MECHANICAL/ELECTRICAL DRAWING LIST

M000 GENERAL NOTES & LEGENDS

M001 GENERAL MECHANICAL SPECIFICATIONS

M002 HVAC SPECIFICATIONS

M200 IT ROOM PROPOSED DRAINAGE PLAN

M300 IT ROOM PROPOSED HVAC PLAN

M301 IT ROOM MECHANICAL PROPOSED ROOF PLAN

M600 MECHANICAL SCHEDULE AND DETAILS

GENERAL NOTES

- 1. REFER TO SITE AND OWNER INSTRUCTIONS FOR PHASING AND STAGING.
- 2. CO-ORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND SLEEVES THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.
- SAW-CUT OR CORE BORE PENETRATIONS OF CONCRETE. DO NOT USE IMPACT HAMMERS. SEAL DUCTWORK & SLEEVES TO PREVENT LEAKAGE THRU FLOOR.
- 4. DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN DIMENSIONS FROM
- ARCHITECTURAL PLANS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.

 5. MECHANICAL, DIV. 2-14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ONE
- ANOTHER SO AS TO AVOID INTERFERENCE'S BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
- 6. CO-ORDINATE WORK THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CO-ORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SPACE ALLOCATIONS.
- 7. PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
- 8. REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM MECHANICAL REQUIREMENTS AND PROVIDE TO SUIT.
- 9. REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
- 10. MAINTAIN MECHANICAL SERVICES TO THE OCCUPIED AREA THROUGHOUT THE PHASING OF THE WORK. PROVIDE CONSTRUCTION VALVES, TEMPORARY DUCTWORK AND PIPING AS REQUIRED TO LIMIT THE SHUT DOWN OF SERVICES TO ONE TIME.
- 11. EXISTING MECHANICAL SERVICES SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE ORIGINAL CONTRACT DRAWINGS AS LISTED BELOW. VERIFY EXACT SIZE AND LOCATION OF EXISTING SERVICES ON SITE. REMOVE ALL REDUNDANT SERVICES IN THE AREAS OF CONSTRUCTION.
- 12. ALL DRAWINGS ARE INTEGRATED WITH THE SPECIFICATIONS WHICH ACCOMPANY THEM. DO NOT USE EITHER ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE BUT IMPLIED IN THE OTHER IS FULLY AND PROPERLY REQUIRED. WHEREVER DIFFERENCE OCCURS, THE MOST ONEROUS CONDITION GOVERNS.
- 13. SLEEVE AND SEAL PENETRATIONS OF EITHER FIRE OR SMOKE BARRIER RESISTANT WALLS AGAINST THE PASSAGE OF FLAME OR SMOKE W/SUITABLE NON-COMBUSTIBLE MATERIALS EQUAL TO THE CONSTRUCTION TO BE PENETRATED.
- AVOID ANY DIRECT CONTACT BETWEEN ANY PIPING, DUCTING AND ELECTRICAL CONDUIT SYSTEMS. TO PREVENT SOUND TRANSMISSION.
- 15. IF ANY AREAS ARE AFFECTED BY THE NEW SCOPE OF WORK, CARRY COSTS FOR THE REMOVAL AND INSTALLATION OF THE EXISTING CEILING TILES. REFER TO ARCHITECTURAL NEW REFLECTED CEILING PLAN FOR SCOPE OF NEW CEILING.
- 16. PROVIDE INSTALLATION COMPLETE AND FULLY FUNCTIONAL. PROVIDE ALL LABOR, MATERIALS, TOOLS, SERVICES, EQUIPMENT, ETC. AS REQUIRED.
- 17. PROVIDE ACCESS FOR SERVICING EQUIPMENT AS INDICATED, AS REQUIRED BY CODE AND AS RECOMMENDED BY THE MANUFACTURER.
- PROVIDE ACCESS DOORS AS NECESSARY FOR ACCESS TO VALVES, DAMPERS, AND OTHER COMPONENTS REQUIRING MONITORING, INSPECTION, AND MAINTENANCE.
- 19. INSTALL EQUIPMENT, DUCTS, AND PIPES PARALLEL TO OR PERPENDICULAR TO BUILDING LINES. PROVIDE SPACE, UNIONS AND FLANGES FOR DISASSEMBLY, SERVICING AND REMOVAL OF EQUIPMENT.
- 20. REMOVE, REARRANGE AND/OR RELOCATE ANY OBSTRUCTIONS WHICH INTERFERE WITH INSTALLATION OF NEW WORK. OBTAIN OWNER'S PRIOR APPROVAL.
- 21. OBTAIN OWNER'S CONSENT FOR SHUTDOWN OF ANY PORTION OF EXISTING BUILDING SYSTEMS. COORDINATE WITH THE OWNER FOR TIME AND DURATION OF SERVICE INTERRUPTIONS. INCLUDE COST OF PREMIUM TIME IN THE CONTRACT PRICE FOR WORK PERFORMED DURING NIGHTS, WEEK-ENDS OR OTHER TIME OUTSIDE NORMAL WORKING HOURS AS NECESSARY TO MAINTAIN MECHANICAL SERVICES IN OPERATION.
- 22. WHEN A CONFLICT OCCURS BETWEEN INSTALLATION DETAILS, DIAGRAMS, ETC. INDICATED IN THE CONTRACT DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS, FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
- 23. CONFORM TO CODES, APPLICABLE STANDARDS, BULLETINS ETC., AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES FOR THE <u>CITY OF HAMILTON</u>.
- 24. DUE TO INCONSISTENT RECORD OF EXISTING SERVICES NOT ALL SERVICES MAY BE SHOWN, OR IF SHOWN MAY NOT BE ACCURATE. FIELD CONFIRM EXISTING SERVICES.
- 25. VERIFY CONNECTION POINTS TO EXISTING SERVICES ON SITE.
- 26. CHECK AND VERIFY LOCATION OF PIPES, DUCTS AND EQUIPMENT WITH OTHER TRADES TO PREVENT INTERFERENCE. REMOVAL OR RELOCATION OF ANY SUCH WORK INTERFERING WITH WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADE CONCERNED UNLESS OTHERWISE APPROVED IN WRITING.
- 27. BEFORE CUTTING ANY HOLES THROUGH THE EXISTING SLAB REFER TO STRUCTURAL DRAWINGS FOR GENERAL REQUIREMENTS.
- 28. PROVIDE SIGN IDENTIFYING LOCATION OF ALL VALVES INSTALLED IN CEILING SPACE.

GENERAL DEMOLITION NOTES

- 1. ENSURE THAT ALL EXISTING PIPING SERVING EXITING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONLY THEN OBSOLETE PIPING IS TO BE REMOVED AS SHOWN
- 2. FILL IN DISTURBED SURFACES AFTER PIPE REMOVAL OR REROUTING WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION AND PATCHED TO MATCH EXISTING OR NEW.

DRAWING NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, NFPA STANDARDS NO,'S 10, 13, & 14 AND TO THE LOCAL AUTHORITIES REQUIREMENTS.
- THE CONTRACTOR SHALL COORDINATE THE INSTALLATION WITH THE WORK OF OTHER TRADES. PROVIDE HORIZONTAL AND/OR VERTICAL OFFSETS AS REQUIRED TO SUIT THIS COORDINATION.

THIS LEGEND OF SY	MBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD/GENERIC LEGENI ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.
REFER	DESCRIPTION
	POSITIVE PRESSURE (SUPPLY) DUCT UP
	POSITIVE PRESSURE (SUPPLY) DUCT UP
+	NEGATIVE PRESSURE (RETURN) DUCT UP
	POSITIVE PRESSURE (SUPPLY) DUCT DOWN
	POSITIVE PRESSURE (SUPPLY) DUCT DOWN
ł	NEGATIVE PRESSURE (RETURN) DUCT DOWN
4	EXISTING DUCTWORK TO BE REMOVED
+	EXISTING DUCTWORK TO REMAIN
4	NEW DUCTWORK
<u> </u>	DUCTWORK WITH INSULATION
F0000000000000000000000000000000000000	SIDEWALL GRILLE
	RETURN/EXHAUST GRILLE
	SUPPLY AIR DIFFUSER (SQUARE)
	SUPPLY AIR DIFFUSER (LAMINAR FLOW)
	SHADING INDICATES DIFFUSER TO HAVE A BLANK OFF PANEL
	LINEAR OR SLOT DIFFUSER WITH PLENUM
	SUPPLY AIR DIFFUSER (ROUND)
EXS CFM	INDICATES EXISTING SUPPLY AIR OULET
EXR CFM	INDICATES EXISTING RETURN AIR OUTLET
ETR CFM	INDICATES EXISTING VAV BOX
S1 CFM	INDICATES NEW SUPPLY AIR OULET
R1 CFM	INDICATES NEW RETURN AIR OUTLET
REB CFM	INDICATES EXISTING SUPPLY/RETURN AIR OUTLET TO BE RE-BALANCED TO FLOW INDICATED
TR CFM	INDICATES NEW VAV BOX

- AIR FLOW (CFM)

GENERAL SITE SERVICE NOTES

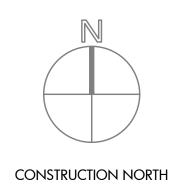
- 1. VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN AND SUPPORT EXISTING UTILITIES AND SERVICES TO THE SATISFACTION OF THE OWNER OF THE UTILITY.

THIS LEGEND (OF SYMBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD/GENERIC LEGEN ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.
REFER	DESCRIPTION
-///////	EXISTING PIPING SHOWN HATCHED TO BE REMOVED
 0	PIPING RISER UP
	PIPING DROP
	PIPING RISER UP & DOWN
,t,	TEE
- لر	ELBOW - 90°
	ELBOW - 45°
	WYE
	REDUCER
—	UNION
	FLANGE
	PUMP
	STRAINER
	3-WAY CONTROL VALVE
—战—	2-WAY CONTROL VALVE
\longrightarrow	—— ISOLATING (SHUT-OFF) VALVE
	THROTTLING (BALANCING) VALVE
—— <mark>™</mark> CB	CIRCUIT BALANCING VALVE
<u></u>	— CHECK VALVE
—— RS —	REFRIGERANT SUCTION
—— RL —	REFRIGERANT LIQUID

LEGEND - POWER SYSTEM						
THIS LEGEND OF SYMBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD LEGEND. ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.						
SYMBOL	DESCRIPTION					
=	DUPLEX RECEPTACLE					
⊖ _{GFI}	GFCI RECEPTACLE					
 	20A T-SLOT RECEPTACLE					
Ø	ISOLATED GROUND RECEPTACLE					
Θ	SINGLE RECEPTACLE					
#	QUAD RECEPTACLE					
igorplus	DUPLEX RECEPTACLE - FLOOR MOUNTED					
**	QUAD RECEPTACLE - FLOOR MOUNTED					
+	DUPLEX RECEPTACLE - CEILING MOUNTED					
-	SPLIT RECEPTACLE					
•	DIRECT CONNECTION					
占	NON FUSED DISCONNECT SWITCH					
	FUSED DISCONNECT SWITCH					
	NON-FUSED DIRECT CONNECTION					
Ġ	MOTOR NON FUSED DISCONNECT					
Ź	MOTOR					
Р	JIFFY/PAC POLE					
JB	JUNCTION BOX					
T	CONTROL SWITCH					
R	RELAY					
	ELECTRICAL PANEL					



TRUE NORTH

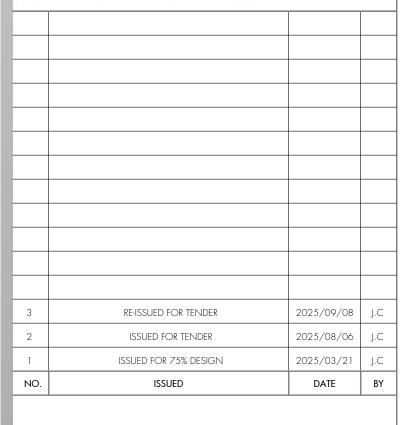




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SEAL

REVIEW ALL DRAWINGS AND VERIFY ALL DIMENSIONS AT THE SITE. DO NOT SCALE THE DRAWINGS. REPORT ALL DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH ANY CONSTRUCTION OR SHOP FABRICATION. ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF 'MANTECON PARTNERS' AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS IN PART OR WHOLE IS FORBIDDEN WITHOUT THE ENGINEER'S WRITTEN PERMISSION.





