

City of Saint John

TENDER

Tender # 2023-085305T CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

Sealed tenders, hand delivered or couriered, addressed to Monic MacVicar, CCLP, CPPB, Supply Chain Management, 1st Floor – 175 Rothesay Avenue, Saint John, NB, E2J 2B4, and marked on the envelope:

“Tender # 2023-085305T CANADA GAMES AQUATIC CENTRE – AHU RENEWALS”

will be received until 2:30:00 pm, Tuesday, December 12th, 2023 for the supply of all materials, labor and equipment necessary to complete the AHU Renewals at the Canada Game Aquatic Centre at 50 Union Street, in accordance with the enclosed specifications, drawings, terms and conditions.

In light of the current Covid-19 pandemic, there will be no public opening. Tenders will be opened by the Tender Opening Committee, in the first-floor boardroom, 175 Rothesay Avenue, Municipal Operations Complex, immediately following the tender closing time. **Registered bidders may attend remotely via Teams invitation.**

The lowest or any tender not necessarily accepted.

**Monic MacVicar, CCLP, CPPB
Supply Chain Management**

Issued: Monday, November 27th, 2023

T E N D E R
Tender # 2023-085305T
CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

SCOPE OF WORK:

The City of Saint John is soliciting tenders from qualified bidders to supply all materials, labor and equipment necessary to complete the AHU Renewals at the Canada Game Aquatic Centre at 50 Union Street, as per the specifications, drawings, terms and conditions outlined in this document.

A pre-bid site visit will be held on Thursday, November 30th, 2023 at 11:30:00AM. We will meet in the lobby of the CGAC located at 50 Union Street. All bidders are strongly urged to attend.

SPECIFICATIONS:

See Appendix A for specifications and drawings.

TERMS AND CONDITIONS

Governing Law, Trade Treaties and Policies

This procurement will be in accordance with the laws of the province of New Brunswick and the federal laws of Canada.

This procurement is also subject to the following Policies, Legislation and Internal Trade Agreement(s) including:

- Agreement on the Opening of Public Procurement for NB and Québec
- Canadian Free Trade Agreement
- New Brunswick Procurement Act and Regulation 2014-93
- City of Saint John Strategic Procurement Policy
- Construction Remedies Act

Submission Instructions

Sealed tenders, hand delivered or couriered, addressed to Monic MacVicar, CCLP, CPPB, Supply Chain Management, 1st Floor – 175 Rothesay Avenue, Saint John, NB, E2J 2B4, and marked on the envelope:

“Tender # 2023-085305T
CANADA GAMES AQUATIC CENTRE – AHU RENEWALS”

will be received until 2:30:00 pm, Tuesday, December 12th, 2023 for the work contemplated in this document and in accordance with the enclosed specifications, drawings, terms and conditions.

Enquiries

Bidders shall promptly examine the bid documents and report any errors, omissions or ambiguities and may direct enquiries or seek additional information in writing by email before the deadline for enquiries to the Authorized Enquiries Contact as set out below. No such communications are to be directed to anyone other than the Authorized Enquiries Contact.

Authorized Enquiries Contact

Monic MacVicar, CCLP, CPPB
Supply Chain Management
City of Saint John
Email: supplychainmanagement@saintjohn.ca

It is the Bidder's responsibility to seek clarification from the City on any matter it considers unclear. The City shall not be responsible for any misunderstanding on the part of the Bidder concerning this bid document or its process.

The City intends to confirm receipt of a bidder's communication by way of an email or facsimile in reply. If a bidder has not received a reply, the bidder may wish to resend its communication as the lack of reply may have resulted from a technical problem. The City is under no obligation to respond to enquiries or provide additional information but may do so at its sole discretion.

Responses to inquiries may be distributed to all bidders on the invitation list as having received the bid documents as of the date the response is prepared. The source of the question will not be identified in the response. Verbal information shall not be binding upon the City. Inquiries received after the deadline for enquiries will not receive a response.

Tender to be Submitted on Prescribed Form

Bidders are to submit their tender on the prescribed form contained in this document. Failure to submit on this form may result in the disqualification of the bid.

Taxes

The bid price shall be all taxes extra. The City of Saint John shall be invoiced for and pay all applicable taxes related to this bid.

Schedule for the Bid Process

Issue Date	Monday, November 27 th , 2023
Pre-Bid Site Visit	Thursday, November 30th, 2023 at 11:30:00 am ADT
Deadline for Enquiries	Monday, December 4 th , 2023 at 4:00:00 pm, ADT
Deadline for Issuing Addenda	Tuesday, December 5 th , 2023 at 4:00:00 pm, ADT
Submission Deadline	Tuesday, December 12 th , 2023 at 2:30:00 pm, ADT
Date of Award	TBD

The Schedule for the bid process is tentative only and may be changed by the City in its sole discretion.

Advisory Notice(s)

Periodically, the City of Saint John is required to issue clarification notices to a bid document in the form of Advisory Notices. Normally these notifications will not have a direct bearing on the cost of a project and will not influence bidding.

Bidders are responsible for obtaining all advisory notice(s) issued by the City. Advisory Notice(s) may be obtained from the City's website (www.saintjohn.ca) under the Menu option, City Hall header, then "Tender and Proposals".

Bidders are instructed to sign the Advisory Notice and return it either by fax to (506) 658-4742 or email to supplychainmanagement@saintjohn.ca prior to the closing date. Failure to comply with the instructions on an advisory may result in rejection of the bid.

Addenda

Periodically, the City of Saint John is required to issue notification of changes or corrections to a bid document by way of addenda. Normally these notifications will have direct bearing on the cost of a project and will influence bidding. Therefore, it is important that the City have assurances that bidders have in-fact received the notification(s).

Bidders are responsible for obtaining all addenda issued by the City. Addenda may be obtained from the City's website (www.saintjohn.ca) under the Menu option, City Hall header, then "Tender and Proposals".

Bidders are required to sign and include all addenda with their bid submission.

Failure to include a copy of all signed addenda with the bid submission may result in rejection of the bid regardless of whether or not the changes noted in the addendum are included in the bid submission.

Mandatory Requirements

Each submission will be evaluated to ensure that it complies with the mandatory requirements and may be rejected if it does not comply. The evaluation of mandatory requirements will confirm that:

- the submission was received prior to the applicable Submission Deadline;
- the bid submission is signed;
- the bid submission is legible;
- the bid submission does not contain a substantive qualification or conditions that are contrary to the terms of the bid document;
- the bid submission does not contain a change in price that was not initialled by the person who signed the submission; and
- the bid submission is in English;

Payment

Payment shall be based on Net 45 Days from date of invoice or receipt of goods/services, whichever is later. Invoices can either be mailed to: City of Saint John, Accounts Payable Department, P.O. Box 1971, Saint John, NB, E2L 4L1, or by email to the Accounts Payable department (accounts payable@saintjohn.ca). Vendors are to ensure invoices are not sent both ways.

Pricing

The tender prices shall include all installation wages, fringe benefits, insurance, transportation, delivery, duty, working tools, equipment costs, and any other charges incurred in order to provide required materials and/or services.

Holdback

A Hold back of 10% of all monies due to the contractor will be retained by the City until 60 days after the substantial completion date of the work, approved by the project manager, and receipt of a statutory declaration.

Substitutes

Substitute products will not be considered (where applicable).

Verbal Agreement

No verbal agreement or conversation with any officer, agent or employee of the owner either before or after execution of the contract shall effect or modify any of the terms or obligations contained in any of the documents comprising the said contract.

Fax Tenders

Tenders received by fax WILL NOT be accepted.

Late Bids

Bids received after the time and date as shown in this document shall not be considered.

Cancellation Clause

In the event that the successful bidder does not comply with the specifications and terms and conditions of this tender, at any time throughout the duration of the contract, the City of Saint John reserves the right to cancel the contract in its entirety.

Basis for Award

A The city does not limit itself to accepting the lowest, or any tender submitted, but reserves the right to award the tender in any manner deemed to be in the City's best interest. It is the City of Saint John's intention to award this agreement to one Vendor.

No guarantee

The City makes no guarantee as to the volume of the Deliverables.

Acceptance, Revocation and Rejection Of Tenders

The bidder agrees that his tender is a firm offer to supply the goods and/or services specified herein at the quoted price, and in accordance with the terms and conditions herein contained. The bidder may revoke his tender at any time prior to the time fixed for tender opening by delivering, or causing to be delivered, written notice of revocation to the designated official at the City of Saint John. Revocation will take effect from the time the notice is actually received. A notice of revocation will not be accepted after the time fixed for tender opening.

The bid shall not be restricted by a statement added to the Tender Form, or by a covering letter, or by alterations to the tender form as supplied, unless otherwise provided herein and further, a tender form that has been altered in any way may be deemed to be a non-confirming bid and, therefore, rejected. Bidders shall be allowed to attach descriptive literature; whose sole purpose is to amplify the bid.

Due Diligence

In the event that a health and safety offence is committed, the onus falls on the employer to prove that it exercised due diligence (i.e. did everything it reasonably could) in order to avoid the offence.

When hiring contractors, the City of Saint John is responsible for ensuring compliance with Health and Safety Legislation and must make sure that the appropriate accident prevention systems are implemented in the workplace.

Therefore, if any contractor is found to be working in an unsafe manner, or outside of current legislation, he will be made to stop work immediately. Any losses which may arise as a result of this work stoppage are the responsibility of the contractor.

Failure to comply with current legislation on the part of the contractor, may lead to cancellation of this contract and any bid deposits that may be in place.

Insurance

The successful contractor shall provide evidence of the following insurance coverage:

General Liability with minimum limits of two million dollars, (\$2,000,000.00). The policy shall include:

- *operations of the contractor in connection with this tender;
- *products and completed operations coverage;
- *contractual liability with respect to this tender;
- *the City of Saint John added as an additional insured;
- *a cross liability clause;
- *non-owned automobile;
- *thirty (30) days notice of cancellation of this policy "will" be given to the City of Saint John, by the insurers;

Standard automobile insurance for owned automobiles with at least the minimum limits allowed by law. This coverage is to remain in effect for the entire time frame of the contract.

WorksafeNB Certificate and Business Corporations Act Certificate

New Brunswick Tenderers shall provide to the City a WorkSafeNB certificate which confirms proper registration and good standing with WorkSafeNB and a Business Corporations Act Certificate which confirms proper registration and good standing with the Province of New Brunswick - Corporate Affairs within five (5) Working Days following the City's notice of selection.

Out-of-province Tenderers shall provide to the City a WorkSafeNB certificate which confirms proper registration and good standing with WorkSafeNB or a letter or certificate issued under the equivalent applicable legislation in the province of origin of the Tenderer confirming extension of coverage from said legislation to the Province of New Brunswick for the term of the Contract. Subject to paragraph c), out-of-province Tenderers shall also provide a Business Corporations Act Certificate which confirms proper registration and good standing with the Province of New Brunswick - Corporate Affairs within five (5) Working Days following the City's notice of selection.

Tenderers from Nova Scotia may submit the appropriate Business Corporations Act Certificate from the Province of Nova Scotia.

Reserved Rights

The City reserves the right to:

- a) Reject an unbalanced bid submission. For the purpose of this section, an unbalanced bid submission is a bid submission containing a unit price which deviates substantially from, or does not fairly represent reasonable and proper compensation for the unit of work bid or one that contains prices which appear to be so unbalanced as to adversely affect the interests of the City.

- The City reserves the right to use other bids submitted in response to this bid solicitation or for other like or similar work as a guideline in determining if a bid is unbalanced.
- b) Amend or modify the scope of the Work, and/or cancel or suspend the bid award, at any time for any reason;
 - c) Require bidders to provide additional information after the submission deadline to support or clarify their bid submission;
 - d) Not accept any or all bids;
 - e) Not accept a bid submission from a bidder who is itself, or whose principals, owners or directors are also principals, owners or directors of another entity which is, involved in litigation, arbitration or any other similar proceeding against the City;
 - f) Reject any or all bid submissions without any obligation, compensation or reimbursement to any bidder or any of its team members;
 - g) Withdraw this bid solicitation and cancel or suspend the bid process;
 - h) Extend, from time to time, any date, any time period or deadline provided in this bid solicitation (including, without limitation, the submission deadline), upon written notice to all bidders;
 - i) Assess and reject a bid submission on the basis of:
 - (i) information provided by references;
 - (ii) the bidder's past performance on previous contracts;
 - (iii) the information provided by a bidder pursuant to the City exercising its clarification rights under this bid process;
 - (iv) the bidder's experience with performing the type and scope of work specified;
 - (v) other relevant information that arises during this procurement process;
 - j) Waive formalities and accept bids which substantially comply with the requirements of this bid solicitation;
 - k) Verify with any bidder or with a third party any information set out in a bid submission;
 - l) Disqualify any bidder whose bid submission contains misrepresentations or any other inaccurate or misleading information;
 - m) Disqualify any bidder who has engaged in conduct prohibited by the bid solicitation;
 - n) Make changes, including substantial changes, to the bid solicitation provided that those changes are issued by way of addenda in the manner set out in this bid document;
 - o) Select any bidder other than the bidder whose bid submission reflects the lowest cost to the City;

- p) Cancel this procurement process at any stage, for any reason;
- q) Cancel this procurement process at any stage and issue a new bid solicitation for the same or similar deliverables;
- r) Accept any bid submission in whole or in part;
- s) Waive minor non-compliance with the mandatory requirements of the bid solicitation and accept the bid submission; or
- t) Accept a bid submission which contains the following errors:
 - (i) error in mathematics – whether this involves the extension of a unit price or an error in addition, the mistake will be corrected and the correct total will be used for evaluation purposes and will be binding on the bidder.
 - (ii) conflict between the written and numerical bid prices. In all cases, the total bid price will be corrected to reflect the written bid price, whether lump sum or unit price (where applicable).
 - (iii) failure to include the contingency allowance in the total bid price (where applicable). If the contingency allowance was not included in the addition, the bid price shall be corrected to reflect its inclusion.

and these reserved rights are in addition to any other express rights or any other rights which may be implied in the circumstances and the City shall not be liable for any expenses, costs, losses or any direct or indirect damages incurred or suffered by any bidder or any third party resulting from the City exercising any of its express or implied rights under this bid solicitation.

By submitting a bid, the bidder authorizes the collection by the City of the information set out at paragraph i) in the manner contemplated in that subparagraph.

Limitation of Liability and Waiver

Each bidder, by submitting a bid, agrees that:

- a) Neither the City nor any of its employees, agents, advisors or representatives will be liable, under any circumstances, for any Claim arising out of this procurement process including but not limited to costs of preparation of the bid submission, loss of profits, loss of opportunity or for any other Claim; and
- b) The bidder waives any Claim for any compensation of any kind whatsoever, including Claims for cost of preparation of the bid submission, loss of profit or loss of opportunity by reason of the City's decision to not accept the bid submitted by the bidder, to award a Contract to any other bidder or to cancel this procurement process, and the bidder shall be deemed to have agreed to waive such right or Claim.

Validity Period

The bid submission constitutes an offer which shall remain open and irrevocable until 90 days after the submission deadline.

Minor Irregularities

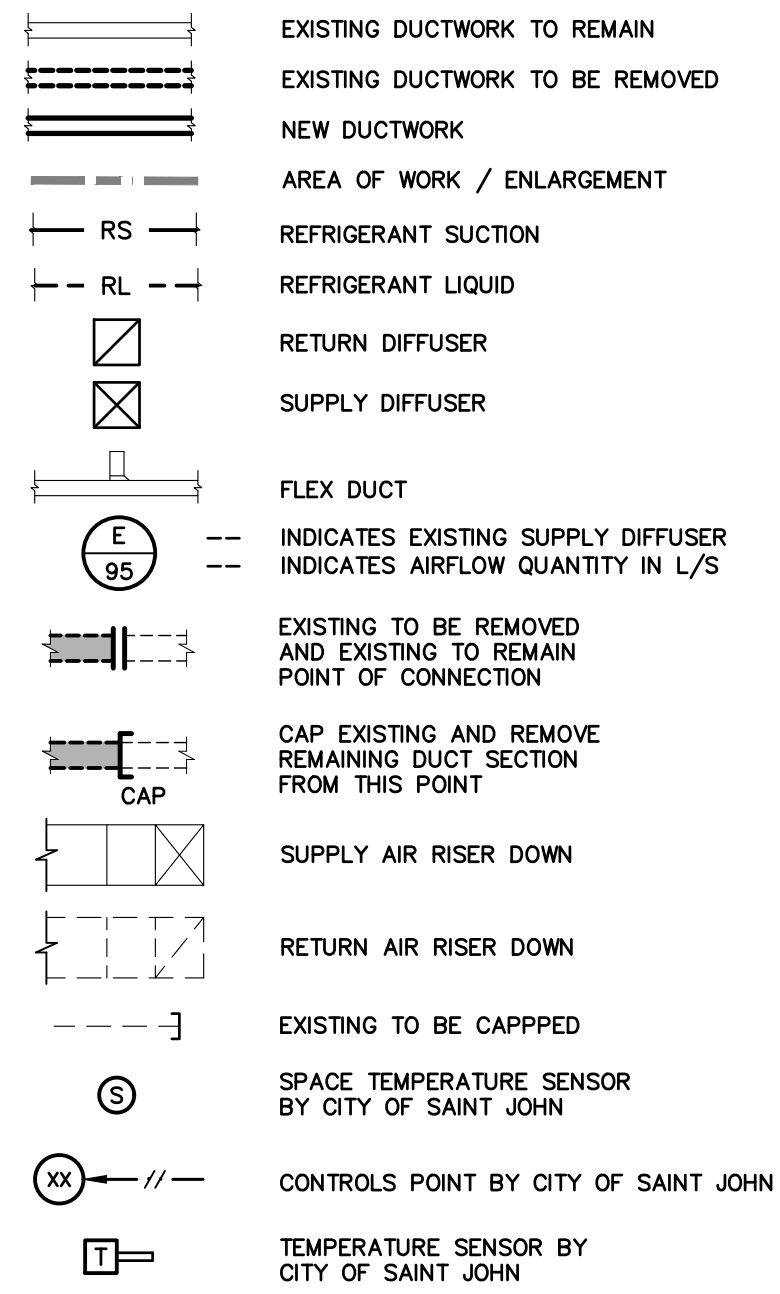
The City of Saint John reserves the right to waive minor non-compliances in accordance with Section 120 of the Province of New Brunswick's Regulation 2014-93 under the Procurement Act.

APPENDIX A – SPECIFICATIONS

2023-085305T

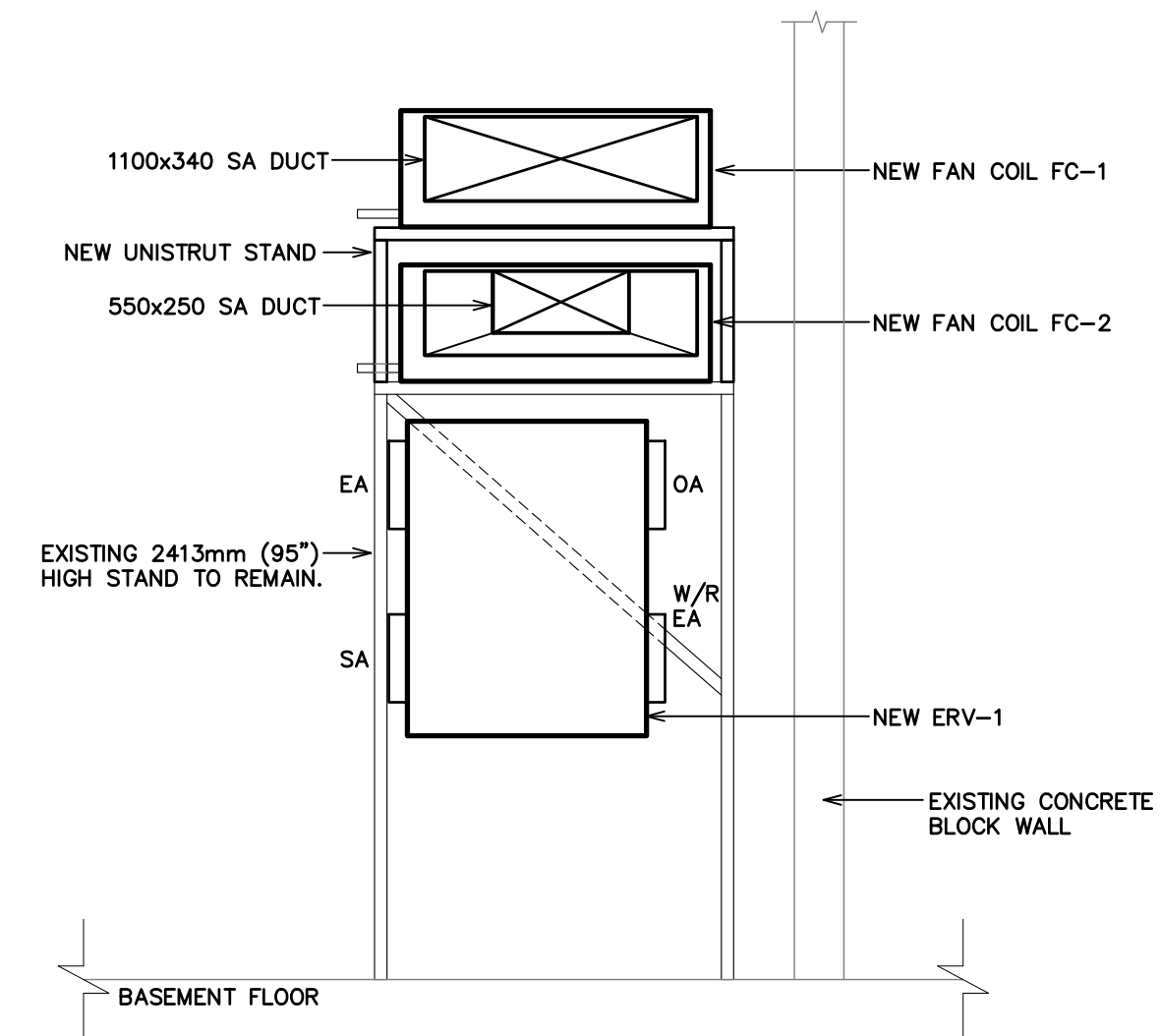
CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

SYMBOL LEGEND



DRAWING LIST

- M-1 BASEMENT LEVEL HVAC DEMOLITION AND NEW WORK
- M-2 LOBBY LEVEL AND POOL DECK HVAC DEMOLITION AND NEW WORK
- M-3 SCHEDULES
- M-4 MECHANICAL SPECIFICATION
- E-1 BASEMENT LEVEL - ELECTRICAL DEMOLITION & NEW WORK
- E-2 ELECTRICAL LOBBY LEVEL AND POOL DECK LEVEL ELECTRICAL DEMOLITION & NEW WORK
- E-3 PANEL SCHEDULES & MECHANICAL SCHEDULE
- E-4 SINGLE LINE DIAGRAM
- E-5 ELECTRICAL SPECIFICATIONS
- A-1 OPTION PRICE 'A': LOBBY LEVEL ARCHITECTURAL DEMOLITION AND NEW WORK



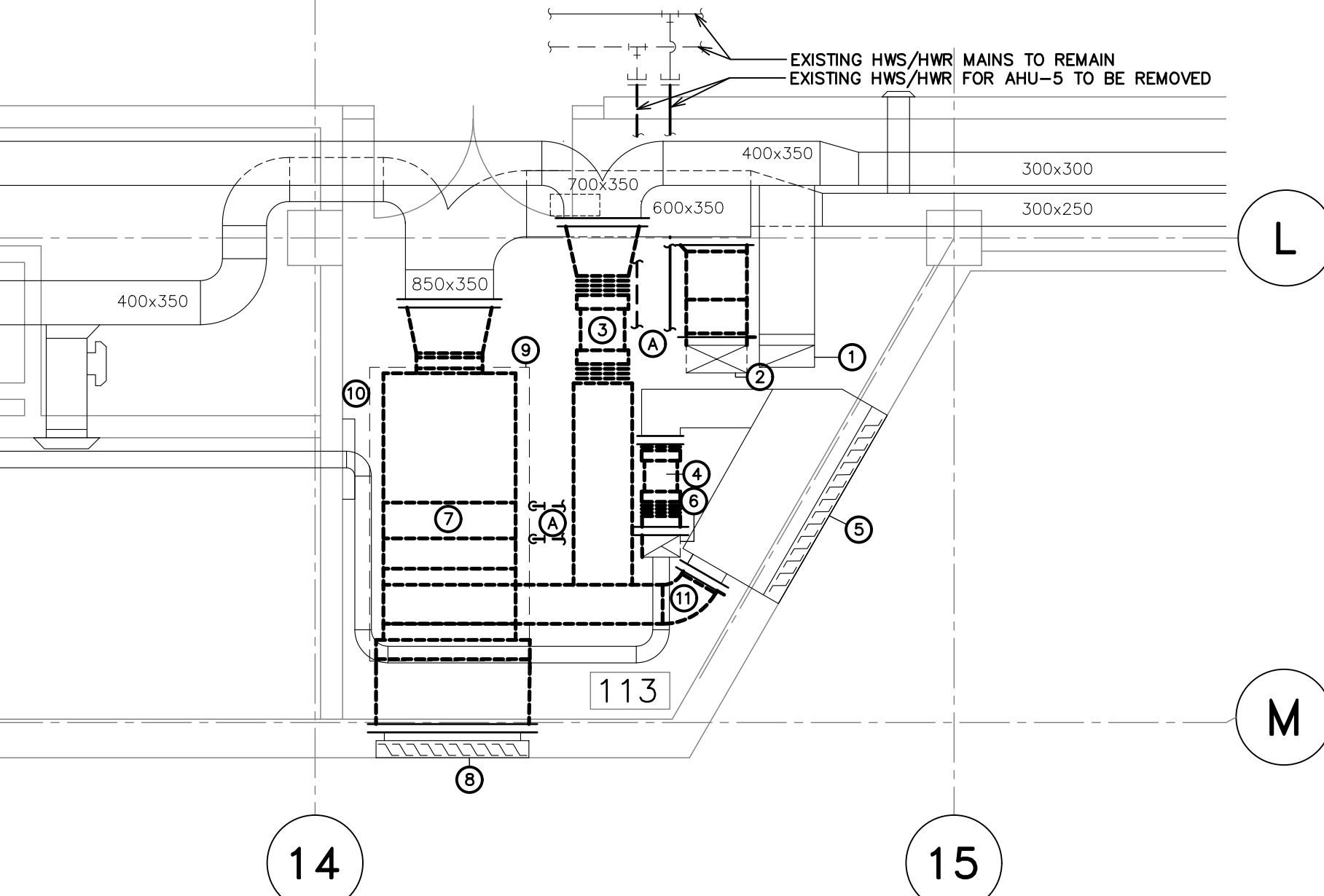
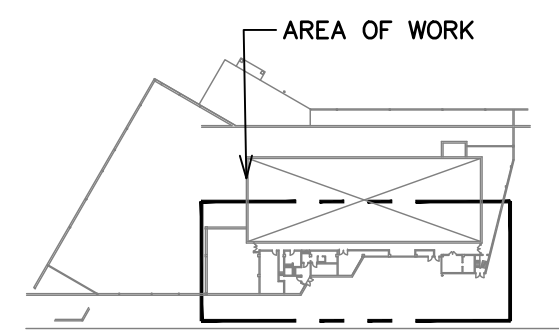
7
M-1 SYMBOL LEGEND

