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

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

STANDARDS. 2. SCOPE OF WORK

RING GASKETS.

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

<u>GENERAL</u> A. COMPLY WITH GENERAL CONDITIONS.

B. PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.

HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR PVC-DWV WHERE

- C. SUBMIT MAINTENANCE AND INSTRUCTION MANUALS. D. 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 A. <u>UNBURIED SECTIONS:</u> CAST IRON SOIL PIPE, 4000# (18KN) CRUSH STRENGTH, NO
- 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

MECHANICAL SPECIFICATION PLUMBING

- A. <u>UNBURIED SECTIONS:</u> 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 <u>OR</u> 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
- B. <u>BURIED SECTIONS</u>: 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.
- A. <u>UNBURIED SECTIONS:</u> 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 <u>OR</u> ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED. B. <u>BURIED SECTIONS:</u> 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 <u>OR</u> ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED, <u>OR</u> PVC PIPE AND FITTINGS, PVC PRIMER AND PVC SOLVENT CEMENT.
- DOMESTIC WATER DISTRIBUTION: HARD TEMPER COPPER TUBING, TYPE L, SOLDERED, WITH WROUGHT COPPER OR CAST BRASS PRESSURE FITTINGS, WITH INSULATED AND VAPOUR BARRIERED 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

6. PIPING SPECIALTIES

- 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 TEMP PIPE INSULATION WITH ASJ; MANSON INSULATION INC. ALLEY-K WITH APT; KNAUF FIBREGLASS OR ROXUL-SEITZ. INSULATE NEW PIPING WITH RIGID PIPE INSULATION AS FOLLOW:
- HORIZONTAL STORM, RAINWATER LEADERS AND SANITARY DRAINAGE CHWS, CHWR, HWR, HWS, CWR. CWS CONDENSATE DRAINS (COLD) DOMESTIC COLD WATER DOMESTIC HOT WATER
- 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
- A. <u>CLEANOUTS</u>: CLEANOUTS IN EXPOSED AREAS AND ACCESSIBLE PIPE CHASES SHALL BE LACQUERED CAST IRON CLEANOUT WITH NEOPRENE GASKET AND PLUG. ANCON CO—
- 200 SERIES. B. <u>FLOOR DRAINS</u>: FLOOR DRAINS SHALL BE LACQUERED CAST IRON BODY WITH WEEP
- HOLES AND STRAINER. ANCON FD-200 SERIES. C. <u>FUNNEL FLOOR DRAIN</u>: COMPLETE WITH 4"x 9" (102 x 228 MM) OVAL FUNNEL STRAINER, ANCHORING FLANGE AND STRAINER. ANCON FD-200-EG-1.
- D. <u>TRAP SEAL PRIMER</u>: TRAP SEAL PRIMERS SHALL BE AUTOMATIC, CAST BRASS BODY, RENEWABLE DISC AND SEAT RINGS, VACUUM BREAKER, AND REMOVABLE COVER. ANCON
- E. <u>BACKFLOW PREVENTER</u>: 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.
- F. <u>ACCESS DOOR</u>: 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

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- 1. GENERAL A) 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 D) CONFORM TO LOCAL AND DISTRICT BYLAWS, REGULATIONS AND PUBLISHED ENGINEERING
- STANDARDS. 2.<u>SCOPE OF WORK</u>
- PROVIDE AND INSTALL DUCTWORK, DIFFUSERS, DAMPERS AND ACCESSORIES INCLUDING ROOFTOP UNIT, VVT CONTROLS, CONTROLLERS AND PRESSURE SENSORS
- <u>GENERAL</u>
- A. PROVIDE EQUIPMENT, DUCTWORK, AND ACCESSORIES AS SHOWN.
 B. 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 MAINTÈNANCE AND INSTRUCTION MANUALS. BEFORE FINAL PAYMENT, SUBMIT TWO SETS OF AS-BUILT DRAWINGS SHOWING ALL
- CHANGES AND CONCEALED SERVICES DIMENSIONED.
- F. 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.

 G. POWER WIRING SHALL BE PROVIDE DIV 16

3. <u>DUCTWORK AND FITTINGS</u>

A) <u>DUCTWORK</u>

- EXHAUST DUCTWORK: DUCTWORK TO BE CONSTRUCTED TO 1 1/2 TIMES WORKING PRESSURE OF 1.0" w.c. 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
- 8. ALL DUCTWORK IN THE POOL AREA SHALL BE STAINLESS STEEL, RIGID AND SEAMLESS
- GALVANIZED STEEL OR PLASTIC NOT PERMITTED
- B) <u>DUCT SEAL CLASS AND DUCT SEALANT</u>
- 1GENERAL: 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

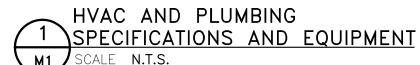
ROOFTOP DEHUMIDIFIER/HEATING UNIT SCHEDULE

				CC	OLING	HEA	TING (ELEC	CTRIC)	,	SUPPLY FA	AN	MIN	VOLTAGE /DUAGE	MIN	WEIGHT	MOLINITINIO	DEMARKS
UNIT REF.	NOM, TONS	MANUFACTURER	MODEL	TOTAL (TONS)	ECONOM.	INPUT (kW)	OUTPUT MBH	STAGES	(cfm)	E.S.P.	(hp)	AIR (CFM)	VOLTAGE/PHASE	AMPS	(LB)	MOUNTING ARRANGEMENT	REMARKS
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		ROOF MTD	_
AHU-2 & 3 WITH INTEGRATED CCNDENSER (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

DEHUMIDFIER UNIT NOTES:

1. REFRIGERATION: R410A

- 2. UNIT TO BE COMPLETE WITH ENTHALPY CONTROL ECONOMIZER.
- 3. THERMOSTATIC CONTROLS:
- 4. CO2 SENSOR (CD-WOOO-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.



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

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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