CLIENT

CENTENNIAL COLLEGE 65 Carl Hall Rd, Toronto, ON

DJECT:

CENTENNIAL COLLEGE DOWNSVIEW CAMPUS IT ROOM UPGRADES

DRAWING TITLE:

25-007

LEAD SHEET GENERAL NOTES AND LEGENDS

1	DRAWN BY:	SCALE:
ı	J.C	NTS
٠	CHECKED BY:	DRAWING NUMBER:
ı	M.V	
٠	DATE:	
ı	MAR. 2025	M000

MECHANICAL SPECIFICATIONS - GENERAL 25-007

ABBREVIATED SECIFICATION DESCRIBES SOME EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK, ONLY FIRST CLASS WORKMANSHIP, MATERIALS AND PRACTICES WILL BE ACCEPTED. THE STANDARDS TO BE MET ARE FULLY DESCRIBED IN THE MASTER SPECIFICATIONS OF MANTECON PARTNER. INC. AND ARE AVAILABLE FOR REFERENCE AT THEIR MAIN OFFICE.

<u>GENERAL</u>

- GENERAL REQUIREMENTS
- A. READ AND CONFORM TO:
- .1 THE CONTRACT CCDC 2, STIPULATED PRICE CONTRACT AS AMENDED. .2 DIVISION 1 REQUIREMENTS AND DOCUMENTS REFERRED TO THEREIN.
- THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE BUT IMPLIED IN THE OTHER IS
- FULLY AND PROPERLY REQUIRED. WHEREVER DIFFERENCES OCCUR IN THE TENDER DOCUMENTS, THE MOST ONEROUS CONDITIO
- GOVERNS. BASE THE BID ON THE COSTLIEST ARRANGEMENT ENSURE SUB-CONTRACTORS UNDERTAKING THE WORK PROVIDE A 50% PERFORMANCE BOND AND A 50% LABOUR AND MATERIALS PAYMENT BOND. IN ADDITION, ENSURE SUB-CONTRACTOR
- EMPLOYED TO UNDERTAKE ANY PART OF THE WORK THAT IS \$50,000.00 OR GREATER CONTRACT VALUE PROVIDE A 50% PERFORMANCE BOND AND A 50% LABOUR AND MATERIAL BOND TO THE PARTY THEY ARE IN CONTRACT WITH. CONFORM TO THE LATEST EDITION OF ONTARIO BUILDING CODE (CSA STANDARDS), ONTARIO
- FIRE CODE, LOCAL & DISTRICT BYLAWS, REGULATIONS, & PUBLISHED ENGINEERING STANDARDS. NOTIFY CONSULTANT UPON DISCOVERY OF CONDITIONS WHICH ADVERSELY AFFECT WORK O THIS DIVISION. NO ALLOWANCE WILL BE MADE AFTER LETTING OF CONTRACT FOR ANY EXPENSE INCURRED THROUGH FAILURE TO DO SO.
- ARRANGE AND PAY FOR PERMITS AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION REQUIRED IN THE UNDERTAKING OF THIS DIVISION. MAKE MODIFICATIONS REQUIRED AUTHORITIES.
- ALL TRADESMEN EMPLOYED ON THE PROJECT SHALL HOLD VALID TRADE CERTIFICATES/LICENSI AND SHALL MAKE A COPY AVAILABLE FOR REVIEW BY THE CONSULTANT AND/OR OWNER WHE REQUESTED

2 SCOPE OF WORK

- PRODUCTS AND METHODS MENTIONED OR SHOWN IN THE CONTRACT DOCUMENTS COMPLETE WITH INCIDENTALS NECESSARY FOR A COMPLETE OPERATING INSTALLATION. PROVIDE ALI TOOLS, EQUIPMENT AND SERVICES REQUIRED TO DO THE WORK.
- SITE EXAMINE EXISTING CONDITIONS WHICH MAY AFFECT WORK OF THIS DIVISION. EXAMINE A CONTRACT DOCUMENTS IN CONJUNCTION WITH SITE EXAMINATION TO ENSURE THAT WORK O
- THIS DIVISION MAY BE SATISFACTORILY COMPLETED.
- DISCONNECTION AND REMOVAL OF VARIOUS MECHANICAL EQUIPMENT IN AREAS TO BE TURNE
- DISCONNECTION AND MAKING SAFE OF VARIOUS MECHANICAL SYSTEMS AND EQUIPMENT AREAS TO BE DEMOLISHED AND/OR RENOVATED.
- ISOLATE AND DRAIN (OR PIPE FREEZE WHERE DRAINAGE IS NOT APPLICABLE) SYSTEMS A REQUIRED TO EFFECT DEMOLITION, RENOVATIONS, MODIFICATIONS AND/OR REPAIR DISCONNECT, CAP AND MAKE SAFE ALL MECHANICAL SERVICES TO THE BUILDING INCLUDIN BUT NOT LIMITED TO; SANITARY SEWER(S), STORM SEWER(S), WATER SERVICE, NATURAL G. SERVICE, STEAM SERVICE, CONDENSATE RETURN, WATER SUPPLY TO STANDPIPE AND SPRINKLEF SYSTEMS, FIRE SUPPRESSION SYSTEMS HOT WATER HEATING SYSTEMS, STEAM AND CONDENSAT
- ON COMPLETION OF RENOVATIONS, MODIFICATIONS AND/OR REPAIRS, TEST ENTIRE SYSTEM AS II NEW. REPORT REPAIRS OR REPLACEMENTS REQUIRED OF EXISTING EQUIPMENT, PIPING, FITTING OR DEVICES THAT ARE NOT INCLUDED IN CONTRACT TO CONSULTANT AND OWNER FO INSTRUCTION. FLUSH, CLEAN AND REFILL RENOVATED SYSTEMS AS SPECIFIED FOR NEW.
- BE RESPONSIBLE FOR THE EXCAVATION & BACKFILL NECESSARY FOR INSTALLATION (UNDERGROUND WORK. EXCAVATE WITH SUITABLE MACHINERY OR BY HAND AS NECESSARY.
- CUTTING AND PATCHING OF NEW OR EXISTING WORK. IDENTIFICATION OF EQUIPMENT, PIPING, VALVES AND CONTROLLERS.
- PERFORM START-UP AND COMPLETELY COMMISSION ALL EQUIPMENT AND SYSTEMS INSTALLE AND/OR MODIFIED UNDER THIS CONTRACT. COMMISSIONING WORK SHALL BE COMPLETED T THE SATISFACTION OF THE CONSULTANT PRIOR TO ACCEPTANCE OF THE WORK OR ANY PAR
- APPLY FOR & OBTAIN ALL PERMITS INCLUDING BUILDING PERMITS, & TSSA APPLICATION LICENSES, OR CERTIFICATES NECESSARY FOR THE PERFORMANCE OF THE WORK. COORDINAT ALL WORK WITH BUILDING OFFICIALS & AUTHORITIES HAVING JURISDICTION.
- TAKE SUCH MEASURES AND INCLUDE IN BID PRICE FOR THE PROPER PROTECTION OF THE EXISTIN BUILDING AND ITS FINISHES AT ALL TIMES DURING ALTERATIONS AND CONSTRUCTION OF THE NE ADDITION, COORDINATE THIS PROTECTIVE WORK WITH ALL TRADES
- VERIFY THE CORRECT OPERATION OF EACH EQUIPMENT ITEM PROVIDED AND/OR ALTERED ANI EACH SYSTEM IN TOTAL AND OBTAIN THE OWNER'S APPROVAL PRIOR TO STARTING AND/C RETURNING TO OPERATION.

- SHOP DRAWINGS: PREPARE AND SUBMIT TWO (2) COPIES OF SHOP DRAWINGS OF A equipment items to the consultant for review. The consultant will return one co MARKED WITH COMMENTS AND HIS REVIEW STAMP AS HE DEEMS APPROPRIATE.
- .1 CLEARLY INDICATE MANUFACTURER'S AND SUPPLIER'S NAMES, MODEL NUMBERS, DETAILS (CONSTRUCTION, ACCURATE DIMENSIONS, CAPACITIES AND PERFORMANCE. PRIOR T SUBMISSION CHECK AND CERTIFY AS CORRECT, SHOP DRAWINGS AND DATA SHEETS. DO NOT ORDER EQUIPMENT UNTIL A COPY OF THE SHOP DRAWINGS, REVIEWED BY CONSULTAN HAS BEEN RETURNED TO CONTRACTOR.
- .2 THE CONSULTANT WILL NOT REVIEW SHOP DRAWINGS THAT FAIL TO BEAR THE CONTRACTOR'S STAMP OF APPROVAL OR CERTIFICATION.
- AS-BUILT RECORDS: BEFORE FINAL PAYMENT, SUBMIT TWO SETS OF AS-BUILTS DRAWINGS AUTOCAD FORMAT SHOWING ALL CHANGES & CONCEALED SERVICES DIMENSIONED. AUTOCAD FILES SHALL BE PROVIDED TO THE CONTRACTOR BY MANTECON PARTNERS INC AT A FEE C \$500.00 UPON REQUEST
- REQUESTS FOR SHUT-DOWN: OBTAIN PERMISSION FOR SYSTEMS SHUT-DOWN AND/OR SERVICE INTERRUPTION FROM THE OWNER PRIOR TO DISRUPTION OF ANY SYSTEM OR SERVICE IN USE BY THE OWNER. EMPLOY THE OWNER'S STANDARD FORM OF REQUEST WHERE AVAILABLE.
- REQUESTS FOR START-UP: OBTAIN PERMISSION FROM THE OWNER TO START-UP OR TO RETURN 1 SERVICE ANY ITEM OF EQUIPMENT, SYSTEM OR SERVICE INSTALLED NEW OR PREVIOUSI
- WARRANTY: PROVIDE WRITTEN GUARANTEE FOR ALL NEW EQUIPMENT & WORKMANSHIP FOR ON (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION. FIVE (5) YEARS FOR COMPRESSOR & HEA EXCHANGER. DEFECTIVE PARTS REPAIRED OR REPLACED WITHOUT CHARGE.

COMMON WORK RESULTS

MM) AND LARGER.

