



CHAR LAKE PUMP HOUSE AND UPGRADE TO SIGNAL HILL WATER TREATMENT PLANT

LIST OF DRAWINGS		
DRAWING No.	REVISION No.	DESCRIPTION
M001	0	MECHANICAL LEGEND AND DRAWING LIST
M002	0	MECHANICAL DETAILS
M201	0	MECHANICAL FUEL SYSTEM LAYOUT
M301	0	MECHANICAL HEATING SYSTEM LAYOUT
M302	0	MECHANICAL HEATING SYSTEMS, ELEVATIONS AND SCHEMATICS
M501	0	MECHANICAL VENTILATION LAYOUT
M601	0	MECHANICAL CONTROLS - LENGED & NETWORK ARCHITURE
M602	0	MECHANICAL CONTROLS - VENTILATION SCHEMATICS
M603	0	MECHANICAL CONTROLS - HYDRONIC NETWORK SCHEMATICS
M604	0	MECHANICAL CONTROLS - WIRING SCHEMATICS
S-300	0	TYPICAL DETAILS
S-301	2	LAYOUT PLAN AND GENERAL NOTES
S-302	2	FOUNDATION PLAN
S-303	2	ROOF FRAMING PLAN AND WALL ELEVATIONS
S-304	2	SECTIONS
S-305	1	SECTIONS
S-306	0	SECTIONS
S-401	2	EXISTING PUMP HOUSE DEMOLITION PLANS, SECTIONS & GENERAL NOTES

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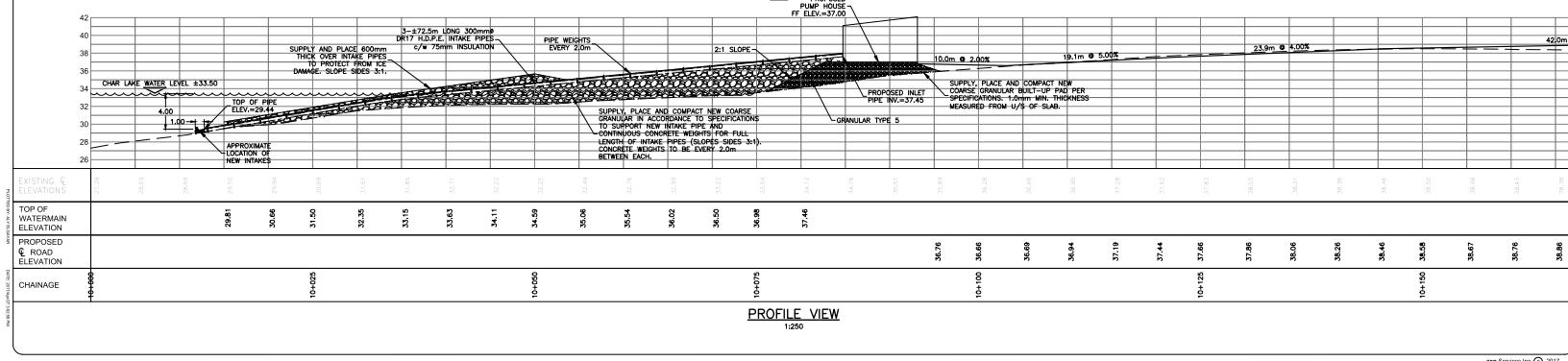
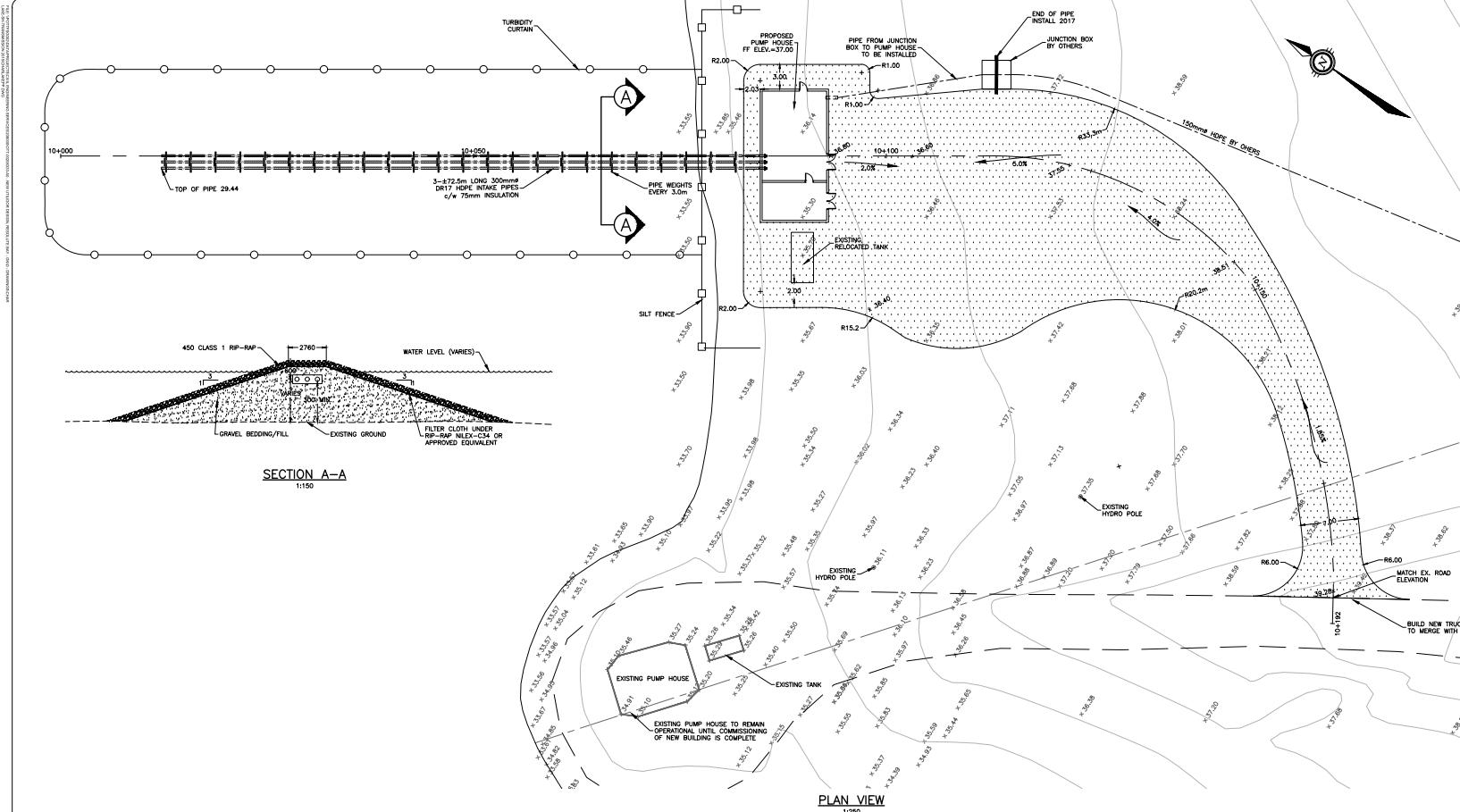
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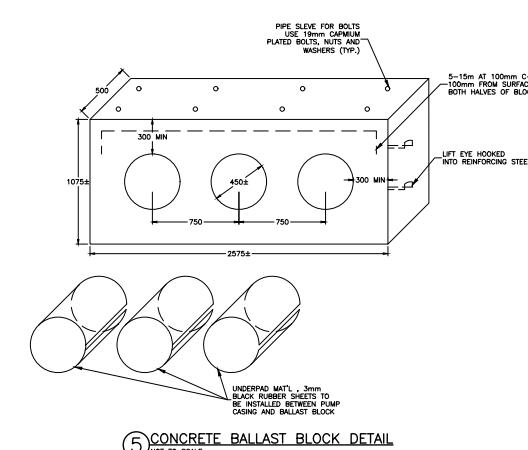
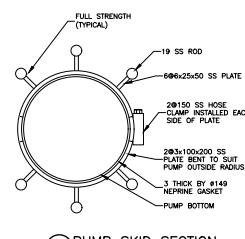
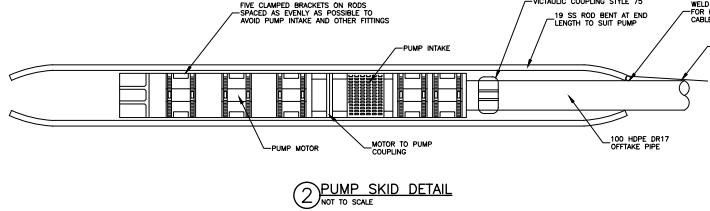
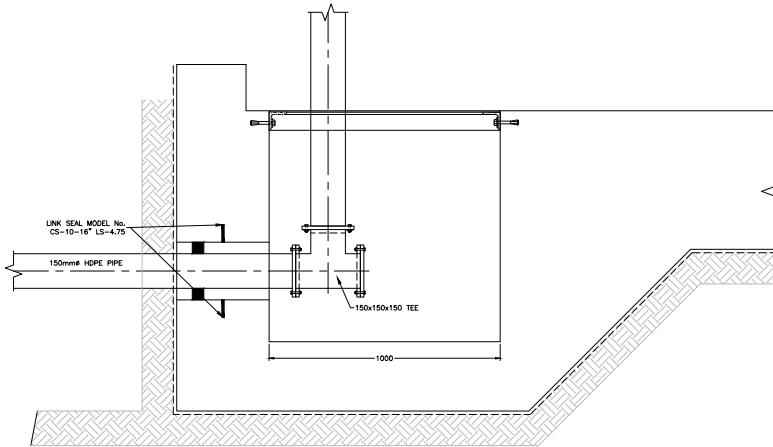
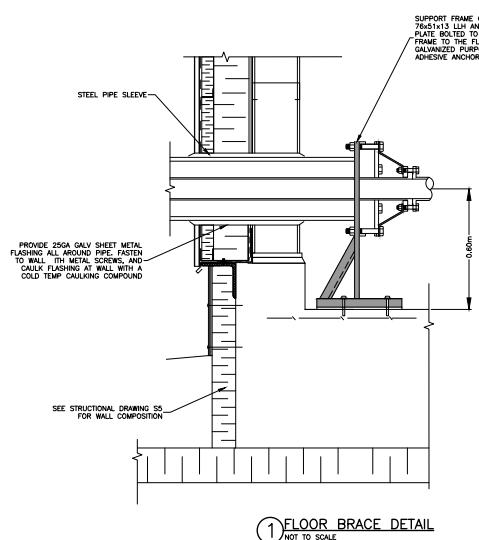
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PRELIMINARY

DATE: JANUARY 2018





No.	Issue	Date
01	50% SUBMISSION	17/02/17
02	75% SUBMISSION	06/04/17
03	100% SUBMISSION	27/04/17



No.	Revision	Cd. By	Date

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Project Title	NEW ULLIDOR DESIGN RESOLUTE BAY, NU	
Dwg. Title	CHAR LAKE PUMP HOUSE DETAILS 1	

Project No.	OTT-00206333-B0	Rev. No.
Dwg. No.	C-101	02
Scale	AS NOTED	

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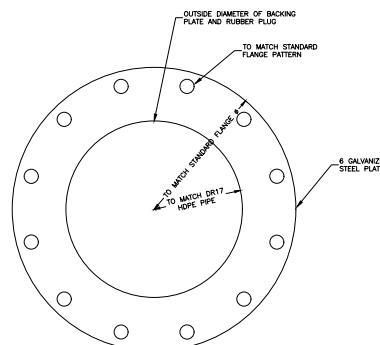
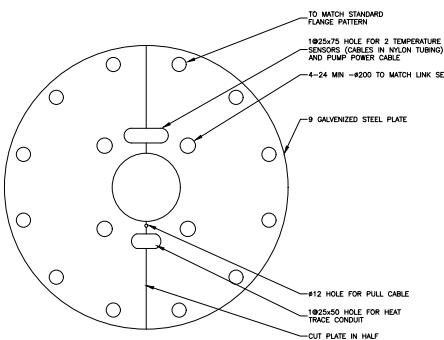
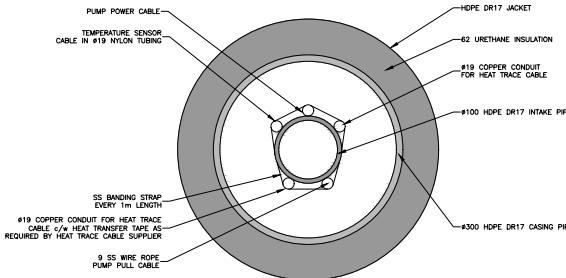
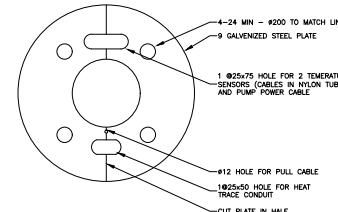
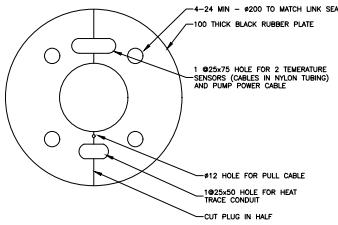
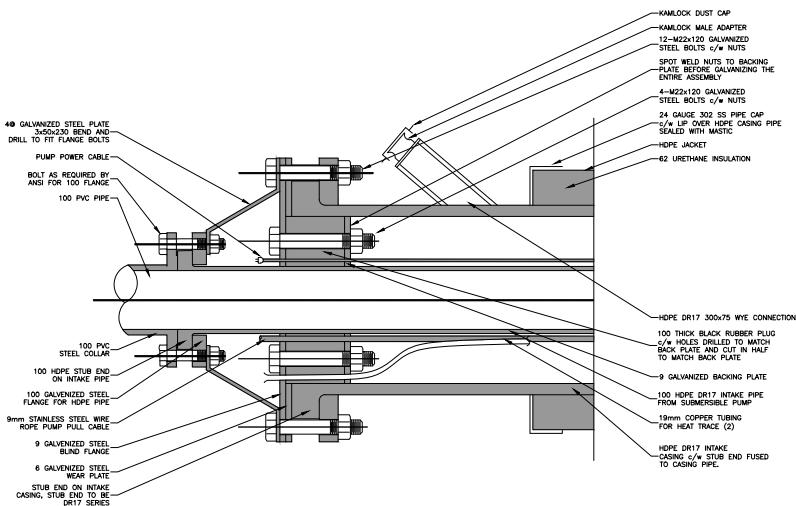
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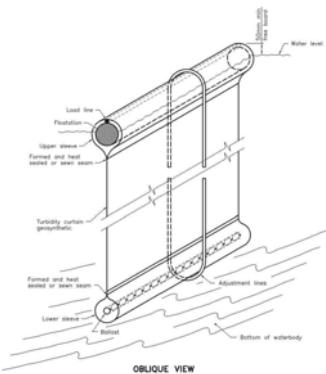
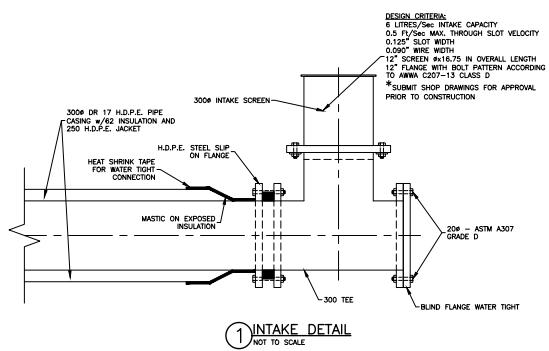
Project Title	NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Dwg. Title		

CHAR LAKE PUMP HOUSE DETAILS 2

Project No.	OTT-00206333-B0	
Desg. No.	C-102	Rev. No.
Scale	AS NOTED	

This drawing is not to be scaled



**DEFINITION**

A FLEXIBLE, IMPENETRABLE BARRIER USED TO TRAP SEDIMENT IN WATER BODIES. THE CURTAIN IS POSITIONED AT THE TOP AND HAVE CLOSURE WHILE SUPPORTED AT THE TOP THROUGH A FLOTATION SYSTEM.

PURPOSE

TO PREVENT THE MIGRATION OF SILT FROM A WORK SITE IN A WATER ENVIRONMENT INTO THE LARGER BODY OF WATER.

CONDITION WHERE PRACTICAL APPLIES

A TURBIDITY CURTAIN IS GENERALLY USED FOR CONSTRUCTION ACTIVITY OCCURS WITHIN A WATERBODY OR ALONG ITS SHORELINE AND IS OF SHORT DURATION, GENERALLY LESS THAN ONE MONTH. CURTAINS ARE USED IN DAILY CONSTRUCTION ACTIVITIES. TURBIDITY CURTAINS ARE NOT TO BE USED ACROSS FLOWING WATERCOURSES.

