

DATE	ISSUED FOR	REV
21-10-2016	50% REVIEW	1
15-11-2016	90% REVIEW	2
05-12-2016	TENDER	3

BOILER SCHEDULE														
TAG	LOCATION	MANUF. AND MODEL/SERIES	SIZE	THERMAL EFFICIENCY (%)	COMBUSTION EFFICIENCY (%)	INPUT (KW)	OUTPUT (KW)	WATER CONNECTION (MM)	GAS CONNECTION (MM)	AIR INLET (MM)	VENT (MM)	DIMENSION WxLxH (MM)	SHIPPING WEIGHT (KG)	NOTES
B-1,2	MECH ROOM	LAARS NEOTHERM HYDRONIC BOILER/ NTH 399 NXN	399	96.5	96.5	117.199	113.125	40	20	100	100	635x800x969	165	C/W BOILER CONTROL SYSTEM AND PUMP

PUMP SCHEDULE										
TAG	LOCATION	MANUF. AND MODEL/SERIES	EQUIPMENT	HEAD (M)	CAPACITY (L/S)	HP	R.P.M.	V/PH/Hz	AMPS	NOTES
P-1,2	MECH ROOM	LAARS	BOILER PUMP	8.5	2.5	1	1750	115/1/60	7.4	

COMPRESSOR SCHEDULE										
TAG	LOCATION	MANUF. AND MODEL/SERIES	APPLICATION	VOLT/PHASE	RLA	BTUH	WATTS	AMPS	DIMENSION (MM)	NOTES
C-1,2	ATTIC	COPELAND / ZB58KC-TFC	AC	208/3	32.1	94000	8250	25.6	264x284x490	REFRIGERANT R22

DRAWING LIST	
DRAWING NO.	DRAWING NAME
M00-00	DRAWING LIST AND SCHEDULES & SCHEMATICS
M01-00	BASEMENT MECHANICAL LAYOUT
M01-01	ATTIC MECHANICAL LAYOUT
M02-00	ELECTRICAL SPECIFICATION

MECHANICAL LEGEND:	
	EXISTING TO BE REMOVED
	EXISTING TO REMAIN
	NEW

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Project Component
Phase # - Description
Keyplan

North Arrow

Detail Symbol

DETAIL#
SHEET #

Symbol not to scale

Consultants
Civil:
Landscape:
Architectural:
Structural:
Mechanical:
Electrical:

NORR ARCHITECTS ENGINEERS PLANNERS
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Seal(s)