.1 PIPING SPECIALTIES

- A. CAST BRASS, PRESSURE, COPPER TO COPPER UNIONS SHALL BE USED WITH SEAMLESS COPPER TUBING SMALLER THAN 3" (75 MM). CAST BRASS FLANGES SHALL BE USED WITH SEAMLESS COPPER TUBING, TYPE L FOR TUBING 3" (7
- DART TYPE, 125 LB. (860 KPA) BLACK MALLEABLE IRON UNIONS SHALL BE USED WITH ALL STEEL PIPE FOR PIPING 2-1/2" (65 MM) AND SMALLER
- SLIP-ON, 150 LB. (1000 KPA) CARBON STEEL FLANGES WITH 1/16" (4 MM) RAISED FACE SHALL BE
- USED WITH ALL STEEL PIPE FOR PIPING LARGER THAN 2-1/2" (65 MM). GASKETS FOR JOINING FLANGED STEEL PIPE SHALL BE 1/16" (4 MM) CRANITE RING TYPE GASKETS
- PIPING SPECIALTIES INCLUDING BACKFLOW PREVENTERS, STRAINERS, VALVES ETC. SHALL BE LINE SIZE UNLESS INDICATED OTHERWISE ON DRAWINGS. STRAINERS
- .1 APPROVED MANUFACTURERS: SARCO SB, S.A. ARMSTRONG, CRANE, CONBRACO, COLTON .2 IN COPPER TUBING: CLASS 250, WYE TYPE, BRONZE, SCREWED CONNECTION, WITH BLIND CAPS, AND 1/32" (0.8 MM) PERFORATED STAINLESS STEEL SCREEN. .3 IN STEEL PIPING: 2" (50MM) AND SMALLER
- .1 BODY AND COVER: SCREWED, LINE SIZE Y TYPE STRAINER, SEMI-STEEL CONFORMING TO ASTM A278-85, CLASS 30, COMPLETE WITH SCREWED BLIND CAP. PRIMARY SERVICE RATING OF 125 PSI @ 350 F (860 KPA @ 178 C). BODY SHALL HAVE SIDE DRAIN

1/16" (0.4 MM)

- CONNECTION. .2 SCREEN: PERFORATED TYPE 304 STAINLESS STEEL SERVICE:
- .2 WATER 1/32" (0.8 MM) .3 GLYCOL 1/32" (0.8 MM) .4 WATER @ PUMP SUCTION 1/8" (3.2 MM) .5 LIGHT OIL 1/16" (1.6 MM) 1/64" (0.4 MM)
- .6 COMPRESSED AIR .4 IN STEEL PIPING: 2-1/2" (65MM) AND LARGER

.1 STEAM

.5 LIGHT OIL

.6 COMPRESSED AIR

BODY AND COVER: FLANGED, LINE SIZE Y TYPE STRAINER, CAST STEEL, CLASS 15 COMPLETE WITH FLANGED BLOW DOWN COVER. PRIMARY SERVICE RATING OF 150 P. @ 500 F (1 MPA @ 260 C).

1/16" (1.6 MM)

1/32" (0.8 MM)

- .2 SCREEN: PERFORATED TYPE 304 STAINLESS STEEL SERVICE:
- .1 STEAM 1/32" (0.8 MM) .2 WATER 1/16" (1.6 MM) .3 GLYCOL 1/16" (1.6 MM) .4 WATER @ PUMP SUCTION 1/4" (6.4 MM)

MECHANICAL SPECIFICATIONS - GENERAL 25-007

- .1 VICTAULIC STYLE 730 GROOVED END TEE-TYPE STRAINER FOR PIPING 2 1/2" (65 MM)
- AND LARGER OR APPROVED EQUIVALENT. .2 VICTAULIC STYLE 731 SUCTION DIFFUSER, OR APPROVED EQUIVALENT
- A. IN ACCORDANCE WITH CSA W48 SERIES.
- 3 FIRE STOPPING COMPOUNDS
- APPROVED MANUFACTURER: 3M PRODUCTS INDICATED.
- OTHER ACCEPTABLE MANUFACTURERS OFFERING EQUIVALENT PRODUCTS: DOW CORNING, JOHN MANVILLE, HILTI FIRESTOP SYSTEMS
- FIRE RATED SEALANTS: INTUMESCENT MATERIAL, SYNTHETIC ELASOMERS, CAPABLE C EXPANDING UP TO 8 TO 10 TIMES WHEN EXPOSED TO TEMPERATURES OF 250°F (121°C) OR HIGHER. ULC LISTED AND LABELLED.
- PROVIDE LAMINATED PLASTIC PLATES WITH BLACK FACE AND WHITE CENTRE OF MINIMUM SIZE 3-1/2" X 1-1/2" X 3/32" (90 X 40 X 2 MM) NOMINAL THICKNESS, ENGRAVED WITH 1/4" (6 MM) HIGH LETTERING. USE 1" (25 MM) LETTERING FOR MAJOR EQUIPMENT.
- FASTEN NAMEPLATES SECURELY IN CONSPICUOUS PLACE. WHERE NAMEPLATES CANNOT BI MOUNTED ON COOL SURFACE, PROVIDE STANDOFFS.
- IDENTIFY EQUIPMENT TYPE AND NUMBER AND SERVICE OF AREAS OR ZONE OF BUILDING SERVED. FOR EACH ITEM OF EQUIPMENT WHICH MAY BE STARTED AUTOMATICALLY OR REMOTELY, ADD A RED LAMACOID PLATE, 2-1/2" X 9" (65 X 230 MM), READING: "WARNING. THIS EQUIPMENT IS AUTOMATICALLY CONTROLLED AND MAY START AT ANY TIME."

- APPROVED MANUFACTURER: TRERRICE MODEL 600C.
- OTHER ACCEPTABLE MANUFACTURERS OFFERING EQUIVALENT PRODUCTS: WEISS, WINTER, GAUGE: 4-1/2" (115MM) DIAMETER BLACK CAST ALUMINUM, PHOSPHOR BRONZE BOURDON
- TUBE, ROTARY BRASS MOVEMENT, BRASS SOCKET, WITH FRONT RECALIBRATION ADJUSTMENT. BLACK SCALE ON WHITE BACKGROUND, MID-SCALE ACCURACY: 1%, SCALE: PSI AND KPA GAUGE COCK: TEE OR LEVER HANDLE, BRASS FOR MAXIMUM 150 PSI (1034 KPA0.
- NEEDLE VALVE: BRASS, 1/4" (6 MM) NPT FOR MINIMUM 150 PSI (1034 KPA).
- PULSATION DAMPER: PRESSURE SNUBBER, BRASS WITH 1/4" (6 MM) CONNECTIONS. SYPHON: STEEL, SCHEDULE 40, 1/4" (6 MM) ANGLE OR STRAIGHT PATTERN.

.6 STEM TYPE THERMOMETERS

- APPROVED MANUFACTURER: TRERRICE MODEL BX91403-1/2.
- OTHER ACCEPTABLE MANUFACTURERS OFFERING EQUIVALENT PRODUCTS: WEISS MODEL 9VS3-1/2, WINTER, MORRISON, TAYLOR. THERMOMETER: 9" (230MM) SCALE, RED APPEARING THERMAL FLUID WITH BLACK FIGURES ON
- WHITE SCALE, CALIBRATED IN BOTH DEGREES F AND DEGREES C, ACCURACY TO ASTM E77 OF 2%, CLEAR GLASS LENS FRONT TUBE, CAST ALUMINUM CASE WITH ENAMEL FINISH, CAST ALUMINUM ADJUSTABLE JOINT WITH POSITIVE LOCKING DEVICE, 3/4" (20MM) NPT BRASS STEM. ALL THERMOMETERS TO INCLUDE A SEPARABLE WELL.
- SOCKET: BRASS SEPARABLE SOCKETS FOR THERMOMETER STEMS WITH OR WITHOUT EXTENSIONS AS REQUIRED, AND WITH CAP AND CHAIN.
- FLANGE: 3" (75 MM) OUTSIDE DIAMETER REVERSIBLE FLANGE, DESIGNED TO FASTEN TO SHEET METAL AIR DUCTS, WITH BRASS PERFORATED STEM
- MATERIALS: MINIMUM SCHEDULE 20 GALVANIZED STEEL OR CAST IRON.
- 8 FLASHINGS AND COUNTER FLASHINGS
- THALER OR EQUIVALENT MECHANICAL/ELECTRICAL FLASHINGS AS RECOMMENDED FOR SPECIFIC
- STAINLESS STEEL FLASHING SLEEVE, INTEGRAL DECK FLANGE AND EPDM SEAL.
- .9 PENETRATION SEALS
- APPROVED MANUFACTURER: LINK-SEA OR EQUAL
- MODULAR MECHANICAL TYPE, CONSISTING OF INTERLOCKING SYNTHETIC RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING. LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS RUBBER BELT AROUND THE PIPE WITH A PRESSURE PLATE UNDER EACH BOLT HEAD AND NUT.

- 1 MATERIAL: UPT TO 16" X 16" (400X400) 16 GAUGE MOUNTING FRAME, OVER 16" X 16 (400X400) 14 GAUGE DOOR, 16 GAUGE MOUNTING FRAME. .2 HINGE: CONTINUOUS, CONCEALED.
- 3 LATCH: STAINLESS STEEL SCREWDRIVER OPERATED CAMILATCH .4 FINISH: STEEL: 5-STAGE IRON PHOSPHATE PREPARATION WITH PRIME COAT OF WHITE, ALKYD
- BAKING ENAMEL OR STAINLESS STEEL TYPE 304, NO. 4 SATIN POLISH. .5 MANUFACTURERS: ACUDOR ACORN, CEB, MIFAB, CENDRES CONTOUR
- RECESSED ACCESS DOOR .1 MATERIAL: STEEL OR STAINLESS STEEL, 22 GAUGE DOOR, 22 GAUGE MOUNTING FRAME. DOOR -RECESSED 5/8"
- .2 HINGE: CONTINUOUS, CONCEALED. .3 LATCH: STAINLESS STEEL SCREWDRIVER OPERATED CAM LATCH
- .4 FINISH: SATIN COAT STEEL
- .5 MANUFACTURERS: ACUDOR ACORN, CEB, MIFAB, CENDRES CONTOUR FIRE RATED
- ACCESS DOORS IN FIRE SEPARATIONS OR FIRE RATED ASSEMBLIES: ULC LABELLED. REFER TO ARCHITECTURAL DRAWINGS FOR RATINGS OF FIRE SEPARATIONS AND ASSEMBLIES. MINIMUM 12 GAUGE. .2 HINGE: CONTINUOUS, CONCEALED.
- .3 LATCH: STAINLESS STEEL SCREWDRIVER OPERATED CAM LATCH
- .4 FINISH: STEEL: 5-STAGE IRON PHOSPHATE PREPARATION WITH PRIME COAT OF WHITE, ALKYD BAKING ENAMEL OR STAINLESS STEEL TYPE 304, NO. 4 SATIN POLISH. .5 MANUFACTURERS: ACUDOR ACORN, CEB, MIFAB, CENDRES CONTOUR
- SUPPORTS & ANCHORS
- 1 PIPE HANGERS AND SUPPORTS
- APPROVED MANUFACTURERS: ANVIL, MYAT, HUN B. STAND PIPE & FIRE HOSE
- CONFORM TO NFPA 14.
- HANGERS FOR PIPE SIZES 1/2" TO 1-1/2" (15 TO 40 MM): CARBON STEEL, ADJUSTABLE SWIVEL, SPLIT RING. HANGERS FOR PIPE SIZES 2" (50 MM) AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
- MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS. WALL SUPPORT FOR PIPE SIZES TO 3-1/4" (80 MM): CAST IRON HOOK. WALL SUPPORT FOR PIPE SIZES 4" (100 MM) AND OVER: WELDED STEEL BRACKET AND WROUGHT
- STEEL CLAMP.
- FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCK NUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.
- . CONFORM TO NFPA 13.
- 2. HANGERS FOR PIPE SIZES 1/2" TO 1-1/2" (15 TO 40 MM): CARBON STEEL, ADJUSTABLE SWIVEL, SPLIT RING.
- HANGERS FOR PIPE SIZES 2" (50 MM) AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS. MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS. WALL SUPPORT FOR PIPE SIZES TO 3-1/4" (80 MM): CAST IRON HOOK.
- WALL SUPPORT FOR PIPE SIZES 4" (100 MM) AND OVER: WELDED STEEL BRACKET AND WROUGHT VERTICAL SUPPORT: STEEL RISER CLAMP.
- FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCK NUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.
- PLUMBING PIPING DRAIN, WASTE, AND VENT: .1 CONFORM TO ASME B31.9.
- .2 HANGERS FOR PIPE SIZES 1/2" TO 1-1/2" (15 TO 40 MM): MALLEABLE IRON, ADJUSTABLE SWIVEL, SPLIT RING.
- .3 HANGERS FOR PIPE SIZES 2" (50 MM) AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS. .4 MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER
- .5 WALL SUPPORT FOR PIPE SIZES TO 3-1/4" (80 MM): CAST IRON HOOK. .6 WALL SUPPORT FOR PIPE SIZES 4" (100 MM) AND OVER: WELDED STEEL BRACKET AND
- WROUGHT STEEL CLAMP. .7 VERTICAL SUPPORT: STEEL RISER CLAMP.
- .8 FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCK NUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.

