

1  
EI SCALE 1:500  
EXISTING SITE PLAN - MAIN SALMON HATCHERY

SYMBOL	LEGEND
⊕	20/15A RECEPTACLE.
⊞	SWITCH FOR FISH FEEDER.
○	FISH FEEDER.
□	JUNCTION BOX
TX	TRANSFORMER.
—	SURFACE MOUNTED ELECTRICAL PANEL.
⊙	SMOKE DETECTOR.
⊕	IONIZATION DETECTOR.
⊞	LIGHTING CONTACTOR.
⊞	DISCONNECT; '60'—60 AMP; '50'—FUSE RATING.
TEL	TELEPHONE CABINET.
M	METER CABINET.
1	SCOPE OF WORK NOTES.
MCC-2	MOTOR CONTROL CENTER.
15	SINGLE PHASE 15HP ELECTRIC MOTOR.
G	PORTABLE GENERATOR.
SUBSCRIPTS	
E	EXISTING
N	NEW

Public Works and  
Government Services  
Canada

Travaux Publics et  
Services gouvernementaux  
Canada

electrical consultant

# RASAL

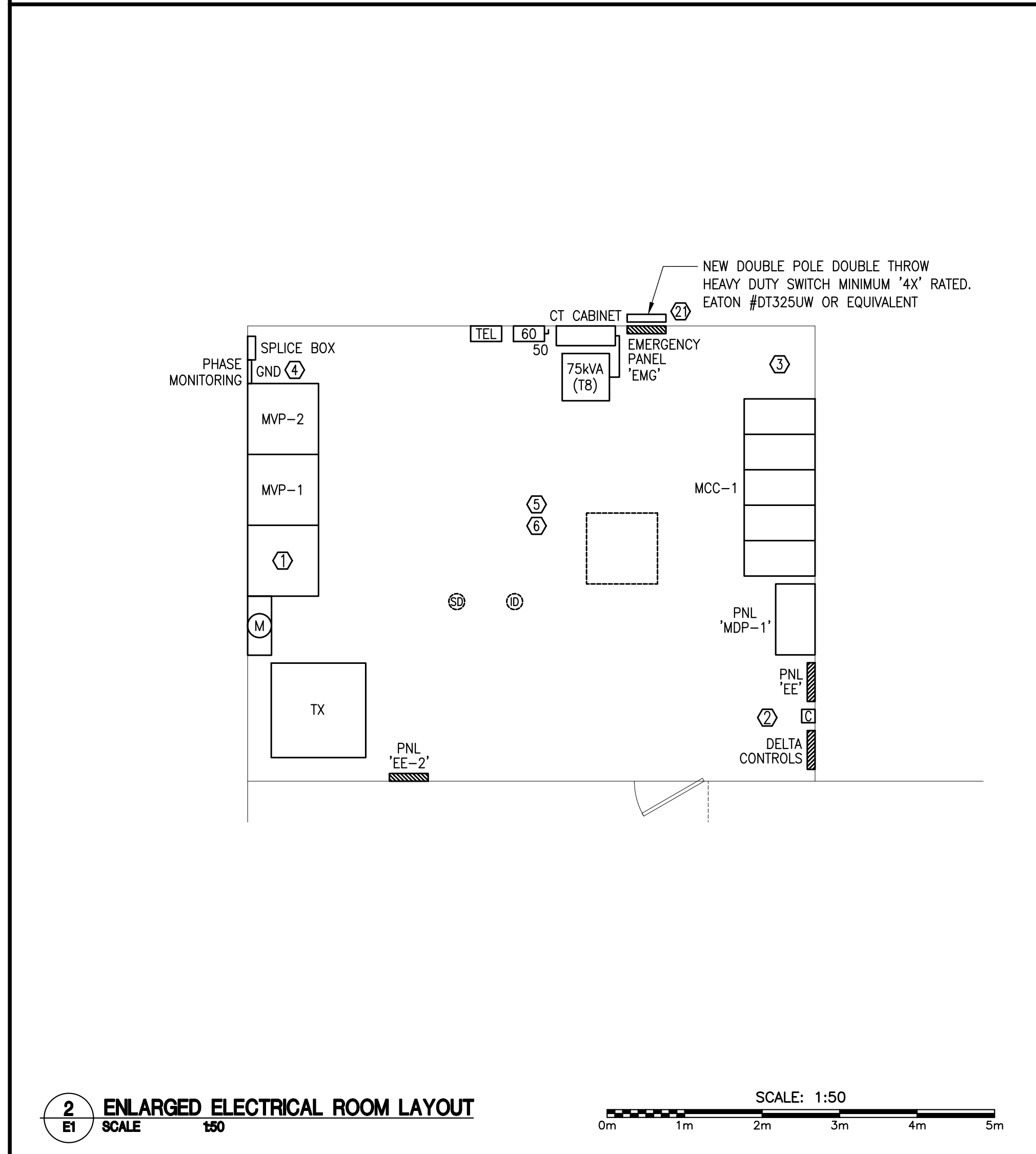
ELECTRICAL CONSULTING ENGINEERING

K.A. SMITH & ASSOC. LIMITED  
REGISTERED PROFESSIONAL ENGINEER  
FREDERICTON, NB E3A 5Y5

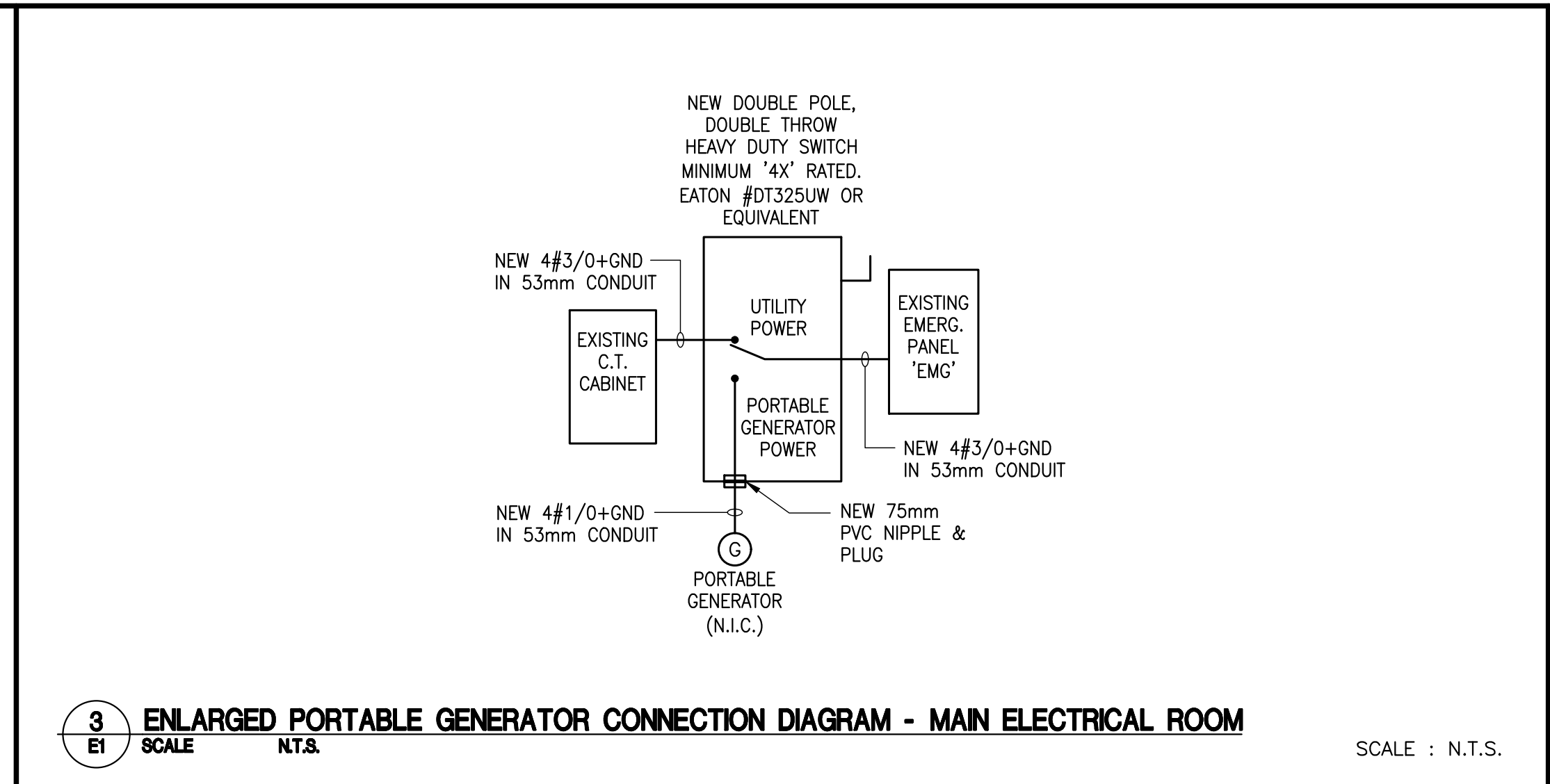
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North Nord Stamp Etampe

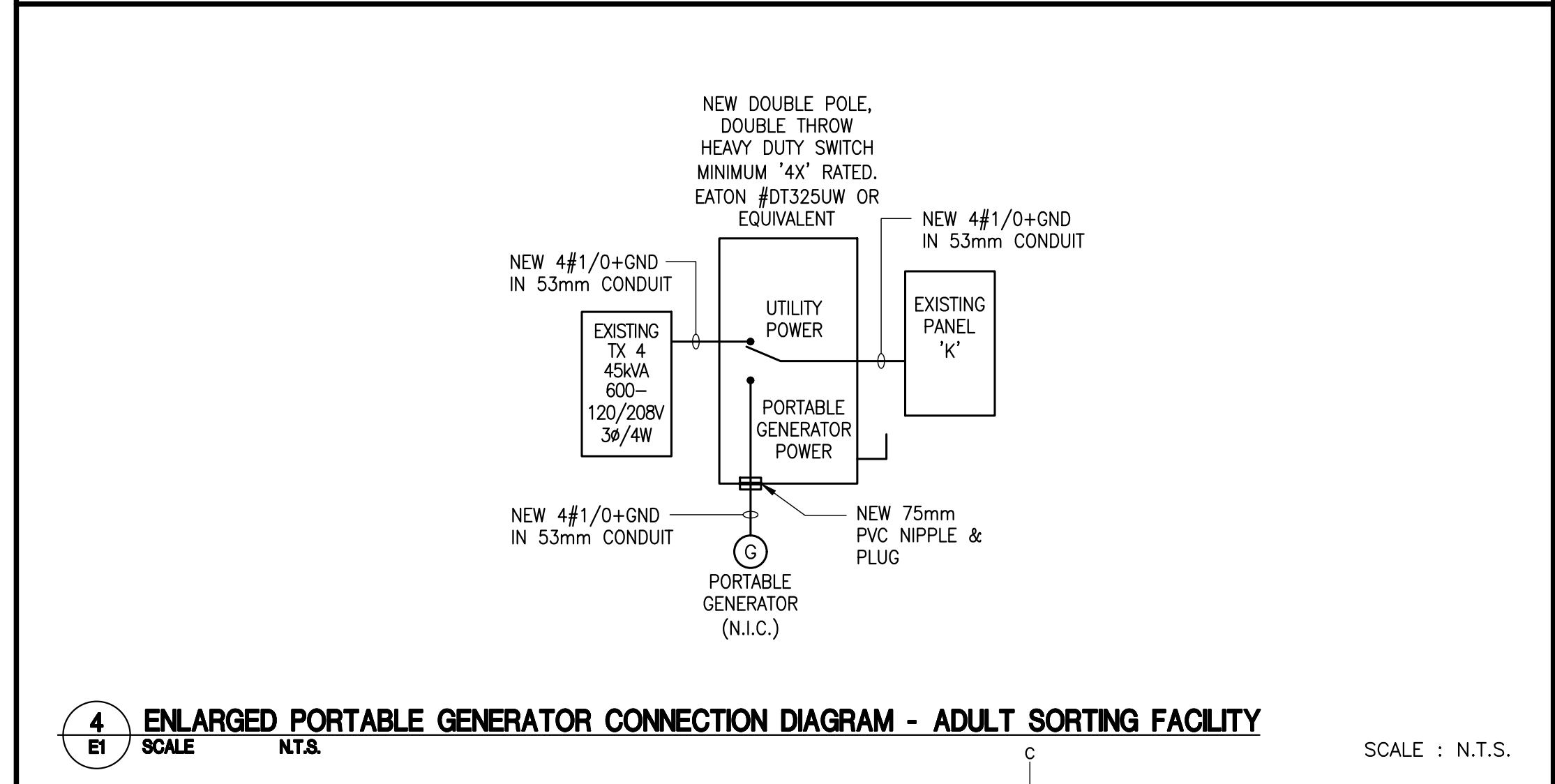
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2  
EI SCALE 1:50  
ENLARGED ELECTRICAL ROOM LAYOUT