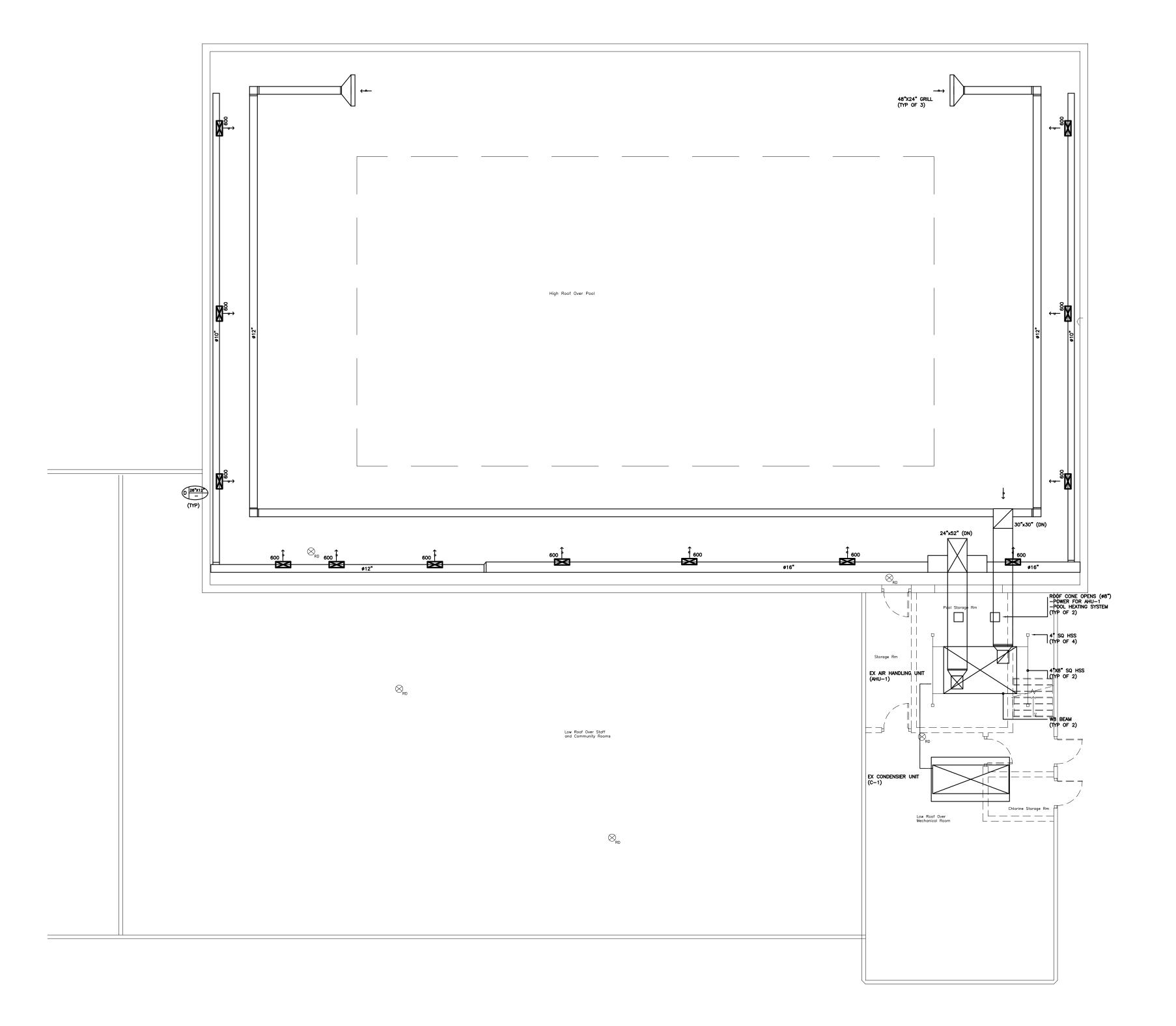
Project Name and Address

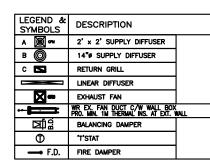
CITY OF TORONTO-ELMS POOL POOL HVAC UPGRADE 45 GOLFDOWN DRV. TORONTO, ONTARIO

Drawing Title

MECHANICAL SPECIFICATIONS & SCHEDULE

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	NTS
DRAWING NO:	M 1





1. THE COMPLETE EXISTING DEHUMIDIFER SYSTEM SHALL BE REMOVED AND REPLACED AS SPECIFIED INCLUDING BUT NOT LIMITED TO BELOW LIST

-AIR HANDLER UNIT (AHU-1) AND COMPRESSOR (C-1)
-EXTERIOR DUCTWORK
-INTERIOR DUCTWORK OVER THE POOL AREA
-GRILLS, REGISTERS, DIFFUSERS

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.

2. PLUMBING PIPE (TWO 2" XFR) SHALL BE DISCONNECTED FROM POOL HEATING SYSTEM BELOW ROOF AND CAPPED

3. 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 NSTALLED, REFER TO STRUCTURAL DRAWINGS

2. EXISTING CHLORINE TANK (200 GALLON) AND ASSOCIATED EQUIPMENT AND PIPING SHALL BE DISCONNECTED. ANY RESIDUAL CHEMICAL SHALL BE PROPERLY DISPOSED BY AN MINISTRY CERTIFIED CONTRACTOR FOR HAZARDOUS WASTE.

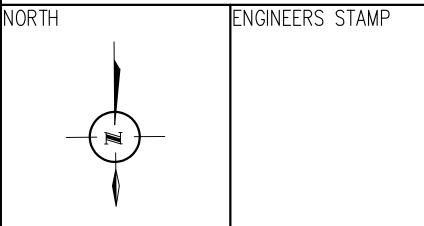
3. TANK SHALL BE STORED ON SITE IN AN SECURED ENCLOSED TRAILER WITH LOCK ACCESS

4. TANK SHALL BE RE—INSTALLED UPON COMPLETION. PROVIDE ALL PIPING, SUPPORT BRACKETS AS REQUIRED TO RESTORE INSTALLATION TO ORIGINAL CONDITION.

