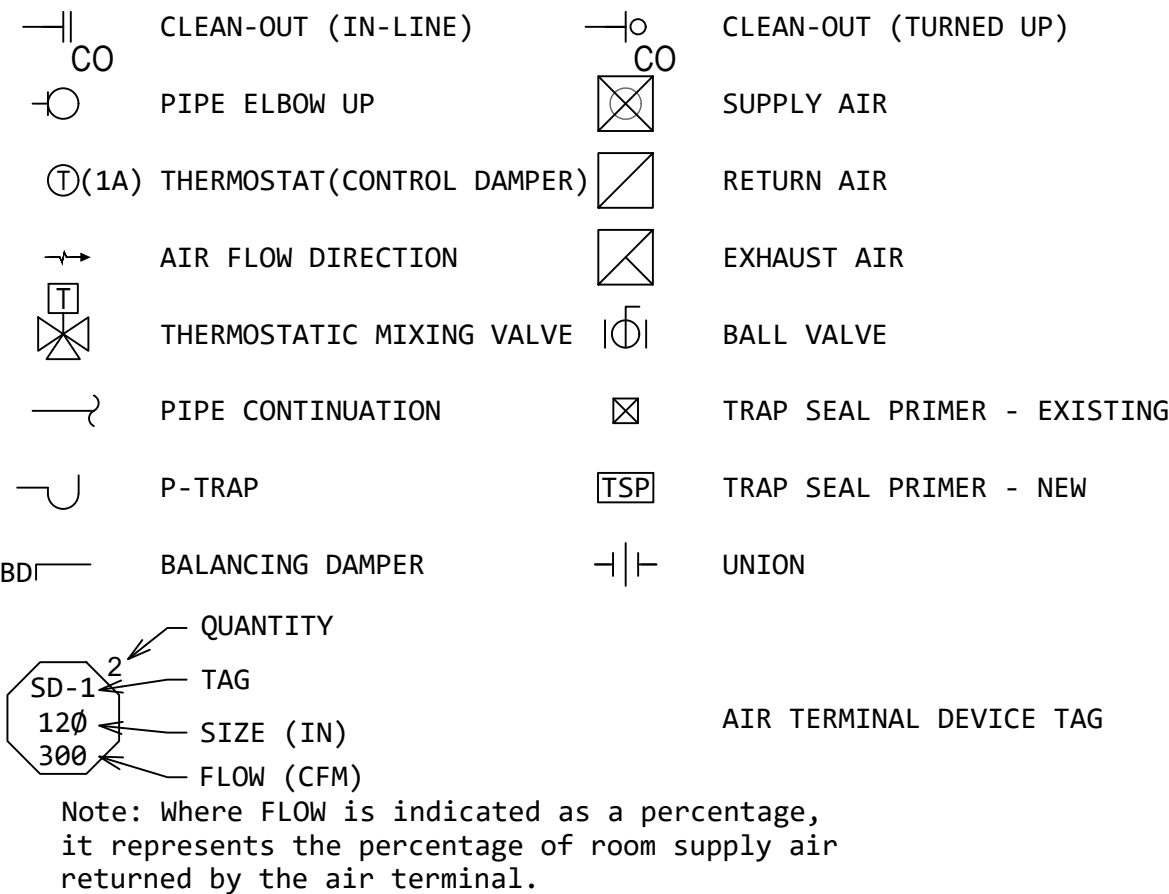


GENERAL NOTES:

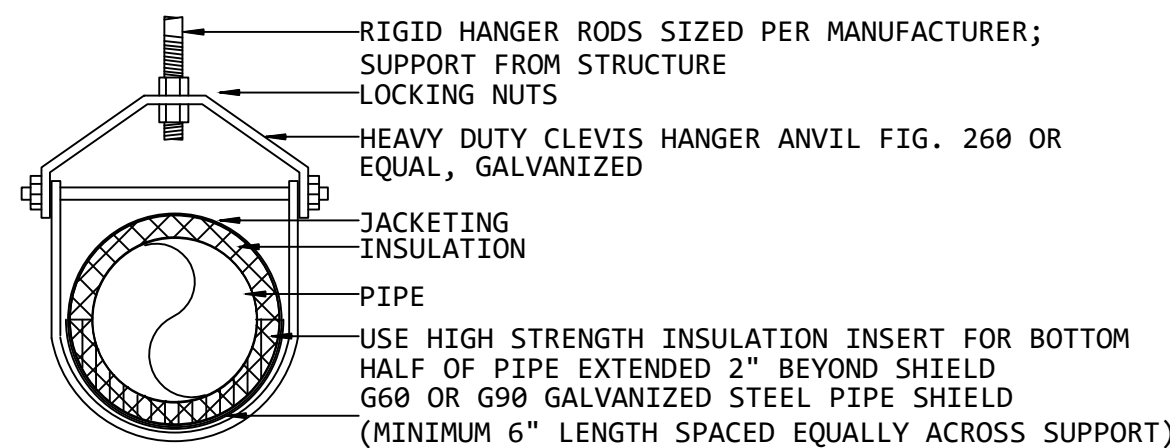
- 1.PROVIDE ALL LABOUR, MATERIAL, EQUIPMENT, TOOLS, SUPERVISION, COORDINATION, TESTING, INSPECTION, BALANCING, COMMISSIONING, PERMITS, CERTIFICATES, AND INCIDENTALS REQUIRED TO COMPLETE THE MECHANICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
- 2.CONTRACTOR SHALL VISIT THE SITE BEFORE COMMENCING WORK AND SHALL VERIFY ALL EXISTING SITE CONDITIONS, DIMENSIONS, ELEVATIONS, SERVICE LOCATIONS, EQUIPMENT LOCATIONS, ROUTING CONSTRAINTS, CEILING SPACES, STRUCTURAL CONDITIONS, AND INTERFERENCES.
- 3.DO NOT SCALE OFF OF DRAWINGS. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT, ROUTING, AND DESIGN INTENT ONLY. DETERMINE EXACT LOCATIONS AND DIMENSIONS ON SITE.
- 4.EXISTING CONDITIONS SHOWN ARE BASED ON AVAILABLE INFORMATION AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS, FABRICATION, DEMOLITION, OR INSTALLATION.
- 5.REPORT DISCREPANCIES, CONFLICTS, OMISSIONS, OR CONDITIONS THAT MAY AFFECT THE WORK TO THE CONSULTANT BEFORE PROCEEDING. DO NOT PROCEED WITH AFFECTED WORK UNTIL DIRECTION IS RECEIVED.
- 6.COMPLETE ALL WORK IN ACCORDANCE WITH THE APPLICABLE EDITION OF THE ONTARIO BUILDING CODE, ONTARIO FIRE CODE, LOCAL MUNICIPAL REQUIREMENTS, REFERENCED STANDARDS, UTILITY REQUIREMENTS, AND ALL APPLICABLE LAWS, RULES, REGULATIONS, AND AUTHORITIES HAVING JURISDICTION.
- 7.CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, APPROVALS, CERTIFICATES, LICENSES, AND FEES REQUIRED FOR THE MECHANICAL WORK, UNLESS NOTED OTHERWISE.
- 8.COORDINATE WITH ALL AUTHORITIES HAVING JURISDICTION, INCLUDING MUNICIPAL BUILDING OFFICIALS, FIRE DEPARTMENT, PUBLIC HEALTH UNIT, UTILITY PROVIDERS, AND OTHER APPLICABLE REVIEW AGENCIES.
- 9.WHERE APPLICABLE, MECHANICAL WORK SHALL COMPLY WITH TSSA REQUIREMENTS, INCLUDING REQUIREMENTS FOR FUELS, BOILERS, PRESSURE VESSELS, PRESSURE PIPING, FITTINGS, CERTIFIED CONTRACTORS, REGISTERED DESIGNS, INSPECTIONS, CERTIFICATES, AND DOCUMENTATION.
- 10.PERFORM ALL WORK IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND APPLICABLE CONSTRUCTION REGULATIONS.
- 11.WORK SHALL BE PERFORMED BY QUALIFIED, LICENSED, AND CERTIFIED TRADESPERSONS IN ACCORDANCE WITH APPLICABLE PROVINCIAL, MUNICIPAL, TSSA, MANUFACTURER, AND TRADE REQUIREMENTS.
- 12.COORDINATE MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL, FIRE PROTECTION, CONTROLS, CIVIL, AND OTHER TRADES. PROVIDE OFFSETS, TRANSITIONS, SLEEVES, SUPPORTS, ACCESS, AND COORDINATION REQUIRED TO SUIT ACTUAL SITE CONDITIONS.
- 13.COORDINATE ROUTING TO AVOID CONFLICTS WITH STRUCTURE, CEILINGS, LIGHTS, CABLE TRAYS, CONDUITS, EQUIPMENT, ACCESS PANELS, MILLWORK, DOORS, AND OTHER NEW AND EXISTING BUILDING SERVICES. NOTIFY CONSULTANT OF CONFLICTS THAT CANNOT BE RESOLVED WITHOUT DESIGN CHANGES.
- 14.MAINTAIN REQUIRED ACCESS AND SERVICE CLEARANCES FOR ALL MECHANICAL EQUIPMENT, VALVES, DAMPERS, CLEANOUTS, STRAINERS, FILTERS, CONTROL DEVICES, BALANCING DEVICES, ACCESS DOORS, AND LIFE SAFETY COMPONENTS.
- 15.INSTALL ALL EQUIPMENT, MATERIALS, AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, LISTING REQUIREMENTS, AND WARRANTY REQUIREMENTS.
- 16.DO NOT SUBSTITUTE SPECIFIED EQUIPMENT, MATERIALS, LAYOUTS, OR INSTALLATION METHODS WITHOUT WRITTEN ACCEPTANCE FROM THE CONSULTANT AND, WHERE REQUIRED, THE OWNER AND AUTHORITIES HAVING JURISDICTION.
- 17.SUBMIT SHOP DRAWINGS, PRODUCT DATA, INSTALLATION INSTRUCTIONS, WIRING DIAGRAMS, CONTROL DIAGRAMS, PERFORMANCE DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW PRIOR TO ORDERING, FABRICATION, OR INSTALLATION.
- 18.COORDINATE ALL CUTTING, CORING, DRILLING, PATCHING, MAKING GOOD, FIRESTOPPING, AND RESTORATION REQUIRED FOR THE MECHANICAL WORK. DO NOT CUT STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL.
- 19.FIRESTOP ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES IN ACCORDANCE WITH CAN/ULC-S115 LISTED FIRESTOP SYSTEMS, APPLICABLE CODES, AND PROJECT REQUIREMENTS. MAINTAIN THE FIRE-RESISTANCE RATING OF AFFECTED ASSEMBLIES.
- 20.PROVIDE SLEEVES, SEALS, ESCUTCHEONS, WATERSTOPS, FIRESTOPPING, SMOKE SEALS, AND ACOUSTIC SEALS AT PENETRATIONS AS REQUIRED BY THE APPLICATION AND ASSEMBLY TYPE.
- 21.PROVIDE HANGERS, SUPPORTS, ANCHORS, GUIDES, RESTRAINTS, VIBRATION ISOLATION, AND SEISMIC RESTRAINT FOR MECHANICAL SYSTEMS IN ACCORDANCE WITH CODE, REFERENCED STANDARDS, MANUFACTURER'S REQUIREMENTS, AND PROJECT SPECIFICATIONS.
- 22.PROTECT EXISTING FINISHES, EQUIPMENT, SERVICES, STRUCTURE, AND OCCUPIED AREAS FROM DAMAGE. REPAIR DAMAGE CAUSED BY THE WORK AT NO ADDITIONAL COST TO THE OWNER.

- 23.COORDINATE ALL SHUTDOWNS, TIE-INS, DRAIN-DOWNS, SERVICE INTERRUPTIONS, AND RECOMMISSIONING WITH THE OWNER. PROVIDE ADVANCE NOTICE AND OBTAIN APPROVAL BEFORE INTERRUPTING EXISTING SERVICES.
- 24.MAINTAIN EXISTING BUILDING SERVICES IN OPERATION EXCEPT DURING APPROVED SHUTDOWNS. PROVIDE TEMPORARY SERVICES WHERE REQUIRED TO MAINTAIN SAFE AND FUNCTIONAL BUILDING OPERATION.
- 25.REMOVE REDUNDANT MECHANICAL EQUIPMENT, PIPING, DUCTWORK, INSULATION, CONTROLS, SUPPORTS, AND ACCESSORIES MADE OBSOLETE BY THE WORK, UNLESS NOTED OTHERWISE. CAP AND MAKE SAFE ALL ABANDONED SERVICES.
- 26.STOP WORK AND NOTIFY THE OWNER AND CONSULTANT WHERE SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED. DO NOT DISTURB SUSPECTED ASBESTOS, LEAD, MOULD, OR OTHER DESIGNATED SUBSTANCES UNLESS PROPER ASSESSMENT AND ABATEMENT PROCEDURES ARE IN PLACE.
- 27.KEEP WORK AREAS CLEAN AND FREE OF DEBRIS. PROTECT OPEN ENDS OF DUCTWORK, PIPING, EQUIPMENT, AND ACCESSORIES DURING CONSTRUCTION TO PREVENT ENTRY OF DUST, DEBRIS, WATER, OR FOREIGN MATERIAL.
- 28.CLEAN, FLUSH, DRAIN, BLOW OUT, DISINFECT, PURGE, AND PREPARE SYSTEMS AS REQUIRED BY CODE, STANDARDS, MANUFACTURER'S INSTRUCTIONS, AND PROJECT SPECIFICATIONS PRIOR TO TESTING AND OPERATION.
- 29.TEST MECHANICAL SYSTEMS FOR LEAKAGE, PRESSURE, FLOW, OPERATION, SAFETY, CONTROLS, ALARMS, AND PERFORMANCE AS APPLICABLE. CORRECT DEFICIENCIES AND RETEST UNTIL SATISFACTORY RESULTS ARE ACHIEVED.
- 30.BALANCE AIR AND HYDRONIC SYSTEMS WHERE APPLICABLE. BALANCING SHALL BE PERFORMED AND REPORTS SHALL BE PREPARED BY QUALIFIED PERSONNEL ACCREDITED TO NEBB OR AABC. SUBMIT BALANCING REPORTS FOR CONSULTANT REVIEW.
- 31.COORDINATE MECHANICAL EQUIPMENT WITH CONTROLS, BAS, ELECTRICAL POWER, STARTERS, INTERLOCKS, ALARMS, SAFETIES, AND SEQUENCES OF OPERATION. VERIFY PROPER OPERATION PRIOR TO TURNOVER.
- 32.CONFIRM EXACT CONNECTION SIZES, LOCATIONS, ELECTRICAL CHARACTERISTICS, SERVICE CLEARANCES, WEIGHTS, AND INSTALLATION REQUIREMENTS FOR EQUIPMENT BEFORE ROUGH-IN AND INSTALLATION.
- 33.PIPE DRAINS, RELIEF VALVES, CONDENSATE, BLOWDOWN, DISCHARGE, AND OVERFLOW LINES TO APPROVED LOCATIONS IN ACCORDANCE WITH CODE AND MANUFACTURER'S REQUIREMENTS.
- 34.SEAL EXTERIOR PENETRATIONS, ROOF PENETRATIONS, WALL PENETRATIONS, LOUVERS, VENTS, AND EQUIPMENT CONNECTIONS TO MAINTAIN WEATHER-TIGHT CONSTRUCTION. SEALS TO BE COLOUR-MATCHING TO ADJACENT BUILDING FEATURES.
- 35.COORDINATE ROOF PENETRATIONS, CURBS, SUPPORTS, FLASHING, AND EQUIPMENT PLACEMENT WITH ROOFING REQUIREMENTS. MAINTAIN ROOF WARRANTIES AND OBTAIN ROOFING CONTRACTOR INVOLVEMENT WHERE REQUIRED.
- 36.PROVIDE ACCESS PANELS WHERE CONCEALED MECHANICAL COMPONENTS REQUIRE INSPECTION, MAINTENANCE, BALANCING, TESTING, OR OPERATION. COORDINATE ACCESS PANEL LOCATIONS WITH ARCHITECTURAL FINISHES.
- 37.MAINTAIN ACCURATE AS-BUILT MARKUPS ON SITE DURING CONSTRUCTION. SUBMIT FINAL RED-LINE MARKUPS INDICATING INSTALLED LOCATIONS, ROUTING, EQUIPMENT, VALVES, CONCEALED SERVICES, AND DEVIATIONS FROM CONTRACT DOCUMENTS.
- 38.SUBMIT OPERATION AND MAINTENANCE MANUALS, WARRANTIES, TEST REPORTS, BALANCING REPORTS, INSPECTION CERTIFICATES, TSSA DOCUMENTATION WHERE APPLICABLE, PRODUCT DATA, CONTROL INFORMATION, START-UP REPORTS, COMMISSIONING DOCUMENTATION, AND TRAINING RECORDS PRIOR TO SUBSTANTIAL PERFORMANCE.
- 39.PROVIDE OWNER TRAINING FOR OPERATION AND MAINTENANCE OF INSTALLED MECHANICAL SYSTEMS, EQUIPMENT, CONTROLS, VALVES, SAFETIES, AND SEASONAL CHANGEOVER REQUIREMENTS.
- 40.WARRANT MECHANICAL WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. CORRECT DEFECTIVE WORK, MATERIALS, EQUIPMENT, INSTALLATION, TESTING, AND OPERATION DURING THE WARRANTY PERIOD.
- 41.NOTIFY THE CONSULTANT WHERE PROPOSED INSTALLATION CONDITIONS DIFFER FROM THE DRAWINGS OR MAY AFFECT PERFORMANCE, CODE COMPLIANCE, MAINTAINABILITY, SAFETY, OR DESIGN INTENT.
- 42.CONULTANT REVIEW OF SHOP DRAWINGS, SITE WORK, OR SUBSTITUTIONS IS FOR GENERAL CONFORMANCE WITH DESIGN INTENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DIMENSIONS, COORDINATION, MEANS, METHODS, SAFETY, OR CODE COMPLIANCE.
- 43.MAINTAIN ALL REQUIRED WORKING CLEARANCES AROUND EQUIPMENT. DO NOT INSTALL PIPING, DUCTWORK, SUPPORTS, OR ACCESSORIES IN SPACES REQUIRED FOR ACCESS, OPERATION, MAINTENANCE, OR CODE CLEARANCES.
- 44.DO NOT CONCEAL MECHANICAL WORK UNTIL REQUIRED INSPECTIONS, TESTING, AND CONSULTANT/OWNER REVIEWS HAVE BEEN COMPLETED.
- 45.SUPPORT COMMISSIONING, START-UP, FUNCTIONAL TESTING, DEFICIENCY CORRECTION, SEASONAL TESTING, AND DOCUMENTATION AS REQUIRED BY THE CONTRACT DOCUMENTS. RETAIN MANUFACTURER'S CERTIFIED FACTORY REPRESENTATIVE FOR SYSTEM START-UP AND TESTING ACTIVITIES.