FOR MECHANICAL ONLY

FOR ELECTRICAL ONLY

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Client
RCMP

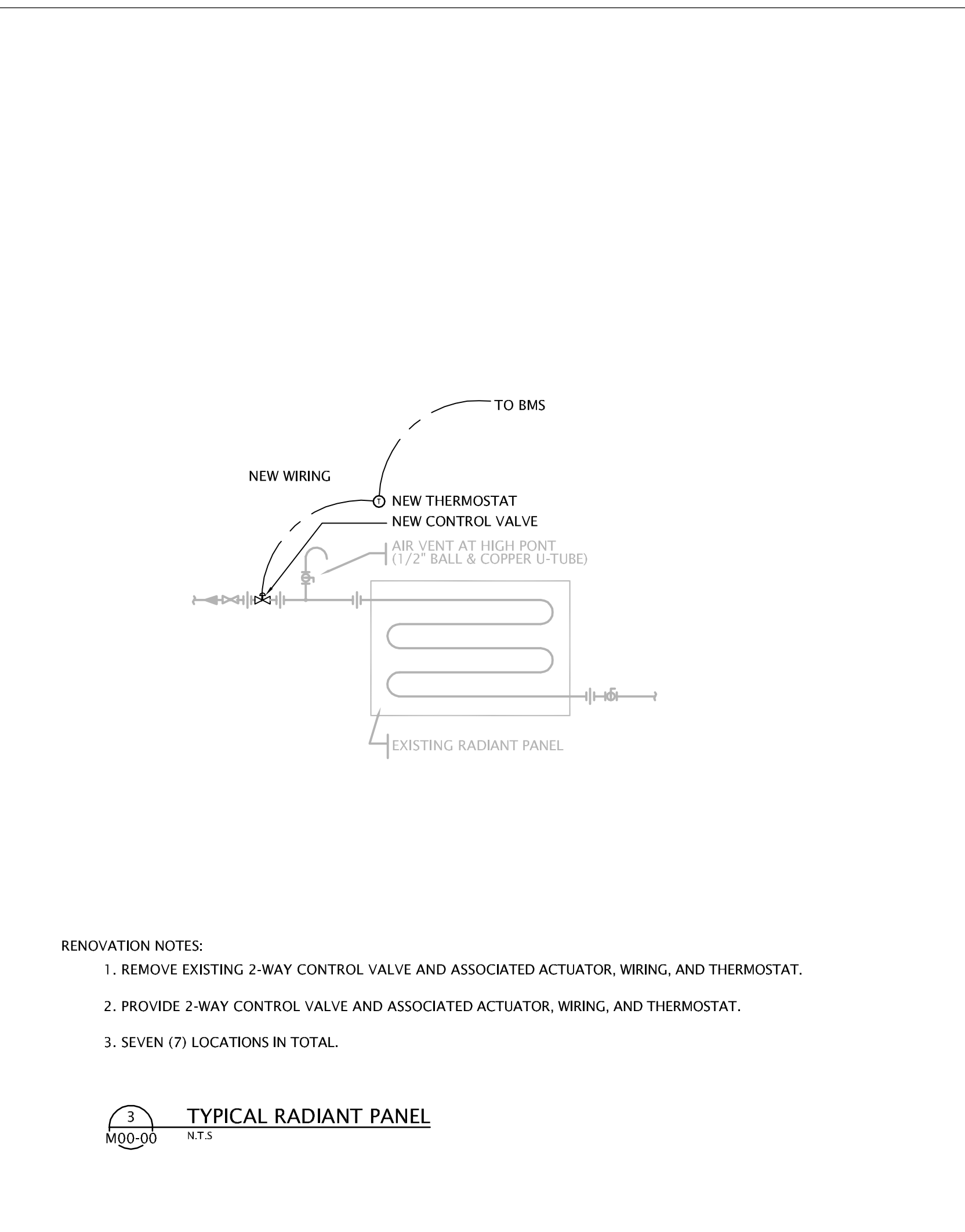
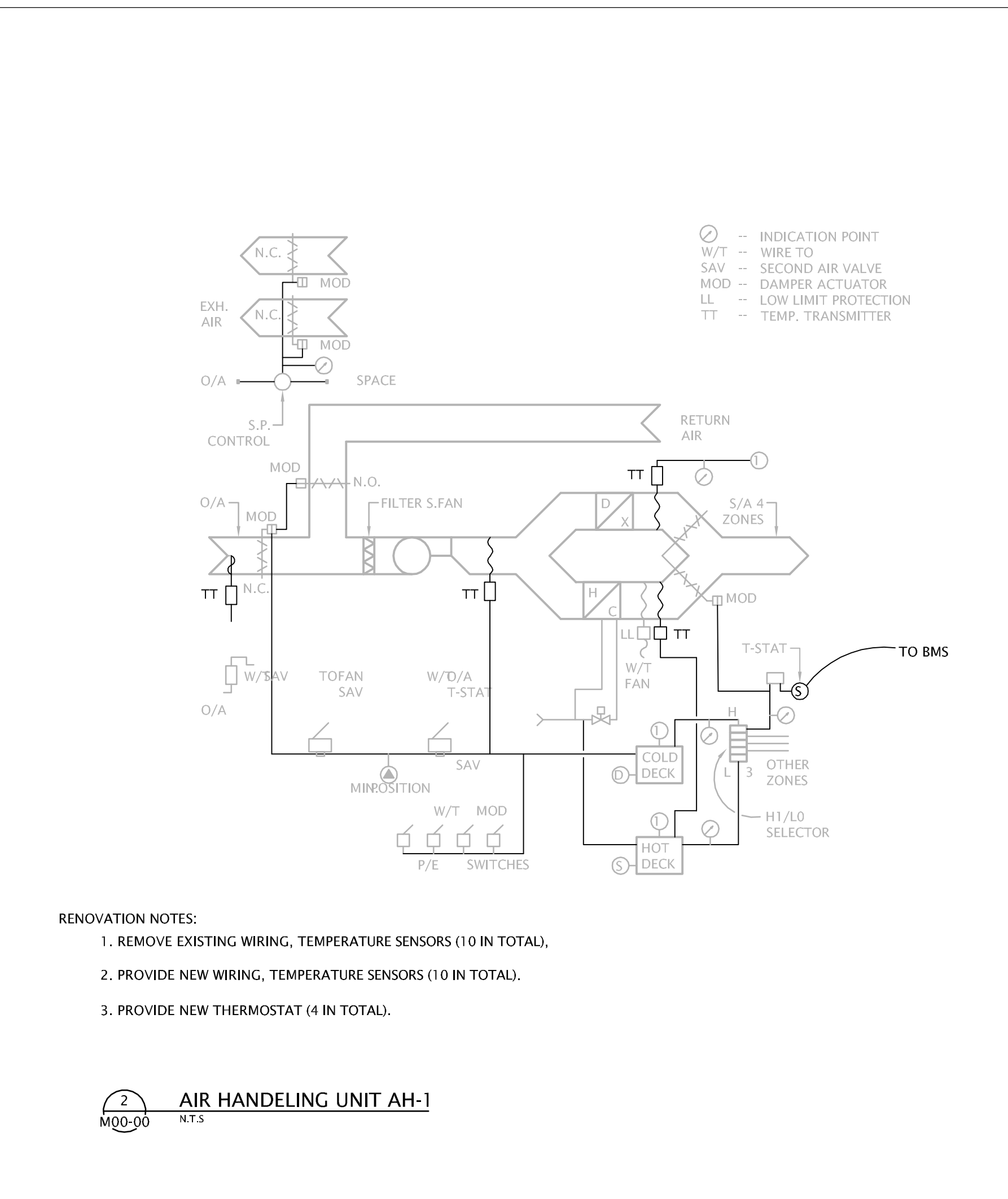
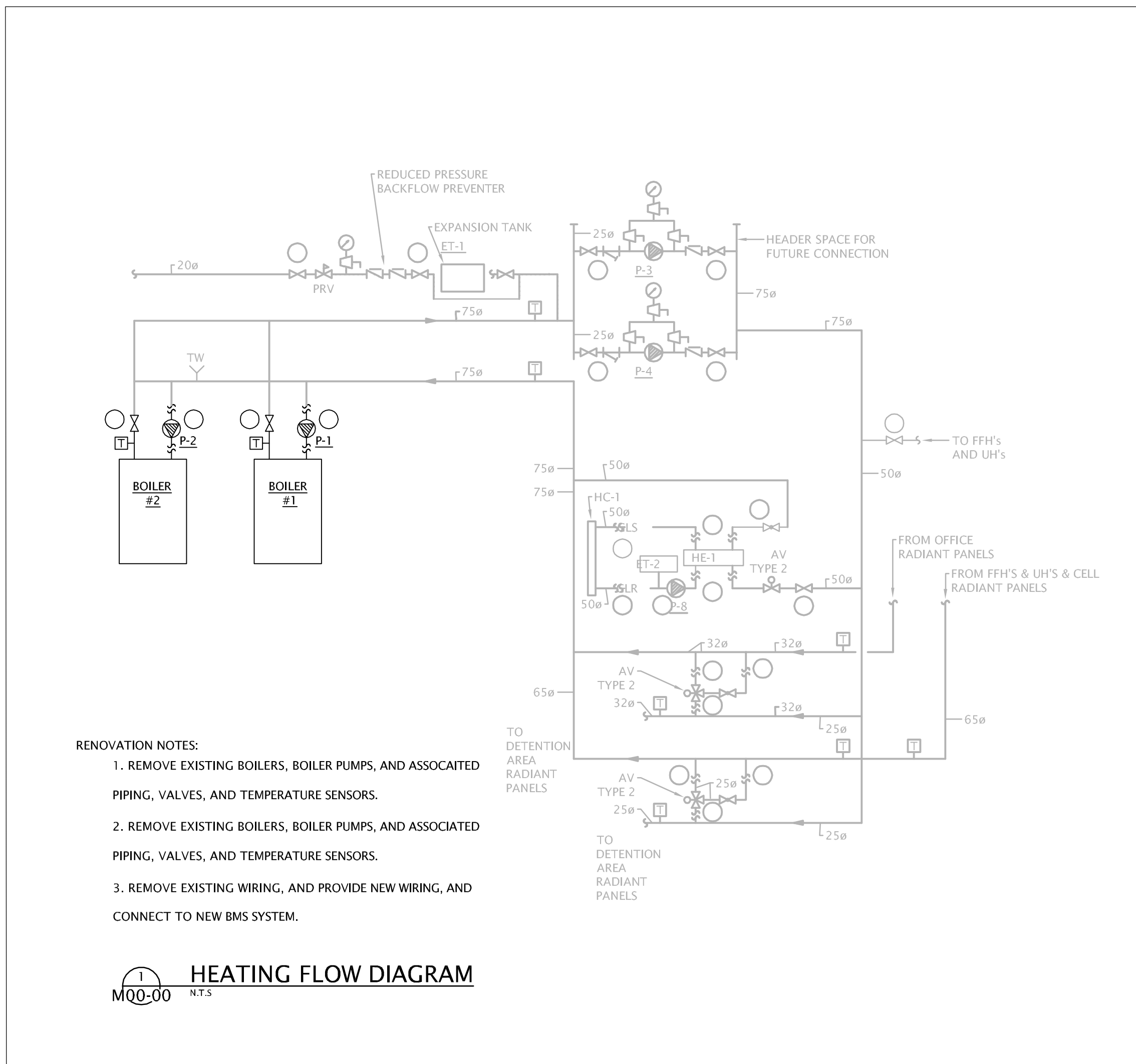
Project
**INNISFAIL
RCMP DETACHMENT
RENOVATIONS**

