# BAIL AUTO THEFT RENOVATION

IO Project No. 1105556

# 2420 LUCKNOW DRIVE Mississauga, ONTARIO L5S1V2

CONTENT

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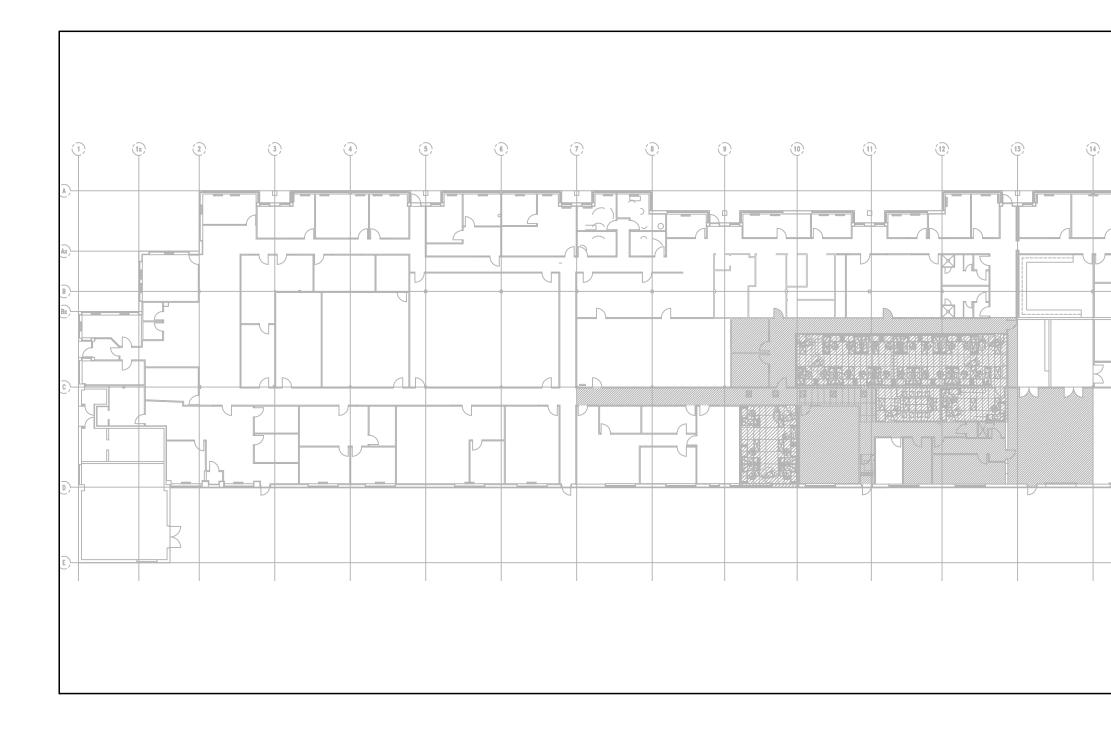
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**ISSUED FOR** 

ELECTRICAL DRAWINGS

TENDER



## DATE

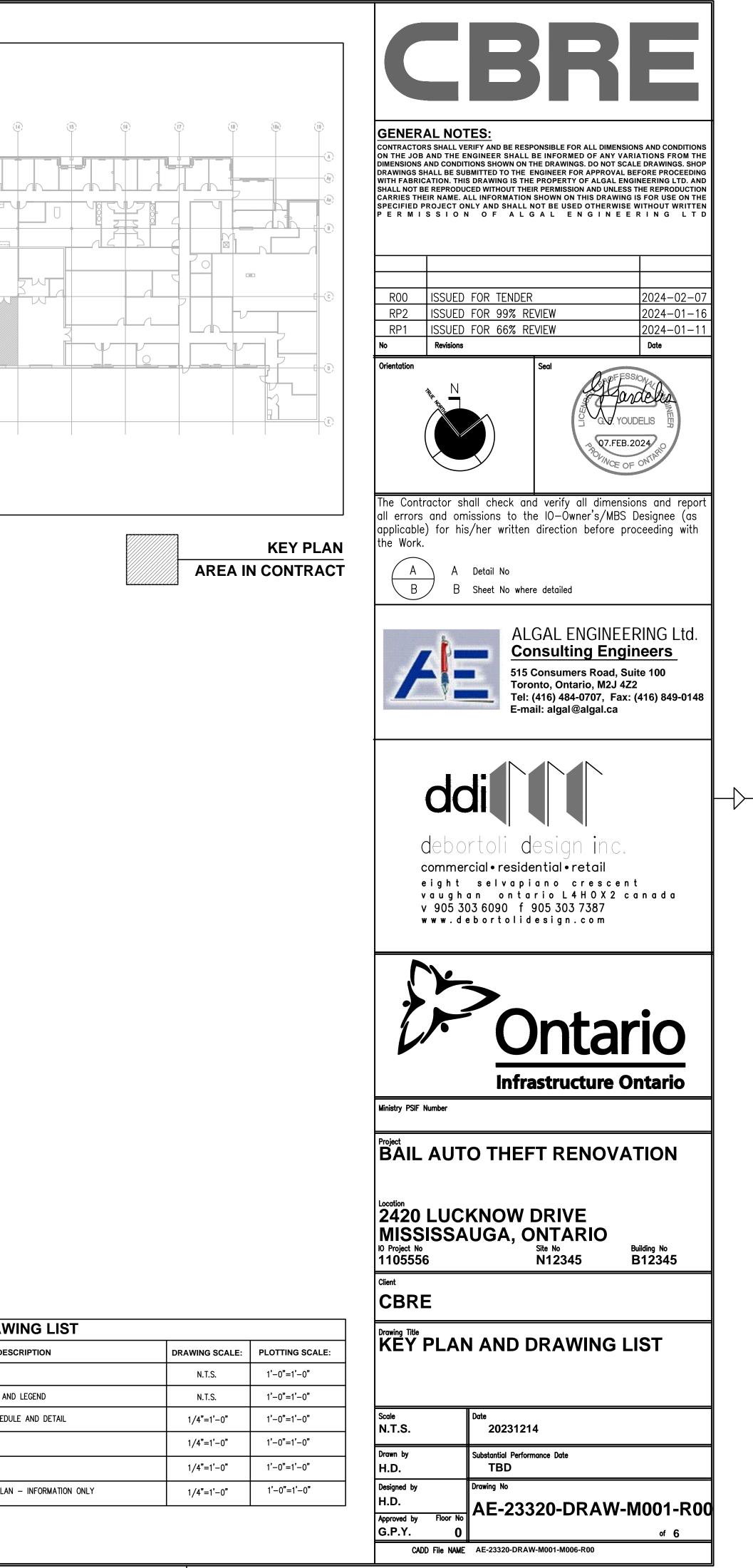
FEBRUARY 07, 2024

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## FILE No.

AE-23320-DRAW-M001-M006-R00

DRAV	
DE	DRAWING NUMBER
KEYPLAN AND DRAWING LIST	AE-23320-DRAW-M001-R00
MECHANICAL SPECIFICATIONS A	AE-23320-DRAW-M002-R00
MECHANICAL EQUIPMENT SCHED	AE-23320-DRAW-M003-R00
HVAC DEMOLITION PLAN	AE-23320-DRAW-M004-R00
HVAC NEW LAYOUT	AE-23320-DRAW-M005-R00
FIRE PROTECTION EXISTING PLA	AE-23320-DRAW-M006-R00



