

**MECHANICAL SPECIFICATION PLUMBING**

THIS ABBREVIATED SPECIFICATION DESCRIBES EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK. ONLY FIRST CLASS WORKMANSHIP, MATERIALS AND PRACTICES WILL BE ACCEPTED.

1. GENERAL
- CONFORM TO ONTARIO BUILDING AND PLUMBING CODES AND AMENDING REGULATIONS
  - CONFORM TO NATURAL GAS AND PROPANE INSTALLATION CODE B149.1-05 AND AMENDING REGULATIONS
  - CONFORM TO ONTARIO FIRE CODE.
  - CONFORM TO LOCAL AND DISTRICT BYLAWS, REGULATIONS AND PUBLISHED ENGINEERING STANDARDS.

2. SCOPE OF WORK

THE SUPPLY AND INSTALLATION OF NEW EQUIPMENT AND PIPING AS SHOWN ON THE DRAWINGS AND AS NOTED.

GENERAL

- COMPLY WITH GENERAL CONDITIONS.
- PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.
- SUBMIT MAINTENANCE AND INSTRUCTION MANUALS.
- PROVIDE WRITTEN GUARANTEE FOR ALL NEW EQUIPMENT AND WORKMANSHIP FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. DEFECTIVE PARTS SHALL BE REPAIRED OR SHALL BE REPLACED WITHOUT CHARGE.

3. PIPE AND PIPE FITTINGS

STORM DRAINAGE

- UNBURIED SECTIONS: CAST IRON SOIL PIPE, 4000# (18KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR PVC-DWV WHERE PERMITTED BY CODE WITH REQUIRED FIRESTOPS.
- BURIED SECTIONS: CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPES AND FITTINGS, CSA APPROVED, OR PSM POLY (VINYL CHLORIDE) (PVC) GRAVITY SEWER PIPE WITH DR OF 35 MAXIMUM. PIPE TO INCLUDE RUBBER RING GASKETS.

- SANITARY DRAINAGE
- UNBURIED SECTIONS: 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBING TYPE DWV, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS, 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED OR PVC-DWV WHERE PERMITTED BY CODE WITH REQUIRED FIRESTOPS.

- BARRIER FREE W/R: TRAP SHALL BE OFF SET
- BURIED SECTIONS: 2" (50 MM) AND SMALLER DIAMETER, HARD TEMPER COPPER PIPE TYPE L, WITH WROUGHT COPPER, COPPER ALLOY SOLDER JOINT, CSA APPROVED, 3" (75 MM) AND LARGER DIAMETER, CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO-HUB MECHANICAL JOINT WITH NEOPRENE GASKETS AND STAINLESS STEEL PIPE CLAMPS WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND PLASTIC FITTINGS, CSA APPROVED OR PVC GRAVITY SEWER PIPE CAN/CSA APPROVED WITH DR OF 35 MAXIMUM. INCLUDE RUBBER RING GASKETS, SOLVENT CEMENT.

VENT

- UNBURIED SECTIONS: 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBE TYPE L DWV, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS, 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB - MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED.
- BURIED SECTIONS: 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBE TYPE L, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS, 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED, OR PVC PIPE AND FITTINGS, PVC PRIMER AND PVC SOLVENT CEMENT.

WATER

- DOMESTIC WATER DISTRIBUTION: HARD TEMPER COPPER TUBING, TYPE L, SOLDERED, WITH WROUGHT COPPER OR CAST BRASS PRESSURE FITTINGS, WITH INSULATED AND VAPOUR BARRIRED COLD WATER AND INSULATED ONLY HOT WATER WITH ALL SERVICE ASJ JACKETING. COMBUSTIBLE PIPING PERMITTED AS AN ALTERNATE WITH FLAME SPREAD RATING NOT GREATER THAN 25

4. PIPE INSULATION
- MINIMUM PIPE INSULATION SHALL CONFORM TO ASHRAE 90.1-2004 AND SHALL BE MOUNTED GLASS FIBRE INSULATION WITH VAPOUR BARRIER JACKET, EQUAL TO FIBREGLASS OF CANADA INC.; STANDARD KNAUF PIPE INSULATION WITH ASJ; MANSON INSULATION INC. ALLEY-K WITH APT; KNAUF FIBREGLASS OR ROXUL-SEITZ. INSULATE NEW PIPING WITH RIGID PIPE INSULATION AS FOLLO:

SERVICE	THICKNESS
HORIZONTAL STORM, RAINWATER LEADERS AND SANITARY DRAINAGE	1"
CHWS, CHWR, HWR, HWS, CWR, CWS	0.5"
CONDENSATE DRAINS (COLD)	0.5"
DOMESTIC COLD WATER	0.5"
DOMESTIC HOT WATER	0.5"

6. PIPING SPECIALTIES

- ISOLATION VALVES - DOMESTIC WATER: 2" (50 MM) AND SMALLER: FORGED BRONZE, 600 PSI (4 MPA) WOG BALL VALVE, SOLDER ENDS, AND TEFLON SEATS. CRANE NO. 9322, JENKINS, RED & WHITE.

7. PLUMBING SPECIALTIES

- CLEANOUTS: CLEANOUTS IN EXPOSED AREAS AND ACCESSIBLE PIPE CHASES SHALL BE LACQUERED CAST IRON CLEANOUT WITH NEOPRENE GASKET AND PLUG. ANCON CO-200 SERIES.
- FLOOR DRAINS: FLOOR DRAINS SHALL BE LACQUERED CAST IRON BODY WITH WEEP HOLES AND STRAINER. ANCON FD-200 SERIES.
- FUNNEL FLOOR DRAIN: COMPLETE WITH 4"x 9" (102 x 228 MM) OVAL FUNNEL STRAINER, ANCHORING FLANGE AND STRAINER. ANCON FD-200-EG-1.
- TRAP SEAL PRIMER: TRAP SEAL PRIMERS SHALL BE AUTOMATIC, CAST BRASS BODY, RENEWABLE DISC AND SEAT RINGS, VACUUM BREAKER, AND REMOVABLE COVER. ANCON MS-810.
- BACKFLOW PREVENTER: BRONZE BODY, STAINLESS STEEL WORKING PARTS, INTEGRAL STRAINER AND DURABLE RUBBER DISCS, MAXIMUM EMERGENCY BACKFLOW TEMPERATURE 250°F (120°C) AND MAXIMUM PRESSURE 175 PSI (1.2 MPA), WATTS 9D SERIES.
- ACCESS DOOR: MIN. 12 GA. (2.6 MM) STEEL, PRIME COATED, WITH HEAVY DUTY FULLY CONCEALED FRAME AND HINGE, POSITIVE LOCKING DEVICE. DOORS IN FIRE SEPARATIONS OR FIRE RATED ASSEMBLIES SHALL BE UL LABELLED, CONTOUR INDICATED, ACUDOR OR EQUIVALENT CEB, LE HAGE.

**MECHANICAL SPECIFICATION HVAC**

THIS ABBREVIATED SPECIFICATION DESCRIBES EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK. ONLY FIRST CLASS WORKMANSHIP, MATERIALS AND PRACTICES WILL BE ACCEPTED.

1. GENERAL
- CONFORM TO ONTARIO BUILDING CODE AND AMENDING REGULATIONS.
  - CONFORM TO LATEST SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
  - CONFORM TO NATURAL GAS AND PROPANE INSTALLATION CODE B149.1-05
  - CONFORM TO LOCAL AND DISTRICT BYLAWS, REGULATIONS AND PUBLISHED ENGINEERING STANDARDS.

