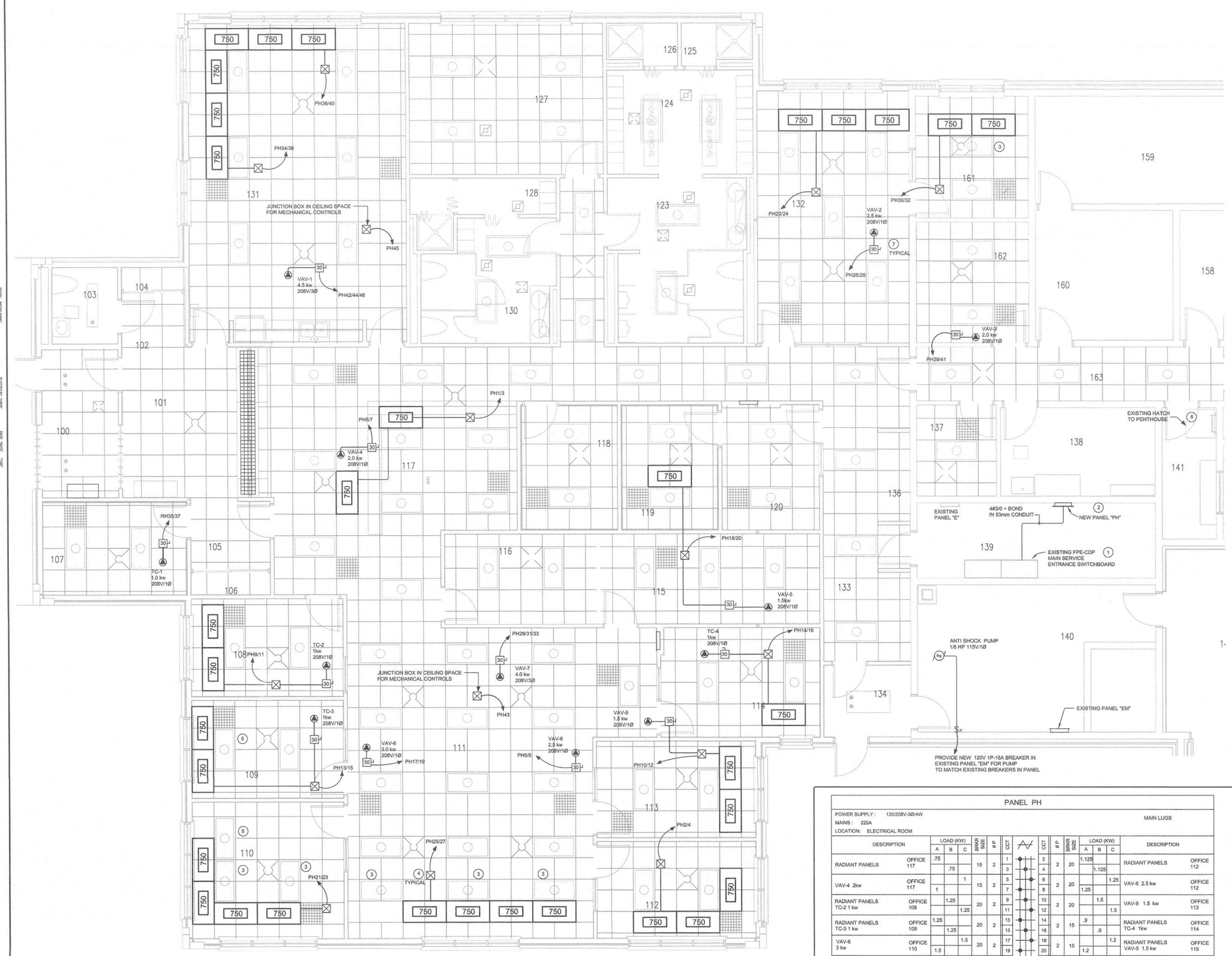

KEYNOTES

1. PROVIDE AND INSTALL A NEW 208V, 200A-3POLE BREAKER IN EXISTING MAIN SERVICE BOARD TO FEED NEW PANEL "PH". BREAKER TO MATCH EXISTING BREAKERS IN PANEL.
2. MOUNT NEW DISTRIBUTION PANEL "PH" ON 19mm DF GIS PLYWOOD, PAINTED GREY.
3. RELOCATED EXISTING 610 x 1220 LIGHT FIXTURES ONE GRID SPACE TO ALLOW FOR INSTALLATION OF NEW RADIANT CEILING HEATERS.
4. HEATER RELAYS AND DCC CONTROLS BY MECHANICAL. DIV. 16 TO PROVIDE JUNCTION BOX IN CEILING SPACE TO MOUNT RELAYS AND PROVIDE 208V POWER TO HEATERS. DIV. 16 TO PROVIDE CONTACTORS AS REQUIRED FOR HEATER INSTALLATION AND COORDINATE WITH CONTROLS CONTRACTOR.
5. IN ROOMS 109 AND 110 RELOCATE EXISTING CEILING TILES AND T-BAR GRID AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF NEW ELECTRIC RADIANT CEILING PANELS. PROVIDE NEW TILES AND T-BAR GRID AS REQUIRED FOR A COMPLETE CEILING.
6. DISCONNECT EXISTING POWER CONNECTS TO STARTER AND MOTOR FOR EXISTING AHU-1 IN PENTHOUSE. DIVISION 26 TO PROVIDE ALL CONDUIT AND WIRING TO CONNECT NEW 5HP MOTOR AND VFD (BY MECHANICAL) TO EXISTING PANEL "F" IN PENTHOUSE. COORDINATE LOCATIONS OF ALL DEVICES ON SITE.
7. DISCONNECT SWITCHES FOR VAV BOXES AND COILS ARE LOCATED IN CEILING SPACE. COORDINATE FINAL LOCATIONS ON SITE AND PROVIDE MOUNTING HARDWARE AS REQUIRED.

PLAN

MAIN FLOOR 1:50

PANEL PH

POWER SUPPLY : 120/208V-3Ø/4W
MAINS : 225A
LOCATION: ELECTRICAL ROOM
MAIN LUGS

DESCRIPTION		LOAD (KW) A	B	C	BRKR SIZE	# P	CCT		CCT	# P	BRKR SIZE	LOAD (KW) A	B	C	DESCRIPTION	