<u>GENERAL</u>

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- 1.1. COMPLETE THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE LATEST EDITIONS OF THE ONTARIO BUILDING CODE, ONTARIO FIRE CODE, C.S.A. STANDARDS, U.L.C., N.F.P.A., O.S.H.A. AND OTHER CODES AS REQUIRED.
- 1.2. WHEREVER THE WORDS "PROVIDE" OR "SUPPLY AND INSTALL" ARE USED, IT SHALL BE UNDERSTOOD TO MEAN "PROVIDE AND INSTALL, INCLUSIVE OF ALL LABOUR, MATERIALS, INSTALLATION, TESTING, AND CONNECTIONS" FOR THE ITEM TO WHICH IT REFERENCES.
- 1.3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, C.S.A. CERTIFIED AND MANUFACTURED TO THE STANDARDS SPECIFIED.
- 1.4. MAKE SITE VISIT(S) AS NECESSARY BEFORE TENDER TO ESTABLISH AND VERIFY ALL EXISTING CONDITIONS. MAKE ALLOWANCE FOR ANY NEW OR EXISTING SERVICE AND EQUIPMENT RELOCATIONS NECESSARY TO COMPLETE THE WORK AND INCLUDE IN THE TENDER PRICE. NO CLAIM FOR EXTRA PAYMENT SHALL BE MADE FOR EXISTING WORK MADE NECESSARY BY CIRCUMSTANCES ENCOUNTERED DUE TO CONDITIONS WHICH WERE VISIBLE UPON, OR REASONABLY INFERABLE FROM AN EXAMINATION OF THE SITE PRIOR TO SUBMISSION OF THE BID.
- 1.5. THE DRAWINGS FOR THE MECHANICAL WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO SHOW THE GENERAL INTENT OF THE WORK, NOT THE DETAILS OF INSTALLATION. CO-ORDINATE THE ROUTING AND INSTALLATION OF ALL MECHANICAL SERVICES WITH ALL EXISTING CONDITIONS, STRUCTURE AND THE WORK OF ALL OTHER TRADES.
- 1.6. PROVIDE SLEEVING DRAWINGS SHOWING ALL OPENINGS IN THE STRUCTURE WITH ALL REQUIRED DIMENSIONS.
- 1.7. PROVIDE INSTALLATION DRAWINGS OF ALL WORK WITH DIMENSIONS, DRAWN TO SCALE AND CO-ORDINATED WITH ALL TRADES AND DIVISIONS. SHOW ALL REQUIREMENTS FOR EQUIPMENT INSTALLED, AREA ACCESS, CLEARANCES AND CONNECTIONS BY OTHER TRADES.
- 1.8. PROVIDE STRUCTURAL LOADS WITH ALL DETAILS NECESSARY FROM INSTALLATION OF INSERTS AND ALL CONCRETE CONSTRUCTION ITEMS INCLUDING PADS, CURBS, SILLS, BASINS, ANCHORS, INSERTS ETC.
- 1.9. DO NOT SCALE MECHANICAL DRAWINGS. REFER TO ARCHITECTURAL OR INTERIOR DESIGN DRAWINGS FOR THE EXACT LOCATION OF ANY DEVICES, FIXTURES, ETC. OBTAIN ALL SITE DIMENSIONS FROM SITE MEASUREMENTS.
- 1.10. MAKE APPLICATION, PROVIDE, OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND INSPECTIONS.
- 1.11. ENSURE THAT FEDERAL TAXES ARE INCLUDED WHERE REQUIRED, H.S.T. TO BE SHOWN AS EXTRA.
- 1.12. PROVIDE A COMPLETE ITEMIZED BREAKDOWN OF MATERIAL, LABOUR, OVERHEAD, PROFIT, ETC. WHEN SUBMITTING QUOTATIONS FOR CHANGE NOTICES ON THIS PROJECT. THE HOURLY LABOUR RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOUR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS, ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILT DRAWINGS, HOISTING, FREIGHT AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT.
- 1.13. PROVIDE A WRITTEN WARRANTY FOR ALL MATERIALS, EQUIPMENT AND LABOUR FOR A ONE-YEAR PERIOD TO BEGIN AT THE TIME WHEN THE WORK IS DESIGNATED ACCEPTABLE BY THE CONSULTANT.
- 1.14. PROVIDE SHOP DRAWINGS (4 COPIES) OF ALL PRODUCTS FOR REVIEW.
- 1.15. CO-ORDINATE ALL SHUTDOWNS OF EXISTING BASE BUILDING SYSTEMS WITH THE LANDLORD OR REPRESENTATIVE. ADVISE THE LANDLORD OR REPRESENTATIVE AT LEAST 48 HOURS PRIOR TO ANY SHUTDOWN AND PAY FOR ANY COSTS INCURRED INCLUDING PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS.
- 1.16. CO-ORDINATE THE MECHANICAL WORK WITH ALL OTHER TRADES.
- 1.17. PROVIDE IN THE TENDER PRICE ANY COSTS FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE AND TO MAINTAIN ALL EXISTING MECHANICAL SYSTEMS IN OPERATION. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY INTERRUPTIONS OR DISRUPTIONS TO THE EXISTING SERVICES. ALL EXISTING BUILDING SERVICES MUST BE KEPT OPERATIONAL AT ALL TIMES. INTERRUPTIONS SHALL BE PERFORMED ONLY AFTER REGULAR OFFICE HOURS. ARRANGE WORK SUCH THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT SCHEDULED TIMES SUITABLE TO THE LANDLORD.
- 1.18. CHECK AND VERIFY EXISTING ELECTRICAL VOLTAGE AND ENSURE THAT ALL MECHANICAL EQUIPMENT SUPPLIED IS SUITABLE FOR THE AVAILABLE VOLTAGE.
- 1.19. ALL POWER WIRING BY ELECTRICAL CONTRACTOR, CONTROL AND INTERLOCK WIRING BY MECHANICAL CONTRACTOR. VERIFY LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE WORK COMMENCES.
- 1.20. PROVIDE STARTERS WITH REQUIRED OVERLOAD PROTECTION FOR ALL MECHANICAL EQUIPMENT. PROVIDE LINE VOLTAGE REVERSE ACTING THERMOSTATS WHERE SPECIFIED. STARTERS AND LINE VOLTAGE THERMOSTATS SHALL BE TURNED OVER TO DIVISION 16 FOR INSTALLATION. WHERE SWITCHES ARE USED ON FINISHED WALLS PROVIDE TO MATCH LIGHTING SWITCH AND TYPE.
- 21. PROVIDE ALL DEMOLITION, CLEAN-UPS, STORAGE, LIFTING, FLASHING, DRILLING, CUTTING AND PATCHING AS REQUIRED. ALL CUTTING AND PATCHING REQUIRED TO THE EXISTING BUILDING STRUCTURE FOR THE WORK SHALL BE INCLUDED UNDER THIS CONTRACT, AND BE ACCEPTABLE TO THE LANDLORD. PROVIDE X-RAY OF SLAB PRIOR TO CORING AND CUTTING OF FLOOR, AND OBTAIN APPROVAL FROM BASE BUILDING STRUCTURAL ENGINEER PRIOR TO DRILLING. SUBMIT WRITTEN CONFIRMATION THAT X-RAY HAS BEEN PERFORMED, AND THAT RESULTS HAVE BEEN ACCEPTED BY BASE BUILDING STRUCTURAL ENGINEER. OBTAIN WRITTEN APPROVAL FROM THE LANDLORD BEFORE ANY CUTTING IS CARRIED OUT.
- 1.22. PROVIDE ALL EQUIPMENT PADS, CURBS, SILLS, BASINS, ANCHORS, INSERTS, SUPPORTS, SLEEVES, ETC. AS REQUIRED FOR MECHANICAL EQUIPMENT AND PIPING.
- 1.23. PROVIDE ALL LABOUR, EQUIPMENT, MATERIALS, AND SERVICES NECESSARY FOR COMPLETE FIRESTOPPING AND SEALING OF ALL PIPE SLEEVES AND PIPE PENETRATIONS REQUIRED FOR THE WORK OF THIS DIVISION.
- 1.24. PROVIDE ACCESS AS REQUIRED IN WALLS AND CEILINGS. ENSURE THAT ACCESS IS PROVIDED FOR ALL EQUIPMENT. PROVIDE ACCESS DOORS COMPATIBLE WITH THE ADJACENT FINISHES AND WITH FIRE RATING EQUAL TO SURFACES IN WHICH INSTALLED. PROVIDE ACCESS PANELS IN PLASTER AND DRYWALL SURFACES WITH RECESSED DOOR WITH WELDED METAL LATH READY TO ACCEPT PLASTER/ DRYWALL INSERT AND WITH A PLASTER GROMMET FOR DOOR KEY ACCESS. MIFAB SERIES CAD-DW OR EQUIVALENT.
- 1.25.RE-USE AND RELOCATE EXISTING MATERIALS SUCH AS PIPING, FIXTURES, DUCTWORK, DIFFUSERS, EQUIPMENT ETC. WHERE SHOWN. CAP AND DISCONNECT ALL EXISTING PIPING AND DUCTWORK NOT REQUIRED AT CEILING, WALLS OR FLOOR, OR TO A LOCATION AS DIRECTED BY THE LANDLORD. MAINTAIN INTEGRITY OF ALL INSULATION INCLUDING VAPOUR BARRIERS WHEN CONNECTING TO EXISTING SERVICES. MAINTAIN THE INTEGRITY OF ALL EXISTING SYSTEMS ASSOCIATED WITH THE BUILDING SYSTEM IN PLACE. UNLESS NOTED OTHERWISE OBTAIN PERMISSION FROM THE LANDLORD AND REMOVE FROM THE SITE ALL MATERIALS WHICH ARE NOT TO REMAIN OR BE RE-USED.
- 1.26. ADJUST THE LOCATION OF DEVICES AND/OR EQUIPMENT (UP TO 10'-O" IN ANY DIRECTION) AS DIRECTED BY THE LANDLORD AND OR THE ARCHITECT AND OR INTERIOR DESIGNER WITHOUT ADJUSTMENT TO THE CONTRACT PRICE, PROVIDED THAT THE CHANGES ARE REQUESTED BEFORE INSTALLATION.
- 1.27.NO ALTERNATIVES FOR EQUIPMENT SHALL BE ACCEPTED WITHOUT WRITTEN APPROVAL OF THE CONSULTANT.
- 1.28. IDENTIFY ALL SYSTEMS AND LABEL ALL EQUIPMENT WITH LAMACOID LABELS. IDENTIFY REMOTE CONTROLS FOR ALL PERTINENT EQUIPMENT INCLUDING ALL ASSOCIATED DISCONNECTS.
- 1.29. PRODUCTS NOT SPECIFICALLY SPECIFIED SHALL BE OF A QUALITY CONSISTENT WITH THE REMAINDER OF THE SPECIFICATION.
- 1.30. PROVIDE OVERSIZED PIPE HANGERS AND INSULATION SHIELDS FOR INSULATED COLD PIPE. PROVIDE PLASTIC COATED PIPE HANGERS WHERE HANGER IS IN DIRECT CONTACT WITH COPPER PIPE.
- 1.31. PROVIDE ALL MISCELLANEOUS METALS REQUIRED FOR MECHANICAL WORK.
- 1.32. PROVIDE DI-ELECTRIC FITTINGS TO SEPARATE ALL DISSIMILAR METALS.
- 1.33. PROVIDE AND INSTALL PIPING WITH ALL NECESSARY EXPANSION LOOPS, OFFSETS, GUIDES, JOINTS, ANCHORS ETC. AS MAY BE REQUIRED SO THAT PIPING WILL NOT BE OVERSTRESSED DURING EXPANSION AND CONTRACTION.
- 1.34.PROVIDE FLASHING AND COUNTER FLASHING FOR ALL DUCTS, PIPES, ETC., PASSING THROUGH EXTERIOR WALLS, WATERPROOF FLOORS AND
- 1.35. PATCH AND SEAL ALL OPENINGS IN FLOORS, WALLS AND PARTITIONS. SEAL ALL VERTICAL SLEEVES AND CORE DRILLED OPENINGS THROUGH ROOF, MECHANICAL ROOMS AND FLOORS ETC, WITH PERMANENTLY RESILIENT WATERPROOF SILICONE BASE SEALING COMPOUND.
- 1.36. PROVIDE ALL CONCRETE REQUIRED FOR MECHANICAL WORK.
- 1.37.IDENTIFY ALL PIPING WITH STENCILLED LETTERS OR COLOUR CODES AND DIRECTIONAL ARROWS.
- COMPLETION OF CONTRACT
- 2.1. ALL EQUIPMENT MUST BE CLEANED AND TESTED BEFORE FINAL ACCEPTANCE BY CONSULTANT.
- 2.2. PRIOR TO CONTACTING THE CONSULTANT FOR FINAL INSPECTION, THE CONTRACTOR MUST CORRECT ALL DEFICIENCIES AS SPECIFIED ON THE DEFICIENCY LIST.
- 2.3. PROVIDE A WRITTEN WARRANTY FOR ONE YEAR CONVERING ALL EQUIPMENT, MATERIALS AND WORKMANSHIP FROM THE DATE OF ACCEPTANCE

