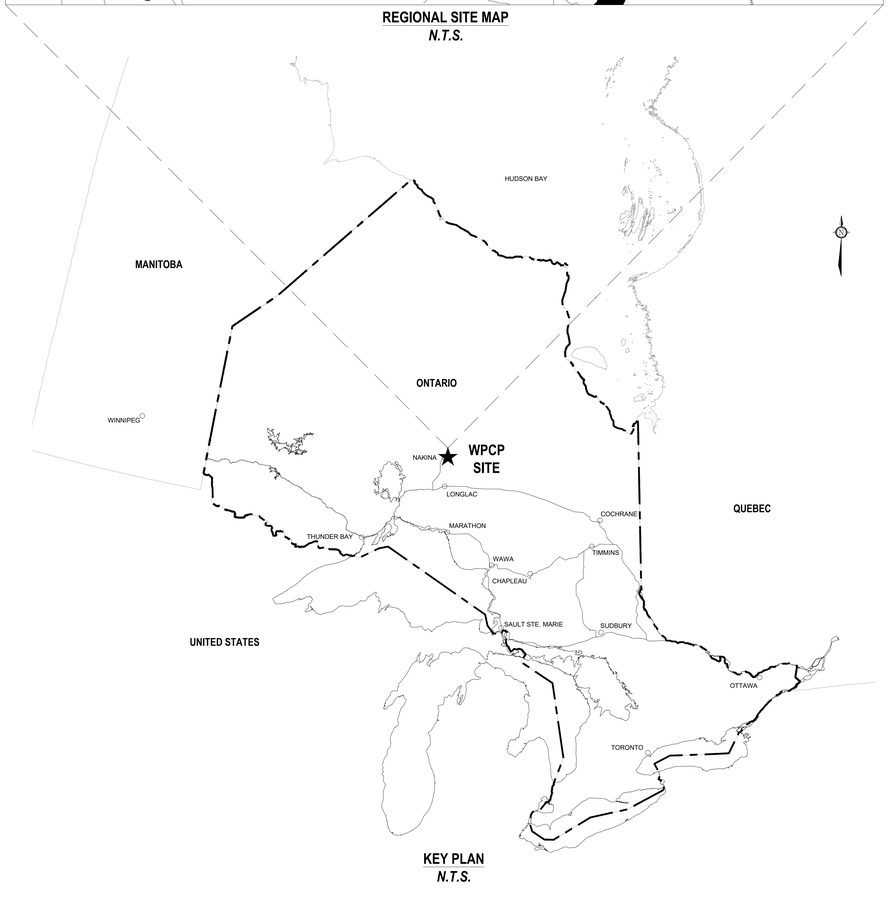
REGIONAL SITE MAP
N.T.S.



KEY PLAN
N.T.S.

NAKINA WPCP
Dechlorination Project

PROJECT NO. – 201–05557–00
CONTRACT NO. – RFS002–2020

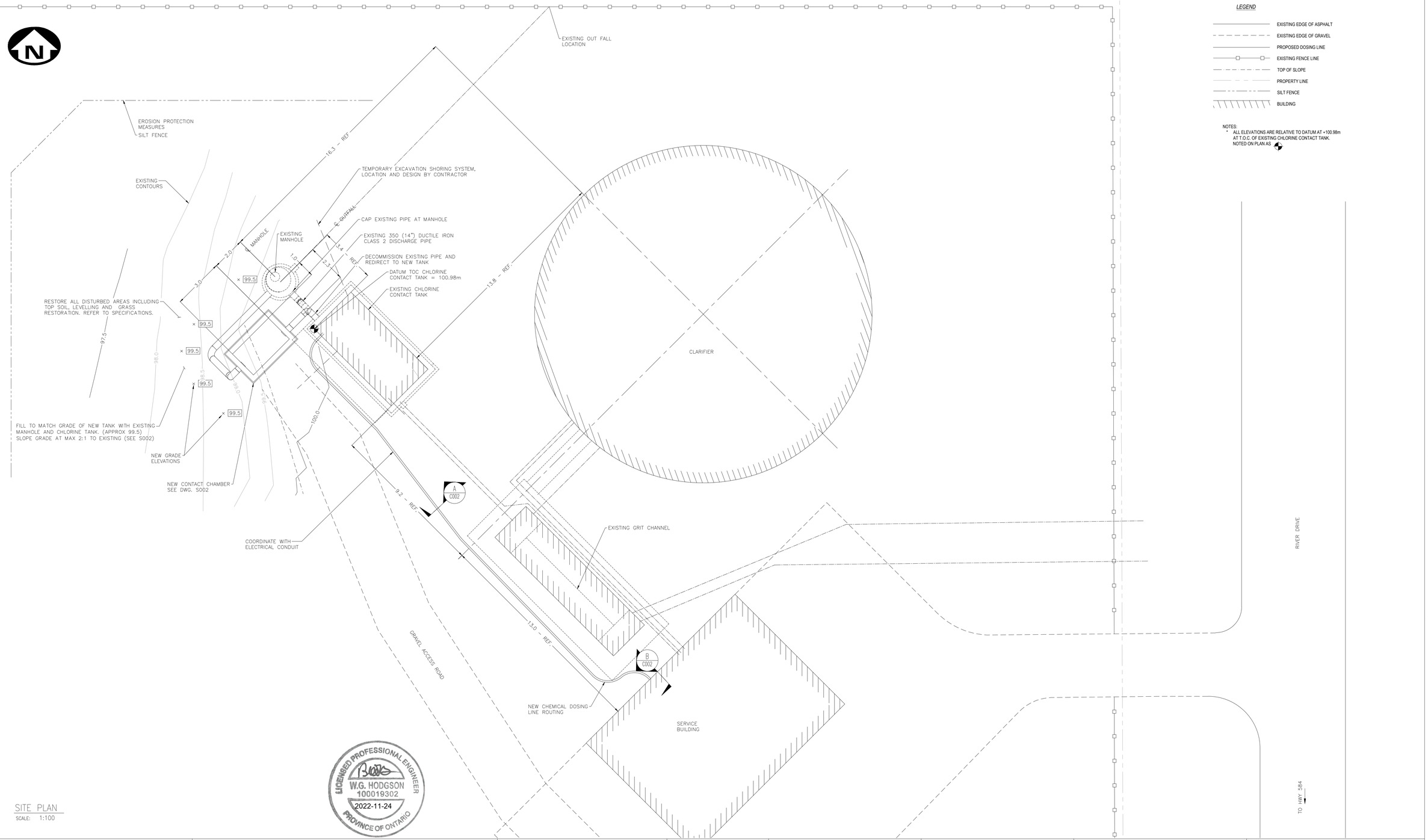
ISSUED FOR TENDER
NOVEMBER 2022

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

1269 PREMIER WAY
THUNDER BAY ONTARIO CANADA P7B 0A3
TEL: 1-807-625-6700|FAX: 1-807-623-4491|WWW.WSP.COM

DRAWING INDEX

file reference	drawing number
–	G001 OF
date	sheet number
NOVEMBER 2022	OF



SITE PLAN
SCALE: 1:100

LEGEND

- EXISTING EDGE OF ASPHALT
- EXISTING EDGE OF GRAVEL
- PROPOSED DOSING LINE
- EXISTING FENCE LINE
- TOP OF SLOPE
- PROPERTY LINE
- SILT FENCE
- BUILDING

NOTES:
* ALL ELEVATIONS ARE RELATIVE TO DATUM AT +100.98m AT T.O.C. OF EXISTING CHLORINE CONTACT TANK. NOTED ON PLAN AS

LICENSED PROFESSIONAL ENGINEER
W.G. HODGSON
100019302
2022-11-24
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
P.R. BARNWELL
2467504
2022/11/23
PROVINCE OF ONTARIO

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
C001	DOSING YARD PIPING AND HYDRAULIC PROFILE
S002	NEW CONTACT CHAMBER PLAN

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
0	NOV. 2022	ISSUED FOR TENDER	KPD	LMH	AT

SEAL

DISCLAIMER COPYRIGHT

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

CLIENT
Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
-

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER
201-05557-00

ISSUE STATUS
FOR TENDER

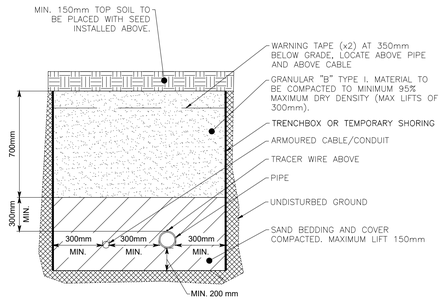
	INITIALS	YYYY-MM-DD
DESIGNED BY	L.HABIB	2022-11-04
DESIGN CHECKED BY	P.BARNWELL	2022-11-04
DRAWN BY	K. DANIELS	2022-11-04
DRAWING CHECKED BY	L.HABIB	2022-11-04
PROJECT MANAGER	A. TARANOVSKA	2022-11-04

SCALE AS NOTED
SHEET NUMBER - OF -

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

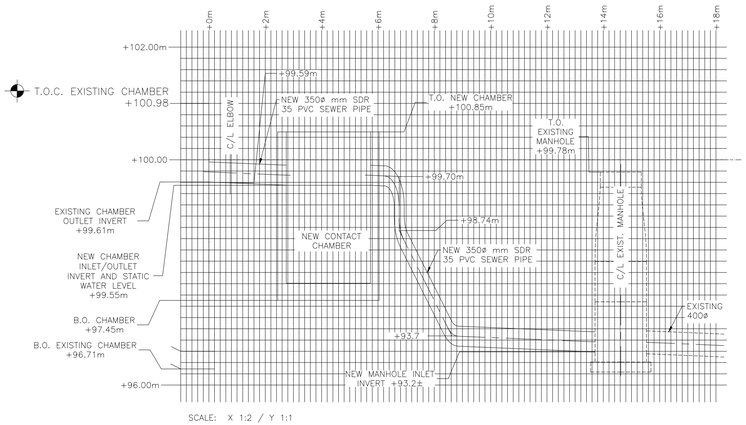
DRAWING TITLE
SITE PLAN

DRAWING NUMBER
C001
0



A C001 TYPICAL TRENCH DETAIL

SCALE: N.T.S.



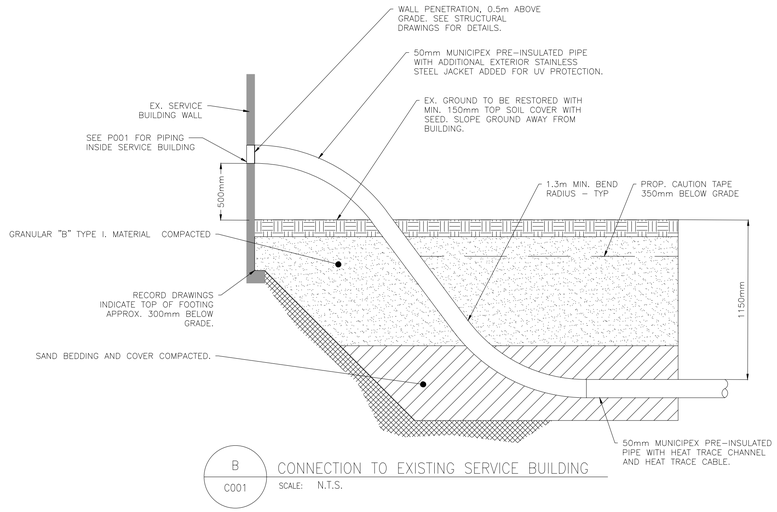
SCALE: X 1:2 / Y 1:1

HYDRAULIC PROFILE

SCALE: 1:100

NOTES

1. ALL WORK TO BE CONSTRUCTED IN ACCORDANCE WITH CURRENT MUNICIPAL, OPSD AND OPSS STANDARDS AND TO THE SATISFACTORY OF THE CONSULTING ENGINEER.
2. CONTRACTOR SHALL COORDINATE AND COMPLY WITH THE REQUIREMENTS OF ALL UTILITIES WHEN CROSSING OR WORKING NEAR THE EXISTING UTILITIES.
3. THE VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR. THE INFORMATION WILL BE PROVIDED TO THE CONSULTANT AND ANY IMPACTS TO ACHIEVING THE SHOWN DESIGN SHALL BE IDENTIFIED BY THE CONTRACTOR PRIOR TO EXCAVATION. EXCAVATION SHALL NOT COMMENCE UNTIL WRITTEN PERMISSION IS PROVIDED BY THE CONSULTANT.
4. THE CONTRACTOR SHALL ADEQUATELY SUPPORT ANY EXISTING UTILITIES WHEN CROSSING UNDER FOR PROPOSED TRENCHING.
5. THE CONTRACTOR SHALL RESTORE ALL AFFECTED AREAS TO EXISTING CONDITION OF BETTER.
6. NEW DIVERSION PIPES TO BE SDR 35 PVC SEWER PIPE. USE MECHANICAL JOINTS TO TIE INTO EXISTING DUCTILE IRON PIPES.
7. CONNECT EXISTING DISCHARGE ONCE NEW CHAMBER AND NEW DISCHARGE PIPES ARE IN PLACE AND READY TO COMMISSION TO MINIMIZE DOWNTIME OF THE PLANT.
8. PROVIDE TRENCHING AND/OR TEMPORARY SHORING AS REQUIRED BY EXCAVATION PLAN.
9. PROVIDE PROPER WALL PENETRATIONS AND SEALING AROUND PEX PIPE ENTERING THE BUILDINGS, AND A TRANSITION FITTING BETWEEN THE PEX PIPE AND THE PVC PIPE USED INSIDE THE BUILDING. TRANSITION TO OCCUR INSIDE BUILDING WITH HEAT TRACE CABLE LOCATED ON PEX PIPE ONLY.
10. THE CONTRACTOR SHALL MATCH PROPOSED GRADES TO EXISTING GRADES AND PROVIDE POSITIVE DRAINAGE AWAY FROM EXISTING AND PROPOSED STRUCTURES.



B C001 CONNECTION TO EXISTING SERVICE BUILDING

SCALE: N.T.S.