1 SYMBOLS LEGEND

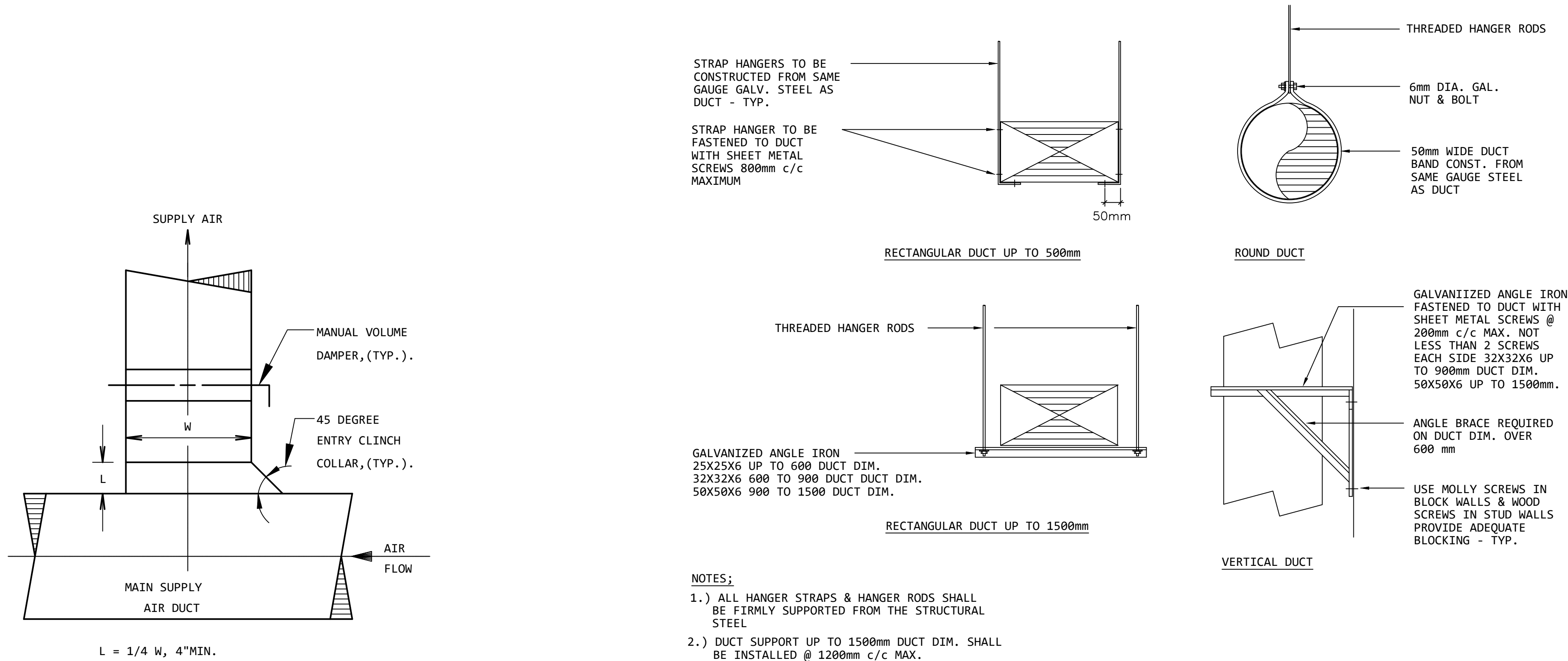
Scale: NTS



- NOTES:
1. INSULATE PIPING PER SPECIFICATIONS.
 2. PAINT SUPPORT SAME AS PIPING, IF APPLICABLE.
 3. SEE PLUMBING PIPING AND INSULATION SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

4 TYP. CLEVIS PIPE HANGER DETAIL

Scale: NTS



2 TYPICAL BRANCH DUCT WITH 45° TAP

Scale: NTS

3 TYPICAL DUCT SUPPORT DETAIL

Scale: NTS

5 TYP. RATED PIPE PENETRATION DETAIL

Scale: NTS

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DRAWING REVISIONS

No.	Issued for:	Date:
01	Issued for Coordination	2026-08-12
02	Issued for Permit	2026-09-04
03	Re-issued for Permit	2026-10-02

SITE ADDRESS:

351 Bridge St
Carleton Place, ON K7C 3H9

OWNER INFORMATION:

Carleton Place School Age Services



Ignite Architecture Inc.
533 Landswood Way
Ottawa, ON K2S 0A6
Phone: 613 - 912 - 1832
Email: nicole@ignitearchitecture.ca

DRAWING TITLE:

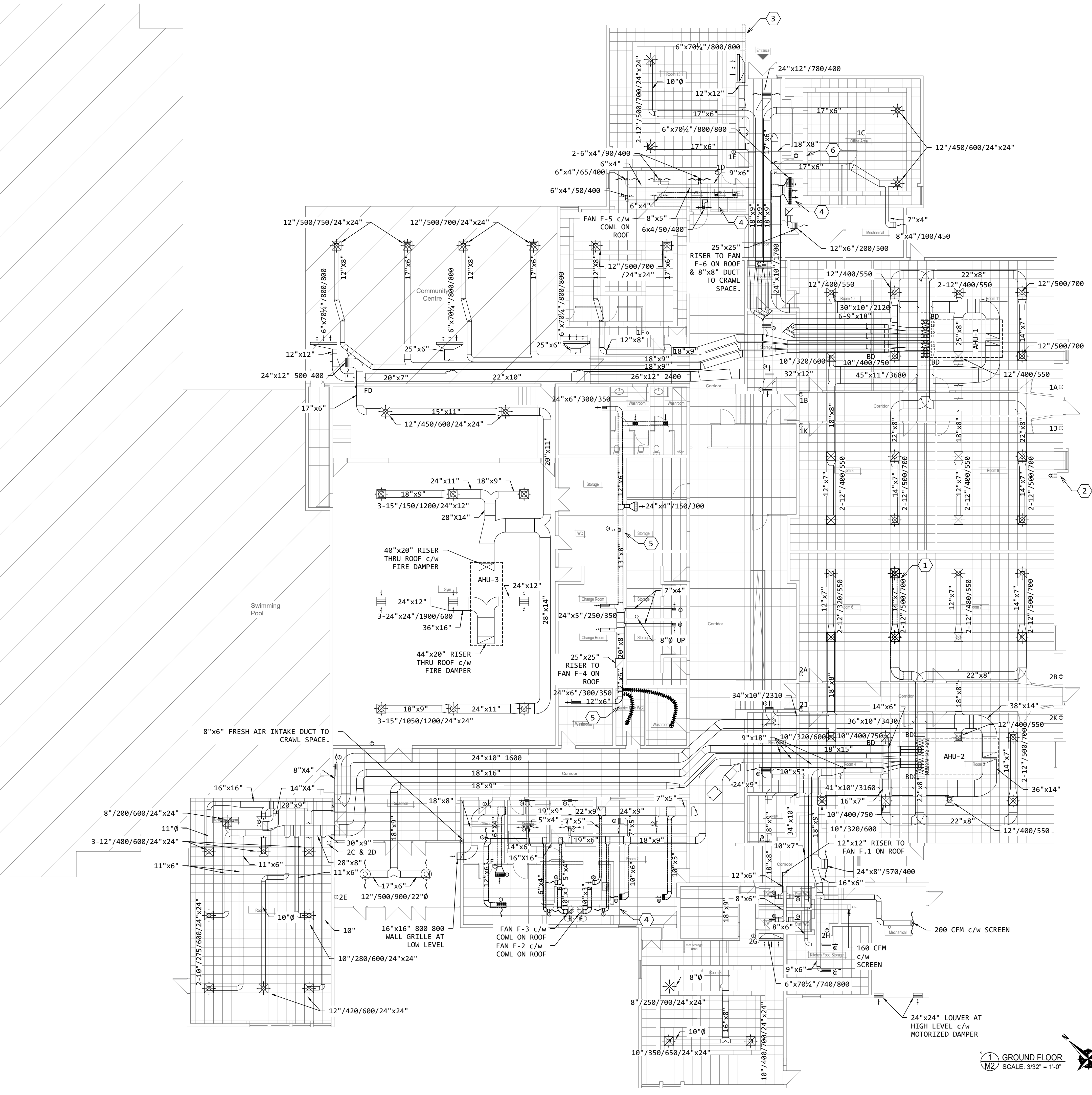
GEN. NOTES & LEGEND

PROJECT:

2516

DWG NO:

M1



- SHEET GENERAL NOTES :**
- EXCEPT AS NOTED OTHERWISE, BACKGROUND AND EXISTING LINE WORK IS SHOWN SHADED.
 - EXCEPT AS NOTED OTHERWISE, DEMOLITION LINE WORK IS SHOWN THICK DASHED.
 - EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
 - CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.

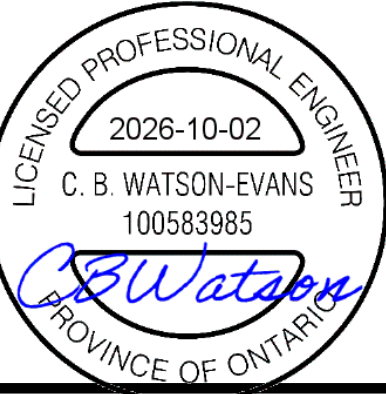
- # SHEET KEYNOTES:**
- RELOCATE SUPPLY DUCT PER NEW WORK PLAN.
 - DEMOLISH ABANDONED DRYER VENTING. SEAL AND MAKE GOOD EXTERIOR PENETRATIONS. MATCH EXTERIOR FINISH COLOUR.
 - DEMOLISH ABANDONED HOOD FAN VENTING. SEAL AND MAKE GOOD EXTERIOR PENETRATIONS. MATCH EXTERIOR FINISH COLOUR.
 - DEMOLISH EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK AS SHOWN.
 - DEMOLISH EXISTING EXHAUST DUCTWORK AS SHOWN.
 - EXISTING THERMOSTAT TO BE RELOCATED. REFER TO NEW WORK PLAN.

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Ignite Architecture Inc.
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Email: nicole@ignitearchitecture.ca

DRAWING TITLE:

HVAC DEMOLITION

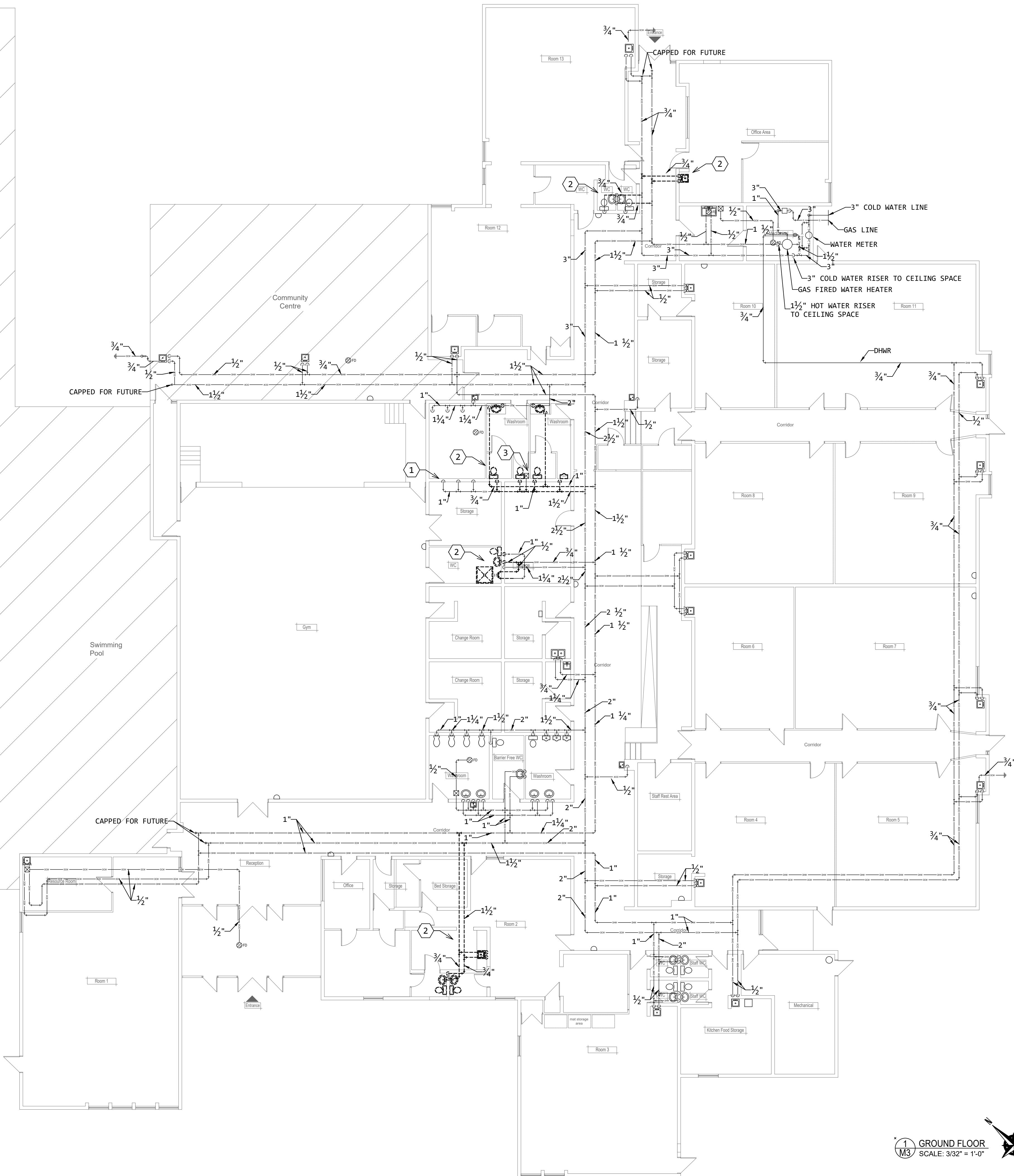
PROJECT:

2516

DWG NO:

M2

GRILLE TAG LEGEND	
	SIZE / CFM / VELOCITY (FPM) / OPENING SIZE (IF REQ.)
1	6"x4" / 60/400
2	24"x6" / 350/350
3	6"x4" / 50/300
4	6"x4" / 40/250
5	12"x4" / 130/400
6	24"x4" / 230/400
7	6"x4" / 50/400
8	24"x6" / 280/350
9	6"x4" / 40/350
10	6"x4" / 30/300
11	12"x4" / 100/400
12	24"x4" / 180/350
13	8"x4" / 75/400
14	24"x4" / 200/400
15	24"x4" / 160/350
16	16"x16" / 550/800



- SHEET GENERAL NOTES :**
- 1 EXCEPT AS NOTED OTHERWISE, BACKGROUND AND EXISTING LINE WORK IS SHOWN SHADED.
 - 2 EXCEPT AS NOTED OTHERWISE, DEMOLITION LINE WORK IS SHOWN THICK DASHED.
 - 3 EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
 - 4 CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.

- # SHEET KEYNOTES :**
- 1 RETAIN EXISTING PIPING SERVING ADJACENT WASHROOM IN OUT-OF-SCOPE COMMUNITY CENTER SPACE.
 - 2 DEMOLISH DCW AND DHW PIPING AS SHOWN.
 - 3 EXISTING TRAP SEAL PRIMER TO REMAIN.

GENERAL NOTES:

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Ottawa, ON K2S 0A6
Phone: 613 - 912 - 1832
Email: nicole@ignitearchitecture.ca

DRAWING TITLE:

DW DEMOLITION

PROJECT:

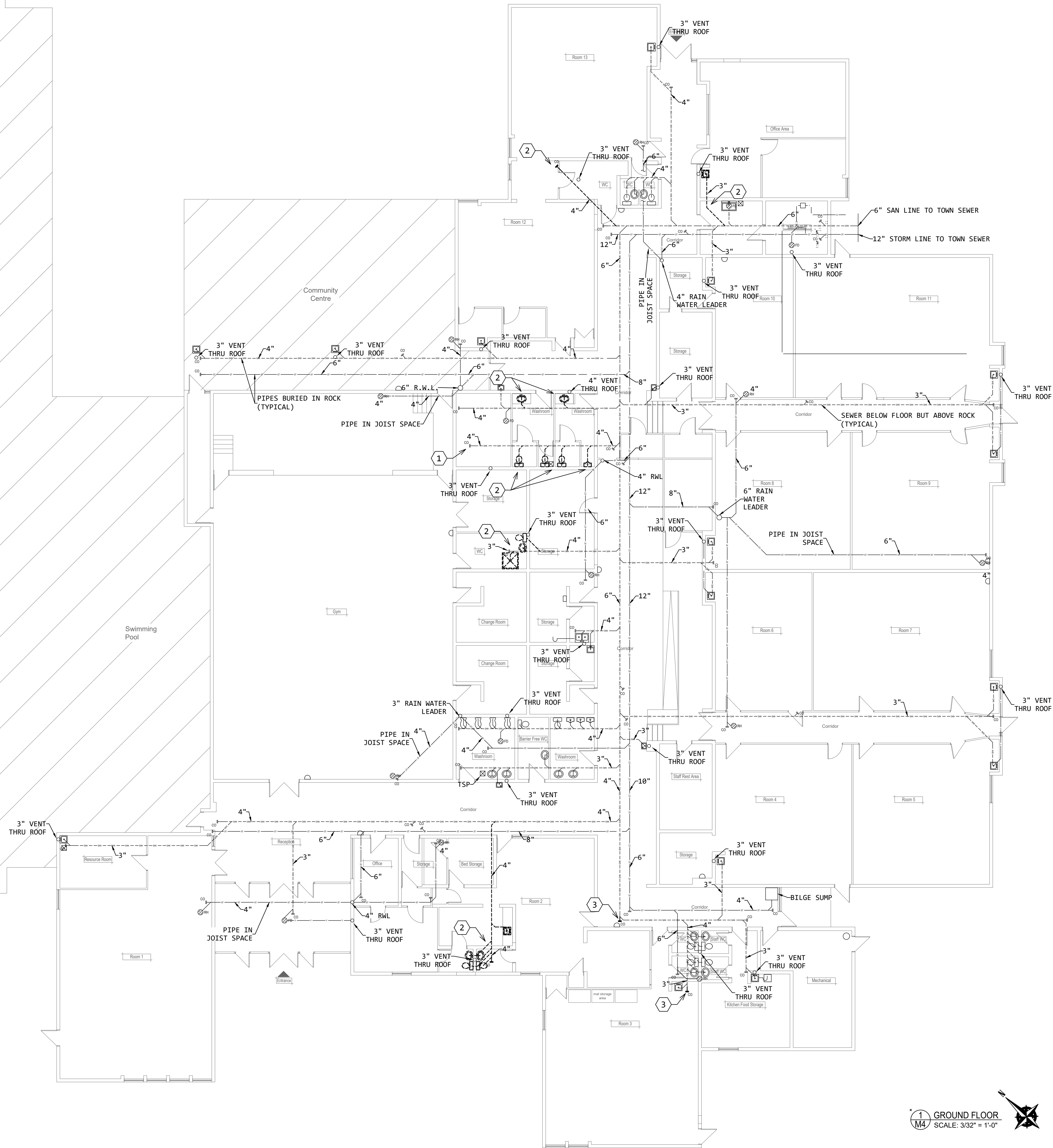
2516

DWG NO:

M3

1 GROUND FLOOR
M3 SCALE: 3/32" = 1'-0"





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 - 3 EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
 - 4 CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.

