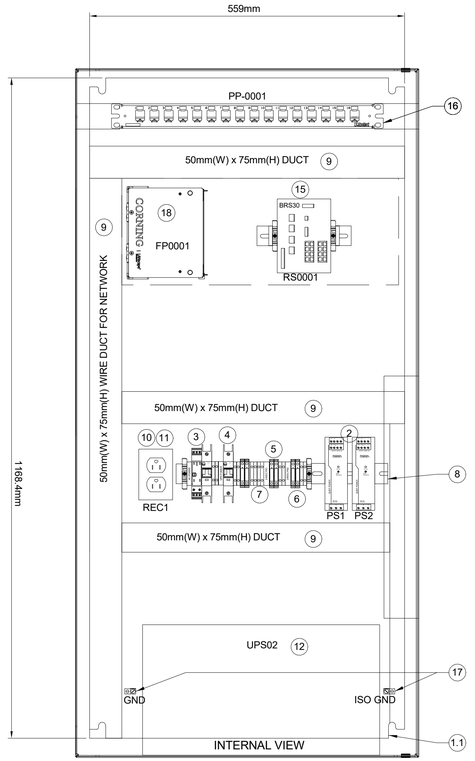

BILL OF MATERIAL

ITEM	TAG	QTY	MAKE	MODEL	DESCRIPTION	CERT.
1.0	ENCL	1	EUROBEX	5412ES482412	NEMA 4X, DUST WATER OIL AND DUST TIGHT ENCLOSURE, 1219mm (H) x 610mm (W) x 305mm (D), c/w INNER PANEL & CLEAR VIEW WINDOW ON KEY LOCK HANDLE	CSA
1.1	BP	1	EUROBEX	C/W ENCLOSURE	BACK PANEL, 1168mm (H) x 559mm (W)	CSA
2	PS1,2	2	PHOENIX CONTACT	2907918	24VDC 5A POWER SUPPLY, QUINT-PS/1AC/24DC/5	CSA
3	S-S	1	PHOENIX CONTACT	SU201M-Z15	120VAC IN/OUT SURGE PROTECTOR, 26A, PLT-SEC-T3-120-FM-UP	CUL
4	CB1	1	ABB/ENTRELEC	SU201M-Z10	120VAC 60HZ 15A 1 POLE CIRCUIT BREAKER	CSA
	CB2	1	ABB/ENTRELEC	1SNA115661R2100	120VAC 60HZ 10A 1 POLE CIRCUIT BREAKER	CSA
5		AS REQ	ABB/ENTRELEC	1SNA115663R2300	120VAC FUSE TERMINAL BLOCK WITH INDICATOR c/w FAST ACTING FUSE	CSA
6		AS REQ	ABB/ENTRELEC	1SNA115116R0700	24VDC FUSE TERMINAL BLOCK WITH INDICATOR c/w FAST ACTING FUSE	CSA
7	TB's	AS REQ	ABB/ENTRELEC	1SNA115116R0700	GREY SINGLE DECK TERMINAL BLOCK	CSA
				1SNA125116R0100	BLUE SINGLE DECK TERMINAL BLOCK	CSA
				1SNA115687R1400	SWITCH TERMINAL BLOCK WITH BLADE	CSA
				1SNA115271R2200	GREY DOUBLE DECK TERMINAL BLOCK	CSA
				1SNA125126R0300	BLUE DOUBLE DECK TERMINAL BLOCK	CSA
				1SNA118368R1600	SINGLE DECK TERMINAL BLOCK END PLATE	CSA
				1SNA125126R0300	DOUBLE DECK TERMINAL BLOCK END PLATE	CSA
				010300226	FUSE TERMINAL BLOCK END PLATE	CSA
				010300226	END STOP	CSA