## MECHANICAL SPECIFICATIONS

- OF THE INSTALLATION BY THE OWNER. INCLUDE IN
- 2.4. ANY DEFECTS OR DEFICIENCIES WHICH ORIGINATE (
- 3. <u>AS-BUILT DRAWINGS</u>

AT NO COST TO THE OWNER.

- 3.1. AT THE COMPLETION OF WORK AND BEFORE FINAL DRAWING FILES CAN BE OBTAINED FROM THE CONSU
- 3.2. INCORPORATE ALL CHANGES AND DEVIATIONS FROM MATCH THE ORIGINAL DRAFTING METHODOLOGY.
- 3.3. ALL CONCEALED PIPING RUNS, VALVE AND DAMPER
- 3.4. REMOVE THE MECHANICAL ENGINEER'S STAMP AND
- 3.5. CLEARLY INDICATE THE WORDS "AS-BUILT" IN THE NAME AND ADDRESS.
- 3.6. SUBMIT A PRINT TO CONSULTANT TO REVIEW. WH TOGETHER WITH AUTO CAD DISKS FOR PRESENTATION

#### 4. <u>OPERATION AND MAINTENANCE MANUALS</u>

- THE CONSULTANTS REVIEWED SHOP DRAWINGS. CERTIFICATE(S) OF ACCEPTANCE FROM AUTHORITIES HAVING JURISDICTION. AIR BALANCING REPORTS
- WRITTEN GUARANTEE. AS-BUILT DRAWINGS.
- MECHANICAL EQUIPMENT AND SYSTEMS AND THEIR OPERATION.

#### 5. FIRE PROTECTION

- FITTINGS ARE PERMITTED ONLY IN ACCESSIBLE LOCATIONS.
- BY THE LANDLORD
- PRESSURE DATA FOR USE IN PREPARING HYDRAULIC CALCULATIONS.
- PREPARATION AND APPROVALS SHALL BE BORNE BY THE CONTRACTOR.
- WITH NEW SPACE REQUIREMENTS.

AUTHORITIES.

WITHOUT CEILINGS.

- ADDITIONAL SPRINKLER HEADS WHERE REQUIRED.

WHERE CEILINGS HAVE BEEN REMOVED.

- REQURIED DISTANCES FROM HEAT PRODUCING EQUIPMENT AND DEVICES.
- 6. <u>HEATING, VENTILATING, AIR CONDITIONING</u>

- 6.4. PROVIDE DUCT ACCESS DOORS FOR ALL COILS, FIRE, CONTROL AND BALANCING DAMPERS, AS REQUIRED.

- INCREASE DUCTWORK SIZES TO SUIT ACOUSTIC INSULATION.

THE OPERATION AND MAINTENANCE MANUAL.	
OR BECOME EVIDENT DURING THE WARRANTY PERIOD MUST BE REPAIRED OR CORRECTED	6.10.PROVIDE ULC LABELLED FIRE DAMPERS IN DUCTWORK WHERE SHOWN AND WHERE REQUIRED BY CODES AND BY AUTHORITIES HAV JURISDICTION. FIRE DAMPERS SHALL BE TYPE 'B', UNLESS NOTED OTHERWISE. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS I THE TYPE OF FIRE DAMPER USED AND FOR THE WALL OR FLOOR ASSEMBLY THAT THE FIRE DAMPER IS INSTALLED WITHIN.
ACCEPTANCE, PROVIDE AS-BUILT DRAWINGS OF THE INSTALLATION IN AUTO CAD FORMAT. ULTANT. M THE TENDER DRAWINGS, UTILIZING NORMAL RECOGNIZED DRAFTING PROCEDURES THAT	<ul> <li>6.11. PROVIDE DIFFUSERS, GRILLES AND REGISTERS AS REQUIRED, SELECTED FOR LOW NOISE LEVELS, COMPATIBLE WITH CEILING TYPES A FINISHES. RELOCATE AND RE-USE EXISTING DIFFUSERS AND GRILLES AS REQUIRED. PROVIDE SUPPORT GRID FOR DIFFUSERS AND GRILL WHERE REQUIRED.</li> <li>6.12. REPLACEMENT OF OEM FILTERS UPON COMPLETION OF CONSTRUCTION.</li> </ul>
LOCATIONS, SERVICE LOCATIONS, ETC. MUST BE REFLECTED ON THE DRAWINGS.	7. DUCT AND PIPE INSULATION
COMPANY NAME FROM ALL DRAWINGS.	7.1. PROVIDE AND COVER ALL DOMESTIC WATER PIPING, VALVES, FITTINGS, APPURTENANCES, ETC. WITH RIGID PREFORMED FIBRE GL/ INSULATION. PROVIDE VAPOUR BARRIER FOR COLD WATER PIPING. INSULATION SHALL BE 1" THICK FOR COLD WATER PIPING AND FOR H
TITLE BLOCK COLUMN OF THE DRAWINGS AS WELL AS THE MECHANICAL CONTRACTOR'S	WATER AND HOT WATER RECIRCULATING PIPING. DO NOT USE STAPLES. ENSURE COMPLETE COVERAGE AND SEAL WITH AN APPRO' VAPOUR BARRIER CEMENT. MAINTAIN THE INTEGRITY OF ALL EXISTING THERMAL INSULATION WHEN CONNECTING NEW PIPING TO EXIST PIPING. PROVIDE PVC JACKETTING FOR ALL EXPOSED PIPE INSULATION.
HEN FOUND ACCEPTABLE BY THE CONSULTANT, SUBMIT THREE (3) SETS OF PRINTS ON TO LANDLORD AND TENANT.	7.2. ALL PIPE INSULATION AND VAPOUR BARRIER (FOR COLD PIPING) SHALL BE CONTINUOUS AND NOT INTERRUPTED BY PIPE HANGERS, UNISTRUT SUPPORTS. PROVIDE OVERSIZED CLEVIS HANGERS AND INSULATION SHIELDS FOR INSULATED PIPING. WHERE INSULATED PIPING SUPPORTED BY UNISTRUT SUPPORTS, PROVIDE UNISTRUT CUSH—A—THERM INSULATED PIPE CLAMPS TO MAINTAIN CONTINUOUS INULAT

AND VAPOUR BARRIER.