6
M-1 DRAWING LIST

5
M-1 BASEMENT MECHANICAL ROOM - SECTION A

SCALE 1:50

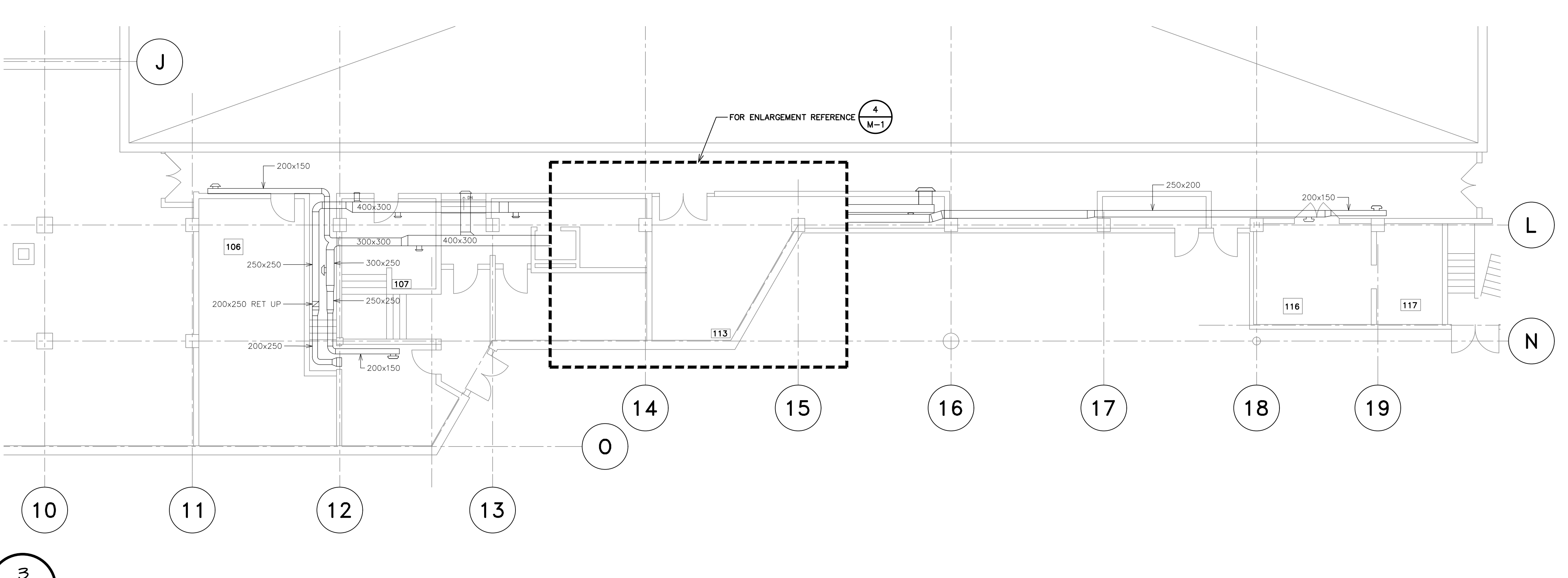
KEYPLAN



- DEMOLITION DRAWING NOTES**
- 500x200mm RETURN AIR DUCT UP TO REMAIN.
 - 550x250mm SUPPLY AIR DUCT UP TO REMAIN.
 - RETURN FAN RF-5 TO BE REMOVED.
 - EXISTING EXHAUST FAN TO BE REMOVED.
 - EXISTING EXHAUST AIR LOUVER TO REMAIN.
 - 350x200mm EXHAUST AIR DUCT TO REMAIN.
 - EXISTING AHU-5 TO BE REMOVED. DEMOLISH EXISTING FRESH AIR PLENUM INCLUDING ORIGINAL FRESH AIR DAMPER.
 - EXISTING AIR INTAKE LOUVER (APPROX. 1000x1100mm) TO REMAIN.
 - EXISTING AHU-5 STRUCTURAL STAND TO REMAIN.
 - DISCONNECT CONTROL WIRING FROM AHU-5 AND COIL WIRE NEXT TO CONTROL PANEL FOR CONTROLS CONTRACTOR WORK. CITY OF SAINT JOHN TO HIRE CONTROLS CONTRACTOR DIRECTLY.
 - EXISTING EXHAUST AIR DUCT TO BE REMOVED. CAP DUCTWORK AT PLENUM.

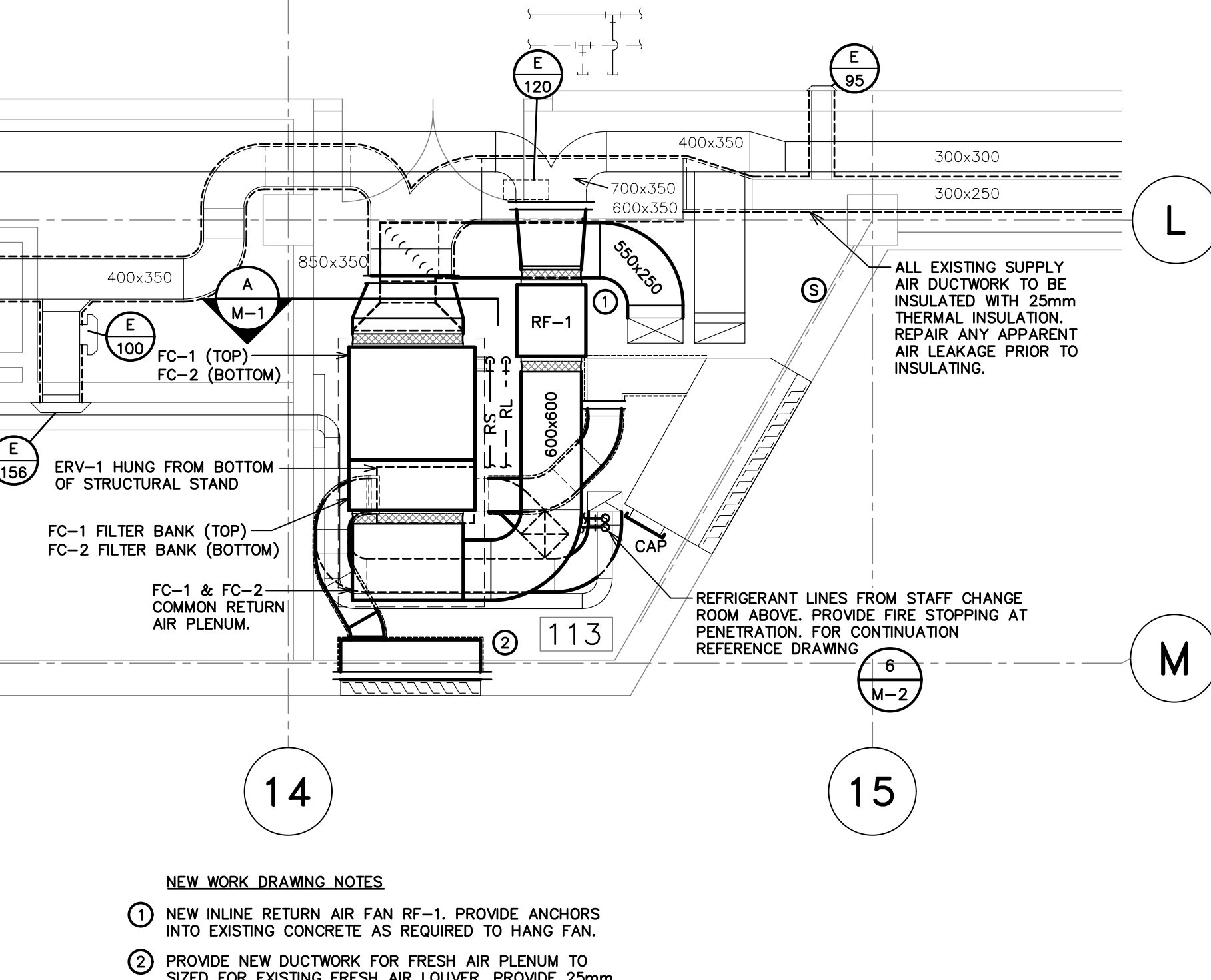
4
M-1 ENLARGEMENT - DEMOLITION

SCALE 1:50



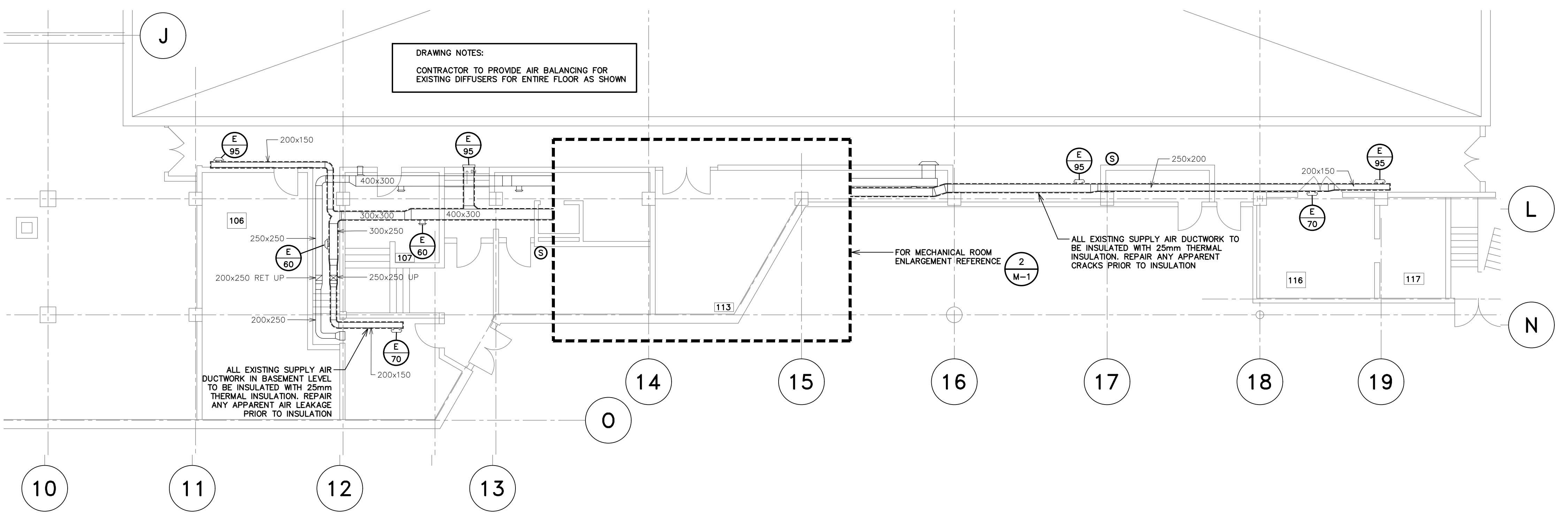
3
M-1 PARTIAL BASEMENT - DEMOLITION

SCALE 1:100



2
M-1 ENLARGEMENT - NEW WORK

SCALE 1:50



1
M-1 PARTIAL BASEMENT - NEW WORK

SCALE 1:100

consultant:
M&W Maricor
120 MILLENNIUM DRIVE, SUITE 201
QUISPAMIS, NB E2E 0G6
BUS: (506) 847-8285 FAX: (506) 848-2131
WWW.M&W.COM.ENG. JOB NO. 12-22-041

client:
SAINT JOHN

KEYPLAN

seal:
REGISTERED PROFESSIONAL ENGINEER
M8103
Sigmund A.G. Steg
Nov 14, 2023
NOUVEAU MANITOBA

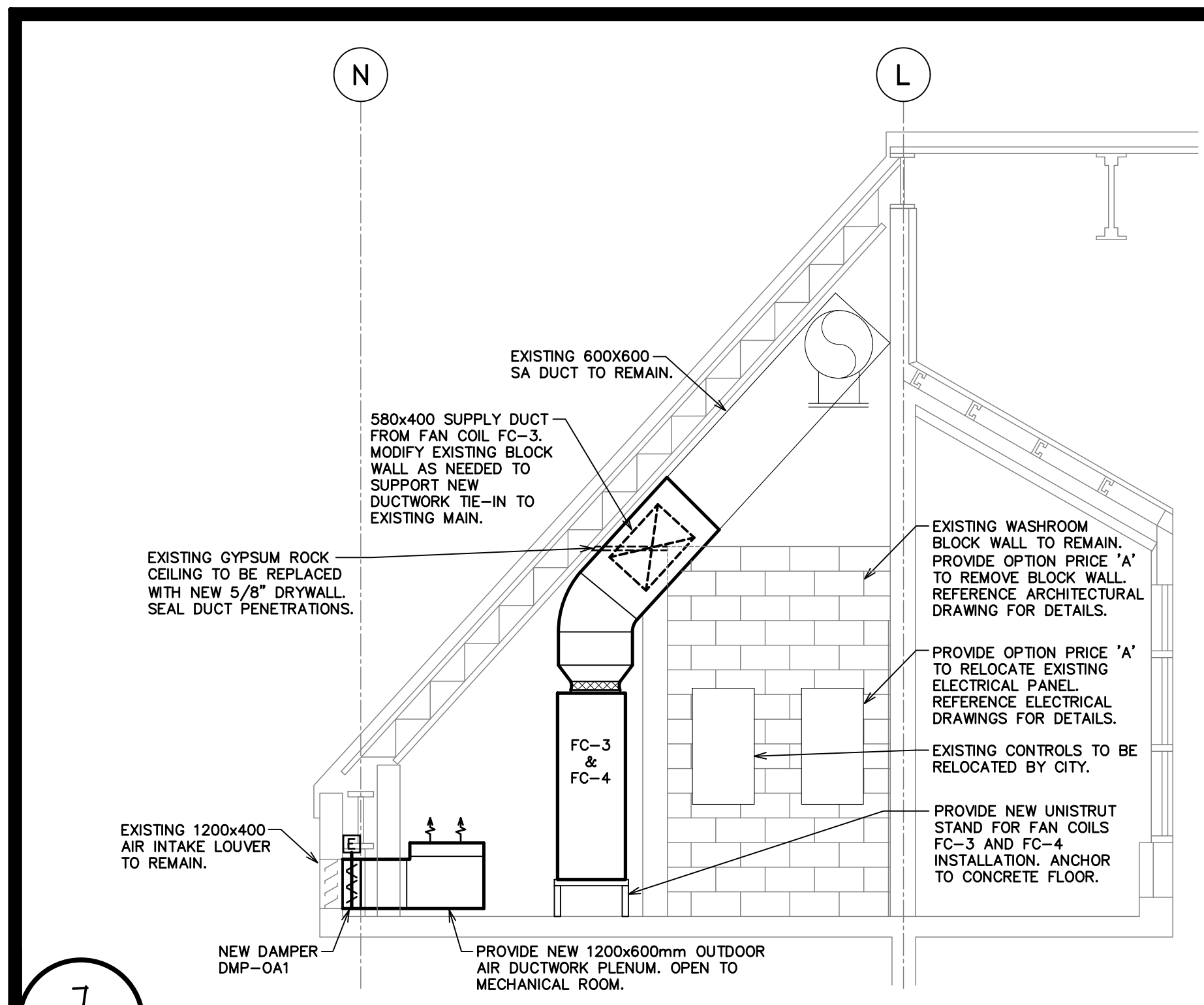
No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

project:
CANADA GAMES AQUATIC CENTRE AHU RENEWALS
SAINT JOHN, NB

drawing:
BASEMENT LEVEL - HVAC DEMOLITION AND NEW WORK

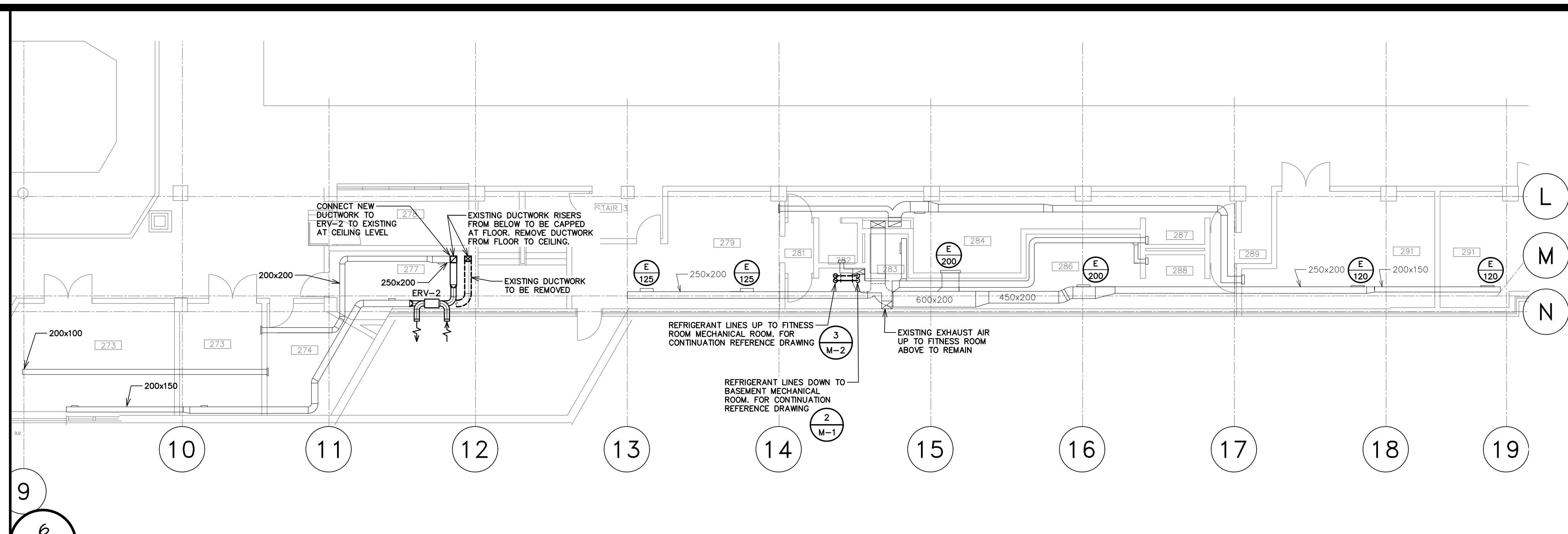
designed by: S.S.	scale: AS NOTED
drawn by: K.C.S.	date: NOVEMBER, 2023
checked by: M.G.	project no. 12-22-041

drawing no.
M-1



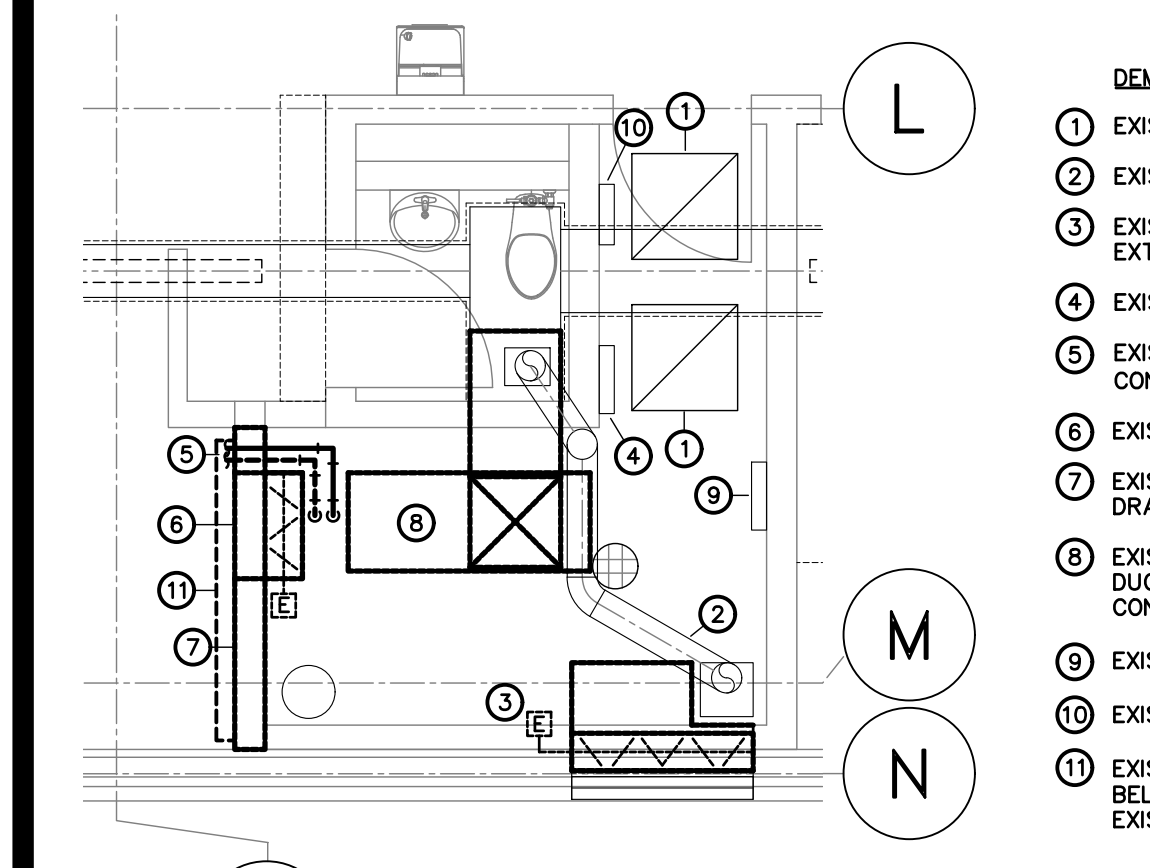
M-2 MECHANICAL ROOM SECTION

SCALE 1:40



M-2 PARTIAL POOL DECK FLOOR PLAN - NEW WORK

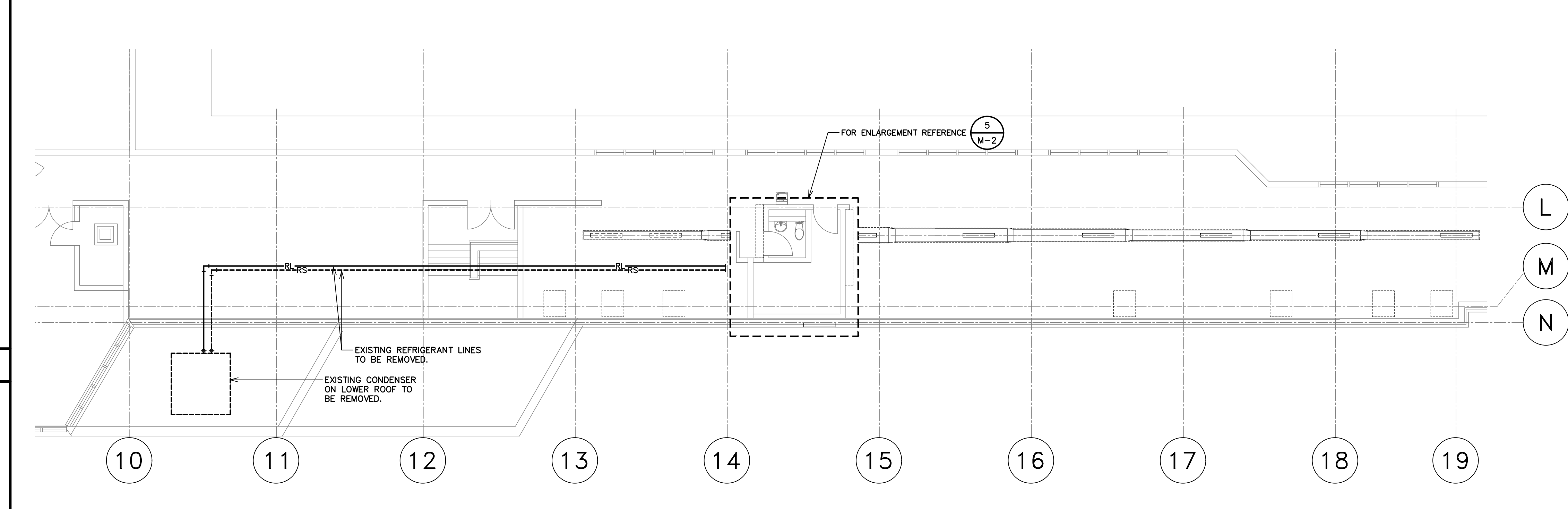
SCALE 1:100



M-2 ENLARGEMENT - DEMOLITION

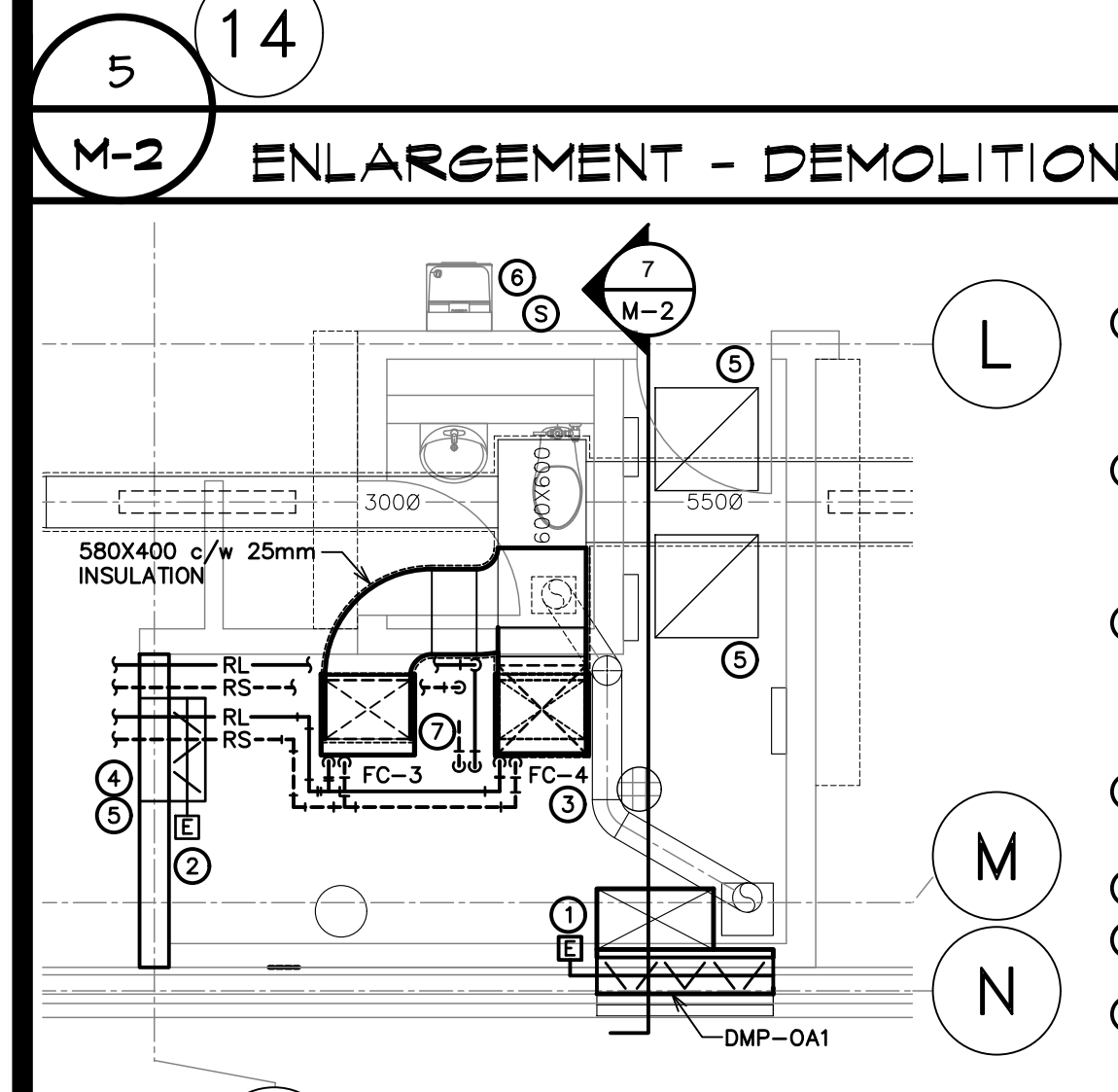
SCALE 1:50

- DEMOLITION DRAWING NOTES**
- EXISTING RETURN AIR GRILLE TO REMAIN.
 - EXISTING EXHAUST AIR DUCT SERVING WASHROOM TO REMAIN.
 - EXISTING 1200x400mm FRESH AIR DAMPER TO BE REMOVED. EXTERIOR WALL LOUVER TO REMAIN.
 - EXISTING CONTROLS CABINET TO REMAIN.
 - EXISTING REFRIGERANT PIPING TO BE REMOVED. FOR CONTINUATION REFER TO 4/M-2.
 - EXISTING RETURN AIR GRILLE AND DAMPER TO BE RELOCATED.
 - EXISTING WALL TO BE REMOVED. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
 - EXISTING AHU TO BE REMOVED, INCLUDING SUPPLY AIR DUCTWORK PLENUM, DX REFRIGERANT PIPING, DRAIN LINE AND CONTROLS.
 - EXISTING 120/208V PANEL "KI" TO REMAIN.
 - EXISTING 120/208V PANEL "D" TO REMAIN.
 - EXISTING HYDRONIC HEATER TO BE REMOVED. CAP HWS/HWR BELOW FLOOR. PLUG FLOOR PENETRATIONS FLUSH WITH EXISTING CONCRETE FLOOR.