BILL OF MATERIAL CONTINUED

ITEM	TAG	QTY	MAKE	MODEL	DESCRIPTION	CERT.
8	DIN	AS REQ	PHOENIX CONTACT	1201730	TS 35x7.5 DIN RAIL. STEEL	CSA
9		AS REQ	PANDUIT	TYPE F	GRAY PVC WIRE DUCT & COVER, SIZE AS ON LAYOUT DRAWING	CSA
10	REC1	1	HUBBELL	IG5362	120VAC 15A DUPLEX RECEPTACLE, NEMA 5-15R, ORANGE	CSA
11	RBOX	1	IBERVILLE	40-111WP	RECEPTACLE BOX	CSA
12	UPS02	1	POWERWARE	9SX700	120VAC/120VAC UPS, 700VA/630W, ETHERNET COMPATIBLE	CUL
13	MBP02	1	POWERWARE	EHBPL1500R-PDU1U	BYPASS MODULE	CUL
14						
15	RS0001	1	HIRSCHMANN	BRS30-16TX/4SFP	(BRS30-1604OOOO-SFCY99HHSES) MANAGED NETWORK SWITCH C/W ETHERNET PORTS AND SFP TRANSCEIVERS	CSA
16	PP0001	1	PANDUIT	CP16WSBLY	16-PORT MODULAR PATCH PANEL SUPPLIED WITH 16 MINI-COM TX6 CATEGORY 6 JACK MODULES (CJ688TG-BU)	CUL
17		AS REQ	ILSCO	SLU-125	COPPER GROUND LUG 1/0-6 AWG	CSA
18	FP0001	1	CORNING	SPH-01	WALL-MOUNTED FIBER OPTIC PATCH PANEL C/W SC FIBRE ADAPTER PANEL, CCH-CP12-G7	CUL

KEY PLAN

ENGINEER'S SEAL:

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FEB 2026	0	ISSUED FOR ADDENDUM No. 6	MG	DC

CLIENT:

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

IT PANEL LAYOUT

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	0	I-509

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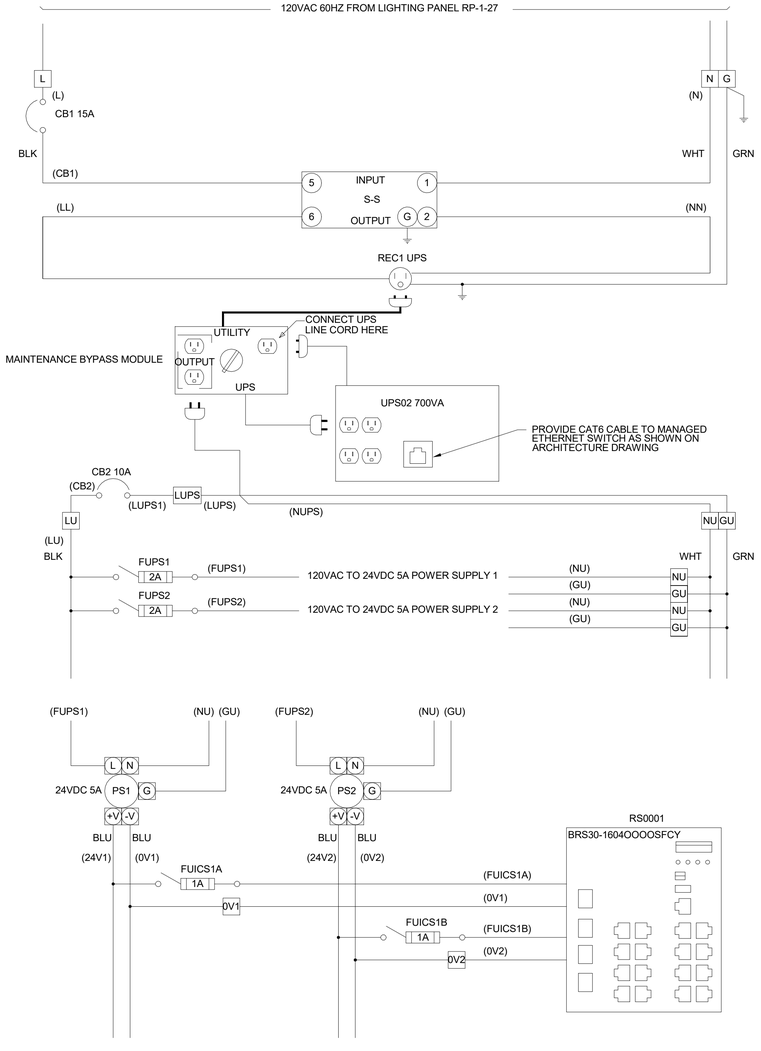