4.1. PROVIDE THREE (3) SETS OF OPERATION AND MAINTENANCE MANUALS TO THE TENANT'S REPRESENTATIVE, ONE COPY IS TO BE PROVIDED TO THE LANDLORD INCLUDE THE FOLLOWING INFORMATION IN THE OPERATION AND MAINTENANCE MANUALS: TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE IS NOT ACCEPTABLE.

VERIFICATION REPORTS AND CERTIFICATE(S) FOR ANY NEW LIFE SAFETY COMPONENTS OR TIE-INS TO ANY BASE BUILDING SYSTEMS.

4.1. REVIEW INFORMATION PROVIDED IN THE MAINTENANCE INSTRUCTIONS AND MANUALS WITH THE TENANT'S OPERATING PERSONNEL AND THE LANDLORD'S OPERATING PERSONNEL WHERE BASE BUILDING SYSTEMS ARE REVISED, TO ENSURE A COMPLETE UNDERSTANDING OF THE

5.1. PROVIDE FIRE PROTECTION, SPRINKLER WORK, EQUIPMENT AND DEVICES IN ACCORDANCE WITH THE REQUIREMENTS OF ALL CODES, GOVERNING UNDERWRITER, BASE BUILDING STANDARDS, LOCAL BYLAWS AND TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.

5.2. ALL LIFE SAFETY, STANDPIPE, SPRINKLERS AND FIRE PROTECTION SERVICES MUST BE MAINTAINED IN OPERATION AT ALL TIMES.

5.3. PROVIDE AND INSTALL PORTABLE FIRE EXTINGUISHERS INCLUDING BRACKETS AND TAGS IN ACCORDANCE WITH NFPA 10CAN4-S508 AND THE ONTARIO FIRE CODE. IN FINISHED OCCUPIED AREAS (OFFICE AREAS, MEETING ROOMS, ETC), PROVIDE SEMI-RECESSED FIRE EXTINGUISHER CABINETS RECESSED INTO DRYWALL PARTITION WALLS. CABINETS SHALL BE SUITABLE FOR INSTALLATION IN 4" (100 MM) THICK WALLS, WITH 1" (25MM) CASING TURN BACK (NATIONAL FIRE EQUIPMENT MODEL 102RS OR EQUIVALENT). PROVIDE STORED PRESSURE RECHARGEABLE TYPE EXTINGUISHERS WITH SHUT OFF NOZZLE YLC LABELLED FOR A, B AND C CLASS PROTECTION. PROVIDE SIZE 2.25 KG OR a SIZE AS REQUIRED BY AUTHORITIES HAVING JURISDICTION. THE LOCATIONS OF PORTABLE FIRE EXTINGUISHERS SHALL BE PROMINENTLY INDICATED BY SIGNS OR MARKINGS IN LARGE FLOOR AREAS AND IN LOCATIONS WHERE VISUAL OBSTRUCTIONS CANNOT BE AVOIDED.

5.4. PROVIDE SCHEDULE 40 BLACK STEEL FIRE LINE PIPING COMPLETE WITH FITTINGS, HANGERS AND ACCESSORIES AS REQUIRED. VICTAULIC TYPE

5.5. SPRINKLER WORK SHALL BE PERFORMED BY THE LANDLORD'S CONTRACTOR AT THE TENANT'S EXPENSE, OR BY A CONTRACTOR APPROVED

5.6. PROVIDE FLOW TEST TO THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION TO DETERMINE AVAILABLE FLOW AND WATER

5.7. PROVIDE, PRIOR TO INSTALLATION, COPIES OF THE WORKING DRAWINGS, HYDRAULIC DESIGN, AND CALCULATIONS TO THE INSURANCE UNDERWRITER AND AUTHORITIES HAVING JURISDICTION. ALL DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ASSUME ANY ADDITIONAL COSTS THAT MAY BE INCURRED TO MODIFY OR COMPLETE THE SYSTEM SHOULD THE AUTHORITIES HAVING JURISDICTION REQUIRE CHANGES. ANY AND ALL COSTS PERTAINING TO

5.8. PROVIDE NEW SPRINKLER HEADS TO MATCH EXISTING COMPLETE WITH RELATED PIPING. RE-USE EXISTING SPRINKLER PIPING IN ACCORDANCE

5.9. PROVIDE THE REQUIRED NUMBER OF SPRINKLER HEADS AND ALL NECESSARY COMPONENTS AS REQUIRED BY NFPA13 AND ALL GOVERNING

5.10.CO-ORDINATE SPRINKLER SYSTEM CHANGES WITH STRUCTURAL, ARCHITECTURAL, ELECTRICAL, PLUMBING AND DUCTWORK. PROVIDE

5.11. ADJUST NEW AND EXISTING SPRINKLER PIPING AND HEADS TO CONFORM TO NEW CEILING HEIGHTS AND CEILING TYPE INCLUDING ANY AREAS

5.12. PROVIDE ADDITIONAL SPRINKLER HEADS AS REQUIRED ABOVE AND BELOW DUCTWORK AND STRUCTURAL COMPONENTS ETC. IN AREAS

5.13.IN AREAS WITH FLOATING CEILINGS OR WITH CEILING PROJECTIONS, SPRINKLER PIPING SHALL BE CONCEALED BEHIND ADJACENT WALLS, CEILING SPACES, STRUCTURAL ELEMENTS, ETC. SO AS NOT TO BE VISIBLE. ALL PIPING DROPS FOR THESE AREAS SHALL BE CONCEALED IN SUCH A MANNER. HORIZONTAL PIPING SERVING SPRINKLER HEADS SHALL BE INSTALLED AT LOW LEVEL AS CLOSE TO THE TOP OF THE FLOATING CEILING OR CEILING PROJECTION AS POSSIBLE SO AS NOT TO BE VISIBLE.

5.14. PROVIDE HIGH TEMPERATURE SPRINKLER HEADS IN ALL ELECTRICAL ROOMS, ETC. ENSURE THAT SPRINKLER HEADS ARE LOCATED WITHIN

6.1. PROVIDE ALL DUCTWORK IN ACCORDANCE WITH THE STANDARDS OF GOOD WORKMANSHIP AND THE LATEST GUIDELINES OF ASHRAE AND SMACNA. SEAL DUCTWORK TO CLASS C WITH TRANSVERSE JOINTS AND CONNECTIONS TREATED WITH SEALING COMPOUND. SEAL EXPOSED DUCTWORK (LOCATED IN FINISHED SPACES) INTERNALLY AND WITH A MINIMUM AMOUNT OF SEALANT EXPOSED ON THE OUTSIDE.

6.2. PROVIDE BALANCING DAMPERS FOR ALL NEW DUCTWORK AT THE BRANCH CONNECTIONS. PROVIDE VOLUME DAMPERS FOR ALL SUPPLY AIR DIFFUSERS. PROVIDE SPIN-ON FITTING WITH BALANCING DAMPER AT EACH FLEXIBLE DUCT CONNECTION AT SUPPLY DUCT TAKE-OFF.

6.3. COMPLETELY CLEAN INTERIOR SURFACES OF ALL DUCTWORK AND VENTILATION SYSTEM COMPONENTS (I.E. FANS, COILS, ETC.). ALL COMPONENTS SHALL BE RENDERED VISIBLY CLEAN. WORK SHALL BE COMPLETED PRIOR TO AIR BALANCING.

6.5. PROVIDE FLEXIBLE DUCTS EQUAL TO FLEXMASTER UNINSULATED TRIPLE LOCK ALUMINUM FASTENED WITH STAINLESS STEEL GEAR DRIVE CLAMPS. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE 10 FT.

6.6. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL DUCTWORK AND EQUIPMENT INCLUDING FANS, ETC.