- # SHEET KEYNOTES:**
- 1 RETAIN EXISTING PIPING SERVING ADJACENT WASHROOM IN OUT-OF-SCOPE COMMUNITY CENTER SPACE.
 - 2 DEMOLISH SAN PIPING AS SHOWN.
 - 3 EXISTING CLEANOUTS DEMOLISHED FOR CONNECTION OF NEW SERVICES.

GENERAL NOTES:

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Ottawa, ON K2S 0A6
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Email: nicole@ignitearchitecture.ca

DRAWING TITLE:

SAN DEMOLITION

PROJECT:

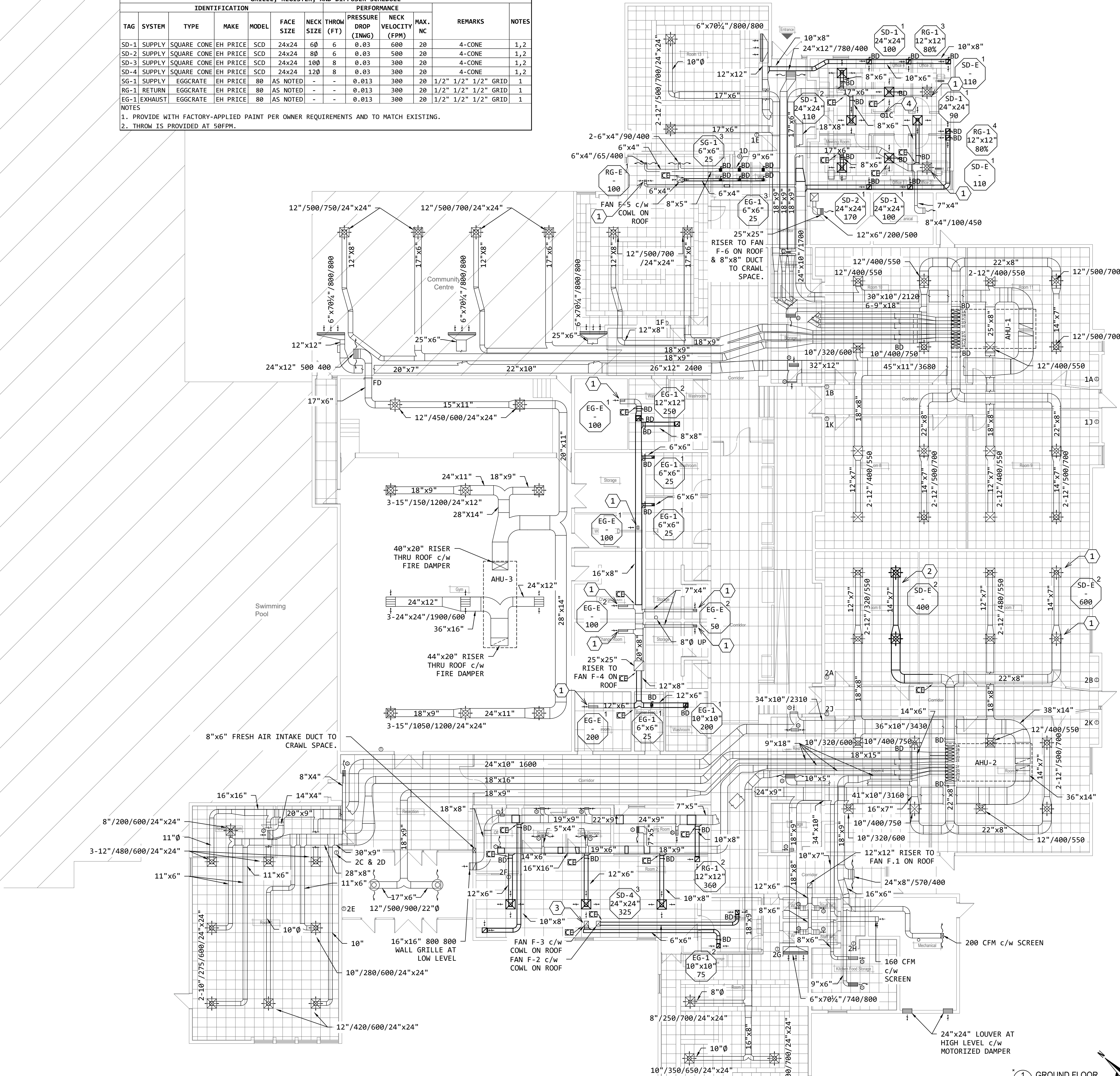
2516

DWG NO:

M4

1 GROUND FLOOR
M4 SCALE: 3/32" = 1'-0"

GRILLE, REGISTER, AND DIFFUSER SCHEDULE												
IDENTIFICATION						PERFORMANCE					REMARKS	NOTES
TAG	SYSTEM	TYPE	MAKE	MODEL	FACE SIZE	NECK SIZE	THROW (FT)	PRESSURE DROP (INWG)	NECK VELOCITY (FPM)	MAX. NC		
SD-1	SUPPLY	SQUARE CONE	EH	PRICE	SCD	24x24	60	0.03	600	20	4-CONE	1,2
SD-2	SUPPLY	SQUARE CONE	EH	PRICE	SCD	24x24	80	0.03	500	20	4-CONE	1,2
SD-3	SUPPLY	SQUARE CONE	EH	PRICE	SCD	24x24	100	0.03	300	20	4-CONE	1,2
SD-4	SUPPLY	SQUARE CONE	EH	PRICE	SCD	24x24	120	0.03	300	20	4-CONE	1,2
SG-1	SUPPLY	EGGCRATE	EH	PRICE	80	AS NOTED	-	0.013	300	20	1/2" 1/2" 1/2" GRID	1
RG-1	RETURN	EGGCRATE	EH	PRICE	80	AS NOTED	-	0.013	300	20	1/2" 1/2" 1/2" GRID	1
EG-1	EXHAUST	EGGCRATE	EH	PRICE	80	AS NOTED	-	0.013	300	20	1/2" 1/2" 1/2" GRID	1
NOTES												
1. PROVIDE WITH FACTORY-APPLIED PAINT PER OWNER REQUIREMENTS AND TO MATCH EXISTING.												
2. THROW IS PROVIDED AT 500FPM.												



TESTING, ADJUSTING, AND BALANCING

- UPON COMPLETION OF HVAC SCOPE OF WORK, CONTRACTOR SHALL PERFORM TESTING, ADJUSTING, AND BALANCING OF AHU-1 AND AHU-2, AND OF ENTIRE DUCT SYSTEMS SERVED BY AHU-1 AND AHU-2.
- VERIFY THAT AHU-1 AND AHU-2 DUCTS ARE NOT ACOUSTICALLY LINED. IF DUCTS ARE NOT LINED, ENTIRE DUCT SYSTEM SHALL BE CLEANED UPON COMPLETION OF HVAC SCOPE OF WORK AND BEFORE TAB.
- AHU-1 AND AHU-2 SHALL PROVIDE 10,000 CFM OF CONTINUOUS SUPPLY AIRFLOW DURING OCCUPIED HOURS AND MAINTAIN THE FOLLOWING ROOM TEMPERATURE SETPOINTS:
 - HEATING OCCUPIED MODE: 22°C
 - HEATING UNOCCUPIED MODE: 18°C
 - COOLING OCCUPIED MODE: 22°C
 - COOLING UNOCCUPIED MODE: 26°C
 - SETPOINTS SHALL BE USER-ADJUSTABLE AT AHU UNIT CONTROL MODULE.
- SETPOINT/SETBACK STRATEGY SHALL INCLUDE A 2-HOUR MORNING WARM-UP PERIOD TO ENSURE SPACE TEMPERATURE SETPOINT IS MET DURING 100% OF OCCUPIED HOURS.
- SUPPLY AIR TEMPERATURE AND HUMIDITY SHALL BE CONTROLLED BY AHU-1 AND AHU-2 UNIT CONTROL MODULES BASED ON RETURN AIR TEMPERATURE AND HUMIDITY.
- HEAT RECOVERY VENTILATORS SERVING AHU-1 AND AHU-2 SHALL BE PROGRAMMED TO CONTINUOUSLY PROVIDE 4,125 CFM OF OUTDOOR AIRFLOW DURING OCCUPIED HOURS. OUTDOOR AIR DAMPER MAY MODULATE TO MINIMUM POSITION DURING UNOCCUPIED HOURS (OR MINIMUM AIRFLOW, AS APPLICABLE).
- EXHAUST FAN OPERATION SHALL BE INTERLOCKED WITH AHU-1 AND AHU-2 OPERATION.
- DURING UNOCCUPIED HOURS, AHU-1 AND AHU-2 MAY MODULATE SUPPLY AIRFLOW AS NEEDED TO MAINTAIN UNOCCUPIED ROOM TEMPERATURE SET POINT.
- EXISTING CONTROL DAMPERS IN SUPPLY DUCT RUNS SHALL BE COMMANDED TO 100% OPEN POSITION AND SHALL NOT BE PERMITTED TO CLOSE AT ANY TIME.

GRILLE TAG LEGEND	
	SIZE / CFM / VELOCITY (FPM) / OPENING SIZE (IF REQ.)
1	6"x4"/60/400
2	24"x6"/350/350
3	6"x4"/50/300
4	6"x4"/40/250
5	12"x4"/130/400
6	24"x4"/230/400
7	6"x4"/50/400
8	24"x6"/280/350
9	6"x4"/40/350
10	6"x4"/30/300
11	12"x4"/100/400
12	24"x4"/180/350
13	8"x4"/75/400
14	24"x4"/200/400
15	24"x4"/160/350
16	16"x16"/550/800

SHEET GENERAL NOTES:

- EXCEPT AS NOTED OTHERWISE, BACKGROUND AND EXISTING LINE WORK IS SHOWN SHADED.
- EXCEPT AS NOTED OTHERWISE, DEMOLITION LINE WORK IS SHOWN THICK DASHED.
- EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
- CONTRACTOR SHALL RETAIN SEISMIC RESTRAINT SYSTEM ENGINEER LICENSED IN THE PROVINCE OF ONTARIO TO PROVIDE COMPLETE SRS DESIGN. SRS ENGINEER SHALL PROVIDE SEALED AS-BUILT DRAWINGS.
- DUCT ELBOWS SHALL USE A BEND RADIUS EQUAL TO 1.5 TIMES THE DUCT DIAMETER, SPACE PERMITTING. WHERE 1.5D IS NOT POSSIBLE, 1D IS PERMITTED.
- FLEXIBLE DUCTWORK IS NOT PERMITTED. DUCT SHALL BE RIGID UP TO CONNECTION WITH DIFFUSER.
- CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.
- PENETRATIONS THROUGH FIRE RATED ASSEMBLY TO BE PROPERLY FIRE STOPPED WITH SEALANT TO MAINTAIN THE FIRE RATING.
- SEAL AND MAKE GOOD ALL DUCT PENETRATIONS WHERE EXISTING DUCTWORK IS DEMOLISHED AND NOT REINSTATED. MATCH EXISTING FINISHES.

SHEET KEYNOTES:

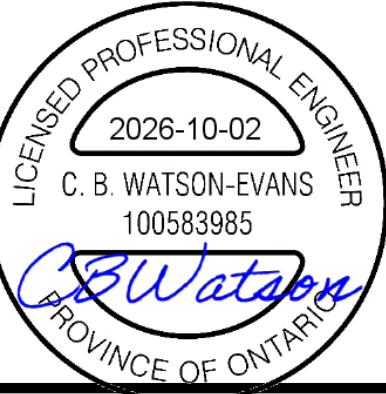
- RE-BALANCE EXISTING GRILLE/DIFFUSER.
- RELOCATED SUPPLY DUCT.
- NEW WASHROOM EXHAUST REQUIRES FLOW FROM BOTH EXISTING EXHAUST FANS F-2 AND F-3.
- RELOCATED THERMOSTAT.

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DRAWING REVISIONS

No.	Issued for:	Date:
01	Issued for Coordination	2026-08-12
02	Issued for Permit	2026-09-04
03	Re-issued for Permit	2026-10-02

SITE ADDRESS:

351 Bridge St
Carleton Place, ON K7C 3H9

OWNER INFORMATION:

Carleton Place School Age Services



Ignite Architecture Inc.
533 Landswood Way
Ottawa, ON K2S 0A6
Phone: 613 - 912 - 1832
Email: nicole@ignitearchitecture.ca

DRAWING TITLE:

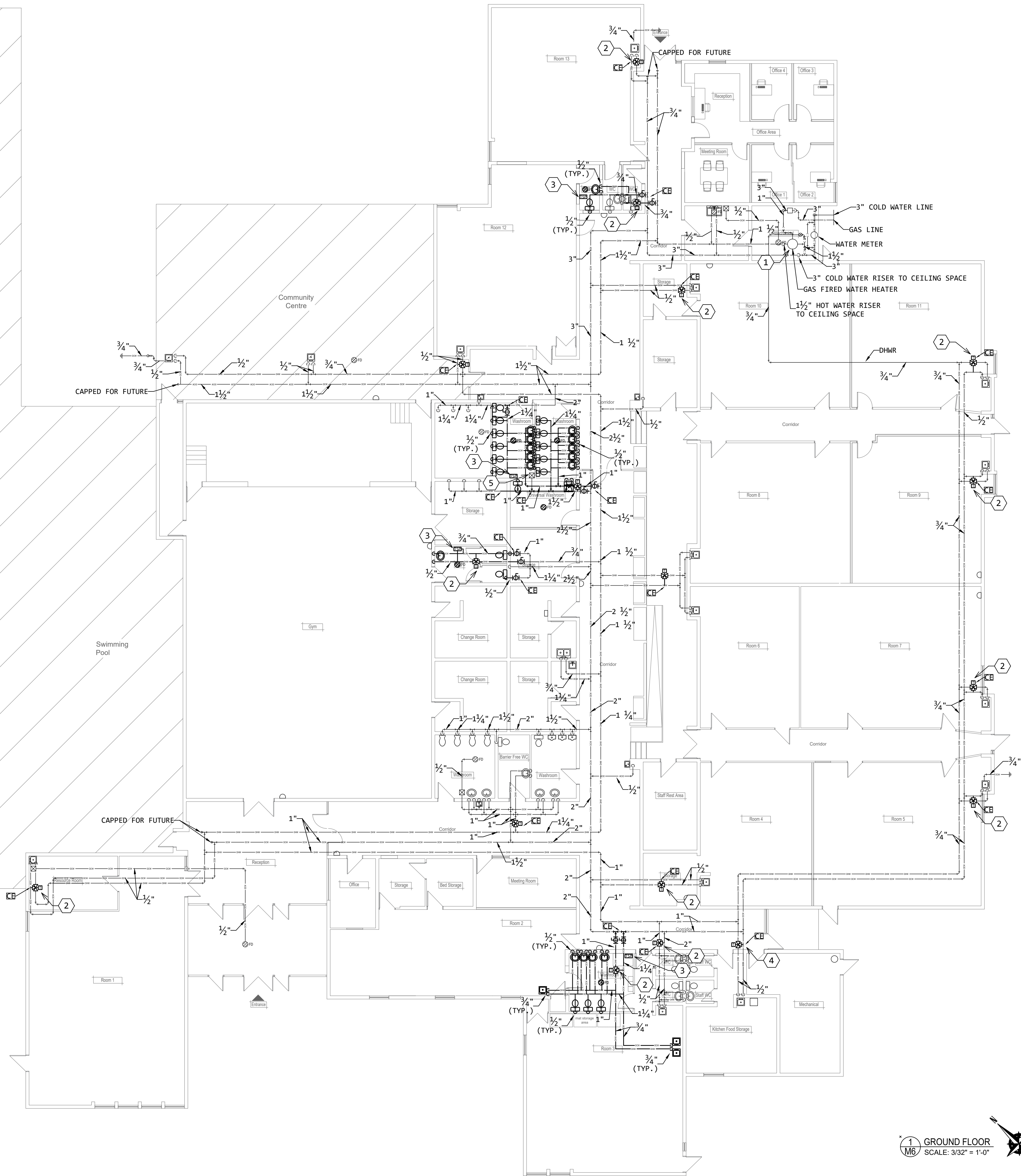
HVAC NEW WORK

PROJECT:

2516

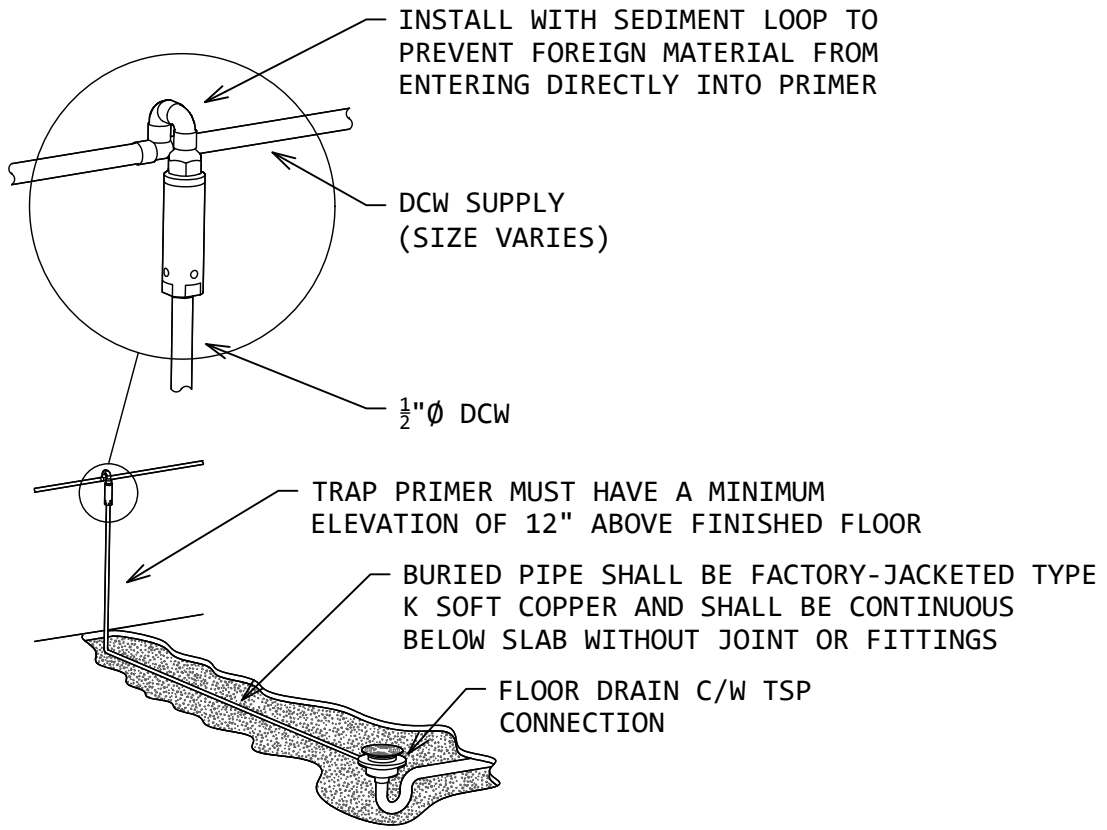
DWG NO:

M5

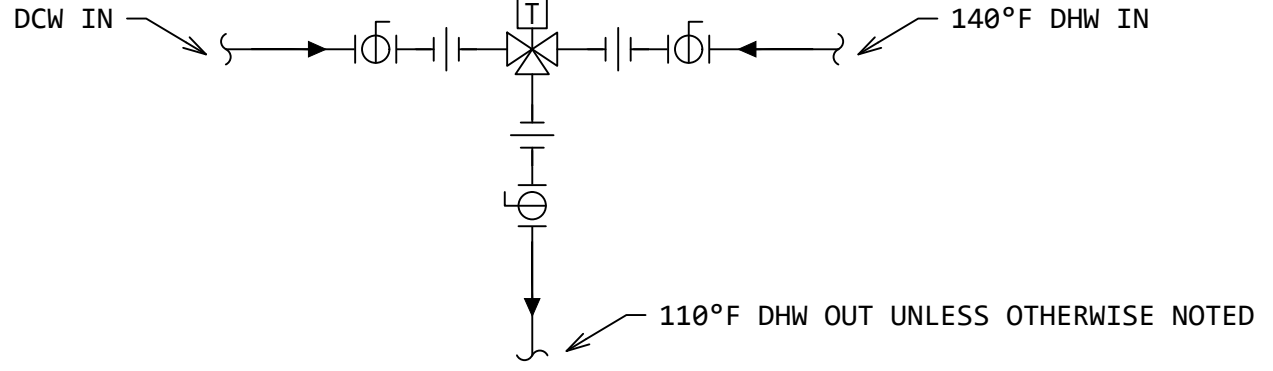


- SHEET GENERAL NOTES:**
- EXCEPT AS NOTED OTHERWISE, BACKGROUND AND EXISTING LINE WORK IS SHOWN SHADED.
 - EXCEPT AS NOTED OTHERWISE, DEMOLITION LINE WORK IS SHOWN THICK DASHED.
 - EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
 - CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.
 - PENETRATIONS THROUGH FIRE RATED ASSEMBLY TO BE PROPERLY FIRE STOPPED WITH SEALANT TO MAINTAIN THE FIRE RATING.
 - REFER TO PLUMBING FIXTURE SCHEDULE ON SHEET A7 OF ARCHITECTURAL PLANS.