RADIANT PANELS	OFFICE 117	.75			15	2	1		2	2	20	1.125			RADIANT PANELS	OFFICE 112
			.75				3		4				1.125			
VAV-4 2kw	OFFICE 117			1	15	2	5		6	2	20			1.25	VAV-8 2.5 kw	OFFICE 112
		1					7		8			1.25				
RADIANT PANELS TC-2 1 kw	OFFICE 108		1.25		20	2	9		10	2	20		1.5		VAV-9 1.5 kw	OFFICE 113
				1.25			11		12					1.5		
RADIANT PANELS TC-3 1 kw	OFFICE 109	1.25			20	2	13		14	2	15	.9			RADIANT PANELS TC-4 1kw	OFFICE 114
			1.25				15		16				.9			
VAV-6 3 kw	OFFICE 110			1.5	20	2	17		18	2	15			1.2	RADIANT PANELS VAV-5 1.5 kw	OFFICE 119
		1.5					19		20			1.2				
RADIANT PANELS	OFFICE 110		1.5		20	2	21		22	2	15		1.125		RADIANT PANELS	OFFICE 132
				1.5			23		24					1.125		
RADIANT PANELS	OFFICE 111	1.5			20	2	25		26	2	20	1.25			VAV-2 2.5 kw	OFFICE 132
			1.5				27		28				1.25			
VAV-7 4 kw	OFFICE 111			1.3	15	3	29		30	2	15			.75	RADIANT PANELS	OFFICE 161
		1.3					31		32			.75				
			1.3				33		34	2	15		1.125		RADIANT PANELS	OFFICE 131
TC-1 1 kw	OFFICE 107			0.5	15	2	35		36					1.125		
		0.5					37		38	2	15	1.125			RADIANT PANELS	OFFICE 131
VAV-3 2 kw	OFFICE 161		1.0		15	2	39		40				1.125			
				1.0			41		42					1.5		
MECHNICAL CONTROLS		0.5			15	1	43		44	3	15	1.5			VAV-1 4.5 kw	OFFICE 131
MECHNICAL CONTROLS			0.5		15	1	45		46				1.5			
							47		48							
							49		50							
							51		52							
							53		54							
							55		56							
							57		58							
							59		60							
PHASE LOAD		8.3	9.05	8.05								9.1	9.65	8.45		
TOTAL PHASE LOAD							A=17.4		B=18.7		C=16.5				TOTAL 52.6	