NOTE:

1. CONTRACTOR TO PROVIDE A DETAILED SHOP DRAWING WITH THE WIRING SCHEMATIC FOR REVIEW.

KEY PLAN

ENGINEER'S SEAL:

FEB 2026	0	ISSUED FOR ADDENDUM No. 6	MG	DC
DATE	REV.	REVISION	BY	APP'D

CLIENT:

Blind River

CONSULTANT:

CIMA+

CONSULTANT:

TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

IT PANEL POWER DISTRIBUTION

RW	DT	DC	MG
DRAWN	DESIGNED	CHECKED	APPROVED
N.T.S.		FEB 2026	
SCALE		DATE	

T001592B	0	I-510
PROJECT NO.	REVISION	DRAWING

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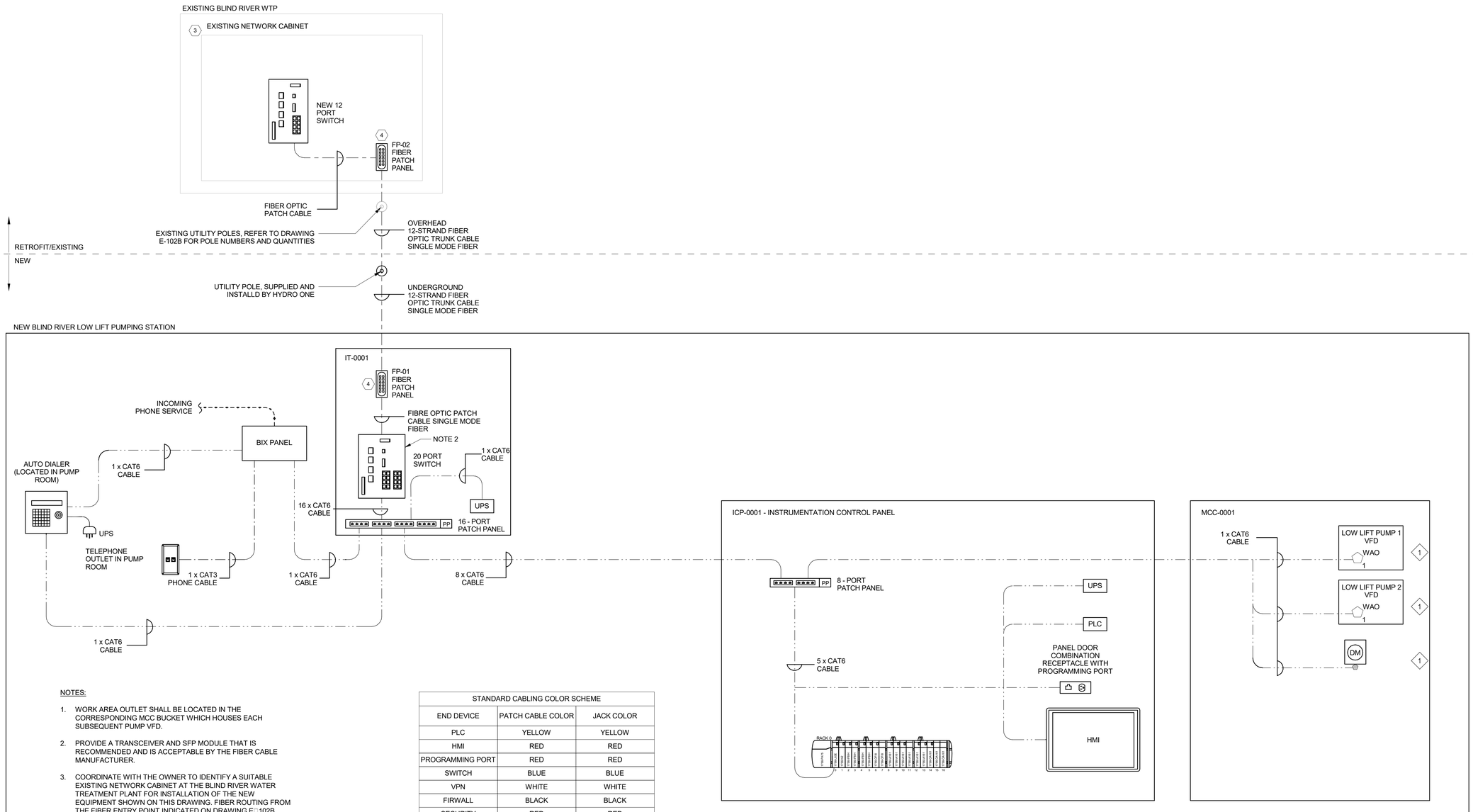