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Project Name and Address

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

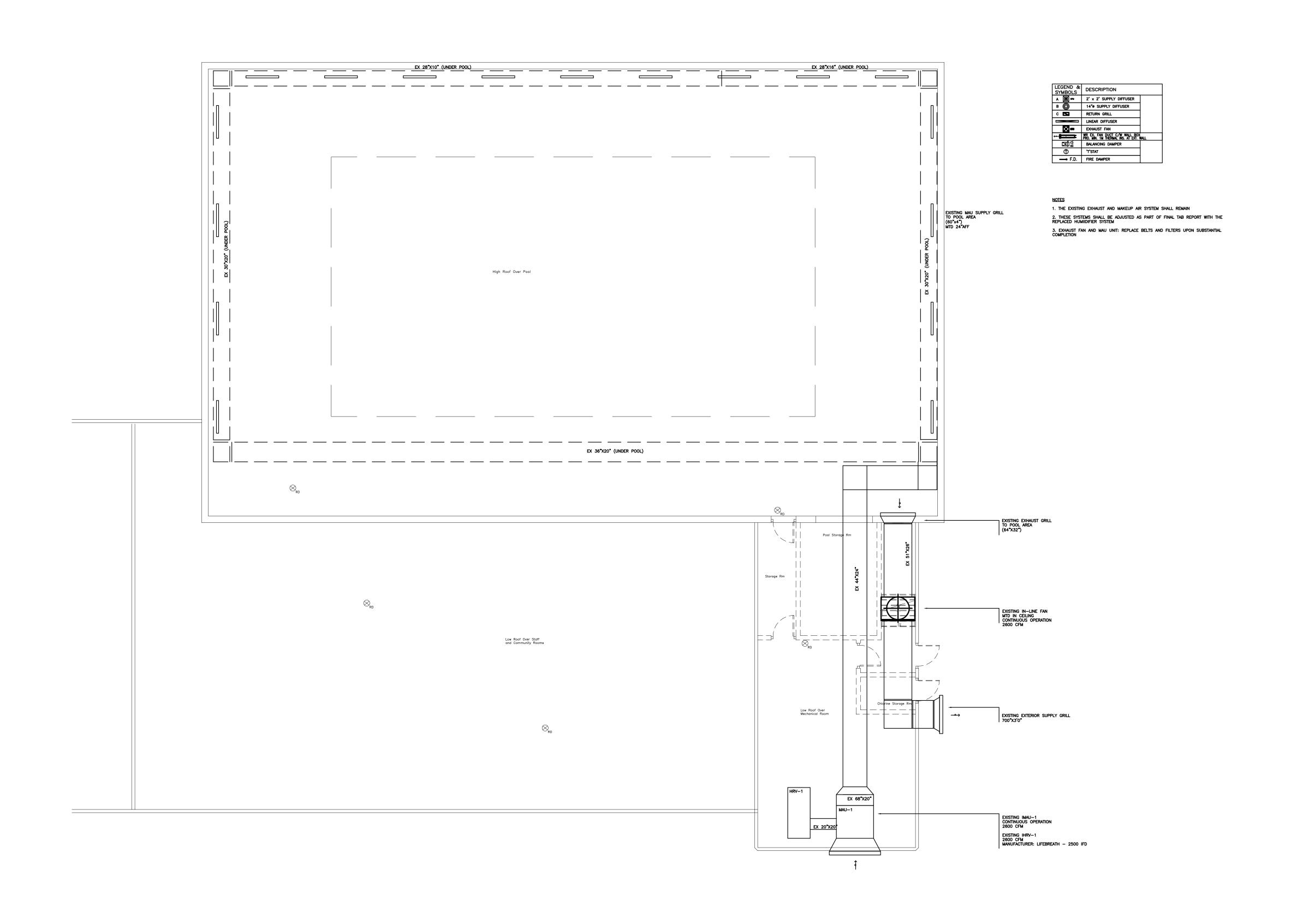
Drawing Title

MECHANICAL HVAC DE PLAN — DEHUMIC

ROOF PLAN — DEHUMIDIFER 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 SCALE 1/8"=1'0"

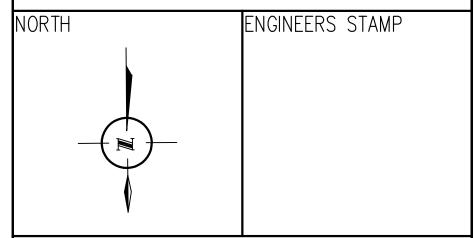


1 EXISTING HVAC FLOOR PLAN - MAU & EXHAUST SCALE 1/8"=1'0"

07/24/24 ISSUED FOR TENDER 06/06/24 ISSUED FOR TENDER REVIEW 05/02/24 ISSUED FOR PERMIT 03/31/24 ISSUED FOR REVIEW 12/21/23 ISSUED FOR ALTERNATE DESIGN 10/27/23 ISSUED FOR COORDINATION 10/20/23 ISSUED FOR COORDINATION 09/01/23 ISSUED DETAIL DESIGN REVIEW 08/09/23 ISSUED FOR ASSESSMENT REPORT ISSUES AND REVISIONS

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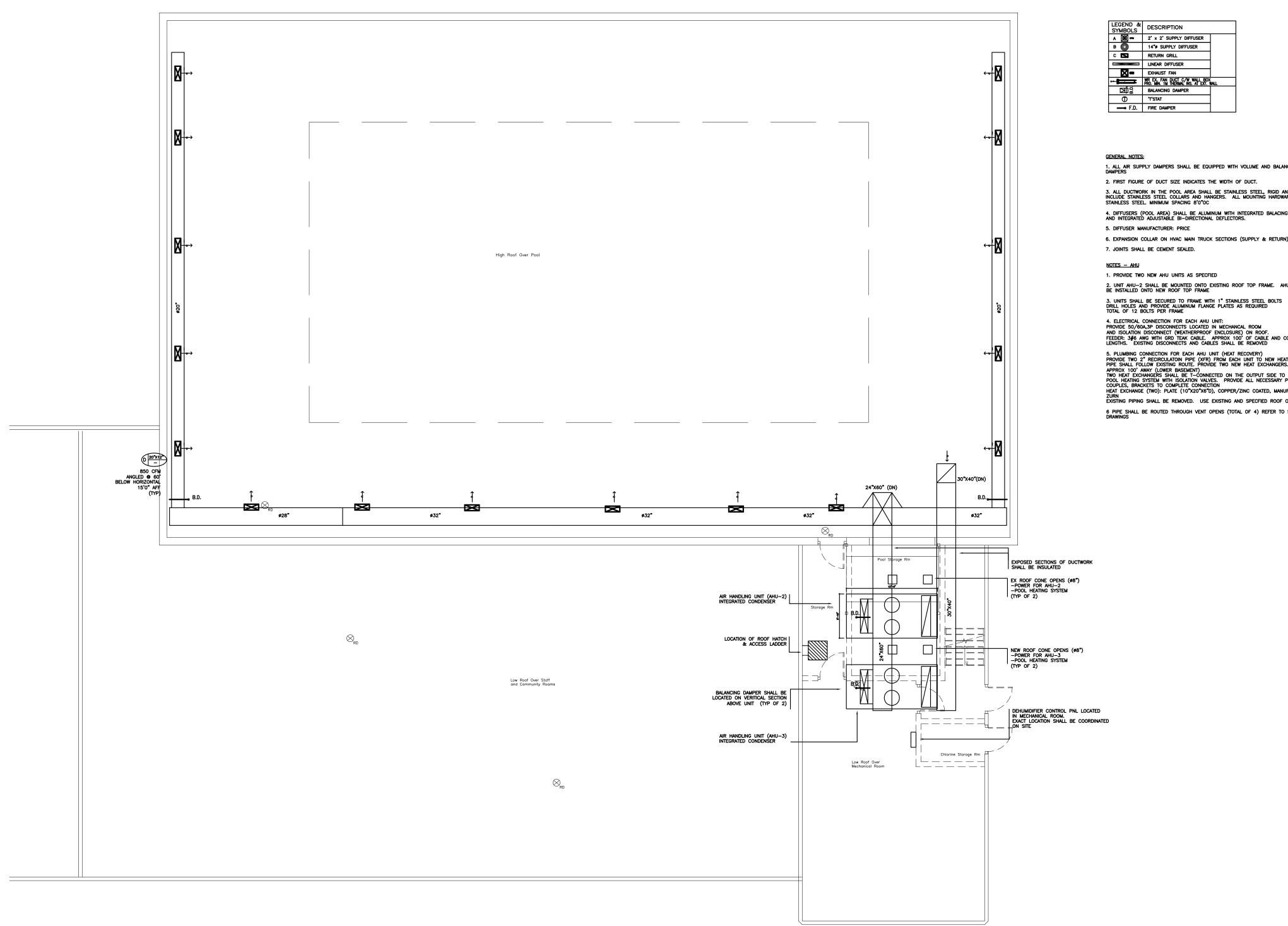
Project Name and Address

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

Drawing Title

MECHANICAL HVAC — MAU & EXH FLOOR PLAN

DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M3



1 HVAC ROOF PLAN - DEHUMIDIFIER

M4 SCALE 1/8"=1'0"