MECHANICAL SPECIFICATIONS - GENERAL 25-007

- .9 COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.
- REFRIGERANT PIPING:
- .1 CONFORM TO ASME B31.5. .2 HANGERS FOR PIPE SIZES 1/2" TO 1-1/2" (13 TO 38 MM); CARBON STEEL, ADJUSTABLE SWIVEL,
- .3 HANGERS FOR PIPE SIZES 2" (50 MM) AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
- .4 MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER
- .5 WALL SUPPORT FOR PIPE SIZES TO 3" (75 MM): CAST IRON HOOK.
- .6 WALL SUPPORT FOR PIPE SIZES 4" (100 MM) AND OVER: WELDED STEEL BRACKET AND WROUGHT STEEL CLAMP.
- .7 VERTICAL SUPPORT: STEEL RISER CLAMP.
- .8 FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCK NUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT. .9 COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.

ACCESSORIES

- HANGER RODS: GALVANIZED, CARBON STEEL CONTINUOUS THREADED.
- INSERTS: MALLEABLE IRON CASE OF GALVANIZED STEEL SHELL AND EXPANDER PLUG FOR THREADED CONNECTION WITH LATERAL ADJUSTMENT, TOP SLOT FOR REINFORCING RODS, LUGS FOR ATTACHING TO FORMS; SIZE INSERTS TO SUIT THREADED HANGER ROD

3 EQUIPMENT ROOF CURBS

FABRICATION: WELDED 0.05" (1.2 MM) GALVANIZED STEEL SHELL AND BASE, MITRED 3" (75 MM) CANT, VARIABLE STEP TO MATCH ROOF INSULATION, FACTORY INSTALLED WOOD NAILER.

- A. ACCEPTABLE MANUFACTURERS: PORTABLE PIPE HANGERS, INC, UNISTRUT
- B. PRE-ENGINEERED PIPE/DUCT SUPPORT SYSTEM INCLUDING: .1 BASES: WEATHER RESISTANT AND UV RADIATION RESISTANT WITH SEISMIC ATTACHMENTS
- .2 FRAMING: 1-5/8" (41.3MM) STRUT OR 1-7/8" (47.6MM) STRUT, FABRICATED OF STEEL TO ASTM A570, GRADE 33., ROLL FORMED OF 12-GAUGE (2.7MM THICK) STEEL INTO 3-SIDED OR
- .3 PIPE SUPPORTS AND HANGERS: CONFORM TO MSS SP-58 AND MSS SP-69, FABRICATED OF CARBON STEEL. SINGLE ROLLER SUPPORTS FOR PIPING SUBJECT TO EXPANSION AND CONTRACTION.
- .4 FINISHES: .1 PLASTICS AS MOULDED WITH UV RADIATION PROTECTION.
- .2 METAL SURFACES HOT DIP GALVANIZED FREE OF ROUGHNESS, WHISKERS, UNSIGHTLY SPANGLES, ICICLES, RUNS, BARBS, SAGS, DROPLETS AND OTHER SURFACE BLEMISHES. GALVANIZING SHALL CONFORM TO ASTM A123 FOR TUBING AND TO ASTM A153 FOR HARDWARE AND ACCESSORIES.

3.5 PIPE HANGER SPACING:

INGER SPACING:					
PIPE SIZE (IN)	ROD DIAMETER (IN)			SUP	PPORT SPACING (FT)
		STEEL PI	IPE	(COPPER TUBE
1/2	3/8	7		6	
3/4	3/8	7		6	
1	3/8	7		6	
1-1/4	3/8		7		6
1-1/2	3/8		9		8
2	3/8	10		9	
2-1/2	3/8	12		10	
3	3/8	12		10	
4	5/8	14		12	
6	7/8	17			
8	7/8	19			
10	7/8	21			
12	7/8	23			
14	1	25			
16	1	27			
18	1	28			
	1/2 3/4 1 1-1/4 1-1/2 2 2-1/2 3 4 6 8 10 12 14	PIPE SIZE (IN) ROD DIAMETER (IN) 1/2 3/8 3/4 3/8 1 -1/4 3/8 1-1/2 3/8 2 3/8 2-1/2 3/8 3 3/8 4 5/8 6 7/8 8 7/8 10 7/8 12 7/8 14 1 16 1	ROD DIAMETER (IN) STEEL PI 1/2 3/8 7 3/4 3/8 7 1 3/8 7 1-1/4 3/8 7 1-1/2 3/8 10 2-1/2 3/8 12 3 3/8 12 4 5/8 14 6 7/8 17 8 7/8 19 10 7/8 21 12 7/8 23 14 1 25 16 1 27	ROD DIAMETER (IN) STEEL PIPE 1/2 3/8 7 3/4 3/8 7 1 3/8 7 1-1/4 3/8 7 1-1/2 3/8 9 2 3/8 10 2-1/2 3/8 12 3 3/8 12 4 5/8 14 6 7/8 17 8 7/8 19 10 7/8 21 12 7/8 23 14 1 25 16 1 27	PIPE SIZE (IN) ROD DIAMETER (IN) STEEL PIPE 1/2 3/8 7 6 3/4 1 3/8 7 6 1 1-1/4 3/8 7 6 1 1-1/2 3/8 7 1-1/2 3/8 7 1-1/2 3/8 10 9 2-1/2 3/8 10 9 2-1/2 3/8 10 9 2-1/2 3/8 10 9 2-1/2 3/8 10 9 2-1/2 10 3 4 5/8 14 12 10 4 5/8 17 8 7/8 17 8 7/8 19 10 7/8 21 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 10 11 12 12



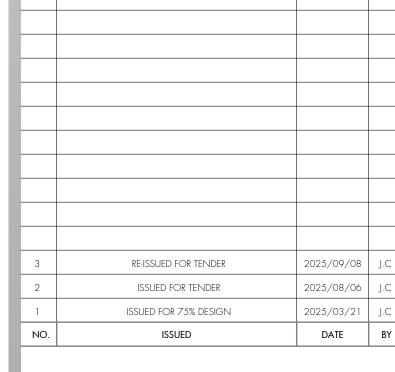
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CENTENNIAL COLLEGE DOWNSVIEW CAMPUS IT ROOM UPGRADES

DRAWING TITLE:

| GENERAL MECHANICAL SPECIFICATIONS

DRAWN BY:	SCALE:
J.C	NTS
CHECKED BY:	DRAWING NUMBER:
M.V	
DATE:	
MAR. 2025	MO0 1

PROJECT NUMBER: 25-007

HVAC SPECIFICATIONS 25-007

- 1. HVAC GENERAL
- 1.1 CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC. ARE INDICATED FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT. DO NOT INTERPRET AS THE COMPLETE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.
- 1.2 CO-ORDINATE DIFFUSERS, REGISTERS, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS. MAKE MINOR DUCT MODIFICATIONS TO SUIT.
- 1.3 ARRANGE AND ASSEMBLE FIELD-ERECTED AND FACTORY ASSEMBLED AIR HANDLING UNIT COILS FOR REMOVAL FROM UPSTREAM SIDE WITHOUT DISMANTILING SUPPORTS. PROVIDE GALVANIZED STEEL

SUPPORTS FOR COILS IN BANKS OVER TWO COILS HIGH TO PERMIT INDEPENDENT REMOVAL OF INDIVIDUA

1.4 LOCATE MECHANICAL EQUIPMENT SUCH AS SINGLE-DUCT, DUAL-DUCT, VARIABLE VOLUME, CONSTANT VOLUME AND FAN-POWERED BOXES, FAN COILS, CABINET HEATERS, UNIT HEATERS, UNIT VENTILATORS, COILS, HUMIDIFIERS, ETC. FOR UNOBSTRUCTED ACCESS TO ACCESS PANELS, CONTROLS AND VALVING.

2. EQUIPMENT DRAINS AND OVERFLOWS

REFRIGERATION PIPING & SPECIALTIES

- 2.1 COPPER TUBING: ASTM B88, TYPE M AND DWV, HARD DRAWN.
- 2.2 FITTINGS: ASME B16.18, CAST BRASS, OR ASME B16.22 SOLDER WROUGHT COPPER.
- 2.3 JOINTS: SOLDER, LEAD FREE, ASTM B32, 95-5 TIN-ANTIMONY, OR TIN AND SILVER, WITH MELTING RANGE 4428°F TO 536°F (220°C TO 280°C).
- 3.1 PROVIDE REFRIGERANT COMPONENTS, FITTINGS AND SPECIALTIES RATED FOR THE SPECIFIC REFRIGERANT
- 3.2 SLOPE REFRIGERANT PIPING 1 PERCENT IN THE DIRECTION OF OIL RETURN. LIQUID LINES MAY BE INSTALLED
- 3.3 INSTALL HORIZONTAL HOT GAS DISCHARGE PIPING ½"/10' DOWNWARD SLOPE AWAY FROM COMPRESSOR.
- 3.4 INSTALL HORIZONTAL SUCTION LINES ½" PER 10' DOWNWARD SLOPE TO THE COMPRESSOR WITH NO LONG TRAPS OR DEAD ENDS THAT MAY CAUSE OIL SEPARATION FROM SUCTION GAS.
- 3.5 PROVIDE LINE SIZE LIQUID INDICATORS IN MAIN LIQUID LINE LEAVING THE CONDENSER OR RECEIVER. INSTALL MOISTURE-LIQUID INDICATORS IN LIQUID LINES BETWEEN FILTER-DRYERS AND THERMOSTATIC EXPANSION VALVES, AND IN LIQUID LINES TO RECIEVER.
- 3.6 PROVIDE LINE SIZED STRAINER UPSTREAM OF EACH AUTOMATIC VALVE. PROVIDE SHUTOFF VALVE ON EAC
- SIDE OF THE STRAINER.