NOTES:

1. WORK AREA OUTLET SHALL BE LOCATED IN THE CORRESPONDING MCC BUCKET WHICH HOUSES EACH SUBSEQUENT PUMP VFD.
2. PROVIDE A TRANSCEIVER AND SFP MODULE THAT IS RECOMMENDED AND IS ACCEPTABLE BY THE FIBER CABLE MANUFACTURER.
3. COORDINATE WITH THE OWNER TO IDENTIFY A SUITABLE EXISTING NETWORK CABINET AT THE BLIND RIVER WATER TREATMENT PLANT FOR INSTALLATION OF THE NEW EQUIPMENT SHOWN ON THIS DRAWING. FIBER ROUTING FROM THE FIBER ENTRY POINT INDICATED ON DRAWING E□102B SHALL BE PLANNED TO MINIMIZE TOTAL FIBER LENGTH. THE CONTRACTOR SHALL SUBMIT THE PROPOSED EQUIPMENT LOCATIONS AND FIBER ROUTING TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION AND FINAL CONNECTION.
4. SINGLE MODE C/W SINGLE MODE SFP MODULE.
5. ALL FIBER INSTALLATION AND COMMISSIONING SHALL BE PERFORMED BY THE CONTRACTOR. FOR FIBER INSTALLATIONS ON UTILITY□OWNED POLES, ALL WORK SHALL BE PERFORMED BY A UTILITY□APPROVED CONTRACTOR AS IDENTIFIED IN THE APPLICABLE JOINT USE AGREEMENT AND/OR PERMIT. REFER TO E-102B FOR MORE INFORMATION.

STANDARD CABLING COLOR SCHEME		
END DEVICE	PATCH CABLE COLOR	JACK COLOR
PLC	YELLOW	YELLOW
HMI	RED	RED
PROGRAMMING PORT	RED	RED
SWITCH	BLUE	BLUE
VPN	WHITE	WHITE
FIRWALL	BLACK	BLACK
SECURITY	RED	RED
MODEM	BLUE	BLUE
UPS	RED	RED

NOTE:

1. THE ABOVE IS INCLUDED FOR GENERAL INFORMATION. CONTRACTOR SHALL ADHERE TO ALL REGION SPECIFIC CABLING COLOUR AS REQUIRED.

1 NETWORK ARCHITECTURE
SCALE: N.T.S.

KEY PLAN

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CLIENT: Blind River

CONSULTANT: CIMA+

CONSULTANT: TULLOCH

PROJECT TITLE:

BLIND RIVER
INTAKE AND LLPS

DRAWING TITLE:

NETWORK
ARCHITECTURE

DRAWN	DESIGNED	CHECKED	APPROVED
RW	DT	DC	MG

SCALE	DATE
N.T.S.	FEB 2026

PROJECT NO.	REVISION	DRAWING
T001592B	1	I-603

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