2. SCOPE OF WORK

PROVIDE AND INSTALL DUCTWORK, DIFFUSERS, DAMPERS AND ACCESSORIES INCLUDING ROOFTOP UNIT, VVT CONTROLS, CONTROLLERS AND PRESSURE SENSORS

GENERAL

- PROVIDE EQUIPMENT, DUCTWORK, AND ACCESSORIES AS SHOWN.
- PROVIDE TESTING AND AIR BALANCING OF AIRFLOWS BY INDEPENDANT TESTING COMPANY.
- PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.
- SUBMIT MAINTENANCE AND INSTRUCTION MANUALS.
- BEFORE FINAL PAYMENT, SUBMIT TWO SETS OF AS-BUILT DRAWINGS SHOWING ALL CHANGES AND CONCEALED SERVICES DIMENSIONED.
- PROVIDE WRITTEN GUARANTEE FOR ALL NEW EQUIPMENT AND WORKMANSHIP FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. DEFECTIVE PARTS SHALL BE REPAIRED OR REPLACED WITHOUT CHARGE.
- POWER WIRING SHALL BE PROVIDE DIV 16

3. DUCTWORK AND FITTINGS

A) DUCTWORK

- EXHAUST DUCTWORK: DUCTWORK TO BE CONSTRUCTED TO 1 1/2 TIMES WORKING PRESSURE OF 1.0" w.g. MINIMUM.
- DUCTS: LOCK FORMING QUALITY STEEL WITH G90 DESIGNATION ZINC COATING TO ASTM A526/A526M-85. GAUGE OF DUCT MATERIAL SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF ASHRAE AND SMACNA OR AS INDICATED, WHICHEVER IS GREATER.
- FABRICATION: DUCTS AND FITTINGS CONFIGURATION IN ACCORDANCE WITH RECOMMENDATIONS A526/A526M-85. GAUGE TO SMACNA AND ASHRAE STANDARDS
- JOINTS: TO ASHRAE AND SMACNA FABRICATION STANDARDS
- FITTINGS: ALL FITTINGS CONSTRUCTED TO SMACNA STANDARDS WITH r/D RATIO OF 1.5 OR GREATER. 20° MAXIMUM TRANSITION ANGLE
- HANGERS AND SUPPORTS: TO SMACNA SQUARE AND ROUND DUCT CONSTRUCTION STANDARDS.
- HANGERS AND SUPPORTS SHALL BE SUPPORTED OFF TOP OF JOIST. NOT SUPPORTED OFF DECKING OR ROOF MEMBRANE
- ALL DUCTWORK IN THE POOL AREA SHALL BE STAINLESS STEEL, RIGID AND SEAMLESS GALVANIZED STEEL OR PLASTIC NOT PERMITTED

B) DUCT SEAL CLASS AND DUCT SEALANT

- 1) GENERAL: ALL DUCTWORK TO SMACNA SEAL CLASS 2. USE WATER BASED SEALANT NON TOXIC, NON-COMBUSTIBLE, NON FLAMMABLE AND TESTED IN ACCORDANCE WITH CAN 4- S102-M83. FLAME SPREAD SHALL NOT EXCEED 25 AND SMOKE DEVELOPED NOT TO EXCEED 50. ADHESIVE TAPE NOT PERMIT AS SEAL FOR JOINTS

**ROOFTOP DEHUMIDIFIER/HEATING UNIT SCHEDULE**

UNIT REF.	NOM, TONS	MANUFACTURER	MODEL	COOLING		HEATING (ELECTRIC)			SUPPLY FAN			MIN FRESH AIR (CFM)	VOLTAGE/PHASE	MIN CIRCUIT AMPS	WEIGHT (LB)	MOUNTING ARRANGEMENT	REMARKS
				TOTAL (TONS)	ECONOM.	INPUT (kW)	OUTPUT MBH	STAGES	(cfm)	E.S.P.	(hp)						
AHU-1 (EXISTING)	20 TON	DECTRON	RSH-100-8	-	-	18	-	-	8200	1.0	7.5	-	575/3	60A,3P	4500	SIDE DISCHARGE WALL MOUNTED	-
C-1 (EXISTING)	20 TON	DECTRON	DCI-088	-	-	-	-	-	-	-	-	-	575/3	15A,3P	1063	ROOF MTD	-
AHU-2 & 3 WITH INTEGRATED CONDENSER (NEW)	15 TON	DECTRON (HTS)	SERIES: DS-060 SELECT: 78067.7	15	-	9.0	-	-	6000	1.0	7.5	2500	575/3	50A,3P	2700	SIDE DISCHARGE ROOF MTD	REFER TO SPECIFICATIONS

**DEHUMIDIFIER UNIT NOTES:**

- REFRIGERATION: R410A
- UNIT TO BE COMPLETE WITH ENTHALPY CONTROL ECONOMIZER.
- THERMOSTATIC CONTROLS:
- CO2 SENSOR (CD-W000-XX) LOCATED IN THE RETURN DUCT OF EACH RTU. TIE INTO THE RTU OUTSIDE AIR ECONOMIZER DAMPER FOR DEMAND CONTROL OF VENTILATION (DCV). PROVIDE REMOTE WALL TRANSMITTER PER EACH UNIT. EFFICIENCY OF THE UNIT SHALL EXCEED ASHRAE 90.1 STANDARDS.

1  
M1 HVAC AND PLUMBING SPECIFICATIONS AND EQUIPMENT SCALE N.T.S.

11	ISSUED FOR TENDER	07/24/24
10	ISSUED FOR TENDER REVIEW	06/06/24
9	ISSUED FOR PERMIT	05/02/24
8	ISSUED FOR REVIEW	03/31/24
7	ISSUED FOR ALTERNATE DESIGN	12/21/23
6	ISSUED FOR ALTERNATE DESIGN	11/17/23
5	ISSUED FOR COORDINATION	10/27/23
4	ISSUED FOR COORDINATION	10/20/23
3	ISSUED DETAIL DESIGN REVIEW	09/01/23
2	ISSUED FOR ASSESSMENT REPORT	08/09/23
1	ISSUED FOR ASSESSMENT REPORT	07/15/23
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

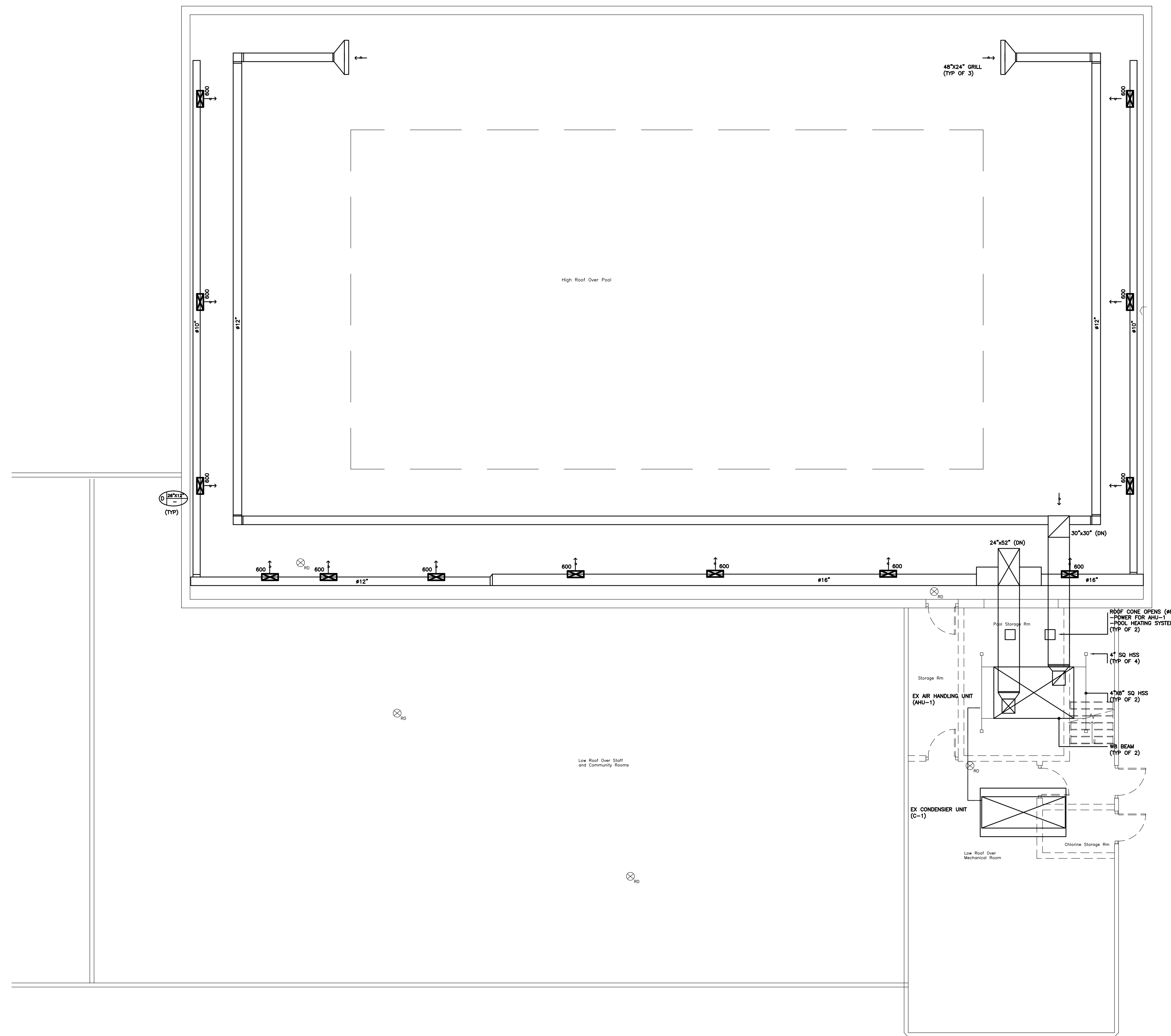
NORTH	ENGINEERS STAMP
-------	-----------------