 3.7 PROVIDE PERMANENT FILTER DRYERS IN LOW TEMPERATURE SYSTEMS AND SYSTEMS USING HERMETIC
- COMPRESSORS.

 3.8 PROVIDE REPLACEABLE CARTRIDGE FILTER-DRYERS WITH A THREE-VALVE BYPASS ASSEMBLY FOR SOLENOII
- 3.9 PROVIDE REFRIGERANT CHARGING VALVE CONNECTIONS TO THE LIQUID LINE BETWEEN THE RECIEVER
- SHUTOFF VALVE AND THE EXPANSION VALVE.

 3.10 PIPING
- .1 COPPER TUBING: ASTM B280, TYPE ACR HARD DRAWN OR ANNEALED. FITTINGS: ASME B16.22 WROUGHT COPPER. JOINTS: BRAZE, AWS A5.8 BCUP SILVER/PHOSPHORUS/COPPER ALLOY WITH MELTING RANGE 640 TO 805 DEGREES C.
- .2 COPPER TUBING TO 22 MM OD: ASTM B88, TYPE K, ANNEALED. FITTINGS: ASME B16.26 CAST COPPER. JOINTS: FLARED.
- 3.11 REFRIGERANT PIPING INSULATION: CLOSED-CELL ELASTOMERIC
- .1 MANUFACTURER: ARMACELL AP ARMAFLEX
- .2 COMPLIANCE: ASTM C534, CAN/ULC-S102, ASTM E84, ULC-S102, NFPA 90A, ASTM D1056
- .3 THERMAL CONDUCTIVITY: 0.235 BTU-in/Hr-Sq. Ft- F AT 50 F
- .4 PERMEABILITY: 0.05 PERM-IN
- .5 MAXIMUM FLAME SPREAD INDEX: 25. MAXIMUM SMOKE DEVELOPMENT INDEX: 50
- .6 WATER ABSORPTION: 0.2% BY VOLUME
- .7 MAXIMUM SERVICE TEMPERATURE: 220 F (105 C).8 MINIMUM SERVICE TEMPERATURE: -297 F (-183 C)
- .9 ON OUTDOOR REFRIGERANT PIPING PROVIDE VAPOUR BARRIER LOCATED OUTSIDE THE INSULATION.
- SEAL JOINTS AND PENETRATIONS.
- .10 PROTECT INSULATION EXPOSED TO WEATHER WITH ALUMINUM, OR PLASTIC JACKETING.

 .11 INSULATE REFRIGERANT SUCTION AND HOT GAS PIPING AND FITTINGS. INSULATE LIQUID LINES WHERE
- EXPOSED TO EXTERIOR CONDITIONS AND IN MECHANICAL ROOMS.

 .12 PROVIDE THICKNESS AS FOLLOWS: 1/2" (13 MM) THICK FOR PIPE 1" (25 MM) O.D. AND SMALLER; 3/4"
- (20 MM) THICK FOR PIPE 1-1/8" (28 MM) TO 2" (50 MM) O.D.; 1" (25 MM) THICK FOR PIPES 2-1/8" (54 MM) O.D. AND LARGER

 .13 SLIP INSULATION ON TO TUBING BEFORE TUBING SECTIONS AND FITTINGS ARE ASSEMBLED. KEEP
- SLITTING OF INSULATION TO A VERY MINIMUM. SEAL ALL JOINTS IN THE INSULATION WITH ARMAFLEX 520 BLV. INSULATE FLEXIBLE PIPE CONNECTORS.

 3.12 MOISTURE AND LIQUID INDICATORS: SINGLE PORT TYPE, UL LISTED, WITH COPPER OR BRASS BODY, FLARED OR SOLDER FNDS. SIGHT GLASS. COLOUR CODED PAPER MOISTURE INDICATOR WITH REMOVABLE FLEMENT
- 3.12 MOISTURE AND LIQUID INDICATORS: SINGLE PORT TYPE, UL LISTED, WITH COPPER OR BRASS BODY, FLARED OR SOLDER ENDS, SIGHT GLASS, COLOUR CODED PAPER MOISTURE INDICATOR WITH REMOVABLE ELEMENT CARTRIDGE AND PLASTIC CAP; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA, AND MAXIMUM TEMPERATURE OF 93 DEGREES C.

3.13 VALVES

- .1 BALL VALVES: TWO PIECE BOLTED FORGED BRASS BODY WITH TEFLON BALL SEALS AND COPPER TUBE EXTENSIONS, BRASS BONNET AND SEAL CAP, CHROME PLATED BALL, STEM WITH NEOPRENE RING STEI SEALS; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA AND MAXIMUM TEMPERATURE OF 149
- .2 SERVICE VALVES: FORGED BRASS BODY WITH COPPER STUBS, BRASS CAPS, REMOVABLE VALVE CORE, INTEGRAL BALL CHECK VALVE, FLARED OR SOLDER ENDS, FOR MAXIMUM PRESSURE OF 3450 KPA.
- INTEGRAL BALL CHECK VALVE, FLARED OR SOLDER ENDS, FOR MAXIMUM PRESSURE OF 3450 KPA.

 3.14 STRAINERS

 .1 STRAIGHT LINE OR ANGLE LINE TYPE: BRASS OR STEEL SHELL, STEEL CAP AND FLANGE, AND
- REPLACEABLE CARTRIDGE, WITH SCREEN OF STAINLESS-STEEL WIRE OR MONEL REINFORCED WITH BRASS; FOR MAXIMUM WORKING PRESSURE OF 2960 KPA.
- .2 STRAIGHT LINE, NON-CLEANABLE TYPE: STEEL SHELL, COPPER PLATED FITTINGS, STAINLESS STEEL WIRE SCREEN, FOR MAXIMUM WORKING PRESSURE TO SUIT APPLICATION.

 3.15 CHECK VALVES
- .1 GLOBE TYPE: CAST BRONZE OR FORGED BRASS BODY, FORGED BRASS CAP WITH NEOPRENE SEAL, BRAS GUIDE AND DISC HOLDER. PHOSPHOR-BRONZE OR STAINLESS-STEEL SPRING. TEFLON SEAT DISC: FOR
- MAXIMUM WORKING PRESSURE OF 2930 KPA AND MAXIMUM TEMPERATURE OF 149 DEGREES C.

 2 STRAIGHT THROUGH TYPE: BRASS BODY AND DISC, PHOSPHOR-BRONZE OR STAINLESS-STEEL SPRING,
- NEOPRENE SEAT; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA AND MAXIMUM TEMPERATURE OF 93 DEGREES C.
- 3.16 PRESSURE REGULATORS: BRASS BODY, STAINLESS STEEL DIAPHRAGM, DIRECT ACTING, ADJUSTABLE OVER 0
 TO 550 KPA RANGE, FOR MAXIMUM WORKING PRESSURE OF 3100 KPA.
 3.17 PRESSURE RELIEF VALVES: STRAIGHT THROUGH OR ANGLE TYPE: BRASS BODY AND DISC, NEOPRENE SEAT,
- 3.17 PRESSURE RELIEF VALVES: STRAIGHT THROUGH OR ANGLE TYPE: BRASS BODY AND DISC, NEOPRENE SEA FACTORY SEALED AND STAMPED WITH ASME UV AND NATIONAL BOARD CERTIFICATION NB; FOR STANDARD 1620 KPA SETTING; SELECTED TO ASHRAE 15.

 3.18 FILTER-DRIERS

.1 REPLACEABLE CARTRIDGE ANGLE TYPE:

- .1 SHELL: ARI 710, UL LISTED, BRASS, REMOVABLE CAP, FOR MAXIMUM WORKING PRESSURE OF 2410 KPA.
- .2 FILTER CARTRIDGE: PLEATED MEDIA WITH INTEGRAL END RINGS, STAINLESS STEEL SUPPORT.
- .3 FILTER/DRYER CARTRIDGE: PLEATED MEDIA WITH SOLID CORE SIEVE WITH ACTIVATED ALUMINA..4 WAX REMOVAL CARTRIDGE: MOULDED BONDED CORE OF ACTIVATED CHARCOAL WITH INTEGRAL
- GASKET SALES OF ACTIVATED CHARGOSE WITHIN EG
- .2 PERMANENT STRAIGHT THROUGH TYPE:.1 ARI 710, UL LISTED, STEEL SHELL WITH MOULDED DESICCANT FILTER CORE, FOR MAXIMUM
- WORKING PRESSURE OF 2410 KPA.

 3.19 SOLENOID VALVES

 .1 VALVE: ARI 760, PILOT OPERATED, COPPER OR BRASS OR STEEL BODY AND INTERNAL PARTS, SYNTHET SEAT, STAINLESS STEEL STEM AND PLUNGER ASSEMBLY, INTEGRAL STRAINER, WITH FLARED, SOLDER,
- OPERATION IN CASE OF COIL FAILURE.

 .2 COIL ASSEMBLY: UL 429, UL LISTED, REPLACEABLE WITH MOULDED ELECTROMAGNETIC COIL, MOISTUR

OR THREADED ENDS; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA. STEM TO PERMIT MANUAL

AND FUNGUS PROOF, WITH SURGE PROTECTOR AND COLOUR CODED LEAD WIRES, INTEGRAL JUNCTIO BOX WITH PILOT LIGHT.

.3 ELECTRICAL CHARACTERISTICS: 120 VOLTS, SINGLE PHASE, 60 HZ.3.20 EXPANSION VALVES

- .1 ANGLE OR STRAIGHT THROUGH TYPE: ARI 750; DESIGN SUITABLE FOR REFRIGERANT, BRASS BODY, INTERNAL OR EXTERNAL EQUALIZER, BLEED HOLE, SUPERHEAT SETTING, REPLACEABLE INLET STRAINEF WITH NON-REPLACEABLE CAPILLARY TUBE AND REMOTE SENSING BULB AND REMOTE BULB WELL.
- .2 SELECTION: EVALUATE REFRIGERANT PRESSURE DROP THROUGH SYSTEM TO DETERMINE AVAILABLE PRESSURE DROP ACROSS VALVE. SELECT VALVE FOR MAXIMUM LOAD AT DESIGN OPERATING PRESSUR AND MINIMUM 6 DEGREES C SUPERHEAT. SELECT TO AVOID BEING UNDERSIZED AT FULL LOAD AND EXCESSIVELY OVERSIZED AT PART LOAD.