6.7. PROVIDE VIBRATION ISOLATION FOR ALL SUSPENDED AND FLOOR MOUNTED EQUIPMENT.

6.8. PROVIDE RIGID OPEN END TRANSFER DUCTS COMPLETE WITH 1" THICK ACOUSTIC INSULATION WHERE SHOWN WITHIN THE CEILING SPACE. DIMENSIONS OF DUCTS ON THE DRAWINGS ARE INSIDE CLEAR SIZES. INCREASE DUCTWORK SIZES TO SUIT ACOUSTIC INSULATION.

6.9. PROVIDE 1" THICK ACOUSTIC DUCT LINING FOR NEW DUCTWORK MINIMUM 10' - 0" DOWNSTREAM OF ROOFTOP AC UNITS AND BY-PASS BOXES AND FOR TRANSFER DUCTS WHERE INDICATED ON THE DRAWINGS. DIMENSIONS OF DUCTS ON THE DRAWINGS ARE INSIDE CLEAR SIZES. 8. TESTING, BALANCING, ADJUSTING AND COMMISSIONING

8.1. PROVIDE TESTING, BALANCING AND COMMISSIONING OF ALL SYSTEMS. COMMISSIONING SHALL INCLUDE PUTTING INTO SERVICE, ADJUST CALIBRATING AND VERIFYING ALL SYSTEMS, BOTH NEW AND EXISTING.

8.2. PROVIDE AN INDEPENDENT BALANCING COMPANY ACCEPTABLE TO THE CONSULTANT TO TEST, BALANCE AND ADJUST THE AIR SYSTEMS. 8.3. AIR SYSTEMS:

- PROVIDE AN AIR BALANCE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND AABC STANDARDS. AIR BALANCING SHALL PERFORMED WITH CLEAN FILTERS INSTALLED. MECHANICAL CONTRACTOR SHALL CLEAN ALL AIR SYSTEM FILTERS (NEW AND EXISTING) PR TO AIR BALANCING. SUBMIT THREE (3) COPIES OF THE AIR BALANCE REPORT TO THE CONSULTANT FOR REVIEW.
- 10. PROVIDE BALANCING AND ADJUSTING OF ALL AIR SYSTEMS TO ACHIEVE SPECIFIED DESIGN VALUES (+5%).
- 11. PROVIDE DATA IN THE BALANCING REPORT WHICH INDICATES AIR VOLUMES AT EACH OUTLET, STATIC PRESSURES, FAN DATA, MOTOR D AND COIL DATA.
- 12. PROVIDE DUCT TRAVERSE READINGS FOR EACH AIR HANDLING UNIT AND FAN (WITH DUCTED CONNECTIONS AND EXCEEDING 1000 CFM).
- 13. IDENTIFY PRESSURE DROP ACROSS FILTERS FOR ALL AIR HANDLING UNITS.
- 14. ADJUST THE AIR PATTERN FOR ALL DIFFUSERS AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE CONSULTANT.
- 15. VERIFY THE OPERATION OF ALL CONTROL DEVICES, INCLUDING VARIABLE VOLUME BOXES.

#### CONTROLS

- 9.1. PROVIDE ALL CONTROLS, INCLUDING WIRING, APPROVED PLENUM CABLE, FITTINGS, THERMOSTATS, RELAYS, AUTOMATIC CONTROL VALV TRANSFORMERS, DAMPERS, FIRE STATS, FREEZE STATS, SWITCHES AND ACCESSORIES AS REQUIRED FOR COMPLETELY OPERATIONAL SYSTE PROVIDE ALL NECESSARY CONNECTIONS, INTERLOCKS AND COMPONENTS TO ALL DEVICES AS REQUIRED.
- 9.2. ALL EXPOSED WIRING SHALL BE INSTALLED IN RIGID CONDUIT. WIRING INSTALLED ABOVE ACCESSIBLE CEILINGS SHALL BE SECURED STRUCTURAL MEMBERS. WIRING SHALL NOT BE SECURED TO MECHANICAL OR ELECTRICAL EQUIPMENT OR DEVICES. AND SHALL NOT BE R ON CEILING TILES. ALL THERMOSTAT WIRING LOCATED WITHIN PARTITION WALLS SHALL BE INSTALLED IN RIGID CONDUIT
- 9.3. PROVIDE ALL CONNECTIONS AND DEVICES NECESSARY TO INTERLOCK OR MAINTAIN THE INTENT OF ALL PERIMETER HVAC SYSTEMS ASSOCIATED ZONE CONTROL OF PERIMETER HEATING SYSTEM AS REQUIRED.
- 9.4. VERIFY OPERATION OF ALL THERMOSTATS AND CONTROLS AFTER RELOCATION OF THERMOSTATS AND DEVICES.
- 9.5. THERMOSTATS ARE NOT TO BE LOCATED ABOVE ELECTRICAL DIMMER SWITCHES OR ADJACENT TO HEAT PRODUCING DEVICES. ADJUST HEIC OF THERMOSTATS TO AVOID INTERFERENCE WITH SYSTEMS FURNITURE OR OTHER FURNISHINGS AS REQUIRED.
- 9.6. WHERE THERMOSTATS ARE TO BE INSTALLED ON CONCRETE COLUMNS, CONCRETE WALLS, ETC THAT ARE NOT FURRED OUT WITH DRYW FINISHES, PROVIDE WIRE MOULD OVER THERMOSTAT WIRING/ PNEUMATIC TUBING TO CONCEAL WIRING/ TUBING FROM CEILING PENETRATI TO THERMOSTAT LOCATION. REFER TO ARCHITECTURAL OR INTERIOR DESIGN DRAWINGS FOR WALL FINISHES.

LE(	GEND – HVAC
SYMBOL	DESCRIPTION
	SUPPLY AIR DUCT
	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN/EXHAUST AIR DUCT UP
	RETURN/EXHAUST AIR DUCT DOWN.
	ROUND DUCT UP
	ROUND DUCT DOWN
<b></b>	ACOUSTICALLY LINED DUCTWORK
	SILENCER
	FLEXIBLE DUCT CONNECTION
	Flexible duct complete with spin-on
	RETURN OR EXHAUST AIR DIFFUSER
$\square$	SQUARE CONE DIFFUSER
	SIDEWALL GRILLE
 B.D.	BALANCE DAMPER
	BACKDRAFT DAMPER
	MOTORIZED DAMPER
	FIRE/SMOKE DAMPER
0	THERMOSTAT
	EXISTING ELECTRICAL BASEBOARD HEATER
	NEW BY-PASS BOX DIFFUSER OR GRILLE SIZE TYPE
	TYPE 
LEGEND	– FIRE PROTECTION
SYMBOL	DESCRIPTION
ex •	EXISTING PENDANT SPRINKLER HEAD
e <sup>'N'</sup>	NEW PENDANT SPRINKLER HEAD
۲	FIRE EXTINGUISHER



#### **GENERAL NOTES:**

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION, THIS DRAWING IS THE PROPERTY OF ALGAL ENGINEERING LTD. ANI SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF ALGAL ENGINEERING LTD

R00	ISSUED FOR TENDER	2024-02-07
RP2	ISSUED FOR 99% REVIEW	2024-01-16
RP1	ISSUED FOR 66% REVIEW	2024-01-11
No	Revisions	Date
T		

G.F. YOUDELIS 07.FEB.2024 0000000000000000000000000000000000
l verify all dimensions and repor e IO-Owner's/MBS Designee (as

rrors and omissions to the iu-uwher symbol designee (us applicable) for his/her written direction before proceedina with the Work.



B Sheet No where detailed



#### ALGAL ENGINEERING Ltd **Consulting Engineers**

515 Consumers Road, Suite 100 Toronto, Ontario, M2J 4Z2 Tel: (416) 484-0707, Fax: (416) 849-0148 E-mail: algal@algal.ca



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Ministry PSIF Number

#### **BAIL AUTO THEFT RENOVATION**

B12345

#### 2420 LUCKNOW DRIVE

- MISSISSAUGA, ONTARIO O Project No 1105556 N12345
- CBRE

#### MECHANICAL SPECIFICATIONS AND LEGEND

Scale		Date
N.T.S.		20231214
Drawn by		Substantial Performance Date
H.D.		TBD
Designed by		Drawing No
Designed by H.D.		
H.D. Approved by	Floor No	Drawing № AE-23320-DRAW-M002-R00
H.D.	Floor No O	·

				E	XISTI	NG 2	ROOF	TOP U	NIT SC	HEDU	L
NO.	MANUFACTURER	MODEL NO.	SUPPLY AIR	FRESH AIR		HEATING		COOLING	ELE	ECTRICAL DATA	
			(CFM)		INPUT	OUTPUT	SOURCE	TOTAL COOLING	VOLTAGE	SUPPLY FAN (FLA)	F F F
EX.RTU-1	CARRIER	48TCED09A2A1A0A0A0 (8.5 TON)	4,250 CFM (MAX)	637.5 CFM (15%)	180 MBH	148 MBH	NATURAL GAS	2 STAGE 102 MBH	575V/3PH/60Hz	_	
EX.RTU-2	CARRIER	48TME009111 (8.5 TON)	3,400 CFM	680 CFM (20%)	180 MBH	144 MBH	NATURAL GAS	102 MBH	575V/3PH/60Hz	-	