**RICE KONG ENGINEERING LIMITED**  
MECHANICAL & ELECTRICAL  
TEL: 416.564.2037  
E-MAIL: JOHN.KONG@ROGERS.COM  
19 ELLIS PARK ROAD  
TORONTO, ONTARIO  
M6S 2V4

Project Name and Address  
**CITY OF TORONTO-ELMS POOL  
POOL HVAC UPGRADE  
45 GOLFDOWN DRV.  
TORONTO, ONTARIO**

Drawing Title  
**MECHANICAL  
SPECIFICATIONS & SCHEDULE**

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	NTS
DRAWING NO:	M1



LEGEND & SYMBOLS	DESCRIPTION
A	2" x 2" SUPPLY DIFFUSER
B	14" SUPPLY DIFFUSER
C	RETURN GRILLE
---	LINEAR DIFFUSER
⊠	EXHAUST FAN
⊠	BE THE USE OF THE UNIT BY THE USER TO REMOVE AS 2" X 2" GRILLE
⊠	SHAKING DAMPER
⊠	T-SHAP
⊠	F.D. FIRE DAMPER

**DEMOLITION NOTES**

1. THE COMPLETE EXISTING DEHUMIDIFIER SYSTEM SHALL BE REMOVED AND REPLACED AS SPECIFIED INCLUDING BUT NOT LIMITED TO BELOW LIST
  - EX AIR HANDLING UNIT (AHU-1) AND COMPRESSOR (C-1)
  - EXTERIOR ELECTRICAL
  - EXTERIOR ELECTRICAL OVER THE POOL AREA
  - GRILLES, REGISTERS, DIFFUSERS
2. EXISTING STRUCTURAL STEEL FRAME UNDER AHU-1 SHALL REMAIN. ANY DAMAGES TO ROOF MEMBRANE SHALL BE REPAIRED AND SEALED. EXISTING STEEL FRAME SHALL BE PRIME AND RE-PAINTED, PAINT TO MATCH. REFER TO STRUCTURAL DRAWINGS.
3. PLUMBING PIPE (TWO 3" XPR) SHALL BE DISCONNECTED FROM POOL HEATING SYSTEM BELOW ROOF AND CAPPED.
4. ELECTRICAL POWER CONNECTIONS SHALL BE DISCONNECTED BELOW ROOF AND TERMINATED INTO JB.

**NOTES: DIS-ASSEMBLY AND RE-INSTALLATION**

1. CHLORINE ROOM SHALL BE CLEARED TO ALLOW FOR STRUCTURAL STEEL TO BE INSTALLED. REFER TO STRUCTURAL DRAWINGS.
2. EXISTING CHLORINE TANK (200 GALLON) AND ASSOCIATED EQUIPMENT AND PIPING SHALL BE DISCONNECTED AND RESIDUAL CHEMICAL SHALL BE PROPERLY DISPOSED BY AN MINISTRY CERTIFIED CONTRACTOR FOR HAZARDOUS WASTE.
3. TANK SHALL BE STORED ON SITE IN AN SECURED ENCLOSED TRAILER WITH LOCK ACCESS.
4. TANK SHALL BE RE-INSTALLED UPON COMPLETION. PROVIDE ALL PIPING, SUPPORT BRACKETS AS REQUIRED TO RESTORE INSTALLATION TO ORIGINAL CONDITION.

10	ISSUED FOR TENDER	07/24/24
9	ISSUED FOR TENDER REVIEW	06/06/24
8	ISSUED FOR PERMIT	05/02/24
7	ISSUED FOR REVIEW	03/31/24
6	ISSUED FOR ALTERNATE DESIGN	12/21/23
5	ISSUED FOR COORDINATION	10/27/23
4	ISSUED FOR COORDINATION	10/20/23
3	ISSUED DETAIL DESIGN REVIEW	09/01/23
2	ISSUED FOR ASSESSMENT REPORT	08/09/23
1	ISSUED FOR ASSESSMENT REPORT	07/15/23
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