3.21 RECEIVERS

- .1 INTERNAL DIAMETER 150 MM AND SMALLER: ARI 495, UL LISTED, STEEL, BRAZED; 2760 KPA MAXIMUN PRESSURE RATING. WITH TAPPINGS FOR INLET. OUTLET. AND PRESSURE RELIEF VALVE.
- .2 INTERNAL DIAMETER OVER 150 MM: ARI 495, WELDED STEEL, TESTED AND STAMPED TO ASME SEC 8D 2760 KPA WITH TAPPINGS FOR LIQUID INLET AND OUTLET VALVES, PRESSURE RELIEF VALVE, AND MAGNETIC LIQUID LEVEL INDICATOR.
- 3.22 FLEXIBLE CONNECTORS
- .1 CORRUGATED STAINLESS STEEL HOSE WITH SINGLE LAYER OF STAINLESS-STEEL EXTERIOR BRAIDING,

HVAC SPECIFICATIONS 25-007

MINIMUM 230 MM LONG WITH COPPER TUBE ENDS; FOR MAXIMUM WORKING PRESSURE 3450 KPA.

- 4. MULTI-SPLIT COOLING SYSTEM
- 4.1 PROVIDE ETL LISTED SYSTEMS WITH WIRING CONFORMING TO THE ELECTRICAL CODE.
- 4.2 PROVIDE SYSTEMS PRODUCED IN ISO 9001/14001 FACILITY AND THAT ARE FACTORY TESTED FOR FUNCTION AND SAFETY.
- 4.3 PROVIDE VARIABLE CAPACITY AIR CONDITIONING SYSTEM INVERTER DRIVEN (HEAT / COOL) MULTI-SPLIT SYSTEM AS SPECIFIED CONSISTING OF 2 TO 4 INDOOR EVAPORATORS MATCHED TO AN OUTDOOR VARIABLE
- SPEED ROTARY COMPRESSOR CONDENSING UNIT.

 4.4 OUTDOOR UNIT: CONFIGURED FOR HORIZONTAL DISCHARGE AIRFLOW AND COMPLETE WITH A VARIABLE SPEED CONDENSER FAN USING A SINGLE-PHASE POWER SUPPLY.
- 4.5 TYPICAL COOLING MODE OPERATING RANGE: 14°F TO 115°F DB. HEATING MODE OPERATING RANGE: 5°F
- 4.6 PROVIDE AN ULTRA-LOW AMBIENT KIT AND WIND BAFFLE TO PERMIT UNIT OPERATION DOWN TO -40°F
 4.7 PROVIDE SYSTEM DESIGNED TO OPERATE WITH A MAXIMUM REFRIGERANT PIPE LENGTH BETWEEN THE CONDENSING UNIT AND EACH INDOOR UNIT OF 82 FEET, WITH 49.2 FEET MAXIMUM VERTICAL DIFFERENCE AND WITHOUT ANY OIL TRAPS OR ADDITIONAL EQUIPMENT. THE TOTAL REFRIGERANT PIPE LENGTH OF ALL PIPING TO ALL INDOOR UNITS COMBINED SHALL NOT EXCEED 230 FT.

4.8 REFRIGERANT: AS PER DRAWING SCHEDULE.4.9 FAN COILS

VERTICALLY ADJUSTED FROM 0° TO 90°.

- .1 THE INDOOR UNIT: CEILING CASSETTE FAN COIL UNIT WITH A VARIABLE SPEED DIRECT DRIVE DC TYPE FAN FOR INSTALLATION INTO THE CEILING CAVITY, EQUIPPED WITH AN AIR PANEL GRILL. FOUR-WAY AIR DISTRIBUTION TYPE WITH FRESH WHITE OR SILVER, IMPACT RESISTANT WASHABLE DECORATION PANEL. SUPPLY AIR DISTRIBUTED VIA MOTORIZED LOUVERS WHICH CAN BE HORIZONTALLY AND
- .2 INDOOR UNIT'S SOUND PRESSURE: 25.5 DB(A) TO 33 DB(A) AT LOW SPEED MEASURED AT 5 FEET BELOW THE UNIT.
- .3 FOUR-WAY SUPPLY AIR FLOW CAPABLE OF FIELD MODIFICATION TO 2-WAY OR 3-WAY AIRFLOW TO ACCOMMODATE VARIOUS INSTALLATION CONFIGURATIONS INCLUDING CORNER INSTALLATIONS.
- .4 THE DECORATION PANEL: LOW-PROFILE DESIGN, EXTENDING ONLY 5/16" BELOW THE CEILING
 WITHOUT ANY OVERLAP WITH NEIGHBORING CEILING TILES, ALLOWING FOR INSTALLATION DIRECTLY
 ADJACENT TO OTHER CEILING COMPONENTS SUCH AS LIGHTS, DIFFUSERS, AND SPRINKLERS, ETC.
 .5 RETURN AIR: THROUGH THE CONCENTRIC PANEL. WHICH INCLUDES A RESIN NET MOLD RESISTANT
- FILTER. EQUIPPED WITH A CONDENSATE PAN AND A FACTORY-MOUNTED CONDENSATE PUMP WITH UP TO 21" OF LIFT AND HAVE A BUILT-IN SAFETY SHUTOFF AND ALARM.

 6 THREE AUTO-SWING POSITIONS: STANDARD, DRAFT PREVENTION AND CEILING STAIN PREVENTION.
- .7 FAN: VARIABLE SPEED DIRECT DRIVE DC MOTOR WITH A STATICALLY AND DYNAMICALLY BALANCED IMPELLER WITH 3 USER-SELECTABLE FAN SPEEDS. AUTOMATIC FAN SPEED MODE ALLOWS THE FAN TO VARY BETWEEN 5 SPEEDS BASED ON SPACE LOAD.
- 4.10 CONDENSING UNIT.1 OUTDOOR UNIT: COMPLETELY WEATHERPROOF AND CORROSION RESISTANT. CONSTRUCTED FROM
- RUST-PROOFED MILD STEEL PANELS COATED WITH A BAKED ENAMEL FINISH.

 .2 FAN: DIRECT DRIVE, PROPELLER TYPE FAN WITH INVERTER DRIVEN MOTOR WITH PERMANENTLY
- LUBRICATED BEARINGS
- .3 FAN GUARD: TO PREVENT CONTACT WITH FAN OPERATION.
- .4 OUTDOOR COIL: NONFERROUS CONSTRUCTION WITH A CORRUGATED FIN TUBE.
- .5 COMPRESSOR: ROTARY SWING INVERTER-DRIVEN COMPRESSOR. COMPRESSOR SAFETIES SHALL INCLUDE INTERNAL THERMAL OVERLOAD PROTECTION. REFRIGERATION SPECIALTIES SHALL INCLUDE
- AN ACCUMULATOR, REFRIGERANT METERING DEVICE AND A FOUR-WAY REVERSING VALVE.

 6 PROVIDE OUTDOOR UNIT WITH 2 TO 4 REFRIGERANT PORTS, EACH CONSISTING OF A LIQUID AND SUCTION LINE FOR EACH INDOOR UNIT. EACH PORT SHALL BE LABELED AND ASSOCIATED WITH A
- 4-WIRE ELECTRICAL AND CONTROL POWER FEED FOR EACH INDOOR UNIT.
- 4.11 CONTROLS.1 FAN COIL UNITS SHALL BE SUPPLIED WITH INDIVIDUAL ZONE CONTROLLERS.
- .2 ZONE CONTROLLERS SHALL BE HARD WIRED BY INSTALLING CONTRACTOR.
- .3 SINGLE AND DUAL SETPOINTS FOR OCCUPIED PERIODS, AND INDEPENDENT SETBACK SETPOINTS FOR
- UNOCCUPIED PERIODS.

 .4 ABILITY TO DIGITALLY PROHIBIT INDIVIDUAL BUTTONS AND FUNCTIONS, INCLUDING CUSTOM MODE
- SELECTION.

 .5 SELF DIAGNOSIS FUNCTION THAT CONSTANTLY MONITORS THE SYSTEM FOR MALFUNCTIONS.
- .6 CONTROLLER EQUIPPED WITH A THERMOSTAT SENSOR.
- .7 BUILT-IN 7 DAY, WEEKDAY PLUS SATURDAY SUNDAY (5+1+1), WEEKDAY PLUS WEEKEND (5+2) AND
- EVERYDAY (1) SCHEDULER.

 8 FAN COIL UNITS SUPPLIED WITH WIRING ADAPTERS AND ASSOCIATED ADAPTER INSTALLATION BOXES
- TO PROVIDE BAS INTEGRATION.

 4.12 STARTUP AND WARRANTY
- .1 SYSTEM INSTALLED BY AN AUTHORIZED CONTRACTOR/DEALER.
- .2 THE WARRANTY PERIOD SHALL COMMENCE ON THE DATE OF INITIAL START-UP AND SHALL CONTINUE FOR A PERIOD OF ONE (10) YEARS NOT TO EXCEED EIGHTEEN (126) MONTHS FROM DATE OF
- 4.13 INSTALLATIO
- .1 INSTALL CONDENSING UNITS ON A FLAT SURFACE LEVEL WITHIN 1/8 INCH AND PROVIDE CONDENSING UNIT SUPPORT STANDS FOR A MINIMUM ELEVATION OF 18" FROM GROUND OR ROOF SURFACE.
- .2 FOR CEILING HUNG INSTALLATIONS, PROVIDE A REINFORCED STEEL FRAMEWORK TO ADEQUATELY SUPPORT ALL UNIT SECTIONS.
- .3 PROVIDE CERTIFIED WIRING SCHEMATICS TO THE ELECTRICAL DIVISION FOR ASSOCIATED EQUIPMENT AND CONTROLS.
 .4 PROVIDE ALL NECESSARY CONTROL WIRING AS RECOMMENDED BY THE MANUFACTURER.
- .5 HIGH/LOW PRESSURE GAS LINE, LIQUID AND SUCTION LINES MUST BE INDIVIDUALLY INSULATED BETWEEN THE OUTDOOR AND INDOOR UNITS.