DESIGN CRITERIA

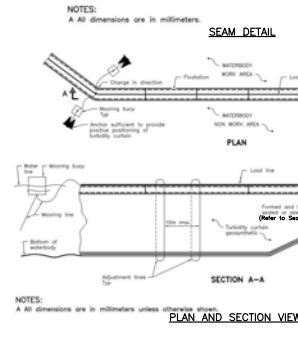
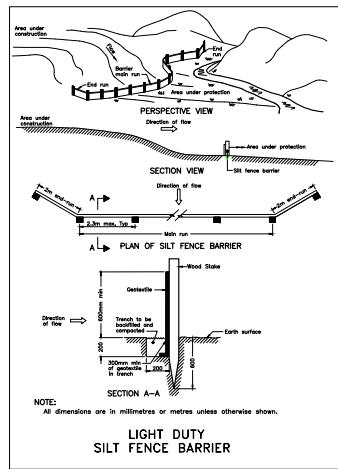
THE TURBIDITY CURTAIN SHALL BE LOCATED BEYOND THE LATERAL LIMITS OF THE CONSTRUCTION ACTIVITY. THE CURTAIN SHOULD BE POSITIONED SO THAT IT SHOULD BE SET AS CLOSE TO THE WORK AREA AS POSSIBLE BUT NOT SO CLOSE AS TO BE DISTURBED BY APPLICABLE CONSTRUCTION EQUIPMENT. THE CURTAIN SHOULD BE POSITIONED SO THAT IT IS SUBMERGED IN THE DEPTH OF THE WATER TO ALLOW FOR WATER LEVEL FLUCTUATIONS. THE ADJUSTMENT LINES SHALL BE POSITIONED SO THAT THEY DO NOT OBSTRUCT CULVERTS OR DRAINAGE AREAS THAT IF FLOW OCCUR BEHIND THE CURTAIN WOULD CAUSE A BREACH OR LOST CONTACT AT THE BOTTOM SURFACE. WATER LEVEL FLUCTUATIONS AND TIDE SWINGS ARE MINIMAL, THE TOE CAN BE ANCHORED IN PLACE BY STAKING.

CONSTRUCTION SPECIFICATIONS

THE AREA OF PROPOSED INSTALLATION OF THE CURTAIN SHALL BE REPAVED OR REGRADED TO ENSURE THAT NO MATERIALS WILL DAMAGE THE CURTAIN OR IMPAIR ITS EFFECTIVENESS TO RETAIN SEDIMENT. ALL MATERIALS SHALL BE REMOVED SO THEY CANNOT ENTER THE WATERBODY. SMALL QUANTITIES OF MATERIALS MAY BE REMOVED BY STAKING RATHER THAN USING A FLOTATION SYSTEM. SUPPLEMENTAL ANCHORAGE FOR THE TURBIDITY CURTAIN ICE SHALL BE USED AS NEEDED, DEPENDING ON WATER SURFACE DISTURBANCES SUCH AS WAVE WINDS.

Maintenance

THE TURBIDITY CURTAIN SHALL BE INSPECTED DAILY AND REPAIRED OR REPLACED IMMEDIATELY. IT IS NOT NORMALLY NECESSARY TO REMOVE SEDIMENT DEPOSITED BEHIND THE CURTAIN; BUT, WHEN NECESSARY, REMOVAL IS TO BE DONE BY STAKING. NO MATERIALS SHALL BE LEFT ON THE CURTAIN. ALL REMOVED SILT IS STABILIZED AWAY FROM THE WATERBODY. THE BARRIER SHALL BE POSITIONED AS CLOSE AS POSSIBLE TO THE CONSTRUCTION SITE TO MINIMIZE THE RELEASE OF ATTACHED SEDIMENT. ANY FLOATING CONSTRUCTION OR NATURAL DEBRIS SHALL BE IMMEDIATELY REMOVED FROM THE WATERBODY. THE TURBIDITY CURTAIN ICE IS DIRECTIONED IN A MANNER THAT FACES THE PREVAILING WINDS. FREQUENT CHECKS OF THE ANCHORAGE SHALL BE MADE.

**③ SILT FENCE DETAIL**
NOT TO SCALE

No	Issue	Date
01	50% SUBMISSION	17/02/17
02	75% SUBMISSION	06/04/17
03	100% SUBMISSION	27/04/17



No	Revision	Chg By	Date

PRELIMINARY

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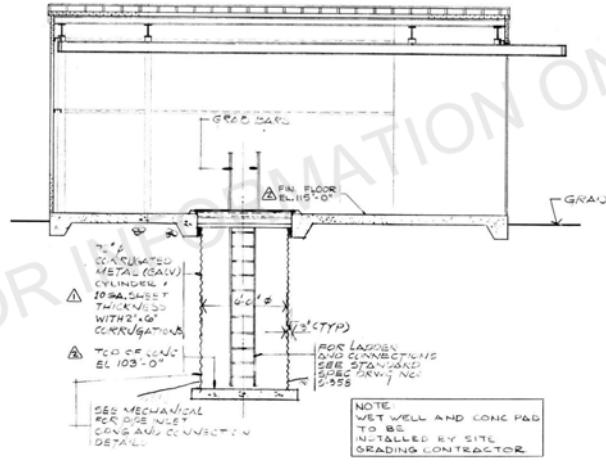
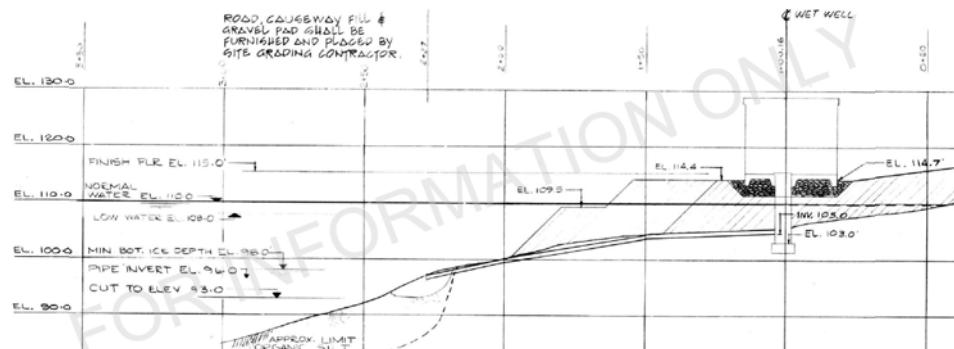
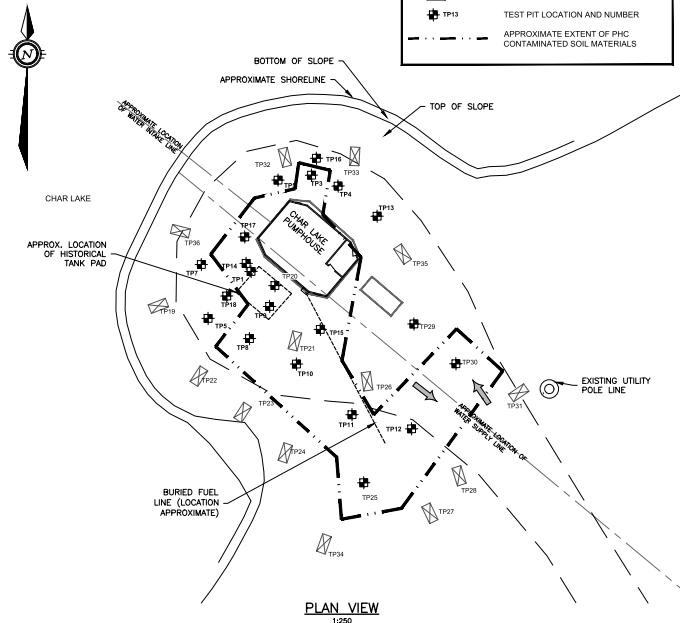


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Project Title	NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Dwg. Title		

CHAR LAKE PUMP HOUSE DETAILS 3		
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Project No	OTT-00206333-B0	
Dwg. No.	C-103	Rev. No. 02
Scale	AS NOTED	This drawing is not to be copied

SECTION A-A
N.T.S.PROFILE VIEW
N.T.S.PLAN VIEW
1:250

No.	Issue	Date
01	75% SUBMISSION	06/04/17
02	100% SUBMISSION	27/04/17



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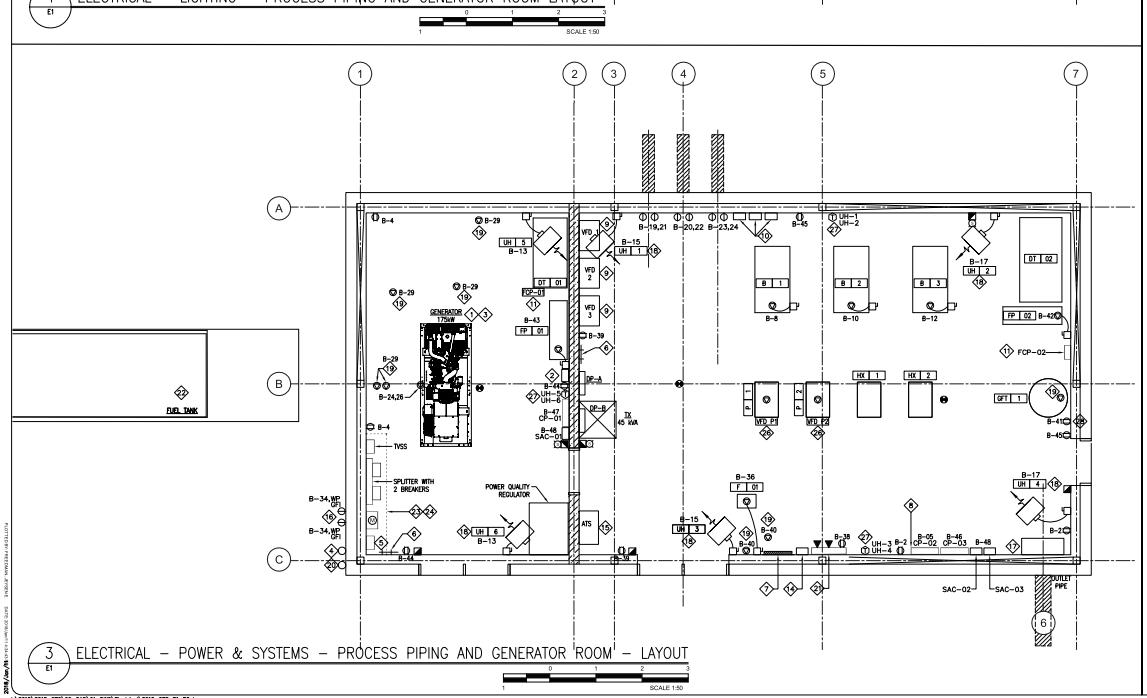
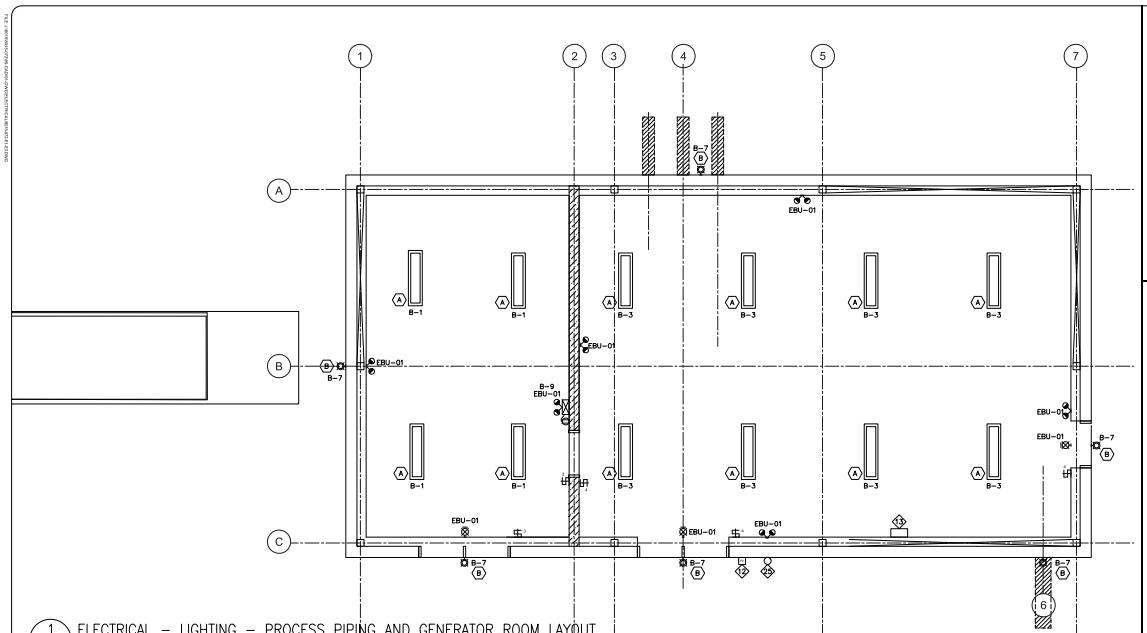
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Project Title	NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Dwg. Title		
CHAR LAKE EXTENT OF CONTAMINATED SOILS		
Project No.	OTT-00206333-B0	
Dwg. No.	C-104	Rev. No. 01
Scale	AS NOTED This drawing is not to scale.	



No.	Issue	Date
04	ISSUED FOR 100% TECHNICAL REVIEW	A.W. 2016-01-11
03	ISSUED FOR 100% REVIEW	A.W. 2017-04-10
02	ISSUED FOR 75% REVIEW	A.W. 2017-03-21
01	ISSUED FOR 50% REVIEW	A.W. 2017-02-16
Nbr	Revision	Cd. By Date

DRAWING LIST

SHEET **DRAWING TITLE**

E1 LIGHTING, POWER & SYSTEMS LAYOUT
E2 LEGEND, SITE PLAN & DETAILS
E3 SCHEDULES
E4 GROUNDING LAYOUT & DETAILS

2 ELECTRICAL - DRAWING LIST

GENERAL NOTES:

A. PERFORM COMPLETE INSTALLATION OF EQUIPMENT IN STRICT ACCORDANCE, AND SHALL MEET THE MOST STRINGENT REQUIREMENTS OF THE FOLLOWING:

- CSA C22.1-15 CANADIAN ELECTRICAL CODE, PART 1 (CNSC EDITION).
- GOVERNMENT OF NUNAVUT'S 2000 BUILDING PRACTICES GUIDELINES – SECOND EDITION DECEMBER, 2005.
- DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – PROTECTION SERVICES DIVISION – ON ENERGY CONSERVATION AND SAFETY – BULLETIN 2005-01, TECHNICAL BULLETIN.

B. VERIFY WITH THE ELECTRICAL INSPECTION DEPARTMENT THE ACCEPTABILITY OF ANY PRE-WIRING DONE OUTSIDE THE PROVINCE OF NUNAVUT AND ENSURE THAT A PERMIT IS ACQUIRED.