Drawing Title
**DRAWING LIST &
MECHANICAL SCHEDULES
& SCHEMATICS**

Check Scale (may be photo reduced)
0 1inch 0 10mm

Project No. **NCCA-16-0095**

Drawing No. **M00-00**

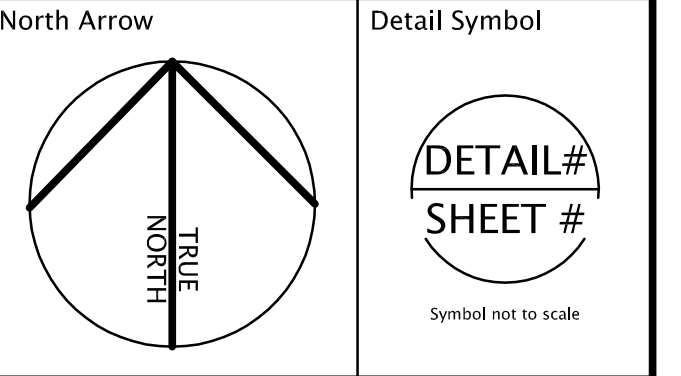


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Project Component
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Keyplan



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Civil:
Landscape:
Architectural:
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Seals

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FOR ELECTRICAL ONLY

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Project Manager
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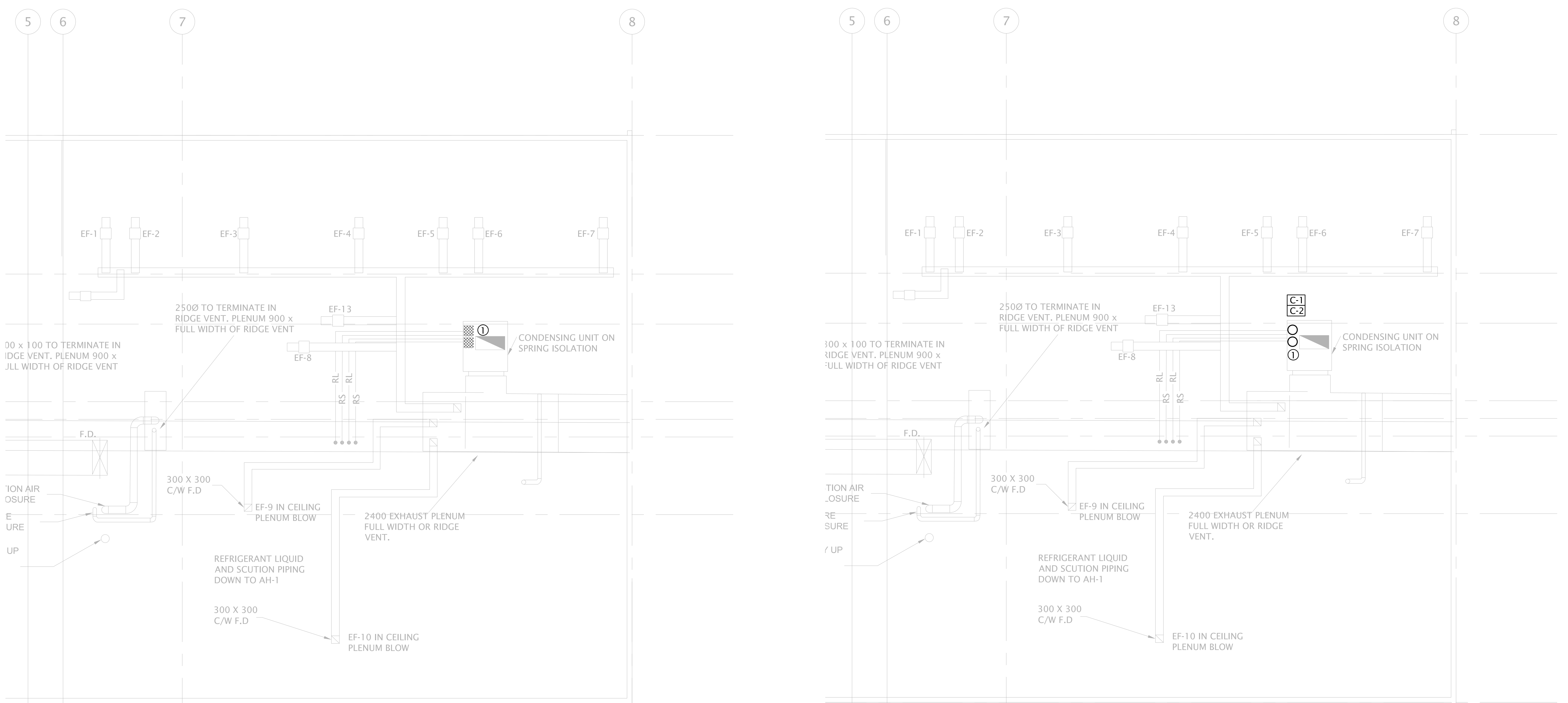
Client
RCMP