LICENSED PROFESSIONAL ENGINEER
W.G. HODGSON
100019302
2022-11-24
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
P.R. BARNWELL
2467504
2022/11/23
PROVINCE OF ONTARIO

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
P001	PROCESS FLOW DIAGRAM
S002	NEW CONTACT CHAMBER PLAN

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
0	NOV. 2022	ISSUED FOR TENDER	KPD	LMH	AT

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

CLIENT: Ontario Clean Water Agency / Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER: -

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER: 201-05557-00

ISSUE STATUS: FOR TENDER

	INITIALS	YYYY-MM-DD
DESIGNED BY	L.HABIB	2022.11.04
DESIGN CHECKED BY	P.BARNWELL	2022.11.04
DRAWN BY	K. DANIELS	2022.11.04
DRAWING CHECKED BY	L.HABIB	2022.11.04
PROJECT MANAGER	A. TARANOVSKA	2022.11.04

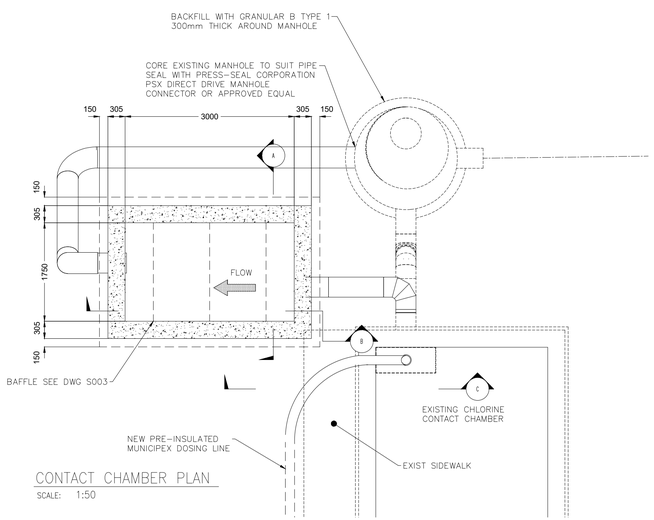
SCALE: AS NOTED

SHEET NUMBER: - OF -

PROJECT DESCRIPTION: WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

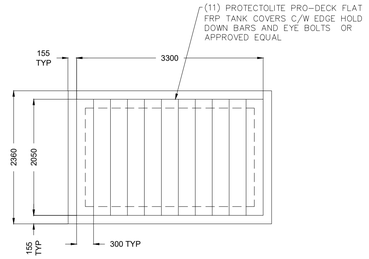
DRAWING TITLE: DOSING YARD PIPING & HYDRAULIC PROFILE

DRAWING NUMBER: C002 / 0



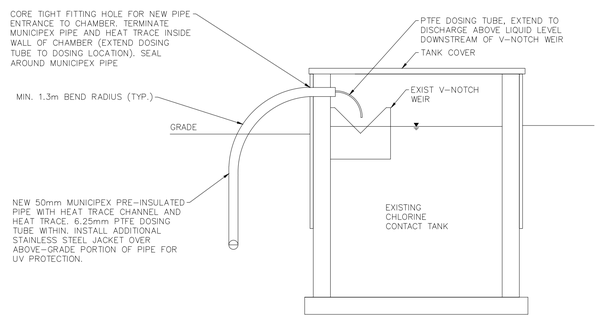
CONTACT CHAMBER PLAN

SCALE: 1:50



CONTACT CHAMBER PANEL PLAN

SCALE: 1:50

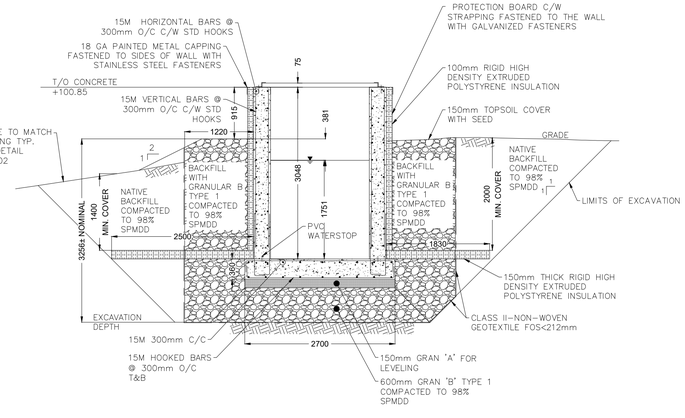


C — EXIST CONTACT TANK SECTION

SCALE: 1:50

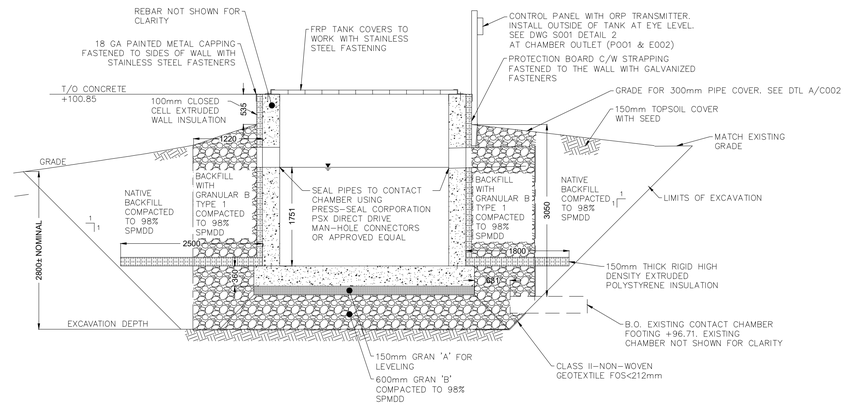
CONCRETE NOTES:

1. PROJECT SHALL CONFORM WITH THE FOLLOWING CODES/STANDARDS:
   - 1.1. CSA A23.3-14: CODE FOR DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS.
   - 1.2. CSA A23.1-14 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION.
   - 1.3. CSA A23.2-14: METHODS OF TEST FOR CONCRETE.
2. REINFORCING BARS TO BE NEW DEFORMED BARS TO GRADE 400W STEEL CONFORMING TO CSA G30.18-M92.
3. THIS DESIGN ASSUMES THE GROUND CONDITIONS ARE AS INDICATED IN GEOTECHNICAL REPORT #20-222. IF CONDITIONS VARY GREATLY FROM THIS DESIGN ASSUMPTION, FURTHER INVESTIGATION AND REMEDIATION MAY BE REQUIRED.
4. CONCRETE: (WATER RETAINING STRUCTURE)
   - 4.1. MIN. COMPRESSIVE STRENGTH @ 56 DAYS SHALL BE 35 Mpa.
   - 4.2. CLASS OF EXPOSURE C-1/A1.
   - 4.3. MAXIMUM W/C RATIO = 0.40.
   - 4.4. AIR ENTRAINED CONCRETE CATEGORY 1.
5. CONCRETE COVER TO REINFORCEMENT:
   - 5.1. CONCRETE AGAINST EARTH 75mm
   - 5.2. ALL OTHER SURFACES 60mm
6. DESIGN LOADS:
   - 6.1. SPECIFIED GROUND SNOW LOAD: 2.9 kPa
7. ALLOWABLE BEARING PRESSURE OF SOIL IS 50 kPa. (SLS) AND 160 kPa (ULS)
8. DO NOT UNDERMINE ADJACENT FOUNDATIONS.



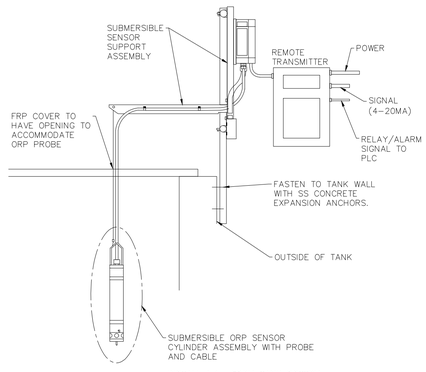
A — CONTACT CHAMBER ELEVATION

SCALE: 1:50



B — CONTACT CHAMBER SECTION

SCALE: 1:50



2 — ORP ANALYZER DETAIL

SCALE: N.T.S.

LICENSED PROFESSIONAL ENGINEER
W.G. HODGSON
100019302
2022-11-24
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
P.R. BARNWELL
2467504
2022/11/23
PROVINCE OF ONTARIO

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
E002	SITE PALN & SPECIFICATIONS
S002	BAFFLE PLAN & DETAILS
1002	PROCESS AND INSTRUMENTATION DIAGRAM
C001	SITE PLAN & GENERAL ARRANGEMENT

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
0	NOV. 2022	ISSUED FOR TENDER	KPD	LMH	AT

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

CLIENT
Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
-

wsp
1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER
201-05557-00

ISSUE STATUS
FOR TENDER

	INITIALS	YYYY-MM-DD
DESIGNED BY	L.HABIB	2022-11-04
DESIGN CHECKED BY	P.BARNWELL	2022-11-04
DRAWN BY	K. DANIELS	2022-11-04
DRAWING CHECKED BY	L.HABIB	2022-11-04
PROJECT MANAGER	A.TARANOVSKA	2022-11-04

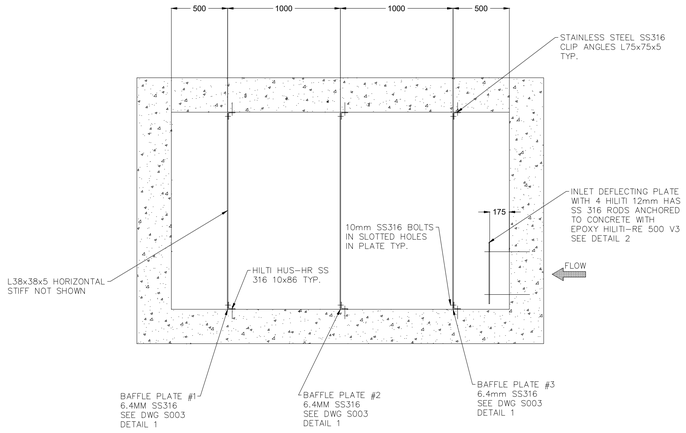
SCALE AS NOTED

SHEET NUMBER - OF -

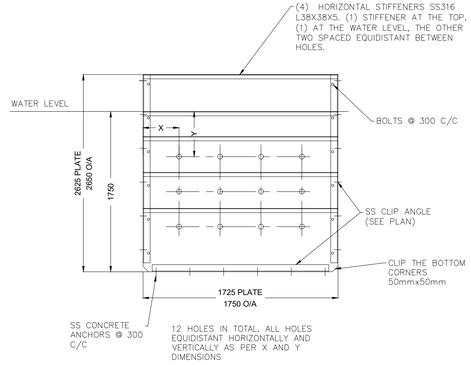
PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
CONTACT CHAMBER PLANS & SECTIONS

DRAWING NUMBER
S001
0

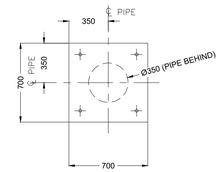


BAFFLE PLAN
SCALE: 1:25

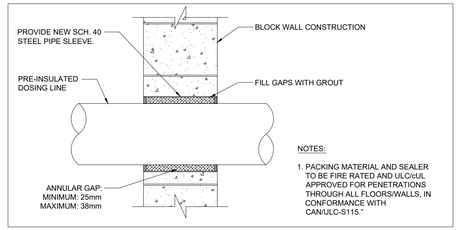


1 — BAFFLE PLATE
SCALE: NTS

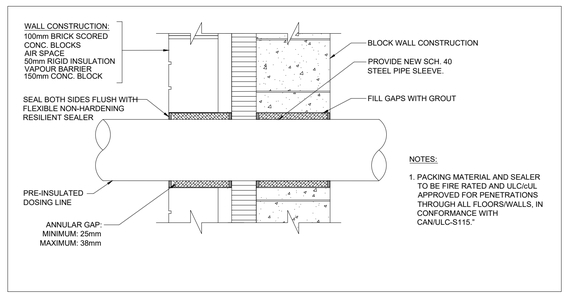
HOLE SPACING (MM)			
	X	Y	HOLE DIA (mm)
PLATE #1	315	405	44
PLATE #2	307	397	54
PLATE #3	303	393	59



2 — INLET DEFLECTING BAFFLE DETAIL
SCALE: 1:25



3 — TYPICAL EXISTING INTERIOR BLOCK WALL PENETRATION
SCALE: N.T.S.



4 — EXTERIOR WALL PENETRATION
SCALE: N.T.S.

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
M001	SERVICE BUILDING LAYOUT MECHANICAL HVAC
C001	SITE PLAN & GENERAL ARRANGEMENT

REVISIONS

REV	YYYY–MM–DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
0	NOV. 2022	ISSUED FOR TENDER	KPD	LMH	AT

SEAL

LICENSED PROFESSIONAL ENGINEER
P.R. BARNWELL
2467504
2022/11/23
PROVINCE OF ONTARIO

DISCLAIMER COPYRIGHT

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS.
REPORT ALL ERRORS AND OMISSIONS PRIOR TO COMMENCING WORK.
THIS DRAWING IS NOT TO BE SCALED.

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

CLIENT
Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
-

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER
201-05557-00

ISSUE STATUS
FOR TENDER

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DESIGNED BY	L.HABIB	2022-11-04
DESIGN CHECKED BY	P.BARNWELL	2022-11-04
DRAWN BY	K.DANIELS	2022-11-04
DRAWING CHECKED BY	L.HABIB	2022-11-04
PROJECT MANAGER	A. TARANOVSKA	2022-11-04

SCALE AS NOTED
SHEET NUMBER - OF -

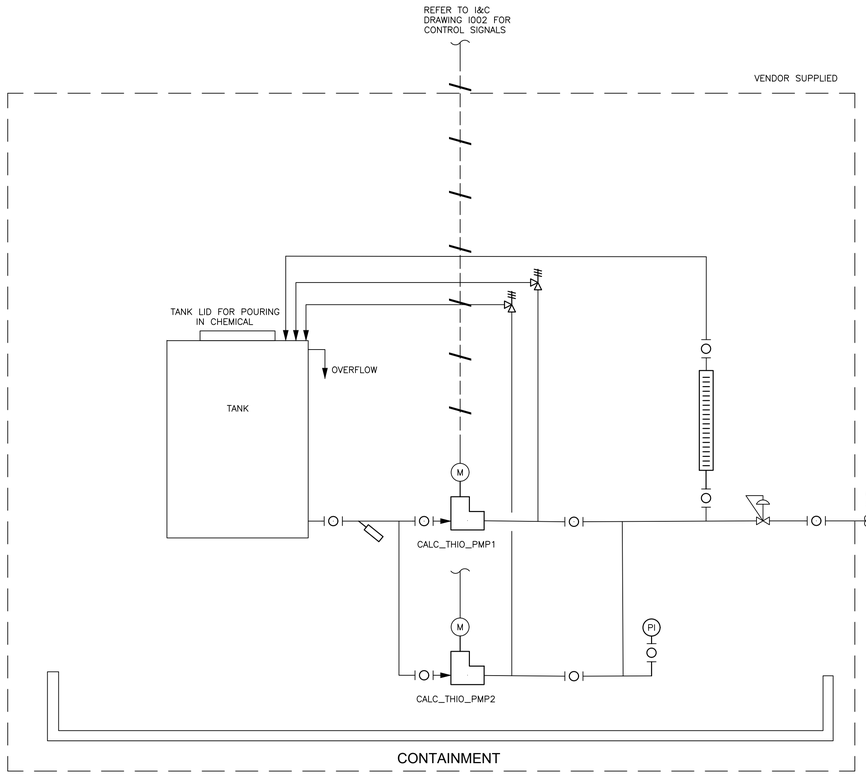
PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