3  
EI SCALE N.T.S.  
ENLARGED PORTABLE GENERATOR CONNECTION DIAGRAM - MAIN ELECTRICAL ROOM



4  
EI SCALE N.T.S.  
ENLARGED PORTABLE GENERATOR CONNECTION DIAGRAM - ADULT SORTING FACILITY

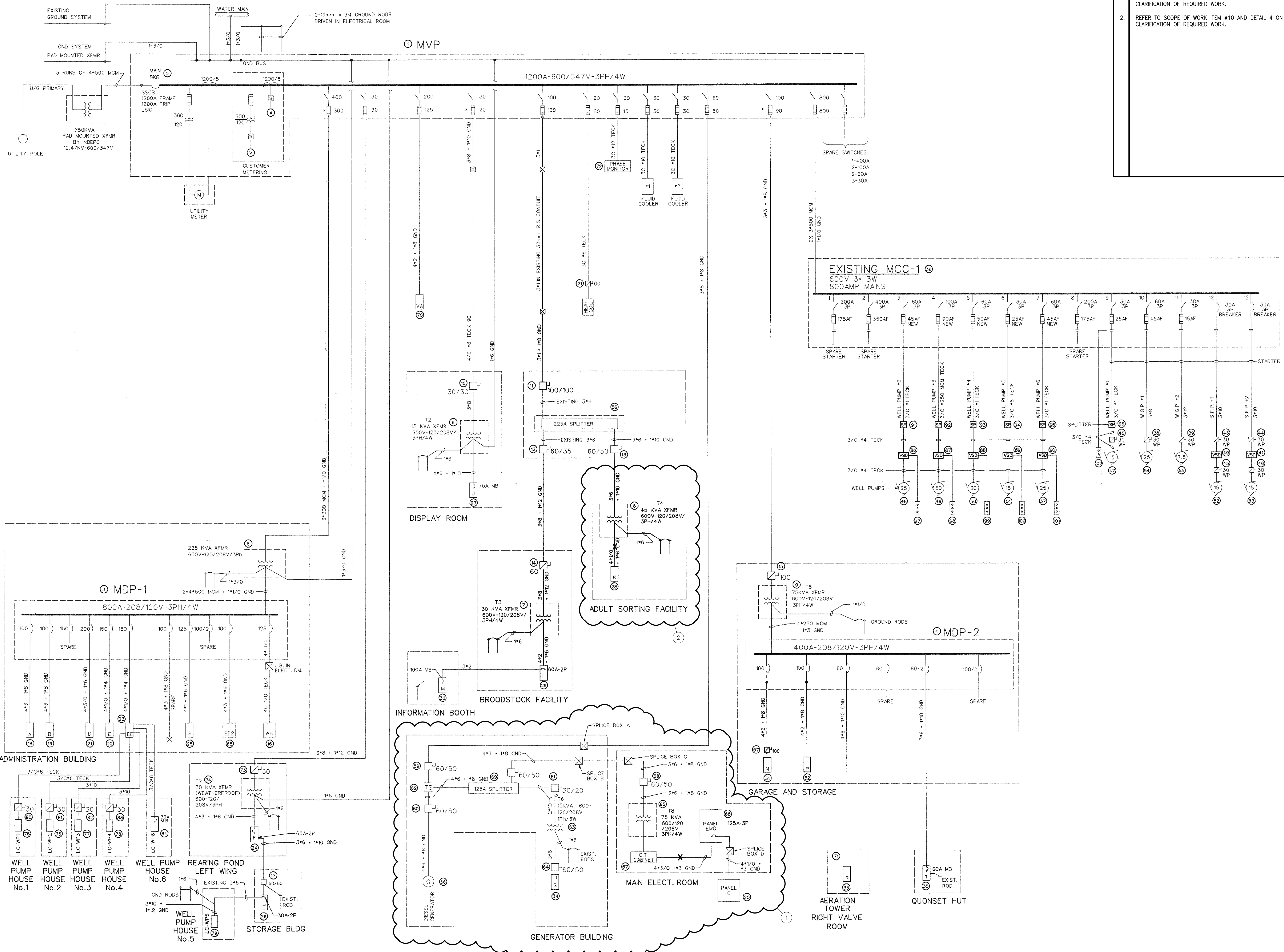
revisions	description	date
1	ISSUED FOR TENDER	2015.08.04

project  
**ELECTRICAL UPGRADE  
FISH CULTURE CENTRE  
MACTAQUAC**

YORK CO. N.B.

drawing  
**MAIN SALMON HATCHERY  
AND  
EARLY REARING FACILITY  
ELECTRICAL LAYOUTS  
& DETAILS**

designed	RALPH SMITH, P.ENG.	conçu
date	2015.08.04	
drawn	JLP/TMD	dessiné
date	2015.08.04	
approved	RALPH SMITH, P.ENG.	approuvé
date	2015.08.04	
Tender		Submission
project number		no. du projet
<b>F5654-150011</b>		
drawing no.		no. du dessin
<b>E1 of/de 3</b>		



**NOTES**

- REFER TO SCOPE OF WORK ITEM #21 AND DETAIL 3 ON E1 FOR CLARIFICATION OF REQUIRED WORK.
- REFER TO SCOPE OF WORK ITEM #10 AND DETAIL 4 ON E1 FOR CLARIFICATION OF REQUIRED WORK.