PANEL INDEX NOT TO SCALE

1.0 SCOPE OF WORK

1.1 THE SCOPE OF ELECTRICAL WORK INCLUDES, BUT IS NOT LIMITED TO, THE SUPPLY AND INSTALLATION OF ALL SUPERVISION, LABOUR, PERMITS, EQUIPMENT, MATERIALS, CONSUMABLES NECESSARY FOR THE INSTALLATION OF COMPLETE AND WORKING ELECTRICAL SYSTEMS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS AND AS LISTED BELOW:

.1 THE ELECTRICAL WORK REQUIRED TO PROVIDE POWER TO MECHANICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO WIRE, CONDUIT, DISCONNECTS, MANUAL STARTERS, COMBINATION STARTERS AND DISTRIBUTION PANELS.

.2 THE INSTALLATION OF NEW ELECTRICAL DEVICES AND EQUIPMENT AS SHOWN ON DRAWING.

.3 PROVIDE ALL CUTTING AND CHASES REQUIRED FOR THE ELECTRICAL INSTALLATION.

.4 PROVIDE NEW DEVICE BOXES WHERE REQUIRED.

.5 ALL CUTTING AND PATCHING TO BE PAINTED AND REFINISHED TO MATCH EXISTING.

.6 IMMEDIATELY UPON COMPLETION OF WORK ALL AREAS WORKED ARE TO BE THROUGHLY CLEANED.

2.0 GENERAL ELECTRICAL REQUIREMENTS

.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE, 2012, LATEST NATIONAL BUILDING CODE, ALL LOCAL AND PROVINCIAL BY-LAWS AND LOCAL AUTHORITY REQUIREMENTS.

.2 THE CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE PRIOR TO THE TENDER CLOSING DATE IN ORDER TO BECOME AWARE OF THE EXTENT OF DEMOLITION AND NEW WORK AND THE EXTENT OF REQUIRED COORDINATION WITH OTHER TRADES. NO ADDITIONAL COSTS WILL BE CONSIDERED DUE TO A FAILURE TO EXAMINE EXISTING SITE CONDITIONS, AND FACILITY OPERATIONS. BEFORE BEGINNING THE WORK, THIS CONTRACTOR SHALL CONFIRM TO THEIR OWN SATISFACTION THAT THE WORK OF THIS TRADE CAN BE CARRIED OUT WITHOUT CHANGES TO THE EQUIPMENT SHOWN ON THE DRAWING. ANY DEFECTS, INTERFERENCE'S OR CONFLICTS SHALL BE REPORTED AT ONCE TO THE ENGINEER. NO ADDITIONAL COSTS WILL BE CONSIDERED DUE TO A FAILURE TO REPORT SUCH OCCURRENCES.

.3 LOCK OUT & TAG OUT (LOTO) PROCEDURES MUST BE FOLLOWED. CONTRACTOR WILL BE REQUIRED TO FOLLOW SNC-LAVALIN O & M LOTO PROCEDURES.