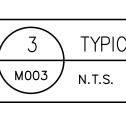
	BY-PASS BOX SCHEDULE BASIS OF DESIGN: E.H. PRICE EQUAL IN: CARNES, NAILOR, TITUS						
REF.	INLET SIZE	MAX. AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	SERVING	CONTR	OL PACKAGE	
BP-1	16"	1,260	850	OFFICE 043	2502 - Heating/cooling Wi	TH AUTOMATIC CHANGEOVER	
BP-2	12"	500	380	BOARD ROOM 066	2502 - HEATING/COOLING WI	TH AUTOMATIC CHANGEOVER	
BP-3	8"	240	150	SGT. OFFICE 067	2502 - HEATING/COOLING WI	TH AUTOMATIC CHANGEOVER	
NOTE: C	NOTE: C/W INLET DAMPER, THERMOSTAT, ELECTRONIC MODULATING CONTROL PACKAGE, AND CONTROL TRANSFORMER.						

		DIFFUSER SCHEDULE BASIS OF DE EQUAL IN: E.	Esign: Titus H. Price Carnes, Nailor
REF.	MODEL No.	DESCRIPTION	REMARKS
A TMSA 24"X24" SQUARE CONE DIFFUSER, FULLY ADJUSTABLE, STEEL CONSTRUCTION, 3 CONES UNIFORM APPEARANCE, ADJUSTABLE AIR PATTERN FOR HORIZONTAL AND VERTICAL AIR DISCHARGE. SUITABLE FOR DRYWALL AND T-BAR #26 WHITE COAT FIN CEILING MOUNTING.			
B 50F EGGCRATE RETURN AIR GRILLE, ALUMINIUM, SUITABLE FOR DRYWALL AND T-BAR MOUNTING. SIZES AS #26 WHITE COAT FIN SERIES INDICATED ON THE FLOOR PLANS #26 WHITE COAT FIN			

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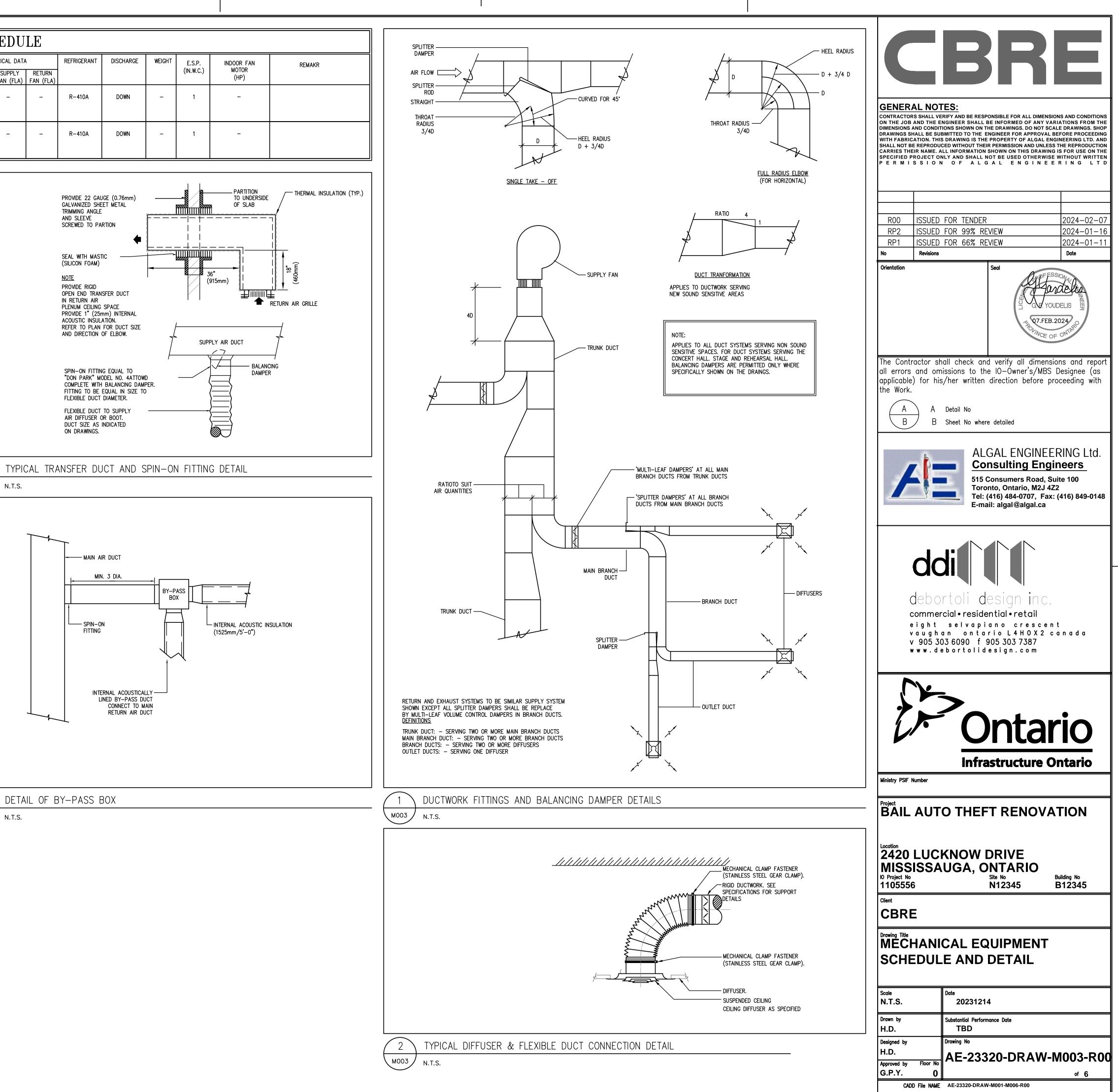
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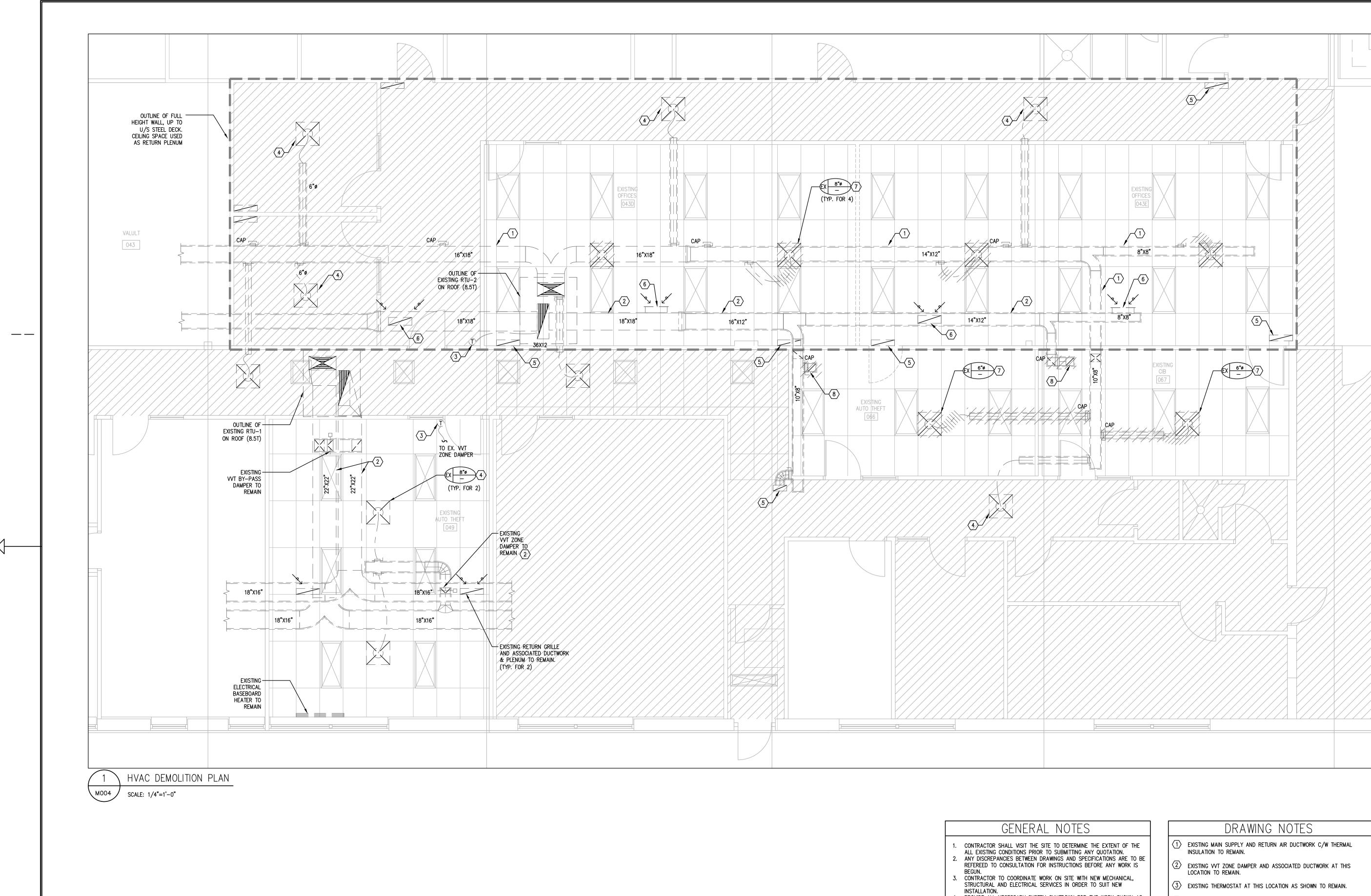
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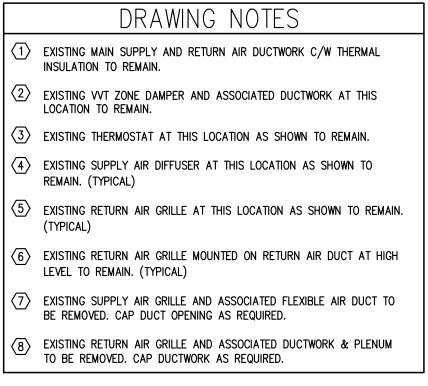