Project
INNISFAIL
RCMP DETACHMENT
RENOVATIONS

Drawing Title
ATTIC MECHANICAL
LAYOUT

Check Scale (may be photo reduced)
0 1 inch 0 10mm

Project No. NCCA-16-0095
Drawing No. M01-01



ELECTRICAL GENERAL NOTES:

- GENERALLY THE ELECTRICAL SCOPE OF WORK CONSISTS OF PROVIDING ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT THAT IS BEING REPLACED WITH NEW. ELECTRICAL CONTRACTOR SHALL DISCONNECT EXISTING MECHANICAL EQUIPMENT BEING DEMOLISHED AND RECONNECT NEW EQUIPMENT ONCE INSTALLED. EXISTING CONNECTIONS CAN BE REUSED PROVIDED THE CIRCUIT BREAKER AND WIRING ARE SUFFICIENTLY SIZED TO SERVICE NEW EQUIPMENT.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXISTING CIRCUIT BREAKERS, DISCONNECT SWITCHES AND CABLES FEEDING THE BOILERS AND BOILER PUMPS. THE REQUIRED BREAKER/DISCONNECT SWITCH FOR EACH BOILER IS 15A-1P (120V/1PH/60Hz) AND FOR EACH BOILER PUMP IS 20A-1P (120V/1PH/60Hz). CABLES TO MATCH THE FEEDER BREAKER. CONTRACTOR TO REPLACE BREAKERS AND CABLES IF DON'T MATCH THE REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXISTING CIRCUIT BREAKERS, DISCONNECT SWITCHES AND CABLES FEEDING CU-1 AND COMPRESSORS. IF THERE IS A SEPARATE CIRCUIT BREAKER/DISCONNECT SWITCH FOR EACH COMPRESSOR, THE REQUIRED BREAKER AND DISCONNECT SWITCH FOR EACH NEW COMPRESSOR IS 60A-3P (208V/3PH/60Hz). CABLES TO MATCH THE FEEDER BREAKER. CONTRACTOR TO REPLACE BREAKERS AND CABLES IF DON'T MATCH THE REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXISTING CABLE AND BREAKER/DISCONNECT SWITCHES FEEDING CONDENSING UNIT AND COMPRESSORS AND PROVIDE THE INFORMATION TO ELECTRICAL ENGINEER PRIOR TO CONNECTION.
- ALL NEW ELECTRICAL WORKS AND ALL NEW ELECTRICAL EQUIPMENT RATINGS (INCLUDING ALL CABLES AND CIRCUIT BREAKERS) TO MEET THE 2015 CEC REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO REFER TO MECHANICAL SCHEDULE AND EQUIPMENT LAYOUT FOR ALL MECHANICAL EQUIPMENT RATING AND ELECTRICAL REQUIREMENTS.
- CONTRACTOR TO VERIFY THE RATED VOLTAGE FOR DEMOLISHED EQUIPMENT AND ENSURE THE NEW EQUIPMENT ARE MATCH TO THE EXISTING VOLTAGE LEVEL.
- CONTRACTOR TO RECONNECT ALL NEW EQUIPMENT ELECTRICAL CONNECTIONS ONCE REPLACED WITH DEMOLISHED EQUIPMENT. VERIFY ALL WIRING AND ENSURE THE BREAKER AND CABLE MATCH VENDOR AND CEC REQUIREMENT.

MECHANICAL GENERAL NOTES:

- CONTRACTOR TO VERIFY THE EXISTING CONDITION BEFORE COMMENCEMENT OF DEMOLITION.
- DISCONNECT AND REMOVE TWO COMPRESSORS. ALL EXISTING CONNECTIONS ARE TO BE REMAINED AND CAPPED FOR FUTURE RE-CONNECTION.
- SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY THE ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
- MECHANICAL SYSTEMS AND THEIR SUPPORTS, AND THE LIKE, MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED UNDER 'SERVICEABILITY CRITERIA' ON THE STRUCTURAL DRAWINGS.
- DESIGN AND DETAIL ALL NECESSARY SEISMIC RESTRAINTS FOR MECHANICAL SYSTEMS SHOWN ON THE CONTRACT DOCUMENTS. SUBMIT SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA, FOR REVIEW BY THE CONSULTANT.
- MECHANICAL CONTRACTOR SHALL SUBMIT SLEEVING DRAWINGS INDICATING LAYOUT AND SIZES OF ALL INTENDED PENETRATIONS THROUGH ANY STRUCTURAL ELEMENTS, INCLUDING ANY EMBEDDED ITEMS, FOR REVIEW BY CONSULTANT WELL IN ADVANCE OF COMPLETING THE WORK.