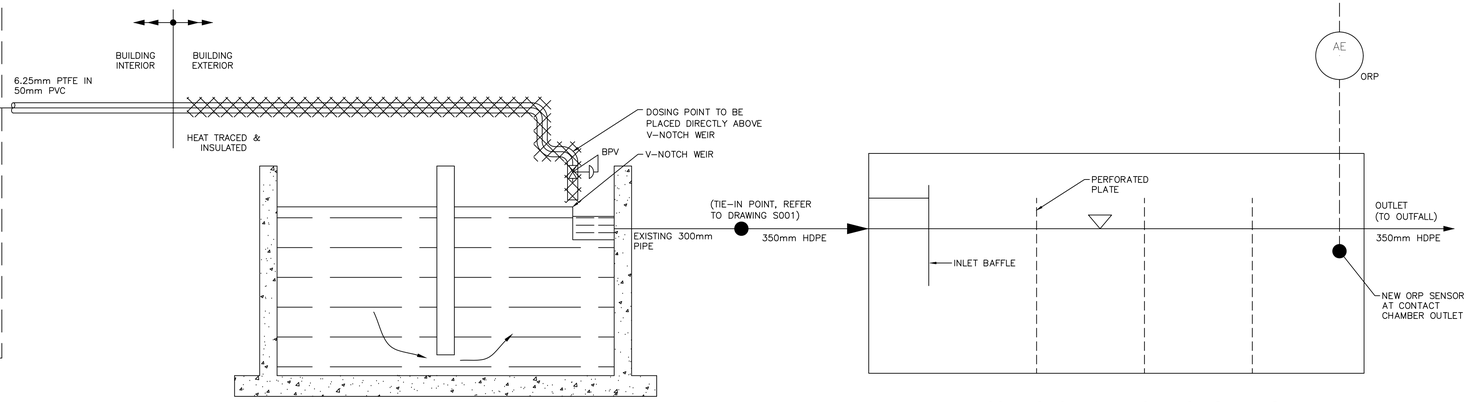
DRAWING TITLE
BAFFLE PLAN & DETAILS

DRAWING NUMBER
S002
0

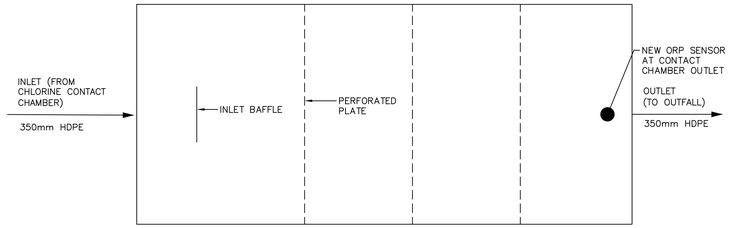
LEGEND

- M — MOTOR
- BACKPRESSURE VALVE
- PRESSURE RELIEF VALVE (PRV)
- BALL VALVE
- STRAINER
- PI — PRESSURE GAUGE
- CALIBRATION COLUMN
- DOSING PUMP





CHLORINE CONTACT TANK (SECTION)



NEW CONTACT CHAMBER FOR DECHLORINATION (TOP VIEW)

NEW CONTACT CHAMBER FOR DECHLORINATION

REFERENCE DRAWINGS		REVISIONS					
		C	2022-11-29	ISSUED FOR TENDER	RH	-	GT
S002	CONTACT CHAMBER PLANS AND SECTIONS	B	2021-04-21	ISSUED FOR ECA AMENDMENT	RH	-	MA
I002	PROCESS AND INSTRUMENTATION DIAGRAM	A	2020-07-29	ISSUED FOR REVIEW	RH	-	MA
REFERENCE NUMBER	DESCRIPTION	REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR

SEAL

LICENSED PROFESSIONAL ENGINEER — Stephen Liegey — S. M. Y. LIEGEY — 100564673 — 2022-11-29 — PROVINCE OF ONTARIO

CLIENT

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER: -

WSP
1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER: 201-05557-00

ISSUE STATUS: FOR TENDER

	INITIALS	YYYY-MM-DD
DESIGNED BY	-	-
DESIGN CHECKED BY	-	-
DRAWN BY	RAMESH H	2022-11-29
DRAWING CHECKED BY	S.LIEGEY	2022-11-29
PROJECT MANAGER	G. THORNE	2022-11-29

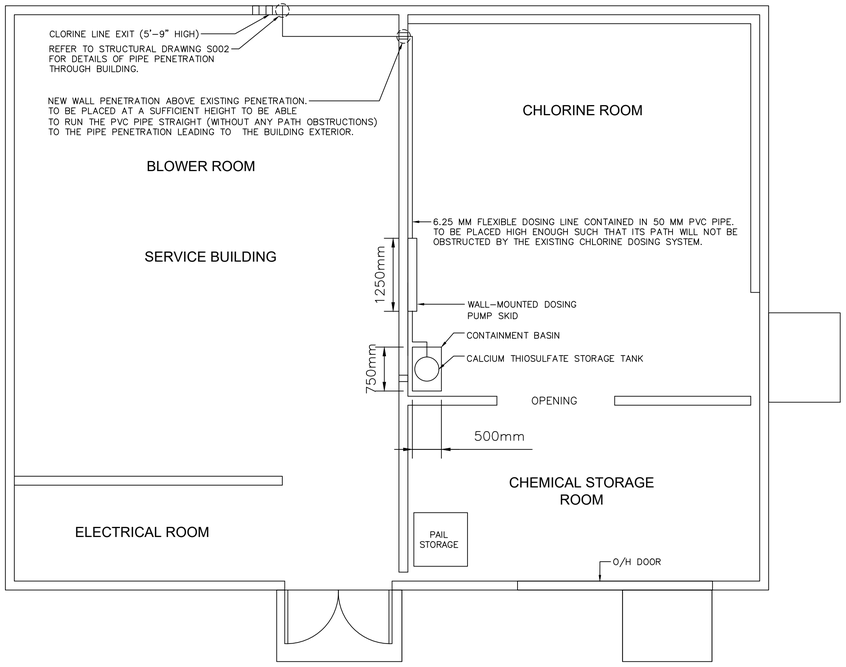
SCALE: AS NOTED

SHEET NUMBER: 1 OF 1

PROJECT DESCRIPTION: WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE: PROCESS FLOW DIAGRAM

DRAWING NUMBER: P001 B



MAIN FLOOR PLAN
SCALE: 1:25mm

NOTES:
1. CONTRACTOR TO RELOCATE ANY PIPES OR OBJECTS BEHIND LOCATION WHERE PAILS, TANK, OR PUMP PANEL ARE TO BE LOCATED.
2. CONTRACTOR TO MOUNT PUMP PANEL ONTO WALL OR PROVIDE UNISTRUT SUPPORT FROM THE GROUND.
3. CHEMICAL DOSING LINE BENDS WITHIN BUILDING TO BE 45 DEG. BENDS OR LONG RADIUS 90 DEG. BENDS ONLY.
4. CONTRACTOR TO PROVIDE LEAK DETECTION VALVE AT LOW POINT OF CHEMICAL DOSING LINE WITHIN BUILDING.
5. CHEMICAL DOSING LINE RUNS OUTSIDE BUILDING TO FINAL DOSING LOCATION IN THE CHLORINE CONTACT TANK V-NOTCH WEIR. REFER TO CIVIL DRAWINGS FOR OUTDOOR LINE ROUTING AND DETAILS.
6. A SINGLE PIPE RUN (NO FITTINGS OR BENDS) IS TO BE PROVIDED FOR THE FLEXIBLE PIPE.
7. PUMP PANEL TO BE PROVIDED WITH A DRIP-CATCH PAN WITH A DRAIN INTO THE SECONDARY CONTAINMENT.
8. INTERNAL ROUTING OF THE CHEMICAL LINES VENT LINE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE DRAWINGS PROVIDES A CONCEPTUAL LAYOUT. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A CLEAR PIPE RUN WITH NO OBSTRUCTIONS. ANY RELOCATIONS REQUIRED SHALL BE PROVIDED AS PART OF THIS CONTRACT. SPECIAL CARE SHOULD BE TAKEN TO PROVIDE AN OBSTRUCTION-FREE PIPE RUN WITHIN THE CHEMICAL ROOM.
9. LABEL TANK, CHEMICAL DOSING LINE, VENT PIPE. INDICATE DIRECTION OF FLOW OF LIQUID WHERE APPLICABLE.
10. LOCATION OF ALL HOLES AND CONDUIT RUNS TO BE COORDINATED WITH ALL TRADES. ALL HOLES THROUGH FLOOR AND WALLS TO BE COMPLETELY WATERTIGHT AND FIRE-PROOF.
11. ALL PROCESS PIPES, VALVES AND FITTINGS TO BE RATED FOR A MINIMUM COLD WATER INTERNAL PRESSURE OF 150 PSI.
12. CONTRACTOR TO VIEW ALL DRAWINGS AND SPECIFICATIONS AS ONE CONTRACT AND SHALL FULLY COORDINATE THE WORK WITH ALL TRADES.

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
S002	BAFFLE PLAN AND DETAILS

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
C	2022-11-29	ISSUED FOR TENDER	RH	-	GT
B	2021-04-21	ISSUED FOR ECA AMENDMENT	RH	-	MA
A	2020-07-29	ISSUED FOR REVIEW	RH	-	MA

SEAL

LICENSED PROFESSIONAL ENGINEER
Stephen Liegey
S. M. Y. LIEGEY
100546I3
2022-11-29
PROVINCE OF ONTARIO

CLIENT
Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
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1269 PREMIER WAY
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WSP PROJECT NUMBER
201-05557-00

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FOR TENDER

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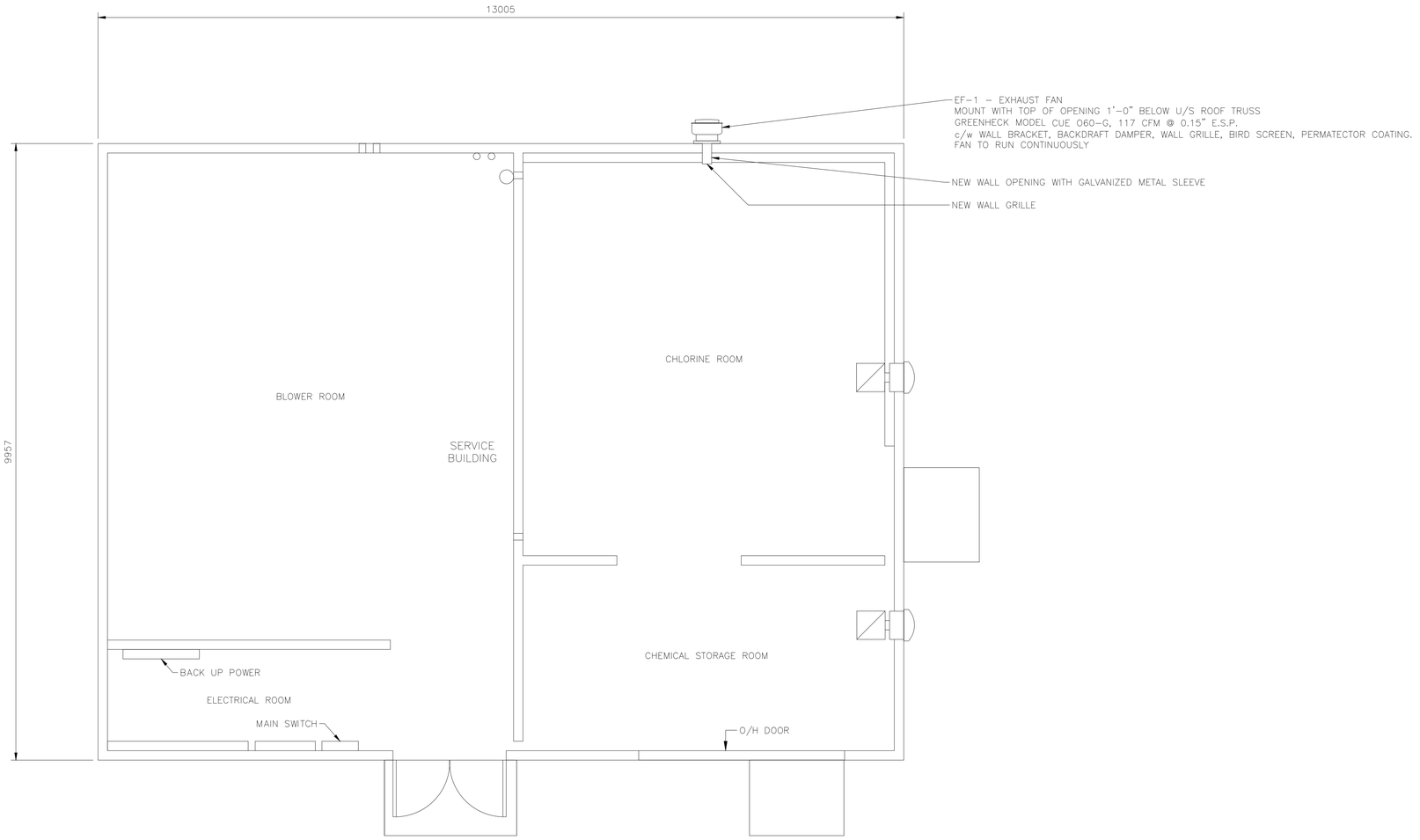
DESIGN CHECKED BY	-	-
DRAWN BY	RAMESH H	2022-11-29
DRAWING CHECKED BY	S.LIEGEY	2022-11-29
PROJECT MANAGER	G.THORNE	2022-11-29
SCALE	AS NOTED	SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
SERVICE BUILDING LAYOUT

DRAWING NUMBER
P002
B



MAIN FLOOR PLAN
SCALE: 1:40

REFERENCE DRAWINGS		REVISIONS					
REFERENCE NUMBER	DESCRIPTION	REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
		0	NOV. 2022	ISSUED FOR TENDER	KPD	WGH	AT

SEAL

LICENSED PROFESSIONAL ENGINEER
W.G. HODGSON
100019302
2022-11-24
PROVINCE OF ONTARIO

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm

CLIENT
Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
-

WSP
1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER
201-05557-00

ISSUE STATUS
FOR TENDER

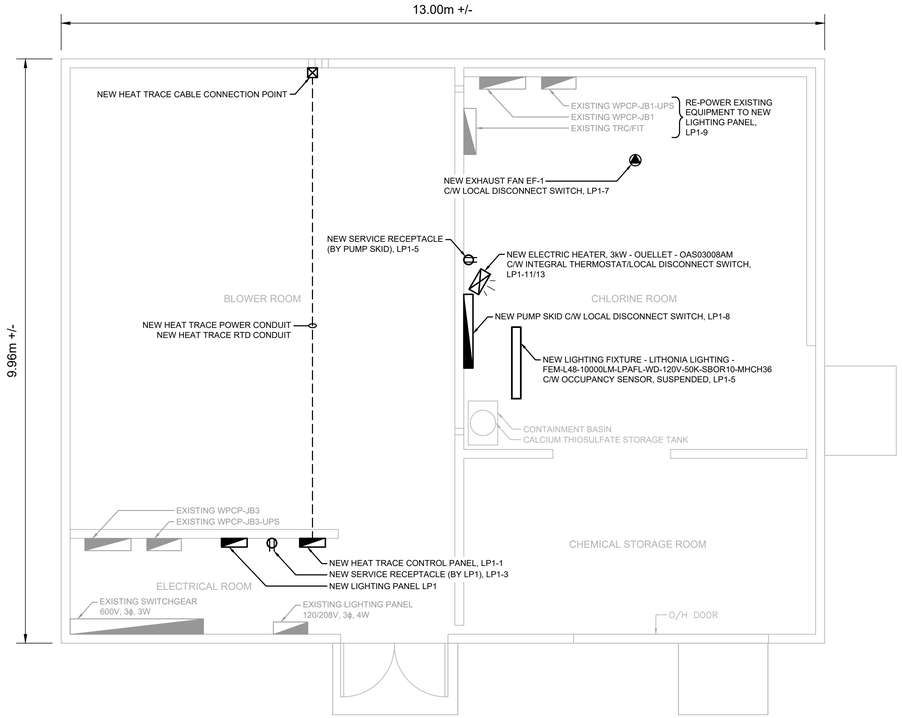
	INITIALS	YYYY-MM-DD
DESIGNED BY	CPB	2020-07-20
DESIGN CHECKED BY	WGH	2022-01-17
DRAWN BY	KPD	2022-11-04
DRAWING CHECKED BY	WGH	2022-01-17
PROJECT MANAGER	AT	2022-11-04