M-2 PARTIAL LOBBY LEVEL FLOOR PLAN - DEMOLITION

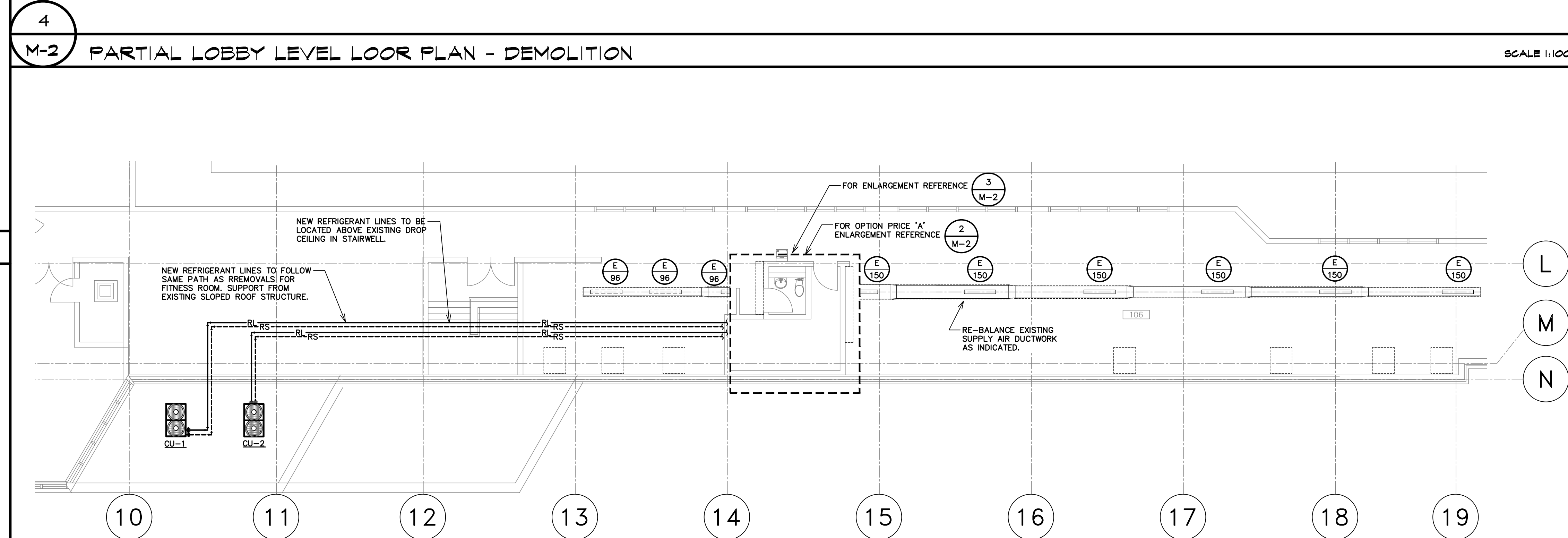
SCALE 1:100



M-2 ENLARGEMENT - NEW WORK

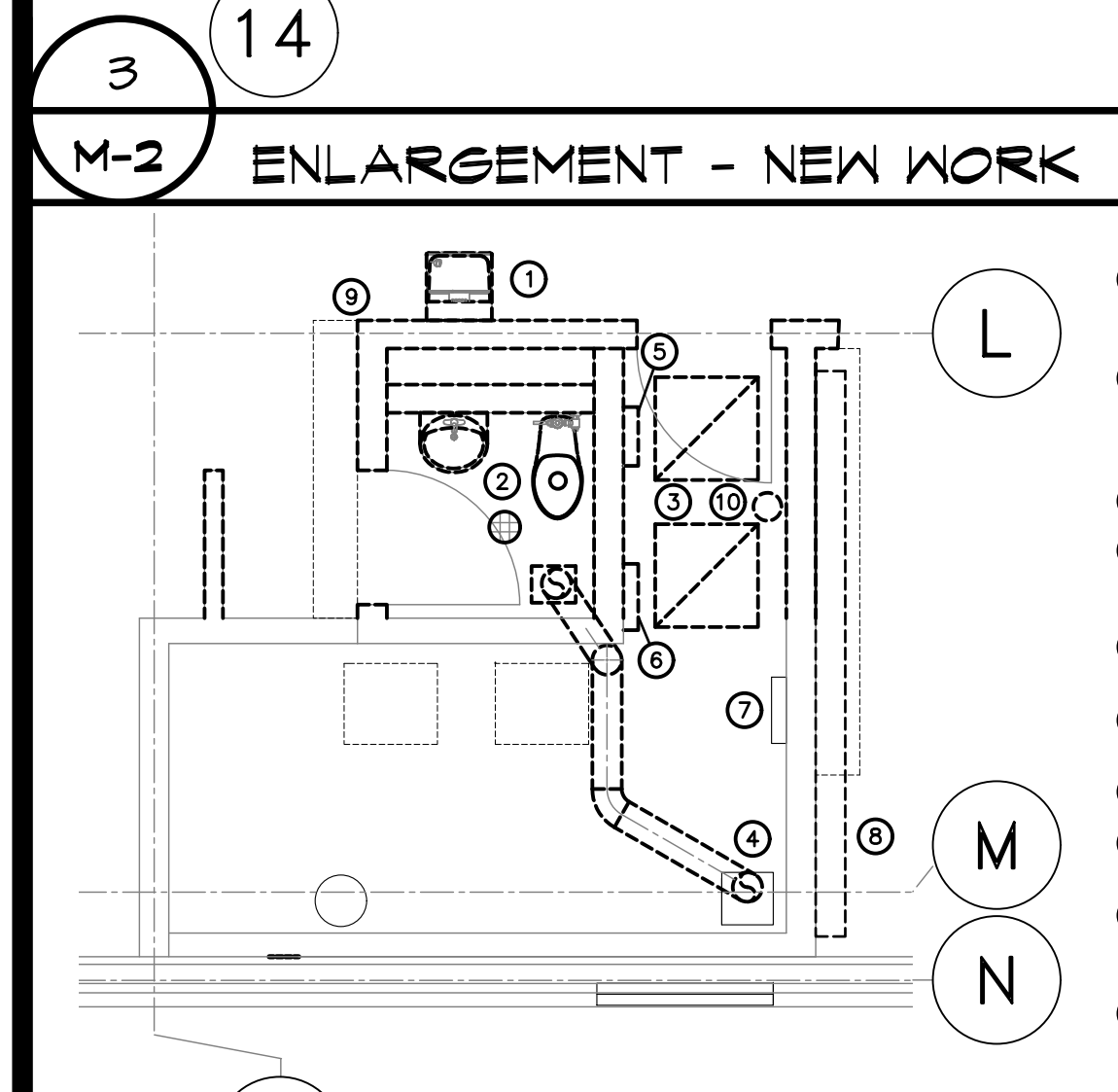
SCALE 1:50

- NEW WORK DRAWING NOTES**
- NEW FRESH AIR PLENUM. DUCT TO MATCH EXISTING LOUVER OPENING. FACE SURFACE AREA TO MECHANICAL ROOM SHALL BE MINIMUM 800x1600mm. COORDINATE WITH EXISTING EXHAUST AIR DUCT.
 - NEW STEEL STUD PARTITION WALL BY THIS CONTRACTOR. INSTALL 5/8 DRYWALL ON INTERIOR AND EXTERIOR OF STUDS. FRAME DAMPER OPENING TO SUIT RE-USED DAMPER AND RETURN AIR GRILLE. CONTROLS WORK BY CITY OF SAINT JOHN.
 - NEW VERTICAL FAN COIL UNITS TO BE INSTALLED ON UNISTRUT STAND MINIMUM 300mm A.F.F. TO PERMIT AIRFLOW THROUGH BOTTOM OF UNIT. PROVIDE CONDENSATE DRAIN TO MECHANICAL ROOM FLOOR DRAIN. CONTROLS WORK BY CITY OF SAINT JOHN.
 - NEW REFRIGERANT PIPING TO RUN TIGHT TO SLOPED ROOF. COORDINATE LOCATION WITH EXISTING SERVICES.
 - EXISTING RETURN AIR GRILLE TO BE CLEANED.
 - NEW SPACE TEMPERATURE SENSOR c/w INTEGRATED CO2 MONITORING BY CITY OF SAINT JOHN.
 - REFRIGERANT PIPING DOWN TO STAFF CHANGE ROOM BELOW. FOR CONTINUATION REFERENCE DRAWING 6/M-2. PROTECT PIPING RUN ALONG FLOOR OF MECHANICAL ROOM.



M-2 PARTIAL LOBBY LEVEL FLOOR PLAN - NEW WORK

SCALE 1:100

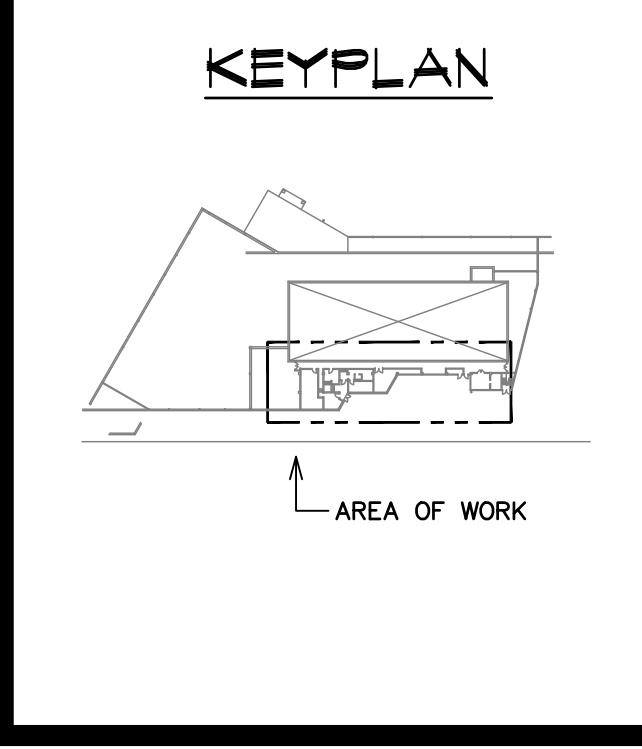


M-2 OPTION PRICE 'A' ENLARGEMENT

SCALE 1:50

- OPTION PRICE 'A' DRAWING NOTES**
- EXISTING WATER FOUNTAIN TO BE REMOVED. REMOVE DOMESTIC COLD WATER SUPPLY FROM SOURCE AND CAP BELOW FLOOR.
 - EXISTING WATER CLOSET, LAVATORY AND FLOOR DRAIN TO BE REMOVED. REMOVE DOMESTIC COLD WATER, DOMESTIC HOT WATER AND SANITARY DRAINS. CAP EXISTING SERVICES ON FLOOR BELOW.
 - EXISTING RETURN AIR GRILLE TO BE REMOVED.
 - EXISTING EXHAUST AIR DUCT SERVING WASHROOM TO BE REMOVED. CAP EXHAUST AIR RISER AT FLOOR OF MECHANICAL ROOM.
 - EXISTING ELECTRICAL PANEL TO BE RELOCATED. REFERENCE ELECTRICAL DRAWINGS FOR DETAILS.
 - EXISTING CONTROLS TO BE RELOCATED BY CITY OF SAINT JOHN.
 - EXISTING ELECTRICAL PANEL TO REMAIN.
 - EXISTING HYDRONIC HEATER TO BE REMOVED. CAP HWS AND HWR PIPING ON FLOOR BELOW.
 - EXISTING BLOCK WALL TO BE REMOVED AS INDICATED. REFERENCE ARCHITECTURAL DRAWINGS FOR FURTHER DETAILS.
 - EXISTING PLUMBING VENT TO BE RELOCATED TO BACK OF MECHANICAL ROOM. PROVIDE NEW CORE DRILL THROUGH CONCRETE FLOOR TO PERMIT RELOCATION FROM FLOOR BELOW. RECONNECT TO EXISTING ROOF PENETRATION POINT.

consultant:
M&W Maricor
 120 MILLENNIUM DRIVE, SUITE 201
 QUISPAMIS, NB E2E 0C6
 BUS: (506) 847-8285 FAX: (506) 848-2131
 WWW.M&W.COM.ENG. JOB NO. 12-22-041



No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

project:
CANADA GAMES AQUATIC CENTRE AHU RENEWALS
 SAINT JOHN, NB

drawing:
LOBBY LEVEL AND POOL DECK HVAC DEMOLITION AND NEW WORK

designed by: S.S.	scale: AS NOTED
drawn by: K.C.S.	date: NOVEMBER, 2023
checked by: M.G.	project no. 12-22-041

drawing no.
M-2

HEAT PUMP UNIT SCHEDULE													
TAG	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	AIRFLOW (L/s)	COOLING LOAD (BTU)	HEATING LOAD (BTU)	REFRIGERANT	ELECTRICAL			DIMENSIONS (HxWxD)	REMARKS
									VOLTAGE	PHASE	HZ		
CU-1	CITYMULTI	PUHY-P120	OUTDOOR CONDENSING UNIT	LOWER ROOF	N/A	120,000	135,000	R410A	208	3	60	1818x1240x740mm	PROVIDE MANUFACTURER'S COLD WEATHER STAND
CU-2	CITYMULTI	PUHY-P120	OUTDOOR CONDENSING UNIT	LOWER ROOF	N/A	120,000	135,000	R410A	208	3	60	1818x1240x740mm	PROVIDE MANUFACTURER'S COLD WEATHER STAND
FC-1	CITYMULTI	PEFY-P72	INDOOR FAN COIL UNIT	BASEMENT	1,016	72,000	80,000	R410A	208	1	60	470x1250x1120mm	PROVIDE MANUFACTURER'S MERV 13 FILTER BANK FBH4-4
FC-2	CITYMULTI	PEFY-P72	INDOOR FAN COIL UNIT	BASEMENT	910	72,000	80,000	R410A	208	1	60	470x1250x1120mm	PROVIDE MANUFACTURER'S MERV 13 FILTER BANK FBH4-4
FC-3	CITYMULTI	PV FY-P54	INDOOR MULTI-POSITION AIR HANDLER	FITNESS CENTRE	595	54,000	60,000	R410A	208	1	60	1511x635x550mm	-
FC-4	CITYMULTI	PV FY-P54	INDOOR MULTI-POSITION AIR HANDLER	FITNESS CENTRE	595	54,000	60,000	R410A	208	1	60	1511x635x550mm	-

REMARKS:
1. THE HEAT PUMP SYSTEMS SHALL BE c/w BACNET IP INTEGRATION. THIS CONTRACTOR TO ENSURE ALL INTEGRATION PARTS ARE ORDERED FROM MANUFACTURER. CONTROLS INTEGRATION BY CITY OF SAINT JOHN.

6
M-3 HEAT PUMP UNIT SCHEDULE

ENERGY RECOVERY VENTILATOR SCHEDULE													
TAG	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	SUPPLY AIR SIDE		EXHAUST AIR SIDE		ELECTRICAL			DIMENSIONS (HxWxD)	REMARKS
					CAPACITY (L/S)	E.S.P. (Pa)	CAPACITY (L/S)	E.S.P. (Pa)	VOLTS	PHASE	HZ		
ERV-1	RENEWAIRE	HE10IN	ENERGY RECOVERY UNIT	BASEMENT	353	90	353	250	208	1	60	890x1400x610mm	1,2
ERV-2	RENEWAIRE	EV PREMIUM MH	ENERGY RECOVERY UNIT	ROOM 277	99	150	99	150	120	1	60	550x550x330mm	1,2,3

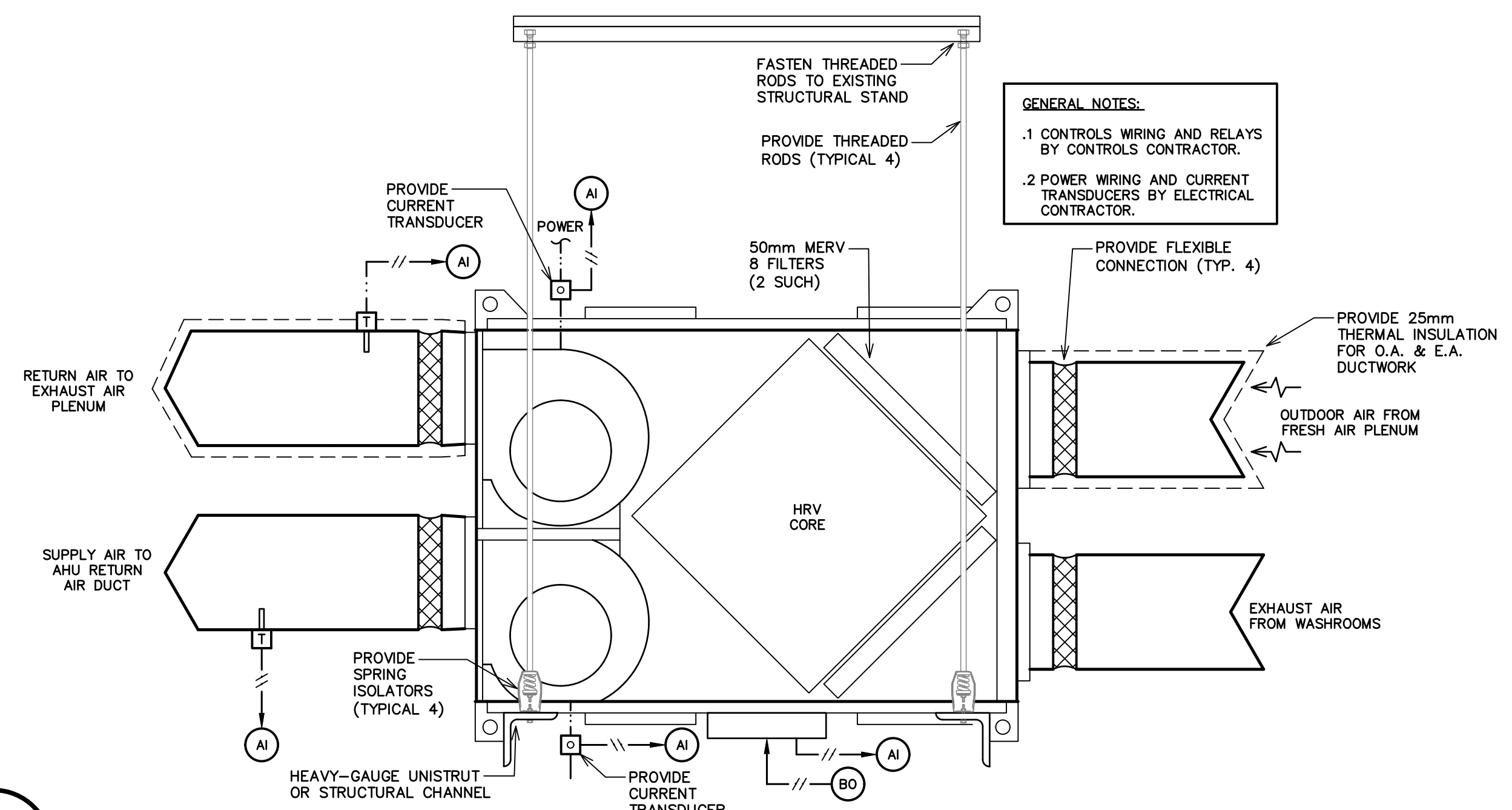
REMARKS:
1. c/w MERV 8 FILTERS
2. CONTRACTOR TO PROVIDE MATERIALS FOR HANGING HRV.
3. c/w HOODED WALL VENT. GALVANIZED AND PAINTED TO MATCH BRICK. PROVIDE INSECT SCREEN.

5
M-3 HEAT RECOVERY VENTILATOR SCHEDULE

FAN SCHEDULE										
TAG	MANUFACTURER	MODEL	TOTAL AIRFLOW	ESP	FAN	ELECTRICAL				REMARKS
			L/s	PA	RPM	VOLTAGE	PHASE	HZ	POWER (HP)	
RF-5	GREENHECK	BSQ-180	1533	125	967	208	3	60	5	1,2,3,4

REMARKS:
1. c/w VIBRATION ISOLATORS AND MOUNTING KIT
2. c/w VFD RATED MOTOR
3. c/w VARIABLE FREQUENCY DRIVE
4. c/w TWO (2) SETS OF SPARE BELTS

4
M-3 FAN SCHEDULE

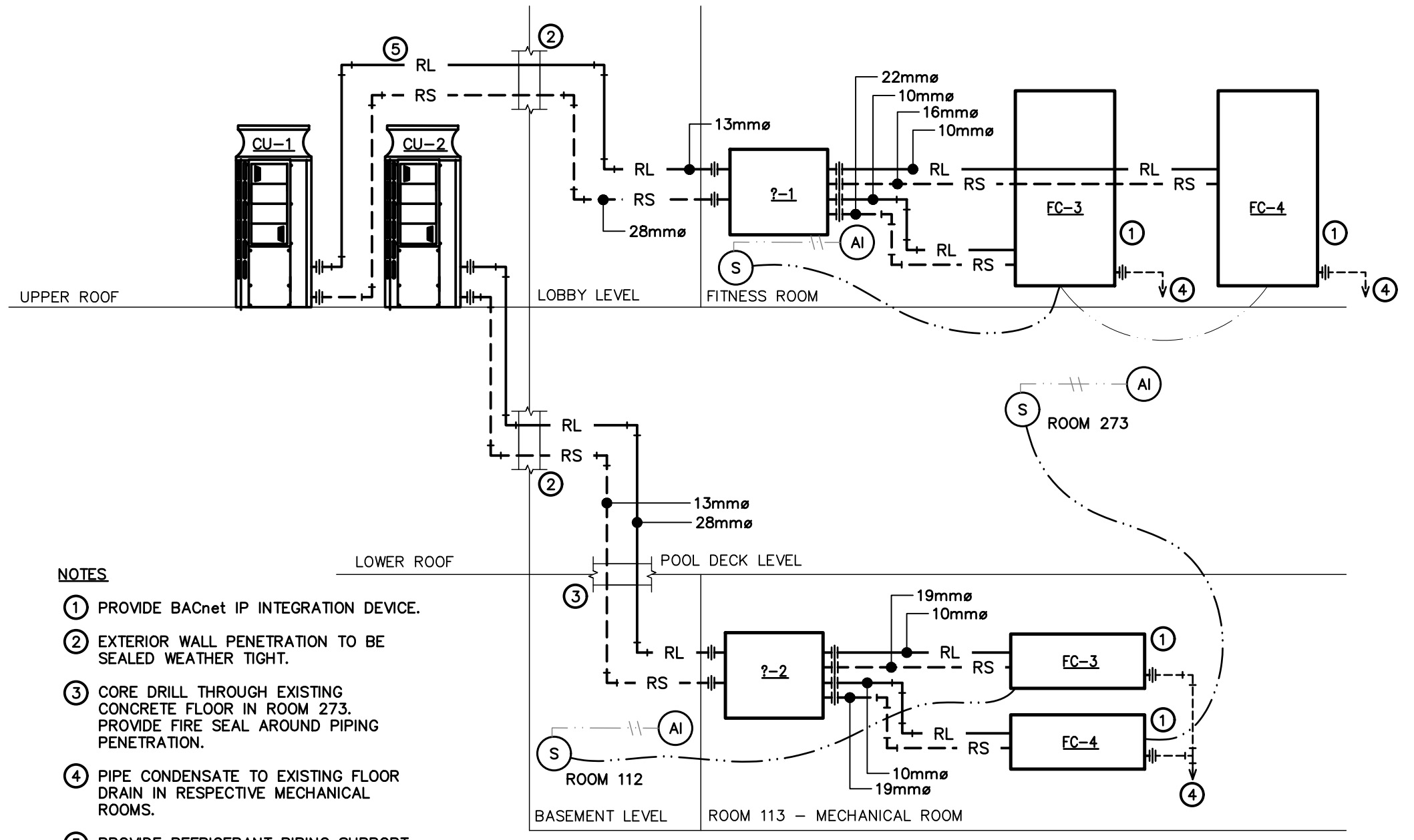


3
M-3 HEAT RECOVERY VENTILATOR SCHEMATIC

DAMPER SCHEDULE							
TAG	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	DIMENSIONS	ACTUATOR	REMARKS
DMP-0A1	TAMCO	9000	OUTDOOR AIR INTAKE ISOLATION DAMPER	FITNESS ROOM	1200x400mm	SPRING RETURN c/w POSITION FEEDBACK	1,2,3,4

REMARKS:
1. DAMPER BLADES SHALL BE INSULATED
2. DAMPER SHALL BE LOW LEAKAGE TYPE
3. CONTRACTOR TO CONFIRM SIZE OF EXISTING OUTDOOR AIR DAMPER BEING REPLACED PRIOR TO SUBMITTING SHOP DRAWINGS.
4. PROVIDE FULLY MODULATING ELECTRONIC ACTUATOR. ACTUATOR(S) SHALL BE PROPERLY SIZED TO PROVIDE 10.5 in-lb PER SQUARE FOOT OF DAMPER FACE. DERATE ACTUATOR BY 25% WHEN SIZING.