MECHANICAL KEY NOTES:

- REPLACE EXISTING TWO COMPRESSORS SERVING THE EXISTING CONDENSING UNIT WITH NEW C-1,2 AS PER COMPRESSOR SCHEDULE.

MECHANICAL LEGEND:

- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
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- DESIGN AND DETAIL ALL NECESSARY SEISMIC RESTRAINTS FOR MECHANICAL SYSTEMS SHOWN ON THE CONTRACT DOCUMENTS. SUBMIT SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA, FOR REVIEW BY THE CONSULTANT.
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MECHANICAL KEY NOTES:

- NEW TWO COMPRESSORS C1,2 SERVING THE EXISTING CONDENSING UNIT AS PER COMPRESSOR SCHEDULE.

MECHANICAL LEGEND:

- EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- NEW

2 ATTIC MECHANICAL NEW LAYOUT
M01-01 1:75

PLOT DATE: December 6, 2016 12:46 PM FULL PATH AND FILENAME: P:\RCMP_PROJECTS\NCCA\600959\RCMP_INNISFAIL_RENOVATIONS\INNISFAIL_DRAWINGS\MECHANICAL\M01-01.DWG PLOTSYCLE TABLE: PMA-STD-100.cbr

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ELECTRICAL SPECIFICATIONS:

- 1. GENERAL
2. THE GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS UNLESS SPECIFICALLY NOTED OTHERWISE TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
3. THE SCOPE OF WORK IS AS DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS.
3.1. STANDARD OF MATERIAL AND WORKMANSHIP
3.1.1. ALL MATERIALS SHALL BE NEW UNLESS SPECIFICALLY NOTED ON DRAWINGS AND BE OF THE QUALITY SPECIFIED AND SHALL CONFORM TO THE STANDARDS OF THE CANADIAN STANDARDS ASSOCIATION. WHERE EQUIPMENT OR MATERIALS ARE SPECIFIED BY TECHNICAL DESCRIPTION ONLY, THEY SHALL BE OF THE BEST COMMERCIAL QUALITY OBTAINABLE FOR THE PURPOSE.
3.2. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESMEN. ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS, ALL SATISFACTORY TO THE ENGINEER, ON THE JOB DURING THE PROGRESS OF THE WORK.
3.3. WORKMANSHIP SHALL BE OF THE HIGHEST STANDARDS THROUGHOUT AND SHALL BE MINIMUM OF THE CURRENT TRADE PRACTICES FOR ELECTRICAL INSTALLATIONS IN THIS BUILDING.
4. UNIFORMITY OF EQUIPMENT
4.1. UNLESS OTHERWISE SPECIFICALLY CALLED FOR IN THE SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
4.2. SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
4.2.1. SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
5. DRAWINGS AND SPECIFICATIONS
5.1. THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY, EACH TO THE OTHER, AND WHAT IS CALLED FOR BY ONE, SHALL BE BINDING AS IF CALLED FOR BY BOTH, WHERE INFORMATION IS CONFLICTING THE SPECIFICATIONS TRUMP THE DRAWINGS.
5.2. SHOULD ANY DISCREPANCY APPEAR BETWEEN THE DRAWINGS AND SPECIFICATIONS WHICH LEAVES THE ELECTRICAL CONTRACTOR IN DOUBT AS TO THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER. IF THIS IS NOT DONE, IT WILL BE ASSUMED THAT THE MOST EXPENSIVE ALTERNATE HAS BEEN ALLOWED FOR.
6. CODES, PERMITS AND INSPECTION
6.1. THE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE AND THE REGULATIONS OF THE RURAL MUNICIPALITY OF WOOD BUFFALO ELECTRICAL INSPECTION DEPARTMENT.
6.2. THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AT THEIR EXPENSE AND DISPLAY THEM IN THE ELECTRICAL ROOM, AND COORDINATE INSPECTIONS AS REQUIRED AND OBTAIN A FINAL INSPECTION CERTIFICATE.
7. EXAMINATION OF THE SITE
7.1. PRIOR TO SUBMITTING THEIR TENDER, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS, WHICH SHALL AFFECT HIS TRADE. NO EXTRAS WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT WOULD HAVE BEEN EVIDENT UPON A THOROUGH EXAMINATION OF THE SITE.
8. CLEAN UP
8.1. THE ELECTRICAL CONTRACTOR AND THEIR SUB-TRADES SHALL AT ALL TIMES DURING CONSTRUCTION, KEEP THE SITE FREE OF ALL DEBRIS, BOXES, PACKING, ETC., RESULTING FROM WORK OF THIS TRADE.
8.2. AT THE COMPLETION OF THE WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.
8.3. ALL LUMINAIRES AND ELECTRICAL DEVICES SHALL BE WASHED, CLEANED OF GREASE, DIRT AND LINT AS REQUIRED.
8.4. ALL HANDLING OF LUMINAIRES AND LAMPS SHALL BE DONE WITH CLEAN GLOVES, TO ENSURE CLEANLINESS AND LAMP LIFE.
8.5. RECYCLE PACKING MATERIAL AND OTHER SUCH ITEMS THAT CAN BE DIVERTED FROM LANDFILL.
9. SETTING OUT OF THE WORK
9.1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS FOR SAME, WHERE THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, HE SHALL OBTAIN THE CLARIFICATION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
9.2. THE ELECTRICAL CONTRACTOR SHALL GIVE THE WORK THEIR PERSONAL SUPERVISION, LAY OUT HIS OWN WORK, DO ALL NECESSARY LEVELLING AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO, FIGURES, FULL SIZE AND DETAIL DRAWINGS SHALL TAKE PRECEDENCE OVER SCALE MEASUREMENTS.
9.3. WHERE ANY EQUIPMENT SUPPLIED BY THE ELECTRICAL CONTRACTOR MUST BE BUILT IN WITH THE WORK OF OTHER CONTRACTORS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLYING OF THE EQUIPMENT TO BE BUILT IN OR MEASUREMENTS TO ALLOW NECESSARY OPENINGS TO BE LEFT SO AS NOT TO HOLD UP THE WORK.
9.4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OF THE OTHER TRADES BY IMPROPER LOCATION OR CARRYING OUT OF HIS WORK.
10. LOCATION OF OUTLETS
10.1. ENGINEER RESERVES THE RIGHT TO CHANGE LOCATION OF OUTLETS TO WITHIN 3.0 METRES OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE PROVIDING ELECTRICAL CONTRACTOR IS ADVISED PRIOR TO INSTALLATION.
11. CORING, CUTTING AND PATCHING
11.1. THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT THE CONSENT OF THE STRUCTURAL ENGINEER.
11.2. WHERE WORK BY THE ELECTRICAL CONTRACTOR DAMAGES WORK OF OTHER TRADES, THE ELECTRICAL CONTRACTOR SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF THE TRADE CONCERNED AND THE ENGINEER.
11.3. WHERE THE FLOOR SLAB IS DRILLED FOR CONDUIT INSTALLATION TO WALL JUNCTION BOXES OR TO FLOOR FITTINGS THE FLOOR SHALL BE DRY CORE DRILLED, AFTER CONDUIT INSTALLATION, THE OPENING SHALL BE FIRE STOPPED, (SEE SECTION "FIRE STOPPING") ELECTRICAL CONTRACTOR TO PAY FOR ALL ASSOCIATED X-RAY COSTS, STRUCTURAL ENGINEER REVIEW, ETC.
12. ACCESS DOORS
12.1. NUMBER OF ACCESS DOORS TO BE KEPT TO AN ABSOLUTE MINIMUM. DOOR LOCATIONS WILL BE COORDINATED WITH THE ENGINEER PRIOR TO INSTALLATION.
12.2. WHERE ACCESS IS REQUIRED TO PULLBOXES AND JUNCTION BOXES, THESE BOXES ARE TO BE LOCATED IN REMOVABLE TYPE CEILING AREAS WHERE POSSIBLE OR ADJACENT TO RECESSED LUMINAIRES.
12.3. WHERE IT IS ABSOLUTELY IMPOSSIBLE TO SERVICE CERTAIN EQUIPMENT THROUGH REMOVABLE TYPE CEILING OR RECESSED LUMINAIRES AND WHERE SPECIAL PERMISSION HAS BEEN OBTAINED FROM THE ENGINEER, ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ACCESS DOORS REQUIRED FOR SERVICING OF SUCH WORK.
12.4. ACCESS DOORS TO BE HELD CLOSED WITH CAPTIVE TYPE STUDS. ACCESS PANELS TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COATED AND PAINTED ON THE JOB TO MATCH THE WALL OR CEILING FINISH AS REQUESTED BY THE ARCHITECT.