NORTH

ENGINEERS STAMP

**RICE KONG ENGINEERING LIMITED**  
 MECHANICAL & ELECTRICAL

TEL: 416.564.2037  
 E-MAIL: JOHN.KONG@ROGERS.COM  
 19 ELLIS PARK ROAD  
 TORONTO, ONTARIO  
 M6S 2V4

Project Name and Address

**CITY OF TORONTO-ELMS POOL  
 POOL HVAC UPGRADE  
 45 GOLFDOWN DRV.  
 TORONTO, ONTARIO**

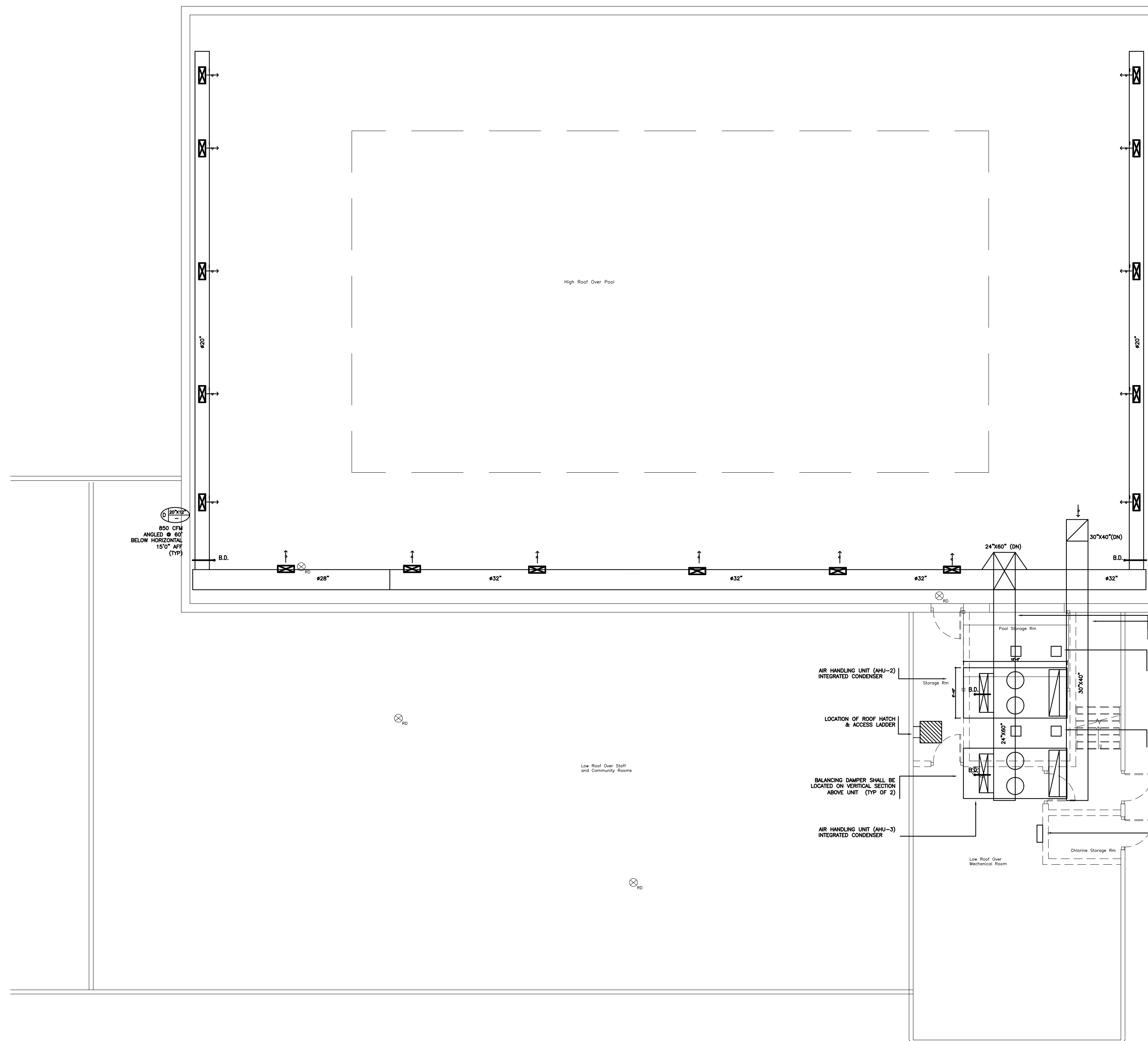
Drawing Title

**MECHANICAL  
 HVAC  
 ROOF PLAN - DEHUMIDIFIER  
 EXISTING & DEMOLITION**

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M2

**1** EXISTING HVAC ROOF PLAN - DEHUMIDIFIER - DEMOLITION & RE-INSTALLATION  
 M2 SCALE 1/8"=1'0"





LEGEND A SYMBOLS	DESCRIPTION
A	2" x 2" SUPPLY DIFFUSER
B	14" SUPPLY DIFFUSER
C	RETURN GRILL
D	LINEAR DIFFUSER
E	CONVERT FAN
F	BE TO THE ROOF TO BE
G	BALANCING DAMPER
H	TSRM
I	FIRE DAMPER

**GENERAL NOTES:**

1. ALL AIR SUPPLY DAMPERS SHALL BE EQUIPPED WITH VOLUME AND BALANCING DAMPERS.
2. FIRST FIGURE OF DUCT SIZE INDICATES THE WIDTH OF DUCT.
3. ALL DUCTWORK IN THE POOL AREA SHALL BE STAINLESS STEEL, RIGID AND SEAMLESS. INCLUDE STAINLESS STEEL COLLARS AND HANGERS. ALL MOUNTING HANGERS SHALL BE STAINLESS STEEL. MINIMUM SPACING 8" O/C.
4. DIFFUSERS (POOL AREA) SHALL BE ALUMINUM WITH INTEGRATED BALANCING DAMPERS AND INTEGRATED ADJUSTABLE B-DIRECTIONAL DEFLECTORS.
5. DIFFUSER MANUFACTURER: PRICE
6. EXPANSION COLLAR ON HVAC MAIN TRUCK SECTIONS (SUPPLY & RETURN)
7. JOINTS SHALL BE CEMENT SEALED.

**NOTES - AHU**

1. PROVIDE TWO NEW AHU UNITS AS SPECIFIED
2. UNIT AHU-3 SHALL BE MOUNTED ONTO EXISTING ROOF TOP FRAME. AHU-3 SHALL BE INSTALLED ONTO NEW ROOF TOP FRAME
3. UNITS SHALL BE SECURED TO FRAME WITH 1" STAINLESS STEEL BOLTS DRILL HOLES AND PROVIDE ALUMINUM FLANGE PLATES AS REQUIRED TOTAL OF 12 BOLTS PER FRAME.
4. ELECTRICAL CONNECTION FOR EACH AHU UNIT: PROVIDE 50/50/3P DISCONNECTS LOCATED IN MECHANICAL ROOM AND ISOLATION DISCONNECT (WEATHERPROOF ENCLOSURE) ON ROOF. FEEDER: 3/8" AWG WITH GND TRAIL CABLE. APPROX 100' OF CABLE AND CONDUIT LENGTH. EXISTING DISCONNECTS AND CABLES SHALL BE REMOVED.
5. PIPING CONNECTION FOR EACH AHU UNIT (HEAT RECOVERY): PROVIDE TWO 2" RECIRCULATION PIPE (RTR) FROM EACH UNIT TO NEW HEAT EXCHANGER. PIPE SHALL FOLLOW EXISTING ROUTE. PROVIDE TWO NEW HEAT EXCHANGERS. LOCATED APPROX 100' AWAY (LOWER BROWNS)
6. TWO HEAT EXCHANGERS SHALL BE T-CONNECTED ON THE OUTPUT SIDE TO EXISTING POOL HEATING SYSTEM WITH SOLID VALVES. PROVIDE ALL NECESSARY PIPES, COUPLERS, BRACKETS TO COMPLETE CONNECTION. HEAT EXCHANGE (TRIO) PLATE (1" O/C/24" O/C). COPPER/ZINC COATED. MANUFACTURER ZURLE. EXISTING PIPING SHALL BE REMOVED. USE EXISTING AND SPECIFIED ROOF OPENS
6. PIPE SHALL BE ROUTED THROUGH VENT OPENS (TOTAL OF 4) REFER TO STRUCTURAL DRAWINGS

10	ISSUED FOR TENDER	07/24/24
9	ISSUED FOR TENDER REVIEW	06/06/24
8	ISSUED FOR PERMIT	05/02/24
7	ISSUED FOR REVIEW	03/31/24
6	ISSUED FOR ALTERNATE DESIGN	12/21/23
5	ISSUED FOR ALTERNATE DESIGN	11/17/23
4	ISSUED FOR COORDINATION	10/27/23
3	ISSUED FOR COORDINATION	10/20/23
2	ISSUED DETAIL DESIGN REVIEW	09/01/23
1	ISSUED FOR ASSESSMENT REPORT	08/09/23
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

NORTH

ENGINEERS STAMP

**RICE KONG ENGINEERING LIMITED**  
 MECHANICAL & ELECTRICAL

TEL: 416.564.2037  
 E-MAIL: JOHN.KONG@ROGERS.COM  
 19 ELLIS PARK ROAD  
 TORONTO, ONTARIO  
 M6S 2V4

Project Name and Address  
**CITY OF TORONTO-ELMS POOL  
 POOL HVAC UPGRADE  
 45 GOLFDOWN DRV.  
 TORONTO, ONTARIO**

Drawing Title  
 MECHANICAL  
 PROPOSED  
 HVAC - DEHUMIDIFIER  
 ROOF PLAN

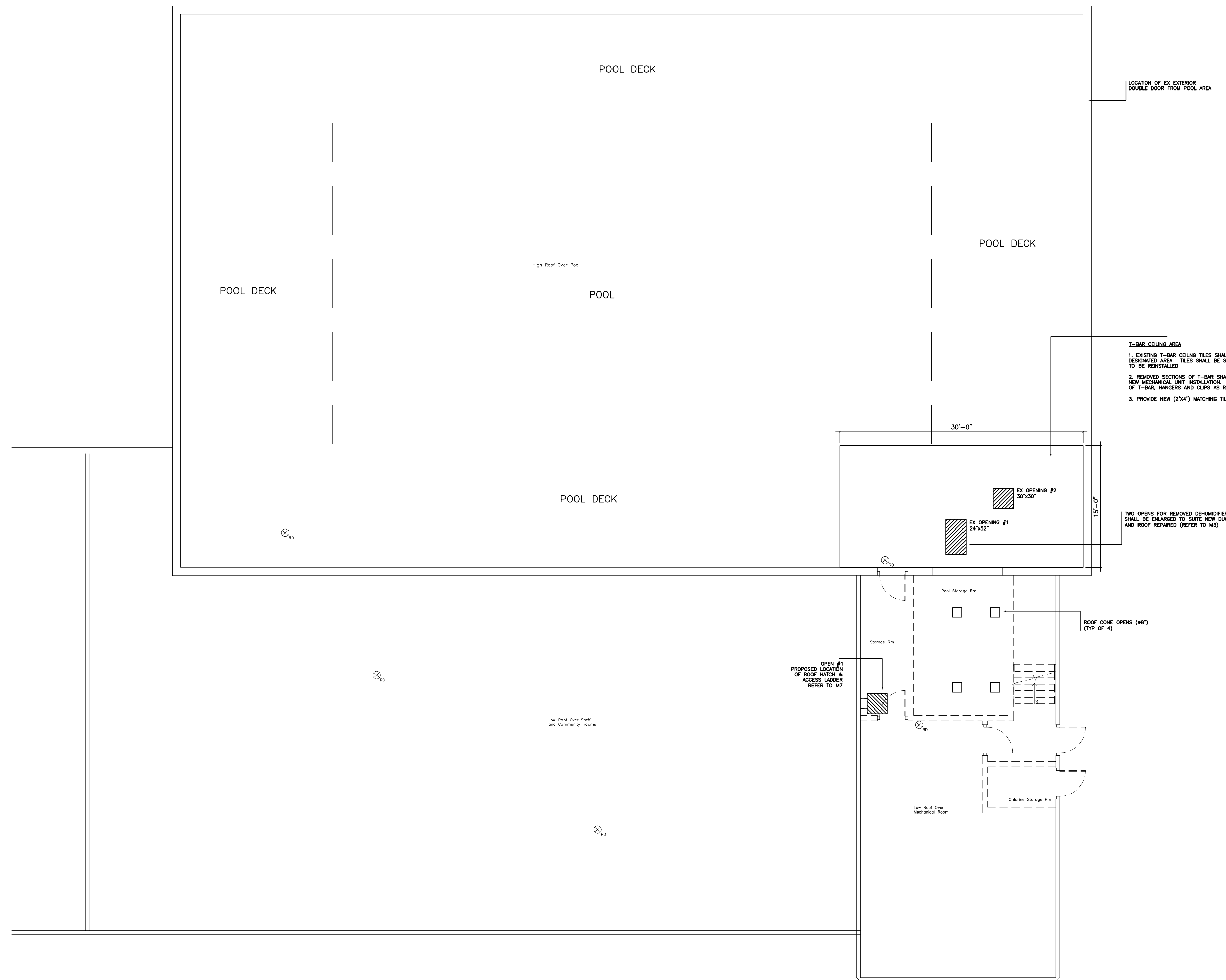
DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M4

