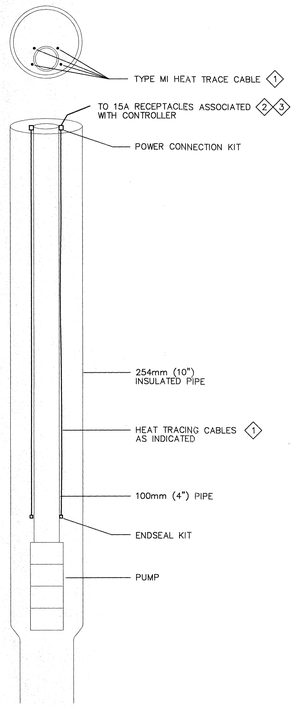


1 / E2 HEAT TRACE CABLE DETAIL
N.T.S.

MOTOR NO.	SERVICE DESCRIPTION	MOTOR LOCATION	MOTOR CHARACTERISTICS H.P.	F.L.A.	VOLT	PH.	SOURCE	FEEDER	MOTOR BREAKER SIZE	MANUAL STARTER: TOGGLE	PUSH BUTTON	MAGNETIC STARTERS: COMBINATION	TYPE	CONTROL TRANSFR.	AUX.CONT. 2 N.O.,N.C.	HAND-OFF-AUTO	STOP/START	IN COVER: SELECTOR	STOP/AUTO	PUSH	PILOT LTS. RUN	PILOT LTS. STOP	REMOTE CONTR.: LOW/START	INTERLOCK TO DISC. LTS	DISC. AT MOTOR	FAN SHUTDOWN	AUX. CONTROL	LEGEND	INTERLOCK TO:	REMARKS
WP-01	WATER PUMP 01	PUMP RM	15	–	208V	3ø	BP-A	3 #4 + 8GRD	110A-3P			●	●	●		●			●		●				●					
WP-02	WATER PUMP 02	PUMP RM	15	–	208V	3ø	BP-A	3 #4 + 8GRD	110A-3P			●	●	●		●			●		●				●					
TP-01	TRANSFER PUMP 01	PUMP RM	0.5	–	120V	1ø	BP-A	2 #12 + 8GRD	15A-1P	●	●														●					
MX-01	CHEMICAL MIXER 01	CHEM RM	0.05	–	120V	1ø	BP-A	2 #12 + 8GRD	15A-1P	●	●														●					
SP-01	SUMP PUMP 01	PUMP RM	0.5	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
SP-02	SUMP PUMP 02	CHEM RM	0.4	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
DWP-01	DOMESTIC WATER PUMP	PUMP RM	–	0.9	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
ERV-01	ENERGY RECOVERY VENT.	PUMP RM	0.5	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
WH-01	HOT WATER TANK 01	CHEM RM	1.5kW	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
UH-01	UNIT HEATER 01	PUMP RM	0.25	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					
EH-01	ELECTRIC HEATER 01	GEN RM	3kW	–	208V	3ø	BP-A	3 #12 + 8GRD		●	●														●					
EH-02	ELECTRIC HEATER 02	CHEM RM	3kW	–	208V	3ø	BP-A	3 #12 + 8GRD		●	●														●					
DH-01	DUCT HEATER 01	PUMP RM	3kW	–	208V	3ø	BP-A	3 #12 + 8GRD		●	●														●					
VF-01	VENTILATION FAN 01	CHEM RM	–	–	120V	1ø	BP-A	2 #12 + 8GRD		●	●														●					

2 / E2 MOTOR SCHEDULE
N.T.S.