12.5. WHERE ACCESS PANELS WILL BE USED, PROPER SHOP DRAWINGS ARE TO BE SUBMITTED FOR APPROVAL, PRIOR TO INSTALLATION.
13. PAINTING AND FINISHES
13.1. ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, CLAMPS, ETC., SHALL HAVE GALVANIZED FINISH OR PAINT FINISH OVER CORROSION-RESISTANT PRIMER.
13.2. ALL PANELS OR SIMILAR FACTORY FINISHED UNITS THAT ARE SCRATCHED OR MARKED DURING INSTALLATIONS SHALL BE TOUCHED UP WITH MATCHING SPRAY OR DRY LACQUER AND IF REQUIRED TO PROVIDE SATISFACTORY JOB SHALL BE COMPLETELY REFINISHED.
14. N/A
15. SHOP DRAWINGS
15.1. THE ELECTRICAL CONTRACTOR MUST REVIEW AND STAMP ACCEPTABLE ALL SHOP DRAWINGS PRIOR TO SUBMITTING TO THE ENGINEER.
15.2. ELECTRICAL CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW, ONE (1) SET OF ELECTRONIC SHOP DRAWINGS IN PDF FORMAT INCLUDING BUT NOT LIMITED TO DISTRIBUTION, LUMINAIRES, EXIT SIGNS, OCCUPANCY SENSORS, BATTERY PACKS, FIRE ALARM EQUIPMENT AND TELECOMMUNICATIONS EQUIPMENT AND CABLING.
15.3. ENGINEER SHALL BE ALLOWED MINIMUM 5 BUSINESS DAYS TO RETURN REVIEWED SHOP DRAWINGS.
15.4. SCANNED SHOP DRAWINGS MUST BE LEGIBLE. SHOP DRAWINGS WHICH ARE UNCLERAR WILL BE REJECTED AND RETURNED FOR RESUBMISSION.
15.5. SHOP DRAWING SHALL BE SPECIFIC TO THIS PROJECT ONLY. GENERIC DRAWINGS WILL NOT BE ACCEPTED. INDICATING ARROWS SHALL HIGHLIGHT THE PRODUCT FOR REVIEW. GENERIC DRAWINGS, DRAWINGS WITHOUT INDICATING ARROWS AND DRAWINGS WITHOUT CONTRACTOR REVIEWED STAMP WILL BE RETURNED REJECTED FOR RESUBMISSION.
15.6. THE ENGINEER'S REVIEW OF SHOP DRAWINGS SHALL BE FOR GENERAL DESIGN ONLY AND SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR OR SUPPLIER FROM THEIR RESPONSIBILITY FOR ERRORS, PROPER FITTING, AND CONSTRUCTION OF THE WORK AND FURNISHING OF MATERIALS. THE REVIEW SHALL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM THE CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED IN A COVERING LETTER ACCOMPANYING SUCH DRAWINGS.
15.7. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
15.8. ANY WORK PERFORMED PRIOR TO THE RETURN OF REVIEWED SHOP DRAWINGS IS DONE AT THE RISK OF THE CONTRACTOR.
16. RECORDS PLANS
16.1. THE ENGINEER WILL FURNISH TO THE ELECTRICAL CONTRACTOR ONE SET OF WHITE PRINTS TO BE USED FOR RECORD WORK AS ACTUALLY INSTALLED. ELECTRICAL CONTRACTOR SHALL ACCURATELY RECORD ON THIS SET OF PLANS, DAY BY DAY, ALL OUTLETS, CONDUIT, LUMINAIRES EQUIPMENT BREAKER CHANGES IN PANELS, ETC. AS ACTUALLY INSTALLED ON THE JOB. ANY CHANGES TO THE CONTRACT WORK SHALL BE SIMILARLY RECORDED.
16.2. AS-BUILT DRAWINGS SHALL BE CLEARLY MARKED IN RED INCLUDING ALL CHANGES TO THE ORIGINAL TENDER DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, JOB CONDITIONS, ETC.
16.3. FINAL PAYMENT TO THE CONTRACTOR WILL NOT BE RELEASED UNTIL AS-BUILT DRAWINGS ARE RECEIVED BY THE ENGINEER. AS-BUILT DRAWINGS ARE TO BE TURNED OVER TO THE ENGINEER AT TIME OF FINAL INSPECTION.
17. EQUIPMENT IDENTIFICATION
17.1. CLEARLY IDENTIFY ALL ELECTRICAL EQUIPMENT USING PRINTED P-TOUCH LABELS OR LAMACODS. HAND-WRITTEN LABELS ARE UNACCEPTABLE.
17.2. ALL ELECTRICAL DISTRIBUTION EQUIPMENT SHALL HAVE A LAMACOD NAMEPLATE FASTENED TO THE OUTSIDE FRONT OF THE EQUIPMENT.
17.3. EQUIPMENT TAG NUMBER SHALL CONTAIN A MINIMUM OF: THE EQUIPMENT NAME, VOLTAGE, PHASE, WIRE (3 OR 4), AMPERAGE, SOURCE: XXXX, LOAD: XXXX. SUBMIT PROPOSED TAGGING FOR ENGINEERS APPROVAL PRIOR TO FABRICATION.
17.4. PROVIDE TYPEWRITTEN CIRCUIT INDEXES FOR ALL PANELS.
17.5. JUNCTION BOXES SHALL ALL BE LABELED INDICATING THE SYSTEM AND OR CIRCUITS CONTAINED WITHIN.
17.6. ALL RECEPTACLES SHALL BE LABELED WITH THE CIRCUIT NUMBERS AND PANEL IDENTIFICATION. UTILIZE P-TOUCH ADHESIVE LABELS COMPLETE WITH A MINIMUM OF 5 LETTERING, I.E. "PML-OCT."
17.7. ALL COMMUNICATIONS AND OTHER SYSTEMS CABLES AND DEVICES ARE TO BE IDENTIFIED AS PER THE IEC/ISA 606 STANDARDS. CONFIRM PROTOCOL WITH OWNER OR ENGINEER PRIOR TO COMMENCEMENT OF LABELS.
17.8. ALL LUMINAIRES CONNECTED TO EMERGENCY CIRCUITS TO BE LABELLED WITH P-TOUCH LABEL INDICATING PANEL AND CIRCUIT DESIGNATION. LABEL TO BE VISIBLE FROM BELOW AFTER INSTALLATION.
18. TESTS
18.1. ALL PORTIONS OF THE ELECTRICAL WORK SHALL BE TESTED AND CHECKED FOR SATISFACTORY OPERATION.
18.2. BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, PERFORM MEGGER TESTS ON ALL FEEDERS, RESULTS OF SUCH TESTS SHALL CONFORM TO THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE AND SHALL BE TO THE SATISFACTION OF THE AUTHORIZED INSPECTION AGENCY AND THE ENGINEER.
18.3. SUBMIT ALL TEST RESULTS TO THE ENGINEER FOR APPROVAL.
18.4. ANY TEST RESULTS THAT DO NOT MEET THE MINIMUM REQUIREMENTS OF THE MANUFACTURER, CANADIAN ELECTRICAL CODE, AUTHORIZED INSPECTION AGENCY AND THE ENGINEER SHALL BE REPAIRED IN A METHOD APPROVED BY THE ENGINEER AND RETESTED AT THE EXPENSE OF THE CONTRACTOR.
18.5. UPON COMPLETION OF THE WORK AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, CHECK THE LOAD BALANCE OF ALL FEEDERS AND AT DISTRIBUTION CENTER, PANELS, ETC. THE TESTS SHALL BE CARRIED OUT BY TURNING ON ALL POSSIBLE LOADS IN THE TENANT AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15 PERCENT, RECONNECT CIRCUITS TO BALANCE THE LOAD.
19. GUARANTEE/WARRANTY
19.1. THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE FROM ENGINEER (C2 SCHEDULE) FOR THIS WORK.
19.2. THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK AND OTHER WORK DAMAGED THEREBY WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.
19.3. THE PERIOD OF THE GUARANTEE SPECIFIED SHALL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT SHALL BE BINDING ON WORK NOT OTHERWISE COVERED.
19.4. ELECTRICAL CONTRACTOR TO ISSUE LETTER STIPULATING WARRANTY PERIOD DATES FOR ALL EQUIPMENT.