LEGEND & DESCRIPTION LINEAR ORIGINAL LINEAR DIFFUSER

EXHAUST FAN

EXHAUST FAN

FRO. MIN. 1M THERMAL INS. AT EXT. WALL

DIT G

BALANCING DAMPER

T'STAT

FIRE DAMPER

1. ALL AIR SUPPLY DAMPERS SHALL BE EQUIPPED WITH VOLUME AND BALANCING DAMPERS

2. FIRST FIGURE OF DUCT SIZE INDICATES THE WIDTH OF DUCT.

6. EXPANSION COLLAR ON HVAC MAIN TRUCK SECTIONS (SUPPLY & RETURN) 7. JOINTS SHALL BE CEMENT SEALED.

1. PROVIDE TWO NEW AHU UNITS AS SPECFIED 2. UNIT AHU-2 SHALL BE MOUNTED ONTO EXISTING ROOF TOP FRAME. AHU-3 SHALL BE INSTALLED ONTO NEW ROOF TOP FRAME

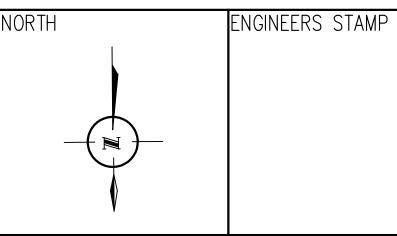
4. ELECTRICAL CONNECTION FOR EACH AHU UNIT:
PROVIDE 50/60A,3P DISCONNECTS LOCATED IN MECHANCAL ROOM
AND ISOLATION DISCONNECT (WEATHERPROOF ENCLOSURE) ON ROOF.
FEEDER: 3#6 AWG WITH GRD TEAK CABLE. APPROX 100' OF CABLE AND CONDUIT
LENGTHS. EXISTING DISCONNECTS AND CABLES SHALL BE REMOVED

5. PLUMBING CONNECTION FOR EACH AHU UNIT (HEAT RECOVERY)
PROVIDE TWO 2" RECIRCULATOIN PIPE (XFR) FROM EACH UNIT TO NEW HEAT EXCHANGER.
PIPE SHALL FOLLOW EXISTING ROUTE. PROVIDE TWO NEW HEAT EXCHANGERS. LOCATED
APPROX 100' AWAY (LOWER BASEMENT)
TWO HEAT EXCHANGERS SHALL BE T—CONNECTED ON THE OUTPUT SIDE TO EXISTING
POOL HEATING SYSTEM WITH ISOLATION VALVES. PROVIDE ALL NECESSARY PIPES,
COUPLES, BRACKETS TO COMPLETE CONNECTION
HEAT EXCHANGE (TWO): PLATE (10"X20"X6"D), COPPER/ZINC COATED, MANUFACTURER
ZURN ZURN
EXISTING PIPING SHALL BE REMOVED. USE EXISTING AND SPECFIED ROOF OPENS 6 PIPE SHALL BE ROUTED THROUGH VENT OPENS (TOTAL OF 4) REFER TO STRUCTURAL

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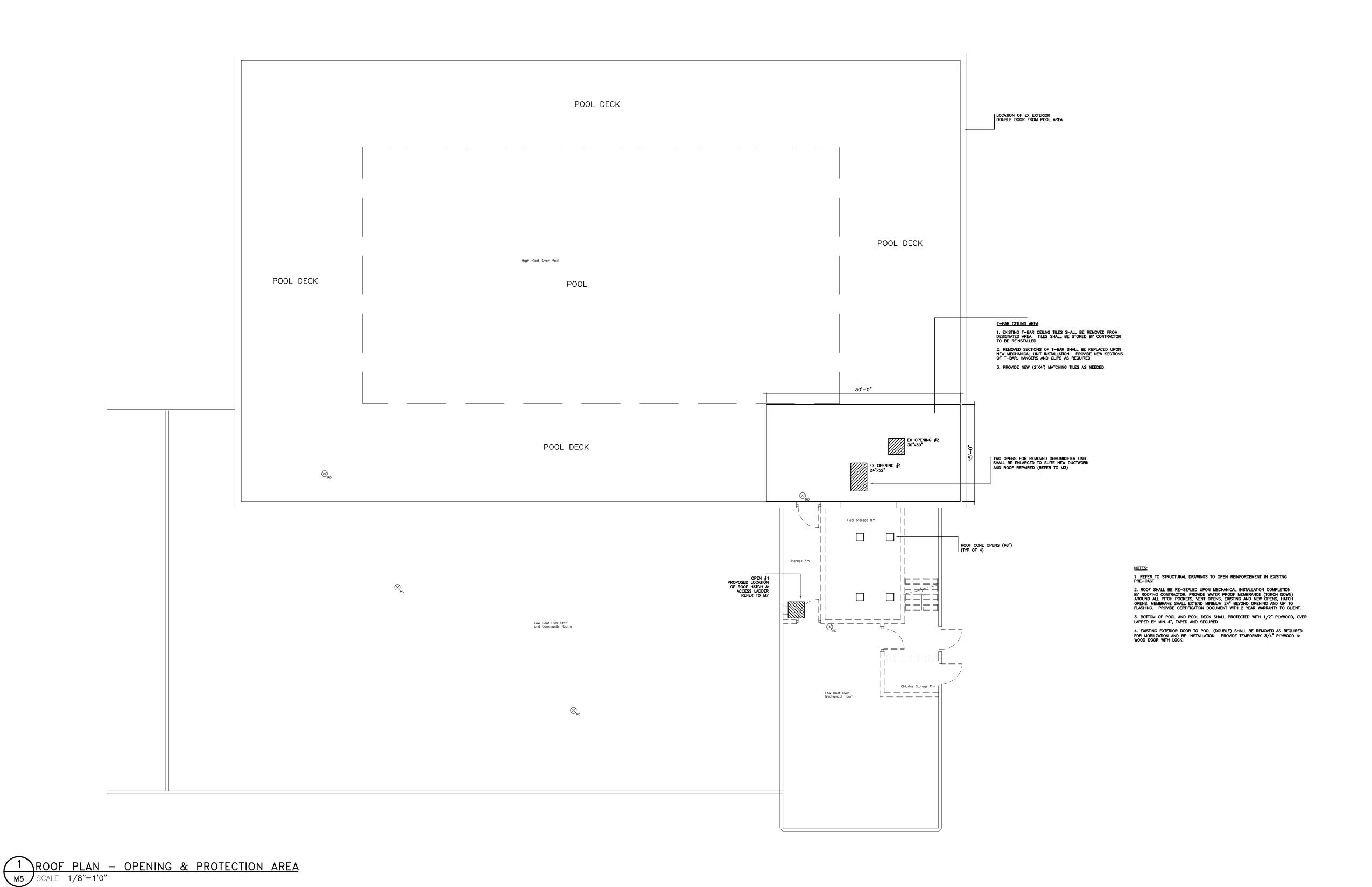
Project Name and Address