**1** HVAC ROOF PLAN - DEHUMIDIFIER  
 M4 SCALE: 1/8"=1'0"

7	ISSUED FOR TENDER	07/24/24
6	ISSUED FOR TENDER REVIEW	06/06/24
5	ISSUED FOR PERMIT	05/02/24
4	ISSUED FOR REVIEW	03/31/24
3	ISSUED FOR COORDINATION	02/23/24
2	ISSUED FOR COORDINATION	10/27/23
1	ISSUED FOR COORDINATION	10/20/23
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.



**T-BAR CEILING AREA**  
 1. EXISTING T-BAR CEILING TILES SHALL BE REMOVED FROM DESIGNATED AREA. TILES SHALL BE STORED BY CONTRACTOR TO BE RE-INSTALLED.  
 2. REMOVED SECTIONS OF T-BAR SHALL BE REPLACED UPON NEW MECHANICAL UNIT INSTALLATION. PROVIDE NEW SECTIONS OF T-BAR, HANGERS AND CLIPS AS REQUIRED.  
 3. PROVIDE NEW (2'x4') MATCHING TILES AS NEEDED.

TWO OPENS FOR REMOVED DENIMIFER UNIT SHALL BE ENLARGED TO SUITE NEW FACTORYWORK AND ROOF REPAIRED (REFER TO M5)

- NOTES**
- REFER TO STRUCTURAL DRAWINGS TO OPEN REINFORCEMENT IN EXISTING PRE-CAST
  - ROOF SHALL BE RE-SEALED UPON MECHANICAL INSTALLATION COMPLETION BY ROOFING CONTRACTOR. PROVIDE WATER PROOF MEMBRANCE (OPEN DOWN) AROUND ALL PITCH PROFILES, VENT OPENS, EXISTING AND NEW OPENS MATCH OPENS. MEMBRANE SHALL EXTEND MINIMUM 24" BEYOND OPENS AND UP TO FLASHING. PROVIDE CERTIFICATION DOCUMENT WITH 2 YEAR WARRANTY TO CLIENT.
  - BOTTOM OF POOL AND POOL DECK SHALL PROTECTED WITH 1/2" PLYWOOD, OVER LAPPED BY MIN 4", TAPED AND SECURED
  - EXISTING EXTERIOR DOOR TO POOL (DOUBLE) SHALL BE REMOVED AS REQUIRED FOR MOBILIZATION AND RE-INSTALLATION. PROVIDE TEMPORARY 3/4" PLYWOOD & WOOD DOOR WITH LOCK.

NORTH 	ENGINEERS STAMP
-----------	-----------------

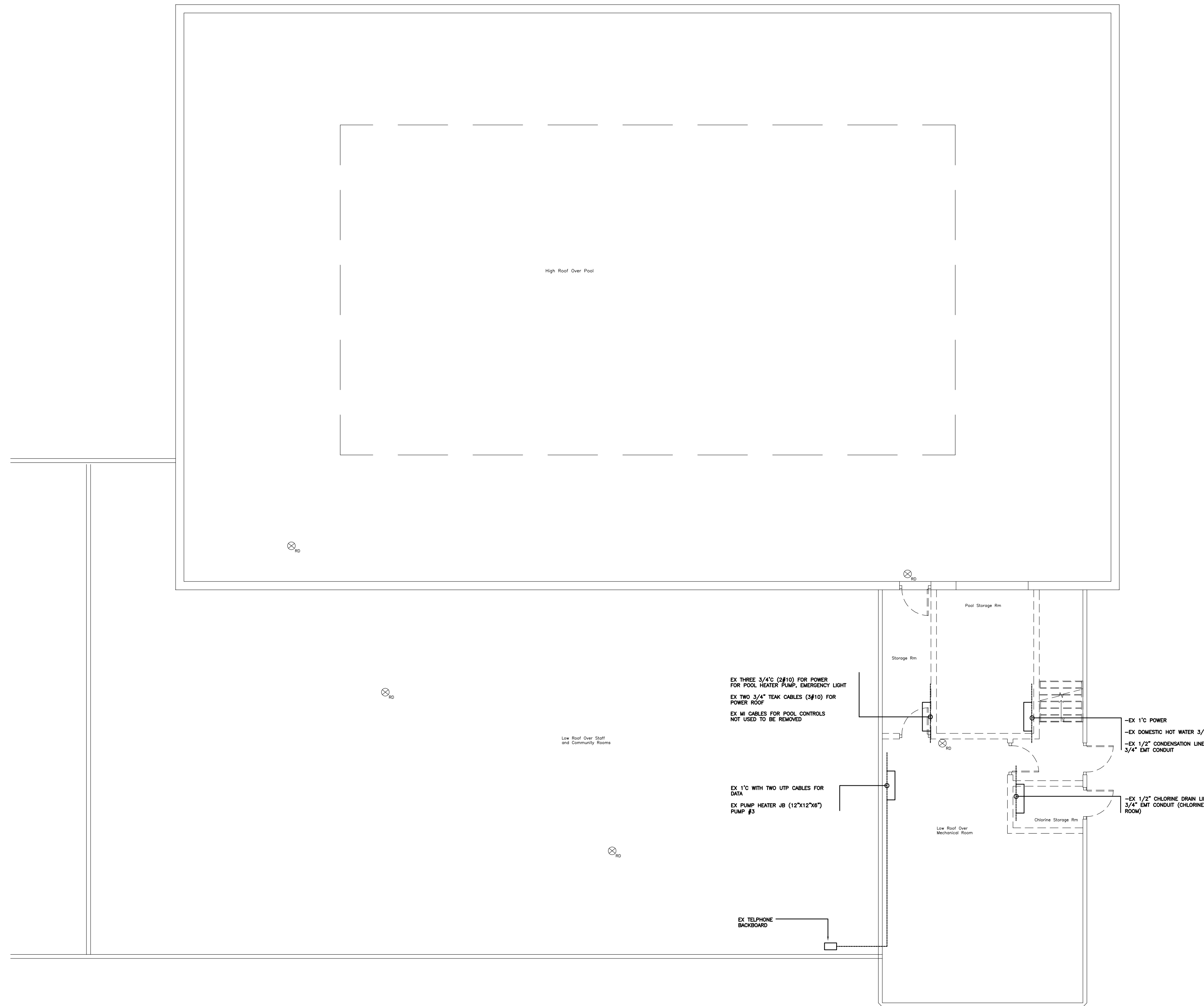
**RICE KONG ENGINEERING LIMITED**  
 MECHANICAL & ELECTRICAL  
 TEL: 416.564.2037  
 E-MAIL: JOHN.KONG@ROGERS.COM  
 19 ELLIS PARK ROAD  
 TORONTO, ONTARIO  
 M6S 2V4