NOTES:

- PROVIDE AND INSTALL NEW 175kW 600V, 3Ø, 4W EMERGENCY GENERATOR GL.
- PROVIDE AND INSTALL BATTERY CHARGER AS INDICATED. COMPLETE CONNECTION FROM CHARGER TO BATTERIES AT GENERATOR.
- ENERGIZE BLOCK HEATER TERMINAL BOX FROM PANEL BCB-B AS INDICATED. REFER TO PANEL SCHEDULE.
- OVERHEAD INCOMING POWER AND COMMUNICATION SERVICE. PROVIDE ONE (1) 38mm RIGID GALVANIZED CONDUIT STUB TO EXTERIOR FOR SERVICE ENTRANCE AND SEAL.
- PROVIDE MAIN INCOMING FEEDER BREAKER AND ENCLOSURE AS INDICATED. REFER TO SINGLE LINE DIAGRAM FOR DETAILS.
- PROVIDE MAIN GROUND BUS IN NEW GENERATOR ROOM AS INDICATED. REFER TO 5/E2 FOR DETAILS.
- PROVIDE FIRE ALARM CONTROL PANEL AND ASSOCIATE FIRE DETECTING DEVICES AND ALARMS AS INDICATED.
- PROVIDE ONE (1) 38mm RIGID GALVANIZED CONDUIT PANEL, CCB-02 PROVIDED BY DIVISION 23. PROVIDE SIX (6) 25mm DIA CONDUIT FROM THIS PANEL TO EACH PUMP STARTERS TO CONTROL THEIR OPERATION.
- PROVIDE THREE (3) VIDS WITH 75mm x 3 x 12 AWG TECK CABLE FED FROM PANEL DCA-A TO FEED WATER PUMPS MCD-1, MCD-2 AND MCD-3. REFER TO 5/E2 FOR DETAILS.
- PROVIDE HEAT TRACING CONTROLLER & POWER SUPPLY TO MATCH THE HEAT TRACE CABLE'S PLUG. PROVIDE GFI BREAKER FOR ASSOCIATED CIRCUITS. SEE SHEET 7/E2.
- PROVIDE POWER FROM PANEL BCB-B TO FUEL CONTROL PANELS AS INDICATED. TWO (2) FUEL TRANSFER PUMPS AND TWO (2) CONTROL PANELS PROVIDED BY DIVISION 23. ENERGIZE EACH PUMP WITH SEPARATE FEEDER FROM CONDUIT SUPPORTS ADJACENT TO PUMPS IN GENERATOR ROOM.
- PROVIDE PHOTOCELL AS INDICATED TO CONTROL TYPE B EXTERIOR LIGHTS.
- PROVIDE LIGHTING CONTROL CONTACTOR FOR OUTDOOR LIGHTING COMPLETE WITH HAND-OFF/AUTO CONTROL. CONNECT TO PHOTOCELL.
- PROVIDE EIGHT (8) CHANNEL AUTO-DIALED COMMUNICATION MODULE AS INDICATED INCLUDING SIGNAL WIRING IN 21mm CONDUIT. PROVIDE OUT MAJOR ALARMS AS FOLLOWS:
 - ONE PAR 1 #1 TO SIGNAL GENERATOR OR FAILURE
 - ONE PAR 1 #1 TO SIGNAL FIRE ALARM ACTIVATION
 - ONE PAR 1 #1 TO SIGNAL FIRE ALARM ACTIVATION
 - ONE PAR 1 #1 TO HAVE BATTERY BACK-UP FOR 24 HOURS OF MONITORING.
- PROVIDE 200A, 600V, 3Ø, 4W ATS. COMPLETE WITH SWITCHEABLE NEUTRAL.
- PROVIDE SPUR PARKING RECEPTACLE IN WEATHERPROOF ENCLOSURE ON EXTERIOR WALL OF BUILDING FOR MAINTENANCE STAFF.
- PROVIDE 150W HEAT TRACING CONTROLLER MODEL THERM-TROL FOR MAIN WATER SUPPLY LINE TO SIGNAL HILL TOWER. PROVIDE HEAT TRACING CONTROL PANEL TO INCLUDE CONTROL MODULE, CONTACTOR AND CIRCUIT BREAKERS FOR HEAT TRACING CIRCUIT. HEAT TRACING SHALL BE THERM-TX SERIES CONSTANT WATT HEATING CABLE, RATED 600W/36' = 13.3W/ft, MODEL 1KX360.
- PROVIDE 150W 120V CONNECTIONS FOR HYDROGEN UNIT HEATER.
- PROVIDE 150W 120V CONNECTIONS FOR MOTORIZED DAMPERS SUPPLIED AND INSTALLED BY DIV.23.
- OPTICAL FIBER MAST WITH CONNECTION TO UTILITY POLE. PROVIDE 53mm CONDUIT FROM MAST TO CONDUIT SUPPORTS.
- PROVIDE 1300mm x 2300mm PLYWOOD COMMUNICATIONS BACKBOARD WITH AUTO DIALER, DEDICATED OUTLET, TELEPHONE OUTLET, SPLITTER, TELEPHONE, AND FIBER OPTIC TO CAT 5E PATCH PANEL FOR COMMUNICATIONS.
- PROVIDE EMPTY 27mm CONDUIT FROM FUEL TANK TO BUILDING FOR CONTROL. WIRING. MOUNT CONDUIT ON OVERHEAD UNSTRUT. COORDINATE WITH MECHANICAL.
- PROVIDE Drip SHIELD AROUND ALL EQUIPMENT MOUNTED BELOW AIR INTAKE DUCTWORK.
- PROVIDE ANGLE IRON SUPPORT TO MOUNT EQUIPMENT OFF THE STRUCTURAL WALL TO CLEAR STRUCTURAL CROSS TIES.
- PROVIDE STROBE LIGHT ON MAST TO ANNUNCIATE CONTROL ALARMS.
- ONE (1) VIDS (PROVIDED BY DIVISION 23) WITH 3/8" x 12 GND IN 27mm CONDUIT. COORDINATE CONNECTION WITH DIVISION 23.
- PROVIDE LINE VOLTAGE THERMOSTAT. COORDINATE INSTALLATION WITH CONTROLS CONTRACTOR.
- COORDINATE GLYCOL FILM TANK CONNECTION WITH DIVISION 23.

PRELIMINARY

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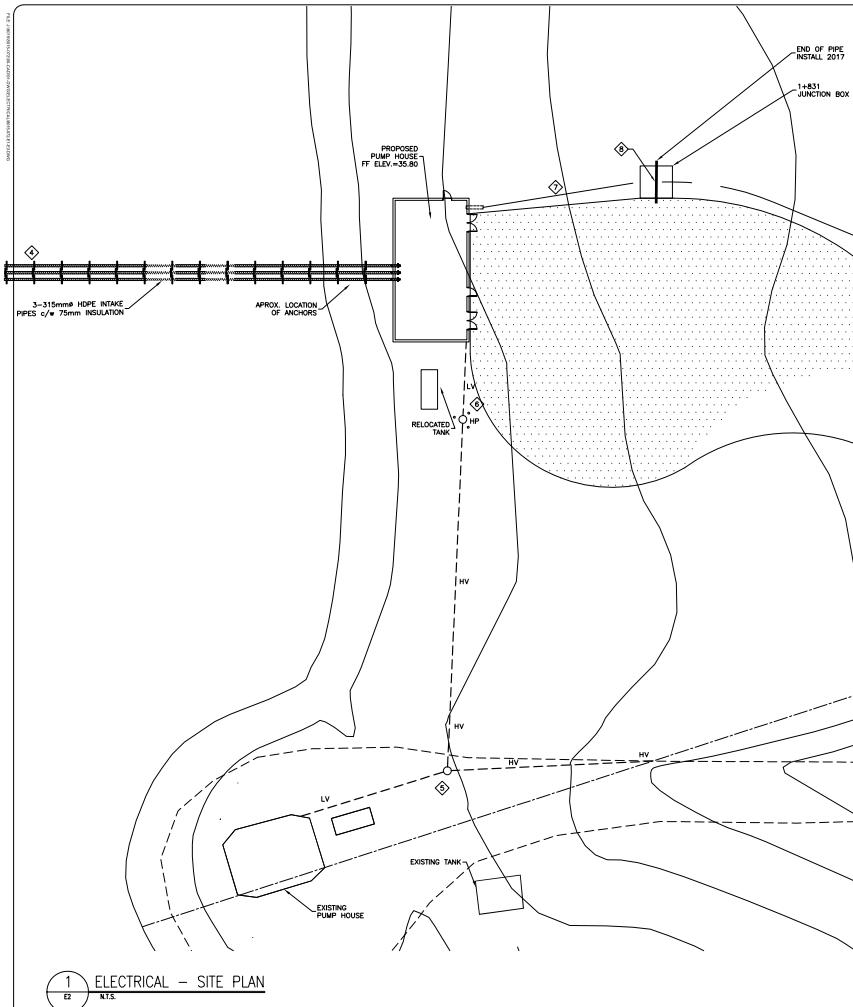
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Dwg. Title:

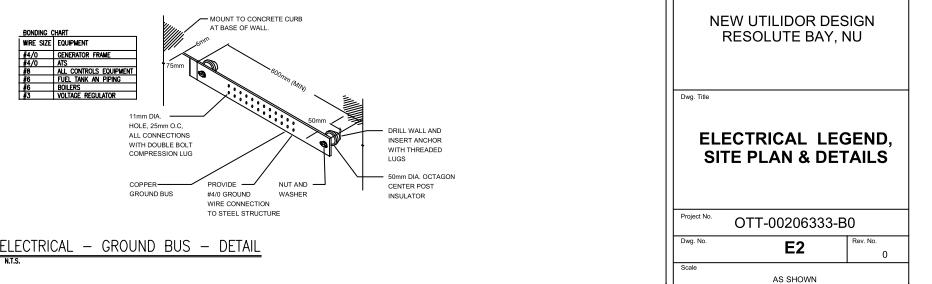
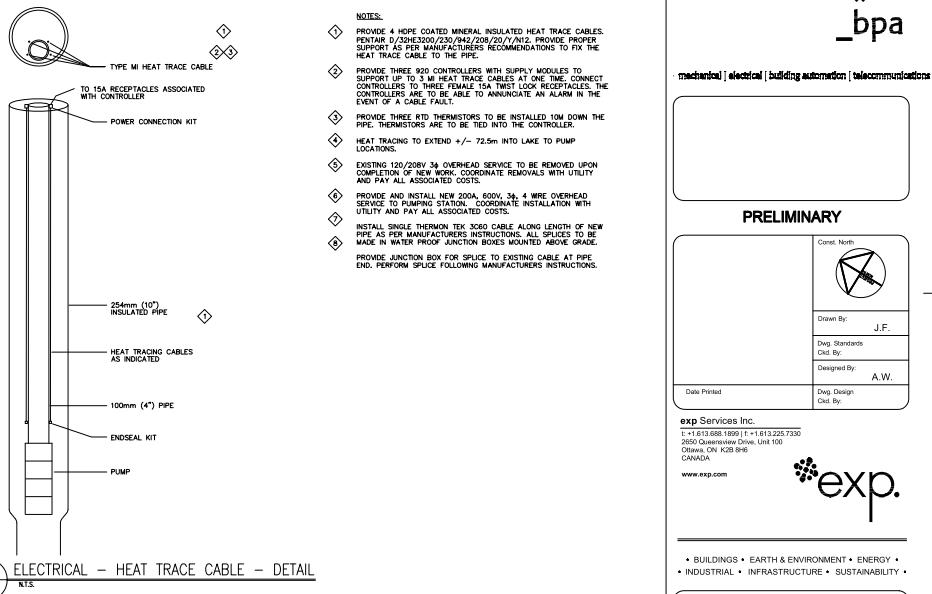
**ELECTRICAL
LEGEND, LIGHTING,
POWER & SYSTEMS
LAYOUT**

Project No.: OTT-00206333-B0
Dwg. No.: E1 **Rev. No.:** 0
Scale: AS SHOWN
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LEGEND	
	FIRE ALARM PULL STATION
	FIRE ALARM HEAT DETECTOR
	FIRE ALARM HORN AND STROBE
	FIRE ALARM CONTROL PANEL
	LIGHT SWITCH 1 INDICATES 3-WAY
	LIGHT SWITCH 4 INDICATES 4-WAY
	1x4 LIGHT FIXTURE
	WALL-MOUNTED LIGHT FIXTURE
	CEILING-MOUNTED BILINGUAL EXIT SIGNS
	EMERGENCY BATTERY UNIT ON HEADS
	EMERGENCY REMOTE HEADS - WALL MOUNTED
	DUPLEX RECEPTACLE
	DEDICATED DUPLEX RECEPTACLE
	DIRECT CONNECTION
	VARIABLE FREQUENCY DRIVE
	DISCONNECT SWITCH
	MOTOR STARTER PROTECTOR
	LINE VOLTAGE THERMOSTAT
	METER HEAD
	JUNCTION BOX
	CONTACTOR
	PHOTOCELL
	BREAKER PANEL
	WALL-MOUNTED TELEPHONE OUTLET
	POWER METER CABINET
	GND
	GROUND
	CIRCUIT BREAKER
	REFER TO NOTE 1
	Fixture Type 'A'
	GFI DENOTES GROUND FAULT INTERRUPT
	WP DENOTES WEATHER PROOF
	HYDRONIC UNIT HEATER

2 ELECTRICAL - LEGEND



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FIXTURE SCHEDULE		
SYMBOL	TYPE	DESCRIPTION
		139mm x 210mm VAPOUR PROOF LED - FROSTED POLYCARBONATE HOUSING WITH CONTINUOUS POLYSEAL IN PLACE, CLOSED GASKET. - INTEGRATED LED MODULE, CLEAR TRANSPARENT POLYCARBONATE LEN. - 120V OPERATED - CHAIN SUPPORT
		WALL MOUNTED LED DOWNLIGHT - 72W LED LAMP - CORROSION RESISTANT DIE CAST ALUMINUM HOUSING - PROTECTIVE GLASS LEN - 3000K COLOR TEMPERATURE - CHAIN GUARD
		VAPOUR LIGHT FIXTURE - 3000K COLOR TEMPERATURE - WEATHER-RESISTANT DIE CAST ALUMINUM HOUSING WITH CORROSION-RESISTANT PAINT - 3000K COLOR TEMPERATURE - MOISTURE AND DUST - FROSTED GLASS DIFFUSER - 120V OPERATED - CHAIN GUARD

1 ELECTRICAL - PANEL SCHEDULE
E3 N.T.S.

PANEL DESIGNATION.....	BP-B	PANEL LOCATION.....	ELEC. BM					
NUMBER OF POLES.....	4	MOUNTING.....	FACE SURFACE					
SHIELDING.....	30A							
WIRING CAPACITY.....	225A							
DESCRIPTION	LOAD	AMP. POLE	CCT NO.	PHASE	CCT NO.	AMP. POLE	LOAD	DESCRIPTION
GENERATOR ROOM LIGHTING	15A	IP		A	2	15A	IP	PROCESS ROOM RECEPTACLE
PROCESS ROOM LIGHTING	15A	IP		B	4	15A	IP	GENERATOR ROOM RECEPTACLE
EXT. LIGHT	15A	IP		C	6	15A	IP	BOILER
EXTERIOR LIGHTING	15A	IP		D	8	15A	IP	BOILER
REF. UNIT	15A	IP		E	10	15A	IP	REF. UNIT
EF-01	15A	IP		F	11	15A	IP	REF. UNIT
HYDROGEN UNIT HEADERS 5 & 6	15A	IP		G	13	15A	IP	BOILER CONTROL PANEL
HYDROGEN UNIT HEADERS 7 & 8	15A	IP		H	15	15A	IP	COOLER
HYDROGEN UNIT HEADERS 3 & 4	15A	IP		I	17	15A	IP	FUEL FILTRATION SYSTEM
HEAT TRACE "P"	30A	2P		J	19	30A	2P	HEAT TRACE "P"
HEAT TRACE "P"	30A	2P		K	21	30A	2P	HEAT TRACE "P"
HEAT TRACE "P"	30A	2P		L	23	30A	2P	GENERATOR BLOCK HEATER
PROCESS ROOM RECEPTACLES	15A	IP		M	25	15A	IP	BATTERY CHARGER
COMPUTER WORKSTATION 240V 8W	15A	IP		N	27	15A	IP	POWER SOURCE, PAINTED RED
HEAT EXCHANGER 1	15A	IP		O	31	15A	IP	CONTROL PANEL
HEAT EXCHANGER 2	15A	IP		P	33	15A	IP	DUOPLEX PLUGS (GFI)
PROCESS ROOM RECEPTACLE	15A	IP		Q	35	15A	IP	FUEL PUMP
GLYCOL FILL TANK	15A	IP		R	41	15A	IP	DUOPLEX RECEPTACLE
FUEL PUMP	15A	IP		S	43	15A	IP	DUOPLEX RECEPTACLE
PROCESS ROOM RECEPTACLE	15A	IP		T	45	15A	IP	DP-03
SPARE	15A	IP		U	47	15A	IP	SPARE
SPARE	15A	IP		V	49	15A	IP	SPARE
SPARE	15A	IP		W	51	15A	IP	SPARE
SPARE	15A	IP		X	53	15A	IP	SPARE
SPARE	15A	IP		Y	55	15A	IP	SPARE
SPARE	15A	IP		Z	57	15A	IP	SPARE
SPARE	15A	IP		A	59	15A	IP	SPARE