3.0 MOULDED CASE CIRCUIT BREAKER SUBMITTALS

3.1 PRIOR TO ANY INSTALLATION OF CIRCUIT BREAKERS IN EITHER A NEW OR EXISTING INSTALLATION, CONTRACTOR MUST SUBMIT THREE (3) COPIES OF A CERTIFICATE OF ORIGIN, FROM THE MANUFACTURER, DULY SIGNED BY THE FACTORY AND THE LOCAL MANUFACTURER'S REPRESENTATIVE, CERTIFYING THAT ALL CIRCUIT BREAKERS COME FROM THIS MANUFACTURER, THEY ARE NEW AND THEY MEET STANDARDS AND REGULATIONS. THESE CERTIFICATES MUST BE SUBMITTED TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL.

3.2 A DELAY IN THE PRODUCTION OF THE CERTIFICATE OF ORIGIN WON'T JUSTIFY ANY EXTENSION OF THE CONTRACT AND ADDITIONAL COMPENSATION.

3.3 ANY WORK OF MANUFACTURING, ASSEMBLY OR INSTALLATION SHOULD BEGIN ONLY AFTER ACCEPTANCE OF THE CERTIFICATE OF ORIGIN BY DEPARTMENTAL REPRESENTATIVE. UNLESS COMPLYING WITH THIS REQUIREMENT, DEPARTMENTAL REPRESENTATIVE RESERVES THE RIGHT TO MANDATE THE MANUFACTURER LISTED ON CIRCUIT BREAKERS TO AUTHENTICATE ALL NEW CIRCUIT BREAKERS UNDER THE CONTRACT, AND THAT, TO CONTRACTOR'S EXPENSE.

3.4 IN GENERAL, THE CERTIFICATE OF ORIGIN MUST CONTAIN:

.1 THE NAME AND ADDRESS OF THE MANUFACTURER AND THE PERSON RESPONSIBLE FOR AUTHENTICATION. THE RESPONSIBLE PERSON MUST SIGN AND DATE THE CERTIFICATE.

.2 THE NAME AND ADDRESS OF THE LICENSED DEALER AND THE PERSON OF THE DISTRIBUTOR RESPONSIBLE FOR THE CONTRACTOR'S ACCOUNT.

.3 THE NAME AND ADDRESS OF THE CONTRACTOR AND THE PERSON RESPONSIBLE FOR THE PROJECT.

.4 THE NAME AND ADDRESS OF THE LOCAL MANUFACTURER'S REPRESENTATIVE. THE LOCAL REPRESENTATIVE MUST SIGN AND DATE THE CERTIFICATE.

.5 THE NAME AND ADDRESS OF THE BUILDING WHERE CIRCUIT BREAKERS WILL BE INSTALLED:

.1 PROJECT TITLE.
.2 END USER'S REFERENCE NUMBER.
.3 THE LIST OF CIRCUIT BREAKERS.

4.0 PRODUCTS

4.1 ALL EQUIPMENT AND MATERIAL TO BE CSA CERTIFIED. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT CSA CERTIFIED, OBTAIN SPECIAL APPROVAL FROM ELECTRICAL BRANCH, SAFETY CODE SERVICES.

4.2 MANUFACTURER'S AND CSA LABELS MUST BE VISIBLE AND LEGIBLE AFTER EQUIPMENT IS INSTALLED.

4.3 ALL NEW WIRING TO BE RW-90 MINIMUM #12 IN EMT CONDUIT OR AS INDICATED ON DRAWINGS.

4.4 RECEPTACLE BOXES BE ELECTRO-GALVANIZED, SECTIONAL, SCREW GANGING STEEL BOXES, MINIMUM 75 x 50 x 63. 100 SQUARE OR OCTAGONAL OUTLET BOXES.

4.5 WHERE BREAKERS ARE REQUIRED FOR ADDITIONAL CIRCUITS, THEY ARE TO MATCH EXISTING BREAKERS AND BE OF THE SAME MANUFACTURER AS THE PANEL.