SCALE AS NOTED
SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
SERVICE BUILDING LAYOUT
MECHANICAL HVAC

DRAWING NUMBER
M001
0



BUILDING FLOOR PLAN

SCALE: NTS

PANEL LP1

120/208V, 3P, 4W
LOC'N: ELECTRICAL ROOM

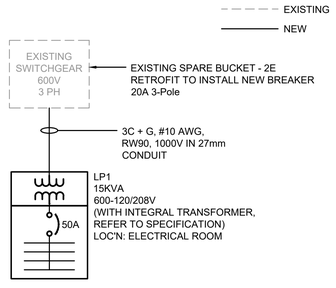
DWG	CIRCUIT DESCRIPTION	LOAD	AMP	CCT #	L1 L2 L3	CCT #	AMP	LOAD	CIRCUIT DESCRIPTION	DWG
E001	HEAT TRACE CONTROL PANEL *30mA GFCI	700	30	1		2	30	N/A	SPD (SURGE PROTECTION DEVICE) (REFER TO LP1 SPECIFICATION)	E001
E001	RECEPTACLE - ELECTRICAL ROOM	500	20	3		4				
E001	RECEPTACLE - CHLORINE ROOM	500	20	5		6				
E001	LIGHTING ABOVE CHEMICAL ROOM PUMP SKID, EXHAUST FAN EF-1	82	15	7		8	20	500	PUMP SKID	E001
E001	EXISTING WPCP-JB1, UPS, TRC, & FIT	500	15	9		10	15	300	ORP ANALYZER	E001
E001 E002	ELECTRIC HEATER - CHLORINE ROOM 3kW	3000	20	11		12	15		SPARE	
				13		14	15		SPARE	
	SPARE		20	15		16	20		SPARE	
	SPARE		20	17		18	20		SPARE	

PANEL SCHEDULE - PANEL LP1

SCALE: NTS

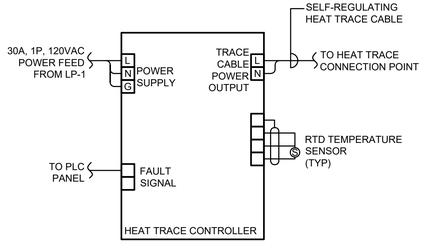
CABLE AND CONDUIT SCHEDULE					
TAG	FROM	TO	DESCRIPTION	COMMENTS	DETAIL
LP1	EXISTING SWITCHGEAR	NEW LIGHTING PANEL LP1	600V POWER FEEDER		PARTIAL SLD BUILDING FLOOR PLAN
LP1-1	NEW LIGHTING PANEL LP1 CIRCUIT 1	NEW HEAT TRACE CONTROL PANEL	120V POWER FEEDER	#10 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
LP1-3	NEW LIGHTING PANEL LP1 CIRCUIT 3	NEW ELECTRICAL ROOM SERVICE RECEPTACLE	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
LP1-5	NEW LIGHTING PANEL LP1 CIRCUIT 5	NEW CHLORINE ROOM SERVICE RECEPTACLE	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
LP1-7	NEW LIGHTING PANEL LP1 CIRCUIT 7	NEW CHLORINE ROOM LIGHTING	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
LP1-8	NEW LIGHTING PANEL LP1 CIRCUIT 8	NEW PUMP SKID	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
LP1-10	NEW LIGHTING PANEL LP1 CIRCUIT 10	NEW ORP ANALYZER	120V POWER FEEDER	#12 R90 C/W CONDUIT	WWTP SITE PLAN LP1 PANEL SCHEDULE
LP1-9	NEW LIGHTING PANEL LP1 CIRCUIT 9	EXISTING WPCP-JB1, UPS, TRC, & FIT	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE
C1	EXISTING WPCP-JB3	NEW ORP ANALYZER	CONTROL/MONITORING CONDUIT	27mm CONDUIT	WWTP SITE PLAN PROCESS SCHEMATIC
C2	EXISTING WPCP-JB3	NEW PUMP SKID	CONTROL/MONITORING CONDUIT	27mm CONDUIT	BUILDING FLOOR PLAN PROCESS SCHEMATIC
C3	EXISTING WPCP-JB3	NEW HEAT TRACE CONTROL PANEL	CONTROL/MONITORING CONDUIT	27mm CONDUIT	BUILDING FLOOR PLAN PROCESS SCHEMATIC
LP1-1A	NEW HEAT TRACE CONTROL PANEL	NEW HEAT TRACE CONNECTION POINT	120V POWER FEEDER	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN HEAT TRACE PIPE DETAIL
C4	NEW HEAT TRACE CONTROL PANEL	PROCESS CONDUIT	RTD SENSOR	21mm CONDUIT	BUILDING FLOOR PLAN HEAT TRACE PIPE DETAIL
LP1-11/13	NEW LIGHTING PANEL LP1 CIRCUIT 11/13	NEW ELECTRIC HEATER	208V 1ϕ POWER SUPPLY	#12 R90 C/W CONDUIT	BUILDING FLOOR PLAN LP1 PANEL SCHEDULE

LEGEND



PARTIAL SINGLE LINE DIAGRAM

SCALE: NTS

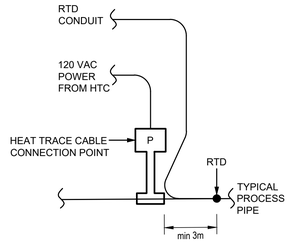


TYPICAL HEAT TRACE CONTROLLER DETAIL

SCALE: NTS

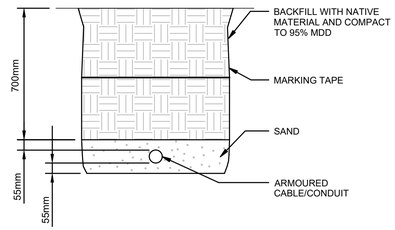
NOTES:

1. WALL MOUNTED CONTROLLER. SEE POWER LAYOUT FOR CONTROLLER LOCATION.
2. ALL PIPES THAT NEED TO BE HEAT TRACED ARE IDENTIFIED ON PROCESS DRAWINGS. SEE PROCESS LAYOUTS.
3. PROVIDE GFI BREAKER TO POWER HEAT TRACE CONTROLLER IN ACCORDANCE WITH CODE REQUIREMENTS. ADJUST BREAKER SIZE TO MATCH MANUFACTURER REQUIREMENTS.
4. PROVIDE WALL MOUNT JUNCTION BOXES IN FIELD.
5. PROVIDE ALL COMPONENTS REQUIRED TO FORM A COMPLETE HEAT TRACE SYSTEM. INCLUDING HEAT TRACE CABLES, JUNCTION BOXES AS WELL AS RTD TEMPERATURE SENSOR, RAYCHEM RTS SENSOR RTD-200 OR EQUAL.
6. PROVIDE COMPLETE HEAT TRACE SYSTEM SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION.
7. PROVIDE A REDUNDANT HEAT TRACE CABLE AND COIL IN THE RESPECTIVE CONTROL PANEL FOR EACH HEAT TRACE APPLICATION.
8. HEAT TRACE CABLE TO BE MINIMUM 10W/M ALONG ENTIRE LENGTH FROM BUILDING TO CHAMBER. RAYCHEM SELF REGULATING BTV SERIES CABLE OR EQUAL. INSTALL C/W RAYCHEM C910-485 CONTROLLER OR EQUAL.



HEAT TRACE PIPE DETAILS

SCALE: NTS



ELECTRICAL TRENCH DETAIL

SCALE: NTS

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION
G001	SITE LOCATION & DRAWING INDEX
P001	PROCESS FLOW DIAGRAM
P002	PROCESS SERVICE BUILDING LAYOUT
M001	MECHANICAL BUILDING LAYOUT / HVAC
E002	SITE PLAN & SPECIFICATIONS
I001 THRU I006	INSTRUMENTATION

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
0	2021-05-26	ISSUED FOR CONSTRUCTION	CEM	KJW	M.ALIDINA

SEAL

LICENSED PROFESSIONAL ENGINEER
K. J. WOZNIAK
100168220
2022-02-17
PROVINCE OF ONTARIO

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

CLIENT

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER

RFS002-2020

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER

201-05557-00

ISSUE STATUS

FOR CONSTRUCTION

	INITIALS	YYYY-MM-DD
DESIGNED BY	K.WOZNIAK	2020-07-05
DESIGN CHECKED BY	K.WOZNIAK	2020-07-15
DRAWN BY	R.NICHOLSON	2020-07-05
DRAWING CHECKED BY	K.WOZNIAK	2020-07-15
PROJECT MANAGER	M.ALIDINA	2020-07-21

SCALE NTS | SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION

WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE

ELECTRICAL
POWER LAYOUT & DETAILS

DRAWING NUMBER

E001

0

ELECTRICAL SPECIFICATIONS

1. SCOPE OF WORK

   A. E### SERIES DRAWINGS OUTLINES THE COMPLETE SUPPLY, INSTALL, COMMISSIONING, OPERATION, CONSTRUCTION ADMINISTRATION & CLOSE-OUT REQUIREMENTS OF THE FOLLOWING SYSTEMS LISTED, SPECIFIED AS PER THE DRAWING PACKAGE & AS PER THE SPECIFICATIONS SHOWN.

      i. POWER DISTRIBUTION
      ii. POWER DEVICES & RE-POWERING EXISTING DEVICES
      iii. LIGHTING FIXTURES
      iv. FREEZE PROTECTION
      v. CONDUIT/CABLING PROVISIONS FOR OTHER TRADES

2. DRAWING LIST

   A. E001 - ELECTRICAL POWER LAYOUT & DETAILS
   B. E002 - ELECTRICAL SPECIFICATIONS & SITE PLAN

3. GENERAL REQUIREMENTS

   A. REFER TO FRONT-END SPECIFICATIONS FOR GENERAL REQUIREMENTS. FRONT-END SPECIFICATION SUPPLEMENTS ANY REQUIREMENTS LISTED BELOW.
   B. READ ELECTRICAL SPECIFICATION IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DOCUMENTS.
   C. CONFORM TO THE GENERAL CONDITIONS OF THE CONTRACT.
   D. THE CONTRACTOR SHALL BE HELD TO HAVE VISITED THE SITE & TO HAVE EXAMINED ALL CONDITIONS AFFECTING THE WORK OF THIS PROJECT PRIOR TO BID SUBMISSION. NO CLAIMS FOR EXTRAS DUE TO CONDITIONS THAT WERE VISIBLE OR REASONABLY INFERABLE PRIOR TO THE START OF DEMOLITION OR CONSTRUCTION WILL BE ACCEPTED.
   E. CONTRACTOR TO REVIEW SITE TO CONFIRM QUANTITY, EFFORT & SCOPE OF WORK FOR EACH PORTION OF WORK.
   F. GENERAL CONTRACTOR IS RESPONSIBLE FOR DIVISION OF WORK.
   G. THE CONTRACTOR WILL REPORT ANY ERRORS, DISCREPANCIES OR OMISSIONS TO THE CONSULTANT IMMEDIATELY IN ORDER THAT APPROPRIATE ACTION MAY BE TAKEN. ANY CONSEQUENCES RESULTING FROM ACTIONS TAKEN TO CORRECT ANY SUCH ERRORS WITHOUT THE WRITTEN CONSENT OF THE CONSULTANT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
   H. IT IS THE RESPONSIBILITY OF THE SUB-CONTRACTORS TO COORDINATE ALL WORK WITH OTHER TRADES & RESOLVE CONFLICTS AT NO ADDITIONAL COST TO THE CONTRACT. EXAMINE ALL SPECIFICATIONS, DRAWINGS & SHOP DRAWINGS BEFORE PROCEEDING WITH WORK.
   I. CONTRACT DOCUMENTS FOR ELECTRICAL WORK ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK & GENERAL ARRANGEMENT FOR EQUIPMENT, CONDUIT & DEVICES. CONTRACTOR TO COORDINATE LAYOUTS OF ALL ELECTRICAL SYSTEMS WITH OTHER ELECTRICAL SYSTEMS ALONG WITH ARCHITECTURAL, MECHANICAL & STRUCTURAL BUILDING COMPONENTS. NO ADDITIONAL EXTRA PAYMENTS ARISING FROM FAILURE TO MAKE THIS COORDINATION WILL BE CONSIDERED.
   J. SYSTEM INTERRRUPTIONS SHALL BE KEPT TO A MINIMUM, & IN ANY CASE, SHALL OCCUR AT TIMES & DURATIONS FOR WHICH PRIOR WRITTEN AGREEMENT OF THE OWNER & OTHER TRADES HAVE BEEN OBTAINED.
   K. THERE IS TO BE NO INTERRUPTIONS TO ANY SYSTEM DURING NORMAL BUILDING HOURS OF OPERATIONS.
   L. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES & SYSTEMS TO PROVIDE POWER, COMMUNICATIONS & CONTROLS AS REQUIRED FOR ALL SYSTEMS SPECIFIED.
   M. PROVIDE ALL MATERIALS, DEVICES, LABOUR & TOOLS, MISCELLANEOUS MATERIAL & HARDWARE AS REQUIRED TO COMPLETE ALL SYSTEMS AS SPECIFIED RENDERING COMPLETE, COMMISSIONED & OPERATIONAL SYSTEMS.
   N. INSTALL ALL SYSTEMS AS SPECIFIED OR AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
   O. PERFORM ALL WORK BY LICENSED ELECTRICIANS HOLDING A VALID CERTIFICATE OF QUALIFICATION &/OR TRAINED TO PERFORM WORK ON THE SPECIFIC MANUFACTURE SYSTEM. PERMITTED ACTIVES ARE BASED ON TRAINING LEVEL ATTAINED & DEMONSTRATION OF SKILL TO SPECIFIC DUTIES.
   P. COMPLETE ALL WORK TO THE ONTARIO ELECTRICAL SAFETY CODE, ONTARIO BUILDING CODE & ALL APPLICABLE CODES & STANDARDS.
   Q. DO NOT REDUCE THE STANDARDS ESTABLISHED BY APPLYING APPLICABLE CODES & STANDARDS.
   R. CONFIRM ALL WORK WITH CONSTRUCTION PROJECT MANAGER BEFORE WORK BEGINS.
   S. REFER TO BINDER SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
   T. CONTRACTOR TO COMPLETE ONTARIO ONE CALL REGARDING BELOW GRADE SERVICE & COMPLETE A DETAILED INSPECTION/INVESTIGATION OF ANY BELOW GRADE SERVICES AROUND WORK. TAKE EXTREME CARE DURING BELOW GRADE WORK & EXCAVATION.
   U. PAY FOR & SUBMIT ALL CERTIFICATES/INSPECTIONS & PERMITS & INCLUDE COPY IN O&M BINDER.