2 ELECTRICAL - PANEL SCHEDULE
E3 N.T.S.

MOTOR NO.	SERVICE DESCRIPTION	MOTOR LOCATION	M.U.L.K. CHARACTERISTICS			SOURCE	FEEDER	MOTOR BREAKER SIZE	SWITCHES	MAGNETIC STARTERS	RELAYS	REMOTE CONTR.	INTERLOCK TO:	REMARKS
			H.P.	F.L.A.	VOLT.									
WP-01	WATER PUMP-01	PUMP RM	10	11	600V	3D	DPA	3.812 + 12.GRD	25A-3P					VFD WITH INTERNAL BYPASS BY DIVISION 26
WP-02	WATER PUMP-02	PUMP RM	10	11	600V	3D	DPA	3.812 + 12.GRD	25A-3P					VFD WITH INTERNAL BYPASS BY DIVISION 26
WP-03	WATER PUMP-03	PUMP RM	10	11	600V	3D	DPA	3.812 + 12.GRD	25A-3P					VFD WITH INTERNAL BYPASS BY DIVISION 26
V-01	VENTILATION FAN-01	PUMP RM	0.25	-	120V	1D	BP-B	2.812 + 12.GRD	25A-3P					VFD WITH INTERNAL BYPASS BY DIVISION 26
UH-01	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
UH-02	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
UH-03	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
UH-04	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
UH-05	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
UH-06	UNIT HEATER-01	PUMP RM	0.05	-	120V	1D	BP-B	2.812 + 12.GRD						
DH-01	DUCT HEATER-01	PUMP RM	9kW	-	208V	3D	BP-B	2.812 + 12.GRD						
H-1	HOT WATER PUMP-01	PUMP RM	5	6.1	600V	3D	DPA	3.812 + 12.GRD	15A-3P					PUMP WITH INTEGRATED VFD BY DIVISION 23
H-2	HOT WATER PUMP-02	PUMP RM	5	6.1	600V	3D	DPA	3.812 + 12.GRD	15A-3P					PUMP WITH INTEGRATED VFD BY DIVISION 23
FP-01	FUEL PUMP-01	PUMP RM	0.33	-	120V	1D	BP-B	2.812 + 12.GRD						FUEL PUMP SYSTEM PROVIDED WITH DUPLEX CONTROLLER BY DIVISION 23.
FP-02	FUEL PUMP-02	PUMP RM	0.33	-	120V	1D	BP-B	2.812 + 12.GRD						FUEL PUMP SYSTEM PROVIDED WITH DUPLEX CONTROLLER BY DIVISION 23.
BL-1	BOILER-1	PUMP RM	-	-	120V	1D	BP-B	2.812 + 12.GRD						
BL-2	BOILER-2	PUMP RM	-	-	120V	1D	BP-B	2.812 + 12.GRD						
BL-3	BOILER-3	DAMPER	-	-	120V	1D	BP-B	2.812 + 12.GRD						

3 ELECTRICAL - MOTOR CONTROL SCHEDULE
E3 N.T.S.

No.	Issue	Date
04	REISSUED FOR 100% TECHNICAL REVIEW	A.W.
03	ISSUED FOR 100% REVIEW	A.W.
02	ISSUED FOR 75% REVIEW	A.W.
01	ISSUED FOR 50% REVIEW	A.W.
No.	Revision	Cmd. By

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Ottawa, Ontario, K2B 5B6
613-966-6434
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PRELIMINARY

Const. North	
Drawn By: J.F.	
Dwg. Standards Ctl. By:	
Designed By: A.W.	
Date Printed	Dwg. Design Ctl. By



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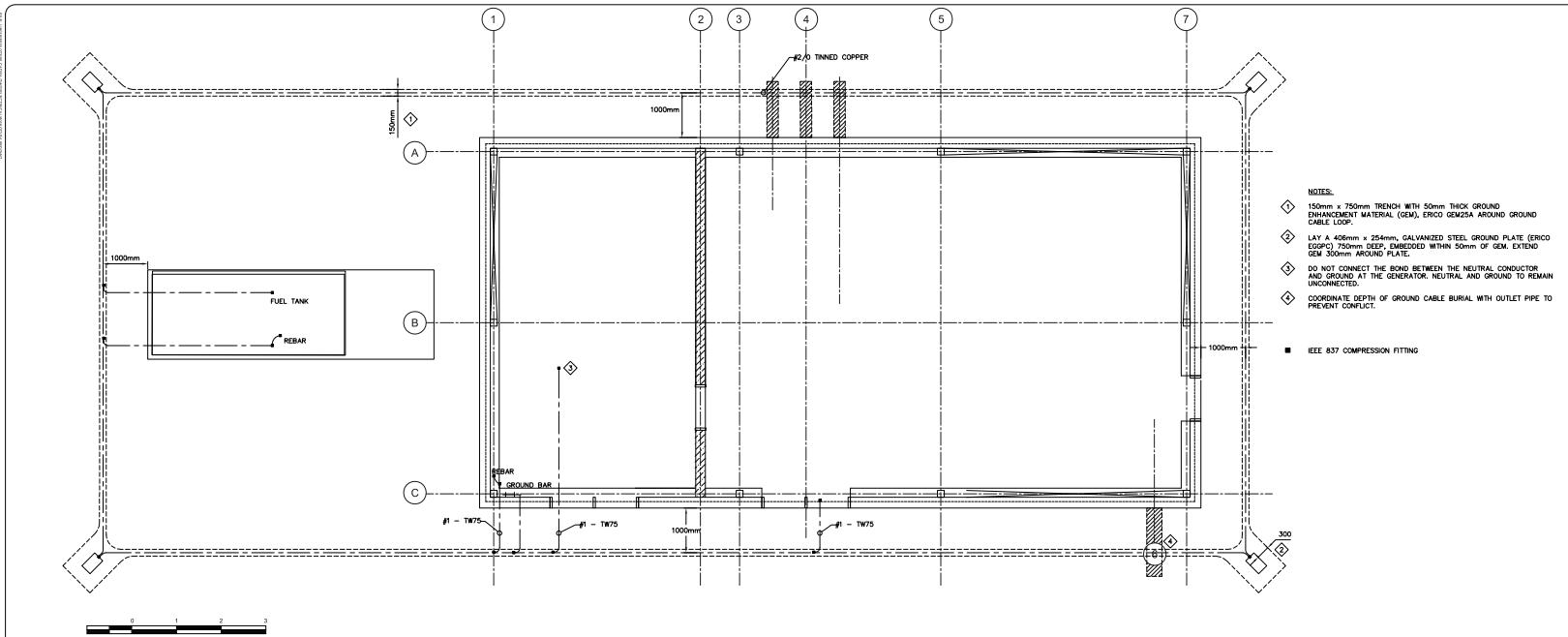
Project Title

NEW UTILIDOR DESIGN
RESOLUTE BAY, NU

Dwg. Title

ELECTRICAL
SCHEDULES

Project No.: OTT-00206333-B0
Dwg. No.: E3 Rev. No.: 0
Scale: AS SHOWN
This drawing is not to be scaled



No.	Issue	Date
04	REISSUED FOR 100% TECHNICAL REVIEW	A.W. 2019-01-11
03	ISSUED FOR 100% REVIEW	A.W. 2017-04-10
02	ISSUED FOR 75% REVIEW	A.W. 2017-03-21
01	ISSUED FOR 50% REVIEW	A.W. 2017-02-16
No.	Revision	Cd. By Date

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PRELIMINARY

Const. North	
Drawn By:	J.F.
Dwg. Standards Ctl. By:	
Designed By:	A.W.
Date Printed	Dwg. Design Ctl. By

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Project Title: NEW UTILIDOR DESIGN RESOLUTE BAY, NU

Dwg. Title:

ELECTRICAL GROUNDING LAYOUT & DETAILS

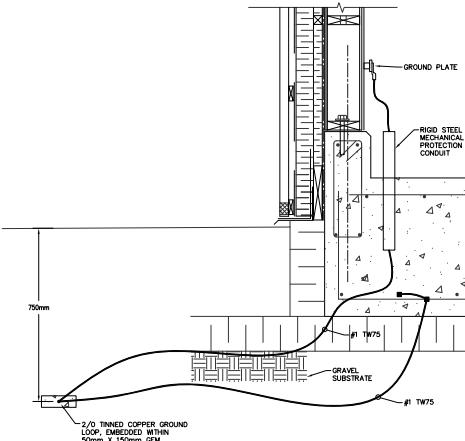
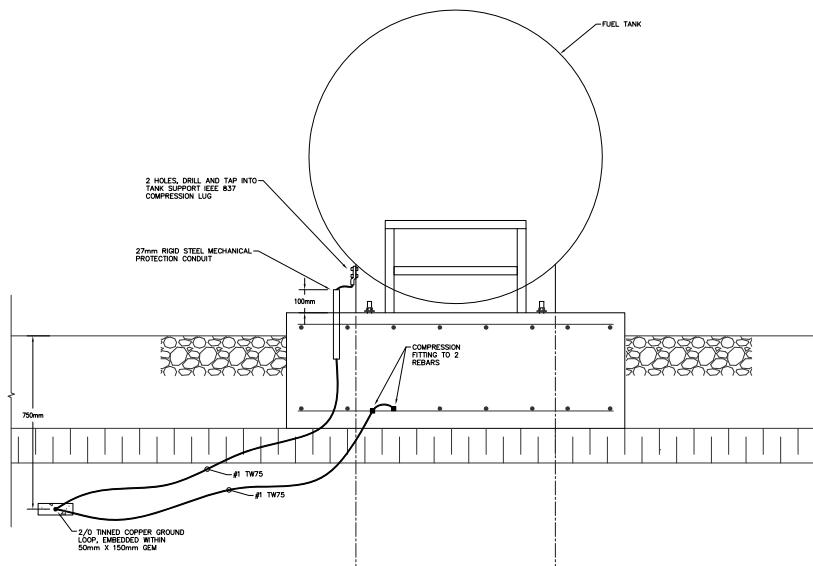
Project No.: OTT-00206333-B0

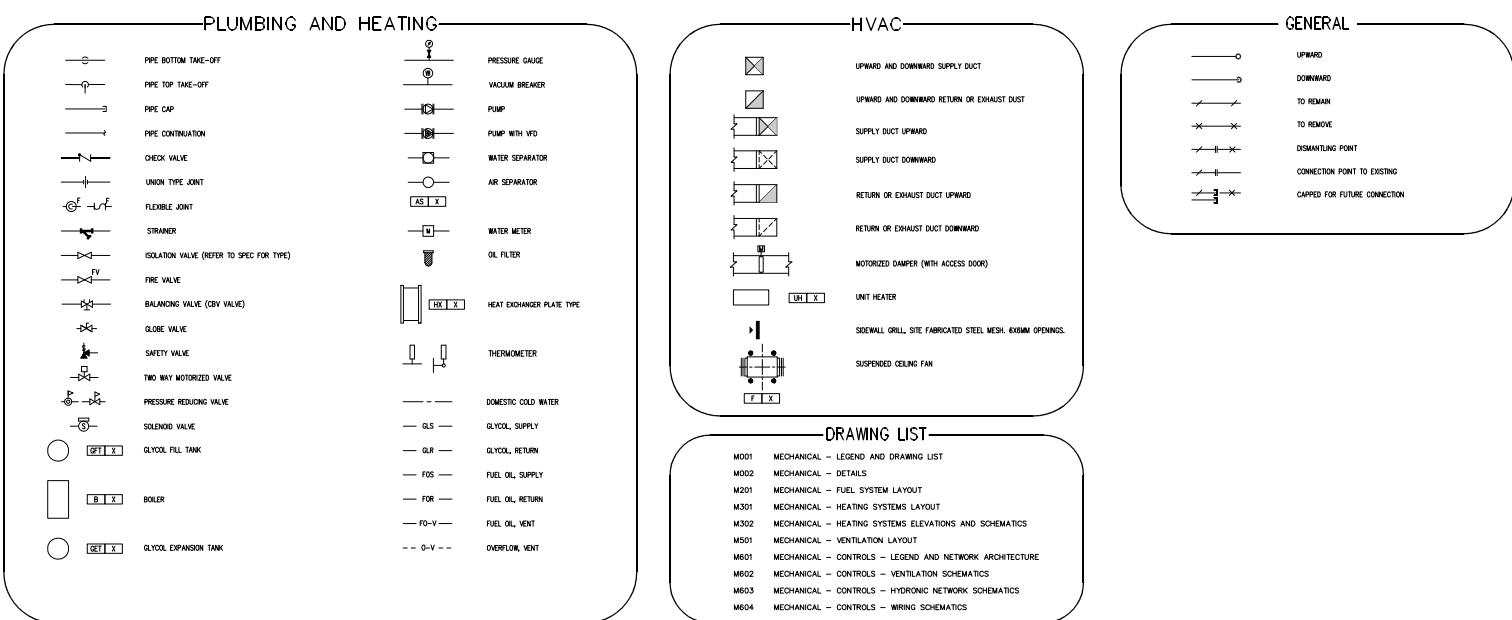
Dwg. No.: E4 Rev. No.: 0

Scale:

AS SHOWN

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DRAWING LIST

- M001 MECHANICAL - LEGEND AND DRAWING LIST
- M002 MECHANICAL - DETAILS
- M201 MECHANICAL - FUEL SYSTEM LAYOUT
- M301 MECHANICAL - HEATING SYSTEMS LAYOUT
- M302 MECHANICAL - HEATING SYSTEMS ELEVATIONS AND SCHEMATICS
- M501 MECHANICAL - VENTILATION LAYOUT
- M601 MECHANICAL - CONTROLS - LEGEND AND NETWORK ARCHITECTURE
- M602 MECHANICAL - CONTROLS - VENTILATION SCHEMATICS
- M603 MECHANICAL - CONTROLS - HYDROGEN NETWORK SCHEMATICS
- M604 MECHANICAL - CONTROLS - WRING SCHEMATICS

No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-10
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 60% REVIEW	PSO 2017-02-16
No.	Revision	Clrd. By Date

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Const. North	
Drawn By:	J. Faubert
Dwg. Standards:	P. St-Onge
Clrd. By:	
Designed By:	J. Faubert
Date Printed:	12-01-2018
Dwg. Design:	P. St-Onge

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Project Title:	
NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Dwg. Title:	
MECHANICAL LEGEND AND DRAWING LIST	
Project No.:	OTT-00206333-B00
Dwg. No.:	M001
Rev. No.:	0
Scale:	AS SHOWN
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No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-10
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 60% REVIEW	PSO 2017-02-16
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Const. North
Drawn By: J. Faubert
Dwg. Standards: P. St-Onge
Designed By: J. Faubert
Date Printed: 12-01-2018
Dwg. Design Cld. By: P. St-Onge

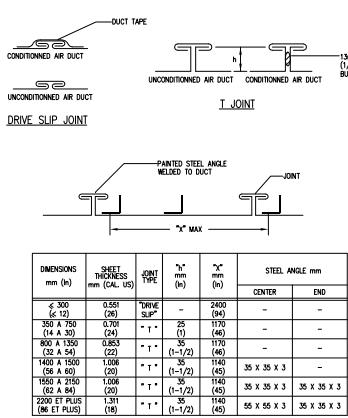
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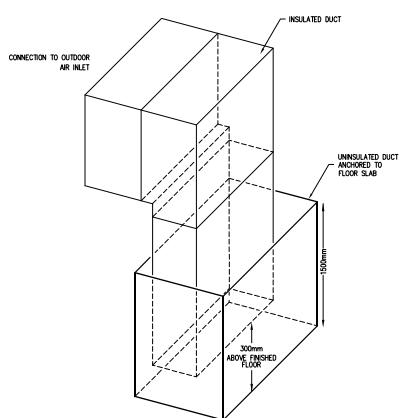
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Project Title:
NEW UTILIDOR DESIGN RESOLUTE BAY, NU

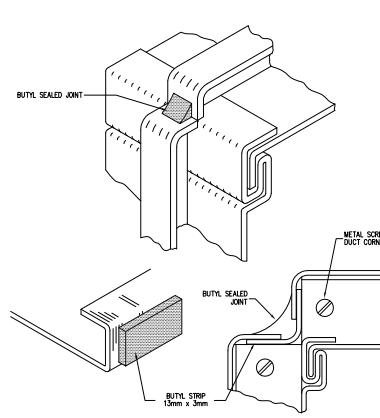
Dwg. Title:	
MECHANICAL DETAILS	
Project No.: OTT-00206333-B0	
Dwg. No.: M002	
Rev. No.: 0	
Scale: AS SHOWN	
This drawing is not to be scaled	



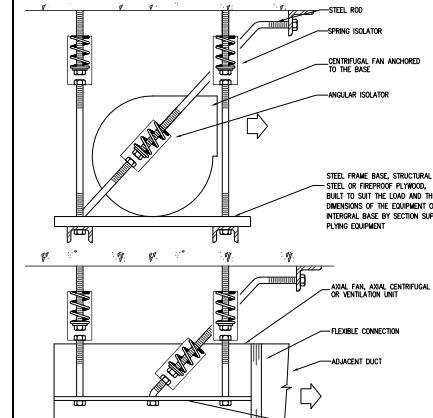
CROSS JOINT AND REINFORCEMENT FOR LOW PRESSURE RECTANGULAR DUCT
(NTS)



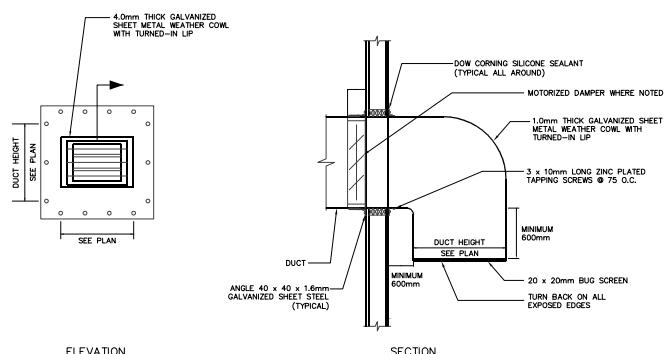
TYPICAL COMBUSTION AIR INLET DETAIL
(NTS)