Public Works and Government Services / Travaux Publics et Services gouvernementaux Canada

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1	ISSUED FOR TENDER	2015.08.04

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**ELECTRICAL UPGRADE  
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**MAIN SALMON HATCHERY  
AND  
EARLY REARING FACILITY  
ELECTRICAL SINGLE LINE  
POWER RISER DIAGRAM**

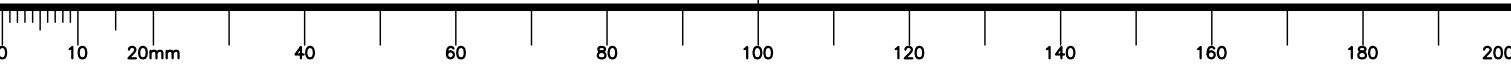
designed RALPH SMITH, P.ENG. conq  
date 2015.07.31  
drawn JLP/TMD dessin  
date 2015.07.31  
approved RALPH SMITH, P.ENG. approuv  
date 2015.07.15

Tender Submission  
PWSC Project Manager / Administrateur de projets TPSCC  
project number / no. du projet  
**F5654-150011**

drawing no. / no. du dessin  
**E2 of/de 3**

**1**  
**SCALE**  
N.T.S.

SCALE : N.T.S.





CODE No.	EQUIPMENT	CODE No.	EQUIPMENT
54	05-239-08 WATER GLYCOL PUMP No.1 MOTOR 25HP/575V/3PH	1	05-220-01 MAIN DISTRIBUTION PANEL - MVP 1200A-600/347V/3PH/4W ELECTRICAL ROOM ADMINISTRATION BUILDING
55	05-239-09 WATER GLYCOL PUMP No.2 MOTOR 7 1/2HP/575V/3PH	2	05-123-01 MAIN BREAKER
56	05-215-01 SPLITTER TROUGH BEL 4203 225A - 600V/3PH/4W ADULT SORTING	3	05-210-01 ELECTRICAL ROOM ADMINISTRATION BUILDING DISTRIBUTION PANEL - MDP-1 600A-120/208V/3PH/4W
57	05-205-09 DISCONNECT SWITCH 100A - 120/240V/1PH/3W GARAGE AND STORAGE BUILDING	4	05-210-02 ELECTRICAL ROOM ADMINISTRATION BUILDING DISTRIBUTION PANEL - MDP-2 400A-120/208V/3PH/4W - 30 CCT. GARAGE AND STORAGE BUILDING
58	05-205-10 TRANSFORMER DISCONNECT SWITCH 60A FUSED AT 50A 600V/3PH MAIN ELECT. ROOM	5	05-491-01 TRANSFORMER - 'T1' - 225KVA - 600-120/208V/3PH/4W ELECTRICAL ROOM ADMINISTRATION BUILDING
59	05-205-11 MAIN DISCONNECT SWITCH 60A FUSED AT 50A 600V/3PH GENERATOR BUILDING	6	05-491-02 TRANSFORMER - 'T2' - MARCUS TYPE TWM 15KVA - 600-120/208V/3PH/4W DISPLAY ROOM (RIGHT WING REARING PONDS)
60	05-205-12 GENERATOR DISCONNECT SWITCH 60A FUSED AT 50A 600V/3PH GENERATOR BUILDING	7	05-491-03 TRANSFORMER - 'T3' 30KVA - 600-120/208V/3PH/4W BROODSTOCK FACILITY
61	05-205-13 TRANSFORMER DISCONNECT SWITCH 30A FUSED AT 20A 600V/3PH GENERATOR BUILDING	8	05-491-04 TRANSFORMER - 'T4' 45KVA - 600-120/208V/3PH/4W ADULT SORTING FACILITY
62	05-487-01 AUTO TRANSFER SWITCH 4500 MDS00030100-RKX - 100A 600V/3PH GENERATOR BLDG	9	05-491-05 TRANSFORMER - 'T5' 75KVA - 600-120/208V/3PH/4W GARAGE AND STORAGE BUILDING
63	05-491-06 TRANSFORMER 'T6' 15KVA 600-120/208V/1PH GENERATOR BUILDING	10	05-205-01 TRANSFORMER DISCONNECT SWITCH ITE FK361 - 30A FUSED AT 30A - 600V/3PH DISPLAY ROOM (RIGHT WING REARING PONDS)
64	05-471-01 DISCONNECT SWITCH FOR PANEL 'S' 60A FUSED AT 50A 600V/3PH GENERATOR BUILDING	11	05-205-02 MAIN DISCONNECT SWITCH FOR SPLITTER 60A FUSED AT 60A - 600V/3PH ADULT SORTING
65	05-471-02 TRANSFORMER T-6 75KVA 600-120/208V/3PH MAIN ELECT. ROOM	12	05-205-03 TRANSFORMER DISCONNECT SWITCH FPE No.1638 - 60A FUSED AT 50A - 600V/3PH ADULT SORTING
66	10-250-01 DIESEL GENERATOR KOHLER 30R071 25KW 600V/3PH/4W GENERATOR BUILDING	13	05-205-04 BROODSTOCK DISCONNECT SWITCH FPE No.1638 - 60A FUSED AT 50A - 600V/3PH ADULT SORTING
67	05-239-10 C.T. CABINET 30x30x10 MAIN ELECT. ROOM	14	05-205-05 TRANSFORMER DISCONNECT SWITCH 60A - 600V/3PH, NON FUSED BROODSTOCK BUILDING
68	05-239-11 PANEL 'EMC' 225A 120/208V/3PH/4W 30 CIR MAIN ELECT. ROOM	15	05-205-06 TRANSFORMER DISCONNECT SWITCH 100A - 600V/3PH, GARAGE AND STORAGE BUILDING
69	05-215-02 SPLITTER TROUGH BEL T4103 125A 600V/3PH GENERATOR BUILDING	16	05-205-07 PANEL 'WH' 125A 208V/3PH/3W - 24 CCT'S REARING PONDS LEFT WING ADM. BLDG.
70	05-212-19 PANEL 'VA' 225A - 347/600V/3PH/4W 30CCT'S LIGHTING PANEL - ADMINISTRATION BUILDING	17	05-205-08 DISCONNECT SWITCH 60A - 120/208V/1PH, STORAGE BUILDING
71	05-205-14 HEAT COIL DISCONNECT 60A 600V/3PH/3W N/F LAB ROOM	18	05-212-01 PANEL 'AI' 225A - 120/208V/3PH/4W - 42CCT'S RIGHT WING ADMINISTRATION BUILDING
72	PHASE MONITOR 600V/3PH	19	05-212-02 PANEL 'BI' 225A - 120/208V/3PH/4W - 42CCT'S LEFT WING ADMINISTRATION BUILDING
73	05-205-15 TRANSFORMER DISCONNECT SWITCH 30A - 600V/3PH LEFT WING REARING PONDS	20	05-212-03 PANEL 'CI' 225A - 120/208V/3PH/4W - 42CCT'S OLD ELECT. ROOM ADMINISTRATION BUILDING
74	05-491-07 TRANSFORMER 'T7' 15KVA 600 - 120/208V/3PH LEFT WING REARING PONDS	21	05-212-04 PANEL 'DI' 225A - 120/208V/3PH/4W - 42CCT'S OLD ELECT. ROOM ADMINISTRATION BUILDING