- # SHEET KEYNOTES:**
- ADJUST DOMESTIC HOT WATER TANK LEAVING WATER TEMPERATURE TO 140°F.
 - PROVIDE NEW MANUALLY ADJUSTABLE THERMOSTATIC MIXING VALVES. OUTLET HOT WATER TEMPERATURE SHALL BE 110°F.
 - PROVIDE NEW TRAP SEAL PRIMER MANIFOLD INSTALLED IN PLENUM SPACE C/W 1/2" WATER INLET AND 1/2" OUTLET CONNECTION TO DRAIN TRAP. BURIED PIPE SHALL BE FACTORY-JACKETED TYPE K SOFT COPPER AND SHALL BE CONTINUOUS BELOW SLAB WITHOUT JOINTS OR FITTINGS. PROVIDE DISTRIBUTION UNIT WHERE MULTIPLE DRAINS ARE SERVED BY ONE TSP.
 - THERMOSTATIC MIXING VALVE OUTLET HOT WATER TEMPERATURE SHALL BE 120°F FOR KITCHEN ONLY.
 - EXISTING TRAP SEAL PRIMER TO REMAIN.



2 TRAP SEAL PRIMER INSTALLATION DETAIL
SCALE: NTS



3 THERMOSTATIC MIXING VALVE INSTALLATION DETAIL
SCALE: NTS

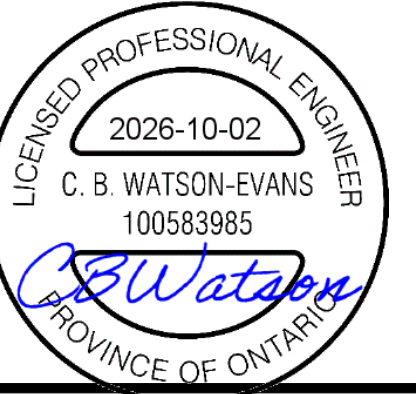
1 GROUND FLOOR
SCALE: 3/32" = 1'-0"

GENERAL NOTES:

- Do not scale drawings.
- The contractor shall check and verify all dimensions on site and report all discrepancies to the Architect.
- All work shall comply with the Ontario Building Code and the requirements of all authorities having jurisdiction.
- This drawing is the exclusive property of Ignite Architecture Inc. copyright reserved.



SEAL:



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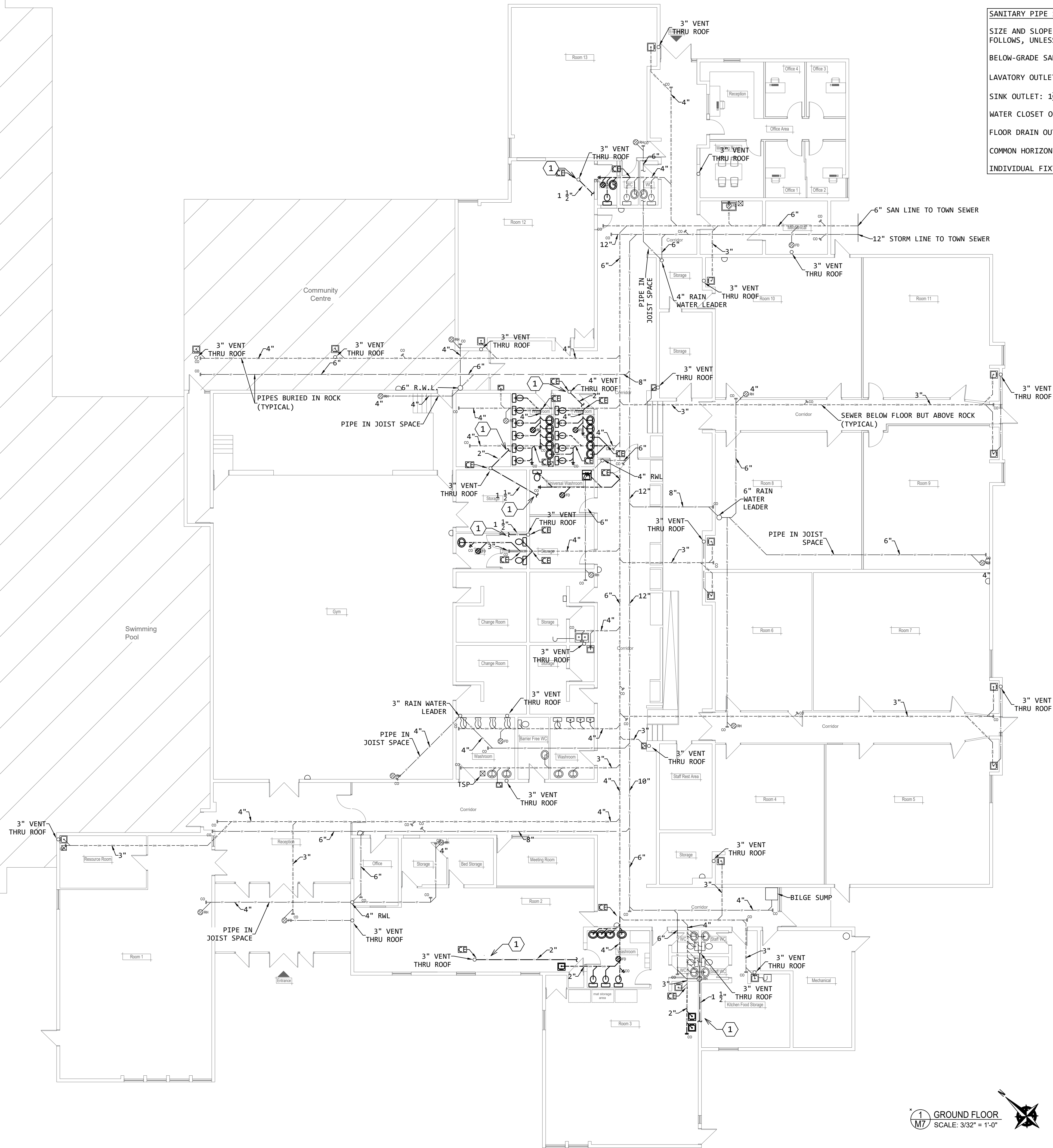
Ignite Architecture Inc.
533 Landswood Way
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Phone: 613 - 912 - 1832
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DRAWING TITLE:

DW NEW WORK

PROJECT: DWG NO:

2516 M6



SANITARY PIPE SIZING

SIZE AND SLOPE PIPING PER OBC, NPC, AND AS FOLLOWS, UNLESS OTHERWISE NOTED:

BELOW-GRADE SANITARY: 3"Ø

LAVATORY OUTLET: 1½"Ø

SINK OUTLET: 1½"Ø

WATER CLOSET OUTLET: 3"Ø

FLOOR DRAIN OUTLET: 2"Ø

COMMON HORIZONTAL VENTING: 2"Ø

INDIVIDUAL FIXTURE VENTING: BY OBC

- SHEET GENERAL NOTES:**
- EXCEPT AS NOTED OTHERWISE, BACKGROUND AND EXISTING LINE WORK IS SHOWN SHADED.
 - EXCEPT AS NOTED OTHERWISE, DEMOLITION LINE WORK IS SHOWN THICK DASHED.
 - EXCEPT AS NOTED OTHERWISE, NEW LINE WORK IS SHOWN THICK SOLID.
 - CONTRACTOR MUST VERIFY DIMENSIONS AND CONDITIONS SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK.
 - PENETRATIONS THROUGH FIRE RATED ASSEMBLY TO BE PROPERLY FIRE STOPPED WITH SEALANT TO MAINTAIN THE FIRE RATING. FLOOR FIRE RATING SHALL BE 2h.
 - REFER TO PLUMBING FIXTURE SCHEDULE ON SHEET A7 OF ARCHITECTURAL PLANS.

- # SHEET KEYNOTES:**
- NEW PLUMBING VENTS SHALL CONNECT TO EXISTING ROOF PENETRATIONS AS SHOWN. VENT PIPE CONTINUATION IS SHOWN TO ILLUSTRATE LOCATION OF MAIN HORIZONTAL BRANCH VENT, AND FIXTURES/ROOMS WHICH THEY SERVE.

GENERAL NOTES:

- Do not scale drawings.
- The contractor shall check and verify all dimensions on site and report all discrepancies to the Architect.
- All work shall comply with the Ontario Building Code and the requirements of all authorities having jurisdiction.
- This drawing is the exclusive property of Ignite Architecture Inc. copyright reserved.



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DRAWING TITLE:

SAN NEW WORK

PROJECT:

2516

DWG NO:

M7

1 GROUND FLOOR
SCALE: 3/32" = 1'-0"



1. GENERAL SCOPE OF WORK
- 1.1. SUPPLY LABOUR, TOOLS, SERVICES AND EQUIPMENT, AND PROVIDE PRODUCTS AND MATERIALS REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH THE TENDER DOCUMENTS. REVIEW ENTIRE TENDER PACKAGE INCLUDING FRONT END DOCUMENTS TO CONFIRM SCOPE OF WORK. COMPLY WITH ALL LAWS, REGULATIONS, AND CODES OF AUTHORITIES HAVING JURISDICTION. CONFORM TO REQUIREMENTS OF FRONT END BID DOCUMENTS AND GENERAL REQUIREMENTS WHICH ARE SUPPLEMENTARY TO THOSE REQUIREMENTS. WHERE CODES AND/OR REQUIREMENTS CONFLICT, INCLUDE FOR MORE STRINGENT AND COSTLY REQUIREMENTS. PERFORM WORK IN ACCORDANCE WITH LOCAL APPLICABLE GOVERNING CODES AND AUTHORITIES INCLUDING ONTARIO BUILDING CODE (OBC) AND OTHER APPLICABLE CODES. CONTRACTOR SHALL CARRY ALL NECESSARY VALID INSURANCE COVERAGE.
2. CODES AND STANDARDS
- 2.1. PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST EDITIONS OF APPLICABLE CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO: ONTARIO BUILDING CODE (OBC), INCLUDING PART 7 PLUMBING; CSA B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE WHERE APPLICABLE; CAN/CSA B64 SERIES BACKFLOW PREVENTERS; NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS; ASHRAE STANDARDS AND ASHRAE 90.1 / OBC SB-10 FOR ENERGY EFFICIENCY; ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS; MSS SP-58 FOR HANGERS AND SUPPORTS; AABC OR NEBB FOR TESTING; ADJUSTING AND BALANCING; AND THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION. WHERE CODES, STANDARDS, OR CONTRACT DOCUMENTS CONFLICT, THE MORE STRINGENT REQUIREMENT GOVERNS.
3. DEFINITIONS
- 3.1. "PROVISION" OR "PROVIDE" (AND TENSES OF "PROVIDE") - MEANS SUPPLY AND INSTALL COMPLETE.
- 3.2. "INSTALL" (AND TENSES OF "INSTALL") - MEANS SECURE IN POSITION, CONNECT COMPLETE, TEST, ADJUST, VERIFY AND CERTIFY.
- 3.3. "SUPPLY" - MEANS TO PROCURE, ARRANGE FOR DELIVERY TO SITE, INSPECT, ACCEPT DELIVERY AND ADMINISTER SUPPLY OF PRODUCTS; DISTRIBUTE TO AREAS; AND INCLUDE MANUFACTURER'S SUPPLY OF ANY SPECIAL MATERIALS, STANDARD ON SITE TESTING, INITIAL START-UP, PROGRAMMING, BASIC COMMISSIONING, WARRANTIES AND ASSISTANCE TO CONTRACTOR.
- 3.4. "DELETE" OR "REMOVE" (AND TENSES OF "DELETE" OR "REMOVE") - MEANS TO DISCONNECT, MAKE SAFE, REMOVE ASSOCIATED OBSOLETE MATERIALS AND PATCH AND REPAIR/FINISH SURFACES TO MATCH ADJOINING SIMILAR CONSTRUCTION; INCLUDE FOR ASSOCIATED RE-PROGRAMMING OF SYSTEMS AND/OR CHANGE OF DOCUMENTATION IDENTIFICATIONS TO SUIT DELETIONS, AND PROPERLY DISPOSE OF DELETED PRODUCTS OFF SITE UNLESS OTHERWISE INSTRUCTED BY CONSULTANT.
- 3.5. "CONSULTANT" - MEANS THE ENGINEER OR THE CONSULTING ENGINEERING FIRM.
- 3.6. "OWNER" - MEANS THE OWNER OR THE OWNER'S REPRESENTATIVE.
- 3.7. "AUTHORITIES HAVING JURISDICTION (AHJ)" - MEANS THE GOVERNING REGULATORY AGENCIES AND OFFICIALS WITH LEGAL AUTHORITY OVER THE WORK.
4. PHASING OF THE WORK
- 4.1. WHERE PROJECT PHASING IS REQUIRED, CONFORM TO THE PHASING REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS. ENSURE THAT SYSTEMS AND EQUIPMENT ARE INSTALLED, TESTED, COMMISSIONED AND VERIFIED AS AREAS ARE TURNED OVER TO OWNER.
5. EXAMINATION OF SITE AND DOCUMENTS
- 5.1. CAREFULLY EXAMINE DOCUMENTS AND VISIT SITE TO DETERMINE AND REVIEW EXISTING SITE CONDITIONS THAT WILL OR MAY AFFECT WORK, AND INCLUDE FOR SUCH CONDITIONS IN BID PRICE. PRIOR TO BID SUBMITTAL, REPORT TO CONSULTANT ANY EXISTING SITE CONDITIONS THAT WILL OR MAY AFFECT PERFORMANCE OF WORK AS PER DOCUMENTS. FAILURE TO DO SO WILL NOT BE GROUNDS FOR ADDITIONAL COSTS. IMMEDIATELY NOTIFY CONSULTANT IN WRITING UPON FINDING DISCREPANCIES IN, OR OMISSIONS FROM, DOCUMENTS FROM, OR HAVING DOUBT AS TO THE MEANING OR INTENT. CONTRACTOR'S REVIEW OF SITE SHALL INCLUDE FOR CEILING INTERFERENCES. CARRY FOR ALL PIPING AND DUCTWORK OFFSETS REQUIRED TO NAVIGATE SERVICES THROUGH CEILING SPACE.
6. PERMITS, CERTIFICATES AND FEES
- 6.1. PAY FOR AND OBTAIN PERMITS AND INSPECTION CERTIFICATES TO COMPLETE WORK. WHEN WORK IS COMPLETE, SUPPLY AND TURN OVER TO CONSULTANT INSPECTION CERTIFICATES FROM GOVERNING AUTHORITIES. PAY FEES AND CHARGES LEVIED BY MUNICIPALITY AND OTHER GOVERNING AUTHORITIES FOR PERMITS, INSPECTIONS, AND CERTIFICATES. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE. WHERE WORK INVOLVES ELECTROMAGNETIC LOCKS, PROVIDE PERMITS AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
7. PLANNING, LAYOUT AND COORDINATION OF WORK
- 7.1. PLAN, COORDINATE, AND ESTABLISH EXACT LOCATIONS AND ROUTING OF SERVICES WITH AFFECTED TRADES PRIOR TO INSTALLATION SUCH THAT SERVICES CLEAR EACH OTHER AS WELL AS OTHER OBSTRUCTIONS. CARRY OUT ALTERATIONS IN ARRANGEMENT OF WORK THAT HAS BEEN INSTALLED WITHOUT PROPER COORDINATION, STUDY, AND REVIEW, EVEN IF IN ACCORDANCE WITH CONTRACT DOCUMENTS, IN ORDER TO CONCEAL WORK BEHIND FINISHES, OR TO ALLOW INSTALLATION OF OTHER WORK, WITHOUT ADDITIONAL COST. IN ADDITION, MAKE NECESSARY ALTERATIONS IN OTHER WORK REQUIRED BY SUCH ALTERATIONS, WITHOUT ADDITIONAL COST. WHERE WORK IS TO BE INTEGRATED, OR IS TO BE INSTALLED IN CLOSE PROXIMITY WITH WORK OF OTHER TRADES, COORDINATE WORK PRIOR TO AND DURING INSTALLATION. ENSURE PROPER ACCESS AND SERVICE CLEARANCES ARE MAINTAINED AROUND EQUIPMENT, AND, WHERE APPLICABLE, ACCESS SPACE FOR FUTURE EQUIPMENT REMOVAL OR REPLACEMENT IS NOT IMPEDED. COMPLY WITH CODE REQUIREMENTS WITH REGARDS TO ACCESS SPACE PROVISION AROUND EQUIPMENT. REMOVE AND REPLACE ANY EQUIPMENT WHICH DOES NOT MEET THIS REQUIREMENT. REVIEW CONTRACT DOCUMENTS AND COORDINATE WORK WITH WORK OF EACH TRADE. COORDINATION REQUIREMENTS ARE TO INCLUDE BUT NOT BE LIMITED TO REQUIREMENTS FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY FOR INSTALLATION OF WORK; CONCRETE WORK SUCH AS HOUSEKEEPING PADS, SUMPS, BASES, ETC., REQUIRED FOR WORK, AND INCLUDING REQUIRED DIMENSIONS, OPERATING WEIGHT OF EQUIPMENT, LOCATION, ETC.; DEPTH AND ROUTING OF EXCAVATION REQUIRED FOR WORK, AND REQUIREMENTS FOR BEDDING AND BACKFILL.
8. NOISE CONTROL
- 8.1. WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY OWNER. COORDINATE WORK WITH OTHER TRADES TO MINIMIZE NOISE DISTURBANCES.
9. CLEANING
- 9.1. DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF REFUSE AND WASTE MATERIAL RESULTING FROM WORK ON A DAILY BASIS TO THE SATISFACTION OF CONSULTANT. BEFORE APPLYING FOR A CERTIFICATE OF SUBSTANTIAL PERFORMANCE OF THE WORK, REMOVE REFUSE AND DEBRIS, AND BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE CAUSED AS A RESULT OF WORK. CLEAN MECHANICAL EQUIPMENT AND DEVICES INSTALLED AS PART OF THIS PROJECT. PROVIDE PROTECTION FOR EQUIPMENT, FURNITURE AND AREAS OF WORK NOT IN PROJECT SCOPE.
10. EQUIPMENT AND MATERIALS
- 10.1. SYSTEMS AND EQUIPMENT OF THIS PROJECT ARE TO BE "STATE OF ART" AND BE MOST RECENT AND UP TO DATE SERIES/VERSION OF PRODUCT THAT IS AVAILABLE AT TIME OF SHOP DRAWING REVIEW PROCESS. PRODUCTS THAT HAVE BEEN STORED OR "ON SHELF" FOR AN EXTENDED PERIOD OF TIME WILL NOT BE ACCEPTED. SOFTWARE IS TO BE OF LATEST VERSION AVAILABLE AND BE PROVIDED WITH UPDATES AVAILABLE AT TIME OF SHOP DRAWING REVIEW PROCESS. SYSTEMS ARE TO BE DESIGNED SUCH THAT ITS SOFTWARE IS BACKWARDS COMPATIBLE. FUTURE UPGRADES ARE NOT TO REQUIRE ANY HARDWARE REPLACEMENTS OR ADDITIONS TO UTILIZE LATEST SOFTWARE. EQUIPMENT AND MATERIALS LISTED AND/OR SPECIFIED ON CONTRACT DOCUMENTS ARE SELECTED TO ESTABLISH DESIGN STANDARDS. IN MOST CASES, ACCEPTABLE MANUFACTURERS ARE LISTED. BASE YOUR BID PRICE ON BASE SPECIFIED PRODUCTS OR PRODUCTS SUPPLIED FROM ACCEPTABLE MANUFACTURERS. CHANGES TO LIST OF ACCEPTABLE MANUFACTURERS MAY BE PROPOSED TO CONSULTANT FOR ACCEPTANCE PRIOR TO CLOSING OF BIDS, LISTING IN EACH CASE CORRESPONDING CREDIT. CONSULTANT HAS SOLE DISCRETION IN ACCEPTING ANY PROPOSED SUBSTITUTION. ENSURE PROPOSED PRODUCTS SUPPLIED FROM ALTERNATE MANUFACTURERS ARE EQUIVALENT TO SPECIFIED PRODUCTS PRIOR TO SUBMISSION FOR CONSULTANT'S REVIEW. INCLUDE IN BID PRICE ANY ADDITIONAL COSTS FOR CHANGES TO ASSOCIATED OR ADJACENT WORK RESULTING FROM PROVISION OF PRODUCTS SUPPLIED BY A MANUFACTURER OTHER THAN BASE SPECIFIED MANUFACTURER. ANY PROPOSED CHANGES INITIATED BY CONTRACTOR AFTER AWARD OF CONTRACT MAY BE CONSIDERED BY CONSULTANT AT CONSULTANT'S DISCRETION, WITH COSTS FOR SUCH CHANGES IF APPROVED BY CONSULTANT, AND COSTS OF SUCH REVIEW BY CONSULTANT TO BE PAID FOR BY CONTRACTOR.
11. PROTECTION OF EQUIPMENT AND MATERIAL
- 11.1. PROTECT FROM DAMAGE NEW EQUIPMENT AND MATERIALS STORED ON SITE. PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS THAT IS ON SITE TO BE RELOCATED. REPAIR AND REPLACE DAMAGED MATERIALS AND EQUIPMENT AT DISCRETION OF OWNER.
12. WARRANTY
- 12.1. UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS, WARRANTY WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR 1 YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO OWNER. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDING REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.
13. CUTTING, PATCHING AND CORE DRILLING
- 13.1. COORDINATE WITH GENERAL TRADES FOR CUTTING, PATCHING AND CORE DRILLING OF EXISTING BUILDING REQUIRED FOR INSTALLATION OF WORK. PERFORM CUTTING IN NEAT AND TRUE FASHION, WITH PROPER TOOLS AND EQUIPMENT TO OWNER'S APPROVAL. PATCHING WILL EXACTLY MATCH EXISTING FINISHES AND BE PERFORMED BY TRADESMEN SKILLED IN PARTICULAR TRADE OR APPLICATION WORKED ON TO OWNER'S APPROVAL. IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOID FOR LENGTH OF OPENING WITH ASBESTOS FREE ELASTOMERIC AND INTUMESCENT ULC LISTED AND LABELED MATERIALS. INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO ULC CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRESTOP RATINGS OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS. SUBMIT WITH SHOP DRAWINGS, SPECIFIC ULC DESIGNATED NUMBER FOR EACH APPLICATION. ACCEPTABLE MANUFACTURERS ARE 3M, TREMCO, HILTI, AND TYCO FIRE STOP SYSTEMS. DO NOT CUT OR DRILL EXISTING WORK WITHOUT PRIOR OWNER'S APPROVAL. IN CONSULTATION WITH OWNER AND BY USE OF NON-DESTRUCTIVE RADAR SCANNING, DETERMINE PRESENCE OF EXISTING SERVICES AND REINFORCING RODS CONCEALED BEHIND SURFACE TO BE CUT. ENSURE THAT AREAS OF BOTH SIDES OF SURFACE BEING CUT ARE PROTECTED FROM DEBRIS. YOU WILL BE HELD RESPONSIBLE FOR DAMAGE DONE TO EXISTING BUILDING AND SERVICES CAUSED BY CUTTING OR DRILLING. IF RADAR SCANNING IS NOT PERMITTED BY OWNER, CAREFULLY HAND CHISEL TO EXPOSE RE-BAR AND BURIED SERVICES AND CHISEL OUT REQUIRED OPENINGS.
14. HAZARDOUS MATERIALS
- 14.1. IF AT ANY TIME DURING COURSE OF EXISTING BUILDING WORK, HAZARDOUS MATERIALS, OTHER THAN THOSE IDENTIFIED IN DOCUMENTS AND PERTAINING TO PROJECT SCOPE OF WORK, ARE ENCOUNTERED OR SUSPECTED THAT WERE NOT IDENTIFIED AS BEING PRESENT AND WHICH SPECIFIC INSTRUCTIONS IN HANDLING OF SUCH MATERIALS WERE NOT GIVEN,