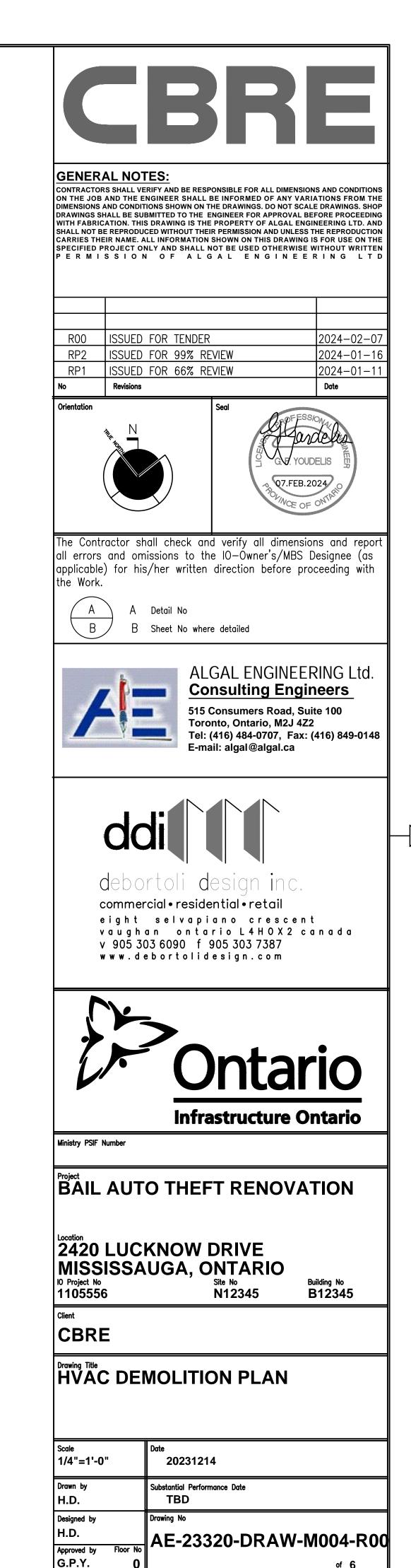


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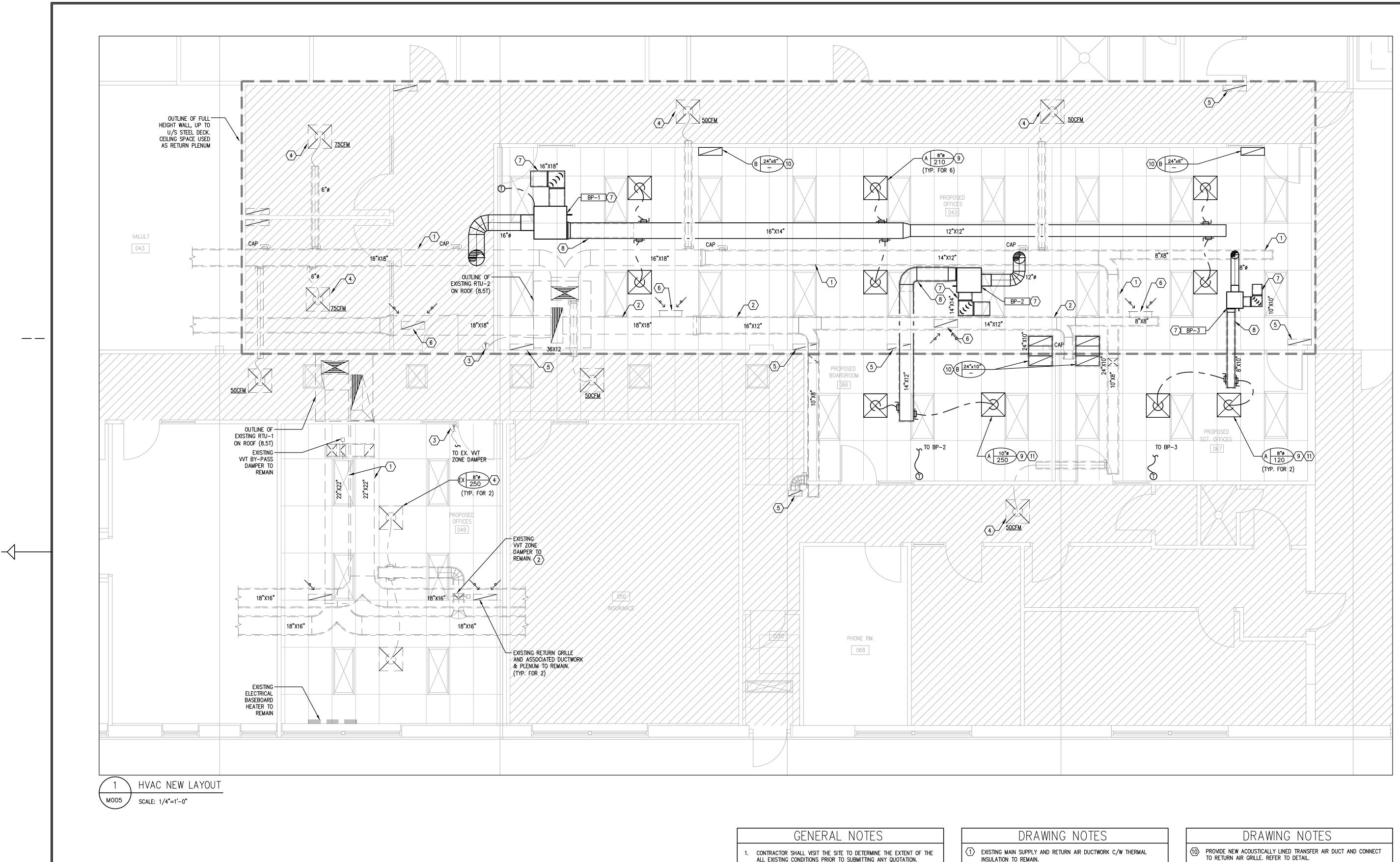
- PROVIDE ALL NECESSARY SYSTEM SHUTDOWN FOR THE WORK SHOWN AS REQUIRED.
- EXISTING SUPPLY AND RETURN DUCT SIZES AS SHOWN FOR INFORMATION ONLY. VERIFY EXACT SIZES ON SITE.





of **6** 

CADD File NAME AE-23320-DRAW-M001-M006-R00



24x36in

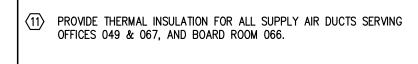
GENERAL	NO	IF;