Project Name and Address  
**CITY OF TORONTO-ELMS POOL  
 POOL HVAC UPGRADE  
 45 GOLFDOWN DRV.  
 TORONTO, ONTARIO**

Drawing Title  
 MECHANICAL  
 ROOF OPENS & MISC  
 ROOF PLAN

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M5

**1** ROOF PLAN - OPENING & PROTECTION AREA  
 M5 SCALE 1/8"=1'0"

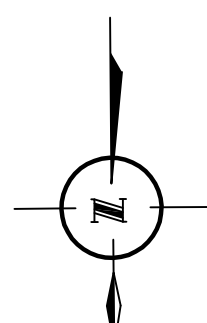


- NOTES:
- MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE REROUTED AROUND THE NEW STRUCTURAL COLUMNS. REFER TO STRUCTURAL DRAWINGS.
  - ELECTRICAL CONDUITS, CONDUCTORS SHALL BE REROUTED AROUND INTERFERENCES. SPlice CONDUITS, PROVIDE JB IF REQUIRED. DATA CABLES SHALL BE REPLACED, SPLICING NOT PERMITTED.
  - EXISTING CONTROL JB SHALL BE RELOCATED AS IDENTIFIED.
  - PLUMBING PIPES SHALL BE REROUTED AROUND INTERFERENCES. ISOLATED WATER & DRAIN SOURCE AND RECONNECTED AFTER COMPLETION. PROVIDE PIPING WITH SAME TYPE UNLESS NOTED.
  - CARRY ALLOWANCE TO ADDITIONAL INTERFERENCE REROUTING. PROVIDE ALL PARTS SIMILAR TO MENTION REROUTINGS.
    - THREE 1\"/>

4	ISSUED FOR TENDER	07/24/24
3	ISSUED FOR TENDER REVIEW	06/06/24
2	ISSUED FOR PERMIT	05/02/24
1	ISSUED FOR REVIEW	03/31/24
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

NORTH 	ENGINEERS STAMP
--	-----------------

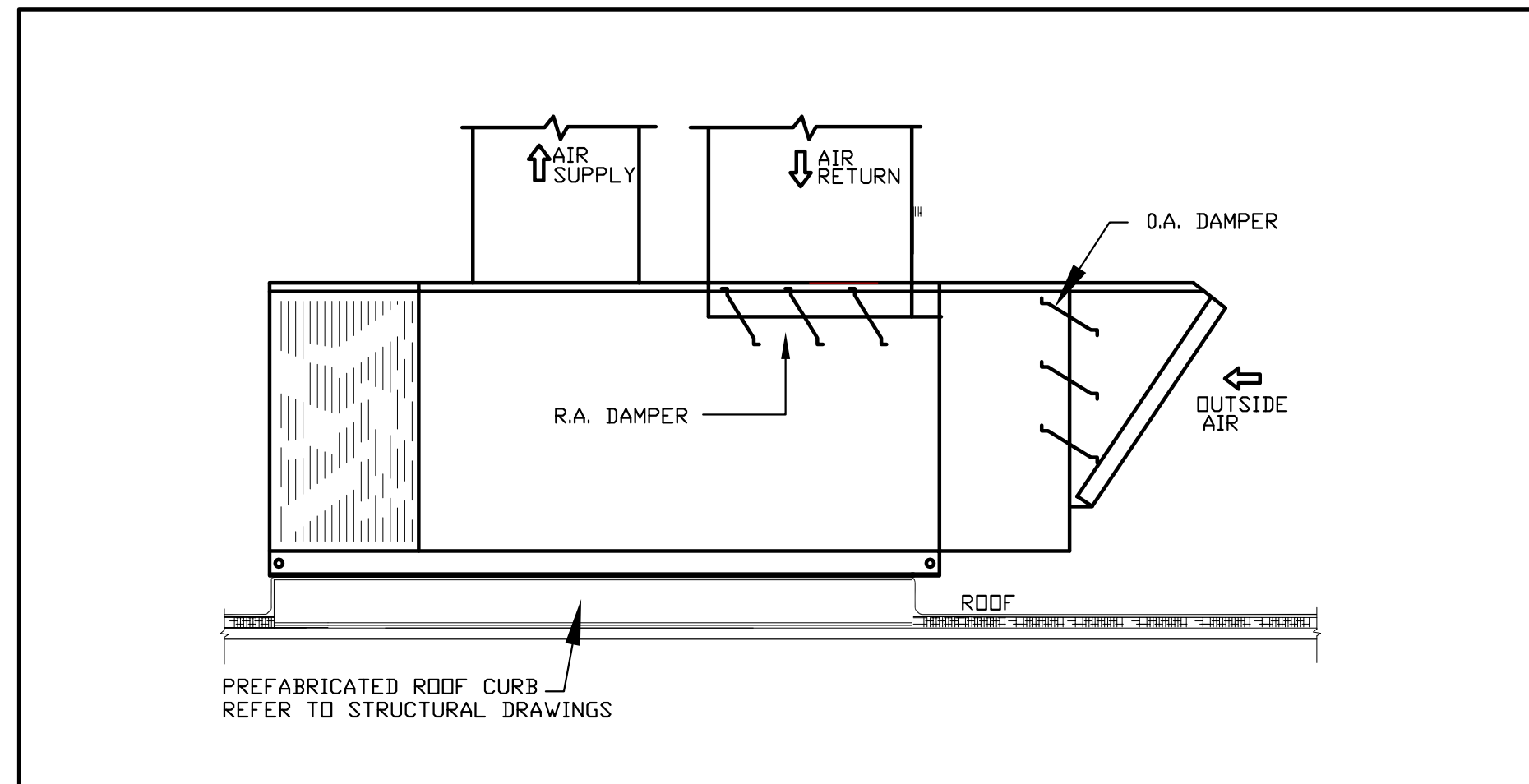
**RICE KONG ENGINEERING LIMITED**  
MECHANICAL & ELECTRICAL  
TEL: 416.564.2037  
E-MAIL: JOHN.KONG@ROGERS.COM  
19 ELLIS PARK ROAD  
TORONTO, ONTARIO  
M6S 2V4

Project Name and Address  
**CITY OF TORONTO-ELMS POOL  
POOL HVAC UPGRADE  
45 GOLFDOWN DRV.  
TORONTO, ONTARIO**