- CEASE WORK IN AREA IN QUESTION AND IMMEDIATELY NOTIFY CONSULTANT. COMPLY WITH LOCAL GOVERNING REGULATIONS WITH REGARD TO WORKING IN AREAS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS. DO NOT RESUME WORK IN AFFECTED AREA UNTIL ADVISED BY CONSULTANT. FROM CONSULTANT, HAZARDOUS MATERIALS SHALL BE PROPERLY DISPOSED OF OFFSITE IN ACCORDANCE WITH LOCAL GOVERNING AUTHORITY REGULATIONS. USE SPECIALTY FIRMS LICENSED BY LOCAL AUTHORITIES AS REQUIRED TO HANDLE SUCH MATERIALS AND TO ENSURE PROPER DISPOSAL TO MINISTRY APPROVED SITES. SUBMIT COPIES OF PERMITS AND/OR APPROVALS.
15. RECORD DRAWINGS (AS-BUILTS)
- 15.1. CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS, ON A DAILY BASIS, CHANGES AND DEVIATIONS FROM ROUTING OF AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS, CHANGES AND DEVIATIONS INCLUDING THOSE MADE BY ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS. MAINTAIN "AS BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY CONSULTANT THROUGHOUT DURATION OF WORK. PAY PARTICULAR ATTENTION TO ACCURATELY DIMENSIONING LOCATION OF CONCEALED SERVICES TERMINATED FOR FUTURE EXTENSION, BURIED WORK AND SERVICES, AND WORK CONCEALED WITHIN BUILDING IN INACCESSIBLE LOCATIONS. WHEN WORK ENDS AT SITE, SUBMIT MARKED UP "AS BUILT" DOCUMENTS TO CONSULTANT. SUBMITTED DOCUMENTS SHALL BE OF SAME SIZE AND QUALITY AS ORIGINAL CONTRACT DOCUMENTS.
16. SHOP DRAWINGS
- 16.1. SUBMIT FOR REVIEW, SHOP DRAWINGS SHOWING IN DETAIL DESIGN, CONSTRUCTION, AND PERFORMANCE OF NEW EQUIPMENT AND MATERIALS. SUBMIT SHOP DRAWINGS TO CONSULTANT FOR REVIEW PRIOR TO ORDERING AND DELIVERY OF PRODUCT TO SITE. ENSURE PROPOSED PRODUCTS MEET EACH REQUIREMENT OF PROJECT. EACH SHOP DRAWING OR PRODUCT DATA SHEET IS TO BE PROPERLY IDENTIFIED WITH PROJECT NAME AND PRODUCT DRAWING OR SPECIFICATION REFERENCE. INCLUDE COMPANY NAME, SUBMITTAL DATE, AND SIGN EACH COPY. SHOP DRAWINGS THAT ARE RECEIVED AND THAT ARE NOT ENDORSED, DATED AND SIGNED WILL BE RETURNED TO BE RESUBMITTED. SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS UNLESS OTHERWISE DIRECTED BY CONSULTANT. OBTAIN SHOP DRAWINGS FOR SUBMISSION FROM PRODUCT MANUFACTURER'S AUTHORIZED REPRESENTATIVES AND SUPPLEMENTED WITH ADDITIONAL ITEMS SPECIFIED HEREIN. WHERE EXTENDED WARRANTIES ARE SPECIFIED FOR EQUIPMENT ITEMS, SUBMIT SPECIFIED EXTENDED WARRANTY WITH SHOP DRAWING SUBMITTAL. WHERE ANY ITEM OF EQUIPMENT IS REQUIRED BY CODE OR STANDARD OR BY-LAW TO MEET A SPECIFIC ENERGY EFFICIENCY LEVEL, OR ANY OTHER SPECIFIC REQUIREMENT, ENSURE THIS REQUIREMENT IS CLEARLY INDICATED ON SUBMISSION. SUBMIT SHOP DRAWING FOR EACH NEW PIECE OF EQUIPMENT. EACH SYSTEM AND EACH MAJOR COMPONENT ARE TO BE SEPARATELY IDENTIFIED AND SUBMITTED. SHOP DRAWINGS FOR LOCALITY GROUP AND ARRANGE ALL SHOP DRAWINGS ARE TO BE SUBMITTED TOGETHER. REVIEW BY CONSULTANT IS FOR SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH GENERAL DESIGN CONCEPT. THIS REVIEW DOES NOT MEAN THAT CONSULTANT APPROVES DETAIL DESIGN INHERENT IN SHOP DRAWINGS, RESPONSIBILITY FOR WHICH REMAINS WITH CONTRACTOR. CONSULTANT'S REVIEW DOES NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS OR OF CONTRACTOR'S RESPONSIBILITY FOR MEETING REQUIREMENTS OF CONTRACT DOCUMENTS. BE RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR COORDINATION OF WORK OF SUB-TRADES.
17. OPERATING AND MAINTENANCE MANUALS
- 17.1. SUBMIT MINIMUM THREE HARD COPIES OF OPERATING AND MAINTENANCE (O&M) MANUALS CONSOLIDATED IN HARDCOVER THREE "D" RING BINDERS WITH EACH BINDER SIZED TO INCLUDE APPROXIMATELY 25% SPARE SPACE FOR FUTURE DATA. EACH BINDER TO INCLUDE SHOP DRAWINGS, LETTERS OF WARRANTY, OPERATING, AND MAINTENANCE INFORMATION FOR ALL NEW SYSTEMS AND EQUIPMENT. ON FRONT COVER OF BINDER CLEARLY IDENTIFY PROJECT NAME, LOCATION, CONSULTANT, AND CONTRACTOR.
18. DEMONSTRATION AND INSTRUCTION
- 18.1. UPON COMPLETION OF WORK, PROVIDE DEMONSTRATION AND INSTRUCTION SESSIONS TO FAMILIARIZE THE OWNER'S OPERATION AND MAINTENANCE PERSONNEL WITH THE INSTALLED MECHANICAL SYSTEMS AND THEIR OPERATION AND MAINTENANCE. CONDUCT SESSIONS USING QUALIFIED PERSONNEL AND, WHERE REQUIRED, EQUIPMENT MANUFACTURER'S AUTHORIZED REPRESENTATIVES. BASE INSTRUCTION ON THE APPROVED OPERATING AND MAINTENANCE MANUALS. COORDINATE SCHEDULING WITH OWNER AND WITH PERSONNEL PERFORMING TESTING, ADJUSTING AND BALANCING AND CONTROLS WORK. SUBMIT A RECORD OF EACH SESSION INDICATING DATE, DURATION, SYSTEMS COVERED, AND ATTENDEES.
19. EQUIPMENT AND SYSTEM MANUFACTURER'S CERTIFICATION
- 19.1. WHEN EQUIPMENT/SYSTEM INSTALLATION IS COMPLETE, BUT PRIOR TO START-UP PROCEDURES, ARRANGE AND PAY FOR EQUIPMENT/SYSTEM MANUFACTURER'S AUTHORIZED REPRESENTATIVE TO VISIT SITE TO EXAMINE INSTALLATION, AND AFTER ANY REQUIRED CORRECTIVE MEASURES HAVE BEEN MADE, TO CERTIFY IN WRITING TO CONSULTANT THAT EQUIPMENT/SYSTEM INSTALLATION IS COMPLETE AND IN ACCORDANCE WITH EQUIPMENT/SYSTEM MANUFACTURER'S INSTRUCTIONS.
20. CHANGES OR REVISIONS TO WORK
- 20.1. WHENEVER CONSULTANT PROPOSES IN WRITING TO MAKE A CHANGE OR REVISION TO DESIGN, ARRANGEMENT, QUANTITY OR TYPE OF WORK FROM THAT REQUIRED BY CONTRACT DOCUMENTS, PREPARE AND SUBMIT TO CONSULTANT FOR APPROVAL. A QUOTATION BEING PROPOSED COST FOR EXECUTING CHANGE OR REVISION. QUOTATION IS TO BE A DETAILED AND ITEMIZED ESTIMATE OF PRODUCT, LABOUR, AND EQUIPMENT COSTS ASSOCIATED WITH CHANGE OR REVISION, PLUS OVERHEAD AND PROFIT PERCENTAGES AND APPLICABLE TAXES AND DUTIES. UNLESS OTHERWISE SPECIFIED, THE FOLLOWING REQUIREMENTS APPLY TO ALL QUOTATIONS SUBMITTED:
- 20.2. WHEN CHANGE OR REVISION INVOLVES DELETED WORK AS WELL AS ADDITIONAL WORK, COST OF DELETED WORK (LESS OVERHEAD AND PROFIT PERCENTAGES BUT INCLUDING TAXES AND DUTIES) IS TO BE SUBTRACTED FROM COST OF ADDITIONAL WORK BEFORE OVERHEAD AND PROFIT PERCENTAGES ARE APPLIED TO ADDITIONAL WORK;
- 20.3. MATERIAL COSTS ARE NOT TO EXCEED THOSE PUBLISHED IN LOCAL ESTIMATING PRICE GUIDES.
- 20.4. COSTS FOR MECHANICAL AND ELECTRICAL LABOUR SHALL NOT EXCEED LOCAL PUBLISHED MCA AND ECA RATES AT TIME OF EXECUTION OF CONTRACT.
- 20.5. COSTS FOR JOURNEYPERSON AND APPRENTICE LABOUR MUST NOT EXCEED PREVAILING RATES AT TIME OF EXECUTION OF CONTRACT AND MUST REFLECT ACTUAL PERSONNEL PERFORMING WORK;
- 20.6. COST FOR SITE SUPERINTENDENT MUST NOT EXCEED 10% OF TOTAL HOURS OF LABOUR ESTIMATED FOR CHANGE OR REVISION, AND CHANGE OR REVISION MUST BE SUCH THAT SITE SUPERINTENDENT'S INVOLVEMENT IS NECESSARY;
- 20.7. COSTS FOR RENTAL TOOLS AND/OR EQUIPMENT ARE NOT TO EXCEED LOCAL RENTAL COSTS;
- 20.8. MAXIMUM ALLOWABLE PERCENTAGE FOR OVERHEAD AND PROFIT IS TO BE 10% AND 5% (15% TOTAL) ON CONTRACTOR'S OWN WORK AND 5% AND 5% (10% TOTAL) ON WORK BY CONTRACTOR'S SUB-TRADES;
- 20.9. OVERHEAD PERCENTAGE WILL BE DEEMED TO COVER QUOTATION COSTS OTHER THAN ACTUAL SITE LABOUR AND MATERIALS, AND RENTALS;
- 20.10. QUOTATIONS, INCLUDING THOSE FOR DELETED WORK, TO INCLUDE A FIGURE FOR ANY REQUIRED CHANGE TO CONTRACT TYPE.
- 20.11. QUOTATIONS SUBMITTED THAT ARE NOT IN ACCORDANCE WITH REQUIREMENTS SPECIFIED ABOVE WILL BE REJECTED AND RETURNED FOR RE-SUBMITTAL. FAILURE TO SUBMIT A PROPER QUOTATION TO ENABLE CONSULTANT TO EXPEDITIOUSLY PROCESS QUOTATION AND ISSUE A CHANGE ORDER WILL NOT BE GROUNDS FOR ANY ADDITIONAL CHANGE TO CONTRACT TYPE. MAKE REQUESTS FOR CHANGES OR REVISIONS TO WORK TO CONSULTANT IN WRITING AND, IF CONSULTANT AGREES, WILL ISSUE NOTICE OF CHANGE. DO NOT EXECUTE ANY CHANGE OR REVISION UNTIL WRITTEN AUTHORIZATION FOR THE CHANGE OR REVISION HAS BEEN OBTAINED FROM CONSULTANT.
21. PROJECT CLOSEOUT SUBMITTALS
- 21.1. PRIOR TO APPLICATION FOR SUBSTANTIAL PERFORMANCE OF THE WORK, SUBMIT REQUIRED ITEMS AND DOCUMENTATION SPECIFIED, INCLUDING THE FOLLOWING:
- 21.2. OPERATING AND MAINTENANCE MANUALS;
- 21.3. AS-BUILT RECORD DRAWINGS AND ASSOCIATED DATA;
- 21.4. EXTENDED WARRANTIES FOR EQUIPMENT AS SPECIFIED;
- 21.5. OPERATING TEST CERTIFICATES, I.E. SPRINKLER TEST CERTIFICATE;
- 21.6. FINAL COMMISSIONING REPORT AND TAB REPORT;
- 21.7. IDENTIFIED KEYS FOR EQUIPMENT AND/OR PANELS FOR WHICH KEYS ARE REQUIRED, AND OTHER ITEMS REQUIRED TO BE SUBMITTED;
- 21.8. LETTER FROM MECHANICAL CONTRACTOR AND SEALED BY A STRUCTURAL ENGINEER LICENCED IN THE PROVINCE OF ONTARIO INDICATING THAT EQUIPMENT AND SYSTEMS HAVE BEEN SEISMICALLY RESTRAINED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
- 21.9. OTHER DATA OR PRODUCTS SPECIFIED.
22. PIPING HANGERS AND SUPPORTS
- 22.1. PIPE HANGER AND SUPPORT MATERIALS, INCLUDING ACCESSORIES, ARE TO BE, UNLESS OTHERWISE SPECIFIED, IN ACCORDANCE WITH THE MANUFACTURERS STANDARDIZATION SOCIETY (MSS) STANDARD PRACTICE MANUAL SP-58, PIPE HANGERS AND SUPPORTS-MATERIALS, DESIGN AND MANUFACTURE, AND WHERE POSSIBLE, MSS DESIGNATIONS ARE TO BE INDICATED WITH EACH PRODUCT. UNLESS OTHERWISE SPECIFIED, ALL FERROUS HANGER AND SUPPORT PRODUCTS ARE TO BE ELECTRO-GALVANIZED. HANGERS AND SUPPORTS THAT ARE IN DIRECT CONTACT WITH COPPER SHALL BE COPPER-PLATED OR PLASTIC-COATED TO PREVENT ANY ELECTROLYTIC REACTION. HANGERS AND SUPPORTS FOR INSULATED PIPING ARE TO BE SIZED TO FIT AROUND THE INSULATION AND THE INSULATION JACKET.
23. VIBRATION ISOLATION
- 23.1. PROVIDE VIBRATION ISOLATION FOR ALL ROTATING AND VIBRATING MECHANICAL EQUIPMENT, SELECTED AND SIZED IN ACCORDANCE WITH ASHRAE RECOMMENDATIONS FOR THE EQUIPMENT TYPE, WEIGHT, ROTATIONAL SPEED, AND SUPPORTING STRUCTURE. ISOLATORS TO BE NEOPRENE PADS, NEOPRENE MOUNTS, OR SPRING ISOLATORS AS REQUIRED TO ACHIEVE THE SPECIFIED ISOLATION EFFICIENCY, EACH COMPLETE WITH LEVELLING AND ANCHORING PROVISIONS. PROVIDE FLEXIBLE PIPE CONNECTORS AT EQUIPMENT CONNECTIONS WHERE REQUIRED TO PREVENT TRANSMISSION OF VIBRATION TO CONNECTED PIPING. SUPPORT ISOLATED PIPING ADJACENT TO ISOLATED EQUIPMENT ON RESTLENT HANGERS. ACCEPTABLE MANUFACTURERS: MASON INDUSTRIES; KINETICS NOISE CONTROL; VIBRO-ACOUSTICS.
24. PIPE ESCUTCHEON PLATES
- 24.1. PROVIDE ESCUTCHEON PLATES SUITABLY SECURED OVER ALL EXPOSED PIPING PASSING THROUGH FINISHED BUILDING SURFACES. A FINISHED BUILDING SURFACE IS ANY SURFACE WITH A FACTORY FINISH OR THAT RECEIVES A SITE APPLIED FINISH. PIPE ESCUTCHEON PLATES TO BE ONE-PIECE CHROME PLATED BRASS OR #4 FINISH TYPE 302 STAINLESS STEEL PLATES WITH MATCHING SCREWS FOR ATTACHMENT TO THE BUILDING SURFACE, EACH PLATE SIZED TO COMPLETELY COVER THE PIPE SLEEVE OR BUILDING SURFACE OPENING, AND TO FIT TIGHTLY AROUND THE PIPE OR PIPE INSULATION.
25. ACCESS DOORS
- 25.1. ACCESS DOORS TO BE RUST RESISTANT STEEL DOOR PANELS WITH CONCEALED HINGES AND POSITIVE LOCKING AND SELF-OPENING SCREWDRIVER OPERATED LOCK. WALL TYPE FRAME TO BE SUITABLE FOR WALL INSTALLATION AND HAVE INTEGRAL KEYS FOR PLASTER WALLS. DOORS IN TILE WALL TO BE STAINLESS STEEL. DOORS IN CEILINGS TO BE SUITABLE FOR PLASTER CEILING WITH ONLY FRAME JOINT SHOWING. ALL OTHER DOORS TO BE PRIME PAINTED STEEL. ACCESS DOORS IN FIRE RATED COVERINGS, WALLS, PARTITIONS, STRUCTURES, ETC., TO BE ULC LISTED AND LABELED AND OF A RATING