4. TENDER

   A. REFER TO FRONT-END SPECIFICATIONS FOR TENDER REQUIREMENTS.

5. HEALTH & SAFETY

   A. REFER TO FRONT-END SPECIFICATIONS FOR HEALTH & SAFETY REQUIREMENTS.

6. CONSTRUCTION ADMINISTRATION

   A. REFER TO FRONT-END SPECIFICATIONS FOR CONSTRUCTION ADMINISTRATION REQUIREMENTS. FRONT-END SPECIFICATION SUPPLEMENTS ANY REQUIREMENTS LISTED BELOW.
   B. SUBMIT COMPLETE SHOP DRAWINGS FOR ALL EQUIPMENT, MATERIAL & LABELING USED FOR REVIEW BEFORE WORK COMMENCES.
   C. COMPLETE TESTING, COMMISSIONING & VERIFICATION OF PROPER OPERATION OF ALL EQUIPMENT & SYSTEMS.
   D. CONTACT CONSULTANT IMMEDIATELY REGARDING CONFLICT BETWEEN DRAWING, SPECIFICATION & SITE CONDITIONS FOR CLARIFICATION & DIRECTION.
   E. SYSTEM INTERRUPTIONS SHALL BE KEPT TO A MINIMUM, & IN ANY CASE, SHALL OCCUR AT TIMES & DURATIONS FOR WHICH PRIOR WRITTEN AGREEMENT OF THE OWNER & OTHER TRADES HAVE BEEN OBTAINED.

7. OWNER STAFF TRAINING

   A. REFER TO FRONT-END SPECIFICATIONS FOR OWNER / STAFF TRAINING REQUIREMENTS.

8. CLOSE-OUT REQUIREMENTS

   A. REFER TO FRONT-END SPECIFICATIONS FOR CLOSE OUT REQUIREMENTS. FRONT-END SPECIFICATION SUPPLEMENTS ANY REQUIREMENTS LISTED BELOW.
   B. INSTRUCT OPERATING PERSONNEL IN OPERATION, CARE & MAINTENANCE OF SYSTEMS, SYSTEM EQUIPMENT & COMPONENTS. PROVIDE THESE SERVICES FOR SUCH PERIOD, & FOR AS MANY VISITS AS NECESSARY TO PUT EQUIPMENT IN OPERATION, & TO ENSURE THAT OPERATING PERSONNEL ARE CONVERSANT WITH ALL ASPECTS OF ITS CARE & OPERATION.
   C. TEST ALL EQUIPMENT TO CONFIRM PROPER INSTALLATION & SAFE OPERATION IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS & SPECIFICATIONS. SUBMIT ALL SPECIFIED TEST.
   D. SUBMIT ELECTRICAL SAFETY AUTHORITY PERMIT, INSPECTION & RESULTS.
   E. SUBMIT LETTER OUTLINING THAT EACH SYSTEM SPECIFIED HAS BEEN TESTED, COMMISSIONED & IS 100% OPERATIONAL.

9. GENERAL PRODUCT REQUIREMENTS

   A. REFER TO FRONT-END SPECIFICATIONS FOR ADDITIONAL GENERAL PRODUCT REQUIREMENTS.
   B. ALL MATERIAL TO BE COMMERCIAL GRADE, NEW, WITHOUT DEFECT, CSA/ULC/CUL APPROVED, NEMA STANDARDS, DLC CERTIFICATION.
   C. ALL EQUIPMENT, DEVICES & FIXTURES TO MATCH EXISTING FINISH & INSTALLATION DETAILS UNLESS NOTED OTHERWISE.
   D. SUPPLY ALL EQUIPMENT OF A SPECIFIC SYSTEM BY A SINGLE MANUFACTURER. I.E. SUPPLY ALL RECEPTACLES BY A SINGLE MANUFACTURER, SUPPLY ALL POWER DISTRIBUTION EQUIPMENT BY A SINGLE MANUFACTURER, SUPPLY ALL LIGHTING CONTROL BY SINGLE MANUFACTURER, ETC. UNLESS NOTED OTHERWISE.
   E. SUPPLY ALL EQUIPMENT AS SPECIFIED. WHERE EQUIPMENT IS SPECIFIED OR EQUAL AN EQUAL CAN BE SUPPLIED IF IT MEETS THE GENERAL CONFORMITY OF THE PRODUCT SPECIFIED UNLESS NOTED OTHERWISE.
   F. ALL ELECTRICAL FITTINGS, DEVICES, BOXES, SUPPORTS & HARDWARE TO BE GALVANIZED OR HAVE A CORROSION RESISTANT PRIMER FACTORY INSTALLED.
   G. ALL POWER CONDUCTORS TO BE MINIMUM #12 AWG CU, R90 TYPE. DO NOT USE ROMEX/LOMAX NMD90 CABLING OR EQUAL, NO EXCEPTIONS.
   H. ALL CONDUCTORS TO BE COPPER.
   I. ALL RACEWAYS AS REQUIRED OR SPECIFIED TO BE EMT. PROVIDE MECHANICAL PROTECTION WHERE SUBJECT TO DAMAGE.
   J. PROVIDE MECHANICAL PROTECTION TO ALL EXPOSED CABLING/CONDUIT WHERE SUBJECT TO DAMAGE.
   K. CONFIRM ALL ELECTRICAL EQUIPMENT SUPPLIED BY OTHERS IS SUITABLE FOR INSTALLATION & POWER REQUIREMENTS.
   L. ALL RECEPTACLES TO BE SIDE/BACK WIRED TYPE. QUICK PUSH IN TYPE IS NOT ACCEPTABLE.
   M. INSTALL ALL LABELS, NAMEPLATES & EQUIPMENT INSTRUCTION IN ENGLISH.
   N. EQUIPMENT IDENTIFICATION: IDENTIFY ALL EQUIPMENT, LAMACOID PLATES, WHITE BACKGROUND, BLACK TEXT AS SPECIFIED. IDENTIFY ALL EQUIPMENT IN ENGLISH. SUBMIT SHOP DRAWING FOR REVIEW & APPROVAL PRIOR TO MANUFACTURER. SECURE ALL EXTERIOR LAMACOID LABELS WITH STAINLESS STEEL HARDWARE. SECURE ALL INTERIOR LAMACOID LABELS WITH MANUFACTURER'S ADHESIVE, CLEAN SURFACE BEFORE APPLICATION.

      i. POWER PANELS/POWER DISTRIBUTION EQUIPMENT - 10MM TEXT (MAXIMUM 3 LINE)
      ii. MECHANICAL EQUIPMENT ELECTRICAL INFORMATION - 10MM TEXT (MAXIMUM 2 LINE)
      iii. ELECTRICAL EQUIPMENT - 10MM TEXT (MAXIMUM 2 LINE)
      iv. RECEPTACLES - 5MM TEXT (MAXIMUM 1 LINE), 75MM WIDE & 10MM TALL LABEL.
      v. IF LAMACOID LABEL SPECIFICATIONS NOT SHOWN FOR SPECIFIC APPLICATION, CONFIRM LABEL DIMENSIONS.

   O. COLOUR CODED CIRCUITS: ALL 120/208/240/347/600V CIRCUITS SHALL BE COLOUR CODED TO RED (PHASE A), BLACK (PHASE B), BLUE (PHASE C). NO OTHER COLOUR CURRENT CARRYING CONDUCTORS TO BE USED. ALL NEUTRALS TO BE WHITE. ALL BONDING CONDUCTORS TO BE GREEN.
   P. WIRING IDENTIFICATION: IDENTIFY CONDUCTORS WITH PERMEANT NUMBERED TAPE AT THE PANEL, EACH DEVICE ON THE CIRCUIT & EACH SPLICE. GROUND NEUTRAL WITH ASSOCIATED BRANCH CIRCUITS UTILIZING ELECTRICAL TAPE GROUPING & IDENTIFYING THE CIRCUITS THE NEUTRAL IS ASSOCIATED WITH.

10. GENERAL EXECUTION REQUIREMENTS

   A. CONTRACTOR TO KEEP THE WORK SITE ON A DAILY BASIS. ALL MATERIALS RELATED TO CONSTRUCTION/DEMOLITION TO BE REMOVED FROM SITE UPON COMPLETE OF THE WORK FOR THAT. MATERIAL/EQUIPMENT/DEMOLITION MATERIAL NOT TO BE STOCKPILED ONSITE.
   B. CONFIRM EQUIPMENT VOLTAGE LIGHTING FOR ALL AREAS BEFORE EQUIPMENT ORDERED.
   C. ALL BELOW GRADE CONDUIT TO BE PVC RIGID CONDUIT.
   D. SIZE ALL CONDUCTORS AS PER CODE REGARDING VOLTAGE DROP, REFER TO OESC - D3 & 8-102 FOR REFERENCE.
   E. ADJUST DEVICE BOX TO ACCOUNT FOR BOX FILL.
   F. ADJUST HOME RUN CABLING SIZE AS PER PANEL SCHEDULES WHERE NOTED TO REDUCE CIRCUIT VOLTAGE DROP. ADJUST TERMINATION TO ACCOUNT FOR OVER SIZED CONDUCTOR SIZE TO DEVICES/BREAKERS/DEVICE BOXES, ETC.
   G. ALL INTERIOR CONDUIT TO BE EMT, EXTERIOR/BELOW GRADE CONDUIT TO BE PVC, SIZED ACCORDINGLY. INSTALL PULL STRING/ROPE IN ALL CONDUIT. ALL ABOVE GROUND CONDUIT FILLS NOT TO EXCEED VALUES OUTLINED IN OESC TABLE 8 & ASSOCIATED RULES.
   H. INSTALL ALL BELOW/ABOVE GRADE WHERE WARRANTED WITH EXPANSION COUPLINGS/SLEEVES TO MITIGATE THERMAL EXPANSION & CONTRACTION & DAMAGE TO CONDUIT/CABLING.
   I. VERIFY ALL LAYOUTS & MOUNTING HEIGHTS BEFORE WORK BEGINS.
   J. REFER TO PRODUCT SPECIFICATION/LAYOUT DRAWINGS FOR MOUNTING HEIGHT, IF NOT SPECIFIED MAINTAIN MOUNTING HEIGHT AS PER EXISTING DEVICES THROUGHOUT SPACE &/OR PER CODE REQUIREMENT, CONFIRM MOUNTING HEIGHT WITH CONSULTANT.
   K. WHEN DEVICE BOXES, DEVICES OR EQUIPMENT ARE GROUPED, INSTALL AT SAME MOUNTING HEIGHT. MOUNTING HEIGHTS TO REMAIN CONSISTENT THROUGHOUT THE WORK.
   L. MAINTAIN 1-METER CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS & EQUIPMENT.
   M. INSTALL ALL EQUIPMENT TO ALLOW FOR SERVICING OF EQUIPMENT.
   N. RELOCATE ALL EQUIPMENT NAMEPLATES AS REQUIRED TO BE VISIBLE FROM FRONT OF EQUIPMENT.
   O. ALL EQUIPMENT, DEVICES, LIGHTING FIXTURES SHALL BE SECURED TO STRUCTURAL SECURE COMPONENTS, INSTALL BLOCKING AS REQUIRED. DO NOT USE DRYWALL ANCHORS, TOGGLE BOLTS OR EQUAL.
   P. INSTALL ALL CONDUIT WITH INSULATED GREEN BOND CONDUCTOR, RELYING ON CONDUIT FOR BOND IS NOT SUFFICIENT, NO EXCEPTIONS.
   Q. SIZE ALL BOND/GROUND CONDUCTORS AS PER OESC & OESC TABLE 16.
   R. PROVIDE ALL UNDERGROUND CABLE/CONDUITS INCLUDING TRENCHING, BEDDING & BACK FILLING FOR ALL WORK.
   S. INSTALL ALL EQUIPMENT, DEVICES, RACEWAYS, CONDUIT & CABLING LEVEL, PLUMB, SQUARE & STRAIGHT WITH RESPECT TO BUILDING LINES.
   T. SEAL ALL CONDUIT/CABLING THAT AT BUILDING INTERIOR/EXTERIOR PERIMETER ON THE INTERIOR. DO NOT SEAL EXTERIOR TO ALLOW FOR NATURAL DRAINAGE, SLOPE TO THE EXTERIOR.
   U. MODIFY CIRCUIT ALLOCATION AS REQUIRED, RECORD FINAL PANEL DIRECTORY ON AS-BUILT DRAWINGS.
   V. PRODUCT DIMENSIONS: LAYOUTS SHOWN ON THE DRAWINGS ARE BASED ON PUBLISHED DIMENSIONS OF VARIOUS MANUFACTURERS' EQUIPMENT AT TIME OF DESIGN. DIMENSION OF EQUIPMENT PROVIDED BY THE CONTRACTOR MAY CONFLICT WITH THE LAYOUTS SHOWN ON THE DRAWINGS. CONTRACTOR IS TO CONFIRM THAT THE EQUIPMENT BEING SUPPLIED WILL FIT THE SPACE ALLOTTED OR MAKE ALTERNATE LAYOUT TO ACCOMMODATE THE PROVIDED EQUIPMENT SUBJECT TO APPROVAL.
   W. ALL SERVICE ROOMS SHALL MAINTAIN WORKING SPACE AROUND ALL EQUIPMENT WITH AN UNOBSTRUCTED MEANS OF EGRESS ALONG WITH 1000MM OF CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT (POWER PANELS, CONTROL PANELS, MCC, ETC. AS PER OESC 2-308.
   X. INSTALL ALL BELOW GRADE CONDUIT/CABLING/GROUND CABLING/ETC. WITH DIRECT BURIED CAUTION TAPE AT HALF DISTANCE BETWEEN CONDUIT/CABLING & SURFACE. RECORD FINAL, DETAILED LOCATIONS & ROUTING WITH DIMENSIONS ON AS BUILT DRAWINGS.
   Y. MAINTAIN EQUIPMENT STANDARD MOUNTING HEIGHT THROUGHOUT.