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

Drawing Title

MECHANICAL PROPOSED HVAC - DEHUMIDIFIER ROOF PLAN

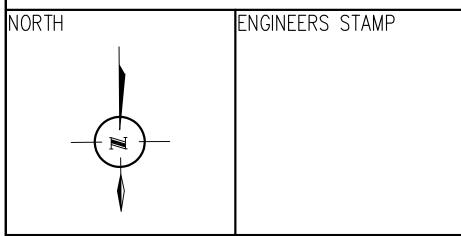
DRAWN BY		LK
DESIGNED BY		LK
APPROVED BY		JK
SCALE	AS	NOTED
DRAWING NO:		M4



7 ISSUED FOR TENDER 07/24/24
6 ISSUED FOR TENDER REVIEW 06/06/24
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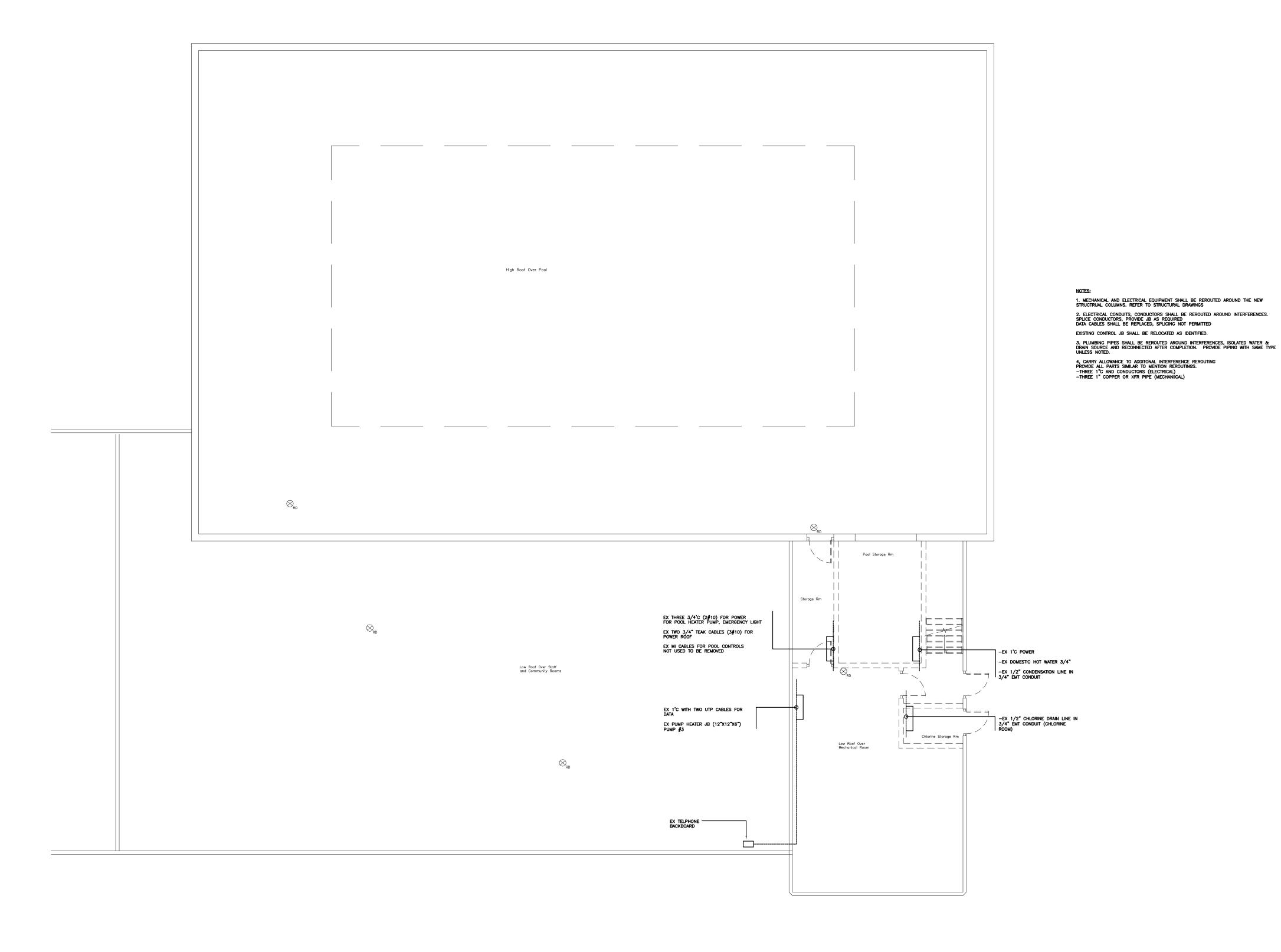
Project Name and Address

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



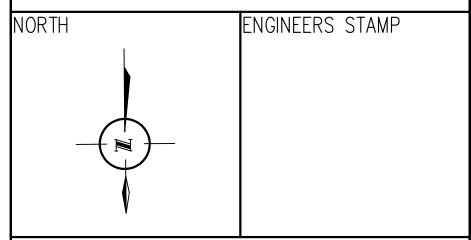
1 HVAC ROOF PLAN - M&E INTERFERENCES

SCALE 1/8"=1'0"

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

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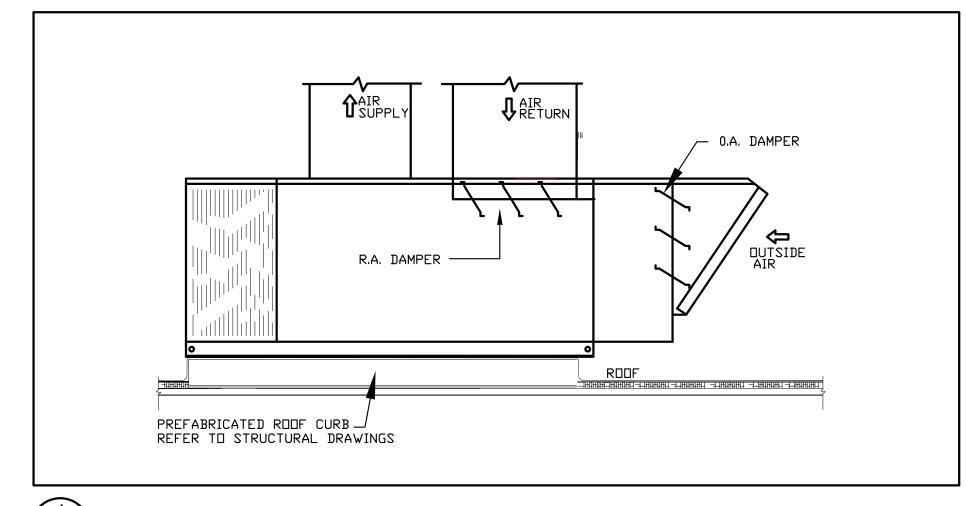
Project Name and Address