75	05-212-20 PANEL 'LC-WP1' 100A - 120/208V/1PH/3W - 20 CCT'S WELL PUMP HOUSE No.1	22	05-212-05 PANEL 'EI' 225A - 120/208V/3PH/4W - 42CCT'S OLD ELECT. ROOM ADMINISTRATION BUILDING
76	05-212-21 PANEL 'LC-WP2' 100A - 120/208V/1PH/3W - 20 CCT'S WELL PUMP HOUSE No.2	23	05-212-06 PANEL 'EE' 225A - 120/208V/3PH/4W - 42CCT'S ELECT. ROOM ADMINISTRATION BUILDING
77	05-212-22 PANEL 'LC-WP3' 100A - 120/208V/1PH/3W - 20 CCT'S WELL PUMP HOUSE No.3	24	05-212-07 PANEL 'FI' 225A - 120/208V/3PH/4W - 42CCT'S LEFT WING REARING PONDS ADMINISTRATION BUILDING
78	05-212-23 PANEL 'LC-WP4' 100A - 120/208V/1PH/3W - 12 CCT'S WELL PUMP HOUSE No.4	25	05-212-08 PANEL 'GI' - FPE NBC342 225A - 120/208V/3PH/4W 42 CCT'S - FISH FEEDER ADMIN. BLDG
79	05-212-24 PANEL 'LC-WP5' 100A - 120/208V/1PH/3W - 12 CCT'S WELL PUMP HOUSE No.5	26	05-212-09 PANEL 'HI' - GOULD 120GLB 60A - 120/208V/1PH/3W 8 CCT'S - STORAGE BUILDING
80	05-205-16 WELL PUMP HOUSE No.1 DISCONNECT SWITCH 100A - 120/208V/1PH	27	05-212-10 PANEL 'JI' - SQUARE D QBM-420 70A - 120/208V/3PH/4W 20 CCT'S DISPLAY BUILDING (RIGHT WING REARING PONDS)
81	05-205-17 WELL PUMP HOUSE No.2 DISCONNECT SWITCH 100A - 120/208V/1PH	28	05-212-11 PANEL 'KI' - FPE NBC 342 225A - 120/208V/3PH/4W 42 CCT'S ADULT SORTING FACILITY
82	05-205-18 WELL PUMP HOUSE No.3 DISCONNECT SWITCH 100A - 120/208V/1PH	29	05-212-12 PANEL 'LI' - 225A - 120/208V/3PH/4W 42CCT'S BROODSTOCK FACILITY
83	05-205-19 WELL PUMP HOUSE No.4 DISCONNECT SWITCH 100A - 120/208V/1PH	30	05-212-13 PANEL 'MI' - FPE STABLOCK BE108-16 16 CCT'S 100A - 120/208V/1PH/3W INFORMATION BOOTH
84	05- PANEL LC-WP6 100A 120V/208V/3PH/4W - 12 CCT'S WELL PUMP HOUSE No.6	31	05-212-14 PANEL 'NI' - 225A - 120/208V/3PH/4W 42CCT'S ELECT. STORES - GARAGE AND STORAGE BUILDING
85	05- PANEL 'EE-2' 225A - 120/208V/3PH/4W - 30 CCT'S MAIN ELECTRICAL RM - ADMIN. BLDG.	32	05-212-15 PANEL 'PI' - 225A - 120/208V/3PH/4W 42CCT'S WORKSHOP - GARAGE AND STORAGE BUILDING
86	DANFOSS V.S.D. 25HP 600V 3PH WELL PUMP HOUSE No. 2	33	05-212-16 PANEL 'RI' - 100A - 120/208V/3PH/4W 30CCT'S VALVE ROOM AERATION TOWER
87	DANFOSS V.S.D. 50HP 600V 3PH WELL PUMP HOUSE No. 3	34	05-212-17 PANEL 'SI' - SQUARE D QO-24M 24CCT'S. 125A - 120/240V/1PH/3W GENERATOR BUILDING
88	DANFOSS V.S.D. 30HP 600V 3PH WELL PUMP HOUSE No. 4	35	05-212-18 PANEL 'TI' - SQUARE D QO-24M 24CCT'S. 125A - 120/240V/1PH/3W QUONSET-HUT
89	DANFOSS V.S.D. 15HP 600V 3PH WELL PUMP HOUSE No. 5	36	05-386-01 MOTOR CONTROL CENTER - MCC-1 1200A-600V/3PH/3W ELECTRICAL ROOM ADMINISTRATION BUILDING
90	DANFOSS V.S.D. 25HP 600V 3PH WELL PUMP HOUSE No. 6	37	05-386-02 WELL PUMP No.6 MOTOR 25HP/575V/3PH
91	SPLITTER BOX BEL BPS100 100A - 600V/3PH WELL PUMP HOUSE No. 2	38	05-200-01 MOTOR CONTROL DISCONNECT SWITCH 30A - 600V/3PH N.F. W.G.P. #1
92	SPLITTER BOX BEL BPS200 200A - 600V/3PH WELL PUMP HOUSE No. 3	39	05-200-02 MOTOR CONTROL DISCONNECT SWITCH 30A - 600V/3PH N.F. W.G.P. #2
93	SPLITTER BOX BEL BPS100 100A - 600V/3PH WELL PUMP HOUSE No. 4	40	05-200-03 LITEPEC V.S.D. FOR SAND FILTER PUMP #1
94	SPLITTER BOX BEL BPS100 100A - 600V/3PH WELL PUMP HOUSE No. 5	41	05-200-04 LITEPEC V.S.D. FOR SAND FILTER PUMP #2
95	SPLITTER BOX BEL BPS100 100A - 600V 3PH WELL PUMP HOUSE No. 6	42	05-200-05 MOTOR CONTROL DISCONNECT SWITCH 30A - 600V/3PH WELL PUMP No.1
96	SPLITTER BOX BEL BPS100 100A - 600V 3PH WELL PUMP HOUSE No. 1	43	05-200-06 MOTOR CONTROL DISCONNECT SWITCH WEATHER PROOF 30A - 600V/3PH SAND FILTER PUMP No.1 V.S.D.
97	S.O. D STOP/START/P.L. STATION WELL PUMP #2 MAIN ELECTRICAL ROOM	44	05-200-07 MOTOR CONTROL DISCONNECT SWITCH WEATHER PROOF 30A - 600V/3PH SAND FILTER PUMP No.2 V.S.D.
98	S.O. D STOP/START/P.L. STATION WELL PUMP #3 MAIN ELECTRICAL ROOM	45	05-200-08 MOTOR CONTROL DISCONNECT SWITCH WEATHER PROOF 30A - 600V/3PH SAND FILTER PUMP No.1
99	S.O. D STOP/START/P.L. STATION WELL PUMP #4 MAIN ELECTRICAL ROOM	46	05-200-09 MOTOR CONTROL DISCONNECT SWITCH WEATHER PROOF 30A - 600V/3PH SAND FILTER PUMP No.2
100	S.O. D STOP/START/P.L. STATION WELL PUMP #5 MAIN ELECTRICAL ROOM	47	05-239-01 WELL PUMP No.1 MOTOR 15HP/575V/3PH
101	S.O. D STOP/START/P.L. STATION WELL PUMP #6 MAIN ELECTRICAL ROOM	48	05-239-02 WELL PUMP No.2 MOTOR 25HP/575V/3PH
102	TELEMCANIQUE STOP/START STATION WELL PUMP #1 WELL PUMP HOUSE No.1	49	05-239-03 WELL PUMP No.3 MOTOR 50HP/575V/3PH
		50	05-239-04 WELL PUMP No.4 MOTOR 30HP/575V/3PH
		51	05-239-05 WELL PUMP No.5 MOTOR 15HP/575V/3PH
		52	05-239-06 SAND FILTER PUMP No.1 MOTOR 15HP/575V/3PH
		53	05-239-07 SAND FILTER PUMP No.2 MOTOR 15HP/575V/3PH