2
M-3 DAMPER SCHEDULE



NOTES:
1. PROVIDE BACnet IP INTEGRATION DEVICE.
2. EXTERIOR WALL PENETRATION TO BE SEALED WEATHER TIGHT.
3. CORE DRILL THROUGH EXISTING CONCRETE FLOOR IN ROOM 273. PROVIDE FIRE SEAL AROUND PIPING PENETRATION.
4. PIPE CONDENSATE TO EXISTING FLOOR DRAIN IN RESPECTIVE MECHANICAL ROOMS.
5. PROVIDE REFRIGERANT PIPING SUPPORT ACROSS ROOF. DURABLOCK OR EQUAL.

1
M-3 FAN COIL REFRIGERANT AND CONTROLS SCHEMATIC

consultant:
M&W Maricor
120 MILLENNIUM DRIVE, SUITE 201
QUISPAMIS, NB E2E 0G6
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WWW.MCW.COM ENG. JOB NO. 12-22-041

client:
SAINT JOHN

seal:
REGISTERED PROFESSIONAL ENGINEER
M8103
Gourmy A.G. Stiel
Nov 24 2023
PROFESSIONAL ENGINEERING
REGISTRATION BOARD
NEW BRUNSWICK

No.	date	description
1	NOV. 2023	ISSUED FOR TENDER

project:
CANADA GAMES AQUATIC CENTRE AHU RENEWALS
SAINT JOHN, NB

drawing:
SCHEDULES

designed by: S.S.	scale: AS NOTED
drawn by: K.C.S.	date: NOVEMBER, 2023
checked by: M.G.	project no. 12-22-041

drawing no.
M-3

GENERAL CONDITIONS

1. GENERAL
THE FOLLOWING GENERAL CONDITIONS SHALL BE READ IN CONJUNCTION WITH THE GENERAL CONDITIONS AND FRONT-END DOCUMENTS ISSUED BY THE CITY.

2. SCOPE OF WORK
THE CONTRACTORS SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND ASSOCIATED SERVICES NECESSARY FOR, AND REQUIRED BY THE INSTALLATION OF COMPLETELY FINISHED, TESTED, BALANCED AND PROPERLY OPERATING MECHANICAL SYSTEMS AS SPECIFIED HEREINAFTER AND SHOWN ON THE DRAWINGS. THE INTENTION IS TO PROVIDE FOR FINISHED WORK COMPLETE IN ALL ESSENTIALS AS CALLED FOR BY THE DOCUMENTS AND ACCEPTED GOOD PRACTICE.

ALL CONTROLS INTEGRATION AND WIRING TO BE PROVIDED BY THE CITY OF SAINT JOHN. THIS CONTRACTOR RESPONSIBLE FOR PURCHASE OF ALL ACCESSORIES REQUIRED FOR BACNET IP INTEGRATION AVAILABLE THROUGH EQUIPMENT MANUFACTURER.

IN ADDITION TO THE BASIC CONTRACT INDICATED ON DRAWINGS, PROVIDE OPTION PRICE "A" FOR WORK ASSOCIATED WITH SUPPORTING ARCHITECTURAL RENOVATIONS OF THE FITNESS ROOM MECHANICAL ROOM AND WASHROOM.

3. TIMING AND EXTENSIONS
IT SHOULD BE NOTED THAT THE PROJECT MUST BE COMPLETE BY MARCH 1, 2024. ANY EXTENSION FOR PROJECT WORK SHALL NOT BE ACCEPTED.

4. CONTROL WORK
ALL CONTROLS WORK SHALL BE COMPLETED BY THE CITY OF SAINT JOHN.

5. PERMITS AND BY-LAWS
CONTRACTORS SHALL ABIDE BY ALL CODES AND BY-LAWS RELATING TO THIS INSTALLATION. PROVIDE NECESSARY NOTICES, OBTAIN PERMITS AND PAY ALL FEES, IN ORDER THAT WORK SPECIFIED MAY BE CARRIED OUT. CHANGES AND ALTERATIONS REQUIRED BY AUTHORIZED INSPECTOR OF ANY AUTHORITY HAVING JURISDICTION, TO BE CARRIED OUT WITHOUT CHARGE OR EXPENSE TO OWNER.

6. SITE VISIT
BEFORE TENDER CLOSE, THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AT THE SITE WHERE THE WORK HAS TO BE DONE. NO EXTRA WILL BE ALLOWED DUE TO FAILURE TO TAKE SITE CONDITIONS INTO CONSIDERATION.

7. COORDINATION OF WORK
THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THE PROJECT MANAGER AND WITH ALL OTHER SUB-CONTRACTORS. COOPERATE WITH THE OWNER AND OTHER CONTRACTORS. WORK SHALL BE EXECUTED IN A MANNER SO AS TO CAUSE MINIMUM DISRUPTION. ALL SERVICES INTERRUPTIONS SHALL BE SCHEDULED OUTSIDE NORMAL WORKING HOURS. THIS CONTRACTOR SHALL INCLUDE IN HIS TENDER, COSTS FOR ALL OVERTIME WORK INVOLVED WITH THE CONSTRUCTION.

8. GUARANTEE
THE CONTRACTOR SHALL GUARANTEE ALL WORK AND NEW EQUIPMENT PROVIDED AND INSTALLED UNDER THIS SPECIFICATION AGAINST ANY DEFECTS OF WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF SAME BY OWNER. REPAIR AND MAKE GOOD ALL DAMAGE TO BUILDING INCURRED AS A RESULT OF FAILURE OF MECHANICAL WORK.

9. DRAWINGS
THE DRAWINGS FOR THE WORK ACCOMPANYING THESE SPECIFICATIONS ARE MADE AS ACCURATELY AS POSSIBLE, BUT ABSOLUTE ACCURACY OF DIMENSIONS CANNOT BE GUARANTEED. THEY ARE INTENDED TO SUPPLEMENT AND SIMPLIFY THE GENERAL CONTRACT DRAWINGS. NO CLAIM FOR EXTRA PAYMENT ON ACCOUNT OF DIFFERENCE OF ACTUAL AND ESTIMATED DIMENSIONS SHALL BE ALLOWED. IN THE CASE OF DISCREPANCY OF FIGURE DIMENSIONS ON THE DRAWINGS, THE MATTER SHALL BE IMMEDIATELY SUBMITTED TO THE ENGINEER FOR HIS DECISION. WITHOUT THE DECISION, THE DISCREPANCY SHALL NOT BE ADJUSTED BY THE CONTRACTOR SAVE AT HIS OWN RISK, AND IN THE SETTLEMENT OF ANY COMPLICATIONS ARISING FROM SUCH ADJUSTING, THE CONTRACTOR SHALL BEAR ALL EXTRA EXPENSE INVOLVED. INTERPRETATION OF ALL DOCUMENTS SHALL BE BY THE ENGINEER.

10. EXTRA WORK
NO ADDITIONAL MONEY OVER CONTRACT PRICE SHALL BE PAID UNLESS CONTRACTOR RECEIVES A SIGNED APPROVAL IN ACCORDANCE WITH THE GENERAL CONDITIONS. NO ADDITIONAL MONEY SHALL BE PAID FOR USE OF EQUAL PRODUCTS.

11. CUTTING AND PATCHING
THIS CONTRACTOR IS TO PERFORM CUTTING, PATCHING, AND PAINTING WHERE IT MAY BE REQUIRED IN FLOORS, ROOFS, CEILINGS AND/OR WALLS FOR THE PASSAGE OF PIPES, DUCTS, REFRIGERANT WORK, ETC. WHERE CUTTING & PATCHING IS NECESSARY, IT SHALL BE DONE BY THIS CONTRACTOR.

12. SLEEVES AND PENETRATIONS
THE CONTRACTOR IS TO SUPPLY AND SET IN PLACE PIPE AND/OR DUCT SLEEVES IN FLOOR, ROOF, OR WALLS, AND SHALL ENSURE WATER TIGHT AND AIR TIGHT SEALS WITH BUILDING ENVELOPE AND VAPOUR BARRIER. ALL PENETRATIONS, INTERIOR OR EXTERIOR SHALL PROVIDE A FINISH CONSISTENT WITH ARCHITECTURAL INTEGRITY OF THE FACILITY. THE ENGINEER SHALL HAVE SOLE DISCRETION ON ACCEPTANCE OF FINISHES.

13. SHOP DRAWINGS
CONTRACTOR SHALL SUBMIT, WITHIN TWO WEEKS AFTER BEING AWARDED THE CONTRACT, ONE COPY BY EMAIL OF CERTIFIED SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF ALL EQUIPMENT AND MATERIAL SPECIFIED AND SHALL NOT PROCEED WITH ANY OF THIS WORK UNTIL THE DRAWINGS HAVE BEEN RETURNED STAMPED AND SIGNED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION OF CHECKING THE DRAWINGS HIMSELF OR FURNISHING THE MATERIALS SPECIFIED.

14. CLEANING
THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE NEAT, CLEAN AND FREE FROM ACCUMULATION OF WASTE, MATERIALS AND RUBBISH WHICH ARISE OUT OF THEIR WORK.

15. ACCEPTABLE PRODUCTS
THE ENGINEER HAS THE SOLE RIGHT TO DETERMINE AND INTERPRET THE "EQUAL" QUALITIES. ANY MODIFICATIONS REQUIRED FOR INSTALLATION OF EQUAL PRODUCTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. EQUIPMENT OF MANUFACTURERS NOT MENTIONED IN THE "REVIEWED EQUALS LIST", WHO WISH TO HAVE THEIR EQUIPMENT LISTED AS EQUAL, MAY QUALIFY FOR THE "REVIEWED EQUALS LIST". SUBMIT ALL REQUIRED TECHNICAL DATA THROUGH THE OFFICE OF THE PROJECT MANAGER A MINIMUM OF TEN (10) DAYS PRIOR TO TENDER CLOSING.

1. APPROVED EQUALS LIST:
 .1 HEAT PUMP UNITS
 .1 MITSUBISHI
 .2 DAIKIN
 .3 TRANE
 .2 HRV'S
 .1 LIFEBREATH
 .2 TRANE
 .3 VENMAR
 .4 GREENHECK
 .3 CONTROLS (BY CITY OF SAINT JOHN)

16. OPERATING AND MAINTENANCE INSTRUCTIONS
CONTRACTOR SHALL INSTRUCT THE OWNER IN OPERATION OF MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED. ALL SAFETY AND CONTROL FEATURES SHALL BE THOROUGHLY EXPLAINED. THREE COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS, TOGETHER WITH ALL APPROVED SHOP DRAWINGS AND SPARE PARTS LIST FASTENED IN A BINDER, SHALL BE SUBMITTED TO THE OWNER.

17. AS BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN, AT THE JOB SITE, ONE SET OF PLANS ON WHICH HE SHALL CLEARLY NOTE ALL CHANGES OR DEVIATIONS FROM THE CONTRACT DOCUMENTS, AS THE JOB PROGRESSES. CONTRACTOR SHALL AT THE TIME OF FINAL INSPECTION SUBMIT TO THE OWNERS REPRESENTATIVE, ONE SET OF FINAL "AS-BUILT" WHITE PRINT DRAWINGS.

18. FIRE STOPPING
ALL MECHANICAL CONTRACTORS SHALL PROVIDE AND INSTALL A ULC LISTED FIRE STOPPING MATERIAL AT PENETRATOR OF MECHANICAL SYSTEMS WHERE SUCH SYSTEMS PENETRATE FIRE AND SMOKE SEPARATIONS AND RATED ASSEMBLIES IN THE STRUCTURE OR REQUIRED BY AUTHORITIES HAVING JURISDICTION. FIRE STOPPING SHALL BE INSTALLED AS PER MANUFACTURERS APPROVED INSTALLATION REQUIREMENTS AND SHALL BE INSPECTED PRIOR TO ENCLOSING WALLS OR CEILING WHERE FIRE STOPPING HAS BEEN INSTALLED.

VENTILATION SYSTEMS

1. DUCTWORK
ALL DUCTWORK SHALL BE CONSTRUCTED FROM LOCK FORMING QUALITY STEEL WITH G90 DESIGNATION ZINC COATING TO ASTM A-525 M-80 IN ACCORDANCE WITH THE LATEST EDITION OF ASHRAE GUIDE AND SMACNA STANDARDS. DUCT LEAKAGE SHALL NOT EXCEED 3% MAXIMUM. SEAL ALL DUCTS WITH APPROVED SEALANT.

DUCT CONSTRUCTION SHALL BE AS FOLLOWS:

LONGEST SIDE	GAUGE US	TYPE OF JOINTS				
		HEIGHT	SLIP	BAR SLIP	LOCK	"T"
UP TO 11" (275mm)	26	25	24	-	24	-
12" (300mm) TO 24" (600mm)	24	25	22	-	22	-
25" (625mm) TO 60" (1500mm)	22	25	-	22	22	22
61" (1525mm) TO 108" (2700mm)	20	37	-	22	22	22

REINFORCING MUST BE APPLIED ON ALL FOUR SIDES AND FASTENED TOGETHER AT EACH CORNER BY WELDING, BOLTING OR RIVETING. SIDES OF DUCTS OVER 18" (450 mm) WIDE SHALL BE STIFFENED BY CROSS BRACING UNLESS THEY ARE TO BE INSULATED OR LINED. DUCT SIZES SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS. WHEN ACOUSTIC INSULATION IS ADDED INSIDE OF DUCT, SIZES SHALL BE INCREASED ACCORDINGLY. SEAL ALL JOINTS AND CONNECTIONS WITH POLYMER TYPE, FLAME RESISTANT HIGH VELOCITY DUCT SEALING COMPOUND, DURO-DYNE S-2 OR EQUAL TO MAKE DUCTWORK AIRTIGHT. ROUND DUCT SHALL BE UNITED SPIRAL "UNISEAL" OR APPROVED EQUAL.

2. HANGERS
SUPPORT EACH SECTION OF THE DUCTWORK WITH STEEL RODS, ANGLE IRON, "C" CLAMPS AND OR CONCRETE INSERTS ALL AS PER SCHEDULE BELOW:

DUCT SIZE	ANGLE DIM.	RODS DIA.	SPACING
UP TO 24" (750mm)	1"x1"x1/8" (24x25x3mm)	1/4" (6mm)	108" (2700mm)
31" (775mm) TO 48" (1200mm)	1"x1"x1/8" (37x37x3mm)	1/4" (6mm)	108" (2700mm)
49" (1225mm) TO 72" (1800mm)	1"x1"x1/8" (37x37x3mm)	3/8" (9mm)	108" (2700mm)
73" (1825mm) TO 96" (2400mm)	2"x2"x1/8" (50x50x3mm)	3/8" (9mm)	108" (2700mm)

DUCTS UP TO 18" (450 mm) MAY BE SUPPORTED WITH GALVANIZED STEEL STRAP HANGERS MANUFACTURED TO SMACNA STANDARDS. SCREWED AT THE TOP AND ON THE BOTTOM OF DUCT. DO NOT BREAK CONTINUITY OF INSULATION VAPOUR BARRIER BY HANGERS OR RODS.

3. PENETRATIONS
THIS CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO SEAL ALL WALL/CEILING PENETRATIONS. ALL PENETRATIONS OF DRYWALL AND VAPOUR BARRIER SHALL PROVIDE AN AIR TIGHT SEAL AND PROVIDE ARCHITECTURAL FINISH SEAMLESS WITH EXISTING CONSTRUCTION FINISHES.

4. DUCT INSULATION - THERMAL
STANDARD DUCT INSULATION (INSIDE BUILDING WHERE INDICATED AND ON ALL DUCTWORK WITHIN 15ft (4.5m) OF EXTERIOR WALL OR ATTIC PENETRATION) SHALL BE 1" THICK FIBERGLASS BLANKET INSULATION WITH FOIL FACING. INSTALL DUCT INSULATION. SEAL ALL JOINTS AND PENETRATIONS WITH FOIL TAPE. INSULATE AFTER ALL DUCTWORK HAS BEEN SEALED AND INSPECTED. ALL DUCT HANGERS AND ANGLE IRON SUPPORTS SHALL BE LOCATED OUTSIDE OF DUCT INSULATION.

5. DUCT LINER INSULATION - ACOUSTIC
LINE INSIDE OF DUCTS WHERE INDICATED TO BE 1/2" THICK CLOSED CELL HOMOGENOUS ELASTOMERIC LINER. LINER TO BE FASTENED TO INTERIOR SHEET METAL SURFACES WITH 100% COVERAGE OF AN APPROVED FIRE RESISTANT BONDING ADHESIVE AND METAL PINS AND WASHERS, SPACED ON NOT MORE THAN 12" CENTRES. SEAL EDGES, PEN PENETRATIONS AND JOINTS WITH AN APPROVED FIRE RESISTANT MASTIC. PROTECT LEADING AND TRAILING EDGES WITH SHEET METAL EDGING, FLAME/SMOKE SPREAD RATING ON INTERIOR LINING SHALL NOT EXCEED 25/50 RESPECTIVELY. PRODUCT SHALL PROVIDE A MINIMUM SOUND ABSORPTION COEFFICIENT OF NRC 70 AT 1" THICKNESS. PRODUCT SHALL NOT PERMIT MICROBIAL GROWTH IN CONFORMANCE WITH ASTM G1538, G21, G22. PRODUCT SHALL BE GREENGUARD CERTIFIED FOR LOW VOCs. STANDARD OF ACCEPTANCE: K-FLEX, OR APPROVED EQUAL.

6. FIRE DAMPERS
PROVIDE FIRE DAMPERS WHERE SHOWN AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION TO MAINTAIN FIRE WALL OR CEILING INTEGRITY. ACCEPTABLE MANUFACTURERS: RUSKIN, EH PRICE, OR APPROVED EQUAL.

FIRE DAMPERS SHALL BE DYNAMIC TYPE. FIRE DAMPERS SHALL BE LISTED AND BEAR THE LABEL OF ULC AND SHALL MEET REQUIREMENTS AND BE INSTALLED TO NFPA 90A AND SMACNA STANDARD "FIRE DAMPER GUIDE FOR AIR HANDLING SYSTEMS".

SEAL WALL OPENINGS ALL AROUND THE DUCTS PASSING THROUGH THE FIRE WALLS AS RECOMMENDED BY THE NFPA-13. PROVIDE ACCESS DOORS AT FIRE DAMPER (ACCESS TO BE INSULATED TYPE WHERE DUCT IS INSULATED.)

7. BALANCING DAMPERS
PROVIDE BALANCING DAMPERS IN DUCTWORK WHERE SHOWN AND WHERE REQUIRED FOR PROPER ADJUSTMENT OF AIR QUANTITIES. ALL DAMPERS SHALL BE EQUIPPED WITH A LOCKING QUADRANT SOLIDLY MOUNTED ON THE EXTERIOR OF THE DUCT. CLOSED POSITIONS MUST BE CLEARLY MARKED. PROVIDE SHAFT AND BEARING ON EACH SIDE OF DAMPER.

.1 SPLITTER DAMPERS SHALL BE AIRTIGHT, SHARP DOUBLE THICKNESS, ONE GAUGE HEAVIER THAN DUCT (MINIMUM 22 GAUGE) MOUNTED ON A ROUNDED EDGE PIANO HINGE. THE LENGTH OF THE DAMPER SHALL BE 1.5 TIMES THE WIDTH OF THE SMALLEST DUCT.
 .2 BUTTERFLY DAMPER WITH A SINGLE 22 GAUGE BLADE MAY BE USED IN ROUND DUCTS OF 12" (300 mm) AND LESS.
 .3 MULTI-LEAF OPPOSED BLADE DAMPERS DESIGNED TO SMACNA STANDARDS SHALL BE USED IN SQUARE DUCTS.

8. ACCESS DOORS
PROVIDE AS INDICATED AND WHERE REQUIRED FOR ACCESS TO FIRE OR OTHER DAMPERS AND FOR SERVICE OR INSPECTION OF EQUIPMENT CAM-LEVER TYPE ACCESS PANEL 12" x 18" (300 x 450 mm) UNLESS OTHERWISE STATED, COMPLETE WITH TWO SASH LOCKS. PANELS ON INSULATED DUCT WORK SHALL BE OF DOUBLE PANEL CONSTRUCTION WITH INSULATION FILLER AND SHALL HAVE AN EXTENDED METAL COLLAR TO BE FLUSH WITH FACE OF FINISHED INSULATION.

9. FLEXIBLE DUCTS
FLEXIBLE DUCTS SHALL BE THERMAFLEX MKE OR APPROVED EQUAL. (MAXIMUM LENGTH 48" (1200 mm), EXCEPT WHERE PERMITTED OR SHOWN).

10. CLEANING AND STARTING
SYSTEMS SHALL BE CLEANED OF ALL DIRT, ETC., AND SHALL THEN BE STARTED UP. ALL EQUIPMENT SHALL BE FULLY SERVICED BEFORE STARTUP, AS PER MANUFACTURERS RECOMMENDATIONS. FILTERS SHALL BE REPLACED AFTER TEST RUN.

11. AIR BALANCING
AIR BALANCING SHALL BE DONE BY A PROFESSIONAL TEST AND BALANCING FIRM (AABC OR NEBB). AIR QUANTITIES AT EACH OUTLET SHALL BE AS INDICATED ON THE DRAWINGS. A REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THIS REPORT SHALL SHOW THE CFM (l/s), VELOCITIES AND AREA OF EACH OUTLET, TYPE AND MODEL NUMBER OF FANS AND MOTORS INSTALLED, ACTUAL AIR DELIVERED BY THE FAN WITH TOTAL STATIC PRESSURE, VOLTAGE AND AMPERAGE DRAWN BY THE MOTORS. AFTER FINAL APPROVED BALANCE, PROVIDE INDEPENDENT REPORT TO THE OWNER FOR HIS USE.

12. DUCT SEALING
ALL NEW SHEET METAL DUCTWORK SHALL BE DUCT SEALED WITH DUCT SEALANT AND FIBERGLASS MESH TAPE. DUCT SEALANT: DURO-DYNE WT.

13. EQUIPMENT
AS INDICATED ON DRAWING SCHEDULES.

REFRIGERANT EQUIPMENT

1. GENERAL
1.1 SCOPE THE WORK UNDER THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE THE FURNISHING OF ALL APPARATUS, EQUIPMENT, TOOLS, LABOR AND MATERIAL REQUIRED FOR A COMPLETE REFRIGERATION INSTALLATION AS INCLUDED ON THE DRAWINGS OR SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

.1 CONDENSING UNITS, EVAPORATORS/FAN COIL UNITS, INTERCONNECTING PIPING AND ALL APPURTENANCES.
 .2 PIPE AND EQUIPMENT INSULATION.
 .3 TESTING, CHARGING, ADJUSTING AND OPERATING OF SYSTEM THROUGH TEMPERATURE PULL DOWN OF ALL REFRIGERATED SPACES.
 .4 INSTRUCTION OF OWNER'S OPERATING AND MAINTENANCE PERSONNEL.
 .5 SECURING AND PAYING FOR ALL PERMITS, CERTIFICATIONS AND APPROVALS REQUIRED.
 .6 CUTTING, PATCHING, PAINTING, SEALING, FLASHING AND COUNTER FLASHING OF ALL WALL AND ROOF PENETRATIONS, AND COOLER PENETRATIONS.

2. REGULATIONS
 .1 ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST LOCAL, RULES AND REGULATIONS, THE SAFETY ORDERS OF THE DIVISIONS OF INDUSTRIAL SAFETY, THE PROVINCIAL FIRE MARSHAL, THE ELECTRICAL CODE, AND ALL ELEMENTS, APPLICABLE STATE AND LOCAL REQUIREMENTS PLANS AND SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE REQUIREMENTS. PLANS AND SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE REQUIREMENTS.
 .2 WHEREVER THE SPECIFICATIONS CALL FOR OR DESCRIBE MATERIALS OR CONSTRUCTION OF BETTER QUALITY OR LARGER SIZE THAN ARE REQUIRED BY THE ABOVE RULES AND REGULATIONS, THE SPECIFICATIONS SHALL GOVERN. SHOULD THERE BE ANY DIRECT CONFLICT BETWEEN THE ABOVE RULES AND THESE SPECIFICATIONS, THE RULES SHALL GOVERN.

3. APPLICABLE PUBLICATIONS: THE PUBLICATIONS LISTED BELOW FORM A PART OF THIS SPECIFICATION TO THE EXTENT REFERENCED. THE PUBLICATIONS ARE REFERRED TO IN THE TEXT BY THE BASIC DESIGNATION ONLY.
 .1 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATION: ANSI B31.5-83 REFRIGERATION PIPING.
 .2 AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) PUBLICATION: SECB-D-1-83 PRESSURE VESSEL DIVISION 1
 .3 AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE) PUBLICATION: 15-1989 - SAFETY CODE FOR MECHANICAL REFRIGERATION.

3. SHOP DRAWINGS
 .1 SHALL BE COMPLETE AS ONE SUBMITTAL AND INCLUDE THE FOLLOWING:
 .1 CONDENSING UNITS/HEAT PUMPS.
 .2 EVAPORATORS/FAN COIL UNITS.
 .3 HAND VALVES.
 .4 CONTROL VALVES.
 .5 SUCTION FILTERS.
 .6 SIGHT GLASSES.
 .7 PRESSURE GAUGES.
 .8 THERMOSTATS.
 .9 PIPE HANGING ACCESSORIES.

4. COORDINATION
 .1 ASSUME FULL RESPONSIBILITY FOR LAYING OUT THIS WORK TO AVOID CONFLICT WITH OTHER TRADES.
 .2 WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CODES, REGULATIONS, AND BY-LAWS.
 .3 WORK SHALL BE DONE BY A CERTIFIED REFRIGERATION JOURNEYMEN EXPERIENCED IN INSTALLATION OF VRF SYSTEMS AND EQUIPMENT.

5. CLASSES AND MAXIMUM WORKING PRESSURES
 .1 EXCEPT AS SPECIFIED OTHERWISE, ALL EQUIPMENT AND PIPING COMPONENTS SHALL BE SUITABLE FOR USE UNDER THE MAXIMUM WORKING PRESSURE INDICATED. EXCEPT AS MODIFIED HEREIN, THE PRESSURE, TEMPERATURE LIMITATIONS SHALL BE AS SPECIFIED IN THE REFERENCED STANDARDS, SPECIFICATIONS AND SPECIFICATIONS IN THIS SPECIFICATION ARE PRESSURES IN POUNDS PER SQUARE INCH (PSI) ABOVE ATMOSPHERE PRESSURE, AND TEMPERATURE ARE IN DEGREES FAHRENHEIT (°F).

2. PRODUCTS
 .1 SEE SCHEDULE, SCHEMATIC AND DRAWINGS.

3. EXECUTION
 .1 MOISTURE TREATMENT REQUIREMENT
 .1 THE HIGH PRESSURE SIDE OF THE SYSTEM SHALL BE TESTED WITH DRY NITROGEN AT 2068 KPA (300 PSIG).
 .2 THE LOW PRESSURE SIDE OF THE SYSTEM SHALL BE TESTED WITH DRY NITROGEN AT 1034 KPA (150 PSIG).
 .3 CONTROLS AND OTHER EQUIPMENT OR APPARATUS THAT MAY BE DAMAGED BY THE TEST PRESSURE EMPLOYED SHALL BE REMOVED OR MADE INOPERATIVE BEFORE THE TESTS ARE MADE AND THE OPENINGS SHALL BE PLUGGED OR CAPPED.
 .4 A PRESSURE LIMITING OR REDUCING VALVE WITH PRESSURE GAUGE SHALL BE USED ON THE HIGH PRESSURE GAS TANK TO LIMIT THE PRESSURE IN THE SYSTEM TO THE TEST PRESSURE.