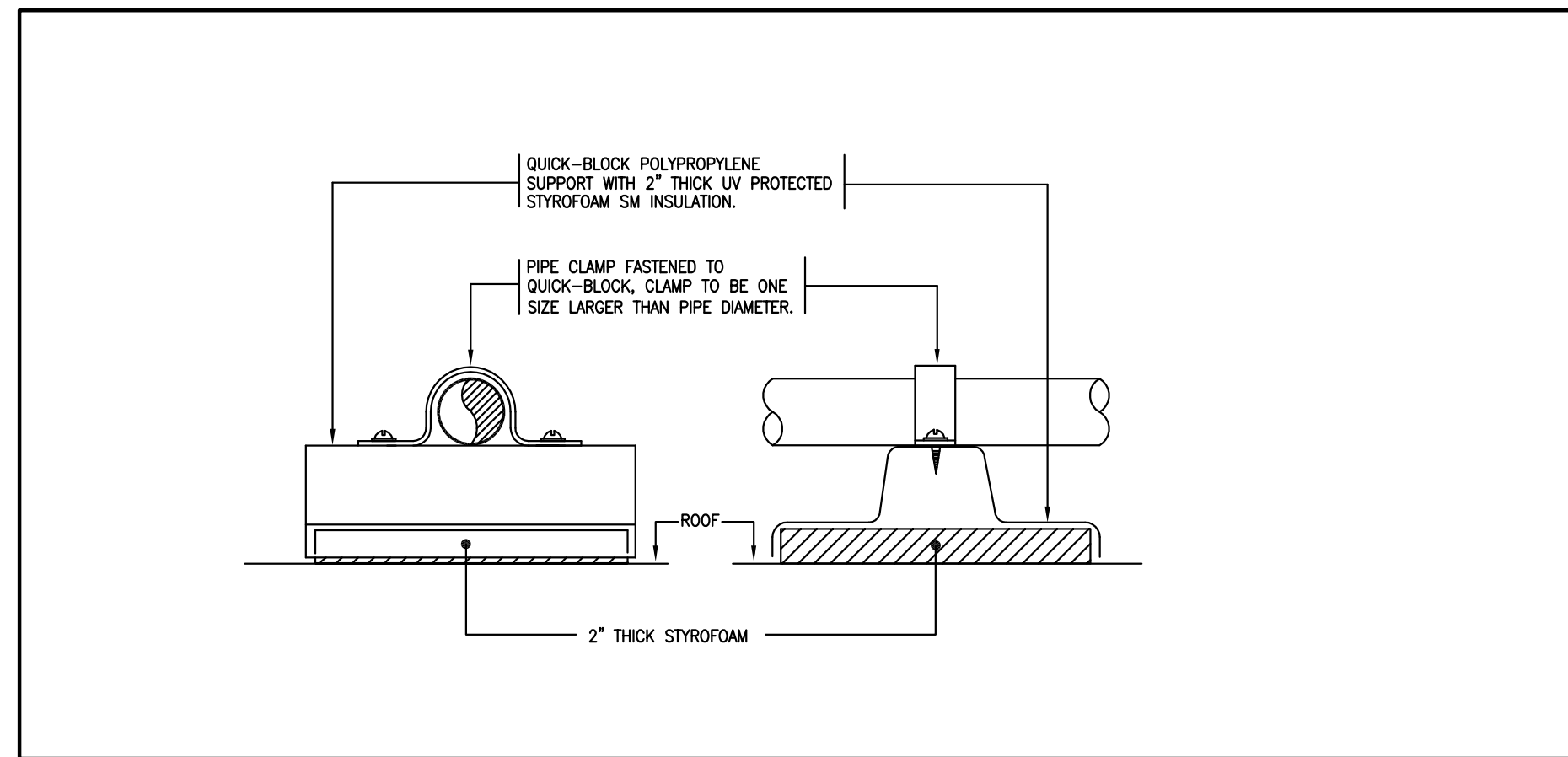
Drawing Title  
**MECHANICAL & ELECTRICAL  
INTERFERENCES  
FLOOR PLAN**

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M6

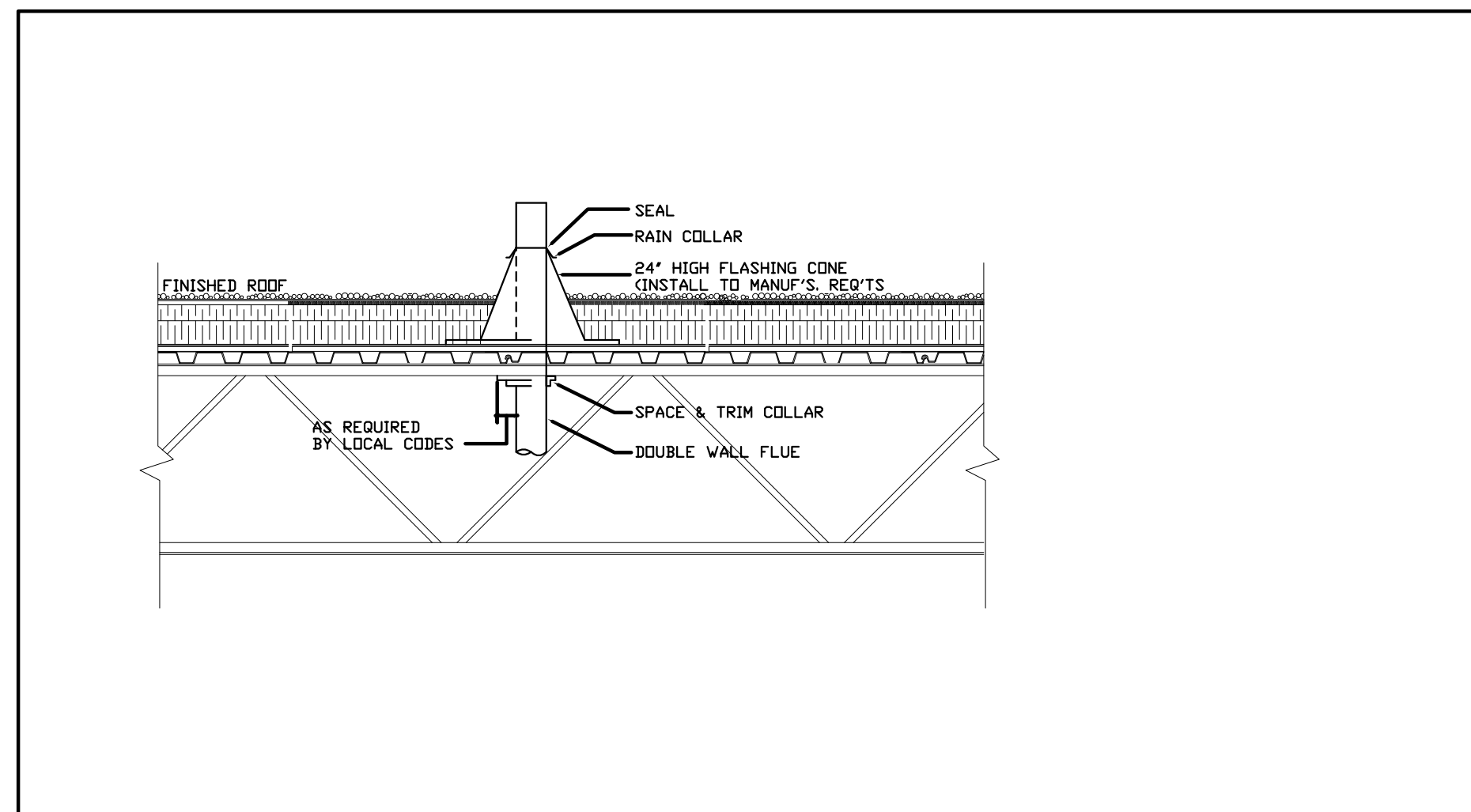
**1** HVAC ROOF PLAN - M&E INTERFERENCES  
M6 SCALE 1/8"=1'0"



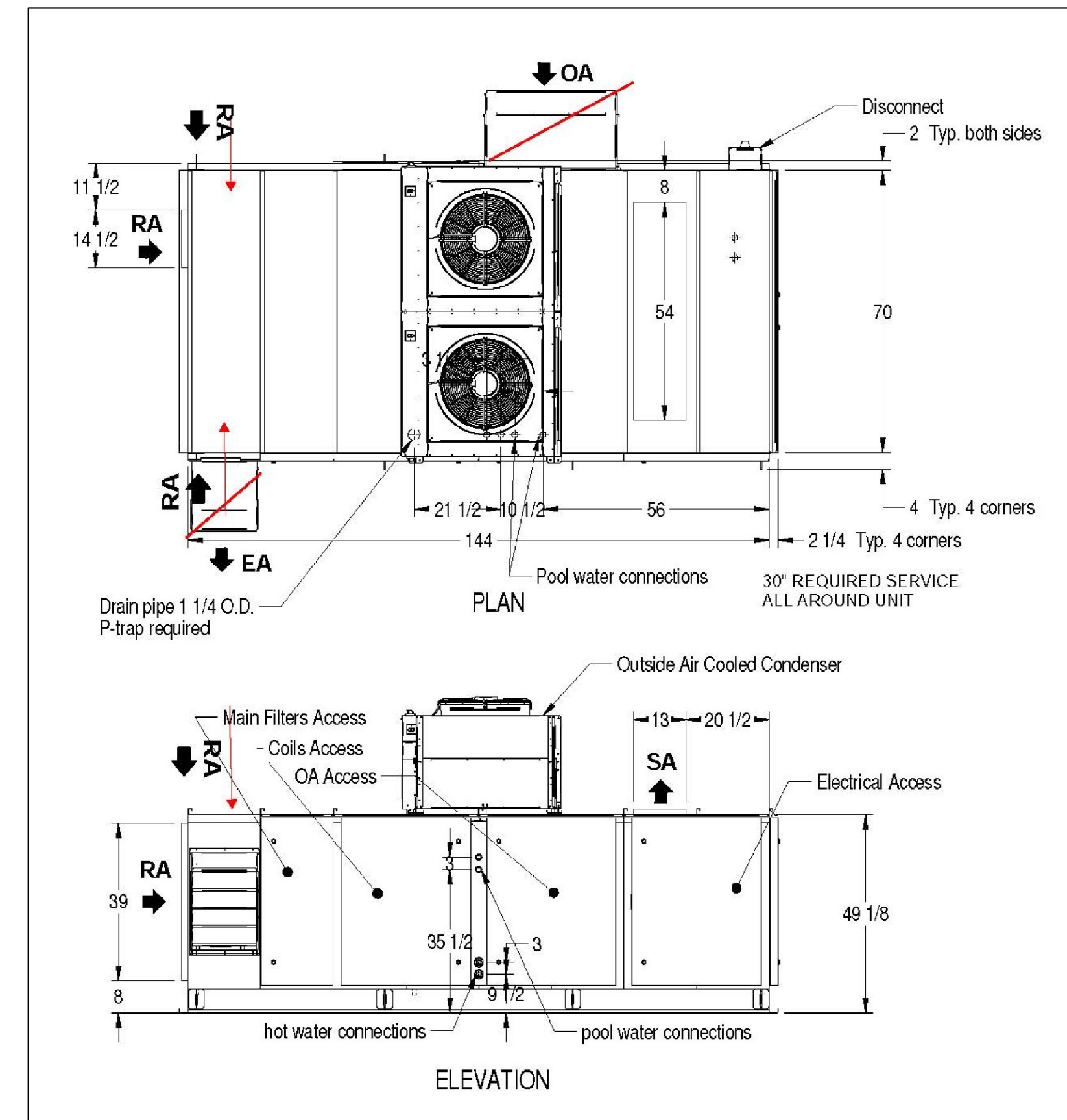
**1** DEHUMIDIFIER UNIT MOUNTING DETAIL  
M7 SCALE N.T.S.