1 SINGLE LINE DIAGRAM EQUIPMENT LIST  
SCALE N.T.A.

SCALE : N.T.S.

SPECIFICATION

- SUPPLY AND INSTALL ALL LABOUR AND MATERIALS THAT ARE REQUIRED FOR COMPLETE ELECTRICAL INSTALLATION.
- CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE JOB AND ALL CONDITIONS WHICH MAY AFFECT HIS COSTS.
- ALL MATERIALS AND WORKMANSHIP TO CONFORM TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE AND ALL LOCAL AND PROVINCIAL BYLAWS.
- GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED SO THE WORK MAY BE CARRIED OUT.
- COORDINATE WORK WITH OTHER CONTRACTORS. REFER TO THE DRAWINGS FOR CONSTRUCTION DETAILS AND FOR EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AND THE RATINGS AND CHARACTERISTICS OF THE EQUIPMENT. COORDINATE EQUIPMENT RATINGS AND CONNECTION REQUIREMENTS FOR OWNER-SUPPLIED EQUIPMENT.
- SUBMITTALS: PROVIDE ALL REQUIRED DOCUMENTS FOR REVIEW AND APPROVAL IN ACCORDANCE WITH DIVISION 1 INCLUDING:
  - ALL POWER, COMMUNICATIONS AND LIGHTING SHOP DRAWINGS AS REQUESTED. ELECTRICAL CONTRACTOR TO REVIEW SUBMITTALS PRIOR TO SUBMISSION TO ENGINEER. THIS REVIEW REPRESENTS THAT NECESSARY REQUIREMENTS HAVE OR WILL BE DETERMINED AND VERIFIED AND THAT EACH SUBMITTAL HAS BEEN CHECKED AND COORDINATED WITH THE REQUIREMENTS OF THE WORK AND CONTRACT DOCUMENTS AND BEARS STAMP OF CONTRACTOR
  - AS-BUILT DRAWINGS TO BE PROVIDED AND SHALL INCLUDE FINAL LAYOUT AND LOCATION OF ALL ELECTRICAL EQUIPMENT, DEVICES, OUTLETS AND PULLBOXES INSTALLED. CHANGES SHALL BE NEATLY MARKED IN RED AND BEAR STAMP OF CONTRACTOR.
  - SUBMIT OPERATION AND MAINTENANCE MANUALS. INCLUDE NAME/ADDRESS OF LOCAL SUPPLIERS FOR ITEMS INCLUDED; ENGINEER-REVIEWED SHOP DRAWINGS; ALL DETAILS TO PERMIT EFFECTIVE START-UP OPERATOR MAINTENANCE, REPAIRS, MODIFICATION, EXTENSION OR EXPANSION OF ANY PORTION OR FEATURE OF THE INSTALLATION; WORK REPORT; WARRANTY LETTERS FROM CONTRACTORS AND SUPPLIERS.
  - UPDATE SINGLE LINE POWER RISER DIAGRAM IN MAIN ELECTRICAL ROOM.
  - UPDATE FIRE ALARM GRAPHIC.
- ALL LABOUR AND MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER THE DATE OF THE ACCEPTED SUBSTANTIAL COMPLETION OF THE CONTRACT.
- WHERE MANUFACTURERS' NAMES ARE USED, IT IS FOR THE PURPOSE OF ESTABLISHING A STANDARD, AND THAT EQUIPMENT SHALL BE USED IN PREPARING QUOTATIONS. PERMISSION TO USE ALTERNATIVES SHALL BE SECURED BY MEANS OF WRITTEN REQUEST NO LATER THAN 5 DAYS PRIOR TO TENDER CLOSING. MATERIALS SHALL BE OF ONE MANUFACTURER, WHERE TRADE NAMES ARE NOT USED TO DESCRIBE MATERIALS, THESE MATERIALS SHALL BE OF SPECIFICATION GRADE.
- ALL CLAIMS FOR EXTRAS SHALL BE SUPPORTED BY WRITTEN AUTHORIZATION AND ITEMIZED MATERIAL AND LABOUR COST BREAKDOWNS.
- ALL MATERIAL SHALL BE SORTED NEATLY AND OUT OF THE WAY. CLEAN UP DAILY ALL REFUSE CAUSED BY WORK. AT COMPLETION OF PROJECT, CLEAN ALL FIXTURES AND EQUIPMENT.
- CUTTING, PATCHING AND PAINTING DUE TO ELECTRICAL WORK WILL BE BY ELECTRICAL CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL TOTALLY REVIEW ALL ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR CONFLICTS AND DISCREPANCIES ASSOCIATED WITH ELECTRICAL WORK PRIOR TO SUBMITTING TENDER PRICE. ALSO REVIEW ALL ADDENDA ASSOCIATED WITH ALL TRADES. AFTER REVIEW OF ALL DOCUMENTS ASSOCIATED WITH OTHER TRADES, FORWARD ANY QUESTIONS AND OBTAIN ANSWERS PRIOR TO TENDER SUBMISSION. SUBMISSION OF TENDER BY ELECTRICAL CONTRACTOR ACKNOWLEDGES COORDINATION WITH OTHER TRADES.
- MECHANICAL/ELECTRICAL RESPONSIBILITIES: THE FOLLOWING IS A LIST OF MECHANICAL AND ELECTRICAL RESPONSIBILITIES FOR THIS PROJECT:
  - ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE WIRING OF ALL ELECTRICAL AND 120V MECHANICAL SYSTEMS (CONTROLS). ELECTRICAL CONTRACTOR WILL SUPPLY AND INSTALL ALL FEEDERS TO LINE AND LOAD SIDE OF STARTERS/DISCONNECTS
  - ELECTRICAL CONTRACTOR TO PROVIDE ALL REMOTE DISCONNECT SWITCHES.
  - ALL MOTORS, CONDENSERS, HEAT PUMPS, EVAPORATORS, EXHAUST FANS, HEAT RECOVERY SYSTEMS AND HEATING RELAYS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
  - ELECTRIC HEATING TO BE BY ELECTRICAL CONTRACTOR.
  - ALL LOW VOLTAGE CONTROL WIRING BY MECHANICAL CONTRACTOR.
- IDENTIFICATION: ALL LIGHT SWITCHES, LIGHTS, RECEPTACLES (IN CONTRACT AREA) ARE TO HAVE IT'S PANEL AND CIRCUIT IDENTIFIED WITH A PLASTIC NAMEPLATE 6mm HIGH X 25mm LONG (IE A-3 OR A-2.4.6). NAMEPLATES TO BE PROPERLY ADHERED TO DEVICE OR EQUIPMENT AND IDENTIFIED IN CORRESPONDING OUTLET, CONDUIT AND CABLE TO BE IDENTIFIED WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT ENTERS WALL, CEILING, OR FLOOR, AND AT 15M INTERVALS. BRANCH CIRCUIT WIRING TO BE IDENTIFIED AT BOTH ENDS, INCLUDING IN ALL JUNCTION BOXES IN BETWEEN, WITH PERMANENT INDELEIBLE MARKING, INDICATION PANEL AND CIRCUIT (IE A-3) - ELECTRICAL EQUIPMENT (DISCONNECTS, PANELBOARDS, SPLITTERS, METER STACKS, ETC.) TO HAVE DESIGNATED NAME OF EQUIPMENT, VOLTAGE, NUMBER OF PHASES AND WIRES, BRANCH CIRCUIT NUMBER.