- 20. BUILDING WIRING
20.1. ALL WIRING SHALL BE COPPER WITH RW90 X-LINK INSULATION IN ELECTRICAL METALLIC TUBING UNLESS INDICATED OTHERWISE ON DRAWINGS.
20.2. NO WIRE SMALLER THAN NO. 12 AWG GAUGE SHALL BE USED FOR BRANCH CIRCUIT WIRING.
20.3. BX CABLE MAY BE USED ONLY AS FOLLOWS:
20.3.1. WITHIN NEW DRYWALL PARTITIONS WITHIN ONE ROOM TO INTERCONNECT ELECTRICAL DEVICES, EXCEPT THAT THE CONNECTION FROM THE JUNCTION BOX ABOVE THE SUSPENDED CEILING DOWN TO THE FIRST ELECTRICAL DEVICE IN THE DRYWALL SHALL BE WIRED IN THE EMT CONDUIT.
20.3.2. INDIVIDUAL DROPS FROM JUNCTION BOXES IN CEILING SPACES TO LUMINAIRES TO A MAXIMUM OF THREE (3) METRES, ("Daisy-Chaining" of Luminaires is NOT PERMITTED).
20.3.3. WITH THE ABOVE EXCEPTIONS, ALL 120-VOLT BRANCH CIRCUIT WIRING MUST BE INSTALLED IN EMT CONDUIT.
20.3.4. WIRING SHALL BE COLOUR CODED TO MATCH EXISTING INSTALLATION.
20.4. CONDUIT TO BE SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
20.5. WIRING SHALL BE COLOUR CODED AS FOLLOWS:
120/208V 277/480V 347/600V
A PHASE RED ORANGE ORANGE
B PHASE BLACK BROWN BROWN
C PHASE BLUE YELLOW YELLOW
NEUTRAL WHITE WHITEWHITE
GROUND GREEN GREEN GREEN
20.6. ALL LINE VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT.
20.7. ALUMINUM CONDUCTORS MAY ONLY BE USED WHERE INDICATED ON DRAWINGS, APPLY ZINC JOINT COMPOUND ON ALL ALUMINUM CONDUCTORS PRIOR TO INSTALLATION OF CONNECTORS OR TERMINATING CONDUCTORS.
20.8. COMPUTER RECEPTACLES SHALL BE COMPLETE WITH A DEDICATED NEUTRAL CONDUCTOR PER PHASE.
20.9. VOLTAGE DROP FOR WIRING SHALL MEET REQUIREMENTS AS LAID OUT IN THE CANADIAN ELECTRICAL CODE. GENERALLY MAXIMUM BRANCH CIRCUIT CONDUCTOR DISTANCES (120VAC) TO MAINTAIN MAX. 3% VOLTAGE DROP ARE AS FOLLOWS:
20.9.1. 15A-1P BREAKER - #12AWG WIRING - 80 FEET (24 METRES)
20.9.2. 15A-1P BREAKER - #10AWG WIRING - 125 FEET (39 METRES)
20.9.3. 20A-1P BREAKER - #12AWG WIRING - 60 FEET (18 METRES)
20.9.4. 20A-1P BREAKER - #10AWG WIRING - 95 FEET (29 METRES)
21. DEMOLITION
21.1. GENERAL
21.1.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
21.1.2. ABANDONED BREAKERS IN PANEL BOARDS SHALL BE MARKED AS SPARE IF THEY NO LONGER SERVICE ANY LOAD.
21.1.3. AS NOTED ON DRAWINGS THE CONTRACTOR SHALL TURN OVER EQUIPMENT BEING REMOVED TO BUILDING MANAGEMENT. EQUIPMENT NOT REQUIRED BY BUILDING MANAGEMENT SHALL BE REMOVED FROM SITE BY THE CONTRACTOR.
21.1.4. THE CONTRACTOR SHALL SEAL ALL UNUSED OPENINGS DUE TO ELECTRICAL DEMOLITION TO ENSURE THAT FIRE-RESISTANCE RATING IS MAINTAINED. REFER TO "FIRE STOPPING" SECTION OF THIS SPEC.
21.1.5. IF INDICATED ON DRAWINGS, PROVIDE BLANK COVER PLATE MATCHING WALL FINISH FOR BOXES TO REMAIN.
21.2. LIGHTING
21.2.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
21.2.2. EXISTING BUILDING LUMINAIRES SHALL BE REMOVED AS NOTED ON DRAWINGS AND RESPONSIBLY DISPOSED OF.
21.3. POWER
21.3.1. ALL CIRCUITS ORIGINATING FROM PANELBOARDS LOCATED IN ELECTRICAL ROOM WHICH ARE NOT BEING RE-USED SHALL BE PULLED BACK TO THE PANEL.
21.3.2. THE ELECTRICAL CONTRACTOR SHALL INFORM THE ENGINEER OF ANY DEFICIENCIES THAT ARE ENCOUNTERED DURING THE DEMOLITION.
21.3.3. ALL ELECTRICAL DEVICES ON EXISTING WALLS BEING DEMOLISHED ARE TO BE REMOVED.
21.3.4. ENSURE THAT ALL EXISTING RECEPTACLES LEFT ISOLATED BY THE REMOVAL OF OUTLETS IN THE SAME RUN SHALL BE RE-FED TO BECOME FULLY FUNCTIONAL TO THE SATISFACTION OF THE ENGINEER.
21.4. COMMUNICATIONS
21.4.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
21.4.2. EXISTING COMMUNICATIONS CABLING AND CONNECTORS SHOWN ON EXISTING WALLS BEING DEMOLISHED ARE TO BE REMOVED. COMMUNICATION OUTLETS THAT ARE NOT BEING REUSED SHALL BE BLANKED OFF WITH BLANK COVER PLATES, IF INDICATED ON DRAWINGS.
21.5. SYSTEMS
21.5.1. SECURITY DEVICES AND ASSOCIATED WIRING NOT BEING REUSED SHALL BE REMOVED AND RETURNED TO OWNER

Table with 3 columns: DATE, ISSUED FOR, REV. Row 1: 21-10-2016, 50% REVIEW, 1. Row 2: 15-11-2016, 90% REVIEW, 2. Row 3: 05-12-2016, TENDER, 3.

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Project Component Phase # - Description. Keyplan. North Arrow. Detail Symbol. Symbol not to scale.

Consultants: Civil, Landscape, Architectural, Structural, Mechanical, Electrical. NORR ARCHITECTS ENGINEERS PLANNERS.

Seal(s) for Professional Engineer (Mechanical) and Professional Engineer (Electrical). Includes dates Dec 24, 2016 and Dec 6, 2016.

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Table with Project Manager (D.HIDER), Project Leader (L.YANG), Client (RCMP), Project (INNISFAIL RCMP DETACHMENT RENOVATIONS), Drawing Title (ELECTRICAL SPECIFICATIONS), Check Scale (0 to 10mm), Project No. (NCCA-16-0095), Drawing No. (M02-00).