NOTES:

1. PROVIDE 4x80m (262') HEAT TRACE CABLE, PYROTENAX #D/32HE3200/80M/826/208/2.1M/H22A/Y. PROVIDE PROPER SUPPORT AS PER THE MANUFACTURERS RECOMMENDATIONS TO FIX THE HEAT TRACE CABLE TO THE PIPE.
2. PROVIDE TWO 920 CONTROLLERS WITH SUPPLY MODULES TO SUPPORT UP TO 3 MI HEAT TRACE CABLES AT ONE TIME. CONNECT CONTROLLERS TO THREE FEMALE 15A TWIST LOCK RECEPTACLES. THE CONTROLLERS ARE TO BE ABLE TO ANNUNCIATE AN ALARM IN THE EVENT OF A CABLE FAULT.
3. PROVIDE TWO RTD THERMISTORS TO BE INSTALLED 40M DOWN THE PIPE. THERMISTORS ARE TO BE TIED INTO THE CONTROLLER.
4. PROVIDE A BOND CONDUCTOR BETWEEN THE NEUTRAL CONDUCTOR AND GROUND AT THE GENERATOR.

PANEL DESIGNATION..... DP-A
NUMBER OF POLES..... 60
SYSTEM VOLTAGE..... 120/208V 3PH, 4W
MAINS CAPACITY..... 225A
MAINS BREAKER..... 200A

PANEL LOCATION..... ELECT. RM.
MOUNTING..... SURFACE

SHORT CIRCUIT CAPACITY: 10kA

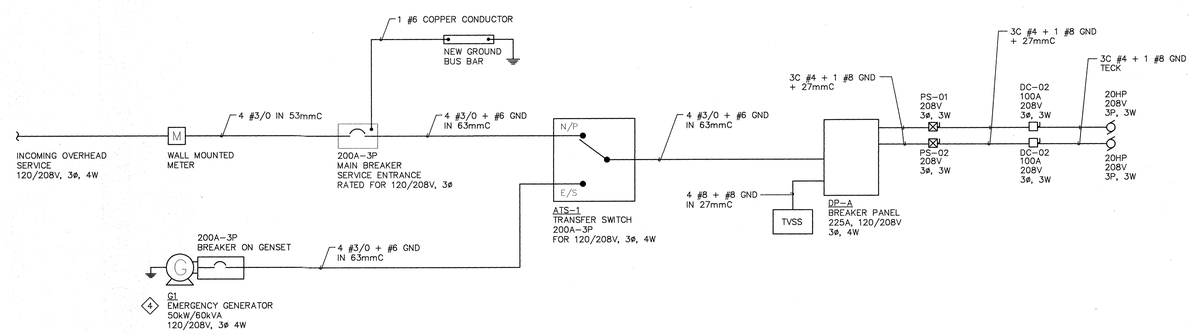
DESCRIPTION	LOAD	BRKR AMP	POLE	CCT NO.	PHASE	CCT NO.	BRKR AMP	POLE	LOAD	DESCRIPTION
GENERATOR ROOM LIGHTING		15A	1P	1	A	2	15A	1P		OUTLETS GENERATOR ROOM
PUMP ROOM LIGHTING		15A	1P	3	B	4	15A	1P		OUTLETS PUMP ROOM
EXTERIOR LIGHTING		15A	1P	5	C	6	15A	1P		EXTERIOR GFI OUTLETS
MOTORIZED DAMPERS		15A	1P	7	A	8	15A	1P		SUMP PUMP SP-01 & SP-02
BATTERY CHARGER		15A	1P	9	B	10	15A	1P		UNIT HEATER UH-01
GENERATOR BLOCK HEATER		15A	1P	11	C	12	15A	1P		EMERGENCY EBU-1
CONTROL PANEL CP-01		15A	1P	13	A	14	15A	1P		EXIT LIGHTING
FUEL CONTROLLER FPC-01		15A	1P	15	B	16	15A	1P		MOTORIZED DAMPERS
FIRE ALARM PANEL		15A	1P	17	C	18	15A	1P		DOMESTIC WATER PUMP DWP-01
AUTO-DIALER		15A	1P	19	A	20	15A	1P		MOTORIZED DAMPERS
ENERGY RECOVERY ERV-1		15A	1P	21	B	22	20A	1P		ELECTRIC MIXER MX-01
HOT WATER TANK WH-01		15A	1P	23	C	24	20A	1P		TRANSFER PUMP TP-01
ELECTRIC HEATER EH-01		15A	3P	25	A	26	15A	1P		THERMOSTAT & CONTROLS
		•	•	27	B	28	15A	1P		EXTERIOR WATER ARM LIGHT
		•	•	29	C	30	15A	1P		FLOW METER
TVSS UNIT		40A	3P	31	A	32	30A	3P		ELECTRIC HEATER EH-02
		•	•	33	B	34	•	•		
		•	•	35	C	36	•	•		
HEAT TRACE FOR WP-01 (GFI)		30A	2P	37	A	38	30A	2P		HEAT TRACE FOR WP-02 (GFI)
		•	•	39	B	40	•	•		
BATTERY CHARGER		15A	1P	41	C	42	15A	1P		HEAT TRACE TRUCK FILL (GFI)
WATER PUMP WP-01		80A	3P	43	A	44	80A	3P		WATER PUMP WP-02
		•	•	45	B	46	•	•		
		•	•	47	C	48	•	•		
DUCT HEATER DH-01		15A	3P	49	A	50	15A	1P		EXTERIOR VEHICLE OUTLET
		•	•	51	B	52	15A	1P		SPARE
		•	•	53	C	54	15A	1P		MOTORIZED DAMPERS
VENTILATION FAN VF-01		15A	1P	55	A	56	15A	1P		CHLORINE CONTROLLER CPC-01
				57	B	58				
				59	C	60				