EVACUATING REFRIGERATION SYSTEMS
 .1 AFTER COMPLETION OF TESTING OF REFRIGERANT SYSTEM FOR LEAKS, REMOVE ALL AIR AND MOISTURE FROM THE SYSTEM BY USING A HIGH VACUUM PUMP. THE PUMP SHALL BE CAPABLE OF REDUCING THE ABSOLUTE PRESSURE IN THE SYSTEM TO A POINT WHERE ANY WATER PRESENT IN THE LINES WILL VAPORIZE AT A TEMPERATURE APPRECIABLY BELOW THE AMBIENT TEMPERATURE, AND WILL BE WITHDRAWN FROM THE SYSTEM, BEFORE CONDUCTING THE EVACUATION TEST. INSPECT THE VACUUM PUMP OIL FOR PURITY AND PROVIDE NEW OIL CHARGE IF EXISTING CHARGE IS CONTAMINATED. EVACUATE THE SYSTEM TO A MAXIMUM ABSOLUTE PRESSURE OF 500 MICRONS (20 MIL) OF MERCURY OR LOWER. DURING THE EVACUATION, THE AMBIENT TEMPERATURE SHALL NOT BE LESS THAN 2° (35°). ELECTRONIC INSTRUMENTS SHALL BE USED FOR MEASUREMENT OF PRESSURE. UPON ACHIEVING EVACUATION OF SYSTEM, VALVE OFF THE VACUUM PUMP FROM THE SYSTEM FOR A PERIOD OF AT LEAST 6 HOURS. THE SYSTEM SHALL BE CONSIDERED TIGHT AND DRY AND FREE OF AIR IF THE ABSOLUTE PRESSURE HAS NOT INCREASED BY MORE THAN 200 MICRONS (8MIL) HG AT THE EXPIRATION OF THIS PERIOD. REPEAT THE PRESSURE TEST IF THE PRESSURE HAS EXCEEDED 500 MICRONS (20 MIL) WHICH INDICATES A LEAK IN THE SYSTEM OR PRESENCE OF MOISTURE. IF NO LEAKS ARE FOUND, REPEAT THE EVACUATION TEST AND CONTINUE UNTIL DRYNESS OF SYSTEM IS ACHIEVED. WHEN A SATISFACTORY VACUUM HAS BEEN OBTAINED, IT SHALL BE BROKEN WITH THE INTRODUCTION OF DRY NITROGEN AND CHARGE TO A PRESSURE OF 103 KPA (15 PSIG). A HOLDING CHARGE OF 103 KPA (15 PSIG) SHALL BE MAINTAINED UNTIL THE SYSTEM IS CHARGED WITH REFRIGERANT.

CHARGING REFRIGERATION SYSTEMS
 .1 FURNISH AND PLACE A FULL CHARGE OF REFRIGERANT INTO SYSTEMS. EVACUATE THE 103 KPA (15 PSIG) NITROGEN HOLDING CHARGE. BREAK THE VACUUM WITH REFRIGERANT GAS AND CHARGE THE SYSTEM BY CONNECTING CYLINDERS OF REFRIGERANT TO THE SYSTEM CHARGING CONNECTION, TO FEED LIQUID REFRIGERANT INTO THE LOW SIDE OF THE SYSTEMS WHERE IT WILL BE EVAPORATED. RECORD THE WEIGHT OF REFRIGERANT CHARGED INTO EACH SYSTEM. THE CHARGING CONNECTION SHALL BE LOOSELY CONNECTED TO THE SYSTEM CONNECTION SO THAT THE INITIAL FLOW OF REFRIGERANT WILL PURGE THE AIR. AFTER PURGING, THE CHARGING CONNECTION SHALL BE TIGHTENED AND CHARGING CONTINUED. AFTER THE SYSTEM VACUUM HAS BEEN ESTABLISHED, REFRIGERATOR SHALL BE STARTED AND OPERATED. OPERATE THE CONDENSER AND EVAPORATOR FANS. DO NOT PERMIT THE COMPRESSOR, DISCHARGE TO BECOME EXCESSIVE.
 .2 CHECK THE REFRIGERANT CHARGE(S) AND SYSTEM(S) OPERATION DURING EXTREMES OF AMBIENT TEMPERATURE. WITH THE OWNER'S REPRESENTATIVE, VERIFY THE OPERATION(S) AND CHARGE(S) WHEN:
 .1 THE AMBIENT TEMPERATURE IS 35°C (95°F) OR HIGHER.
 .2 THE AMBIENT TEMPERATURE IS 5°C (40°F) OR LOWER.

DEMONSTRATION AND OPERATION
 .1 GENERAL OPERATING TESTS SHALL COVER A PERIOD OF NOT LESS THAN FOUR (4) CONTINUOUS DAYS AND SHALL DEMONSTRATE THAT SYSTEM AND EQUIPMENT IS FUNCTIONING IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. EQUIPMENT IS FUNCTIONING IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
 .2 DURING THE DEMONSTRATION AND BREAK-IN PERIOD PERFORM THE FOLLOWING:
 .1 MAINTAIN REFRIGERANT CHARGE AS REQUIRED TO BALANCE OUT SYSTEM WITH OPERATING CONDITIONS.
 .2 ADJUST AND BALANCE REFRIGERATION SYSTEMS CONTROLS.
 .3 CHECK, CLEAN AND MAINTAIN IN OPERATING CONDITION, STRAINERS, VALVES AND OTHER COMPONENTS OF REFRIGERATION SYSTEM.
 .4 ADJUST BALANCE VALVES AND AUTOMATIC VALVES TO THE PROPER REFRIGERANT FLOW AND OPERATING PRESSURES.
 .5 INSTRUCT OWNER'S PERSONNEL IN THE OPERATION OF THE SYSTEM. PROVIDE AN INSTRUCTOR FOR 8 HOURS (ONE 8 HOUR SHIFT) WHOSE SOLE RESPONSIBILITY SHALL BE THE TRAINING OF SYSTEM OPERATING AND MAINTENANCE PERSONNEL.

RECHECK OF PIPE HANGERS AND SUPPORTS
 .1 WHILE THE SYSTEM IS OPERATING AND ALL AREAS ARE AT DESIGN TEMPERATURE, WITH THE OWNER'S REPRESENTATIVE, RECHECK ALL PIPE HANGERS AND SUPPORTS TO ENSURE:
 .1 ALL INSULATION PROTECTORS AND SHIELDS ARE IN PLACE AND CENTERED ON SUPPORTS.
 .2 ALL PIPE IS BEING SUPPORTED AT ALL SUPPORT POINTS.
 .3 ALL HANGER RODS, ANCHORS, AND SUPPORTS ARE FIRMLY SECURED AND LOCKED IN PLACE.
 .4 CORRECT AS REQUIRED.
 .5 CLEANING AND PROTECTION

THROUGHOUT THE CONSTRUCTION PERIOD, PROTECT THE PIPE VALVES, EQUIPMENT, ETC. FROM INTRUSION BY RAIN, DIRT AND FOREIGN MATTER FROM DAMAGE OF ANY KIND. MAINTAIN WORK AND OPERATING AREAS NEAT, ORDERLY AND BROOM CLEAN CONDITION. PROJECT ALL SURFACES FROM DAMAGE. AT THE COMPLETION OF CHARGING AND BEFORE START-UP THOROUGHLY CLEAN UNDER, AROUND, BEHIND AND ON TOP OF ALL EQUIPMENT AND PIPING. REPLACE ANY MATERIAL, ANY DAMAGED WORK AND TOUCH UP PAINT ON EQUIPMENT WITHOUT ADDITIONAL COST, SO THAT THE ENTIRE INSTALLATION WILL BE LEFT IN NEW CONDITION, SATISFACTORY TO THE OWNER'S REPRESENTATIVE.

PENETRATIONS/BULKHEAD/FURRING/CHASES
 .1 THIS CONTRACTOR SHALL PROVIDE REQUIRED PENETRATIONS AND CONSTRUCTION OF BULKHEADS, FURRING, CHASES, AND FINISHES TO CONCEAL PIPING, WRING, AND DEVICES AS INTENDED BY THE DOCUMENTS HEREIN AND AS OTHERWISE INSTRUCTED BY THE ENGINEER.

consultant:



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client:



seal:



No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

project:

**CANADA GAMES
 AQUATIC CENTRE
 AHU RENEWALS**

SAINT JOHN, NB

drawing:

**MECHANICAL
 SPECIFICATION**

designed by: S.S.	scale: AS NOTED
drawn by: K.C.S.	date: NOVEMBER, 2023
checked by: M.G.	project no. 12-22-041

drawing no.
M-4

No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

project:
**CANADA GAMES
 AQUATIC CENTRE
 AHU RENEWALS**
 SAINT JOHN, NB

drawing:
**BASEMENT LEVEL -
 ELECTRICAL
 DEMOLITION AND
 NEW WORK**

designed by: J.A.T	scale: AS NOTED
drawn by: J.A.T.	date: NOVEMBER, 2023
checked by: R.R. - T.D.	project no. 12-22-041

drawing no.
E-1

EQUIPMENT CONNECTIONS AND CONTROLS

- MOTOR CONNECTION C/W UNFUSED DISCONNECT SWITCH.
- VARIABLE FREQUENCY DRIVE.
- SURFACE MOUNTED ELECTRICAL PANEL.
- FUSED DISCONNECT SWITCH.
- JUNCTION BOX.

GENERAL POWER

- 5-20R, 20A, 120V (T-SLOT) U-GROUND DUPLEX RECEPTACLE C/W GROUND FAULT CIRCUIT INTERRUPTER - STANDARD MOUNTING HEIGHT.

MISCELLANEOUS

- INDICATES CONDUIT.
- ELECTRICAL DRAWING NOTES.
- MECHANICAL SCHEDULE NOTES.

ABBREVIATIONS

- DEL - INDICATES DEVICE TO BE DELETED
- EMT - ELECTRICAL METALLIC TUBING
- EF - EXHAUST FAN
- EX - INDICATES EXISTING DEVICE TO REMAIN
- MCC - MOTOR CONTROL CENTER
- NTS - NOT TO SCALE
- WP - WEATHERPROOF
- MV - INDICATED EXISTING DEVICE TO BE MOVED
- REL - INDICATES DEVICE IN RELOCATED LOCATION.

DRAWING LIST

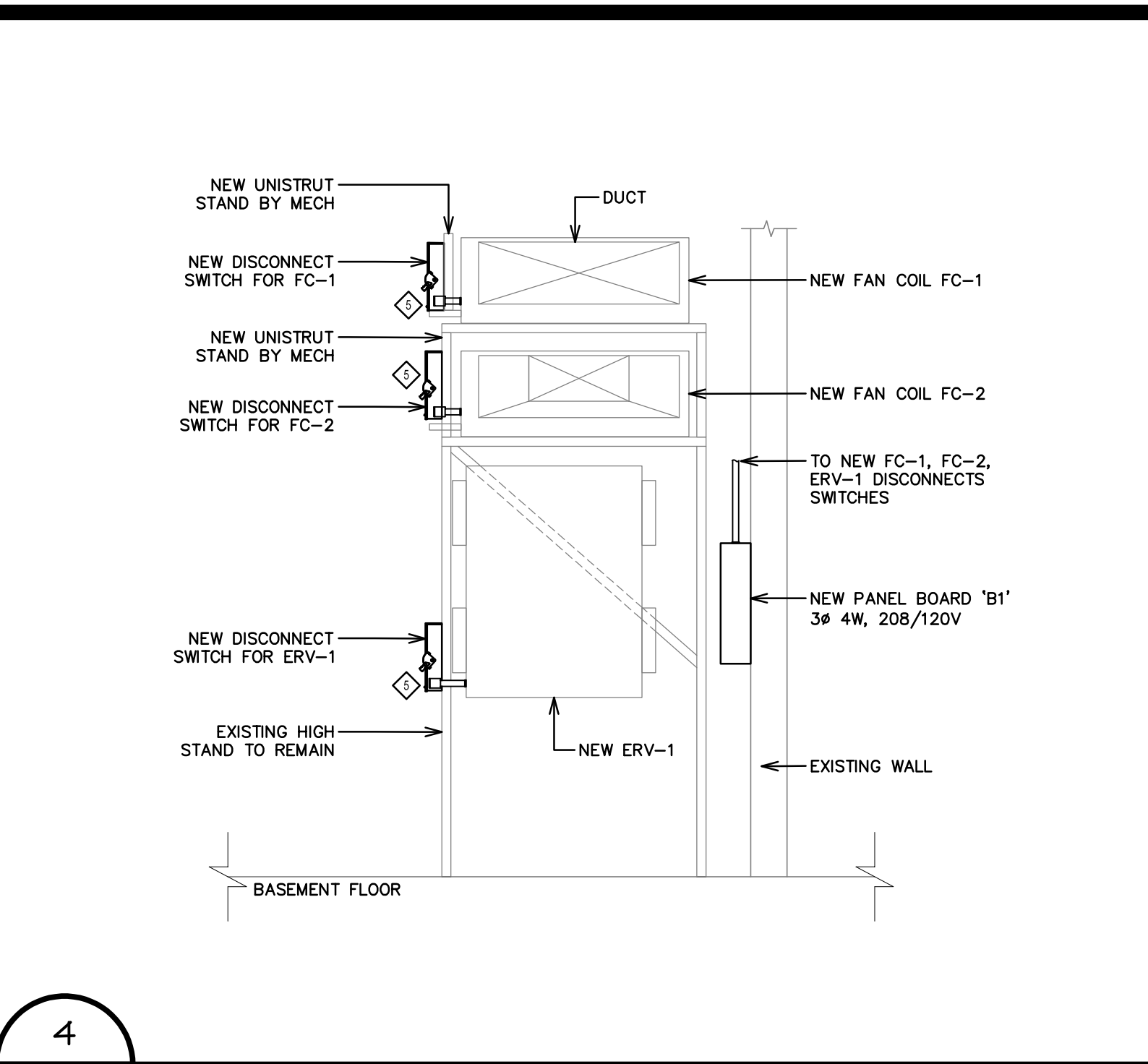
E-1	BASEMENT LEVEL ELECTRICAL DEMOLITION AND NEW WORK
E-2	LOBBY LEVEL AND POOL DECK ELECTRICAL DEMOLITION AND NEW WORK
E-3	PANEL SCHEDULES AND MECHANICAL SCHEDULES
E-4	SINGLE LINE DIAGRAM
E-5	ELECTRICAL SPECIFICATIONS

GENERAL NOTES:

- REFER TO MECHANICAL DRAWINGS (M-1, M-2, M-3, M-4, M-5) FOR MORE INFORMATION AND DETAILS ON NEW EQUIPMENT.
- CONTRACTOR SHALL INCLUDE FIRE STOPPING PATCHING AND PAINTING FOR ALL CONDUIT PENETRATIONS.
- COORDINATE ON SITE FOR EXACT MOUNTING LOCATION OF EQUIPMENT PRIOR TO INSTALLATION.
- COORDINATE ALL REMOVALS WITH MECHANICAL CONTRACTOR. TURN OVER ALL REMOVED EQUIPMENT TO OWNER FOR FIRST RIGHT OF REFUSAL. PROPERLY DISPOSE OF REFUSED MATERIAL. COORDINATE FOR ALL PATCHING AND PAINTING.

SPECIFIC NOTES:

- CONTRACTOR SHALL SUPPLY AND INSTALL ALL THE NECESSARY HARDWARE TO CONNECT THE NEW BREAKER 50A-3P INTO THE EXISTING SIEMENS ELECTRICAL PANEL 'BB' TYPE P1, BREAKER TO MATCH PANEL KA IC RATING.
- CONTRACTOR SHALL RUN A NEW 35mm EMT CONDUIT FROM THE EXISTING PANEL 'BB' TO THE NEW PANEL 'B1' WITH 4# RW90 + 1#B BOND. CONFIRM EXACT ROUTING ON SITE.
- MECHANICAL EQUIPMENT TO BE REMOVED. THIS CONTRACTOR SHALL REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE OF SUPPLY. REPAIR PENETRATIONS AS REQUIRED TO MATCH EXISTING CONDITIONS.
- CONTRACTOR SHALL REMOVE EXISTING 'MCC'. REMOVE ELECTRICAL FEEDER AND CONDUIT BACK TO SOURCE AND LABEL BREAKER 'SPARE'. REPAIR PENETRATIONS AS REQUIRED TO MATCH EXISTING CONDITIONS.
- LOCATIONS OF DISCONNECTS SWITCHES ARE SHOWN FOR DIAGRAMMATIC PURPOSES. CONTRACTOR TO COORDINATE ON SITE EXACT LOCATION OF DISCONNECTS ON THE EXISTING STAND OR ON THE WALL. PROVIDE ALL REQUIRED MOUNTING HARDWARE.
- CONTRACTOR SHALL DISCONNECT AND RECONNECT ALL F.A. DEVICES FROM REMOVED RF-5 FOR NEW RF-5 ALLOW FOR FIRE ALARM RELAY FOR SHUTDOWN AND DUCT SMOKE DETECTOR REPLACEMENT.
- SUPPLY AND INSTALL NEW DUCT SMOKE DETECTOR AND FIRE ALARM RELAY FOR ERV-1 TO SHUTDOWN THE UNIT WHEN THE DUCT SMOKE DETECTS SMOKE. PROVIDE PARTIAL VERIFICATION AND RECERTIFICATION FOR IMPACTED DEVICES.

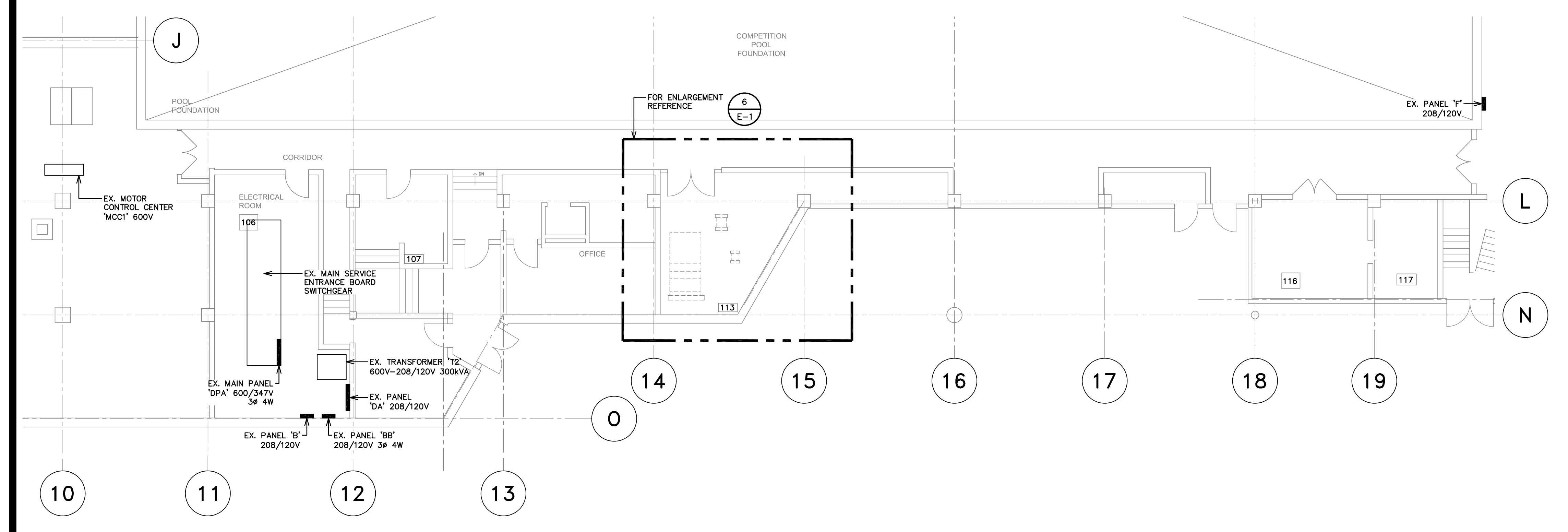


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E-1 SYMBOL LEGEND SCALE N.T.S.

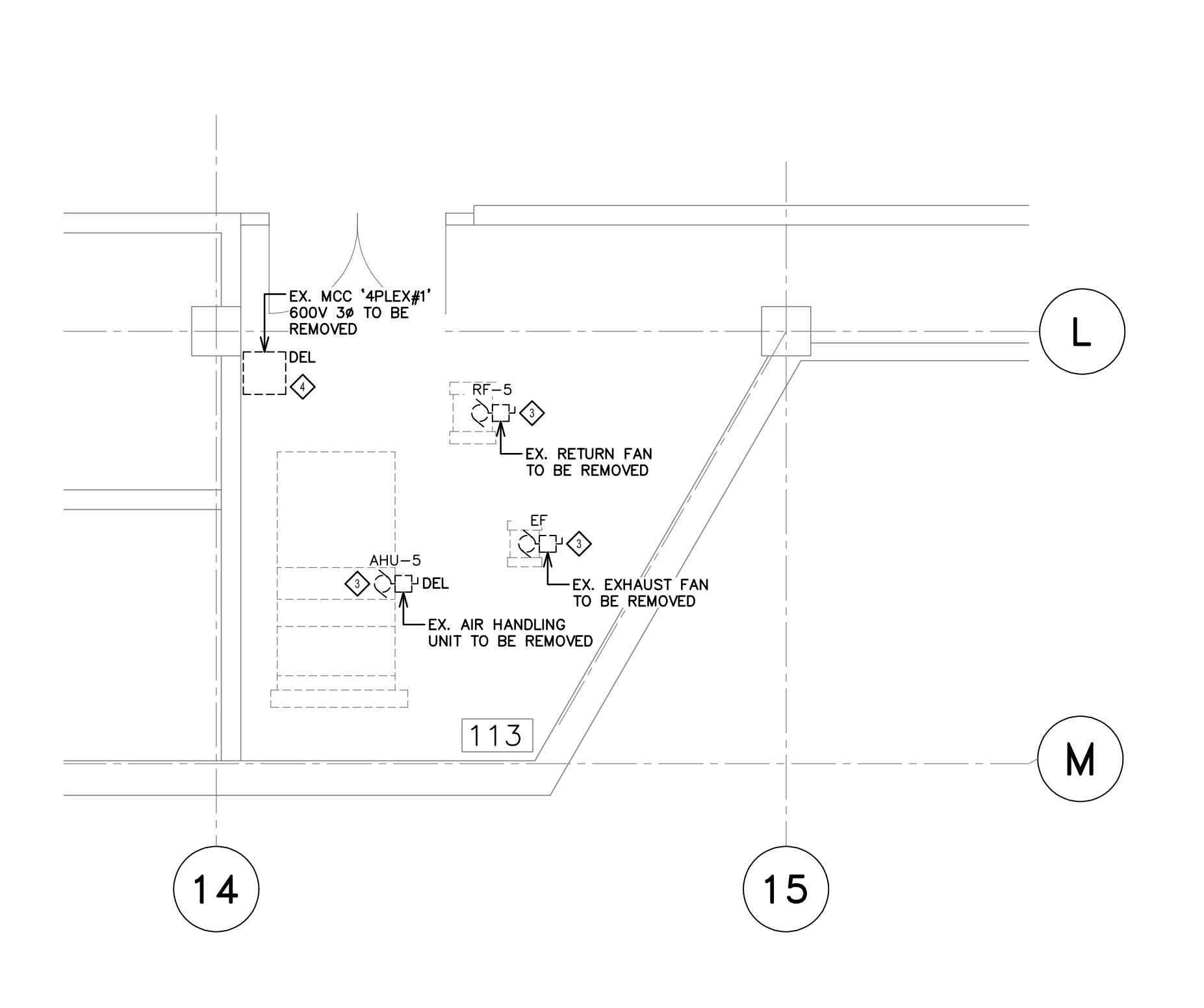
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E-1 DRAWING LIST SCALE N.T.S.