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PROJECT:

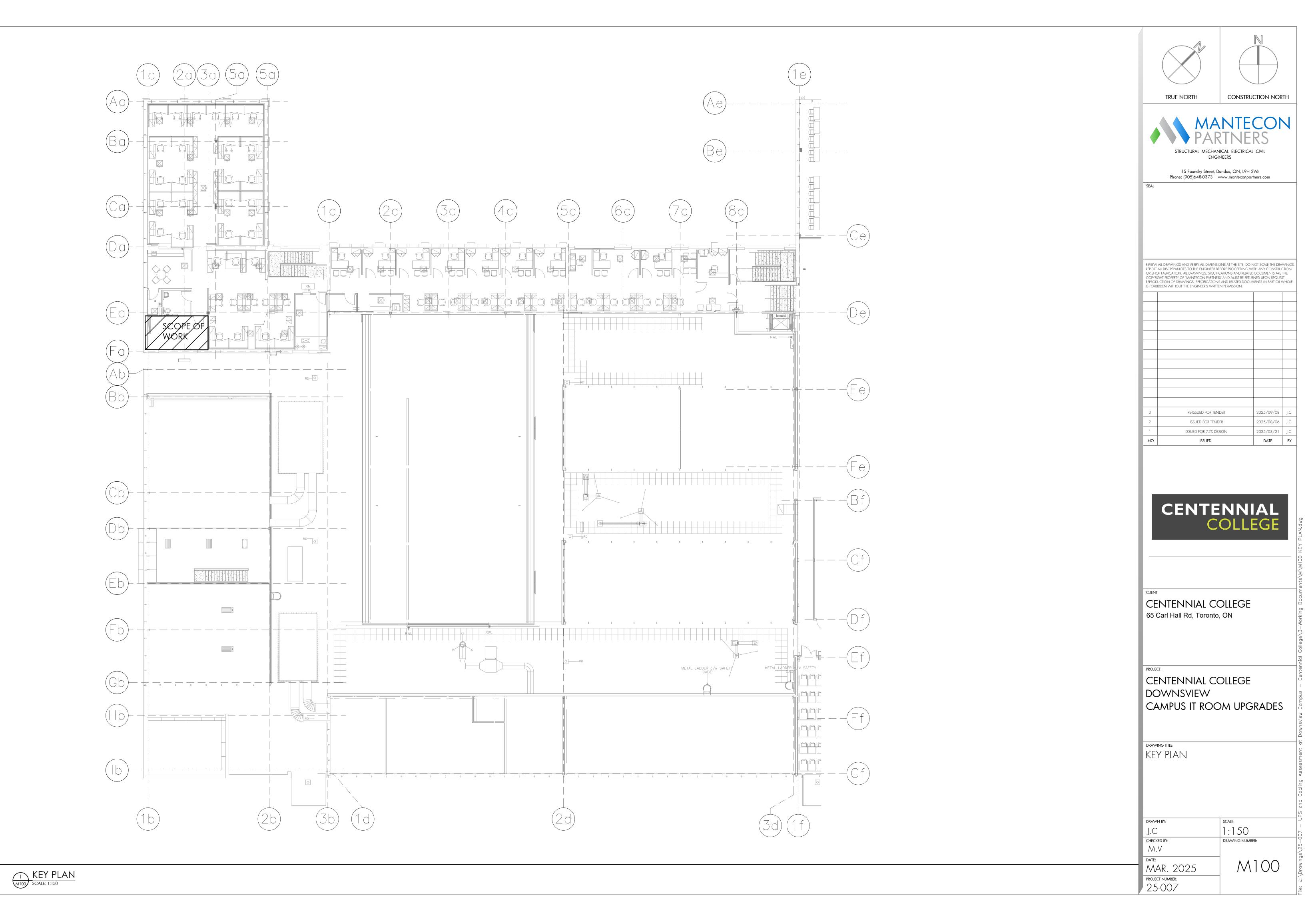
CENTENNIAL COLLEGE DOWNSVIEW CAMPUS IT ROOM UPGRADES

DRAWING TITLE:

25-007

HVAC SPECIFICATIONS

DRAWN BY:	SCALE:
J.C	NTS
CHECKED BY:	DRAWING NUMBER:
M.V	
DATE:	
MAR. 2025	M002
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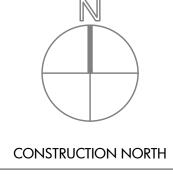


CONDENSATE LINE TO RUN ABOVE THE CEILING. FAN COIL CONDENSATE TO COME WITH CONDENSATE PUMPS.

GENERAL NOTES

DRAWING NOTES

 EXISTING FAN COIL + ASSOCIATED DRAINAGE PIPING TO REMAIN. PROVIDE INDIRECT CONNECTION FOR FAN COIL CONDENSATE TO EXISTING JANITORS SINK.



STRUCTURAL MECHANICAL ELECTRICAL CIVIL **ENGINEERS**

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ISSUED FOR 75% DESIGN

ISSUED

CENTENNIAL COLLEGE

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IT ROOM PROPOSED

DRAINAGE PLAN

CAMPUS IT ROOM UPGRADES

1:25

DRAWING NUMBER:

M200

DOWNSVIEW

DRAWING TITLE:

CHECKED BY:

PROJECT NUMBER:

M.V

65 Carl Hall Rd, Toronto, ON

2025/09/08

2025/08/06 2025/03/21

DATE BY

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IT ROOM PROPOSED DRAINAGE PLAN

SCALE: 1:25 ORIGINAL SHEET - ARCH D

25-007 September 08, 2025 — 04:03pm Plotted by: jcrowe

MAR. 2025

DRAWING NOTES

EXISTING THERMOSTAT & TEMPERATURE/HUMIDI SENSOR TO REMAIN _____

UP TO VRF-3

LEXISTING THERMOSTAT TO REMAIN

****UP TO VRF-2

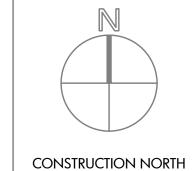
FC-4

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

- EXISTING FAN COIL + ASSOCIATED WIRING & PIPING TO REMAIN.
- NEW REFRIGERANT LINES TO BE SIZED AND ROUTED PER MANUFACTURERS INSTRUCTIONS.
 REFER TO M600 FOR PIPING DIAGRAM









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NO.	ISSUED	DATE	
1	ISSUED FOR 75% DESIGN	2025/03/21	J
2	issued for tender	2025/08/06	J
3	re-issued for tender	2025/09/08	J



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CENTENNIAL COLLEGE DOWNSVIEW CAMPUS IT ROOM UPGRADES

DRAWING TITLE: IT ROOM PROPOSED HVAC PLAN

DRAWN BY:	SCALE:
J.C	1:25
CHECKED BY:	DRAWING NUMBER:
M.V	
DATE:	11000
MAR. 2025	M300

September 08, 2025 — 04:03pm Plotted by: jcrowe

MAR. 2025

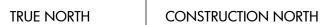
PROJECT NUMBER: 25-007



DRAWING NOTES

- EXISTING CONDENSER+ ASSOCIATED REFRIGERANT PIPING TO REMAIN.
- PROVIDE NEW VRF CONDENSING UNITS WITH ASSOCIATED REFRIGERANT PIPING C/W PIPE TRANSITIONS BOXES AND SUPPORTS.

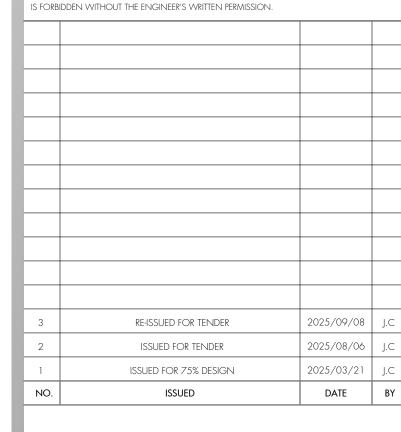






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CENTENNIAL COLLEGE DOWNSVIEW CAMPUS IT ROOM UPGRADES

DRAWING TITLE: IT ROOM MECHANICAL PROPOSED ROOF PLAN

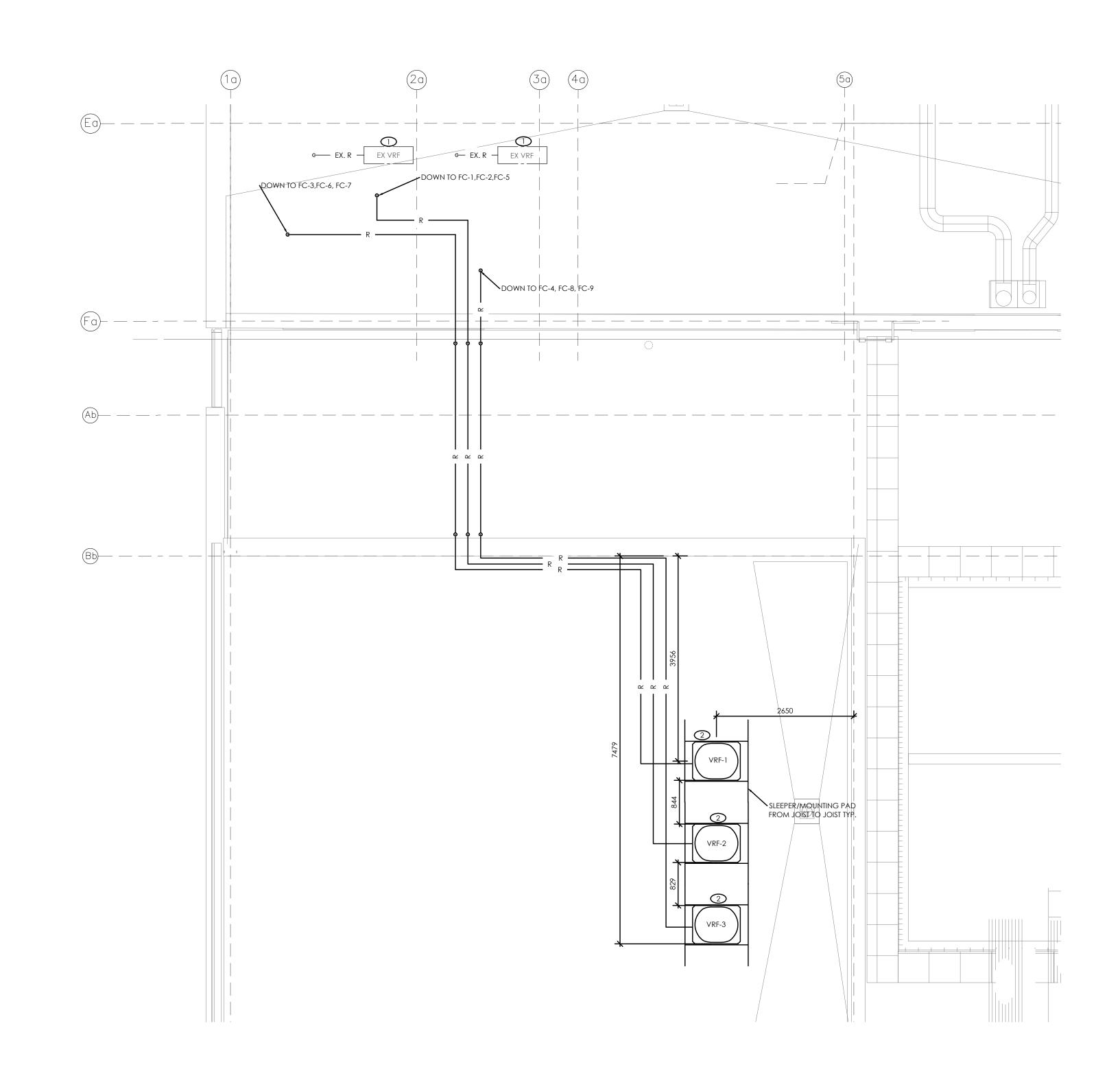
DRAWN BY:	SCALE:
J.C	1:50
CHECKED BY:	DRAWING NUMBER:
M.V	
DATE:	1 1 1 1 1 1 1 1
MAR. 2025	M30 ⁻

MAR. 2025

PROJECT NUMBER: 25-007

September 08, 2025 — 04:03pm Plotted by: jcrowe

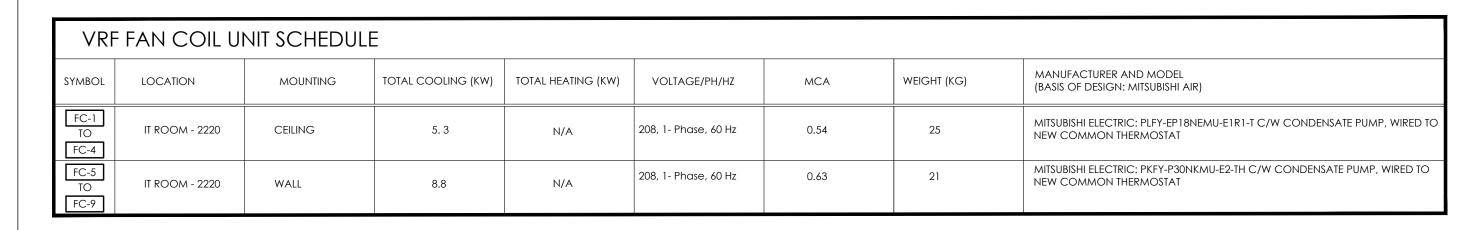
1 IT ROOM MECHANICAL PROPOSED ROOF PLAN
SCALE: 1:50