- ALL PENETRATIONS THROUGH FIRE-RATED WALLS OR CEILINGS MUST BE SEALED WITH PRE-APPROVED FIRESTOP BY ELECTRICAL CONTRACTOR.
- WIRING METHODS: INTERIOR WIRING SHALL BE 600V AND 300V RW90 COPPER IN EMT OR AC90. MINIMUM #12 FOR LIGHTING, RECEPTACLES, AND FOR POWER. ALL WIRING SHALL BE CONCEALED WHERE POSSIBLE. EXPOSED WIRING SHALL BE INSTALLED IN EMT AND SHALL CONFORM TO BUILDING CONSTRUCTION LINES. ALL EMPTY CONDUIT SHALL BE C/W NYLON FISH WIRE.
- ALL NON-CURRENT-CARRYING METAL PARTS, INCLUDING RACEWAYS, CABINETS, METAL SUPPORT FRAMES AND OTHER EQUIPMENT WHERE GROUNDING IS REQUIRED, SHALL BE COMPLETELY GROUNDED IN AN APPROVED MANNER AS PRESCRIBED BY THE UTILITY SERVICE ENTRANCE STANDARDS AND THE CANADIAN ELECTRICAL CODE. ALL NECESSARY CONDUIT, CONDUCTORS, CLAMPS, CONNECTORS, ETC. FOR THE GROUNDING SYSTEM SHALL BE FURNISHED, INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR.
- PANELBOARDS: TO BE MANUFACTURED TO CSA C22.2 No.29. PANELBOARDS TO HAVE ALUMINUM BUS BARS RATED FOR 16,000A WITHSTAND CAPACITY, FULL SIZE NEUTRAL, BOLT-ON BREAKERS, ACCEPTABLE MANUFACTURERS: SIEMENS, SCHNEIDER, EATON (CUTLER-HAMMER).
- MOULDED CASE CIRCUIT BREAKERS: MANUFACTURED TO CSA C22.2 No.5. NEW BREAKERS TO MATCH EXISTING PANEL BREAKERS. BOLT-ON BREAKERS SHALL BE QUICK MAKE, QUICK BREAK TYPE FOR MANUAL AND AUTOMATIC OPERATION WITH TEMP. COMPENSATION FOR 40°C AMBIENT.
- WIRING DEVICES: COMMERCIAL SPECIFICATION GRADE, DECORA WHITE WITH MATCHING STAINLESS STEEL COVERPLATES. RECEPTACLES SHALL BE, UNLESS OTHERWISE NOTED, U GROUND TYPE, WHITE SCREW TERMINAL TYPE. RECEPTACLES SHALL BE IN ACCORDANCE WITH SPECIFICATION GRADE. ALL RECEPTACLES TO BE INSTALLED IN 'GROUND UP' POSITION. LIGHT SWITCHES SHALL BE, UNLESS OTHERWISE NOTED, SILENT, AC TYPE, ROCKER STYLE, WHITE WITH MATCHING COVERPLATE. BRYANT, HUBBELL, LEVITON, COOPER AND P&G SHALL BE CONSIDERED AS ACCEPTABLE MANUFACTURERS.
- DISCONNECT SWITCHES: HEAVY DUTY FUSED AND NON-FUSED AS INDICATED, WEATHERPROOF ENCLOSURE AS INDICATED. PROVIDE FOR PAD LOCKING IN 'ON' OR 'OFF' POSITION, QUICK MAKE, QUICK BREAK ACTION. ACCEPTABLE MANUFACTURERS: SIEMENS, SCHNEIDER, EATON (CUTLER-HAMMER).
- LIGHTING: ELECTRICAL CONTRACTOR IS TO ENSURE LAMP/FIXTURE COMBINATION PROVIDED BY MANUFACTURER IS COMPATIBLE. SIX SPARE LAMPS TO BE PROVIDED, FLUORESCENT LUMINAIRES TO BE EQUIPPED WITH A BALLAST DISCONNECTING MEANS INTEGRAL WITH LUMINAIRE AND BE PERMANENTLY IDENTIFIED IN A CONSPICUOUS MANNER. LIGHT FIXTURE SCHEDULE INDICATES MINIMUM PERFORMANCE REQUIRED FOR EACH LIGHTING SYSTEM. SUPPORT LUMINAIRES IN ACCORDANCE WITH LOCAL INSPECTION REQUIREMENTS.
- EMERGENCY LIGHTING: UNIT EQUIPMENT TO BE MANUFACTURED TO CSA C22.1 No.141. OPERATING TIME, 30 MIN. PROVIDE A WARRANTY, STATING THE BATTERY IS WARRANTED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR 10 YEARS. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS. CONNECTED LOAD TO BE MIN. 25% BATTERY SIZE.
- EXIT LIGHTING: GREEN 'RUNNING MAN' TO CSA C880. STEEL HOUSING WITH HIGH IMPACT, UV STABILIZED, THERMOPLASTIC CONSTRUCTION (SURFACE, END OR CEILING MOUNT - SINGLE OR DOUBLE FACE). EXIT LIGHT CIRCUIT BREAKER TO BE LOCKED IN 'ON' POSITION, ALL EXIT LIGHTS MUST BE INSTALLED AT HEIGHT WHICH IS VISIBLE FROM ADJACENT CORRIDORS AND MUST NOT BE MOUNTED IN LOCATIONS THAT ARE OR WILL BE OBSTRUCTED BY EQUIPMENT OR ARCHITECTURAL COMPONENTS.
- FIRE ALARM SYSTEM: SUPPLY, INSTALL AND VERIFY FIRE ALARM SYSTEM. ALL WIRING TO BE IN CONDUIT. UPON COMPLETION OF WORK, THE FIRE ALARM SYSTEM MUST BE VERIFIED BY A CONTRACTOR/COMPANY OTHER THAN THE INSTALLING CONTRACTOR/COMPANY. PROVIDE A CERTIFICATE OF VERIFICATION CONFIRMING THAT THE INSPECTION HAS BEEN IN ACCORDANCE WITH CAN/ULC-5537.
- ALL DEVICES MOUNTED BACK TO BACK WITHIN ADJOINING ROOMS ARE TO BE OFFSET A MINIMUM OF 12" FROM EACH OTHER TO AVOID SOUND TRANSFER.
- HEATING: BASEBOARD HEATERS SHALL BE 347V, 1ø, WATTAGE AS INDICATED (STANDARD WATTAGE DENSITY) MOUNTED ABOVE BASEBOARD TRIM. CONTROL RELAYS AND TEMPERATURE SENSORS AS INDICATED, SUPPLIED BY MECHANICAL OR ELECTRICAL CONTRACTOR AS INDICATED, WIRED BY ELECTRICAL CONTRACTOR. BUILT-IN THERMOSTATS WHERE INDICATED. FORCE FLOW HEATERS, RECESSED CEILING AND WALL MOUNT HEATERS WHERE INDICATED. VOLTAGE AND PHASE AS INDICATED IN PANEL SCHEDULE. C/W BUILT-IN THERMOSTATS, WHITE, 2ø-GUAGE STEEL CABINET, THERMAL PROTECTION WITH AUTOMATIC RESET, 1 YEAR WARRANTY FOR ELEMENT, 1 YEAR WARRANTY FOR OTHER COMPONENTS. ACCEPTABLE MANUFACTURERS: STELPRO, DIMPLEX.