3
E-1 NOTES SCALE N.T.S.

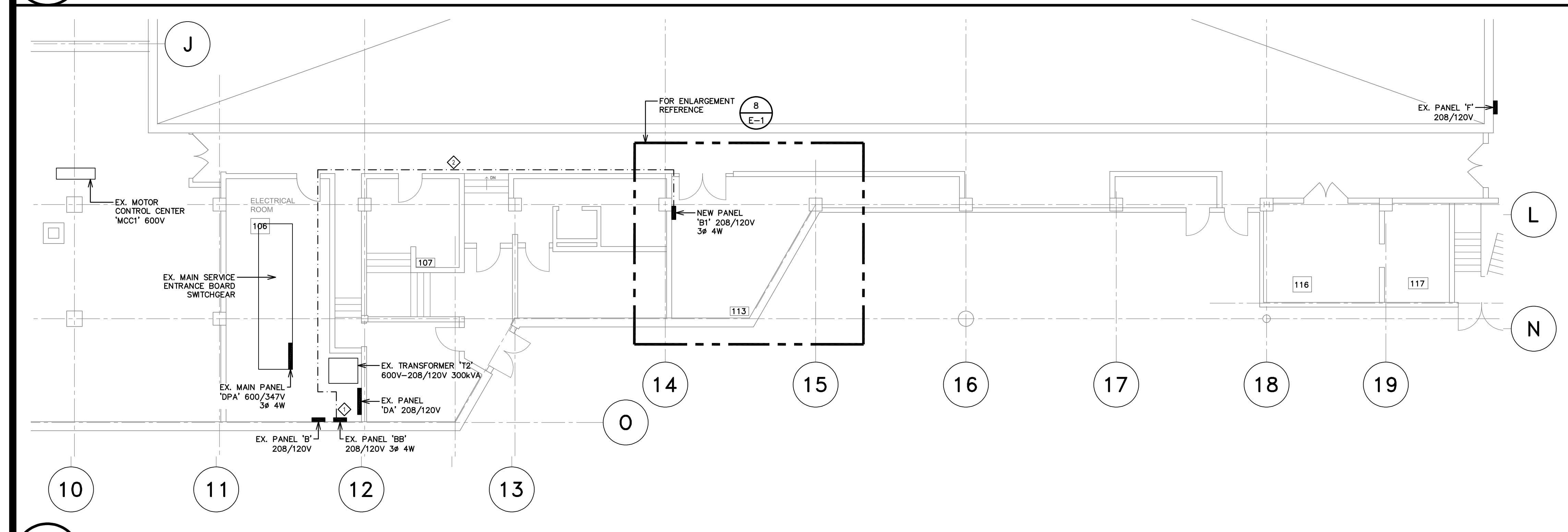
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E-1 DETAIL SCALE 1:50



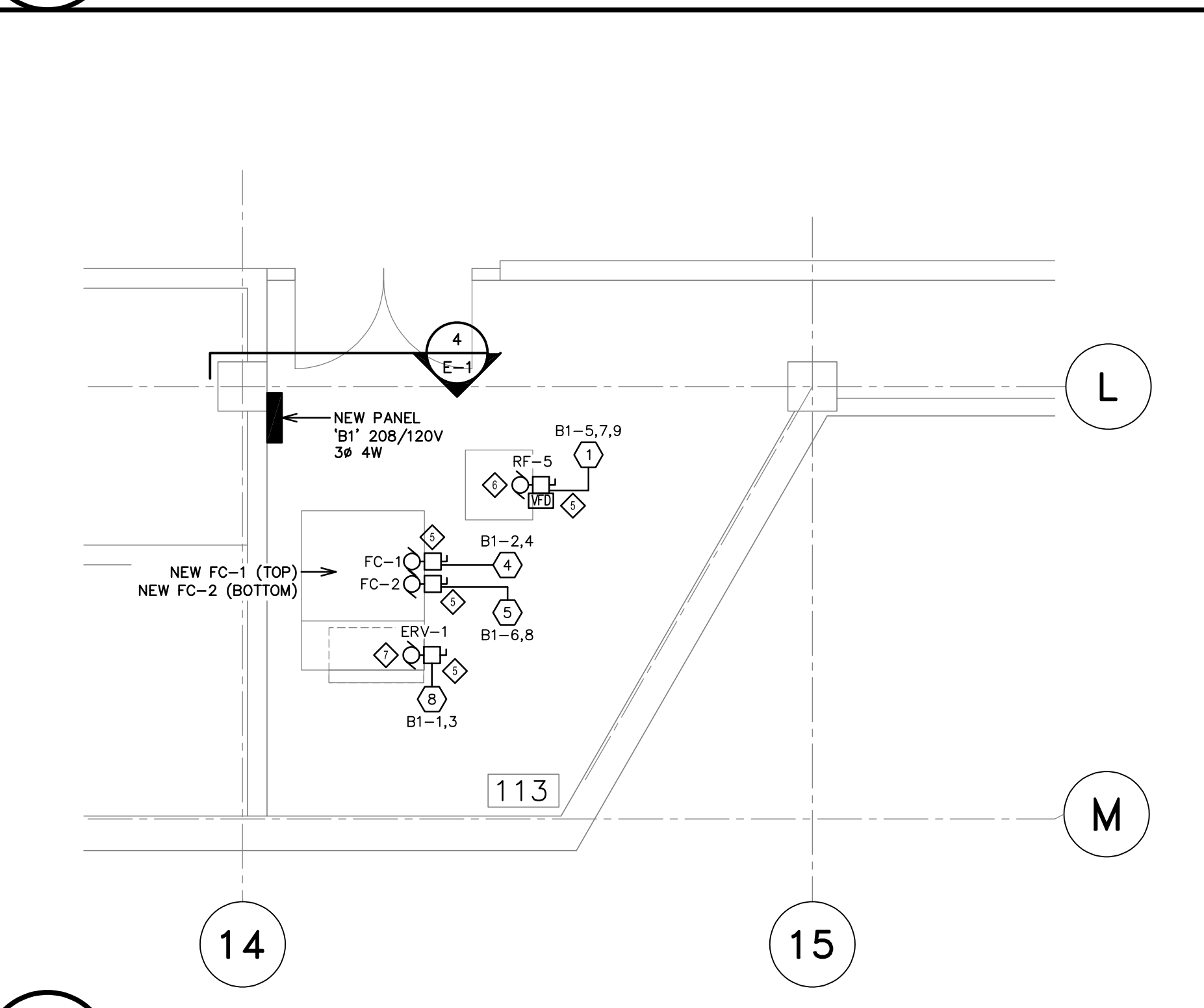
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E-1 PARTIAL BASEMENT - ELECTRICAL DEMO SCALE 1:100



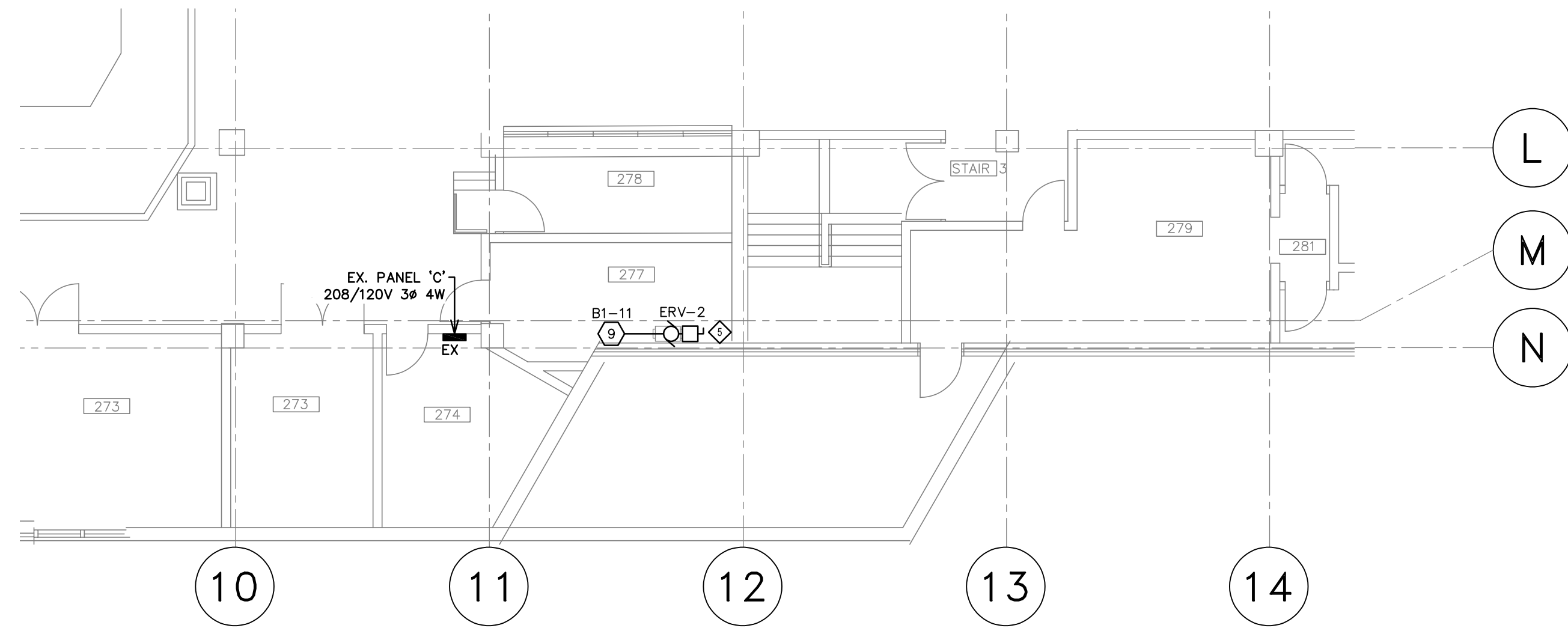
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E-1 ENLARGEMENT - DEMO SCALE 1:50



7
E-1 PARTIAL BASEMENT - ELECTRICAL NEW WORK SCALE 1:100



8
E-1 ENLARGEMENT - NEW WORK SCALE 1:50



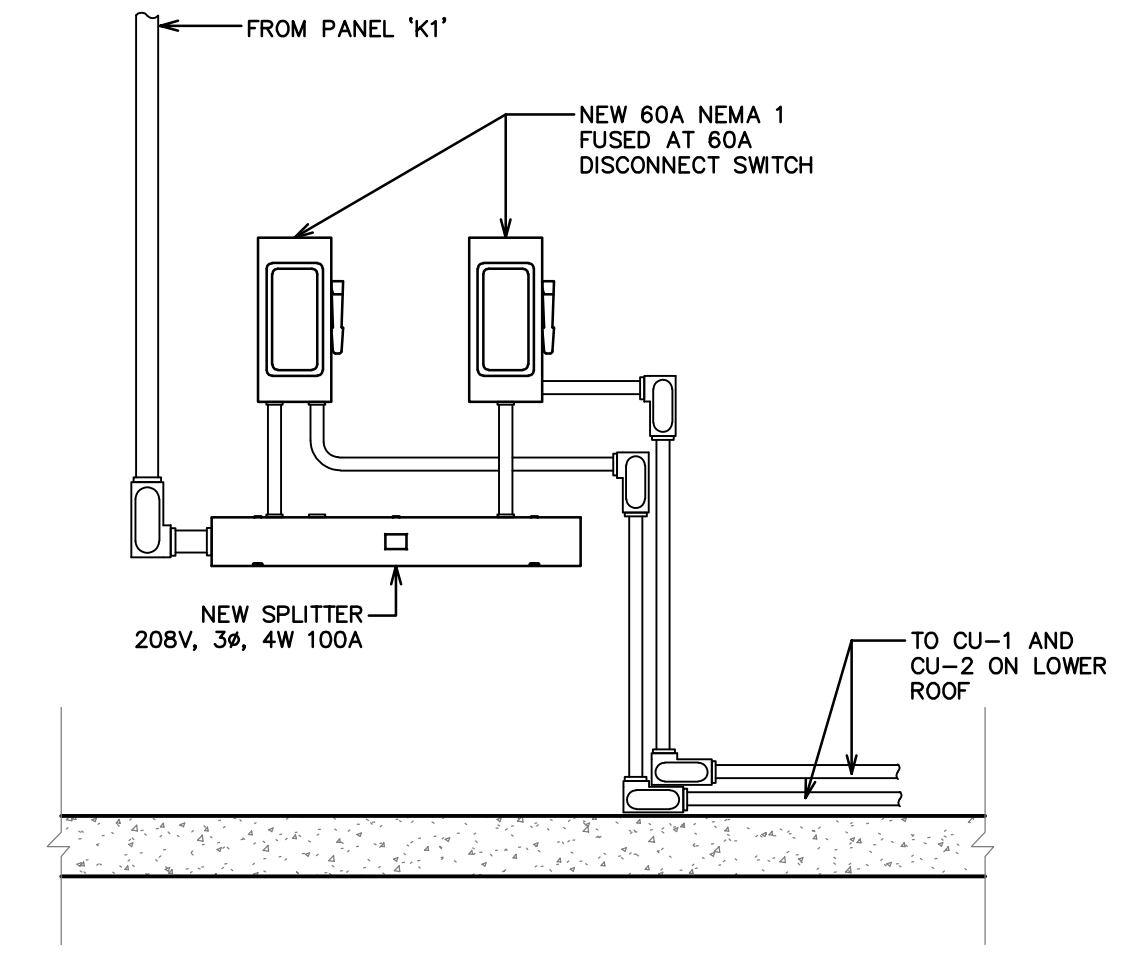
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E-2 PARTIAL POOL DECK - ELECTRICAL NEW WORK

SCALE 1:100

- GENERAL NOTES:
- REFER TO MECHANICAL DRAWINGS (M-1, M-2, M-3, M-4, M-5) FOR MORE INFORMATION AND DETAILS ON NEW EQUIPMENT.
 - CONTRACTOR SHALL INCLUDE FIRE STOPPING PATCHING AND PAINTING FOR ALL CONDUIT PENETRATIONS.
 - COORDINATE ON SITE FOR EXACT MOUNTING LOCATION OF EQUIPMENT PRIOR TO INSTALLATION.
 - COORDINATE ALL REMOVALS WITH MECHANICAL CONTRACTOR. TURN OVER ALL REMOVED EQUIPMENT TO OWNER FOR FIRST RIGHT OF REFUSAL. PROPERLY DISPOSE OF REFUSED MATERIAL. COORDINATE FOR ALL PATCHING AND PAINTING.
- SPECIFIC NOTES:
- CONTRACTOR SHALL REUSE THE EXISTING 100A-3P BREAKER LOCATED IN THE CIRCUITS K1-1,3,5.
 - CONTRACTOR SHALL RUN A NEW 41mm EMT CONDUIT FROM THE EXISTING PANEL 'K1' TO THE NEW SPLITTER WITH 3/2 RW90 + 1# BOND. CONFIRM EXACT ROUTING ON SITE.
 - MECHANICAL EQUIPMENT TO BE REMOVED. THIS CONTRACTOR SHALL REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE OF SUPPLY, REPAIR PENETRATIONS AS REQUIRED TO MATCH EXISTING CONDITIONS.
 - CONTRACTOR SHALL REMOVE EXISTING 15A-3P BREAKER LOCATED IN THE CIRCUITS K1-7,9,11.
 - CONTRACTOR SHALL RUN DOWN A NEW CONDUIT AND CONNECT THE NEW VENTILATOR UNIT (ERV-2) TO NEW PANEL 'B1' IN BASEMENT.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL THE NECESSARY HARDWARE TO CONNECT NEW BREAKERS 20A-2P AND 20A-1P INTO THE EXISTING ELECTRICAL PANEL 'K1'.
 - CONTRACTOR SHALL PROVIDE 'OPTION PRICE 'A' PRICE TO RELOCATE ALL ELECTRICAL EQUIPMENT IN THE DENOTED AREA. RELOCATED EQUIPMENT SHALL BE INSTALLED IN THE MECHANICAL ROOM AREA NOT AFFECTED BY ARCHITECTURAL RENOVATIONS TO DEMOLISH THE FOOT PRINT IN THE DENOTED AREA. COORDINATE ON SITE TO RELOCATE PANEL 'D' AND ALL ASSOCIATED WIRING. PROVIDE JUNCTION BOX IN CEILING SPACE AS REQUIRED TO EXTEND/REROUTE BRANCH CIRCUITS AND FEEDERS. RELOCATE ALL REQUIRED EQUIPMENT FOR REMAINING MECHANICAL SPACE SUCH AS TOGGLE SWITCH FOR LIGHTING CONTROL.
 - OPTION PRICE 'A' REMOVE EXISTING LIGHTING AND WIRING BACK TO SOURCE.
 - OPTION PRICE 'A' REMOVE EXISTING WATER COOLER POWER SUPPLY BACK TO SOURCE.

2
E-2 NOTES

SCALE N.T.S.



3
E-2 DETAIL

SCALE N.T.S.

consultant:

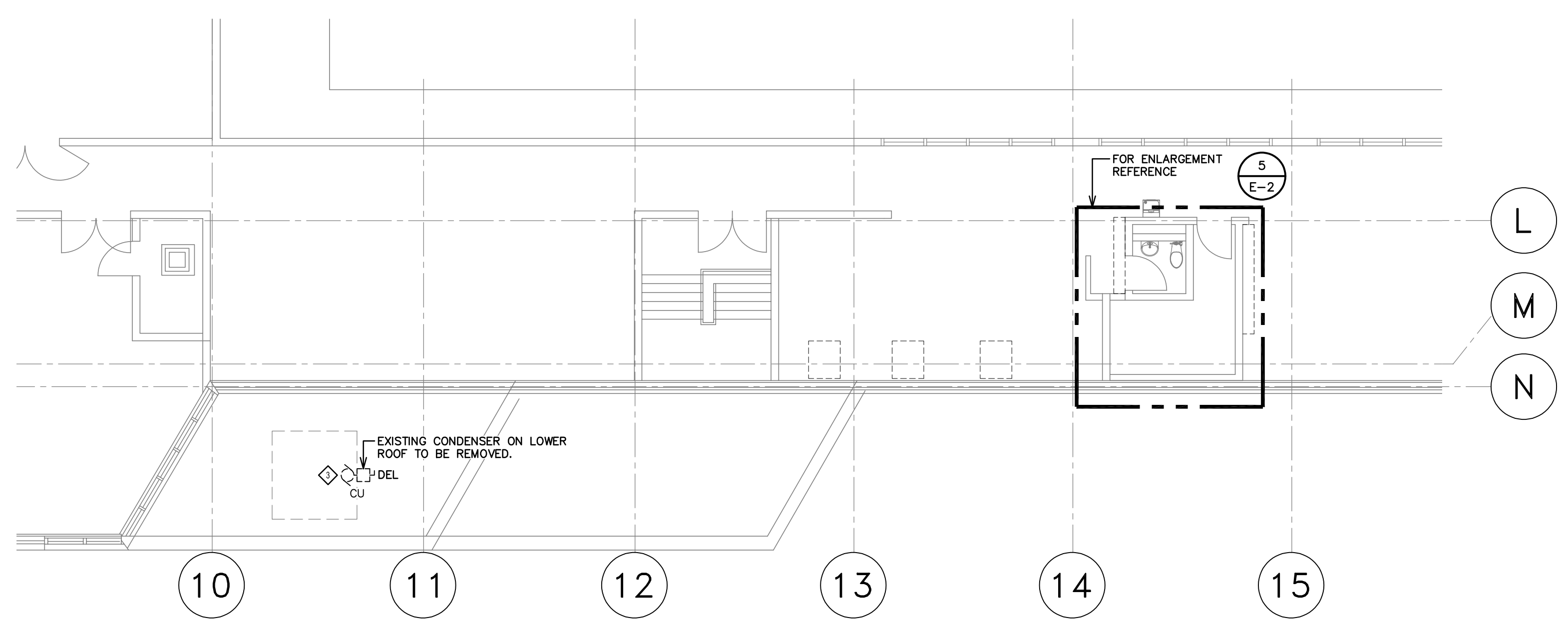
M&W Maricor

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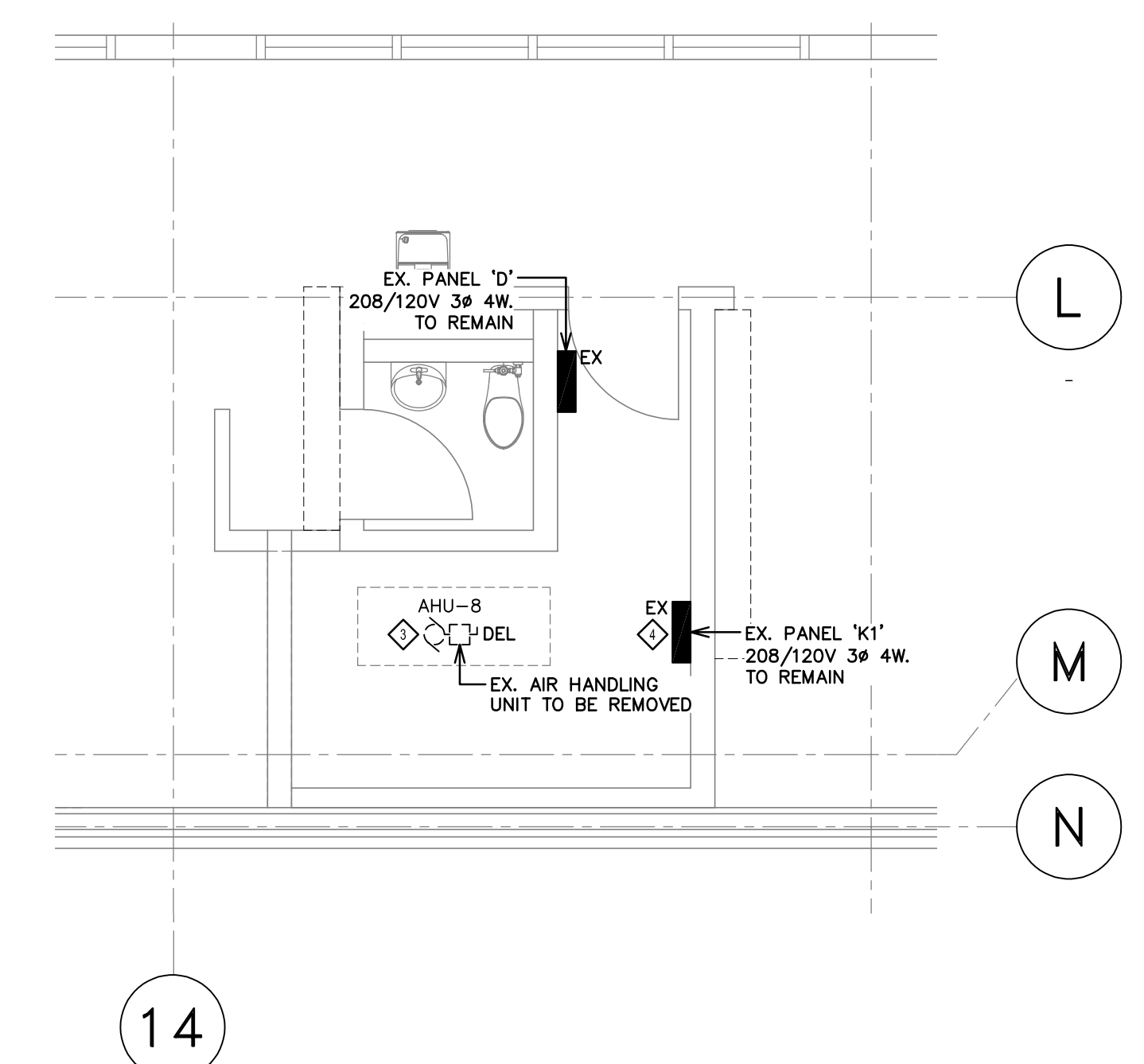
SAINT JOHN

KEYPLAN



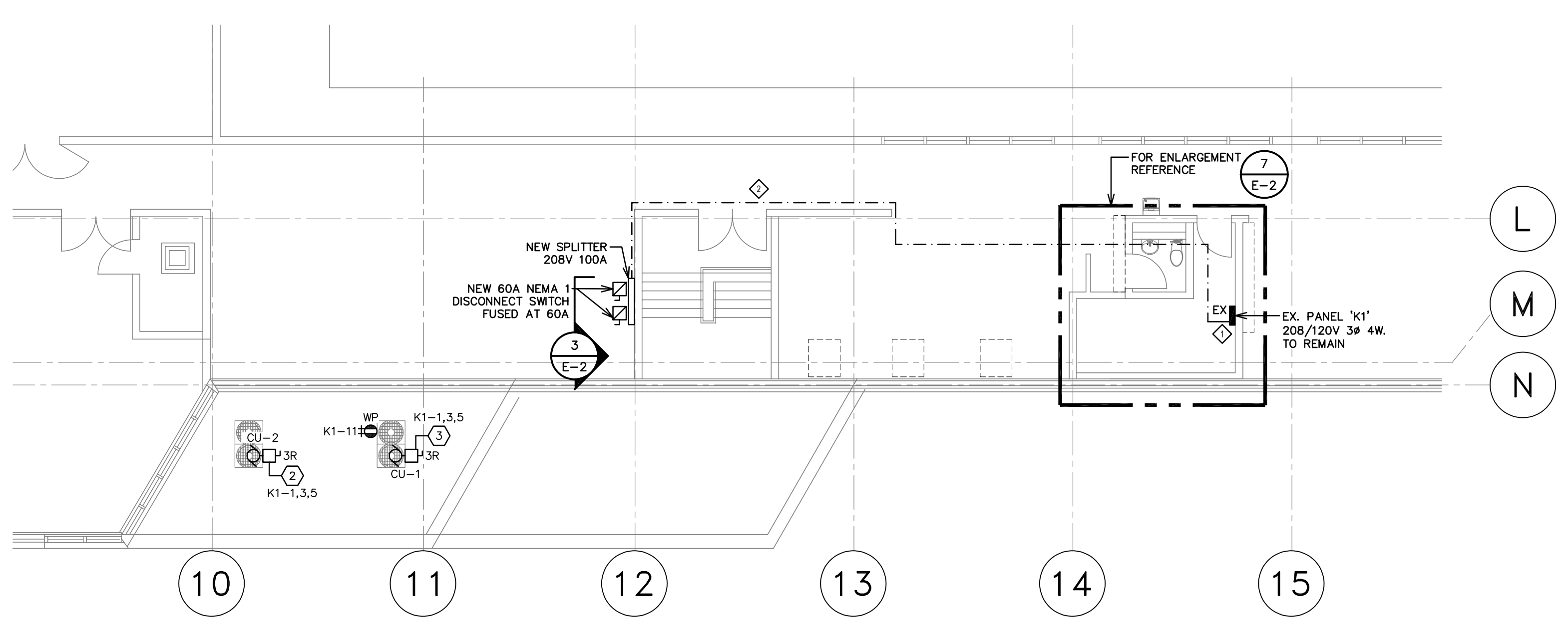
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E-2 PARTIAL LOBBY LEVEL - ELECTRICAL DEMO