- TO MAINTAIN FIRE SEPARATION INTEGRITY. SUPPLY ACCESS DOORS TO GIVE ACCESS TO MECHANICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION, EXCEPT AS OTHERWISE SPECIFIED HEREIN. ACCESS DOORS TO BE RUST RESISTANT STEEL DOOR PANELS WITH CONCEALED HINGES AND POSITIVE LOCKING AND SELF-OPENING SCREWDRIVER OPERATED LOCK. WALL TYPE FRAME TO BE SUITABLE FOR WALL INSTALLATION AND HAVE INTEGRAL KEYS FOR PLASTER WALLS. DOORS IN TILE WALL TO BE STAINLESS STEEL. DOORS IN CEILINGS TO BE SUITABLE FOR PLASTER CEILING WITH ONLY FRAME JOINT SHOWING. ALL OTHER DOORS TO BE PRIME PAINTED STEEL. ACCESS DOORS IN FIRE RATED COVERINGS, WALLS, PARTITIONS, STRUCTURES, ETC., TO BE ULC LISTED AND LABELED AND OF A RATING TO MAINTAIN FIRE SEPARATION INTEGRITY. SUPPLY ACCESS DOORS TO GIVE ACCESS TO MECHANICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION, EXCEPT AS OTHERWISE SPECIFIED HEREIN. ACCESS DOORS TO BE RUST RESISTANT STEEL DOOR PANELS WITH CONCEALED HINGES AND POSITIVE LOCKING AND SELF-OPENING SCREWDRIVER OPERATED LOCK. WALL TYPE FRAME TO BE SUITABLE FOR WALL INSTALLATION AND HAVE INTEGRAL KEYS FOR PLASTER WALLS. DOORS IN TILE WALL TO BE STAINLESS STEEL. DOORS IN CEILINGS TO BE SUITABLE FOR PLASTER CEILING WITH ONLY FRAME JOINT SHOWING. ALL OTHER DOORS TO BE PRIME PAINTED STEEL. ACCESS DOORS IN FIRE RATED COVERINGS, WALLS, PARTITIONS, STRUCTURES, ETC., TO BE ULC LISTED AND LABELED AND OF A RATING TO MAINTAIN FIRE SEPARATION INTEGRITY. SUPPLY ACCESS DOORS TO GIVE ACCESS TO MECHANICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION, EXCEPT AS OTHERWISE SPECIFIED HEREIN. ACCESS DOORS TO BE RUST RESISTANT STEEL DOOR PANELS WITH CONCEALED HINGES AND POSITIVE LOCKING AND SELF-OPENING SCREWDRIVER OPERATED LOCK. WALL TYPE FRAME TO BE SUITABLE FOR WALL INSTALLATION AND HAVE INTEGRAL KEYS FOR PLASTER WALLS. DOORS IN TILE WALL TO BE STAINLESS STEEL. DOORS IN CEILINGS TO BE SUITABLE FOR PLASTER CEILING WITH ONLY FRAME JOINT SHOWING. ALL OTHER DOORS TO BE PRIME PAINTED STEEL. ACCESS DOORS IN FIRE RATED COVERINGS, WALLS, PARTITIONS, STRUCTURES, ETC., TO BE ULC LISTED AND LABELED AND OF A RATING
26. MECHANICAL WORK IDENTIFICATION
- 26.1. PROVIDE AN IDENTIFICATION NAMEPLATE FOR EACH NEW PIECE OF EQUIPMENT, INCLUDING ITEMS SUCH AS CONTROL VALVES, MOTORIZED DAMPERS, INSTRUMENTS, AND SIMILAR PRODUCTS. IF AN EXISTING VALVE TAG CHART IS AVAILABLE AT THE SITE, VALVE TAG NUMBERING IS TO BE AN EXTENSION OF EXISTING NUMBERING AND THE NEW VALVE TAG CHART IS TO INCORPORATE THE EXISTING CHART. PROVIDE PIPE IDENTIFICATION LABELS TO IDENTIFY SYSTEM AND DIRECTION OF FLOW. PROVIDE DUCTWORK IDENTIFICATION WITH MYLAR STENCILS TO IDENTIFY SYSTEM AND DIRECTION OF FLOW.
27. FIELD PAINTING
- 27.1. PREPARE AND FIELD PAINT EXPOSED BARE FERROUS PIPING, HANGERS, SUPPORTS, AND BARE G60 GALVANIZED DUCTWORK DESIGNATED TO BE FINISH PAINTED. PREPARE SURFACES IN ACCORDANCE WITH SSPC REQUIREMENTS. REMOVE OIL, GREASE, AND LOOSE MATERIAL AND APPLY ONE PRIMER COAT COMPATIBLE WITH THE SUBSTRATE FOLLOWED BY A MINIMUM OF TWO FINISH COATS. COLOUR AND SHEEN AS DIRECTED BY THE CONSULTANT OR TO MATCH ADJACENT FINISHES. DO NOT PAINT NAMEPLATES, IDENTIFICATION LABELS, OR MOVING PARTS.
28. GENERAL PIPING AND DUCTWORK INSTALLATION REQUIREMENTS
- 28.1. UNLESS OTHERWISE SPECIFIED, LOCATE AND ARRANGE HORIZONTAL PIPES AND DUCTS ABOVE OR AT THE CEILING OR FLOORS ON WHICH THEY ARE SHOWN, ARRANGED SO THAT UNDER CONSIDERATION OF ALL OTHER WORK IN THE AREA, THE MAXIMUM CEILING HEIGHT AND/OR USABLE SPACE IS MAINTAINED. IF REQUIRED TO MAINTAIN CEILING HEIGHTS, REROUTE AND/OR RESIZE DUCTWORK, WITH CONSULTANT'S APPROVAL. INSTALL ALL PIPES AND DUCTS PARALLEL TO BUILDING LINES AND TO EACH OTHER. NEATLY GROUP AND ARRANGE ALL EXPOSED WORK. LOCATE ALL WORK TO PERMIT EASY ACCESS FOR SERVICE OR MAINTENANCE AS REQUIRED AND/OR APPLICABLE. LOCATE ALL VALVES, DAMPERS AND ANY OTHER EQUIPMENT WHICH WILL OR MAY NEED MAINTENANCE OR REPAIRS AND WHICH ARE TO BE INSTALLED IN ACCESSIBLE CONSTRUCTION SO AS TO BE EASILY ACCESSIBLE FROM ACCESS DOORS. WHERE VALVES, DAMPERS AND SIMILAR PIPING OR DUCTWORK ACCESSORIES OCCUR IN VERTICAL SERVICES IN SHAFTS, PIPE SPACES OR PARTITIONS, LOCATE THE ACCESSORIES AT THE FLOOR LEVEL. CAREFULLY CLEAN ALL DUCTS, PIPE AND FITTINGS PRIOR TO INSTALLATION. TEMPORARILY CAP OR PLUG ENDS OF PIPE, DUCTS AND EQUIPMENT WHICH ARE OPEN AND EXPOSED DURING CONSTRUCTION. WHETHER SHOWN OR SPECIFIED ON THE DRAWINGS OR NOT, PROVIDE SCREWED UNIONS OR FLANGES IN ALL PIPING CONNECTIONS TO EQUIPMENT AND IN REGULAR INTERVALS IN LONG (IN EXCESS OF 12 M [40']) PIPING RUNS TO PERMIT REMOVAL OF SECTIONS OF PIPING. UNLESS OTHERWISE SPECIFIED AND EXCEPT WHERE SPACE LIMITATIONS DO NOT PERMIT, ALL PIPING ELBOWS ARE TO BE LONG RADIUS. ECCENTRIC REDUCERS ARE TO BE INSTALLED WITH THE STRAIGHT SIDE AT THE TOP OF THE PIPING. INSTALL PIPING AND DUCTWORK WHICH ARE TO BE INSULATED SO THAT THEY HAVE SUFFICIENT CLEARANCE TO PERMIT INSULATION AND FINISH TO BE APPLIED CONTINUOUSLY AND UNBROKEN AROUND THE PIPE OR DUCT, EXCEPT FOR DUCTWORK AT FIRE BARRIERS, IN WHICH CASE THE INSULATION WILL BE TERMINATED AT EACH SIDE OF THE DUCT FIRE DAMPER.
29. DISCONNECTION AND REMOVAL OF EXISTING MECHANICAL WORK
- 29.1. WHERE INDICATED ON DRAWINGS, DISCONNECT AND REMOVE EXISTING MECHANICAL WORK, INCLUDING HANGERS, SUPPORTS, INSULATION, ETC. DISCONNECT AT POINT OF SUPPLY, REMOVE OBSOLETE CONNECTING SERVICES AND MAKE SYSTEM SAFE. CUT BACK OBSOLETE PIPING BEHIND FINISHES AND CAP WATER-TIGHT UNLESS OTHERWISE SPECIFIED. SCOPE AND EXTENT OF DEMOLITION OR REVISION WORK IS ONLY GENERALLY INDICATED ON DRAWINGS. ESTIMATE SCOPE, EXTENT AND COST OF WORK AT SITE DURING BIDDING PERIOD SITE VISIT(S). CLAIMS FOR EXTRA COSTS FOR DEMOLITION WORK NOT INCLUDING TESTING, ADJUSTING AND BALANCING AND REMOVAL OF EXISTING MECHANICAL DRAWINGS AND SITE CONDITIONS, NOTIFY CONSULTANT WHO WILL ISSUE A SITE INSTRUCTION. IF, IN THE OPINION OF CONSULTANT, DISCREPANCIES BETWEEN MECHANICAL DRAWINGS AND ACTUAL SITE CONDITIONS ARE OF A MINOR NATURE, REQUIRED MODIFICATIONS ARE TO BE DONE AT NO ADDITIONAL COST. WHERE EXISTING MECHANICAL SERVICES EXTEND THROUGH, OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES IN OPERATION. INCLUDE FOR REROUTING EXISTING SERVICES CONCEALED BEHIND EXISTING FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND NEW OR EXISTING FINISHES.
30. INTERRUPTION TO AND SHUTDOWN OF MECHANICAL SERVICES AND SYSTEMS
- 30.1. CO-ORDINATE SHUT-DOWN AND INTERRUPTION TO EXISTING MECHANICAL SYSTEMS WITH OWNER. GENERALLY, SHUT-DOWNS MAY BE PERFORMED ONLY DURING TIMES APPROVED BY THE OWNER. UPON AWARD OF CONTRACT, SUBMIT A LIST OF ANTICIPATED SHUT-DOWN TIMES AND THEIR MAXIMUM DURATION. PRIOR TO EACH SHUT-DOWN OR INTERRUPTION, INFORM OWNER IN WRITING 5 BUSINESS DAYS IN ADVANCE OF PROPOSED SHUT-DOWN OR INTERRUPTION AND OBTAIN WRITTEN CONSENT TO PROCEED. DO NOT SHUT-DOWN OR INTERRUPT ANY SYSTEM OR SERVICE WITHOUT SUCH WRITTEN CONSENT. PERFORM WORK ASSOCIATED WITH SHUT-DOWNS AND INTERRUPTIONS AS CONTINUOUS OPERATIONS TO MINIMIZE SHUT-DOWN TIME AND TO REINSTATE SYSTEMS AS SOON AS POSSIBLE, AND, PRIOR TO ANY SHUT-DOWN, ENSURE MATERIALS AND LABOUR REQUIRED TO COMPLETE THE WORK FOR WHICH SHUT-DOWN IS REQUIRED ARE AVAILABLE AT SITE. DRAIN SYSTEMS AS REQUIRED TO EXECUTE WORK. PIPE FREEZING MAY BE USED TO CONNECT NEW PIPING TO EXISTING PIPING WITHOUT DRAINING EXISTING PIPING IF APPLICABLE. PIPE FREEZE EQUIPMENT IS TO BE EQUAL TO "MORDIC FREEZE" EQUIPMENT SUPPLIED BY MAG TOOL INC. OR RIGID TOOL CO. RIGID "SUPERFREEZE".
31. SEISMIC CONTROL AND RESTRAINT
- 31.1. UNLESS OTHERWISE SPECIFIED, SEISMIC CONTROL AND RESTRAINTS ARE TO BE DESIGNED IN ACCORDANCE WITH CODE REQUIREMENTS, ANSI/SMACNA SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS, SMACNA/ASHRAE SERVICE RESTRAINT APPLICATIONS CO-ROM, AND THE P.P.I.C. MANUAL GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS, ALL OF WHICH ARE TO FORM A PART OF THIS SECTION. SEISMIC CONTROL AND RESTRAINTS FOR FIRE PROTECTION PIPING AND EQUIPMENT ARE TO BE IN ACCORDANCE WITH NFPA REQUIREMENTS. WHEN SPECIFIED AND/OR REQUIRED, DESIGN IS ALSO TO INCLUDE FACTORY MUTUAL REQUIREMENTS. RESTRAINT PRODUCTS MUST BE TESTED IN AN INDEPENDENT TESTING LABORATORY, OR CERTIFIED BY SEISMIC CONSULTANT, TO CONFIRM RESTRAINT PRODUCTS MEET REQUIREMENTS OF THIS SECTION, I.E. DYNAMIC ULTIMATE LIMIT LOAD STATE AS REQUIRED BY CODE, "FAIL SAFE" DESIGN, ETC. IF PARTICULAR TESTS ARE CARRIED OUT TO REPRESENT A RESTRAINT TYPE, TEST IS TO BE VALID FOR THE FULL LOAD RANGE OF THE RESTRAINT. SUBMIT SUCH TESTS OR CERTIFICATION WHEN REQUESTED. RETAIN AND PAY FOR SERVICES OF AN EXPERIENCED SEISMIC CONSULTANT WHO IS A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE JURISDICTION OF THE WORK AND A MEMBER IN GOOD STANDING OF A PROFESSIONAL ENGINEERS ASSOCIATION IN THE JURISDICTION OF THE WORK. SEISMIC CONSULTANT IS TO: DETERMINE PROPER SEISMIC HAZARD LEVEL, DESIGN, RECOMMEND, AND REVIEW PROPOSED MECHANICAL WORK SEISMIC RESTRAINT SHOP, PLACEMENT AND SECURING DRAWINGS, AND SIGN AND STAMP DRAWINGS PRIOR TO SUBMITTAL FOR REVIEW AS SPECIFIED BELOW; SUPERVISE INSTALLATION OF MECHANICAL WORK SEISMIC RESTRAINT AND, WHEN WORK IS COMPLETE, CERTIFY IN WRITING THAT SEISMIC RESTRAINT WORK HAS BEEN INSTALLED IN ACCORDANCE WITH SIGNED, STAMPED AND REVIEWED DRAWINGS; PREPARE AND SUBMIT TO MUNICIPALITY AND AUTHORITIES HAVING JURISDICTION, ON A FORM APPROVED BY MUNICIPALITY AND AUTHORITIES HAVING JURISDICTION, AT THE BEGINNING OF SEISMIC RESTRAINT WORK AND WHEN WORK IS COMPLETE, ORIGINAL SIGNED AND SEALED LETTERS OF ASSURANCE FOR DESIGN, INSTALLATION AND FIELD REVIEW OF SEISMIC RESTRAINT WORK.
32. PLUMBING, GENERAL
- 32.1. UNLESS OTHERWISE SPECIFIED, SLOPE HORIZONTAL DRAINAGE PIPING IN ACCORDANCE WITH OBC, PROVIDE ALL VENTING IN ACCORDANCE WITH ONTARIO BUILDING CODE (LATEST EDITION). PROVIDE NON-CONDUCTING TYPE CONNECTION WHEREVER CONTRASTING METALS ARE JOINED.
33. PIPE MATERIALS
- 33.1. DOMESTIC WATER PIPING INSIDE BUILDING AND ABOVE GROUND IN SIZES TO 100mm (4") DIAMETER: TYPE "L" HARD DRAIN SEAMLESS COPPER TO ASTM B88, COMPLETE WITH COPPER SOLDER TYPE FITTINGS TO ASME/ANSI B16.18 AND SOLDERED JOINTS USING THE CANADA METAL CO. LTD. "SILVABRITE 100" OR EQUAL LEAD-FREE SOLDER FOR COLD WATER PIPE, AND 95% TIN / 5% ANTIMONY OR "SILVABRITE 100" SOLDER FOR OTHER SERVICES.
- 33.2. SANITARY DRAINAGE, CONDENSATE AND VENT PIPING INSIDE BUILDING AND ABOVE GROUND IN SIZES LESSER THAN OR EQUAL TO 65mm (2-1/2") DIAMETER: TYPE DW HARD TEMPER COPPER TO ASTM B306, WITH FORGED COPPER SOLDER TYPE DRAINAGE FITTINGS AND 50% LEAD - 50% TIN SOLDER JOINTS.
- 33.3. SANITARY DRAINAGE AND VENT PIPING INSIDE BUILDING AND ABOVE GROUND IN SIZES GREATER THAN OR EQUAL TO 75mm (3") DIAMETER: CLASS 4000 CAST IRON PIPE, FITTINGS, AND MECHANICAL COUPLING JOINTS TO CAN/CSA B70.
- 33.4. CONDENSATE DRAINAGE PIPING: COPPER - SOLDER JOINT: TYPE DW HARD TEMPER TO ASTM B306, WITH FORGED COPPER SOLDER TYPE DRAINAGE FITTINGS AND 50% LEAD - 50% TIN SOLDER JOINTS.
34. PIPE INSULATION
- 34.1. DOMESTIC COLD WATER PIPING: PRE-MOULDED MINERAL FIBRE, 25mm (1") THICK, RIGID, SECTIONAL, SLEEVE TYPE INSULATION TO ASTM C547, WITH A FACTORY APPLIED VAPOUR BARRIER JACKET.
- 34.2. DOMESTIC HOT WATER PIPING: MINERAL FIBRE, 25mm (1") THICK, WITH A GENERAL PURPOSE JACKET.
- 34.3. CONDENSATE DRAINAGE PIPING: 25mm thick MINERAL FIBRE INSULATION COMPLETE WITH FACTORY APPLIED VAPOUR SEAL JACKET AND SELF SEAL LAP JOINT.
- 34.4. BARRIER FREE LAVATORY PIPING INSULATION KIT: REMOVABLE, FLEXIBLE, WHITE MOULDED PLASTIC INSULATION KIT FOR BARRIER FREE LAVATORY DRAIN PIPING AND POTABLE WATER SUPPLIED EXPOSED UNDER LAVATORY. EQUAL TO MCGUIRE MANUFACTURING CO. "PRO-WRAP".