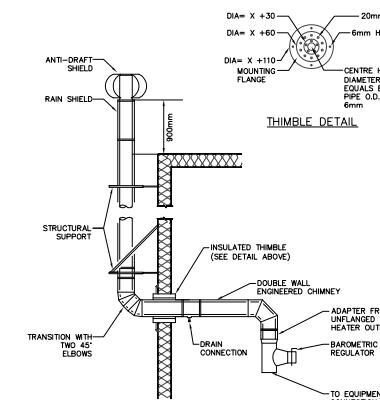
SEALED JOINT FOR LOW PRESSURE RECTANGULAR DUCT
(NTS)



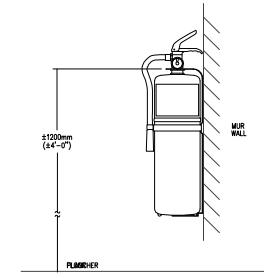
SUSPENDED EQUIPMENT (TYPE VI)
(NTS)



TYPICAL WEATHER COwl DETAIL
(NTS)



BOILER CHIMNEY DETAIL
(NTS)

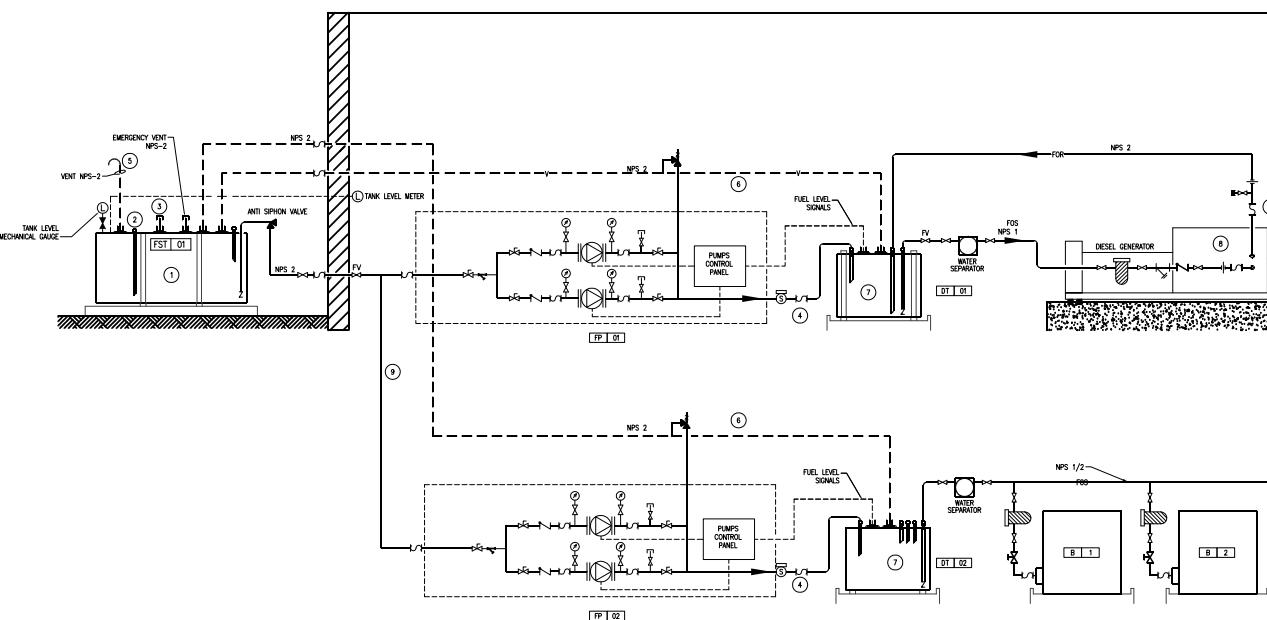


PORTABLE EXTINGUISHER CLASS A.B.C. 10 lbs.

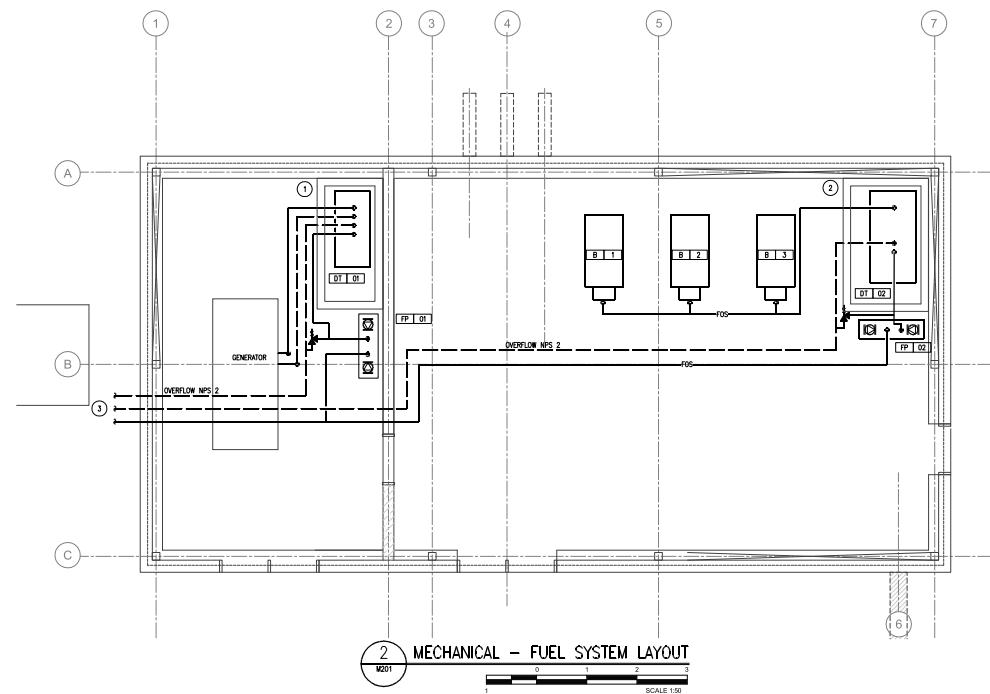
PORTABLE EXTINGUISHER
(NTS)

Project No.	OTT-00206333-B0
Dwg. No.	M002
Rev. No.	0
Scale	AS SHOWN

This drawing is not to be scaled



1 MECHANICAL - FUEL SYSTEM - SCHEMATIC
M201



GENERAL NOTE:
THE SCHEMATIC DRAWING SHOWS DETAILS OF THE CONTROLS, LAYOUT, EQUIPMENT CONNECTIONS AND PIPING COMPONENTS OF THE SYSTEM REFER TO DRAWING 2/M201 FOR DETAILS ON THE PIPING LAYOUT AND LOCATION OF EQUIPMENT.

- DRAWING NOTES:**
- RELOCATED MAIN FUEL SUPPLY TANK CONTR
 - FST-01 FILL/VENT CONNECTION WITH LOCKING CAPS (NPS 2).
 - FST-01 OIL INSPECTION PORT
 - FUEL SUPPLY LINE TO DAY TANKS (NPS 3)
 - FUEL TANK VENT WITH WHISTLE (NPS 2)
 - FUEL VENT LINE FROM DAY TANKS (NPS 2)
 - DAY TANK
 - STAINLESS STEEL FLEXIBLE CONNECTION. CONNECT TO FUEL SUPPLY AND RETURN CONNECTIONS ON ENGINE
 - FUEL SUPPLY LINE TO BOILER DAY TANK.

FST-01 CONTROLS

- AI - FST-01 LEVEL SENSOR
- BI - HIGH LEVEL SENSOR
- BI - LOW LEVEL SENSOR
- BL - LEAK DETECTION

TO DPS-01 PUMPS CONTROL PANEL

- DAY TANK CONTROLS**
- BI - HIGH LEVEL SENSOR
 - BI - LOW LEVEL SENSOR
 - BL - LEAK DETECTION

TO DPS-02 PUMPS CONTROL PANEL

No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-10
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 60% REVIEW	PSO 2017-02-16
No.	Revision	Clkd By Date

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PRELIMINARY

Const. North	
Drawn By:	J. Faubert
Draw. Standards:	P. St-Onge
Designed By:	J. Faubert
Date Printed:	12/01/2018
Dwg. Design Clkd. By:	P. St-Onge

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Project Title:	NEW UTILIDOR DESIGN RESOLUTE BAY, NU
Dep. Tide:	
MECHANICAL FUEL SYSTEM LAYOUT	
Project No.:	OTT-00206333-B00
Draw. No.:	M201
Rev. No.:	0
Scale:	AS SHOWN
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No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-10
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 60% REVIEW	PSO 2017-02-16
No.	Revision	Cld By Date



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PRELIMINARY

Const. North
Drawn By: J. Faubert
Dwg. Standards: P. St-Onge
Designed By: J. Faubert
Date Printed: 12/01/2018
Dwg. Design Cld. By: P. St-Onge

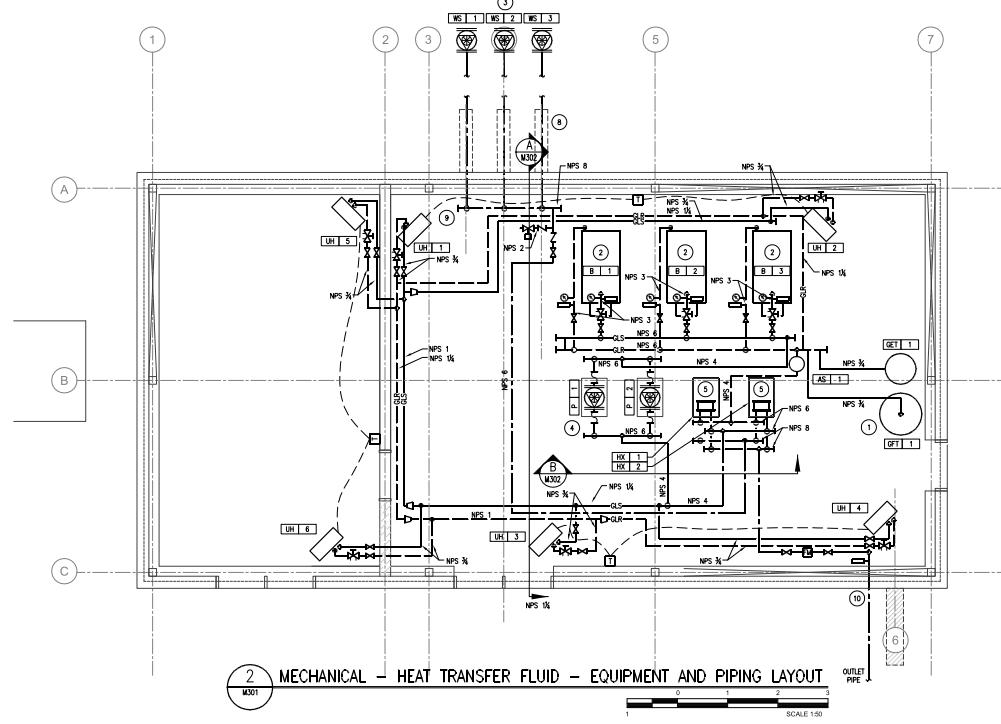
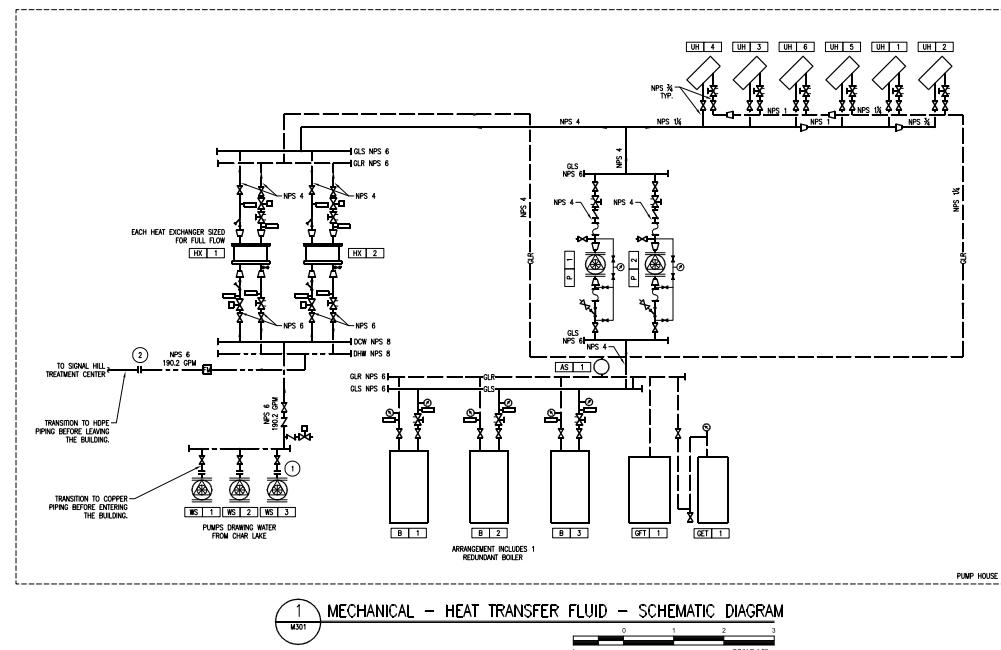
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Project Title:	NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Design Title:	MECHANICAL HEATING SYSTEM LAYOUT	
Project No.:	OTT-00206333-B0	
Dwg. No.:	M301	Rev. No.: 0
Scale:	AS SHOWN	

This drawing is not to be scaled.



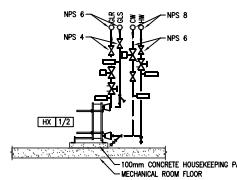
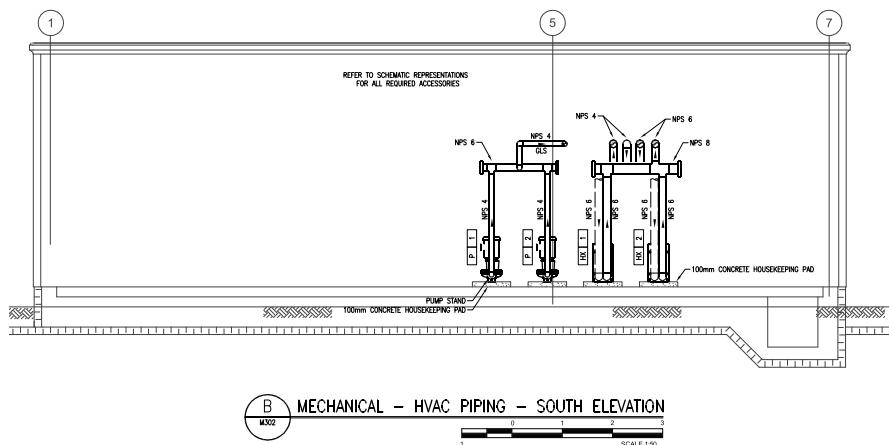
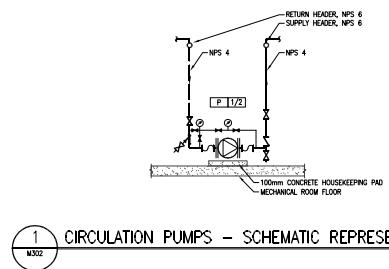
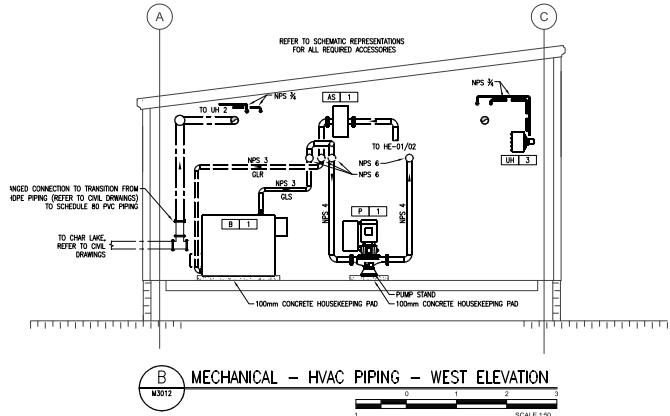
No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-10
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 60% REVIEW	PSO 2017-02-16
No.	Revision	Cld By Date