11. DEMOLITION

   A. REFER TO CONSTRUCTION DOCUMENTS FOR SCOPE OF DEMOLITION WORK TO BE COMPLETED.
   B. VERIFY SCOPE OF DEMOLITION WITH GENERAL CONTRACTOR BEFORE WORK BEGINS.
   C. REMOVE EXISTING SURFACE MOUNT CONDUIT, CABLING & EQUIPMENT. CONFIRM SCOPE WITH GENERAL CONTRACTOR.
   D. EQUIPMENT, DEVICES TO BE DECOMMISSIONED, RE-FED & REMOVED AS PER NEW LAYOUT. REMOVE C/W DEVICE BOX, CABLING & CONDUIT BACK TO ELECTRICAL PANEL IF NO OTHER DEVICES ARE PRESENT ON THE SPECIFIC CIRCUIT. IF OTHER DEVICES REMAIN ON CIRCUIT, REMOVE ALL BACK TO EXISTING JUNCTION BOX/DEVICE BOX. PROVIDE ADDITIONAL JUNCTION BOXES AS REQUIRED, TAG JUNCTION BOX COVER WITH CIRCUIT. UPDATE PANEL DIRECTORY AS REQUIRED.
   E. COORDINATE HANDING OVER REMOVED EQUIPMENT/MATERIAL TO OWNER.
   F. RECORD ALL JUNCTION BOXES ON AS-BUILT DRAWINGS.

12. BELOW GRADE CONDUIT

   A. RECORD ALL BELOW GRADE CONDUIT/CABLE ON AS-BUILT DRAWINGS.
   B. PHOTOGRAPH ALL BELOW GRADE WORK FOR RECORD & INCLUDE IN AS-BUILT DRAWING PACKAGE.
   C. ALL BELOW GRADE CONDUIT TO BE RIGID PVC. SEAL ALL NOT USED BELOW GRADE CONDUIT ENDS WITH MANUFACTURER'S RIGID PVC CONDUIT END CAPS FOR USE DURING CONSTRUCTION &/OR FUTURE USE.
   D. ALL BELOW GRADE CONDUIT FILL NOT TO EXCEED 30% FOR ANY SYSTEM UNLESS SPECIFIED OTHERWISE.

13. POWER DISTRIBUTION

   A. POWER DISTRIBUTION SCOPE OF WORK INCLUDES BUT IS NOT LIMITED TO THE INSTALLATION OF A NEW 120/208V LIGHTING PANEL LP1 POWERED BY EXISTING 600V SWITCHGEAR.
   B. INSTALL NEW FEEDER 600V FEEDER BREAKER C/W ASSOCIATED CABLING, TRANSFORMER & NEW 120/208V PANEL AS PER LAYOUT & SPECIFIED BELOW.
   C. 600V SWITCHGEAR FEEDER BREAKER: UTILIZE EXISTING SPARE SECTION WITH EXISTING 600V SWITCH GEAR, REPLACE EXISTING BREAKER WITH NEW 30A 3-POLE 600V BREAKER TO POWER NEW LIGHTING PANEL LP1.
   D. LIGHTING PANEL LP1: COMBINATION 600/208/120V STEPDOWN TRANSFORMER/ LIGHTING PANEL. 120/208V 3 PHASE 4 WIRE, LOAD CENTER 18 BRANCH CIRCUITS, TOP ENTRY, SURFACE MOUNT. INSTALLED AS PER LAYOUT, BRANCH CIRCUITS AS PER PANEL SCHEDULE. EATON P60G28T1518CUB OR EQUAL.

      i. INSTALL C/W EXTERNAL SURGE PROTECTION DEVICE. TOTAL PROTECTION SOLUTIONS - TK-080-3Y208-F-L-B OR EQUAL.

   E. COORDINATE WITH OWNER REGARDING SHUT DOWN FOR WORK OUTLINED.
   F. SUBMIT SHORT CIRCUIT & COORDINATION (IF APPLICABLE) STUDY WITH POWER DISTRIBUTION SHOP DRAWING, CONTRACTOR TO CARRY FEE FOR STUDY. STUDY TO BE CARRIED OUT BY POWER DISTRIBUTION MANUFACTURER.
   G. PROVIDE ARC FLASH WARNING STICKERS ON ALL ELECTRICAL PANELS & POWER DISTRIBUTION EQUIPMENT OUTLINING POTENTIAL ARC FLASH HAZARDS & ELECTRIC SHOCK.
   H. PROVIDE COMPLETE, TYPED, ACCURATE & VERIFIED PANEL DIRECTORY ON MANUFACTURER PROVIDED PANEL DIRECTORY TEMPLATE ON ALL NEW PANELS.
   I. INSTALL POWER PANEL(S) COMPLETE WITH LOCKABLE DOOR COVER, FULL SIZED NEUTRAL, CIRCUIT DIRECTORY SLEEVE, GALVANIZED ENCLOSURE UNLESS NOTED OTHERWISE.
   J. MODIFY CIRCUIT ALLOCATION AS REQUIRED, RECORD FINAL PANEL DIRECTORY ON AS-BUILT DRAWINGS.
   K. COMPLETE LOAD BALANCING ON ADJUST BRANCH CIRCUIT LOCATION AS REQUIRED FOR OPTIMAL LOAD BALANCE.

14. POWER DEVICES

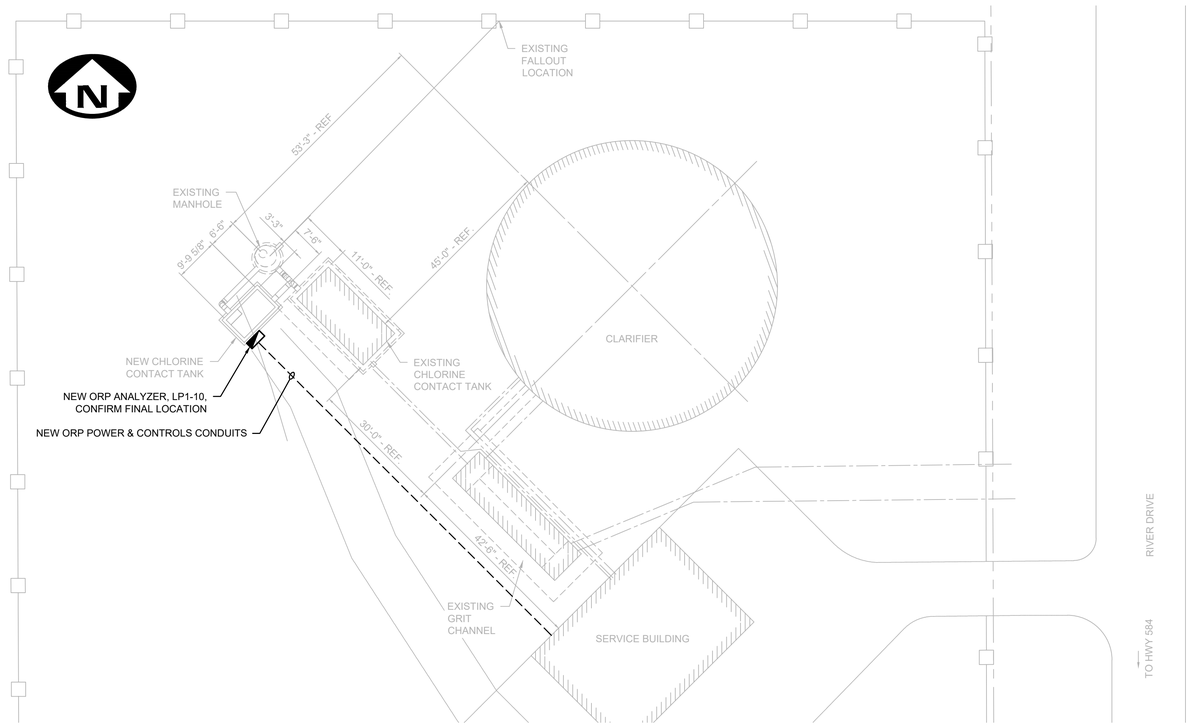
   A. POWER DEVICES SCOPE OF WORK INCLUDES BUT IS NOT LIMITED TO MODIFY EXISTING DEVICE & CIRCUIT LAYOUTS & INSTALL NEW POWER DEVICES AS PER LAYOUT & SPECIFICATIONS:

      i. INSTALLATION OF NEW SERVICE RECEPTACLES AS PER LAYOUT.
      ii. RE-POWERING OF EXISTING PROCESS EQUIPMENT AS SPECIFIED/PER LAYOUT.
      iii. POWERING OF NEW PROCESS EQUIPMENT AS SPECIFIED/PER LAYOUT.
      iv. POWERING OF FREEZE PROTECTION HEAT TRACE.

   B. COORDINATE WITH MILLWORK, EQUIPMENT & FINAL LAYOUTS FOR OPTIMAL LOCATION OF POWER DEVICES.
   C. MODIFY CIRCUIT ALLOCATION AS REQUIRED, RECORD FINAL PANEL DIRECTORY ON AS BUILD DRAWINGS.
   D. ALL RECEPTACLES WITHIN 2000MM OF A WATER SOURCE, I.E. SINK, JANITORIAL MOP SINK, ETC. ALONG WITH OUTDOOR RECEPTACLES AS OUTLINED BY THE OESC TO BE GROUND FAULT CIRCUIT PROTECTED UTILIZING A GFCI RECEPTACLE OR BREAKER. INSTALL GFCI PROTECTED STICKER ON RECEPTACLE PLATE IF PROTECTED BY A GROUND FAULT BREAKER.
   E. SERVICE RECEPTACLE: SERVICE USE, 20A, HEAVY DUTY INDUSTRIAL SPECIFICATION, 5-20R CONFIGURATION, YELLOW FINISH. INSTALL COMPLETE WITH CAST FD BOX, CORROSION RESISTANT. HUBBELL BRYU5462CR OR EQUAL. INSTALL COMPLETE WITH CORROSION RESISTANT METALLIC FACE PLATE.
   F. HEAT TRACE: AS SPECIFIED.

15. INTERIOR LIGHTING

   A. INTERIOR LIGHTING SCOPE OF WORK INCLUDES BUT IS NOT LIMITED TO THE INSTALLATION OF NEW LIGHTING FIXTURES & CONTROLS AS OUTLINED.
   B. REFER TO LIGHTING CONTROL SETTINGS DOCUMENT, TO BE ISSUED TO AWARDED CONTRACTOR PRIOR TO WORK OUTLINING THE LIGHTING CONTROLS SETTINGS/PARAMETERS FOR EACH SPACE.
   C. ALL LIGHTING FIXTURE TO BE POWERED BY EXISTING / NEW DEDICATED CIRCUITS USED SOLELY FOR THE INTERIOR LIGHTING FIXTURES & CONTROLS. NO OTHER DEVICES TO BE WIRED TO SAID CIRCUITS. UPDATE PANEL DIRECTORY ACCORDINGLY.
   D. ADJUST LIGHTING LAYOUTS FOR OPTIMAL LIGHTING DISTRIBUTION, CONFIRM ALL LAYOUT ADJUSTMENTS.
   E. INSTALL FIXTURES WITH INTEGRAL OCCUPANCY SENSORS SO THAT OCCUPANCY SENSOR IS POSITIONED TOWARDS THE ENTRANCE TO THE SPACE.
   F. LIGHTING CONTROL SETTINGS TO BE ISSUED DURING SHOP DRAWING PHASE. TIME OFF DELAY TO BE SET TO 15 MINUTES THROUGHOUT UNLESS NOTED OTHERWISE.
   G. ALL LIGHTING CONTROLS (WHERE APPLICABLE) TO BE FAIL SAFE. IN THE EVENT OF A LIGHTING CONTROL FAILURE, LIGHTING TO REMAIN ON.
   H. CHLORINE ROOM LIGHTING FIXTURE: AS SPECIFIED, REFER TO LAYOUT.



WWTP SITE PLAN
SCALE: NTS

REFERENCE DRAWINGS	
G001	SITE LOCATION & DRAWING INDEX
P001	PROCESS FLOW DIAGRAM
P002	PROCESS SERVICE BUILDING LAYOUT
M001	MECHANICAL BUILDING LAYOUT / HVAC
E001	ELECTRICAL POWER LAYOUT & DETAILS
I001 THRU I006	INSTRUMENTATION
REFERENCE NUMBER	DESCRIPTION

REVISIONS					
0	2021-05-26	ISSUED FOR CONSTRUCTION	CEM	KJW	M.ALIDINA
REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR

SEAL

LICENSED PROFESSIONAL ENGINEER
K. J. WOZNIAK
100168220
2022-02-17
PROVINCE OF ONTARIO

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25mm

CLIENT

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER
RFS002-2020

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER
201-05557-00

ISSUE STATUS
FOR CONSTRUCTION

	INITIALS	YYYY-MM-DD
DESIGNED BY	K.WOZNIAK	2020-07-05
DESIGN CHECKED BY	K.WOZNIAK	2020-07-15
DRAWN BY	R.NICHOLSON	2020-07-05
DRAWING CHECKED BY	K.WOZNIAK	2020-07-15
PROJECT MANAGER	M.ALIDINA	2020-07-21

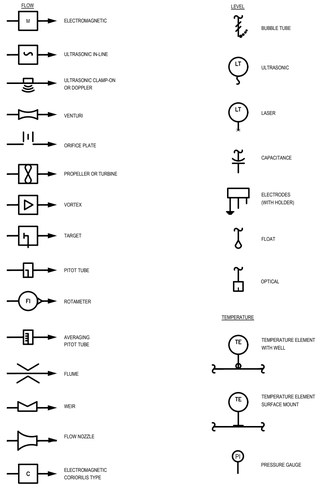
SCALE NTS | SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

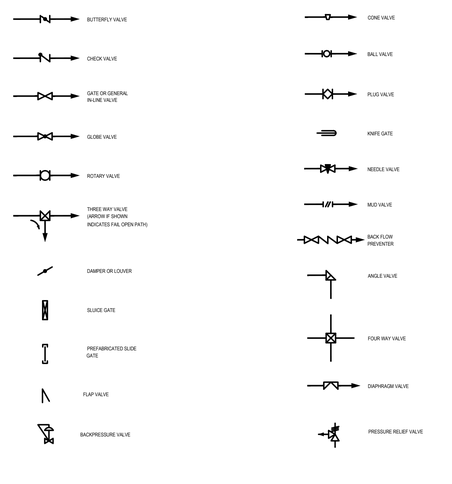
DRAWING TITLE
ELECTRICAL
SITE PLAN & SPECIFICATIONS

DRAWING NUMBER
E002
0

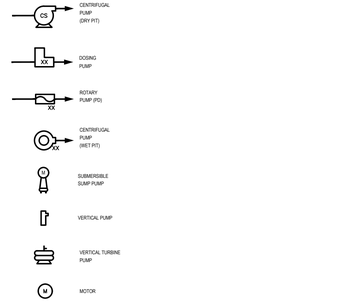
PRIMARY ELEMENT SYMBOLS



VALVE & GATE SYMBOLS



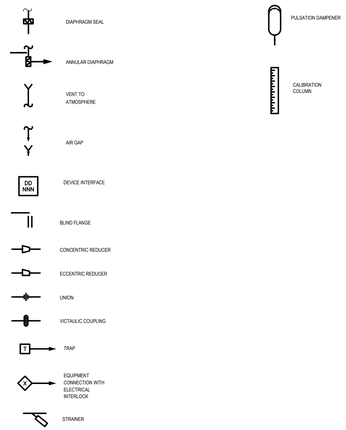
EQUIPMENT SYMBOLS



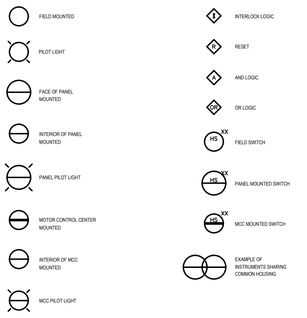
NOTE XX : CS = CONSTANT SPEED
2S = TWO SPEED
VS = VARIABLE SPEED

PD : POSITIVE DISPLACEMENT

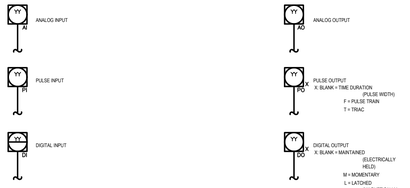
MISCELLANEOUS SYMBOLS



INSTRUMENT & FUNCTION SYMBOLS



INPUTS & OUTPUTS TO SHARED OR PROGRAMMABLE LOGIC CONTROLLER



NOTE:

YY: MEASURED VARIABLE OR OUTPUT FUNCTION FROM INSTRUMENT IDENTIFICATION TABLE

YN: ON DIGITAL INPUT INDICATES COMPUTER/HAND SWITCH STATUS

EXPLANATORY NOTATIONS

"A": WHEN ADDED TO NOTATION, INDICATES AUTO.
EXAMPLE: HOA = HAND/OFF/AUTO

1. "R": WHEN ADDED TO NOTATION, INDICATES REMOTE.
EXAMPLE: HOR = HAND/OFF/REMOTE

2.