GENERAL NOTES:

- Do not scale drawings.
- The contractor shall check and verify all dimensions on site and report all discrepancies to the Architect.
- All work shall comply with the Ontario Building Code and the requirements of all authorities having jurisdiction.
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SEAL:



DRAWING REVISIONS

No.	Issued for:	Date:
01	Issued for Coordination	2026-08-12
02	Issued for Permit	2026-09-04
03	Re-issued for Permit	2026-10-02

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DRAWING TITLE:

SPECIFICATIONS

PROJECT:

DWG NO:

2516

M8

36. DOMESTIC WATER SHUTOFF VALVES
- 36.1. CLASS 600, 4140 KPA (600 PSI) WOG RATED FULL PORT BALL TYPE VALVES, EACH COMPLETE WITH A FORGED BRASS BODY WITH SOLDER ENDS, FORGED BRASS CAP, BLOWOUT-PROOF STEM, SOLID FORGED BRASS CHROME PLATED BALL, "TEFLON" OR "PTFE" SEAT, AND A REMOVABLE LEVER HANDLE. VALVES IN INSULATED PIPING ARE TO BE COMPLETE WITH STEM EXTENSIONS.
37. CLEANOUTS
- 37.1. PROVIDE CLEANOUTS AT ALL LOCATIONS SHOWN ON DRAWINGS AND WHERE REQUIRED BY CODE. CLEANOUTS ARE TO BE SAME DIAMETER AS PIPE IN PIPING TO 100 MM (4") DIA., AND NOT LESS THAN 100 MM (4") DIA. IN PIPING LARGER THAN 100 MM (4") DIA. WHERE CLEANOUTS OCCUR IN HORIZONTAL INACCESSIBLE UNDERGROUND PIPING, EXTEND CLEANOUT TY FITTING UP TO FLOOR, AND PROVIDE A CLEANOUT TERMINATION SET FLUSH WITH FINISHED FLOOR. WHERE CLEANOUT TERMINATIONS OCCUR IN FINISHED AREAS, CONFIRM LOCATIONS PRIOR TO ROUGH-IN AND ARRANGE PIPING TO SUIT. CLEANOUTS SHALL BE CAST IRON BODY WITH BRASS FLOOR PLATE.
38. PIPE LEAKAGE TESTING
- 38.1. BEFORE PIPING HAS BEEN INSULATED OR CONCEALED, AND BEFORE EQUIPMENT, FIXTURES AND FITTINGS HAVE BEEN CONNECTED, TEST PIPING FOR LEAKAGE. TESTS ARE TO BE WITNESSED BY CONSULTANT AND/OR OWNER'S REPRESENTATIVE, AND, WHERE REQUIRED, REPRESENTATIVES OF GOVERNING AUTHORITIES. GIVE AMPLIFIED NOTICE OF TESTS IN WRITING AND VERIFY ATTENDANCE. HAVE COMPLETED TEST REPORT SHEETS DATED AND SIGNED BY THOSE PRESENT TO CONFIRM PROPER TEST RESULTS. GRAVITY DRAINAGE AND VENT PIPING: TEST PIPING IN ACCORDANCE WITH LOCAL GOVERNING BUILDING CODE. AFTER FIXTURES AND FITTINGS ARE SET AND PIPES ARE CONNECTED TO BUILDING DRAIN OR DRAINS, TURN ON WATER INTO PIPE, FIXTURES, FITTINGS AND TRAPS IN ORDER TO DETECT ANY IMPERFECT MATERIAL OR WORKMANSHIP. PERFORM A SMOKE TEST IF REQUIRED BY LOCAL GOVERNING AUTHORITIES. DOMESTIC WATER PIPING: TEST PIPING WITH COLD WATER AT A PRESSURE OF 1-1/2 TIMES NORMAL WORKING PRESSURE AND MAINTAIN PRESSURE FOR A MINIMUM OF 2 HOURS.
39. FLUSHING, CLEANING AND DISINFECTING
- 39.1. FLUSH AND DISINFECT ALL NEW AND/OR RENOVATED DOMESTIC WATER PIPING AFTER LEAKAGE TESTING IS COMPLETE. ISOLATE NEW PIPING FROM EXISTING PIPING PRIOR TO FLUSHING AND DISINFECTING PROCEDURES. FLUSH PIPING UNTIL ALL FOREIGN MATERIALS HAVE BEEN REMOVED AND FLUSHED WATER IS CLEAR. PROVIDE CONNECTIONS AND PUMPS AS REQUIRED. OPEN AND CLOSE VALVES, FAUCETS, HOSE OUTLETS, AND SERVICE CONNECTIONS TO ENSURE THOROUGH FLUSHING.
40. PLUMBING FIXTURES
- 40.1. CONFIRM EXACT LOCATION OF PLUMBING FIXTURES AND TRIM PRIOR TO ROUGH-IN. REFER TO ARCHITECTURAL PLAN AND ELEVATION DRAWINGS. CHECK, AND TEST OPERATION OF EACH FIXTURE AND FITTING WHEN INSTALLATION IS COMPLETE. ADJUST OR REPAIR AS REQUIRED. FOR BARRIER-FREE FIXTURES, COMPLY WITH MOUNTING HEIGHT AND OTHER REQUIREMENTS OF APPLICABLE CODES AND STANDARDS. PROVIDE FIXTURE CARRIERS WHERE REQUIRED. FIXTURE CARRIERS ARE TO BE SUITABLE IN ALL RESPECTS FOR THE FIXTURE THEY SUPPORT AND CONSTRUCTION IN WHICH THEY ARE LOCATED. CONNECT PLUMBING FIXTURES AND FITTINGS WITH PIPING SIZED IN ACCORDANCE WITH DRAWING SCHEDULE. REFER TO MANUFACTURER'S PUBLISHED CONNECTION (ROUGH-IN) REQUIREMENTS. WHERE MANUFACTURER REQUIRES PIPING CONNECTIONS LARGER THAN INDICATED ON SCHEDULE, PROVIDE PIPING ACCORDINGLY. PROVIDE SHUT-OFF VALVES TO ISOLATE DOMESTIC WATER SUPPLY TO EACH FIXTURE. INSTALL SHUT-OFF VALVES WITH HANDLES UPRIGHT OR HORIZONTAL, NOT INVERTED, AND LOCATED FOR EASY ACCESS. EXPOSED SUPPLIES FOR FIXTURES WHICH DO NOT HAVE SUPPLY TRIM/FITTINGS WITH INTEGRAL STOPS, I.E. LAVATORIES, ARE TO BE SOLID CHROME PLATED BRASS ANGLE VALVES WITH SCREWDRIVER STOPS FOR PUBLIC AREAS, WHEEL HANDLE STOPS FOR PRIVATE AREAS, FLEXIBLE STAINLESS STEEL RISERS, AND STAINLESS STEEL OR CHROME PLATED STEEL ESCUTCHEONS, ALL ARRANGED AND SIZED TO SUIT FIXTURE. EXPOSED TRAPS FOR FIXTURES NOT EQUIPPED WITH INTEGRAL TRAPS, SUCH AS LAVATORY SINKS, ARE TO BE ADJUSTABLE CHROME PLATED CAST BRASS "P" TRAP WITH CLEANOUTS, MINIMUM #17 GAUGE CHROME PLATED TUBULAR EXTENSIONS, AND CHROME PLATED ESCUTCHEONS, ALL TO SUIT FIXTURE TYPE AND DRAIN CONNECTION. CONCEALED TRAPS FOR FIXTURES NOT EQUIPPED WITH INTEGRAL TRAPS, SUCH AS COUNTER SINKS, ARE TO BE ADJUSTABLE CAST BRASS WITH CLEANOUT PLUGS, ALL TO SUIT FIXTURE TYPE AND DRAIN CONNECTION. FLOOR FLANGES FOR FLOOR MOUNTED WATER CLOSETS ARE TO BE CAST IRON OR BRASS, SECURED TO FLOOR TO PREVENT MOVEMENT AND COMPLETE WITH A WAX SEAL AND BRASS OR STAINLESS STEEL BOLTS, NUTS, AND WASHERS. PLASTIC FLOOR FLANGES WILL NOT BE ACCEPTABLE.
41. FLOOR DRAINS
- 41.1. UNLESS OTHERWISE SPECIFIED OR INDICATED, FLOOR DRAINS ARE TO BE VANDAL-PROOF DRAINS IN ACCORDANCE WITH DRAWING SYMBOL LIST. EACH COMPLETE WITH A CAST IRON BODY AND A TRAP SEAL PRIMER CONNECTION. CAST IRON COMPONENTS ARE TO BE FACTORY FINISHED WITH LATEX BASED PAINT COATING. FLOOR DRAINS IN AREAS WITH A TILE OR SHEET VINYL FLOOR FINISH ARE TO BE AS ABOVE BUT WITH A SQUARE GRATE IN LIEU OF A ROUND GRATE. ACCEPTABLE MANUFACTURERS: MATTS INDUSTRIES (CANADA) LTD.; JAY R. SMITH MANUFACTURING CO.; ZURN INDUSTRIES LTD.; MIFAB INC.
42. TRAP SEAL PRIMERS
- 42.1. PROVIDE A TRAP SEAL PRIMER FOR EACH FLOOR DRAIN AND TRAP SUBJECT TO EVAPORATION OF THE TRAP SEAL. PRIMERS TO BE AUTOMATIC PRESSURE ACTIVATED TYPE CONFORMING TO ASSE 1018 OR ASSE 1044, COMPLETE WITH ACCESS AND, WHERE MULTIPLE DRAINS ARE SERVED, A DISTRIBUTION UNIT. CONNECT PRIMER LINES TO THE DESIGNATED TRAP PRIMER CONNECTION ON EACH DRAIN AND CONCEAL IN WALL OR FLOOR CONSTRUCTION WITH ACCESS PROVIDED. ACCEPTABLE MANUFACTURERS: PRECISION PLUMBING PRODUCTS (PPP INC.); MIFAB; SIOUX CHIEF.
43. THERMOSTATIC MIXING VALVES
- 43.1. PROVIDE THERMOSTATIC TEMPERING (MIXING) VALVES, AT INDIVIDUAL AND MULTIPLE LAVATORY FIXTURE LOCATIONS WHERE HOT WATER SUPPLY TEMPERATURE MUST BE AUTOMATICALLY CONTROLLED TO PREVENT SCALD HAZARDS WHILE MAINTAINING WATER TEMPERATURES SUITABLE FOR SAFE, ECONOMICAL USE; VALVE SHALL INCORPORATE A THERMAL ACTUATOR THAT SENSES OUTLET WATER TEMPERATURE AND AUTOMATICALLY COMPENSATES FOR FLUCTUATIONS CAUSED BY CHANGES IN SUPPLY LINE WATER TEMPERATURE AND PRESSURE, BLENDING HOT AND COLD WATER TO MAINTAIN A STABLE, PRE-SET OUTLET TEMPERATURE; VALVE BODY SHALL BE SOLID LEAD-FREE* BRASS WITH CORROSION-RESISTANT INTERNAL COMPONENTS, INTEGRAL INLET CHECKS, AND INLET SCREENS TO PREVENT DEBRIS FROM ACCUMULATION BETWEEN HOT AND COLD SUPPLY LINES; VALVE SHALL BE ADJUSTABLE TO PREVENT TEMPERATURE ADJUSTMENT HAZARD THAT IS SIMPLE TO ADJUST AND EQUIPPED WITH A LOCKING MECHANISM TO PREVENT UNAUTHORIZED ADJUSTMENT OR TAMPERING; PROVIDE UNION-TYPE END CONNECTIONS AS INDICATED ON THE DRAWINGS OR AS REQUIRED TO SUIT PIPING MATERIAL; VALVE SHALL BE LISTED TO ASSE 1069 AND ASSE 1070, CERTIFIED TO CSA B125, AND SHALL COMPLY WITH NSF/ANSI/CAN 372 AND APPLICABLE LEAD-FREE PIPING PRODUCT REQUIREMENTS (*LESS THAN 0.25% LEAD CONTENT, WEIGHTED AVERAGE).
44. DUCTWORK
- 44.1. GALVANIZED STEEL SHEET IS TO BE HOT DIPPED IN ACCORDANCE WITH REQUIREMENTS OF ASTM A653. G60 GALVANIZING FOR BARE UNCOATED DUCT TO BE FINISH PAINTED. G90 FOR ALL OTHER GALVANIZING.
- 44.2. RECTANGULAR: LOCK FORMING GRADE HOT DIP GALVANIZED STEEL, ASTM A653, SHOP FABRICATED, MINIMUM #26 GAUGE.
- 44.3. ROUND: FACTORY MACHINE FABRICATED, SPIRAL, MECHANICALLY LOCKED FLAT SEAM, SINGLE WALL DUCT, FITTINGS AND COUPLINGS.
- 44.4. PROVIDE MAXIMUM 3 M (10') LONG LENGTHS OF FLEXIBLE DUCTWORK FOR CONNECTIONS BETWEEN GALVANIZED STEEL DUCT MAINS AND BRANCHES, AND NECKS OF CEILING GRILLES AND DIFFUSERS. FLEXIBLE ROUND DUCTWORK SHALL BE SPIRALLY WOUND, SEMI-RIGID, SELF-SUPPORTING CORRUGATED ALUMINUM DUCT WITH CONTINUOUS TRIPLE LOCK SEAMS, SMACNA FORM "M-I", ULC S110 LISTED AND LABELLED AS A CLASS 1 AIR DUCT, CONSTRUCTED OF DEAD SOFT ALUMINUM STRIP, INSULATED IN 3 M (10') LENGTHS AND FACTORY COVERED WITH 40 MM (1-1/2") THICK, 12 KG/M3 (0.75 LB/FT3) DENSITY FIBREGLASS SUPPLIED WITH A VINYL JACKET MEETING 25/50 FLAME SPREAD AND SMOKE DEVELOPED REQUIREMENTS TESTED IN ACCORDANCE WITH CAN/ULC S102.
- 44.5. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA, EXCEPT FOR ROUND DUCT WITH SELF-SEALING GASKETED FITTINGS AND COUPLINGS WHICH DOES NOT REQUIRE SUE TYPE APPLIED SEALANT. APPLY SEALANTS BY BRUSH OR GUN TO CLEANED METAL SURFACES. WHERE BARE DUCTWORK IS EXPOSED APPLY NEAT UNIFORM LINES OF SEALANT. RANDOMLY BRUSHED, SLOPPY LOOKING SEALANT APPLICATIONS WILL BE REJECTED AND MUST BE REPAIRED OR REPLACED WITH A NEAT APPLICATION OF SEALANT.
- 44.6. CONSTRUCT AND INSTALL DUCTWORK IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE TO SUIT DUCT PRESSURE CLASS DESIGNATION AND DUCT SYSTEM SEALING AS FOLLOWS:
- | SYSTEM | PRESSURE CLASS | SEAL CLASS |
|------------------------------------|----------------|------------|
| EXHAUST AIR | -250 PA | C |
| RETURN AIR | -250 PA | C |
| CONSTANT VOLUME SUPPLY AIR | +500 PA | C |
| SUPPLY AIR UPSTREAM OF VAV BOXES | +1000 PA | A |
| SUPPLY AIR DOWNSTREAM OF VAV BOXES | +500 PA | C |
- 44.7. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INTERNAL DIMENSIONS. MAKE ALLOWANCES FOR INTERNAL INSULATION. CONFIRM ROUTING OF ALL DUCTWORK AT SITE AND SITE MEASURE DUCTWORK PRIOR TO FABRICATION. DUCT DIMENSIONS MAY BE REVISED TO SUIT SITE ROUTING AND BUILDING ELEMENT REQUIREMENTS, IF DIMENSION REVISIONS ARE REVIEWED WITH AND APPROVED BY CONSULTANT. DUCT ROUTING AND/OR DIMENSION REVISIONS TO SUIT CONDITIONS AT SITE ARE NOT GROUNDS FOR A CLAIM FOR AN EXTRA COST.
45. DUCTWORK SUPPORTS
- 45.1. SUPPORT HORIZONTAL RECTANGULAR DUCTS INSIDE BUILDING IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, BUT USE TRAPEZE HANGERS WITH, UNLESS OTHERWISE SPECIFIED, GALVANIZED STEEL CHANNELS, AND GALVANIZED STEEL HANGER RODS FOR EXPOSED DUCTS AND CONCEALED DUCTS WIDER THAN 500 MM (20"). SUPPORT HARDWARE CONSTRUCTED OF SAME MATERIAL AS DUCT.
- 45.2. SUPPORT ROUND AND FLAT Oval DUCTS INSIDE BUILDING IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, BUT, UNLESS OTHERWISE SPECIFIED, FOR BOTH UNINSULATED AND INSULATED DUCTS EXPOSED IN FINISHED AREAS, USE BANDS AND SECURE AT TOP OF DUCT TO A HANGER ROD, ALL SIMILAR TO DUCTMATE CANADA LIMITED TYPE "BA". IF DUCT IS INSULATED, SIZE STRAP TO SUIT DIAMETER OF INSULATED DUCT. UNLESS OTHERWISE SPECIFIED, DUCT SUPPORT HARDWARE FOR METAL DUCT IS CONSTRUCTED OF SAME MATERIAL AS DUCT.
46. DUCTWORK LEAKAGE TESTING
- 46.1. DUCTWORK LEAKAGE IS NOT TO EXCEED FOLLOWING: DUCTWORK TO 2" W.C. CLASS, 1% OF TOTAL AIR QUANTITY HANDLED BY RESPECTIVE FANS; DUCTWORK EXCEEDING 2" W.C. CLASS, 2% OF TOTAL AIR QUANTITY HANDLED BY RESPECTIVE FANS. LEAKAGE TESTING IS TO BE PERFORMED BY THE TESTING, ADJUSTING AND BALANCING (TAB) AGENCY IN ACCORDANCE WITH SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL AND IS TO BE WITNESSED BY CONSULTANT.
47. DUCTWORK INSULATION
- 47.1. INSTALL INSULATION DIRECTLY OVER DUCTS, NOT OVER HANGERS AND SUPPORTS. INSTALL DUCT INSULATION CONTINUOUS THROUGH WALLS, PARTITIONS, AND SIMILAR SURFACES EXCEPT AT FIRE DAMPERS. WHERE EXISTING INSULATION WORK IS DAMAGED AS A RESULT OF MECHANICAL WORK, REPAIR DAMAGED INSULATION WORK TO PROJECT WORK STANDARDS. LIBERALLY APPLY ADHESIVE TO SURFACES OF CONCEALED RECTANGULAR OR Oval DUCTWORK, AND WRAP INSULATION AROUND DUCT WITH A TOP BUTT JOINT AND TIGHT SECTION TO SECTION BUTT JOINTS. PROVIDE PIN AND WASHER INSULATION FASTENERS AT 300 MM (12") CENTRES ON BOTTOM SURFACES. SECURE AND SEAL JOINTS WITH 75 MM (3") TAPE SEALANT. AT EACH HANGER TYPE DUCT HANGER, PROVIDE A 100 MM (4") WIDE FLAT LENGTH PIECE OF RIGID MINERAL FIBRE BOARD INSULATION BETWEEN DUCT AND HANGER, ACCURATELY CUT SECTIONS OF INSULATION TO FIT TIGHTLY AND COMPLETELY AROUND EXPOSED AND CONCEALED ROUND OR Oval DUCTWORK. LIBERALLY APPLY ADHESIVE TO SURFACES OF DUCT, AND WRAP INSULATION AROUND DUCT WITH A TOP BUTT JOINT AND TIGHT SECTION TO SECTION BUTT JOINTS. SEAL JOINTS WITH TAPE SEALANT. AT DUCT HANGER LOCATIONS INSTALL INSULATION BETWEEN DUCT AND HANGER AT