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

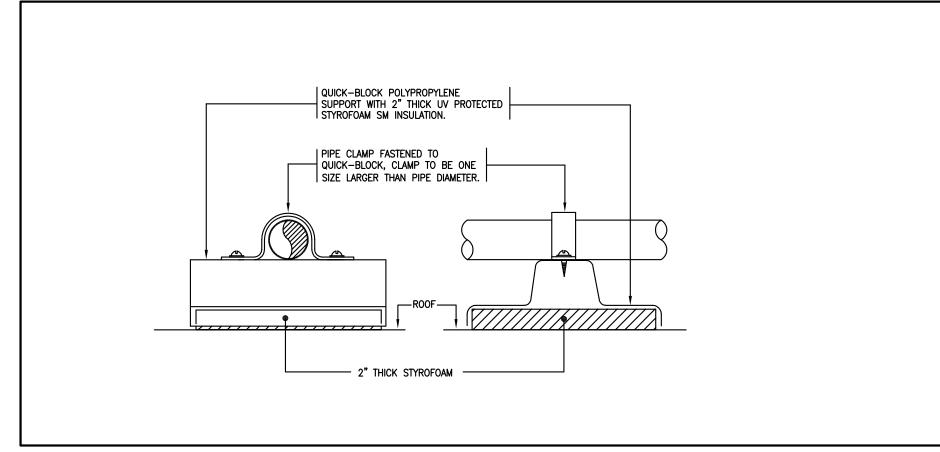
Drawing Title

MECHANICAL & ELECTRICAL INTERFERENCES FLOOR PLAN

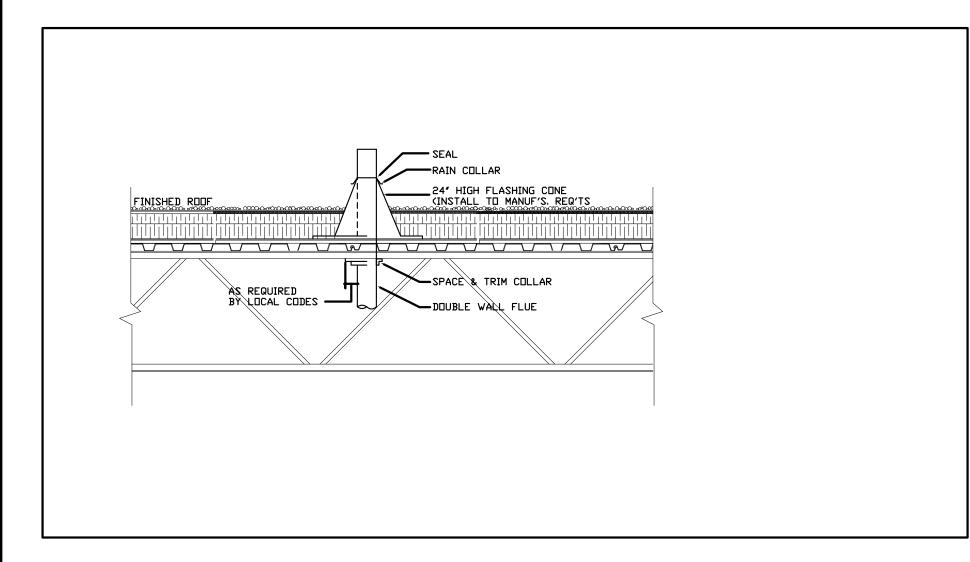
DRAWN BY	LK
DESIGNED BY	LK
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	М6

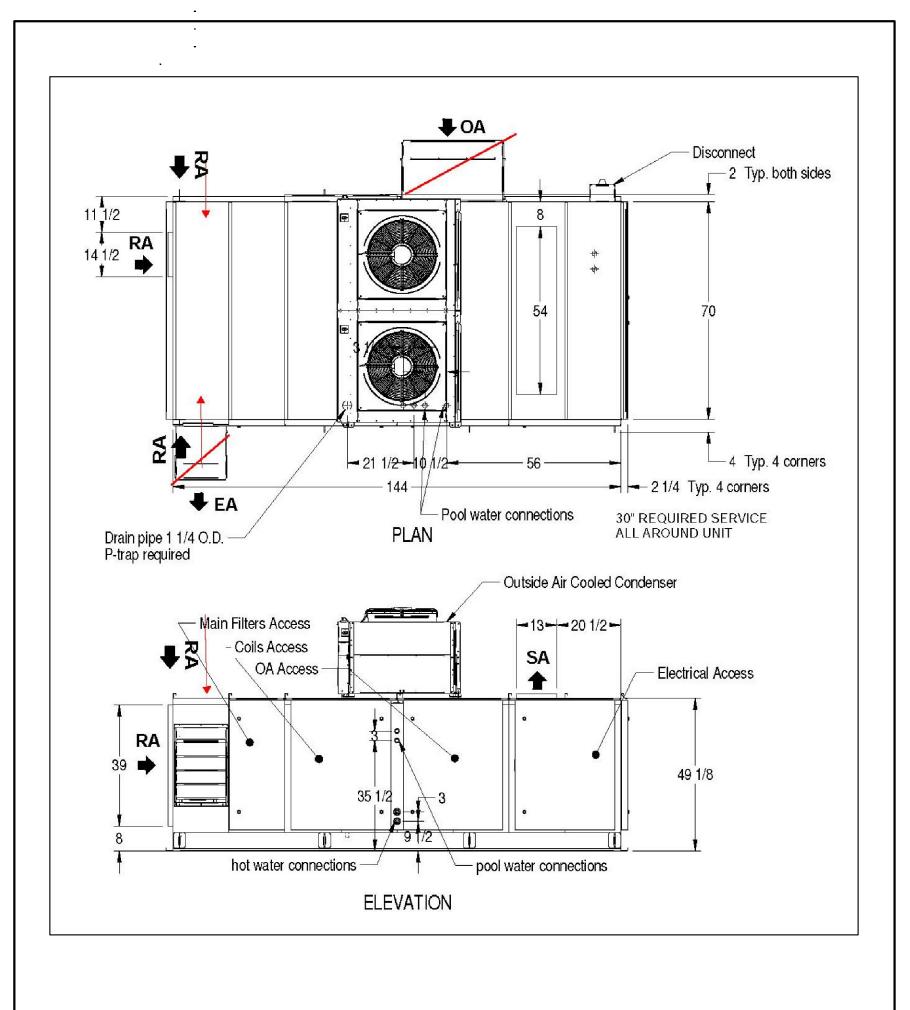


1 DEHUMIDIFIER UNIT MOUNTING DETAIL M7 SCALE N.T.S.



2 HEAT RECOVERY PIPE MOUNTING DETAIL





GENERAL NOTES AND SPECIFICATIONS (DEHUMIFIER)

1. 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. 2. ALL WORK SHALL BE INSPECTED BY THE BUILDING DEPARTEMENT AND FIRE DEPARTMENT.

3. 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.

4. ACCESS PANELS SHALL BE OF THE SAME MATERIAL AS THE DUCT.

5. THE SUPPLY AND RETURN SHALL TERMINATE MINIMUM 18" ABOVE THE ROOF DECK WITHIN PREFABRICATED ROOF CURB

6. THE INTEGRATE DEHUMIDIFIER SHALL BE MOUNTED TO ON STRUCTURAL ANCHORING POINTS. REFER TO STRUCTURAL DRAWIGS.

7. THE INTEGRATE DEHUMIDIFIER UNIT SHALL CONSIST OF AN EVAPORATING COIL, HEATING COIL, CONDENSER ON AN INTEGRATED

-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: 3/4HP

-HEAT EXCHANGER FOR POOL HEATING: TITANIUM PLATES, 126MBH CAPACITY, 20GPM, 1" CONNNECTION, 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-060 SERIES, HTS ORDER 78067.7

8. 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 OPEATION (GREEN) INDICATORS PROVIDE BACNet INTERFACE CONNECTED TO FUTURE BAS CONNECTION

9. EXISTING EQUIPMENT, VVT, AND DUCTWORK ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY EXACT DIMENSIONS, LOCATIONS, AND CONDITIONS ON SITE.