SCALE 1:100



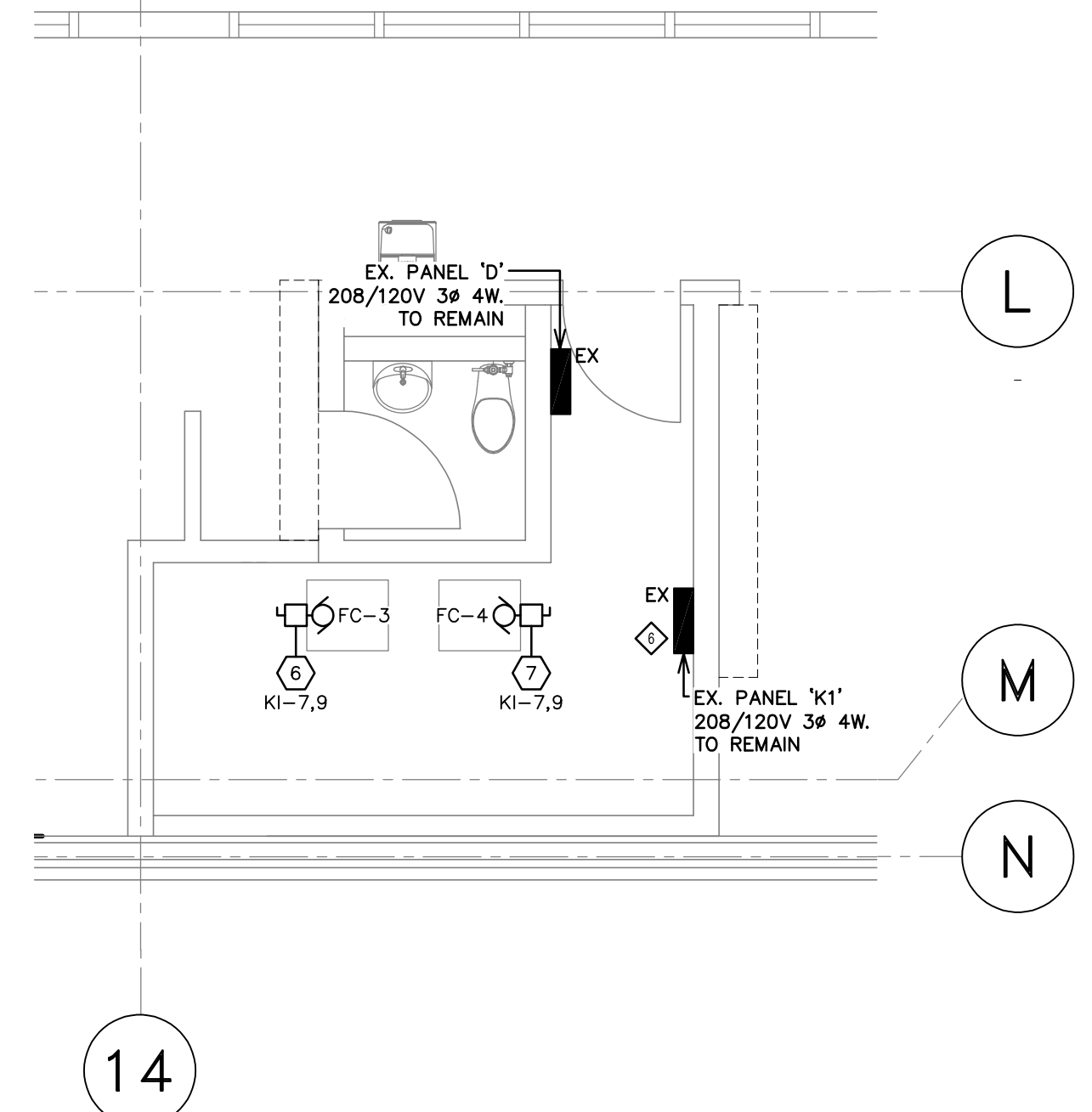
5
E-2 ENLARGEMENT - DEMO

SCALE 1:50



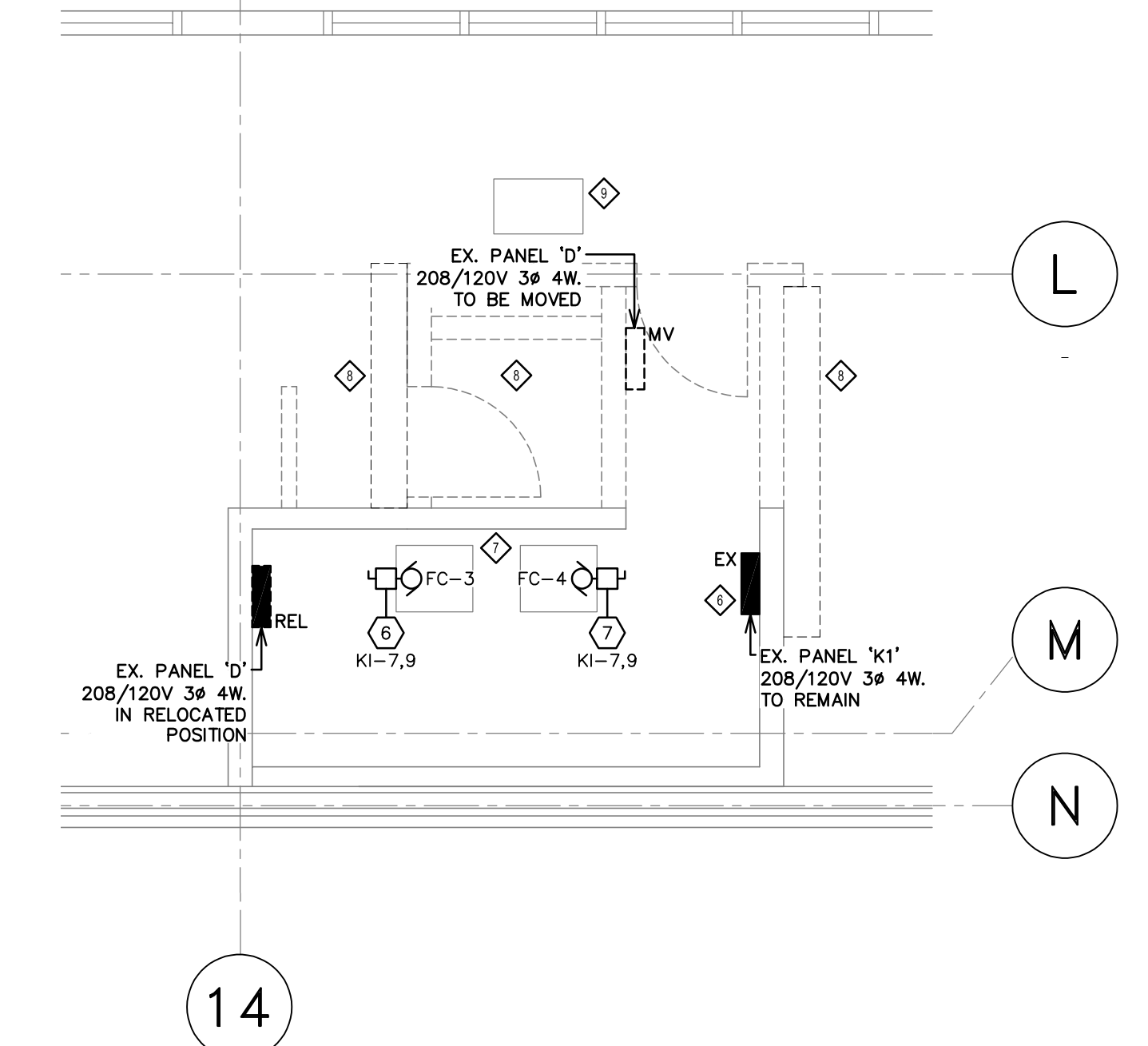
6
E-2 PARTIAL LOBBY LEVEL - ELECTRICAL NEW WORK

SCALE 1:100



7
E-2 ENLARGEMENT - NEW WORK

SCALE 1:50



8
E-2 OPTION PRICE 'A' ENLARGEMENT

SCALE 1:50

seal:

No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

project:

CANADA GAMES AQUATIC CENTRE AHU RENEWALS

SAINT JOHN, NB

drawing:

LOBBY LEVEL AND POOL DECK - ELECTRICAL DEMOLITION AND NEW WORK

designed by:	scale:
J.A.T	AS NOTED
drawn by:	date:
J.A.T.	NOVEMBER, 2023
checked by:	project no.:
R.R. - T.D.	12-22-041

drawing no.:

E-2

PANEL VOLTAGE: 208				PANEL TYPE: SIEMENS P1						PANEL 'BB'			
CCT	DESCRIPTION	WATTAGE			BRKR #	BRKR	WATTAGE			DESCRIPTION	CCT		
		A	B	C			A	B	C				
1		4612									2		
3	EX. UV LEISURE	4612			60	A	488	488			4		
5		4612				B	488	488			6		
7	EX. TOT. CHLORINATOR	1536			20	A	488				8		
9	EX. ADULT CHLORINATOR	1536			20	B	488				10		
11		821				C	488				12		
13	NEW PANEL 'B1'	1769			50	A	488				14		
15		1454				B	488				16		
17						C	488				18		
19					15	A	100				20		
21					15	B	100				22		
23					15	C	100				24		
25					15	A					26		
27					15	B					28		
29					15	C					30		
31					15	A					32		
33					20	B					34		
35						C					36		
37					15	A					38		
39					15	B					40		
41					15	C					42		
PHASE LOADS		7917	7602	5433			1564	1564	1564				
TOTAL PHASE LOADS		9481			9166			6997					
TOTAL CONNECTED LOAD		25644											
TOTAL AMPERAGE		71.27 AMPS											

PANEL VOLTAGE: 208				PANEL TYPE: WESTINGHOUSE POW-R-LINE C PRL1						EXISTING PANEL 'K1'			
CCT	DESCRIPTION	WATTAGE			BRKR #	BRKR	WATTAGE			DESCRIPTION	CCT		
		A	B	C			A	B	C				
1	NEW CONDENSER UNITS CU-1, CU-2	7878			3	*100	A	15	11		EX. REC.	2	
3		7878					B	15	11		EX. REC.	4	
5							C	15	11		EX. REC.	6	
7	NEW FAN COILS FC-3 FC-4	937			2	20	A	15	11		EX. REC.	8	
9		937					B	15	11		EX. DRINKING FOUNTAIN	10	
11	NEW RECEPTACLE				1	20	C	15	11		EX. REC. 103	12	
13	EX. OFFICE 102 REC.				1	15	A	15	11		EX. REC. 103	14	
15	EX. OFFICE 102 LIGHT.				1	15	B	15	11		EX. FLOOR OUTLET	16	
17	EX. RECEPT.				1	15	C	15	11		EX. REC. 103	18	
19	EX. RECEPT.				1	15	A	15	11		EX. CONTROL DESK	20	
21	EX. RECEPT.				1	15	B	20	11		EX. DEDICATED OUTLET	22	
23	EX. RECEPT.				1	15	C	20	11		EX. DEDICATED OUTLET	24	
25	EX. RECEPT.				1	15	A	20	11		EX. DEDICATED OUTLET	26	
27	EX. RECEPT.				1	15	B	20	11		EX. DEDICATED OUTLET	28	
29	EX. RECEPT.				1	15	C	20	11		EX. DEDICATED OUTLET	30	
31	EX. RECEPT.				1	15	A	20	11		EX. DEDICATED OUTLET	32	
33	EX. RECEPT.				1	15	B	20	11		EX. DEDICATED OUTLET	34	
35	EX. RECEPT.				1	15	C	20	11		EX. DEDICATED OUTLET	36	
37	EX. RECEPT.				1	15	A	20	11		EX. DEDICATED OUTLET	38	
39	CONTROLS				1	15	B	20	11		EX. DEDICATED OUTLET	40	
41	EX. SPARE				1	15	C	20	11		EX. DEDICATED OUTLET	42	
43	EX. LITE TRUSS				1	20	A	20	11		EX. DEDICATED OUTLET	44	
45	EX. LITE TRUSS				1	20	B	20	11		EX. DEDICATED OUTLET	46	
47	EX. LITE TRUSS				1	20	C	20	11		EX. DEDICATED OUTLET	48	
49	LIGHTING				1	20	A	20	11		EX. DEDICATED OUTLET	50	
51					2	20	B	20	11		EX. DEDICATED OUTLET	52	
53	EX. TREADMILL 16A				2	20	C	20	11		EX. DEDICATED OUTLET	54	
55	EX. LIGHTS				1	15	A	20	12		EX. TREADMILL 16A	56	
57	EX. RECEPT.				1	15	B	20	12		EX. TREADMILL 16A	58	
59	EX. EMERGENCY LIGHTS				1	15	C	15	11		EX. RECEPT. FAST WALL	60	
61	EX. RECEPT.				1	20	A	15	11		EX. POT. LIGHTS	62	
63	EX. RECEPT.				1	20	B	15	11		EX. POT. LIGHTS	64	
65	EX. RECEPT.				1	20	C	15	11		EX. POT. LIGHTS	66	
67	EX. RECEPT.				1	20	A	15	11		EX. POT. LIGHTS	68	
69	EX. POT. LIGHTS				1	15	B	15	11		EX. POT. LIGHTS	70	
71	EX. POT. LIGHTS				1	15	C	15	11		EX. POT. LIGHTS	72	
PHASE LOADS		8815	8815	8128			###	###	###				
TOTAL PHASE LOADS		8815			8815			8128					
TOTAL CONNECTED LOAD		25758											
TOTAL AMPERAGE		71.58 AMPS											

* =DENOTES EXISTING BREAKER TO BE REUSED IN NEW EQUIPMENT.

PANEL VOLTAGE: 208				PANEL TYPE:						NEW PANEL 'B1'			
CCT	DESCRIPTION	WATTAGE			BRKR #	BRKR	WATTAGE			DESCRIPTION	CCT		
		A	B	C			A	B	C				
1	ENERGY RECOVERY VENTILATOR ERV-1	718			2	15	A	15	2	315		FAN COIL FC-1	2
3		718					B	15	2	315		FAN COIL FC-1	4
5							C	15	2	315		FAN COIL FC-1	6
7	RETURN FAN RF-5	421			3	15	A	15	2	315		FAN COIL FC-2	8
9		421					B	15	2	315		FAN COIL FC-2	10
11	VENTILATOR UNIT ERV-2				1	15	C	15	2			SPARE	12
13	SPARE				1	15	A						14
15							B						16
17							C						18
PHASE LOADS		1139	1139	506			630	315	315				
TOTAL PHASE LOADS		1769			1454			821					
TOTAL CONNECTED LOAD		4044											
TOTAL AMPERAGE		11.24 AMPS											

consultant:

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client:

SAINT JOHN

KEYPLAN

seal:

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
M7172
Timothy S. Dulebo
2011/23
Date
INGENIEUR IMMATRICULE

No.	date	description
1	NOV. 2023	ISSUED FOR TENDER
REVISION		

MECHANICAL SCHEDULE												
NO.	ITEM	DESCRIPTION	LOCATION	LOAD	VOLTS	#	BREAKER	FEEDER	DISCONNECT	STARTER	PANEL	NOTES
①	RF-5	RETURN FAN	WORK SHOP ROOM BASEMENT	0.75HP	208	3	15A-3P	3#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	VFD	B1	1
②	CU-1	OUTDOOR CONDENSING UNIT	LOWER ROOF	11817W	208	3	60A AF	3#6 RW90 + 1#8 BOND IN 35mmC	60A NEMA 3R	INT	K1	2
③	CU-2	OUTDOOR CONDENSING UNIT	LOWER ROOF	11817W	208	3	60A AF	3#6 RW90 + 1#8 BOND IN 35mmC	60A NEMA 3R	INT	K1	2
④	FC-1	INDOOR FAN COIL UNIT	WORK SHOP ROOM BASEMENT	630W	208	1	15A-2P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	B1	-
⑤	FC-2	INDOOR FAN COIL UNIT	WORK SHOP ROOM BASEMENT	630W	208	1	15A-2P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	B1	-
⑥	FC-3	INDOOR MULTI-POSITION AIR HANDLER	MECHANICAL ROOM FITNESS CENTRE	937W	208	1	20A-2P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	K1	3
⑦	FC-4	INDOOR MULTI-POSITION AIR HANDLER	MECHANICAL ROOM FITNESS CENTRE	937W	208	1	20A-2P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	K1	3
⑧	ERV-1	ENERGY RECOVERY VENTILATOR UNIT	WORK SHOP ROOM BASEMENT	0.75HP	208	1	20A-2P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	B1	-
⑨	ERV-2	ENERGY RECOVERY VENTILATOR UNIT	ROOM 277 POOL DECK	85W	120	1	15A-1P	2#12 RW90 + 1#12 BOND IN 21mmC	30A NEMA 1	INT	C	-

NOTES:

- WIRING THROUGH VFD BY ELECTRICAL, CONTROLS BY MECHANICAL, DISCONNECTION OF THE MOTOR MUST BE THROUGH THE AUXILIARY CONTACTS INTERLOCKED WITH VFD.
- STARTING METHOD WITH INVERTER CONTROL INTEGRAL TO UNIT.
- WITH VARIABLE SPEED MOTOR INTEGRAL TO UNIT.

STARTER LEGEND

MS= MANUAL TYPE MOTOR STARTER c/w O/L PROTECTION
HOA= MAGNETIC STARTER C/W HAND/OFF/AUTO SELECTOR SWITCH
VFD= VARIABLE FREQUENCY DRIVE, SUPPLIED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR
INT= INTEGRAL TO UNIT

project:

CANADA GAMES AQUATIC CENTRE AHU RENEWALS

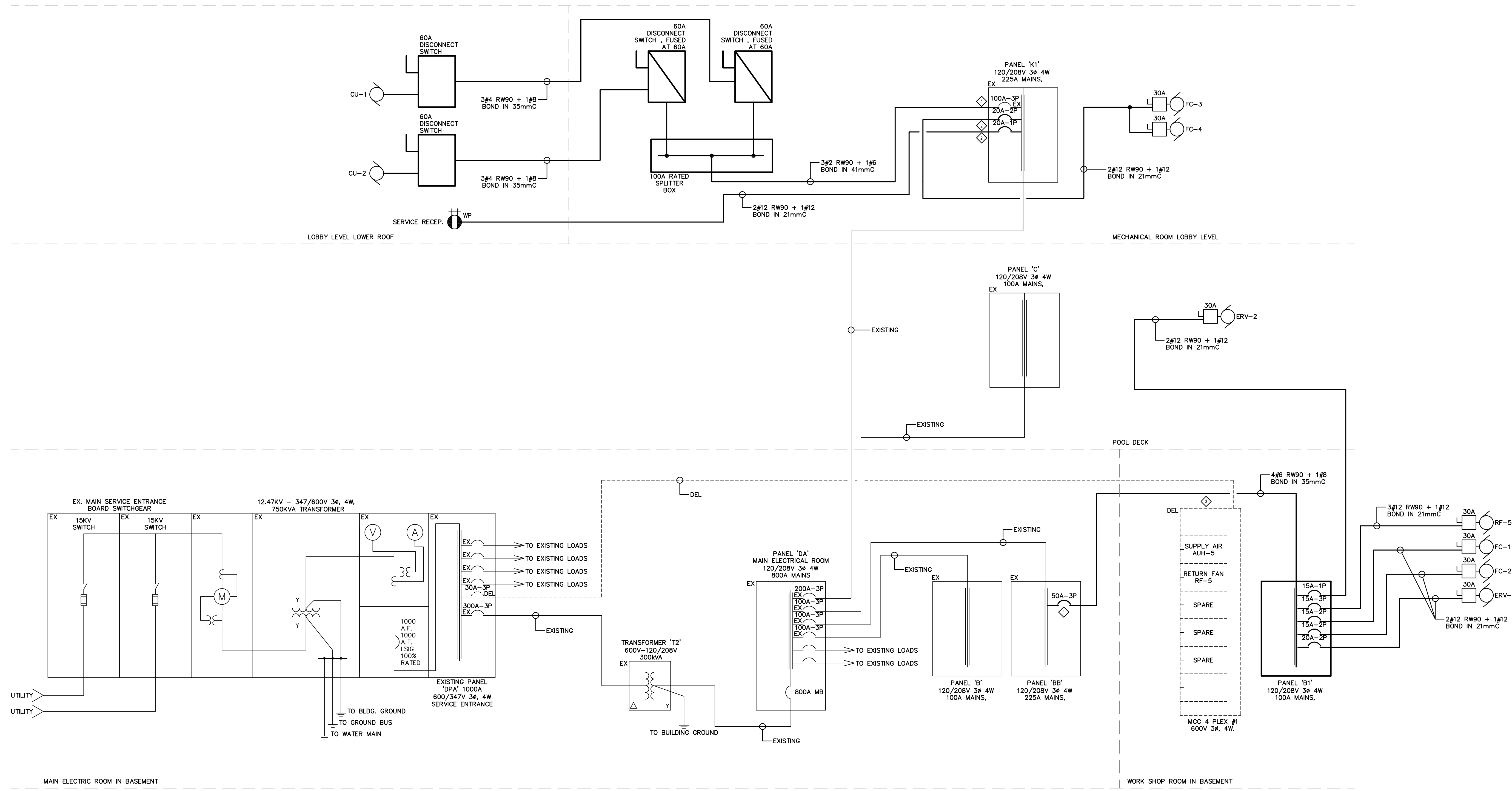
SAINT JOHN, NB

drawing:

PANEL SCHEDULES AND MECHANICAL SCHEDULES

designed by: J.A.T	scale: AS NOTED
drawn by: J.A.T.	date: NOVEMBER, 2023
checked by: R.R. - T.D.	project no. 12-22-041

drawing no.
E-3



- SPECIFIC NOTES:**
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL THE NECESSARY HARDWARE TO CONNECT THE NEW BREAKER 50A-3P INTO THE EXISTING SIEMENS ELECTRICAL PANEL 'BB' TYPE P1, BREAKER TO MATCH PANEL KA IC RATING.
 - CONTRACTOR SHALL SUPPLY AND INSTALL ALL THE NECESSARY HARDWARE TO CONNECT NEW BREAKERS 20A-2P AND 20A-1P INTO THE EXISTING ELECTRICAL PANEL 'K1'.
 - CONTRACTOR SHALL REMOVE EXISTING 'MCC' IN THE BASEMENT. REMOVE ELECTRICAL FEEDER AND CONDUIT BACK TO SOURCE AND LABEL BREAKER "SPARE." REPAIR PENETRATIONS AS REQUIRED TO MATCH EXISTING CONDITIONS.
 - CONTRACTOR SHALL REUSE THE EXISTING 100A-3P BREAKER LOCATED IN THE CIRCUITS K1-1,3,5.

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project:
**CANADA GAMES
 AQUATIC CENTRE
 AHU RENEWALS**
 SAINT JOHN, NB

drawing:
**SINGLE LINE
 DIAGRAM**

designed by: J.A.T	scale: AS NOTED
drawn by: J.A.T.	date: NOVEMBER, 2023
checked by: R.R. - T.D.	project no. 12-22-041

1. GENERAL REQUIREMENTS

- 1.1. THESE ELECTRICAL SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH: GENERAL REQUIREMENTS, ARCHITECTURAL SPECIFICATIONS, ELECTRICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.
1.2. SCOPE OF WORK
1.2.1. THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR THE INSTALLATION OF COMPLETELY FINISHED, TESTED, BALANCED AND PROPERLY OPERATING ELECTRICAL SYSTEMS AS SPECIFIED HEREIN AND AS INDICATED ON DRAWINGS. THE INTENT IS TO PROVIDE FOR FINISHED WORK COMPLETE, IN ALL ESSENTIALS AS CALLED FOR BY THE CONTRACT DOCUMENTS, IN A MANNER CONSISTENT WITH GOOD WORKMANSHIP.
1.2.2. THE WORK INCLUDES, BUT IS NOT LIMITED TO:
1.2.2.1. WIRING OF RECEPTACLES BY OTHERS
1.2.2.2. BRANCH CIRCUIT WIRING
1.2.2.3. WIRING DEVICES
1.3. CODES AND STANDARDS
1.3.1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CSA C22.1-21, CANADIAN ELECTRICAL CODE, PART 1, (2021 EDITION) AND THE NATIONAL BUILDING CODE OF CANADA 2015.
1.3.2. CONTRACTOR MUST BE FAMILIAR WITH AND ADHERE TO THE REQUIREMENTS OF CAN Z462-15 AT ALL TIMES.
1.4. PERMIT AND BY-LAWS
1.4.1. OBTAIN PERMITS AND CERTIFICATIONS PRIOR TO START OF WORK. SUBMIT DRAWINGS TO INSPECTION AUTHORITY. PAY ALL ASSOCIATED FEES.
1.4.2. ALL WORK PERFORMED BY THIS CONTRACTOR SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES, LOCAL BY-LAWS, STANDARDS AND THEIR AMENDMENTS.
1.5. SITE VISIT
1.5.1. PRIOR TO TENDER CLOSE, THIS CONTRACTOR SHALL VISIT SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS. NO ALLOWANCE SHALL BE MADE FOR PROBLEMS REVEALED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS THAT COULD REASONABLY HAVE BEEN ASCERTAINED BY A CAREFUL INSPECTION.
1.6. COORDINATION OF WORK
1.6.1. THIS CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE GENERAL CONTRACTOR AND WITH ALL OTHER SUB-CONTRACTORS.
1.6.2. SCHEDULE AND PERFORM ALL WORK IN EXISTING PREMISES WITH PROJECT MANAGER SO AS NOT TO INTERFERE WITH NORMAL OPERATIONS OF BUILDING OCCUPANTS. ANY DISRUPTIVE WORK SHALL BE SCHEDULED OUTSIDE OPERATING HOURS AND AS APPROVED BY OWNER.
1.6.3. COOPERATE WITH OTHER TRADES, OWNER AND OWNER'S FORCES IN CARRYING OUT WORK. REPORT ANY DEFICIENCIES OR DEFECTS IN WORK PERFORMED BY OTHERS THAT AFFECT THIS CONTRACT'S WORK TO ENGINEER IMMEDIATELY.
1.6.4. WHERE WORK IS CARRIED OUT IN EXISTING PREMISES, NOTIFY PROJECT MANAGER AT LEAST 72 HOURS IN ADVANCE OF ANY NECESSARY INTERRUPTIONS IN SERVICES OR ACCESS.
1.7. GUARANTEE
1.7.1. THIS CONTRACTOR SHALL PROVIDE, IN WRITING, A GUARANTEE COVERING ALL LABOR AND MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. REPAIR AND MAKE GOOD ALL DEFECTS DURING THE GUARANTEE PERIOD, INCLUDING ANY DAMAGE TO BUILDING INCURRED AS A RESULT OF FAILURE OF ELECTRICAL WORK AND/OR EQUIPMENT INSTALLED.
1.8. DRAWINGS
1.8.1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF ALL WALLS AND OPENINGS. MAINTAIN ONE SET OF PLANS ON WHICH SHALL BE CLEARLY NOTED ALL CHANGES OR DEVIATIONS FROM THE CONTRACT, AND SUBMIT THEM AT THE END OF THE PROJECT MARKED "AS-BUILT", SIGNED AND DATED BY THIS CONTRACTOR. THESE DRAWINGS SHALL BE KEPT ON SITE DURING CONSTRUCTION, UPDATED, AND MADE AVAILABLE FOR REVIEW BY ENGINEER, IF REQUESTED.
1.8.2. REVIEW MECHANICAL DRAWING POWER TO ALL MECHANICAL EQUIPMENT. SEE MECHANICAL EQUIPMENT SCHEDULE, CONFIRM EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR. REPORT ANY DISCREPANCY TO ENGINEER FOR DIRECTIVE PRIOR TO START OF WORK. COORDINATE AND ASSIST MECHANICAL CONTRACTOR WITH TESTING OF MECHANICAL EQUIPMENT.
1.9. EXTRA WORK
1.9.1. NO ALLOWANCE SHALL BE MADE BEYOND CONTRACT PRICE UNLESS CONTRACTOR RECEIVES SIGNED APPROVAL IN ACCORDANCE WITH GENERAL CONDITIONS.
1.10. SHOP DRAWINGS
1.10.1. THIS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE GENERAL REQUIREMENTS. WORK SHALL NOT PROCEED AND EQUIPMENT/MATERIAL SHALL NOT BE ORDERED UNTIL THE SHOP DRAWINGS HAVE BEEN RETURNED, STAMPED AND SIGNED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION OF CHECKING THE DRAWINGS THEMSELVES OR FURNISHING THE MATERIALS SPECIFIED.
1.10.2. WHEN SUBMITTED, SHOP DRAWING MUST BEAR CONTRACTOR'S STAMP REPRESENTING THAT THEY HAVE DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, MATERIALS, CATALOGUE NUMBERS AND SIMILAR DATA AND THAT THEY HAVE CHECKED AND COORDINATED EACH SHOP DRAWING WITH REQUIREMENTS OF WORK AS INDICATED ON DRAWINGS AND SPECIFICATIONS.
1.10.3. SHOP DRAWINGS REQUIRED FOR: PANELBOARDS, MOTOR STARTERS, DISCONNECT SWITCHES AND WIRING DEVICES. INFORMATION REQUIRED: MANUFACTURER, MODEL, DIMENSIONS, CONSTRUCTION DETAILS, ACCESSORIES, INSTALLATION DETAILS, CAPACITIES, PERFORMANCE DATA, FINISHES, INCLUDE WIRING SINGLE LINE AND SCHEMATIC DIAGRAMS WHERE APPLICABLE.
1.10.4. ALL MATERIAL SUPPLIED SHALL BE NEW AND CARRY C.S.A. CERTIFICATION OR OTHER CERTIFICATIONS APPROVED BY LOCAL INSPECTION AUTHORITY.
1.11. CLEANING UP
1.11.1. THIS CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE NEAT, CLEAN AND FREE FROM ACCUMULATION OF WASTE MATERIALS.
1.12. NAMEPLATES
1.12.1. SUPPLY AND INSTALL ENGRAVED 1/8"(0.125mm) THICK PLASTIC LAMACOD NAMEPLATES, WHITE FACE-BLACK CORE, FOR ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO: STARTERS, DISCONNECT SWITCHES, PANELBOARDS, AND SPLITTERS. ATTACH WITH SELF-TAPPING SCREWS IN CONSPICUOUS LOCATIONS. WORDING SHALL INDICATE DEVICE NAME, VOLTAGE, PHASE, AMPERAGE AND POWER SOURCE.
1.12.2. PROVIDE LAMICOD NAMEPLATES FOR ALL RECEPTACLES AND SWITCHES INDICATING PANEL AND CIRCUIT NUMBERS.
1.13. DISPOSALS
1.13.1. ADVISE OWNER OF AVAILABILITY OF SURPLUS MATERIAL. TURN OVER ITEMS REQUESTED BY OWNER AND DISPOSE OF REMAINDER IN ACCORDANCE WITH ALL BY LAWS AND LOCAL AUTHORITIES HAVING JURISDICTION.
1.14. DEMOLITION
1.14.1. DISCONNECT AND REMOVE ALL DEVICES, COMPONENTS, EQUIPMENT AND EXPOSED RACEWAYS, WIRES AND CABLES, BACK TO SOURCE OF SUPPLY, MADE REDUNDANT BY THIS WORK INCLUDING THOSE WITHIN IN-FLOOR DUCTS AND SUSPENDED CEILINGS. MAKE SAFE ANY REMAINING LIVE CONNECTIONS. LEAVE POLYPROPYLENE PULL CORD IN EACH EMPTY CONDUIT. TAG EACH EMT CONDUIT AT EACH END WITH LOCATION OF OTHER END.
1.14.2. ELECTRICAL CONTRACTOR SHALL ENSURE ELECTRICAL CONTINUITY TO EXISTING DEVICES REMAINING.
1.14.3. RELOCATE EXISTING WIRING, RACEWAYS, FIXTURES AND DEVICES AS REQUIRED TO MAINTAIN REASONABLE ACCESSIBILITY AND TO FACILITATE INSTALLATION OF TOTAL PROJECT WORK.
1.14.4. REVIEW LOADING ON EACH AFFECTED CIRCUIT PRIOR TO START OF CONSTRUCTION AND ADJUST AS REQUIRED.
1.14.5. WHERE NEW DRYWALL COVERS EXISTING JUNCTION OR PULL BOXES, INSTALL ACCESS HATCHES.
2. BASIC MATERIAL AND METHODS
2.1. EQUIPMENT AND PROPERTY
2.1.1. ANY ALTERNATE PRODUCT PROPOSED SHALL MEET SAME STANDARDS AS PRODUCT SPECIFIED BUT SHALL BE CONSIDERED ACCEPTABLE ONLY IF APPROVED PRIOR TO INSTALLATION BY ENGINEER. SUCH APPROVAL WILL NOT BE UNREASONABLY WITHHELD.
2.1.2. SPECIFIED PRODUCTS PROVIDED BY THIS CONTRACTOR SHALL BE NEW AND CAPABLE OF PROPER OPERATION. UNSPECIFIED PRODUCTS PROVIDED SHALL BE OF QUALITY BEST SUITED TO THEIR PURPOSE. CSA OR LOCAL INSPECTION AUTHORITY APPROVED AND CAPABLE OF PROPER OPERATION.
2.1.3. REUSE EXISTING PRODUCTS WHICH MEET SPECIFICATIONS WHEREVER PRACTICABLE.
2.1.4. CLEAN VISIBLE PORTIONS OF ALL DEVICES AND COVER PLATES AS RECOMMENDED BY MANUFACTURER TO RESTORE FACTORY FINISH.
2.1.5. PROTECT WORK AND OWNER'S PROPERTY FROM DAMAGE THAT MAY ARISE AS A RESULT OF THIS CONTRACTOR'S PERFORMANCE OF WORK. PROMPTLY MAKE GOOD ANY DAMAGES TO WORK AND OWNER'S PROPERTY ARISING FROM THIS CONTRACTOR'S PERFORMANCE OF WORK.