HAND SWITCHES

NOTE XX:

	A/M	= AUTO/MANUAL
	C/M	= COMPUTER/MANUAL
	C/A/M	= COMPUTER/AUTO/MANUAL
	C/L	= COMPUTER/LOCAL
	F/R	= FORWARD/REVERSE
	F/O/R	= FORWARD/OFF/REVERSE
	F/S	= FAST/SLOW
	F/O/S	= FAST/OFF/SLOW
	H/O/A	= HAND/OFF/AUTO
	L/R	= LOCAL/REMOTE
	LO/S	= LOCKOUT/STOP
	M/F/S	= MODULATE FASTER/SLOWER
	M/O/C	= MODULATE OPEN/CLOSE
	O/C	= OPEN/CLOSE
	O/O	= ON/OFF
	O/S/C	= OPEN/STOP/CLOSE
	S/S	= START/STOP
	O/A/O	= ON/AUTO/OFF
	N/M	= NORMAL/MANUAL
	E/S	= EMERGENCY/STOP
	N	= NORMAL
	O	= OPEN
	S	= STOP
	C	= CLOSE
	L	= LOCAL

ACTUATOR SYMBOLS

NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)

XX: FO = FAIL OPEN
FC = FAIL CLOSED
FI = FAIL TO INTERMEDIATE POSITION
BLANK = FAIL TO LAST POSITION

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
C	2022-11-30	ISSUED FOR TENDER	KS	VJ	MA
B	2021-04-23	ISSUED FOR ECA AMENDMENT	AW	VJ	MA
A	2020-06-10	FOR REVIEW	LMB	-	MA

SEAL

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CLIENT

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

CLIENT PROJECT NUMBER

RFS002-2020

1269 PREMIER WAY
THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER

201-05557-00

ISSUE STATUS

FOR TENDER

	INITIALS	YYYY-MM-DD
DESIGNED BY	-	-
DESIGN CHECKED BY	-	-
DRAWN BY	A.WANG	2020-07-30
DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30
SCALE AS NOTED	SHEET NUMBER 1 OF 1	

PROJECT DESCRIPTION

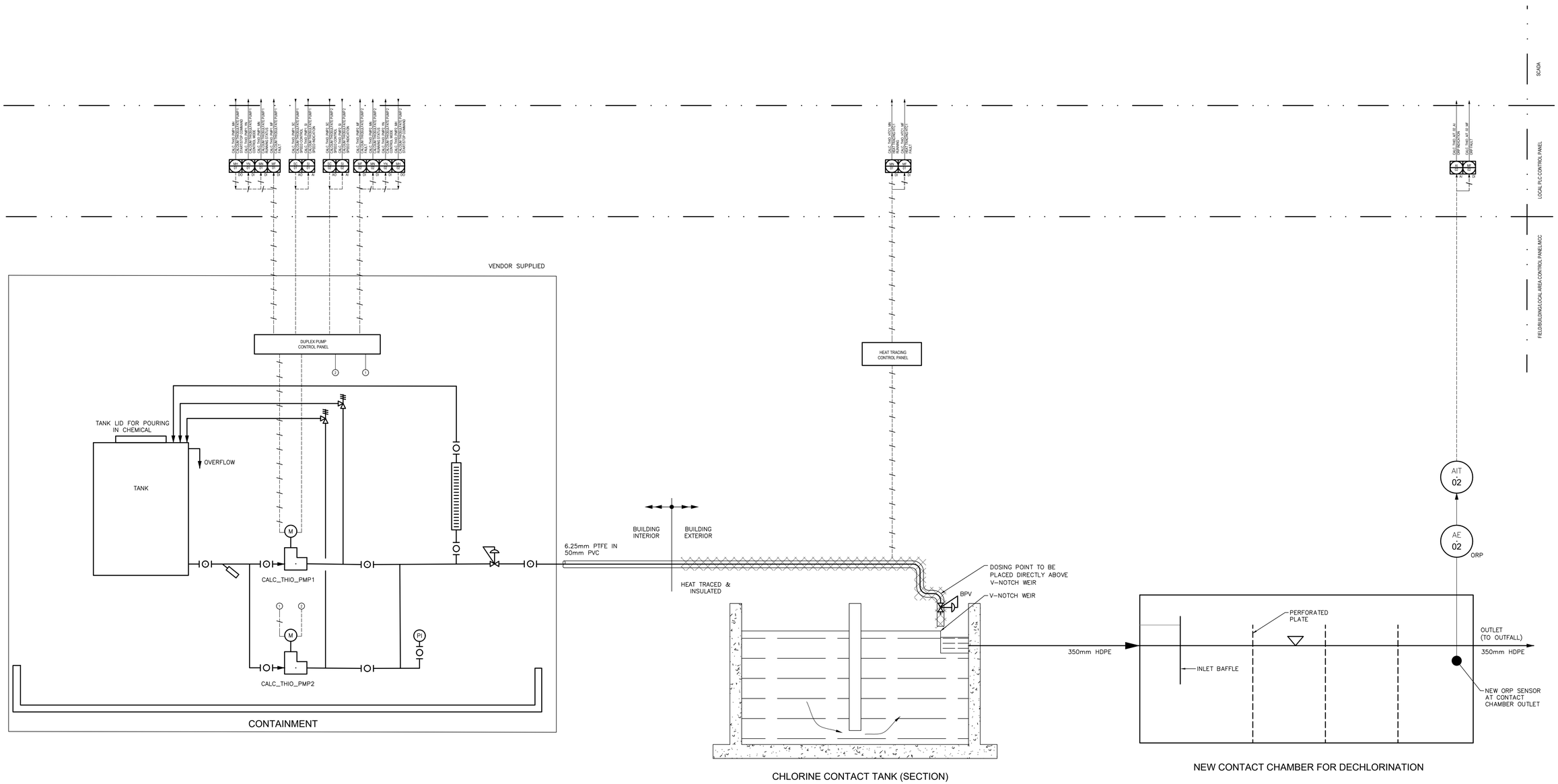
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE

P&ID LEGENDS & ABBREVIATIONS

DRAWING NUMBER

I001 C



NOTE:
1. ALL TAGS PRECEDE WITH PREFIX "NKN"

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REVISIONS

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A	2020-06-10	FOR REVIEW	LMB	-	MA

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THUNDER BAY (ONTARIO) CANADA P7B 0A3
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DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30
SCALE AS NOTED	SHEET NUMBER	1 OF 1

PROJECT DESCRIPTION

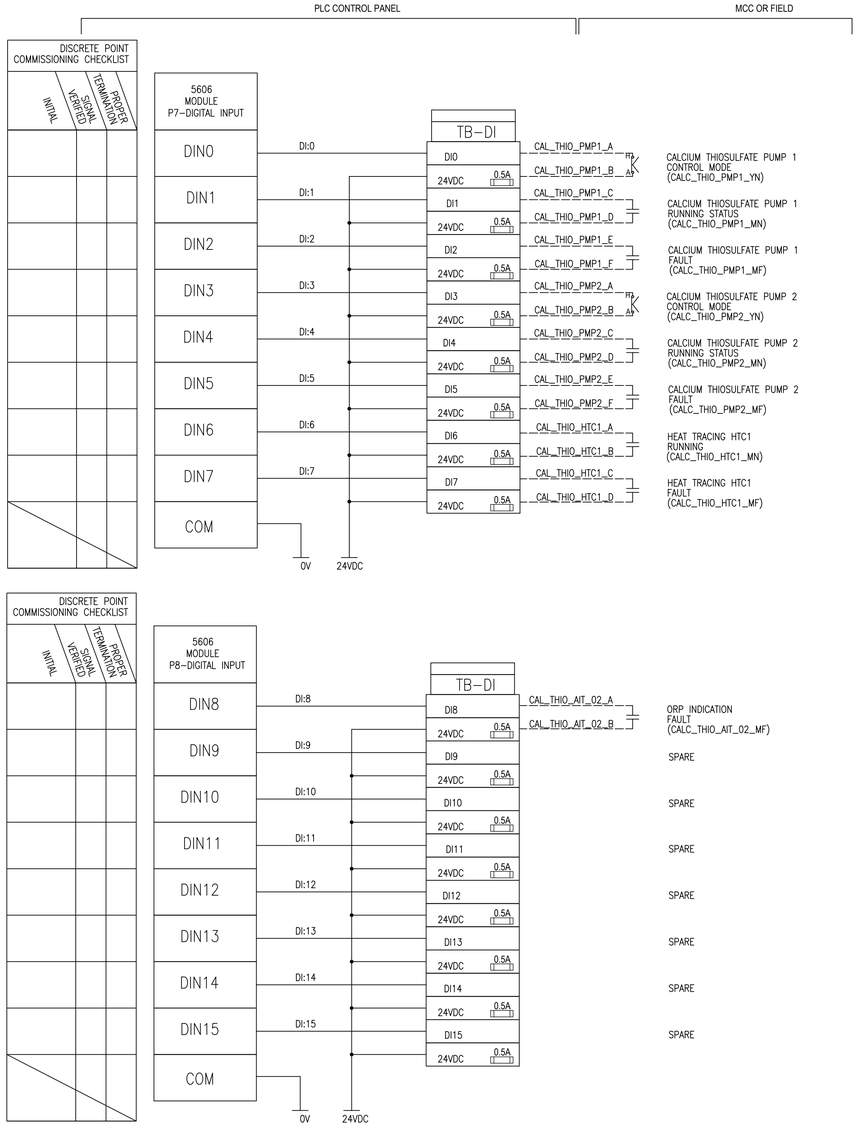
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

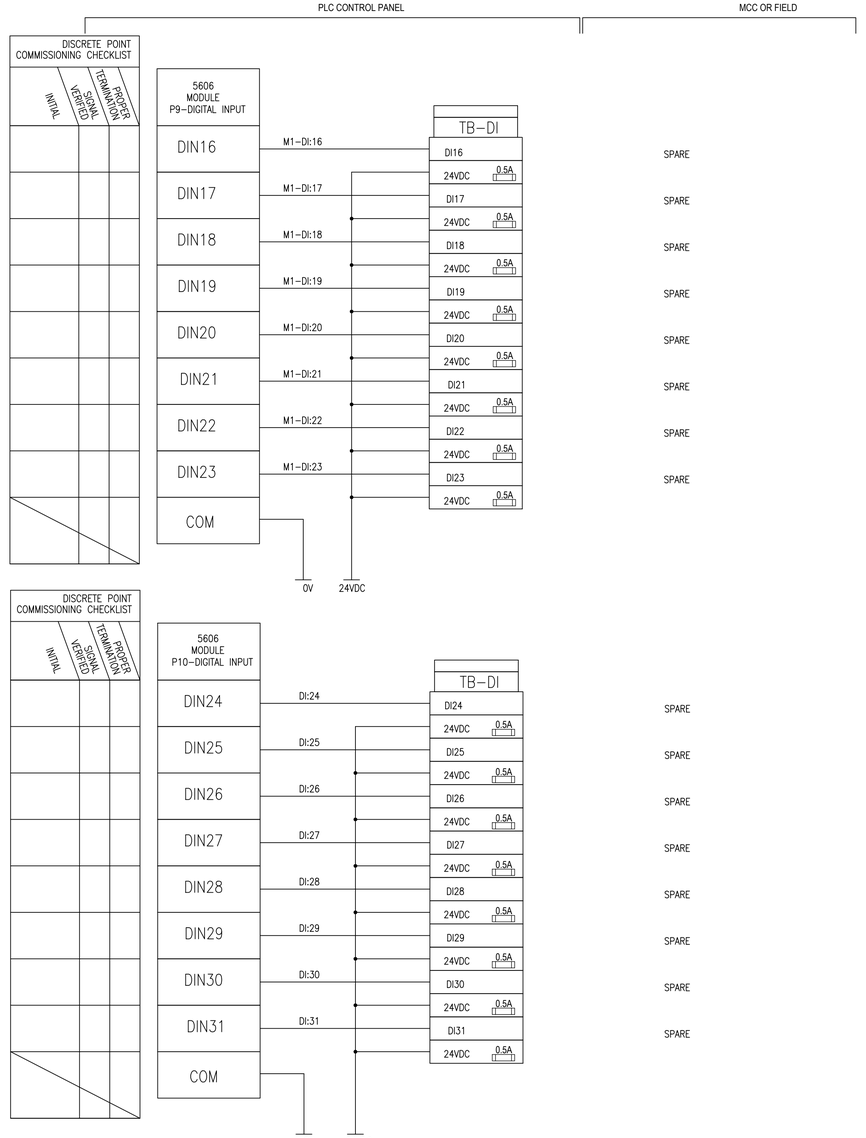
DRAWING TITLE

PROCESS AND INSTRUMENTATION DIAGRAM

DRAWING NUMBER

I002 C





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REFERENCE DRAWINGS		REVISIONS						SEAL
		C	2022-11-30	ISSUED FOR TENDER	KS	VJ	MA	
		B	2021-04-23	ISSUED FOR ECA AMENDMENT	AW	VJ	MA	
		A	2020-06-10	FOR REVIEW	LMB	-	MA	
REFERENCE NUMBER	DESCRIPTION	REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR	