10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND CHECKING DUCTWORK ROUTING BEFORE ORDERING / INSTALLING DUCTWORK. CONTRACTOR TO REPORT ANY

11. PROVIDE FIRE DAMPERS WHEREVER DUCT IS PENETRATING FIRE RATED WALLS, ROOF, OR CEILING.

12. PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.

13. AIR BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT TESTING COMPANY.

14. SUBMIT MAINTENANCE AND INSTRUCTION MANUAL.

15. THE EXHAUST FAN SHALL BE INTERLOCKED WITH VENT HOOD CONTROL MONITORING AND EXISTING ROOF TOP UNITS (RTU) FEEDING THE LABORATORY.

M8 DEHUMIDFIER INTEGRATE UNIT - AHU-2 & 3
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

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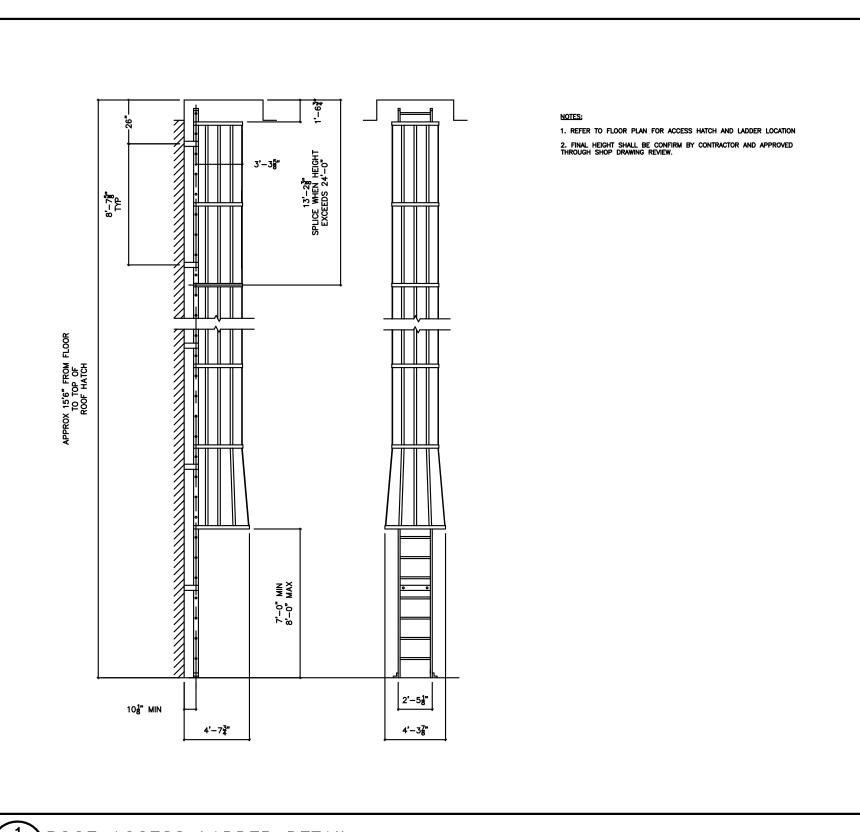
Project Name and Address

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

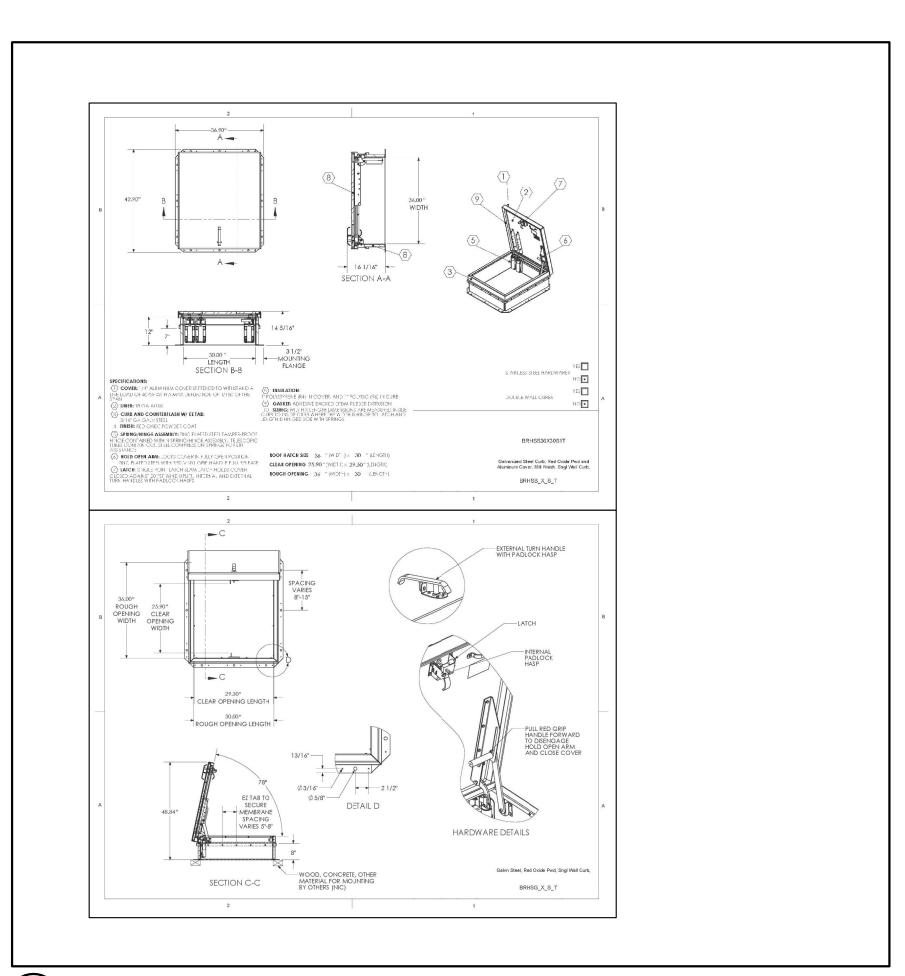
Drawing Title

MECHANICAL DEHUMIDFIER DETAILS

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



1 ROOF ACCESS LADDER DETAIL



2 HATCH OPENING DETAIL

SCALE N.T.S.