EACH HANGER LOCATION FOR CONCEALED DUCTWORK WHERE FLEXIBLE BLANKET INSULATION IS USED, PROVIDE 100mm (4") WIDE FULL CIRCUMFERENCE STRIP OF SEMI-RIGID BOARD TYPE DUCT INSULATION BETWEEN DUCT AND HANGER. PROVIDE RIGID BOARD TYPE INSULATION FOR CASINGS, PLenums, AND EXPOSED RECTANGULAR DUCTWORK. RIGID MINERAL FIBRE BOARD IS TO BE PRE-FORMED TO FIT OVER INSULATED SURFACES. RIGID BOARD TYPE DUCT INSULATION WITH A FACTORY FILLED REINFORCED ALUMINUM FOAM CORE AND KRAFT PAPER FACING. PROVIDE BLANKET TYPE INSULATION FOR ROUND DUCTWORK AND CONCEALED RECTANGULAR DUCTWORK. BLANKET MINERAL FIBRE IS TO BE BLANKET TYPE ROLL FORM INSULATION TO ASTM C553, 24 KG/M3 (1 LB/FT3) DENSITY, 40mm (1-1/4") THICK, WITH A FACTORY APPLIED VAPOUR BARRIER FACING. EXPOSED INSULATION TO BE COVERED IN A CANVAS JACKET, ULC LISTED AND LABELED, 25/50 FIRE/SMOKE RATED, ROLL FORM, MINIMUM 179G (6 OZ.). SUPPLY AIR DUCTWORK UP TO DIFFUSERS: MINIMUM 25mm (1") THICK RIGID BOARD OR MINIMUM 40mm (1-1/4") THICK FLEXIBLE BLANKET AS REQUIRED. UNLESS OTHERWISE SHOWN AND/OR SPECIFIED, DUCTWORK SHALL BE INSULATED WITH 25mm (1") THICK FLEXIBLE BLANKET. ALL DUCTWORK SHALL BE PROTECTED FROM CONTACT OF LAGGING ADHESIVE. ACCURATELY CUT CANVAS WITH SCISSORS OR A KNIFE. DO NOT RIP OR TEAR CANVAS TO SIZE. REMOVE LAGGING ADHESIVE SPLATTER FROM ADJACENT UNINSULATED SURFACES.

- 48.1. MINIMUM 25mm (1") THICK ACOUSTIC LINING MATERIAL MEETING 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATINGS TESTED IN ACCORDANCE WITH CAN/ULC S182, MEETING NFPA 98A, ASTM C1871, AND ASTM G21 REQUIREMENTS, NOT SUPPORTING MICROBIAL GROWTH, FLEXIBLE FOR ROUND DUCTS, BOARD TYPE FOR RECTANGULAR DUCTS, CONSISTING OF A BONDED FIBERGLASS MAT COATED ON INSIDE (AIRSIDE) FACE WITH A BLACK FIRE-RESISTANT COATING. ACCEPTABLE MANUFACTURERS: JOHNS MANVILLE; MANSION INSULATION; KNAUF INSULATION. INSTALL LINING IN ACCORDANCE WITH REQUIREMENTS OF ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, HOWEVER, FOR ALL INSTALLATIONS REGARDLESS OF VELOCITY, PROVIDE GALVANIZED STEEL NOSING CHANNELS AT LEADING AND TRAILING EDGES OF DUCT LINER SECTION IN ACCORDANCE WITH DETAIL ENTITLED "FLEXIBLE DUCT LINER INSTALLATION" FOUND IN THE ANSI/SMACNA MANUAL REFERRED TO ABOVE.
49. BALANCING DAMPERS
- 49.1. FLANGED AND DRILLED, SINGLE OR PARALLEL BLADE (DEPENDING ON DAMPER SIZE) MANUAL BALANCING DAMPERS, EACH CONSTRUCTED OF SAME MATERIAL AS CONNECTING DUCTWORK UNLESS OTHERWISE SPECIFIED, EACH DESIGNED TO MAINTAIN INTERNAL FREE AREA OF CONNECTING DUCT, AND EACH COMPLETE WITH: HEXAGONAL OR SQUARE SHAFT EXTENSION THROUGH FRAME; NON-STICK, NON-CORROSIVE SYNTHETIC BEARINGS FOR RECTANGULAR DAMPERS, FLANGE STAINLESS STEEL BEARINGS FOR ROUND DAMPERS; LINKAGE FOR MULTIPLE BLADE DAMPERS; LOCKING HAND QUADRANT DAMPER OPERATOR; 50mm (2") STANDOFF MOUNTING BRACKET FOR INSULATED DUCTS. ACCEPTABLE MANUFACTURERS: SOUTHERN FLEX; SOUTHERN FLEX; SOUTHERN FLEX; SOUTHERN FLEX. DAMPERS FOR INSULATED DUCTS SHALL BE PROVIDED WITH A LOCKING MECHANISM TO PREVENT EASY OPERATION, AND SO DAMPERS CANNOT BE MOVED OR RATTLE. RECTANGULAR DAMPERS: EQUAL TO NAILOR INDUSTRIES 1890 SERIES, MAXIMUM SIZE 1' 6" M X 1.2' H (4' X 4") FOR A SINGLE DAMPER. ROUND DAMPERS: EQUAL TO NAILOR INDUSTRIES MODEL 1890, MAXIMUM 600 MM (24") DIAMETER, EQUIPPED WITH A MINIMUM 200 MM (8") DEEP FRAME, AND BLADE STIFFENERS WHERE REQUIRED.
50. GRILLES AND DIFFUSERS
- 50.1. GRILLES AND DIFFUSERS OF TYPE, SIZE, CAPACITY, FINISH, AND ARRANGEMENT AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH DRAWING SCHEDULE, EACH EQUIPPED WITH ALL REQUIRED MOUNTING AND CONNECTION ACCESSORIES TO SUIT MOUNTING LOCATION AND APPLICATION.
51. FLEXIBLE CONNECTIONS
- 51.1. WATERPROOF, INDOOR-OUTDOOR TYPE FLEXIBLE CONNECTION MATERIAL MEETING REQUIREMENTS OF NFPA 98A, CONSISTING OF WOVEN GLASS FIBRE FABRIC COATED ON BOTH SIDES WITH SYNTHETIC RUBBER. ACCEPTABLE PRODUCTS ARE: DURO DYNE CANADA INC. "DUROLON"; DYN AIR INC. "HYPALON".
52. DUCT SYSTEM PROTECTION, CLEANING AND START-UP
- 52.1. TEMPORARILY COVER ALL OPEN ENDS OF DUCTS DURING CONSTRUCTION. REMOVE ALL DIRT AND FOREIGN MATTER FROM ENTIRE DUCT SYSTEMS AND CLEAN DUCT SYSTEM TERMINALS.
53. TESTING, ADJUSTING AND BALANCING
- 53.1. PERFORM TOTAL MECHANICAL SYSTEMS TESTING, ADJUSTING, AND BALANCING. REQUIREMENTS INCLUDE MEASUREMENT AND ESTABLISHMENT OF FLUID QUANTITIES OF MECHANICAL SYSTEMS AS REQUIRED TO MEET DESIGN SPECIFICATIONS AND COMFORT CONDITIONS, AND RECORDING AND REPORTING RESULTS. BALANCE ALL AIR SYSTEMS WHERE AIRFLOW IS GIVEN. BALANCE ALL HYDRONIC SYSTEMS WHERE WATER FLOW RATE IS GIVEN. CHECK VALVES AND DAMPERS FOR CORRECT AND LOCKED POSITION, AND TEMPERATURE CONTROL SYSTEMS FOR COMPLETENESS OF INSTALLATION. WHEREVER POSSIBLE, LOCK BALANCING DEVICES IN PLACE AT PROPER SETTING, AND PERMANENTLY MARK SETTINGS ON DEVICES. MECHANICAL SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED ARE TO BE MAINTAINED IN FULL, NORMAL OPERATION DURING EACH CYCLE OF TESTING, ADJUSTING AND BALANCING. BALANCE SYSTEMS WITHOUT DUE REGARD TO OBJECTIONABLE NOISE, WHICH IS TO BE A FACTOR WHEN ADJUSTING FAN SPEEDS AND PERFORMING TERMINAL WORK SUCH AS ADJUSTING AIR QUANTITIES. SHOULD OBJECTIONABLE NOISE OCCUR AT DESIGN CONDITIONS, IMMEDIATELY REPORT THE PROBLEM AND SUBMIT DATA, INCLUDING SOUND READINGS, TO PERMIT AN ACCURATE ASSESSMENT OF THE NOISE PROBLEM TO BE MADE. PERFORM TESTING, ADJUSTING AND BALANCING TO WITHIN $\pm 5\%$ OF DESIGN VALUES, AND MAKE AND RECORD MEASUREMENTS WITHIN $\pm 2\%$ OF ACTUAL VALUES. FOR AIR HANDLING SYSTEMS EQUIPPED WITH AIR FILTERS, TEST AND BALANCE SYSTEMS WITH SIMULATED 50% LOADED (DIRTY) FILTERS BY PROVIDING A FALSE PRESSURE DROP. UPON COMPLETION OF TESTING, ADJUSTING, AND BALANCING PROCEDURES, PREPARE REPORTS ON AABC OR NEBB FORMS. REPORTS MUST BE COMPLETE, FACTUAL, ACCURATE, AND LEGIBLE. SUBMIT COMPLETE REPORT IN PDF FORM. AFTER THE FINAL TESTING AND BALANCING REPORT HAS BEEN SUBMITTED, AGENCY IS TO VISIT SITE WITH CONTRACTOR TO SPOT CHECK RESULTS INDICATED ON THE BALANCING REPORT. AGENCY IS TO SUPPLY LABOUR, LADDERS, AND INSTRUMENTS TO COMPLETE SPOT CHECKS. IF RESULTS OF SPOT CHECKS DO NOT, ON A CONSISTENT BASIS, AGREE WITH THE FINAL REPORT, SPOT CHECK PROCEDURES WILL STOP AND AGENCY IS TO REBALANCE THE SYSTEMS INVOLVED, RESUBMIT THE FINAL REPORT, AND AGAIN PERFORM SPOT CHECKS WITH CONTRACTOR AND CONSULTANT. WHEN THE FINAL REPORT HAS BEEN ACCEPTED, CONTRACTOR IS TO SUBMIT TO OWNER, IN THE NAME OF OWNER, A CERTIFICATE EQUAL TO AABC NATIONAL GUARANTEE CERTIFICATION OR A NEBB QUALITY ASSURANCE PROGRAM BOND. IN ADDITION, CONTRACTOR IS TO SUBMIT A WRITTEN EXTENDED WARRANTY FROM AGENCY COVERING ONE FULL HEATING SEASON AND ONE FULL COOLING SEASON. DURING THIS PERIOD, ANY BALANCING PROBLEMS WHICH OCCUR, WITH THE EXCEPTION OF MINOR REVISION WORK DONE DURING SCHEDULED SITE VISITS, WILL BE IMMEDIATELY TESTED, ADJUSTED, AND REBALANCED AT NO COST TO THE OWNER. IF IT IS DETERMINED THAT THE PROBLEMS ARE A RESULT OF IMPROPER TESTING, ADJUSTING AND BALANCING, THEY ARE TO BE IMMEDIATELY CORRECTED WITHOUT ADDITIONAL COST TO OWNER. REPORTS SHALL BE RESUBMITTED UNTIL APPROVAL IS RECEIVED FROM ENGINEER.
54. COMMISSIONING AND FUNCTIONAL PERFORMANCE TESTING
- 54.1. INSPECT, TEST, AND COMMISSION ALL NEW MECHANICAL EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT TO DEMONSTRATE AND VERIFY CORRECT OPERATION. COMPLETE PRE-FUNCTIONAL START-UP CHECKS AND MANUFACTURER START-UP REQUIREMENTS PRIOR TO FUNCTIONAL TESTING. PERFORM FUNCTIONAL PERFORMANCE TESTING OF EQUIPMENT THROUGH ALL MODES OF OPERATION, INCLUDING SAFETIES, INTERLOCKS, AND SEQUENCES OF OPERATION, IN CONJUNCTION WITH THE CONTROLS CONTRACTOR AND THE TESTING, ADJUSTING AND BALANCING AGENCY. WHERE MECHANICAL SYSTEMS INTERFACE WITH LIFE SAFETY SYSTEMS, COORDINATE WITH THE INTEGRATED TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS PERFORMED IN ACCORDANCE WITH CAN/ULC-S1081. RECTIFY AND RE-TEST ANY FAULTY OPERATION OR EQUIPMENT AT NO COST TO THE OWNER. SUBMIT A COMMISSIONING REPORT DOCUMENTING ALL TESTS, RESULTS, AND DEFICIENCY CORRECTIONS.

GENERAL NOTES:

- Do not scale drawings.
- The contractor shall check and verify all dimensions on site and report all discrepancies to the Architect.
- All work shall comply with the Ontario Building Code and the requirements of all authorities having jurisdiction.
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SEAL:



DRAWING REVISIONS

No.	Issued for:	Date:
01	Issued for Coordination	2026-08-12
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03	Re-Issued for Permit	2026-10-02

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DRAWING TITLE:

SPECIFICATIONS

PROJECT:	DWG NO:
2516	M9