**2** HEAT RECOVERY PIPE MOUNTING DETAIL  
M7 SCALE N.T.S.



**3** VENT THRU ROOF DETAIL  
M7 SCALE N.T.S.



**GENERAL NOTES AND SPECIFICATIONS (DEHUMIDIFIER)**

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE AND AMENDING REGULATIONS, NFPA 91, OFC 4.1.7 AND LATEST SMACNA HVAC DUCT CONSTRUCTION STANDARD. ALL WORK SHALL ALSO CONFORM TO DISTRICT BYLAWS, REGULATIONS, AND PUBLISHED ENGINEERING STANDARDS.
- ALL WORK SHALL BE INSPECTED BY THE BUILDING DEPARTMENT AND FIRE DEPARTMENT.
- EXHAUST DUCT SHALL BE SEAMLESS CIRCULAR METAL DUCT WITH CEMENT SEAL JOINTS. MOUNTED MINIMUM 18" AWAY FROM COMBUSTIBLE SURFACE. VERTICAL SECTION SHALL BE SUPPORTED AT MAXIMUM 12'0" SPACING. NOT AT JOINTS OR COLLAR.
- ACCESS PANELS SHALL BE OF THE SAME MATERIAL AS THE DUCT.
- THE SUPPLY AND RETURN SHALL TERMINATE MINIMUM 18" ABOVE THE ROOF DECK WITHIN PREFABRICATED ROOF CURB
- THE INTEGRATE DEHUMIDIFIER SHALL BE MOUNTED TO ON STRUCTURAL ANCHORING POINTS. REFER TO STRUCTURAL DRAWINGS.
- THE INTEGRATE DEHUMIDIFIER UNIT SHALL CONSIST OF AN EVAPORATING COIL, HEATING COIL, CONDENSER ON AN INTEGRATED STEEL FRAME.
  - COOLING CAPACITY: 174 MBH (15TONS)
  - HEAT REJECTION: 218 MBH; POOL WATER HEATING CAPACITY: 126 MBH
  - AIR VOLUME: DESIGN 6000CFM, OPERATING RANGE 5,500 - 7,500CFM, 1.0" WC, 7.5HP, VFD
  - ELECTRICAL: 575V, 3P, 60HZ, 32.0A (FLA)
  - DUAL COMPRESSORS, 410A REFRIGERANT
  - EVAPORATOR COIL CAPACITY: 174MBH
  - MOISTURE REMOVAL CAPACITY: 71.8LBS/HR
  - REHEAT COIL REJECTION: 218.5MBH
  - GLYCOL PUMP: 34HP
  - HEAT EXCHANGERS FOR POOL HEATING: TITANIUM PLATES, 126MBH CAPACITY, 20GPM, 1" CONNECTION, 60PSI OPERATING
  - OUTDOOR AIR DRY COOLER: DUAL MOTOR, 1.4HP
  - DIMENSIONS: 144"x70"x80"(H). MAINTAIN MIN 36" CLEARANCE AROUND UNIT
  - OPERATION WEIGHT: 7,200LBS
  - MANUFACTURER: DECTRON MODEL: DS-600 SERIES, HTS ORDER 79067.7
- AIR MONITORING ALARM - CONTROL PANEL  
MONITOR AIR FLOW WITHIN HOOD. ON BOARD SENSORS, LOW AIR ALARM AND VISUAL DISPLAY.  
LED PANEL WITH ALARM (RED) AND OPERATION (GREEN) INDICATORS  
PROVIDE BACnet INTERFACE CONNECTED TO FUTURE BAS CONNECTION
- EXISTING EQUIPMENT, VVT, AND DUCTWORK ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY EXACT DIMENSIONS, LOCATIONS, AND CONDITIONS ON SITE.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND CHECKING DUCTWORK ROUTING BEFORE ORDERING / INSTALLING DUCTWORK. CONTRACTOR TO REPORT ANY INTERFERENCES BACK TO THE ENGINEER.
- PROVIDE FIRE DAMPERS WHEREVER DUCT IS PENETRATING FIRE RATED WALLS, ROOF, OR CEILING.
- PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.
- AIR BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT TESTING COMPANY.
- SUBMIT MAINTENANCE AND INSTRUCTION MANUAL.
- THE EXHAUST FAN SHALL BE INTERLOCKED WITH VENT HOOD CONTROL MONITORING AND EXISTING ROOF TOP UNITS (RTU) FEEDING THE LABORATORY.

**4** DEHUMIDIFIER INTEGRATE UNIT - AHU-2 & 3  
M8 SCALE N.T.S.

8	ISSUED FOR TENDER	07/24/24
7	ISSUED FOR TENDER REVIEW	06/06/24
6	ISSUED FOR PERMIT	05/02/24
5	ISSUED FOR REVIEW	03/31/24
4	ISSUED FOR COORDINATION	02/23/24
3	ISSUED FOR COORDINATION	10/27/23
2	ISSUED FOR COORDINATION	10/20/23
1	ISSUED DETAIL DESIGN REVIEW	09/01/23
NO	ISSUES AND REVISIONS	DATE

ALL DIMENSIONS AND INFORMATION SHOWN ON THESE DRAWINGS MUST BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT PRIOR TO CONSTRUCTION AND FABRICATION OF ITS COMPONENTS. SHOULD EXISTING CONDITIONS OR SERVICES BE FOUND TO VARY FROM THAT INDICATED ON THE DRAWINGS, THE CONSULTANT MUST BE NOTIFIED IMMEDIATELY.

ALL DRAWINGS AND RELATED DOCUMENTS SHALL REMAIN THE PROPERTY AND COPYRIGHT OF CONSULTANT. USE LATEST REVISED DRAWINGS. DO NOT SCALE DRAWINGS.

NORTH	ENGINEERS STAMP
-------	-----------------

**RICE KONG ENGINEERING LIMITED**  
MECHANICAL & ELECTRICAL  
TEL: 416.564.2037  
E-MAIL: JOHN.KONG@ROGERS.COM  
19 ELLIS PARK ROAD  
TORONTO, ONTARIO  
M6S 2V4

Project Name and Address  
**CITY OF TORONTO-ELMS POOL  
POOL HVAC UPGRADE  
45 GOLFDOWN DRV.  
TORONTO, ONTARIO**

Drawing Title  
**MECHANICAL  
DEHUMIDIFIER DETAILS**

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M7