GENERAL NOTES AND SPECIFICATIONS (ACCESS HATCH & LADDER)

PART 1 - General

- 1.1 SUMMARY A. Section includes:
- Roof Hatches a. Security Series use thicker materials and optional additional locks.
- 2. Accessory Products for Roof Hatches Safety Railings for all roof hatches
- b. Safety posts for vertical ladder access roof hatches
- 1.2 Related Requirements: A. Division 05 for ladders and stairs.
- B. Division 07 for roofing and sealants.
- 1.3 COORDINATION A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a
- watertight installation. B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
- 1.4 Action SUBMITTALS A. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected Work. 1. Hatch Units: Show types, elevations, thickness of metals, and full-size profiles.
- Hardware: Show materials, finishes, locations of fasteners, types of fasteners, locations and types of operating hardware, and details of installation. 3. General: Show connections of units and hardware to other Work. Include schedules showing location of each type and size of unit 4. Submitted shop drawings shall be sealed by third party engineer for both ladder amd hatch. Include securing details to attach to building
- B. Product Data: Manufacturer's technical data for each type of hatch assembly, including setting drawings, templates, finish requirements, and details of
- 1. Include complete schedule, types, locations, construction details, finishes, latching or locking provisions, and other pertinent data. 1.5 informational submittals
- A. Provide manufacturer's standard warranty. B. Sustainable Design Submittals: 1. Building Product Disclosure Requirements: To encourage the use of building products that are working to minimize their environmental and health
- impacts, provide the following information when available: a. Material Ingredients Documentation demonstrating the chemical inventory of the product 1.6 Closeout submittals
- A. Manufacturer's Installation Instructions and Operation & Maintenance: Indicate installation, operation and maintenance requirements and rough-in
- 1.7 Quality Assurance
- A. Regulatory Requirements:
- OSHA 29 CFR 1910.23 Guarding floor and wall openings and holes
 OSHA 29 CDR 1919.29 Fall protection systems and falling object protection-criteria and practices.
- 3. OSHA 29 CFR 1926.502 Fall protection systems criteria 4. International Building Code (IBC) Section 1013.6 Roof Access
- 5. International Building Code (IBC) Section 1009.11 Means of Egress, Stairways, Stairway to Roof 6. OBC 2012
- 1.8 DELIVERY, STORAGE, and HANDLING A. Deliver materials to Project site ready use.
- B. Exercise proper care in handling of Work so as not to disrupt finished surfaces.
- C. Store materials under cover in a dry and clean location off the ground.
- A. Provide manufacturer's standard 5 year warranty. Roof hatches and smoke vents shall be free from manufacturing defects in materials and fabrication for a period of 5 years from the date of shipment. Should a product fail to function in normal use within this period, manufacturer shall furnish a replacement or new part at Babcock-Davis discretion.

PART 2 - PRODUCT 2.1 MANUFACTURER

A. Babcock-Davis, Security Roof Hatch series:BRHSB35X30S1T, Single door and wall, steel and aluminum construction

2.2 ROOF HATCH

 A Roof Hatches 1. Type and Size: Security, BRHS, single-leaf metal lid, 36x30

- 1) Minimum 40-lbf/sq. ft external live load with a maximum deflection of 1/150 of the span and 20-lbf/sq.ft internal uplift load. b. Hatch Material
- 1) Cover: 3/16 inch hot rolled pickled and oiled (HRPO)] 1/4" aluminumu
- 2) Cover Insulation: 1 inch polystyrene. a) Insulation Options: 1 inch Polyisocyanurate
- 3) Curb: 3/16 inch galvanneal steel with integral counterflashing. Mounting flange continuous around base of frame.
- a) Fabricate curbs to minimum height of 12 Inches above roofing surface unless otherwise indicated. b) Sloping Roofs: Where slope or roof deck exceeds 3:12, fabricate curb with perimeter curb height that is tapered to accommodate roof slope so that top surfaces of perimeter curb are level.
- 4) Curb Insulation: 1 inch polyisocyanurate. c. Finish: TGIC Polyester powder coat paint
- d. Hardware: 316 stainless steel unless noted 1) Hinge/Spring Assembly: Zinc plated steel Tamper-proof hinge contained within hinge/spring assembly with compression springs contained within
- 2) Hold Open Device: Automatic zinc plated steel hold open arm with red vinyl grip handle.
- 3) Latch: Zinc plated steel spring-type slam latch with inside and outside operating turn handles and padlock hasp provisions. 4) Gasket: Extruded EPDM adhesive back seal, continuous around cover.
- e. Security Locking Options 1) Mortise Lock - Specify standard or specific manufacturer and model.

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely
- B. Verify that deck, curbs, roof membrane, base flashing, and other items affecting Work of this Section are in place and positioned correctly. C. Verify tolerances and correct improper condition
- D. Identify conditions detrimental to providing proper quality and timely completions of work. E. Do not proceed with installation until detrimental conditions have been corrected.
- 3.2 Installation
- A. Comply with manufacturer's recommendations.
- B. Coordinate installation of components of this Section with installation of roof deck, roof structure, roofing membrane, and base flashing. C. Coordinate installation of sealant and roofing cement with Work of this Section to ensure water tightness.
- D. Securely anchor roof accessories in compliance with manufacturer's instructions. E. Set units plumb, level, and true to line without warp or rack. Separate metal from incompatible metal or corrosive substrates, including wood, by coating
- concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation. F. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal
- 1.4 ADJUSTING A. Adjust movable parts for smooth operation
- B. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.
- A. Clean exposed surfaces per manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION

Product Description

BASIC USE

Fixed wall ladders provide permanent access to roof hatches.

CONSTRUCTION & MATERIALS aluminum ladders and their components are fabricated from 6061-T6 aluminum alloy for added safety, strength and long-lasting durability, with no painting required. fixed wall ladders include side rails with 1-1/8" (29 mm) round rungs that are serrated and secured with cast aluminum connectors, 4 solid rivets and 3/8" (9.5 mm) thick brackets mounted to the walls.

Cages - The aluminum cage consist of 1/4" x 2" (6.4 x 51 mm) hoops and seven 3/16" x 1-1/2" (4.8 x 38 mm) vertical bars, with solid riveted connections.

Fixed Wall Ladders - Roof hatch access with cage

accessories include the following items:

Height- Exceeding 8'0" (2.4 m) installed with cage; Width- 20-1/4" (514 mm)

FINISHES & COATINGS

Mill finish is standard on aluminum ladders.

APPLICABLE STANDARDS American National Standards Institute (ANSI) - ANSI A14.3 American National Standard for Ladders - Fixed - Safety Requirements

Installation

Technical Data

PREPARATORY WORK

Handle and store product according to manufacturer recommendations.

METHODS

Fixed Aluminum Ladder Standard Assembly Establish distance from the floor to the underside of the roof hatch cover. Locate the mounting bracket centerline 13" (330 mm) below the underside of the roof hatch. Note - Bottom rung height from ground will vary depending on roof height.

Complete installation recommendations for all product models are available from the manufacturer.

Building code requirements and product compliance data can be obtained from the manufacturer. Installation must comply with applicable local, state and national code jurisdictions. as per OBC 2012

manufacturer carry a limited warranty of 5 years.

ladders are maintenance-free, with no painting required.

Product Name model: 560-C ALACO Fixed Wall Ladders - ALACO Ladder Co. or engineer-client approved equivalent

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Project Name and Address

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

Drawing Title

MECHANICAL ROOF LADDER AND HATCH DETAILS

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DESIGNED BY		LK
APPROVED BY		JK
SCALE	AS	NOTED
DRAWING NO:		M8