PLACE SLEEPER/MOUNTING PAD DIRECTLY ON THESE POINTS ON THE JOIST PLACE SLEEPER/MOUNTING PAD DIRECTLY ON THESE POINTS ON THE JOIST

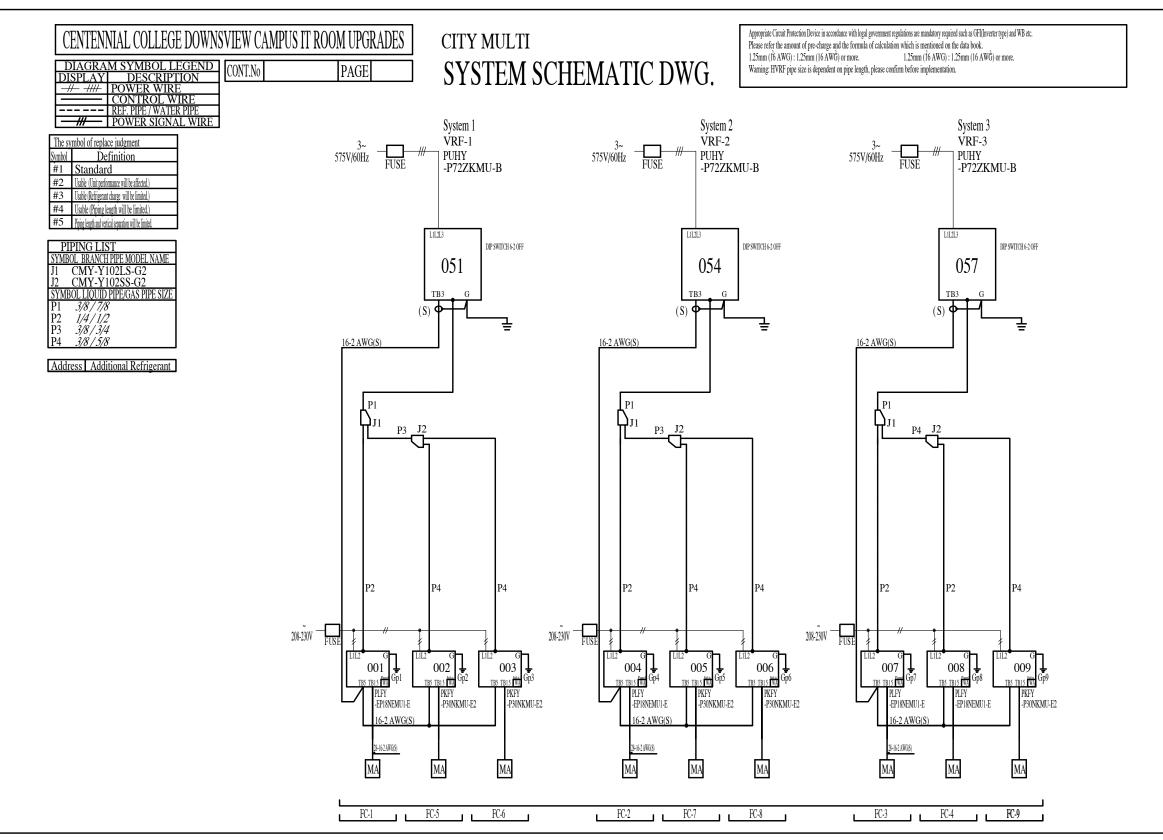
TYPICAL UNIT PLACEMENT ON JOIST

SCALE: NTS

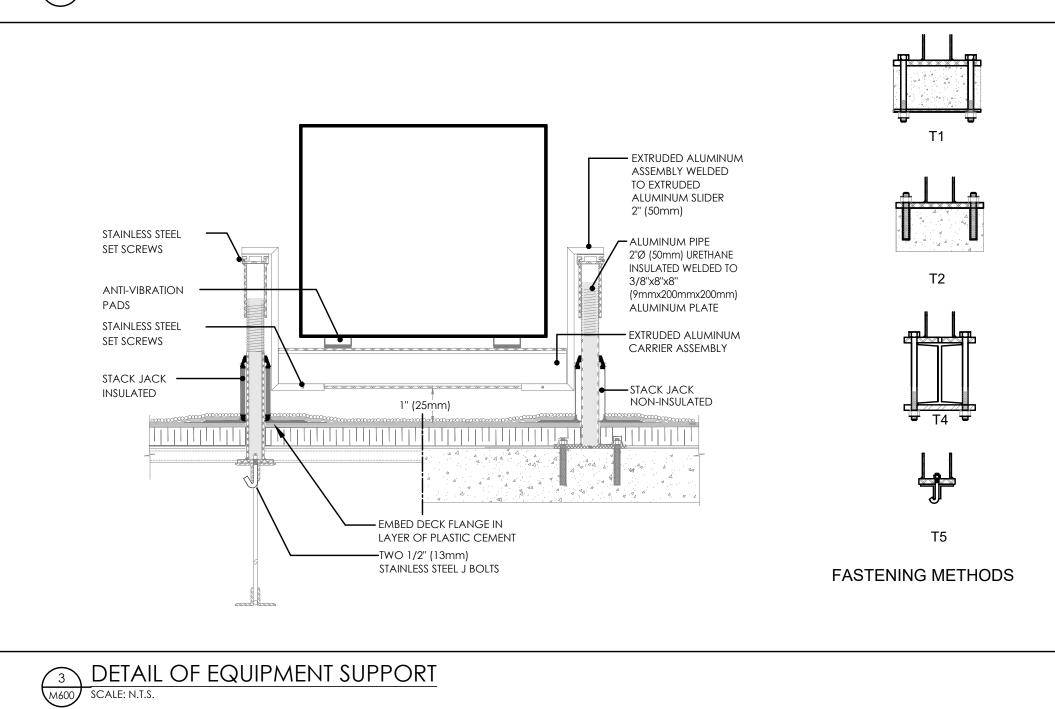


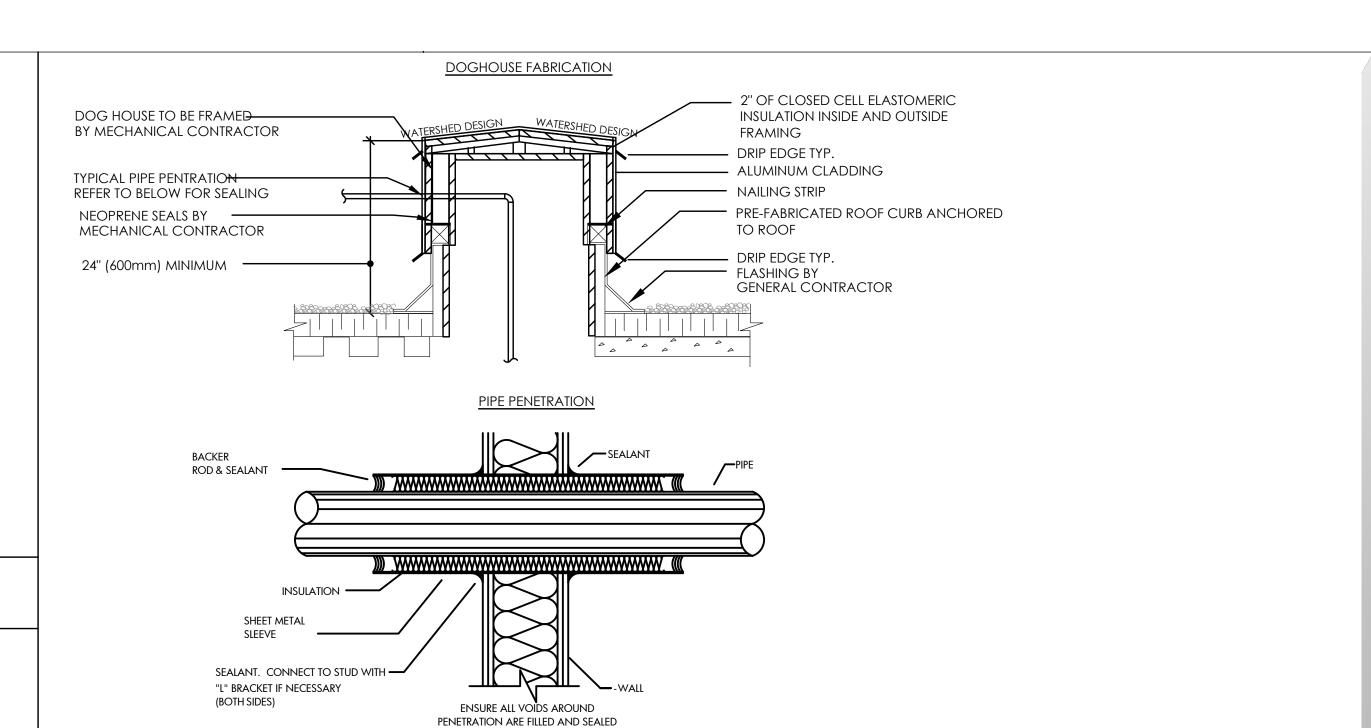
VRF OUTDOOR UNIT SCHEDULE								
SYMBOL	LOCATION	TOTAL COOLING (KW)	TOTAL HEATING (KW)	VOLTAGE/PH/HZ	MCA	МОСР	WEIGHT (KG)	MANUFACTURER AND MODEL (BASIS OF DESIGN: MITSUBISHI AIR)
VRF-1 TO VRF-3	ROOF	21.1	N/A	575V, 3- Phase, 60 Hz	11	15	222	MITSUBISHI ELECTRIC: PUHY-P72ZKMU-B (-BS) C/W LOW AMBIENT COOLING KIT: HOOD WITH CONTROL DAMPER ASSEMBLY & WIND DEFLECTORS.

MECHNICAL SCHEDULES SCALE: N.T.S.



VRF PIPING SCHEMATIC SCALE: N.T.S.





DETAIL OF DOGHOUSE AND PIPING PENETRATIONS

SCALE: N.T.S.





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3	re-issued for tender	2025/09/08	J.C



CLIENT

CENTENNIAL COLLEGE 65 Carl Hall Rd, Toronto, ON

OJECT:

CENTENNIAL COLLEGE
DOWNSVIEW
CAMPUS IT ROOM UPGRADES

DRAWING TITLE:

MECHANICAL SCHEDULES AND DETAILS

DRAWN BY:	SCALE:
J.C	NTS
CHECKED BY:	DRAWING NUMBER:
M.V	
DATE:	
MAR. 2025	M600
PROJECT NUMBER:	
25-007	

September 08, 2025 — 04:03pm Plotted by: jcrowe

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