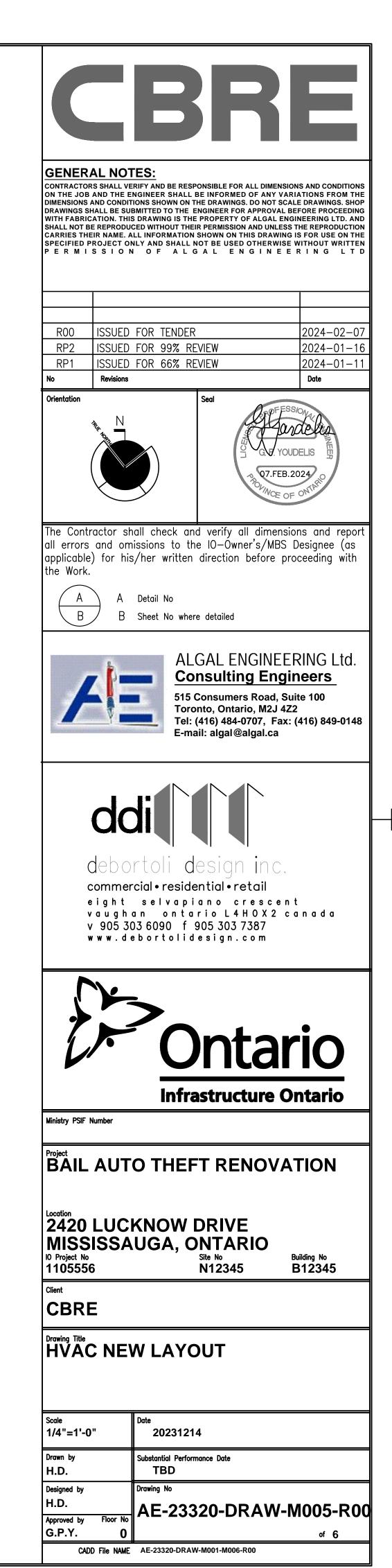
- ALL EXISTING CONDITIONS PRIOR TO SUBMITTING ANY QUOTATION.
- ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS ARE TO BE REFEREED TO CONSULTATION FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
- CONTRACTOR TO COORDINATE WORK ON SITE WITH NEW MECHANICAL, STRUCTURAL AND ELECTRICAL SERVICES IN ORDER TO SUIT NEW

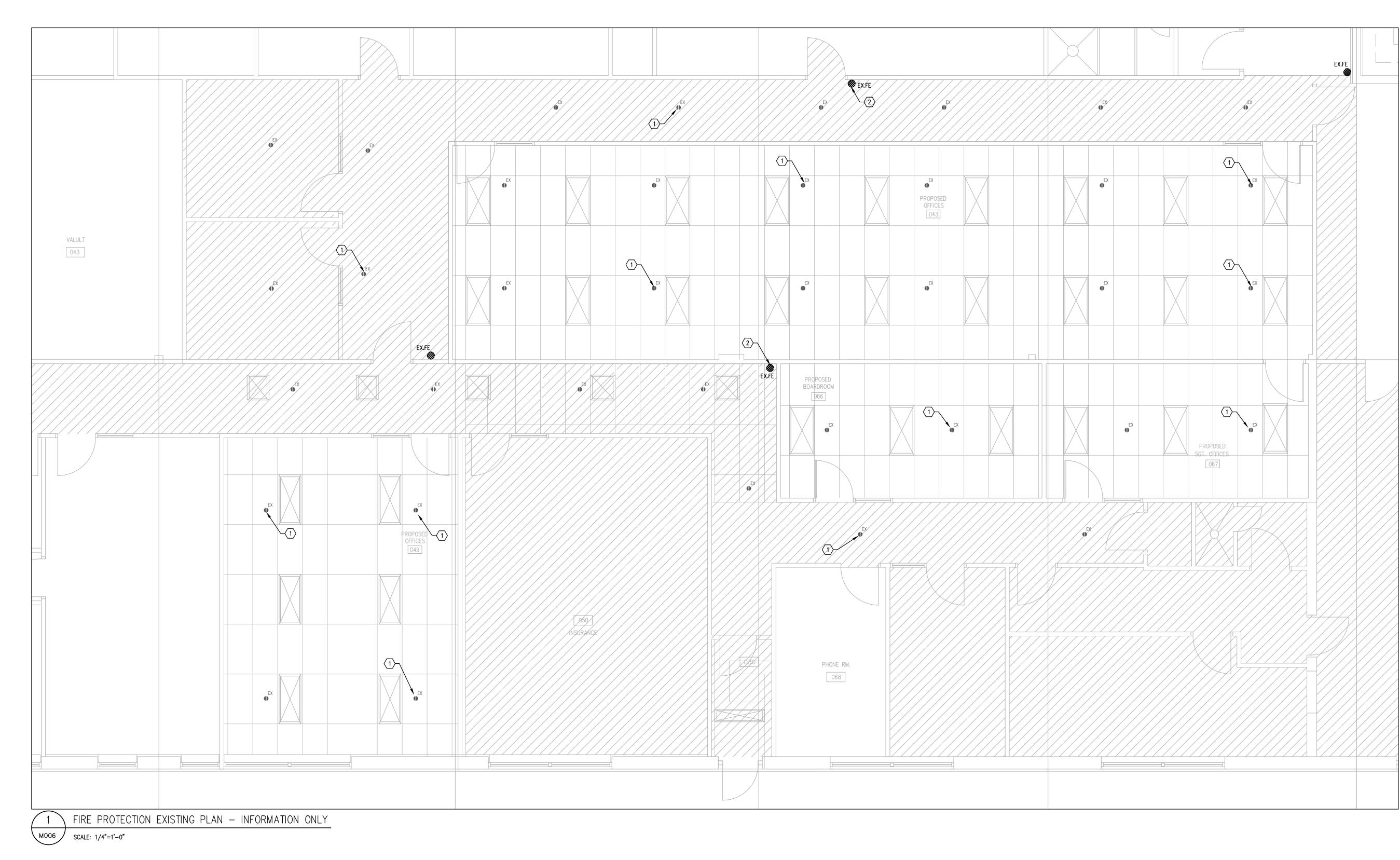
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- INSTALLATION. PROVIDE ALL NECESSARY SYSTEM SHUTDOWN FOR THE WORK SHOWN AS
- REQUIRED. EXISTING SUPPLY AND RETURN DUCT SIZES AS SHOWN FOR INFORMATION ONLY. VERIFY EXACT SIZES ON SITE.

- (1) EXISTING MAIN SUPPLY AND RETURN AIR DUCTWORK C/W THERMAL INSULATION TO REMAIN.
- $\langle 2 \rangle$  existing VVT zone damper and associated ductwork at this LOCATION TO REMAIN.
- $\langle 3 \rangle$  EXISTING THERMOSTAT AT THIS LOCATION AS SHOWN TO REMAIN.
- $\langle 4 \rangle$  Existing supply air diffuser at this location as shown to REMAIN. (TYPICAL)
- (5) existing return air grille at this location as shown to remain. (TYPICAL)
- (6) EXISTING RETURN AIR GRILLE MOUNTED ON RETURN AIR DUCT AT HIGH LEVEL TO REMAIN. (TYPICAL)
- 7 PROVIDE NEW BY-PASS BOX AT THIS LOCATION AS SHOWN. PROVIDE BY-PASS AIR DUCT C/W 1" THICK INTERNAL ACOUSTIC INSULATION AND CONNECT TO BY-PASS BOX OPENING. SIZE TO MATCH BY-PASS BOX OPENING.
- (8) PROVIDE NEW SUPPLY AIR DUCTWORK C/W 1"THICK INTERNAL ACOUSTIC INSULATION AT THIS LOCATION AS SHOWN.
- 9 PROVIDE NEW SUPPLY AIR DIFFUSER AT THIS LOCATION C/W FLEXIBLE AIR DUCT AND SPIN-ON FITTINGS. BALANCE AIR QUANTITY AS INDICATED.







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24x36in

### GENERAL NOTES

- 1. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXTENT OF THE ALL EXISTING CONDITIONS PRIOR TO SUBMITTING ANY QUOTATION.
- 2. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS ARE TO BE REFEREED TO CONSULTATION FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
- CONTRACTOR TO COORDINATE WORK ON SITE WITH NEW MECHANICAL, STRUCTURAL AND ELECTRICAL SERVICES IN ORDER TO SUIT NEW INSTALLATION.
- 4. PROVIDE ALL NECESSARY SYSTEM SHUTDOWN FOR THE WORK SHOWN AS REQUIRED.
- 5. ALL SPRINKLER WORK SHALL BE DONE AS PER NFPA 13.

	DRAWING NOTES
	EXISTING PENDANT SPRINKLER HEAD AT THIS LOCATION AS SHOWN TO REMAIN. (TYPICAL FOR ALL)
2	EXISTING FIRE EXTINGUISHER AT THIS LOCATION AS SHOWN TO REMAIN. (TYPICAL)