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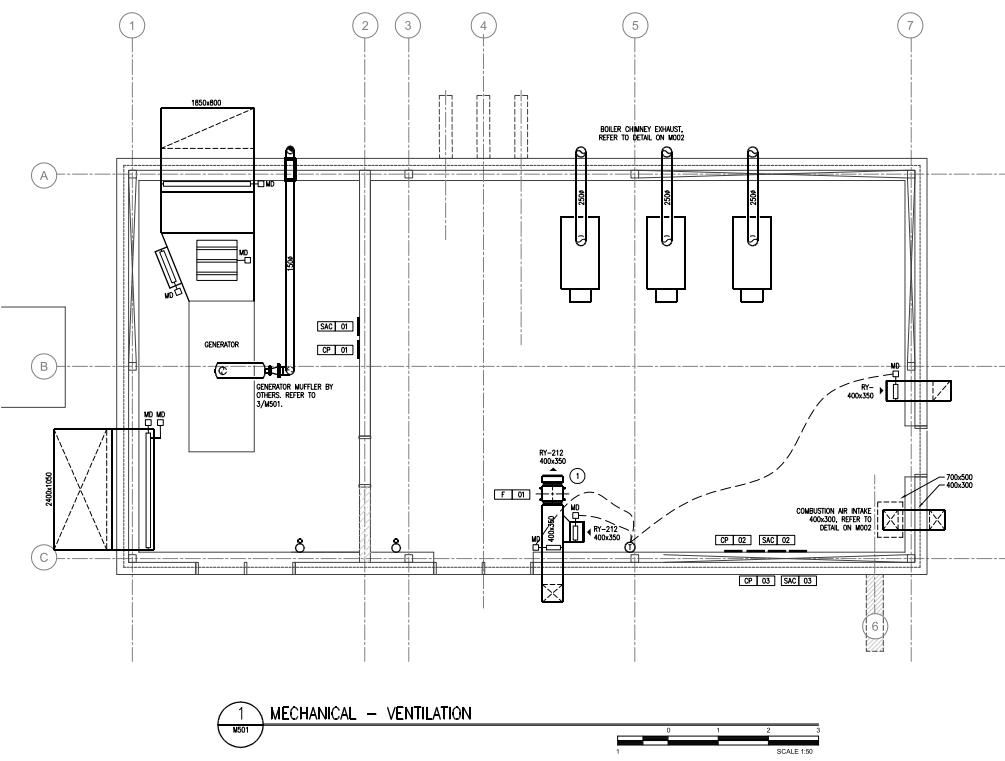
Const. North
Drawn By: J. Faubert
Dwg. Standards: P. St-Onge
Designed By: J. Faubert
Date Printed: 12-01-2018
Dwg. Design: P. St-Onge

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Project Title:	NEW UTILIDOR DESIGN RESOLUTE BAY, NU	
Design Title:	MECHANICAL HEATING SYSTEMS, ELEVATIONS AND SCHEMATICS	
Project No.:	OTT-00206333-B0	
Design No.:	M302	Rev. No.: 0
Scale:	AS SHOWN	
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GENERAL NOTES:



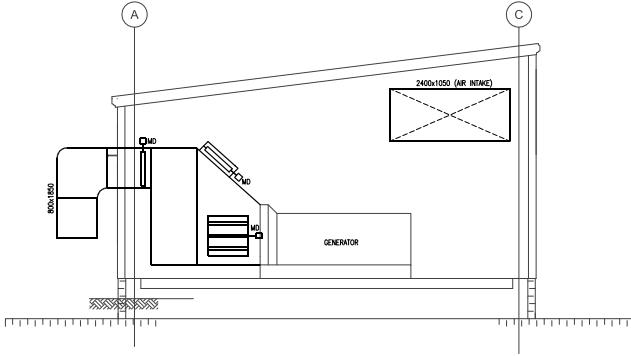
04	RE-ISSUED FOR 100% REVIEW	PSO	2018-01-11
03	ISSUED FOR 100% REVIEW	PSO	2017-04-11
02	ISSUED FOR 75% REVIEW	PSO	2017-03-22
01	ISSUED FOR 50% REVIEW	PSO	2017-02-16
No.	Revision	Ckd. By	Date

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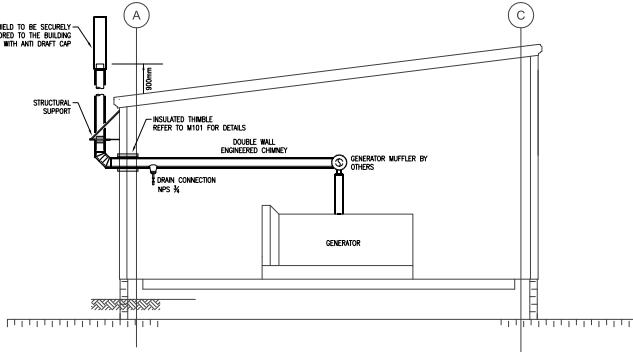


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PRELIMINARY



2 MECHANICAL - VENTILATION - GENERATOR INTAKE AND EXHAUST ELEVATION



3 MECHANICAL - VENTILATION - GENERATOR CHIMNEY ELEVATION



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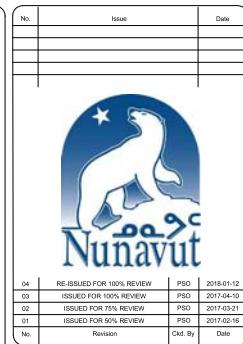
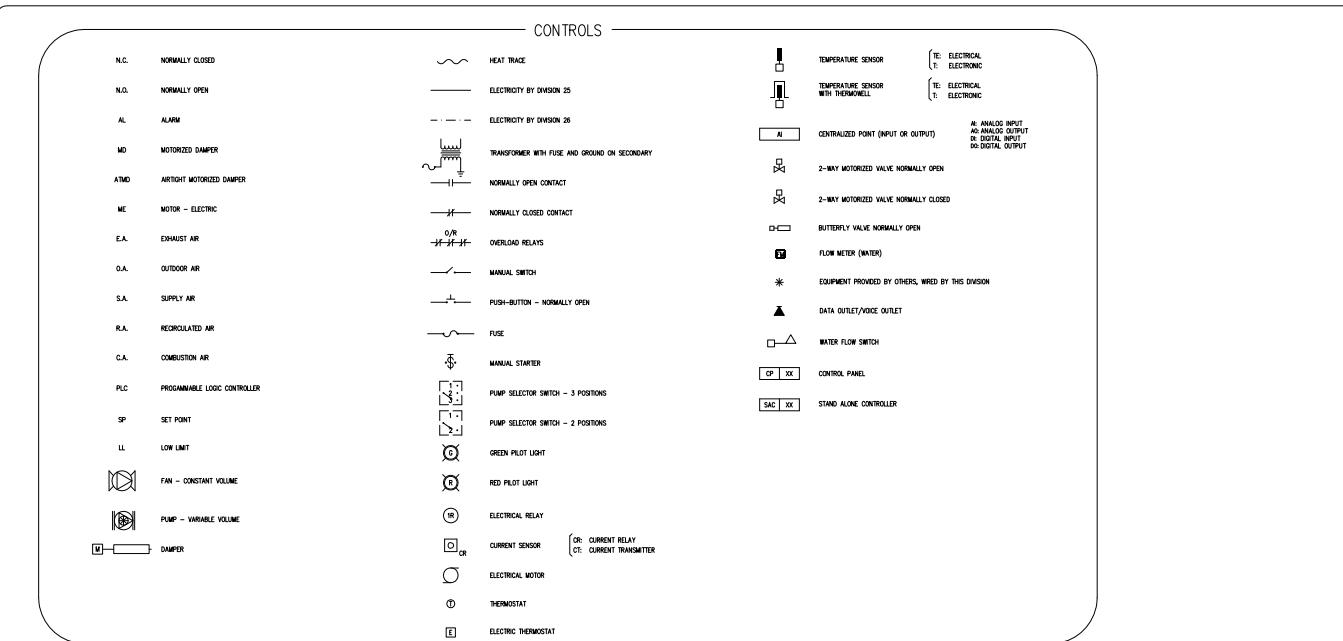


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Project Title

MECHANICAL VENTILATION LAYOUT

Project No.	OTT-00206333-B0	
Dwg. No.	M501	Rev. No. 0
Scale	AS SHOWN This drawing is not to be scaled	

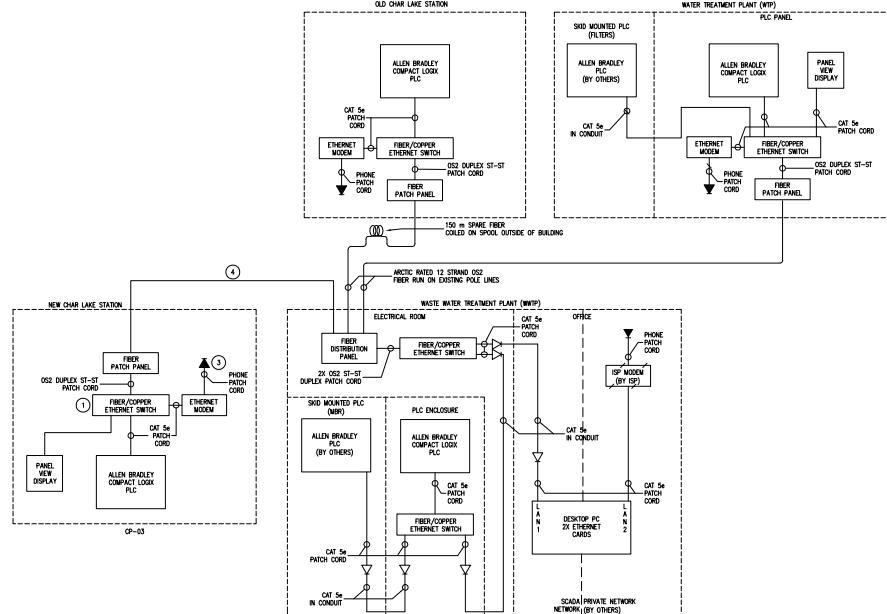


1860 Robertson Road, suite 100
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613-598-6154



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PRELIMINARY



NETWORK ARCHITECTURE

	Const. North
	Drawn By: C.B.
	Dwg. Standards Ctd. By:
	Designed By: C.B.
Data Printed	Dwg. Design Ctd. By:

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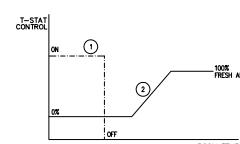
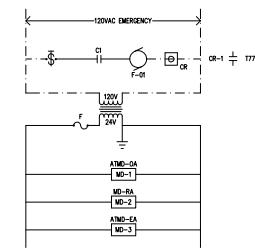
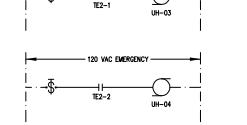
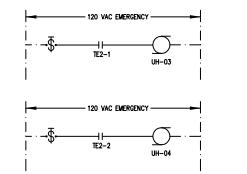
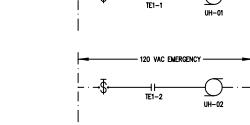
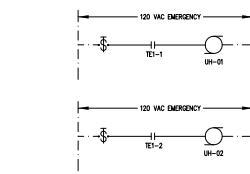
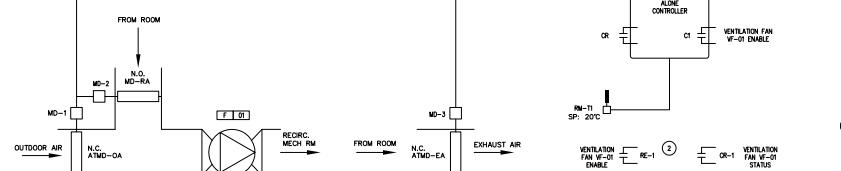
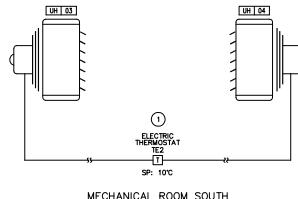
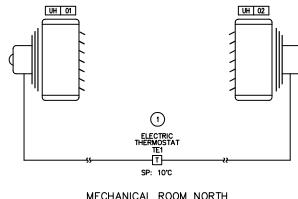
- NOTES:**

 - ① THE 10300 UNMANAGED ETHERNET SWITCH IN THE W/WITH ELECTRICAL ROOM TO BE LOCATED IN THE CARRIER PORTS AND TWO 84 ST DUALLY ELECTRICAL PORTS.
 - ② TO BE INSTALLED ON GFR GELWOOD PLYWOOD BACKBOARD. STANDARD OF ACCEPTANCE: B&G ELECTRONICS WVB08-2ST-ET, 120VAC, 24W POWER REQUIREMENT, 1000 FT CABLE LENGTH TO STARTER KIT.
 - ③ ALL STRUCTURED CABLING TO MEET GOVERNMENT OF NUUANUT COMMUNITY AND GOVERNMENT SERVICES (GNGS) STRUCTURED CABLEING GUIDELINES VERSION 1.3-2010.
 - ④ BREAK OFF A CONNECTION BETWEEN WATER TREATMENT PLANT AND CHAR LAKE ON PHONE LINES USING MODEM INSTALLED AT THE TWO SITES.
 - ⑤ FIBER CABLE BY OTHER
 - ⑥ REFER TO APPROVALS FOR EQUIPMENT PART NUMBER

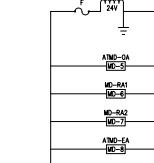
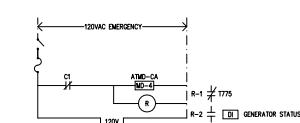
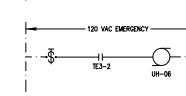
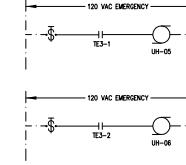
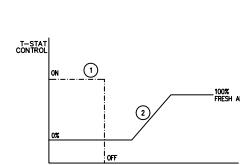
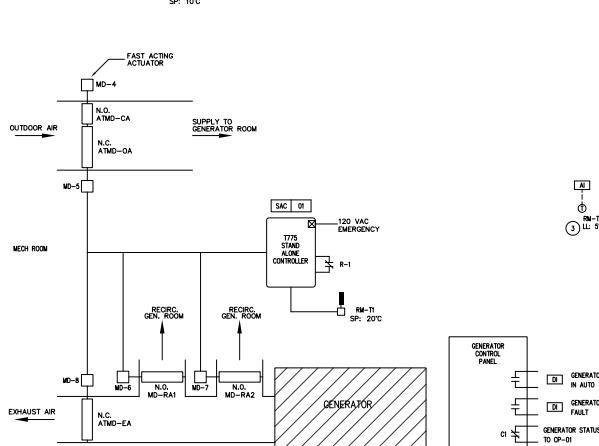
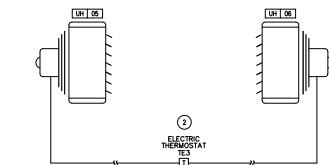
• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

Project Title

NEW UTILIDOR DESIGN RESOLUTE BAY, NU		
Desg. Title	MECHANICAL CONTROLS - LEGEND & NETWORK ARCHITECTURE	
Project No.	OTT-00206333-B0	
Desg. No.	M601	Rev. No. 0
Scale	AS SHOWN This drawing is not to scale	



- NOTES:**
- ① UNIT HEATER (UH-01) START/STOP COMMAND BY ELECTRICAL THERMOSTAT (TE1/TE2).
 - ② MOTORIZED DAMPERS MODULATION BY STANDALONE THERMOSTAT T775.
 - ③ ROOM TEMPERATURE SENSOR FOR ALARMING PURPOSES.



CONTROL PANEL CP-01

- NOTES:**
- ① UNIT HEATER (UH-01) START/STOP COMMAND BY ELECTRICAL THERMOSTAT (TE3).
 - ② MOTORIZED DAMPERS MODULATION BY STANDALONE THERMOSTAT T775.
 - ③ ROOM TEMPERATURE SENSOR FOR ALARMING PURPOSES.

No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW	PSO 2018-01-12
03	ISSUED FOR 100% REVIEW	PSO 2017-04-12
02	ISSUED FOR 75% REVIEW	PSO 2017-03-21
01	ISSUED FOR 50% REVIEW	PSO 2017-02-16
No.	Revision	Cd. By Date

Nunavut logo: A polar bear standing on a small island with a sun rising behind it, with the word "Nunavut" written below it.