3 / E2 PANEL SCHEDULE
N.T.S.

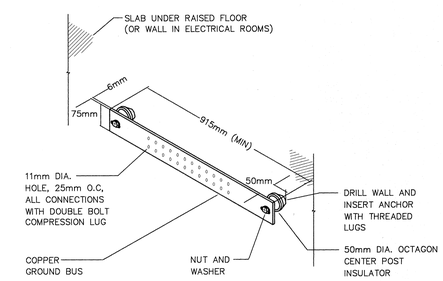
PUMP STATION LOAD SUMMARY
TOTAL AREA..... 60m2

DESCRIPTION	WATTS
GENERAL RECEPTACLES AND LIGHTING (25W/m2)	1500
WATER PUMPS (1 @ 20HP = 15000Watts/ea.)	15000
TRANSFER PUMP (1 @ 0.5HP)	400
DOMESTIC WATER PUMP	400
ENERGY RECOVERY UNIT (1 @ 0.5HP)	400
HOT WATER TANK	1500
ELECTRIC HEATER (x3)	11000
HEAT TRACE (x2)	10000
40200	**TOTAL WATTS**

4 / E2 LOAD SUMMARY
N.T.S.



5 / E2 SINGLE LINE DIAGRAM
N.T.S.



6 / E2 GROUND BUS DETAIL
N.T.S.

Nunavut

NORTH: PROJECT NORTH

STAMP: REGISTERED PROFESSIONAL ENGINEER R. M. G. McCLANG L2748 NWT/NU 2014-04-25

NOTES: GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS WITH FINAL ARCHITECTURAL AND MECHANICAL DRAWINGS. NOTIFY THE ENGINEERS OF ANY ERRORS AND/OR OMISSIONS PRIOR TO CONSTRUCTION FOR DIRECTION. DO NOT SCALE THIS DRAWING.

No.	DESCRIPTION	DATE	BY	APP'D
1	ISSUED FOR TENDER	07/02/2014		

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Consulting Engineers

exp.

CLIENT
GOVERNMENT OF NUNAVUT
DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES

PROJECT
REPULSE BAY, NUNAVUT
NEW PUMPING STATION

TITLE
ELECTRICAL
SINGLE LINE DIAGRAM

design by	A.W.	project no.	8012-099
drawn by	D.O.	drawing no.	E2
checked by	R.M.M.		
date	DECEMBER 2013		
	AS SHOWN		

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