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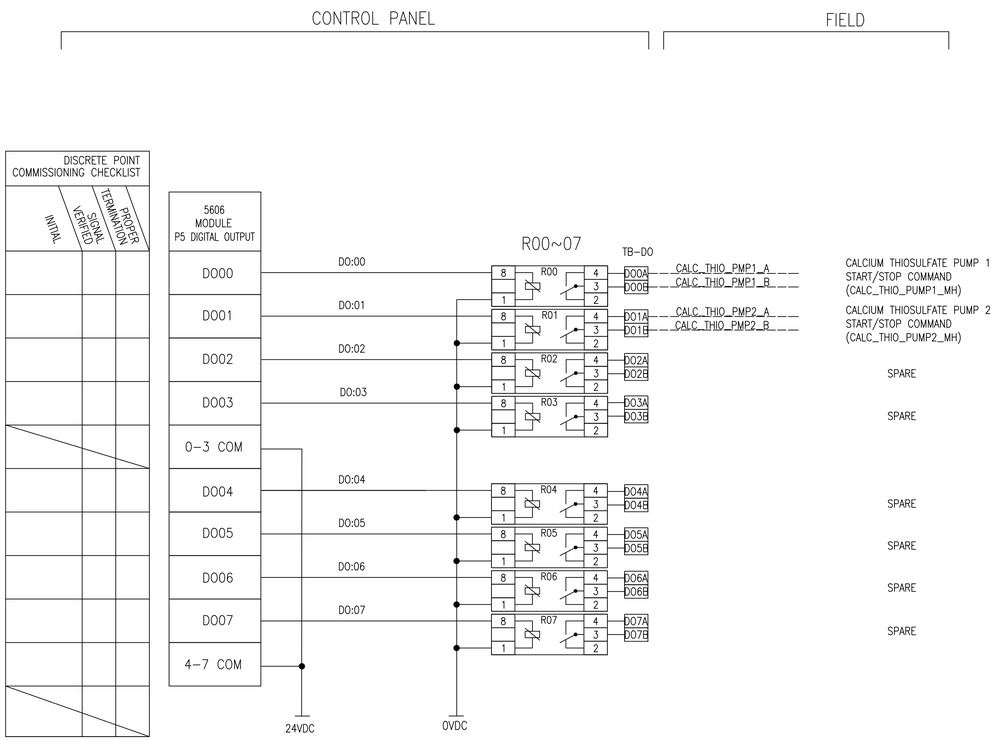
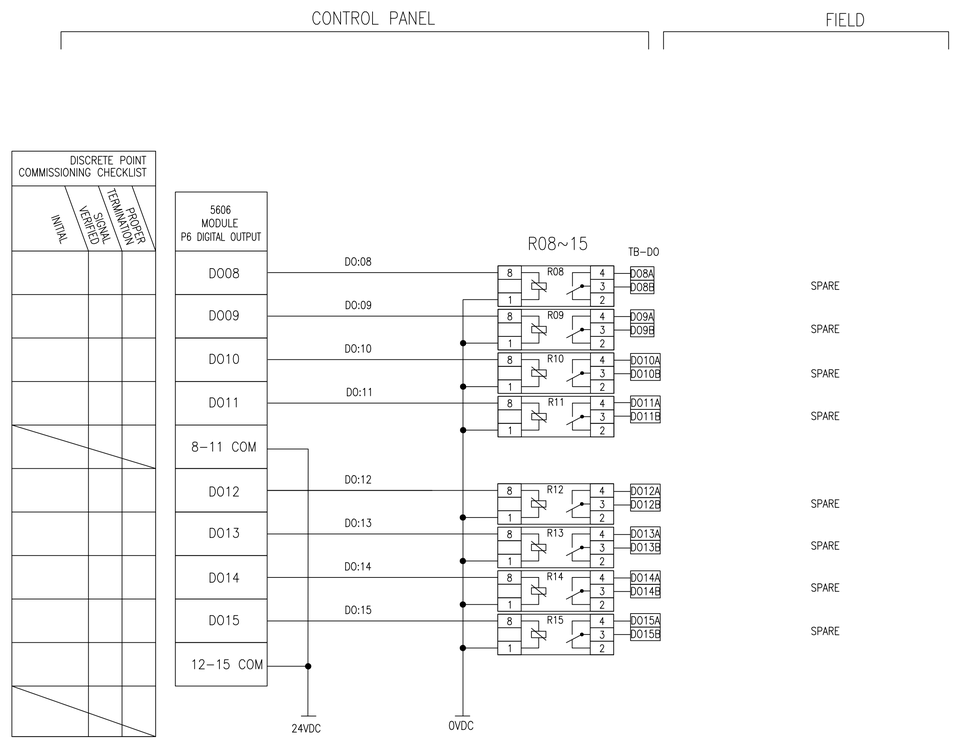
DRAWN BY	A.WANG	2020-07-30
DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30
SCALE AS NOTED	SHEET NUMBER	1 OF 1

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
5606 MODULE P7~P10 DIGITAL INPUT

DRAWING NUMBER
1003
C





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REFERENCE DRAWINGS		REVISIONS					
		C	2022-11-30	ISSUED FOR TENDER	KS	VJ	MA
		B	2021-04-23	ISSUED FOR ECA AMENDMENT	AW	VJ	MA
		A	2020-06-10	FOR REVIEW	LMB	-	MA
REFERENCE NUMBER	DESCRIPTION	REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR

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201-05557-00

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	INITIALS	YYYY-MM-DD
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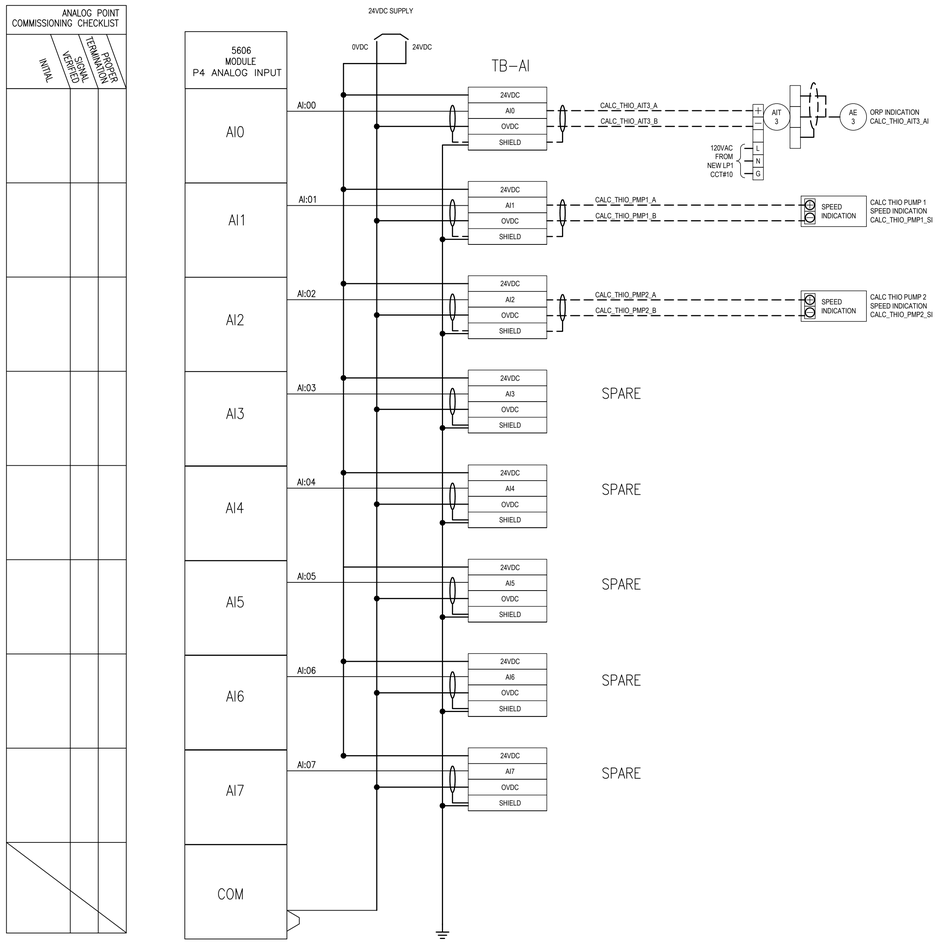
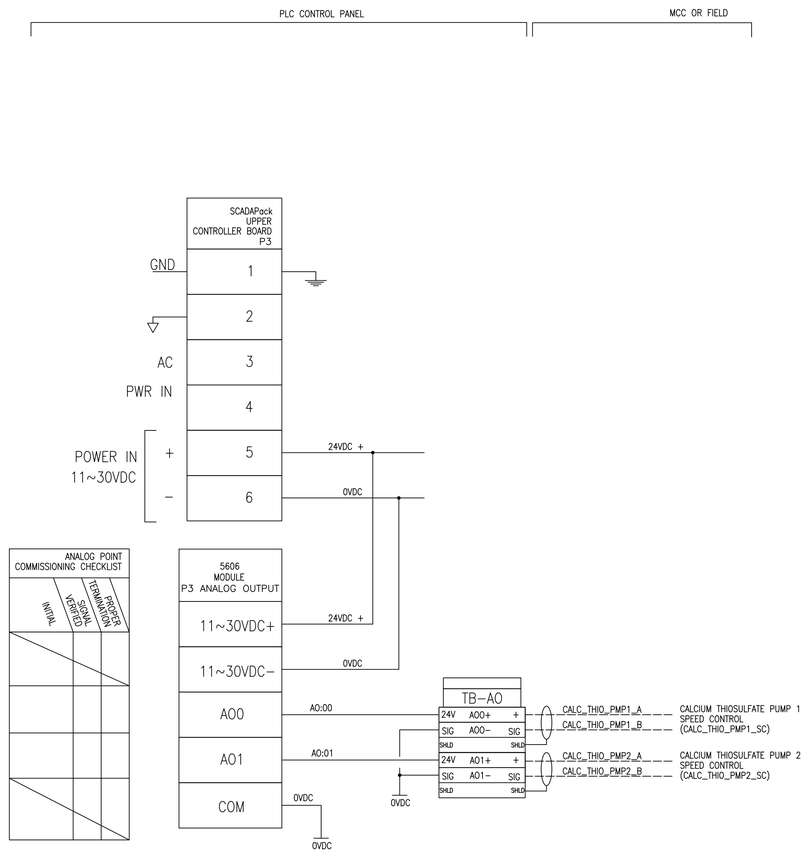
DESIGN CHECKED BY	-	-
DRAWN BY	A.WANG	2020-07-30
DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30
SCALE AS NOTED	SHEET NUMBER 1 OF 1	

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
5606 MODULE P5/P6 DIGITAL OUTPUT

DRAWING NUMBER
I004
C





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REFERENCE DRAWINGS		REVISIONS					
		C	2022-11-30	ISSUED FOR TENDER	KS	VJ	MA
		B	2021-04-23	ISSUED FOR ECA AMENDMENT	AW	VJ	MA
		A	2020-06-10	FOR REVIEW	LMB	-	MA
REFERENCE NUMBER	DESCRIPTION	REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR

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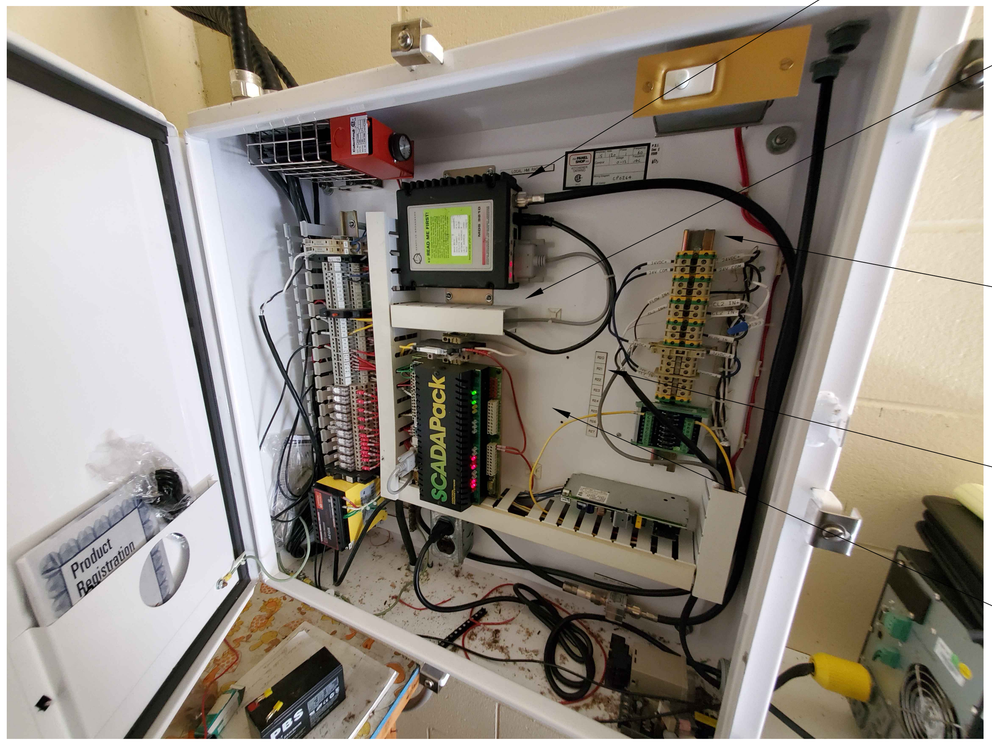
DESIGN CHECKED BY	-	-
DRAWN BY	A.WANG	2020-07-30
DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30
SCALE	AS NOTED	SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION
WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE
5606 MODULE P4/P3 ANALOG INPUT/OUTPUT

DRAWING NUMBER
I005
C

INSTALL MDS 9810 ON FRONT OF JB3 USING EXISTING BRACKET



MOVE MDS 9810 AND REINSTALL ON FRONT OF JB-03 PANEL. REUSE EXISTING BRACKET AND RE-ROUTE (POWER, SERIAL, COAX) CABLES. IF REQUIRED EXTEND CABLES.

REMOVE WIRE DUCT AND INSTALL NEW 5606 COMBINATION MODULE WITH DIN RAIL ABOVE EXISTING SCADAPACK.

IF REQUIRED EXTEND DIN RAIL UP/DOWN AND ADD NEW TERMINAL BLOCKS.

RELOCATE LAMACOID TAGS

ADD NEW DIN RAIL AND TERMINAL BLOCKS.

REFERENCE DRAWINGS

REFERENCE NUMBER	DESCRIPTION

REVISIONS

REV	YYYY-MM-DD	DESCRIPTION	DRAFTER	DESIGNER	PROJ MGR
C	2022-11-30	ISSUED FOR TENDER	KS	VJ	MA
B	2021-04-23	ISSUED FOR ECA AMENDMENT	AW	VJ	MA
A	2020-06-10	FOR REVIEW	LMB	-	MA

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CLIENT PROJECT NUMBER

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THUNDER BAY (ONTARIO) CANADA P7B 0A3
TEL: 807 625-6700 | FAX: 807 623-4491 | WWW.WSP.COM

WSP PROJECT NUMBER

201-05594-00

ISSUE STATUS

FOR TENDER

	INITIALS	YYYY-MM-DD
DESIGNED BY	-	-
DESIGN CHECKED BY	-	-
DRAWN BY	A.WANG	2020-07-30
DRAWING CHECKED BY	V.JOVIC	2020-07-30
PROJECT MANAGER	M.ALIDINA	2020-07-30

SCALE AS NOTED SHEET NUMBER 1 OF 1

PROJECT DESCRIPTION

WASTE WATER TREATMENT PLANT
413 RIVER ROAD, NAKINA, ON

DRAWING TITLE

CONTROL PANEL LAYOUT DIAGRAM

DRAWING NUMBER

I006

C