100% Review Based on 100% Design Control (2018-01-12)
613-966-6434
www.bpa.ca
bpa
01 ISSUED FOR 100% REVIEW P.S.O. 2017-04-07
mechanical | electrical | building automation | telecommunications

PRELIMINARY

Const. North	
Drawn By:	C.B.
Dwg. Standards Ctl. By:	
Design By:	C.B.
Date Printed	Dwg. Design Ctl. By

exp Services Inc.
1-1-613-688-1890 | T-1-613-225-7330
2650 Queen'sview Drive, Unit 100
Ottawa, K2B 5R6
CANADA
www.exp.com



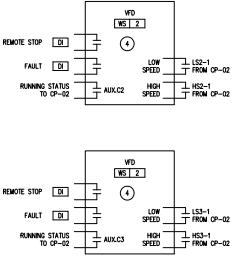
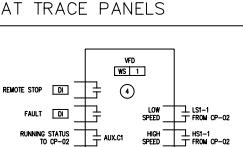
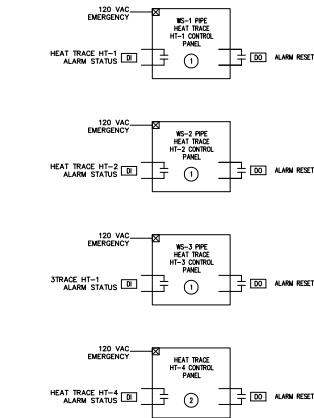
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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

Project Title	NEW UTILIDOR DESIGN RESOLUTE BAY, NU
Dwg. Title	

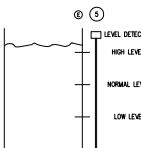
MECHANICAL CONTROLS - VENTILATION SCHEMATICS

Project No.	OTT-00206333-B0
Dwg. No.	M602
Rev. No.	0
Scale	AS SHOWN

This drawing is not to be scaled



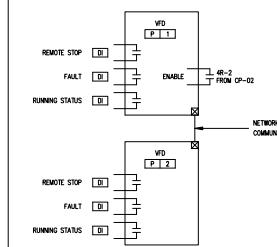
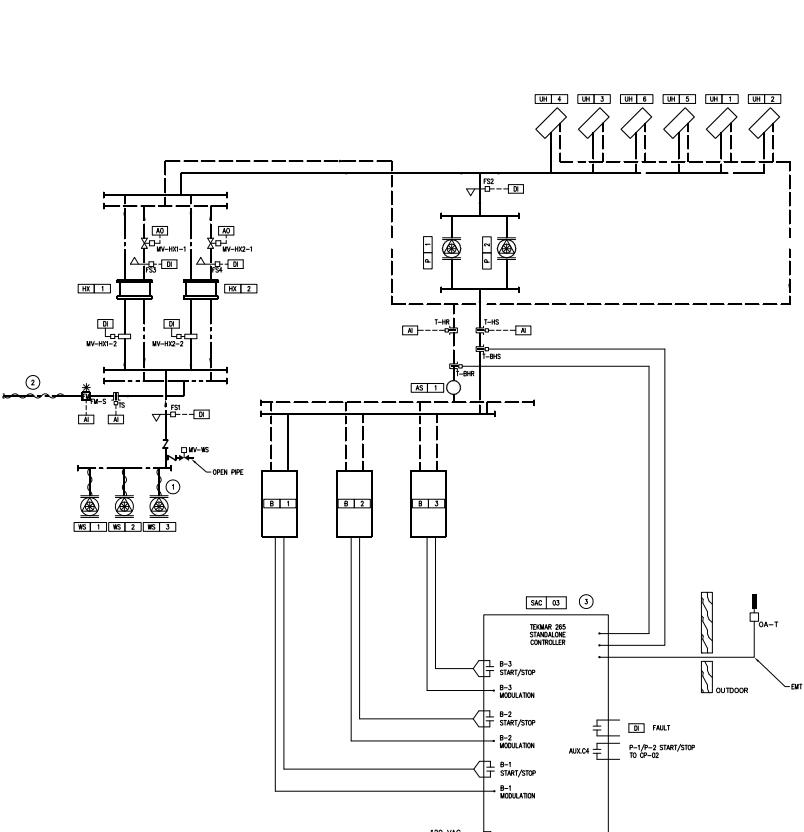
LAKE WATER PUMPS VARIABLE FREQUENCY DRIVES



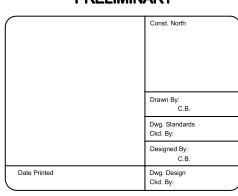
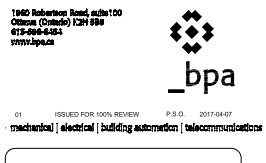
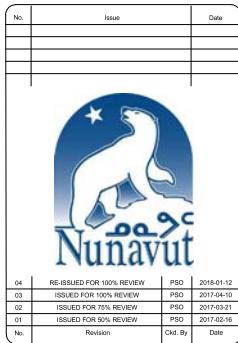
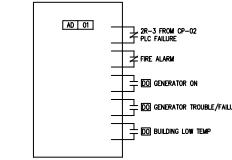
HOT WATER SYSTEM & WATER PUMPING SYSTEM

NOTES:

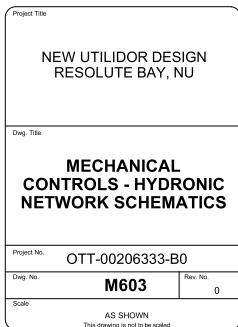
- ① SUBMERSIBLE WATER PUMPS WS-1, WS-2 AND WS-3 PUMP FROM AND ARE LOCATED IN CHAR LAKE. EACH PIPE IS EQUIPPED WITH ITS OWN HEAT TRACE (HT-1, HT-2 AND HT-3, RESPECTIVELY) AND WIRED PER MANUFACTURER'S RECOMMENDATIONS.
- ② PROVIDE WATER TO SIGNAL HILL TREATMENT PLANT. EXISTING HEAT TRACE EQUIPMENT HT-4 IS TO BE REUSED AND WIRED PER MANUFACTURER'S RECOMMENDATIONS.
- ③ PROVIDE AND INSTALL NEW MASTER BOILER CONTROL PANEL (TEMAR 245) AND INDIVIDUAL BOILER CONTROLS FOR CONTROL OF BOILERS 1, 2 AND 3.
- ④ WATER PUMP VFD PARAMETERS ARE TO BE CONFIGURED BY THE WATER BALANCER SUCH THAT AN ENABLE COMMAND STARTS THE VFD AT MINIMUM FLOW (1.4 L/S), AND A HIGH SPEED COMMAND (AT THE SAME TIME THE ENABLE COMMAND IS ON) RAMPS THE SPEED TO 100% (8 L/S).
- ⑤ WATER STORAGE TANK AT SIGNAL HILL (WITH ASSOCIATED ANALOG LEVEL DETECTOR CONNECTED TO SIGNAL HILL VFD) IS EXISTING. THE ANALOG LEVEL VALUE TO BE SHARED WITH CHAR LAKE VIA ALLEN BRADLEY ETHERNET/P OVER FIBER NETWORK.

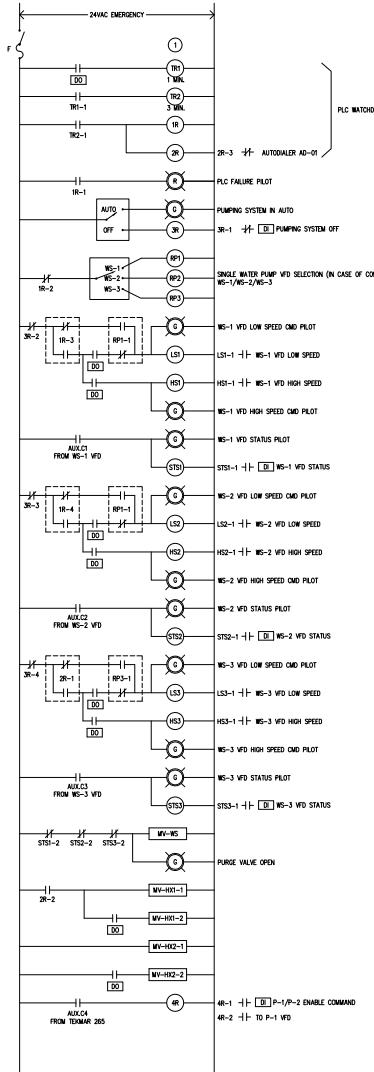


HOT WATER PUMPS VARIABLE FREQUENCY DRIVES

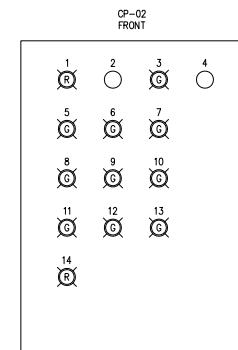
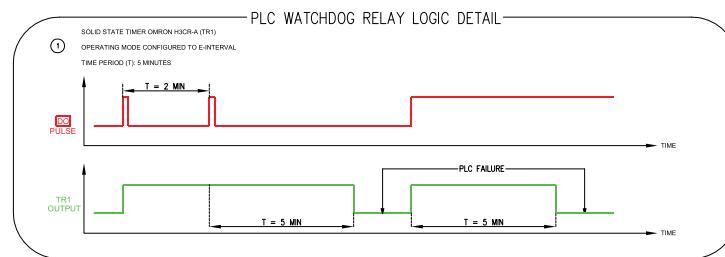


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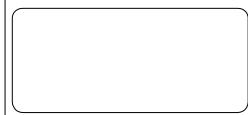
CONTROL PANEL CP-02

MAN CONTROL PANEL CP-02 TO BE INSTALLED INSIDE PUMP HOUSE.
REFER TO RELAY LOGIC AND SPECS FOR PANEL DETAILS.

CP-02 NOTES:	
1.	PLC FAILURE PILOT
2.	PUMPING SYSTEM AUTO/OFF SELECTOR
3.	PUMPING SYSTEM AUTO PILOT
4.	WS-1/WS-2/WS-3 PLC FAILURE DUTY PUMP SELECTOR
5.	WS-1 ENABLE/LOW SPEED COMMAND PILOT
6.	WS-1 HIGH SPEED COMMAND PILOT
7.	WS-1 RUN STATUS PILOT
8.	WS-2 ENABLE/LOW SPEED COMMAND PILOT
9.	WS-2 HIGH SPEED COMMAND PILOT
10.	WS-2 RUN STATUS PILOT
11.	WS-3 ENABLE/LOW SPEED COMMAND PILOT
12.	WS-3 HIGH SPEED COMMAND PILOT
13.	WS-3 RUN STATUS PILOT
14.	PURGE VALVE OPEN

NOTES:	
①	TIMER RELAY TR1/TR2 TO BE CONFIGURED TO CLOSE WHENEVER THE DIGITAL OUTPUT (DO) CONTACT IS CLOSED, AND OPEN 5 MINUTES AFTER THE DIGITAL INPUT CONTACT OPENS.

No.	Issue	Date
04	RE-ISSUED FOR 100% REVIEW Ottawa Controls Inc. 2015-04-12	
03	ISSUED FOR 100% REVIEW PSD 2017-04-04	
02	ISSUED FOR 75% REVIEW PSD 2017-03-21	
01	ISSUED FOR 50% REVIEW PSD 2017-02-16	
No.	Revision	Cd. By

100% Reduction Lead-time 100%
Ottawa Controls Inc. 2015-04-12
613-966-6434
www.ottawacps.com01 ISSUED FOR 100% REVIEW P.S.O. 2017-04-04
mechanical | electrical | building automation | telecommunications

PRELIMINARY

Const. North	
Drawn By:	C.B.
Dwg. Standards Ctl. By:	
Designated By:	C.B.
Date Printed	Dwg. Design Ctl. By

exp Services Inc.

1-1-613-688-1890 | T-1-613-225-7330
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CANADA

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- INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

Project Title

NEW UTILIDOR DESIGN
RESOLUTE BAY, NU

Dwg. Title

MECHANICAL
CONTROLS - WIRING
SCHEMATICS

Project No.	OTT-00206333-B0
Dwg. No.	M604
Scale	AS SHOWN
Rev. No.	0

This drawing is not to be scaled



JOISTS BEARING ON BEAMS AT COLUMN LOCATIONS
(WHERE JOIST DEEPER THAN BEAM)

The diagram illustrates a joist system with the following components and details:

- Stiffener Plates:** Labeled as "2-12mm THICK STIFFENER PLATES TYPICAL EACH SIDE OF BEAM AT COLUMN LOCATIONS.", these are shown as vertical plates attached to the joists at column locations.
- Bottom Chord Panel Point Bridging:** Labeled as "ADDITIONAL BOTTOM CHORD PANEL POINT CONTINUOUS HORIZONTAL BRIDGING AT BOTH ENDS OF ALL JOISTS.", this is shown as horizontal bars connecting the bottom chords of multiple joists.
- Welded Connections:** Labeled as "PROVIDE WELDED CONNECTION BETWEEN JOIST SHOE AND SUPPORTING STEEL, FOR LOADS AS PER SPECIFICATIONS BUT NOT LESS THAN WELD SHOWN ON DETAIL S-004", these are shown as circular welds connecting the joist shoes to the supporting steel.
- Joist Labels:** The diagram includes labels for "OPEN WEB STEEL JOIST DESIGNED BY JOIST SUPPLIER" pointing to a joist, and "EXTEND FULL SIZE BOTTOM CHORD OF JOIST AND CONNECT TO STEEL COLUMN FOR LOADS AS PER NOTES AND SPECIFICATIONS PROVIDED IN ALL CASES WHERE JOISTS FREST INTO COLUMNS, OR WHERE JOISTS ON PLAN ARE DENOTED AS 'T-J'".

2-12mm THICK STIFFENER PLATES TYPICAL
EACH SIDE OF BEAM AT COLUMN LOCATIONS.
STEEL ROOF DECK

PROVIDE WELDED CONNECTION BETWEEN
JOIST SHOE AND SUPPORTING STEEL
FOR LOADS AS PER SPECIFICATIONS
BUT NOT LESS THAN WELD SHOWN ON DETAIL S-004

The diagram illustrates a structural system for a roof deck. At the top, a 'STEEL ROOF DECK' is shown with a '12-mm THICK STIFFENER PLATES TYPICAL EACH SIDE OF BEAM AT COLUMN LOCATIONS.' Below it, a 'OPEN WEB STEEL JOIST' is labeled as 'JOIST SUPPLIER TYPICAL'. A 'CONNECT BOTTOM CHORD TO STIFFENER PLATE TYP.' detail shows a circular hole in the joist's bottom chord being bolted to a stiffener plate. An 'EXTEND FULL SIZE OF BOTTOM CHORD OF JOISTS AND CONNECT TO STIFFENER PLATE FOR LOADS AS PER NOTES AND SPECIFICATIONS.' detail shows a 'STEEL COLUMN' at the bottom right. A 'JOIST SHOE AND SUPPORTING STEEL FOR LOADS AS PER SPECIFICATIONS BUT NOT LESS THAN WELD SHOWN ON DETAIL S-004' detail is at the top right. A 'ADDITIONAL BOTTOM CHORD PANEL POINT CONTINUOUS HORIZONTAL BRIDGING AT BOTH ENDS OF THE BOTTOM CHORD. THIS BRIDGING IS IN ADDITION TO BRIDGING REQUIRED BY THE JOIST DESIGNER, AND IS TO BE SUPPLIED AND INSTALLED BY JOIST SUPPLIER.' detail is in the center right. A 'L15x14x.8 THE BRACE WHEN D' IS GREATER THAN 100, TIE BRACE TO BE CONNECTED TO BOT. CHORD POINT TYPICAL.' detail is at the bottom right.

JOISTS BEARING BEAMS AT COLUMN LOCATIONS
(WHERE JOIST DEEPER THAN BEAM)

S-002 JOISTS BEARING ON BEAMS AT COLUMN LOCATIONS

TYPICAL JOIST BEARING ON EXTERIOR BEAM

S-006 JOIST BEARING ON EXTERIOR BEAM

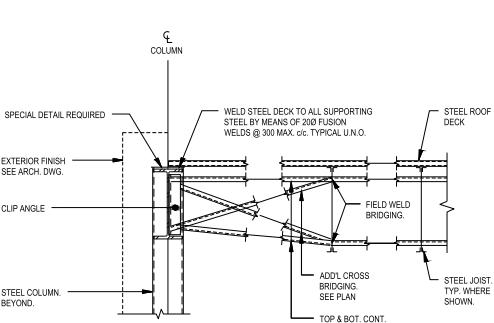
**TYPICAL BRACE CONNECTION
TO COLUMN & ROOF BEAM**

**TYPICAL BRACE CONNECTION
TO COLUMN & ROOF BEAM**

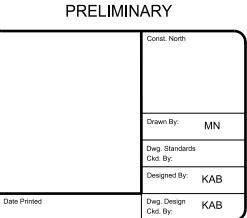
The diagram illustrates a structural connection. A vertical line labeled 'SLOT COLUMN AS REQUIRED TO INSTALL GUSSET PLATE THROUGH CENTER LINE' extends downwards from a horizontal line labeled 'COL'. A diagonal line labeled 'COL' extends upwards from the same horizontal line. A horizontal line labeled 'GUSSET PLATE' runs across the top. A diagonal line labeled 'COL' extends downwards from the 'GUSSET PLATE' line. A diagonal line labeled 'BRACE' extends upwards from the bottom right corner. The area between the 'COL' lines and the 'GUSSET PLATE' is shaded grey.

TYPICAL BRACE CONNECTION TO COLUMN BASEPLATE

S-010 VERTICAL BRACE DETAILS



S-003 STEEL DECK AND HORIZONTAL BRIDGING DETAIL



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Ottawa, ON K2B 8H6
CANADA

*exp.