4.6 BILL OF MATERIALS:

.1 225A, 120/208V/3Ø/4W DISTRIBUTION PANEL: 250V PANEL BOARD, BUS AND BREAKERS RATED FOR 14kA SYMMETRICAL INTERRUPTING CAPACITY. TWO KEYS FOR PANEL BOARDS, COPPER/ALUMINUM BUS, BOLT ON BREAKERS. BREAKERS AS SHOWN IN PANEL INDEX.

.2 DISCONNECT SWITCHES: FUSIBLE AND NON-FUSIBLE DISCONNECT SWITCH IN CSA ENCLOSURE, TYPE 1 UNLESS OTHER WISE NOTED. PROVISION FOR PADLOCKING IN ON-OFF LOCK POSITION. ALL DISCONNECTS LOCATED AT BUILDING EXTERIOR TO BE WEATHERPROOF TYPE 3R UNLESS OTHERWISE INDICATED.

.3 MOTOR STARTERS TO 120 VOLT: MANUAL MOTOR TYPE: EEMAC , SINGLE PHASE MANUAL STARTER OF SIZE, TYPE, RATING AND ENCLOSURE, TYPE AS INDICATED. SWITCHING MECHANISM, QUICK MAKE AND BREAK, OVERLOADS, HEATERS, MANUAL RESET, TRIP INDICATING HANDLE, TOGGLE SWITCH, HEAVY DUTY, LOCKING TAB TO PERMIT PADLOCKING IN ON-OFF POSITION.

.4 ACCEPTABLE MANUFACTURES:
1. CUTLER HAMMER
2. SEIMENS
3. SQUARE D

.5 RECESSED MOUNTED RADIANT CEILING HEATING PANELS, 208 VOLT/1Ø, SIZE 610 x 1220. ACCEPTABLE MANUFACTURER: THERMA RAY - ARCHITECTURAL SERIES AS-2448-750-208.

5.0 EXECUTION

5.1 INSTALLATION

.1 ALL EXISTING DEVICES AND WIRING THAT ARE COMPLIANT AND IN GOOD CONDITION SHALL REMAIN INTACT AND OPERATING AFTER THE REMOVAL OF THE DEMOLITION WIRING OR REDUNDANT WIRING.

.2 UPDATE PANEL WITH TYPE WRITTEN SCHEDULES TO REFLECT ANY ADDITIONS, ALTERATIONS AND CHANGES.

.3 WHERE IT IS NECESSARY TO INSTALL SURFACE CONDUITS RUN CONDUITS PARALLEL PERPENDICULAR TO THE BUILDING LINES.

.4 PROVIDE EQUIPMENT IDENTIFICATION, LAMICOID 4mm THICK PLASTIC ENGRAVING SHEET, BLACK FACE, WHITE CORE, ATTACHED WITH ADHESIVE, (SIZE 4) 19mm X 90mm, 6mm HIGH LETTERS.

ELECTRICAL SPECIFICATION NOT TO SCALE

30	UNFUSED DISCONNECT SWITCH 30 AMP OR AS SHOWN
	DIRECT CONNECTION
750	750 WATT RECESSED RADIANT HEATING PANEL
	2#12 + BOND IN CONDUIT
	HOME RUN TO PANEL
	JUNCTION BOX
	NEW DISTRUBITION PANEL
$x	MANUAL MOTOR STARTER

LEGEND NOT TO SCALE

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No.	Issue	Date

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1	GENERAL REVISIONS	RJM	May 14, 2013

PROFESSIONAL ENGINEER
Darrell P. Fisher
No. 483
PRINCE EDWARD ISLAND

RELEASED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#M5761
Robert J. MacQuarrie
May 14, 2013
Date
Province du Nouveau-Brunswick
INGÉNIEUR INMA ROBLE

Const. North

Drawn By: TAW
Dwg. Standards Ckd. By: DER
Designed By: DER
Dwg. Design Ckd. By: SJG
Date Printed

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Project Title
VENTILATION UPGRADE
GOCB EAST PRINCE, PE

Dwg. Title
ELECTRICAL

Project No. FRE-00210847-A0
Dwg. No. **2600-1**
Rev. No. 1
Scale AS SHOWN
This drawing is not to be scaled