Public Works and Government Services  
Travaux Publics et Services gouvernementaux  
Canada

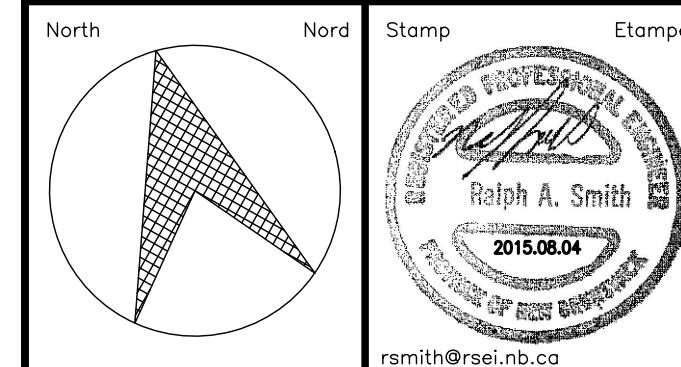
electrical consultant

**RASAL**

ELECTRICAL CONSULTING ENGINEERING

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DO NOT SCALE DRAWINGS. SITE PLANS SCALED FROM PDF RECEIVED FROM D.F.O. (CREATED BY CBCL LIMITED DATED DECEMBER, 2002) AND ARE NOT EXACT. VERIFY ALL DIMENSIONS/CONDITIONS ON SITE.

revisions	description	date
1	ISSUED FOR TENDER	2015.05.04

project  
**ELECTRICAL UPGRADE  
FISH CULTURE CENTRE  
MACTAQUAC**  
project

YORK CO. N.B.

drawing  
**MAIN SALMON HATCHERY  
AND  
EARLY REARING FACILITY  
ELECTRICAL EQUIPMENT LIST  
& SPECIFICATION**  
dessin

designed RALPH SMITH, P.ENG. conçu

date 2015.07.31

drawn JLP/TMD dessiné

date 2015.07.31

approved RALPH SMITH, P.ENG. approuvé

date 2015.07.15

Tender Soumission

PWSSC Project Manager Administrateur de projets TPSSC

project number no. du projet

**F5654-150011**

drawing no. no. du dessin

**E3 of/de 3**