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**NEW UTILIDOR DESIGN
RESOLUTE BAY, NU
CHAR LAKE PUMP HOUSE**

TYPICAL DETAILS

TYPICAL DETAILS

PHOTO BY JEFFREY

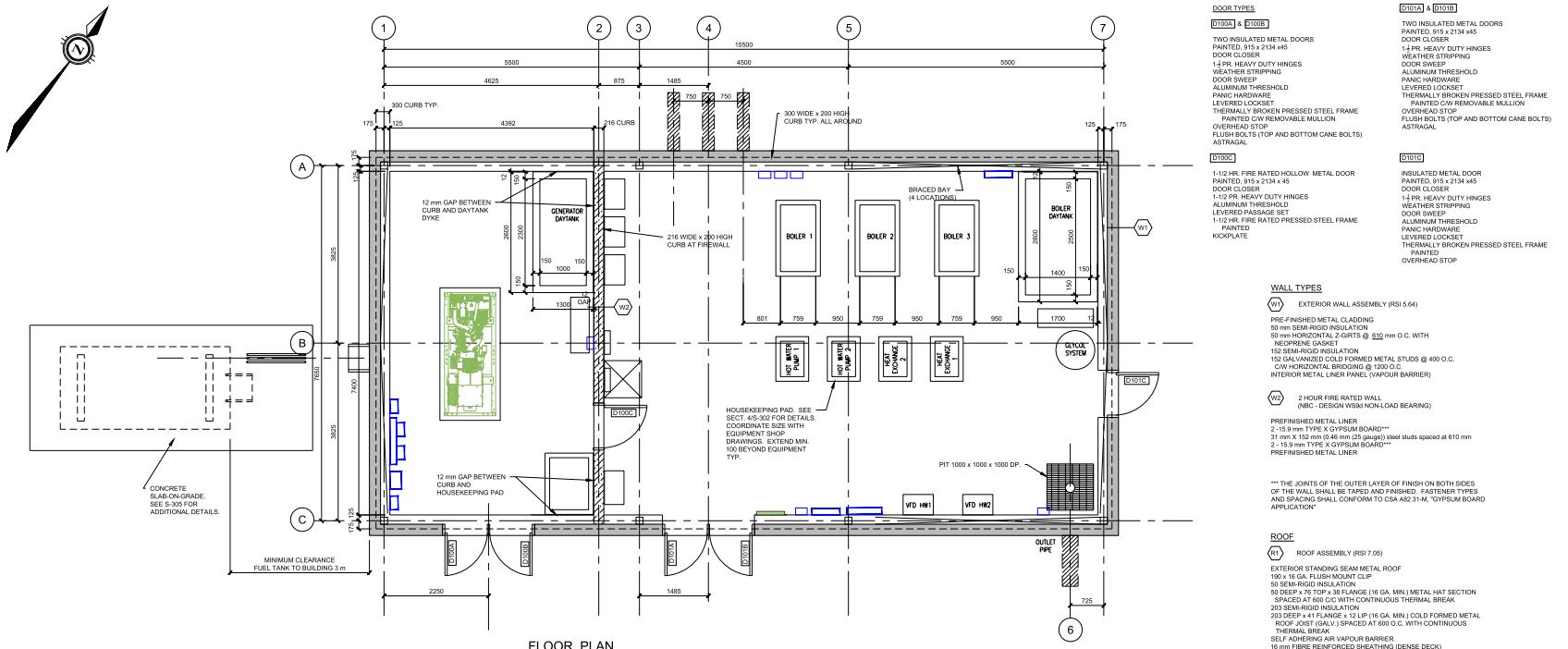
[View Details](#)

ott-00206333-b0

S-300

NTS

N.T.S.



GENERAL NOTES

- Check all dimensions on structural drawings with other drawings. Report any inconsistencies before proceeding with the work. DO NOT SCALE THESE DRAWINGS.
- All work shall comply with current provisions of the Building Code, the Fire Code, the Electrical Safety and Insurance Board and local trade practices. Work shall comply with all local and provincial regulations and with applicable C.S.A. standards. In all cases, the latest editions of codes and standards shall apply.
- Structural design complies with Part 4 of the National Building Code 2015.
- Before submitting tenders contractors shall carefully examine existing conditions to establish the extent of the work.
- Locate all buried services prior to excavation. The contractor shall be responsible for all temporary bracing, shoring and dewatering necessary to the work.
- The contractor is responsible for removing excess materials and cleaning up on completion of the work.
- The contractor shall verify dimensions before construction and report discrepancies before proceeding with the work.

FOUNDATIONS

- Refer to Site Report No. OTT-00206333-A prepared by exp Services Inc. dated December 6, 2017 for granular pad construction and compaction requirements.
- Protect slabs-on-grade and adjacent Soil against freezing, frost action and water infiltration at all times during construction.

MATERIALS SPECIFICATIONS

- Concrete - materials to CSA-A23.1-14. Compressive strength minimum 35 MPa. 6% +/- 1% entrained air for concrete. Slump = 20mm. Maximum water/cement ratio = 0.43. Maximum aggregate size 20 mm. Type GG cement. Exposure Class : C1
- Formwork - to CSA-A23.1-14. Use only new forming materials for architecturally exposed surfaces. Form release agent shall be nonstaining, compatible with finish when applicable.
- Rebar - deformed billet steel bars to CSA G30.18M-09 (2014), Grade 400. Type W for welded rebar.
- Mesh - welded wire fabric to ASTM A106/A106M-17.
- Colour: from manufacturer's standard range of colours
Profile: to be determined
Class: Fibre
- Thickness: 0.53 mm base metal thickness
- Color: from manufacturer's standard range of colours
Profile: vertical ribbed, preformed interlocking joint, based on Vic West CL725
Thickness: 0.61 mm base metal thickness
Fascia and Trim: same colour and thickness as cladding
- Reinforcement: deformed billet steel bars to CSA G30.18M-09 (2014), Grade 400. Type W for welded rebar.
- Wall and Roof Insulation: Rigid Closed Cell polystyrene: to CAN/ULC-S701-11, type 4, square, shiplapped edges. Acceptable material Styrofoam SM or approved equal.

DESIGN SERVICE LOADS

DEAD LOADS

ROOF (Self weight)
Exterior metal cladding, insulation, Z-girts, insulation, structural steel deck, OWSJs 1.00 kPa
Superimposed Loads (Mech. Allowance) 0.5 kPa

LIVE LOADS

FLOOR 4.8 kPa

ROOF SNOW LOAD
Ss = 2.00 kPa
Sf = 1.00 kPa
Is = 1.25 ULS
Ig = 0.9 SLS

S = Is (Ss (Cb Cv Cs Ca) + Sf) + 1.25 (kPa) = 2.125 kPa

LATERAL LOADING

WIND LOAD
q(1:10) = 0.54
q(1:50) = 0.56 kPa
Cw = 1.50 for walls
Cc = 2.00 for roof
Ce = 0.9
Cl = 1.0
Iw = 1.25 ULS Iw = 0.75 SLS

REINFORCEMENT PLACEMENT

- Minimum clear cover
- For concrete placed against earth.....75 mm
- For concrete placed in forms but in contact with earth and weather.....50 mm
- Interior slabs40 mm
- Curb40 mm
- Laps
- lap all bars 36 bar diameters or 460 mm minimum, whichever is greater, unless otherwise indicated.
- Chairs for support of slab reinforcing spaced at maximum of 1.0 m in either direction. Supply support bars, chairs and carriers.

Wind Uplift Parameters for design of roof components and cladding
Cp Cg = 1.5 (generally)
Cp Cg = 5.4 (corners)

EARTHQUAKE LOAD

Site Classification: Class C
Sa (0.2) = 0.194
Sa (0.5) = 0.205
Sa (1.0) = 0.207
Sa (2.0) = 0.228
Sa (5.0) = 0.2069
Sa (10.0) = 0.2030
Fa = 1.0
Fv = 1.0
S (1:10) = 0.194
S (1:50) = 0.195
S (1:100) = 0.057
S (1:200) = 0.028
S (1:500) = 0.0089
S (1:1000) = 0.0030
Rv = 2.0 for conventional braced frames
Rv = 1.5 for conventional braced frames
Ig = 1.0
Structural configuration - Regular
V4-S(1:2) L_v (W Rd Ro) = 0.194(1.5) W(2.0 x 1.3) = 0.0746 W = 0.0746 (539)

NORTH - SOUTH or EAST - WEST
V = 40.2 kN

SPATIAL SEPARATION CONSTRUCTION OF EXTERIOR WALLS

BUILDING GROUP F: DIVISION 3 (LOW HAZARD INDUSTRIAL OCCUPANCY)
BUILDING AREA 129.5 m²
NUMBER OF STOREYS ABOVE GRADE - 0
BELLOW GRADE - 0
NBC 2015 REFERENCE TO DIVISION B 3.2.3 AND TABLE 3.2.3.1.

WALL	AREA OF EBF (m ²)	L.D. (m)	UH or HL	PERMITTED UH OR HL OF UNPROTECTED OPENINGS	PROPOSED UH OR HL OF UNPROTECTED OPENINGS	FRR (hours)	NON-COMBUSTIBLE CONSTRUCTION
NORTH	63.68	> 9 m	3.80	100%	0%	NA	YES
SOUTH	78.53	> 9 m	3.08	79%	5%	NA	YES
EAST	37.49	> 8 m	1.80	100%	5.3%	NA	YES
WEST	37.49	> 8 m	1.80	100%	0%	NA	YES

SPRINKLER SYSTEM - NOT REQUIRED
STUDDED METAL CLADDING - NOT REQUIRED
FIRE ALARM REQUIRED - YES AS PER FIRE MARSHAL. FIRE ALARM SYSTEM PROVIDED
OCCUPANT LOAD - BASED ON DESIGN OF BUILDING LOAD = 3 PERSONS
ARRIER FREE DESIGN - NO
HAZARDOUS SUBSTANCES - ?

No.	Issue	Date
0	50% REVIEW	2017-03-16
1	75% REVIEW	2017-05-17
2	100% REVIEW	2017-04-27



PRELIMINARY

Const. North	
Drawn By:	MN
Dwg. Standards	
Designed By:	KAB

Date Printed: 2017-03-20 09:49 AM
Dwg. Design: KAB
Dwg. Drawn: MN



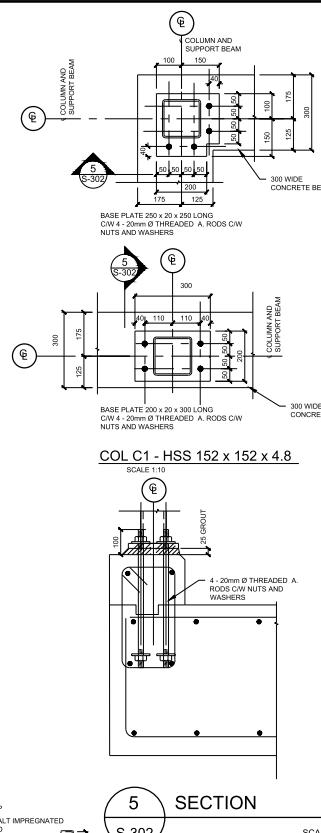
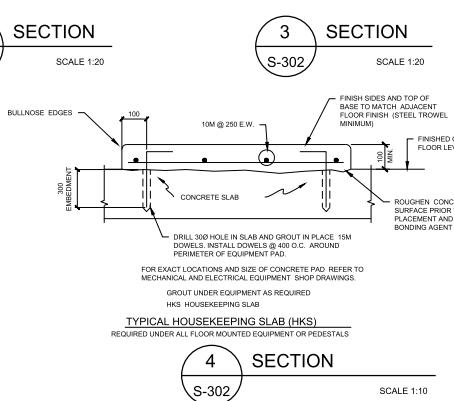
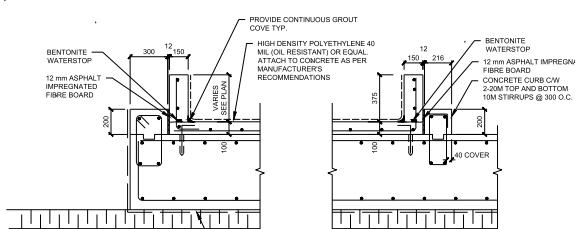
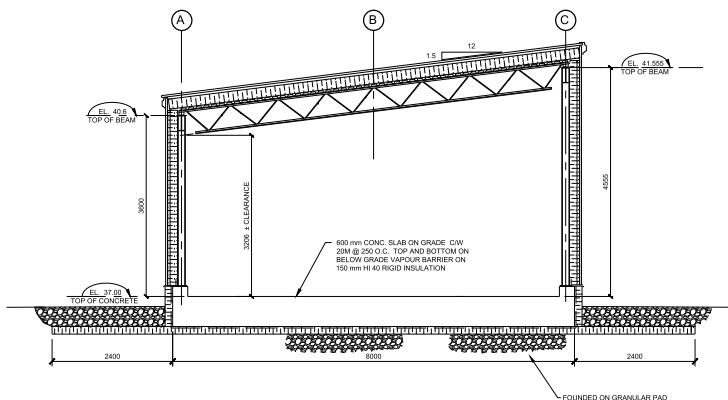
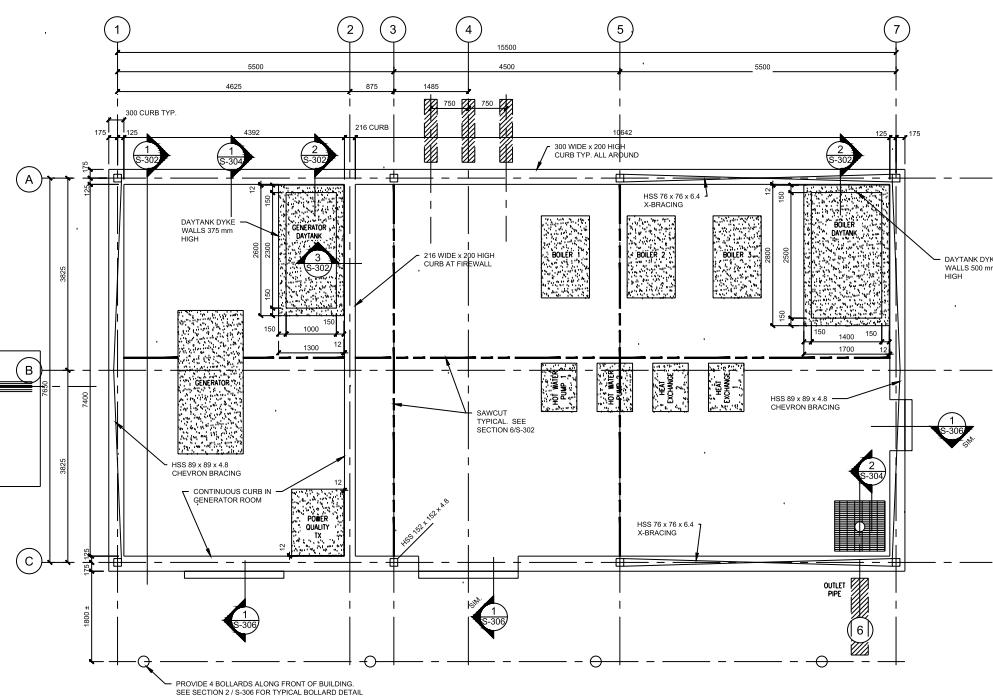
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INDUSTRIAL ► INFRASTRUCTURE ► SUSTAINABILITY ►

Project Title:

NEW UTILIDOR DESIGN RESOLUTE BAY, NU CHAR LAKE PUMP HOUSE

Proj. No.	Rev. No.
OTT-00206333-B0	
Dwg. No.: S-301	2

Scale: AS NOTED
This drawing is not to scale.



No.	Issue	Date
0	50% REVIEW	2017-03-15
1	75% REVIEW	2017-03-17
2	100% REVIEW	2017-04-27



PRELIMINARY

Const. North	
Drawn By:	MN
Dwg. Standards	
Designed By:	KAB
Date Printed	Dwg. Design Dwg. By:

exp Services Inc.
1-1513-028 (89) 1-1-16-225-7330
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Dwg. Title		
FOUNDATION PLAN		
Project No.	OTT-00206333-B0	
Dwg. No.	S-302	Rev. No. 2
Scale	AS NOTED	
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No.	Issue	Date
0	50% REVIEW	2017-03-15
1	75% REVIEW	2017-03-17
2	100% REVIEW	2017-04-27



No. Revision Ord. By Date

PRELIMINARY

Const. North	
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NEW UTILIDOR DESIGN RESOLUTE BAY, NU CHAR LAKE PUMP HOUSE

ROOF FRAMING PLAN AND WALL ELEVATIONS

Project No. OTT-00206333-B0
Dwg. No. S-303 Rev. No. 2

Scale AS NOTED
This drawing is not to scale