- 2.1.6. ARRANGE DELIVERIES AND STORAGE WITH OWNER AND AUTHORITIES HAVING JURISDICTION AS APPROPRIATE. PROTECT NEW AND REUSED MATERIALS FROM ABUSE, DAMAGE AND ENVIRONMENTAL CONDITIONS WHICH THEY ARE NOT INTENDED TO WITHSTAND. NOTWITHSTANDING FOREGOING, FOLLOW MANUFACTURER'S RECOMMENDATIONS.
2.1.7. ELECTRICAL EQUIPMENT TO BE CERTIFIED BY AN ACCREDITED CERTIFICATION ORGANIZATION AND BEAR THAT ORGANIZATION'S CERTIFICATION MARK AS EVIDENCE OF HAVING CONFORMED TO THE APPROPRIATE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARDS ESTABLISHED UNDER THE PROVISIONS OF THE CANADIAN ELECTRICAL CODE.
2.1.8. LOCKOUT AND TAGOUT ALL ELECTRICAL AND OTHER EQUIPMENT BEFORE PERFORMING WORK AS PER CAN/CSA Z460-13.
2.2. WIRING METHODS
2.2.1. FOR POWER WIRING, MAINTAIN PHASE SEQUENCE AND COLOR CODING THROUGHOUT. COLOR CODING TO CSA C22.1.
2.2.2. LOCATE, DIMENSION AND MAKE ELECTRICAL SERVICES OPENINGS. PROVIDE NECESSARY SLEEVES, ESCUTCHEONS AND COVERS.
2.2.3. DRILL AND PROVIDE ANCHORS AS REQUIRED FOR EXPANSION BOLTS, HANGER RODS, BRACKETS AND SUPPORTS.
2.3. TESTING
2.3.1. MEGGER CIRCUITS UP TO 350V WITH A 500V INSTRUMENT.
2.3.2. MEGGER CIRCUITS BETWEEN 350V TO 600V WITH A 1000V INSTRUMENT.
2.3.3. CHECK RESISTANCE TO GROUND BEFORE ENERGIZING ANY PART OF THE WORK.
2.3.4. TEST ALL CIRCUIT BREAKERS, DISCONNECT SWITCHES, MOTOR STARTERS FOR CORRECT OPERATION AND ABSENCE OF SHORTS OR GROUNDS.
2.3.5. PUT EQUIPMENT AND SYSTEMS IN SERVICE AS MAY BE REQUESTED BY ENGINEER FOR TRIAL USE PROVIDED NO HAZARD OR DAMAGE WILL RESULT NOR GUARANTEES VOIDED.
2.3.6. CONTRACTOR SHALL COORDINATE INSPECTION DATE WITH ENGINEER AND SHALL PROVIDE LABOR FOR ACCESS TO ALL EQUIPMENT FOR INSPECTION. SUCH ACCESS SHALL IMPLY REMOVAL OF PANEL COVERS, OPENING OF DISCONNECT SWITCHES JUNCTION/PULL BOXES, TO CONFIRM WORK METHOD.
3. CONDUIT AND FITTINGS
3.1. EMT CONDUIT WITH STEEL SET SCREW CONNECTORS THROUGHOUT UNLESS NOTED OTHERWISE.
3.2. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH PULL CORD. INSTALL NYLON INSULATED BUSHINGS ON ALL DATA, TELEPHONE AND ALL OTHER CABLE "CONDUIT ENDS".
3.3. SEAL ALL CONDUITS WHICH ENTER AIR HANDLING UNITS IN ACCORDANCE WITH CEC RULE 22-302.
3.4. SUPPORT ALL BOXES INDEPENDENTLY OF CONNECTING CONDUITS.
3.5. DO NOT USE SUPPORTS OR EQUIPMENT INSTALLED FOR OTHER TRADES FOR CONDUIT (OR CABLE) SUPPORT, EXCEPT WITH PERMISSION OF OTHER TRADES AND APPROVAL OF ENGINEER.
3.6. DO NOT USE WIRE LASHING OR PERFORATED STRAPPING TO SUPPORT OR SECURE RACEWAYS (OR CABLES).
3.7. PROVIDE ADEQUATE SUPPORT FOR RACEWAYS (AND CABLES) DROPPED VERTICALLY TO EQUIPMENT, WHERE THERE IS NO WALL SUPPORT.
3.8. FASTEN EXPOSED CONDUIT (OR CABLES) TO BUILDING CONSTRUCTION OR SUPPORT SYSTEM USING ONE OF TWO HOLE STEEL STRAPS.
3.9. INSTALL CONNECTORS ON SURFACE CONDUITS, SO THAT SCREW HEADS DO NOT POSE A DANGER TO OCCUPANTS.
4. WIRE AND CABLE
4.1. WRING
4.1.1. AC90 (UP TO 10' (3m) LENGTHS WHERE PERMITTED).
4.1.2. RW90 IN EMT CONDUIT, C/W STEEL SET-SCREW CONNECTORS AND COUPLINGS.
4.1.3. RW90 IN LIQUID TIGHT FLEXIBLE CONDUIT FOR CONNECTION TO MECHANICAL EQUIPMENT.
4.1.4. CONDUCTORS: #12 RW90, 600V, CU, MINIMUM, IN EMT CONDUIT.
4.1.5. ALL CIRCUITS SHALL HAVE INDIVIDUAL BOND. MINIMUM #12 AWG.
4.1.6. FAS90 (FIRE ALARM HARDWIRED DEVICES)(SECUREX)
4.2. IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, EITHER NUMBERED OR COLORED TAPES, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING, AND MAINTAIN PHASE SEQUENCE AND COLOR CODING THROUGHOUT.
4.3. WRING BELOW 2' (50mm) A.F.F. SHALL CONFORM TO CEC RULE 20-102.
4.4. ASSURE THAT ALL CONDUCTORS ARE SIZED FOR MAXIMUM VOLTAGE DROP:
4.4.1. BRANCH CIRCUITS - MAX. 2%
4.4.2. PANEL FEEDERS - MAX. 2%
4.4.3. DISTRIBUTION - MAX. 1%
4.5. ALL SOLID COPPER CONDUCTORS WITH THERMOPLASTIC INSULATION (TYPE RW90, 600V) BRANCH WIRING SHALL BE MINIMUM #12 AWG (MAXIMUM 70' [21.4m]); #10 AWG (MAXIMUM 120'[36.6m]) FOR RUNS EXCEEDING 120'[36.6m] VOLTAGE DROP SHALL BE CALCULATED AT THE MAXIMUM OF 2% #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED COPPER. USE CONNECTORS, CLAMPS AND SUPPORTS TO SUIT.
5. OUTLET, PULL & JUNCTION BOXES
5.1. PROVIDE ELECTRO-GALVANIZED STEEL 'FS' TYPE UTILITY BOXES FOR OUTLETS CONNECTED TO SURFACE-MOUNTED CONDUIT. BOXES SHALL BE CODE GAUGE AND SIZED TO MEET THE CANADIAN ELECTRICAL CODE REQUIREMENTS. PROVIDE PROPER 'FS' STYLE COVERPLATES FOR SAID BOXES.
5.2. PROVIDE WELDED STEEL JUNCTION/PULL BOXES WITH HINGED COVERS FOR SURFACE MOUNTING AS REQUIRED TO FACILITATE CONDUCTOR INSTALLATION. GENERALLY SUIT BOXES WILL BE LOCATED SO AS NOT TO EXCEED 100' (30.5m) OF CONDUIT RUN AND 2-90 DEGREE BENDS BETWEEN PULL BOXES. PROVIDE ADDITIONAL JUNCTION/PULL BOXES AS REQUIRED. ENSURE ALL JUNCTION/PULL BOXES ARE ACCESSIBLE WHEN ALL WORK IS COMPLETE.
5.3. SUPPORT ALL BOXES INDEPENDENTLY OF CONNECTING CONDUITS.
5.4. INSTALL POLYETHYLENE VAPOUR BARRIER BOX ON ALL EXTERIOR WALL OUTLETS TO MAINTAIN VAPOUR BARRIER INTEGRITY OR ACOUSTICAL INTERIORITY, WHERE INDICATED.
6. WIRING DEVICES
6.1. CHANGE LOCATION OF OUTLETS, AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 3m FROM THAT INDICATED, AND DIRECTIVE IS GIVEN PRIOR TO INSTALLATION.
6.2. ADJUST OUTLET AS REQUIRED TO SUIT FINAL FINISHES.
6.3. EQUIPMENT MOUNTING HEIGHT IS FROM FINISHED FLOOR TO EQUIPMENT CENTERLINE UNLESS SPECIFIED OR INDICATED OTHERWISE.
6.4. IF EQUIPMENT MOUNTING HEIGHT IS NOT INDICATED, VERIFY WITH ENGINEER BEFORE PROCEEDING WITH INSTALLATION.
6.5. INSTALL ELECTRICAL EQUIPMENT AT FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE (REFER ALSO TO ARCHITECTURAL DRAWINGS):
6.5.1. POWER RECEPTACLES - WALL: 16" (400mm), 18" (450mm)
6.5.2. PANELBOARDS: 72" (1829mm) TO TOP
6.5.3. SWITCHES (BARRIER FREE): 42" (1052mm)
6.6. SWITCHES:
6.6.1. TOGGLE TYPE 15A & 20A, 347V OR 120V AS INDICATED, SINGLE POLE, 3-WAY MANUALLY OPERATED SPECIFICATION GRADE AS INDICATED.
6.6.2. COLOUR: WHITE
6.6.3. ACCEPTABLE SWITCH MANUFACTURERS:
6.6.3.1. BRYANT, COOPER, HUBBELL, LEVITON, PASS AND SEYMOUR.
6.7. GROUND FAULT AND DUPLEX RECEPTACLES:
6.7.1. CSA TYPE 5-15R, 5-20R, 125V, U GROUND GROUND SPECIFICATION GRADE. COLOR: TO BE DETERMINED AT SHOP DRAWING.
6.7.2. GROUND FAULT RECEPTACLES TO MEET CSA 22-2-144
6.7.3. ACCEPTABLE RECEPTACLE MANUFACTURERS:
6.7.3.1. COOPER, HUBBELL, LEVITON, PASS AND SEYMOUR.
6.8. PROVIDE COVER PLATES FROM ONE MANUFACTURER FOR EACH TYPE OR ASSEMBLY OF OUTLETS THROUGHOUT PROJECT. OPENINGS TO SUIT TYPE AND GANING OF DEVICES.
6.9. SHEET STEEL UTILITY BOX COVERS FOR WIRING DEVICES INSTALLED IN SURFACE-MOUNTED UTILITY BOXES ('FS' TYPE).
6.10. ONE PIECE WEATHERPROOF COVER, COMMERCIAL GRADE, ZINC DIECAST, VERTICAL POSITION, DEVICE MOUNT, SELF CLOSING & GASKETED, FOR USE WITH GFCI RECEPTACLES, LISTED FOR WET LOCATION, ACCEPTABLE MANUFACTURER: PASS AND SEYMOUR #WUCAST1 OR APPROVED EQUAL.
6.11. PROVIDE SURFACE MOUNTED RACEWAY FOR EXPOSED RUNS WHERE INDICATED WITH ALL NECESSARY FITTINGS. PAINT TO MATCH SUPPORTING

- SURFACES. ACCEPTABLE MANUFACTURERS: HUBBELL, WIREMOLD.
6.12. WIRING DEVICES IN LEGEND ARE INTENDED TO SET A STANDARD BELOW WHICH EQUIPMENT WILL NOT BE ACCEPTED.
6.13. MOUNTING HEIGHTS TO MATCH EXISTING IN RENOVATED AREAS.
6.14. GROUND FAULT RECEPTACLES TO MEET CSA 22.2-144
7. MOTOR AND CONTROLS
7.1. MAGNETIC AND COMBINATION MAGNETIC MOTOR CONTROLLERS: SOLENOID OPERATED FROM NEMA CONTACTORS IN NEMA 1 ENCLOSURES. MANUALLY RESETTABLE BI-METALLIC OVERLOAD RELAYS AND HEATERS IN EACH PHASE TO SUIT MOTOR CONTROLLED. UNITS c/w CONTROL TRANSFORMER, 1-N-0 AND 1-N-C AUXILIARY CONTACTS, H-0-A SELECTOR SWITCH AND GREEN "RUN" AND RED "STOPPED" PILOT LIGHTS. COMBINATION TYPES TO INCLUDE DISCONNECT SWITCH WITH ON/OFF LOCKING PROVISIONS AND UL CLASS J HRC-1 TIME DELAY FUSES TO SUIT MOTOR CONTROLLED.
7.2. MANUAL MOTOR STARTERS: MANUAL MOTOR STARTERS OF SIZE, TYPE, RATING, AND ENCLOSURE TYPE AS INDICATED, WITH COMPONENTS AS FOLLOWS:
7.2.1. SWITCHING MECHANISM, QUICK MAKE AND BREAK.
7.2.2. OVERLOAD HEATER, MANUAL RESET, TRIP INDICATING HANDLE.
7.2.3. TOGGLE SWITCH: STANDARD LABELED AS INDICATED.
7.2.4. INDICATING PILOT LIGHT: STANDARD RED.
7.2.5. LOCKING TAB TO PERMIT PADLOCKING IN "ON" OR "OFF" POSITION.
7.3. MANUAL MOTOR SWITCH: MANUAL MOTOR SWITCH RATED AT 30A WITH FLUSH MOUNTED ENCLOSURE, CUTLER HAMMER #B230AN.
7.4. NEMA-1 ALUMINUM ENCLOSURE WITH PADLOCK GUARD FOR LOCKING IN THE OFF OR STOP POSITION. CUTLER HAMMER #B230AG.
7.5. ACCEPTABLE MANUFACTURERS: ALLEN BRADLEY, EATON, FURNAS, SQUARE D.
7.6. ALL EQUIPMENT SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED, IE WEATHERPROOF, DUSTPROOF, SPLASH PROTECTION (SPRINKLERED BUILDING) AND EXPLOSION PROOF.
8. DISCONNECT SWITCHES
8.1. FUSIBLE AND NON-FUSIBLE HEAVY DUTY, SPECIFICATION GRADE DISCONNECT SWITCHES AS INDICATED. PROVISION FOR PADLOCKING IN "OFF" POSITION. MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING IN "ON" POSITION. QUICK-MAKE, QUICK-BREAK ACTION. "ON-OFF" INDICATION ON COVER. FUSES SHALL BE HRC-J.
8.2. ACCEPTABLE MANUFACTURERS; EATON, SIEMENS, SQUARE-D.
9. GROUNDING
9.1. THE ENTIRE ELECTRICAL SYSTEM, AS PERTAINS TO THIS INSTALLATION, SHALL BE GROUNDED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE SECTION 10 AND LOCAL AUTHORITY HAVING JURISDICTION OVER INSTALLATION.
9.2. MAKE GROUNDING CONNECTIONS IN RADIAL CONFIGURATION ONLY, WITH CONNECTIONS TERMINATING AT SINGLE GROUNDING POINT. AVOID LOOP CONNECTIONS.
9.3. ALL METAL PIPING SUCH AS, BUT NOT LIMITED TO, WATER, SEWAGE AND GAS, SHALL BE BONDED WITH MINIMUM #6 AWG TO THE MAIN SYSTEM GROUND.
10. PANELBOARDS
10.1. PANELBOARDS: SHOP ASSEMBLED COMMERCIAL INTEGRATED TYPE, VOLTAGE, PHASE MAINS, CAPACITY, CIRCUIT BREAKERS AND MOUNTING AS INDICATED. ALUMINUM OR COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
10.2. PROVIDE CIRCUIT BREAKERS FOR NEW PANELBOARDS. MOLDED CASE, BOLT-ON, QUICK MAKE-QUICK BREAK, THERMAL-MAGNETIC TRIPPING BREAKERS WITH (SYMMETRICAL) INTERRUPTING CAPACITY AS INDICATED. CIRCUIT BREAKERS SHALL BE NEW WITH FULL MANUFACTURER'S WARRANTY AND PURCHASED THROUGH AUTHORIZED DISTRIBUTOR.
10.3. PROVIDE TYPE WRITTEN DIRECTORIES IN ALL PANELS SHOWING TYPE AND LOCATION OF EACH CIRCUIT.
10.4. PROVIDE A SEPARATE ISOLATED GROUND BUS.
10.5. ACCEPTABLE MANUFACTURERS: EATON, SIEMENS, SCHNEIDER-ELECTRIC.
10.6. MOUNT SURFACE PANELBOARDS ON PLYWOOD BACKBOARD PAINTED FIRE RETARDANT GRAY ON ALL SIDES, OR FIRE RATED PLYWOOD.
10.7. NEW BREAKER FRAMES SHALL MATCH EXISTING PANELBOARDS.
10.8. UPDATE REVISED PANEL LEGENDS AT END OF CONSTRUCTION.
11. MECHANICAL EQUIPMENT
11.1. SEE MECHANICAL EQUIPMENT CONNECTION SCHEDULE AND LEGEND FOR ALL REQUIRED MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS. THE ELECTRICAL TRADE SHALL PROVIDE THE FOLLOWING:
11.1.1. THE NECESSARY POWER DISTRIBUTION EQUIPMENT AT THE ELECTRICAL ROOM.
11.1.2. THE NECESSARY CONDUIT AND WIRE TO THE MECHANICAL EQUIPMENT ROOM.
11.1.3. A TERMINATING DISCONNECT SWITCH, UNLESS PROVIDED FOR BY THE EQUIPMENT MANUFACTURER.
11.1.4. ANY MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
11.1.5. ALL CONDUIT AND WIRING FROM THE TERMINATING DISCONNECT SWITCH TO THE MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE. LOW VOLTAGE CONTROLS, SHALL BE PROVIDED BY THE MECHANICAL TRADE. THE ELECTRICAL TRADE SHALL VERIFY ALL MOTOR CONNECTIONS FOR PROPER PHASE ROTATION, WHERE APPLICABLE.

consultant:
M&W Maricor
120 MILLENNIUM DRIVE, SUITE 201
QUISPAMIS, NB E2E 0C6
BUS: (506) 847-8285 FAX: (506) 848-2131
WWW.M&W.COM ENG. JOB NO. 12-22-041

client:
SAINT JOHN

seal:
REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
M7172
Timothy S. Duley
2011/23
Date
INGENIEUR IMMATRICULE

Table with 3 columns: No., date, description. Row 1: 1, NOV. 2023, ISSUED FOR TENDER. Row 2: REVISION

project:
CANADA GAMES
AQUATIC CENTRE
AHU RENEWALS
SAINT JOHN, NB

drawing:
ELECTRICAL
SPECIFICATIONS
designed by: J.A.T scale: AS NOTED
drawn by: J.A.T. date: NOVEMBER, 2023
checked by: R.R. - T.D. project no. 12-22-041

drawing no.
E-5
SCALE 1:100

APPENDIX B – FORM OF TENDER

**TENDER No. 2023-085305T
CANADA GAMES AQUATIC CENTRE – AHU RENEWALS**

FORM OF TENDER

2023-085305T

CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

The undersigned bidder has carefully examined the specifications and scope of work, and also visited the premises to become familiar with the conditions, character and extent of work.

The undersigned bidder has determined the quality and quantity of labour, materials and equipment required, and has the capability to comply with the terms and conditions herein described.

The undersigned bidder further agrees to provide all necessary equipment, tools, labour and materials which are necessary to complete the work in accordance with the contract and agrees to accept, therefore, in payment in full, in accordance with the terms, conditions, specifications, and drawings, the sum of:

\$ _____
Total Cost (All Taxes Extra)

*Pricing is to be bid in Canadian Funds and FOB Saint John, NB prepaid. The tender pricing shall include all installation wages, fringe benefits, insurance, transportation, delivery, duty, working tools, equipment costs, and any other charges incurred in order to provide required materials and/or services.

COMPANY:	SIGNATURE: _____
E-MAIL:	NAME: _____ (print)
Date:	Tel # Fax #
H.S.T. Reg.#	Remarks:

APPENDIX C – FORM OF AGREEMENT

**TENDER No. 2023-085305T
CANADA GAMES AQUATIC CENTRE – AHU RENEWALS**

AGREEMENT BETWEEN OWNER AND CONTRACTOR

THIS AGREEMENT made in triplicate between THE CITY OF SAINT JOHN herein (and in the Specifications) called the "Owner" or the "City"

AND

herein (and in the Specifications) called the "Contractor".

WITNESSETH: That the Owner and the Contractor agree as follows:

- (a) The Contractor shall provide all the materials and perform all the work shown on the drawings and described in the Contract Specifications titled:

Contract No: 2023-085305T

Title: CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

- (b) The Contractor shall do and fulfill everything indicated by this Agreement; and
- (c) The Contractor shall Substantially Complete the Work no later than March 31, 2024.

CONTRACT DOCUMENTS

General Specifications

General Specifications, City of Saint John, New Brunswick, with all applicable divisions, as updated and as listed in the Table of Contents of the Contract Specifications.

Contract Specifications

Contract specifications for

Contract No: 2023-085305T

Title: CANADA GAMES AQUATIC CENTRE – AHU RENEWALS

City of Saint John, New Brunswick,

Drawings

- M-1 Basement Level - HVAC Demolition and New Work
- M-2 Lobby Level and Pool Deck HVAC Demolition and New Work
- M-3 Schedules
- M-4 Mechanical Specification
- E-1 Basement Level – Electrical Demolition and New Work
- E-2 Lobby Level and Pool Deck – Electrical Demolition and New Work
- E-3 Panel Schedules and Mechanical Schedules
- E-4 Single Line Diagram
- E-5 Electrical Specifications
- A-1 Lobby Level Architectural Demolition and New Work

ADDENDA

The Contractor agrees that he has received addenda ____ to ____ inclusive, and that the tender price includes the provisions set out in the addenda.

CONTRACT PRICE

The Owner shall pay to the Contractor, in lawful money of Canada for the performance of the Contract, the amounts determined for each of the items of work completed at the unit prices as listed in the Schedule of Quantities and Unit Prices, plus applicable taxes, submitted with the tender, which is to be attached with this Agreement, for the total tender price of:

If the Engineer orders in writing the performance of any work not covered by the drawings or included in the specifications that cannot be classified as coming under any of the contract units and for which a unit price can be agreed upon, then such additional work shall be paid for as described under the General Administration of Contract, Division 6.

PAYMENT

The Owner shall pay on account of thereof upon the Engineer's Certificate, as invoiced by the Contractor and approved by the Engineer, in the manner described in the Specifications.

AGREEMENT DOCUMENTS

The General Administration of Contract, Division 6 and the aforesaid Specifications and Drawings are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and it shall inure to the benefit of and be binding upon them and their successors, executors, administrators, and subject to the General Administration of Contract, their assigns.

EXECUTION OF AGREEMENT

In Witness Whereof the parties hereto have executed this Agreement.

) SIGNED, SEALED AND DELIVERED
)
) this ____ day of _____, ____
)
) by _____
) (Contractor)
)
) _____
) (Witness) (Signature)
)
) _____
) (Name and Title) (Name and Title)
)
) _____
) (Signature)
)
) _____
) (Name and Title)
)
)
)
) *PLACE SEAL HERE*

)
)
) SIGNED, SEALED AND DELIVERED
)
) this ____ day of _____, ____
)
) by THE CITY OF SAINT JOHN.
)
)
) _____
) MAYOR
)
) _____
) COMMON CLERK
)
)
)
)
) *PLACE SEAL HERE*

AFFIDAVIT OF CORPORATE EXECUTION

CANADA

PROVINCE OF NEW BRUNSWICK

CITY OF SAINT JOHN

I, _____, of the _____
in the County of _____, and Province of New Brunswick

MAKE OATH AND SAY:

- (1) THAT I am the _____ of _____, and _____ is the _____ of the said Company, as such I am/we are duly authorized officer(s) of the said Company to execute the foregoing instrument.
- (2) THAT the signature _____ subscribed to the within instrument is my signature and in my own proper handwriting and that the signature _____ so subscribed is his signature made thereto by him in my presence.
- (3) THAT the Seal affixed to the said instrument purporting to be the Corporate Seal of the said _____ is the Corporate Seal of the said Company and was affixed to the said instrument by me and by order of the Board of Directors of the Company.

SWORN TO BEFORE ME at the _____)
)
of _____)
)
in the Province of _____)
)
this ____ day of _____ A.D., _____.)
)
_____) _____)
COMMISSIONER OF OATHS) CONTRACTOR
)

Note: The blank spaces are to be filled in with the name or names of the signing officer(s).