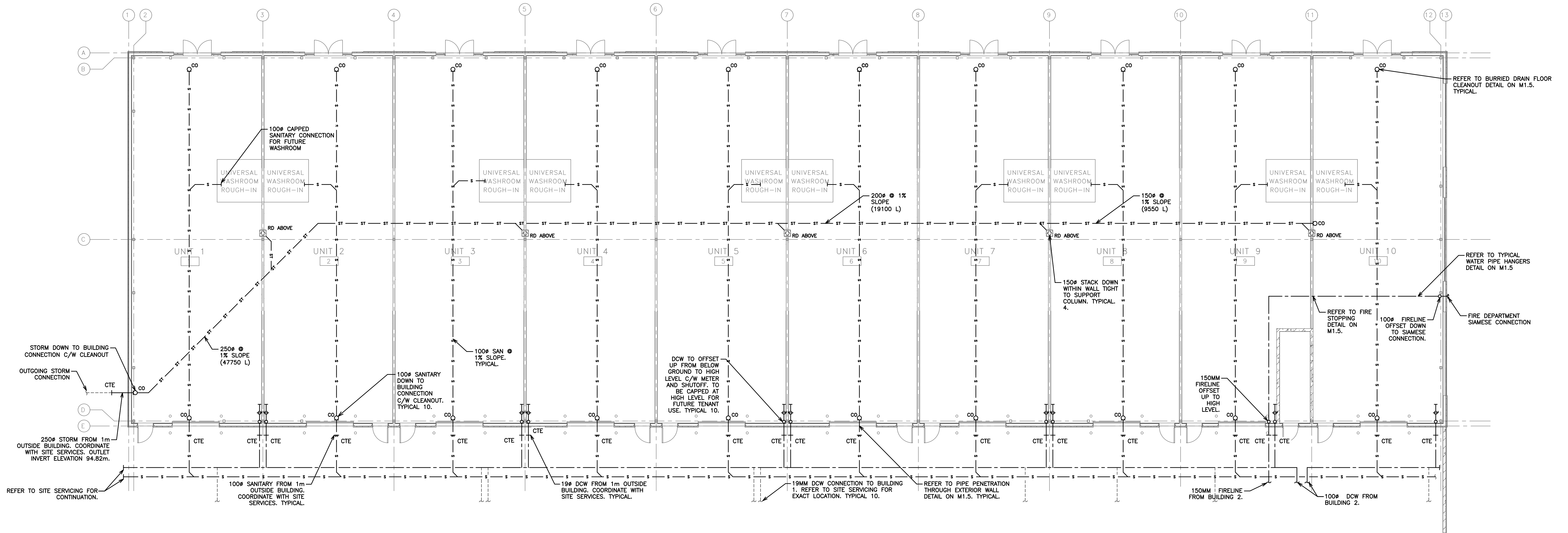


17/10/2025
A:\STAFF\JOB FILES\123081\123081 JASS 025 L11 LATE ROAD\123081 DRAWINGS\123081 MECHANICAL\123081 M1



PLUMBING CONSTRUCTION AND COORDINATION NOTES:

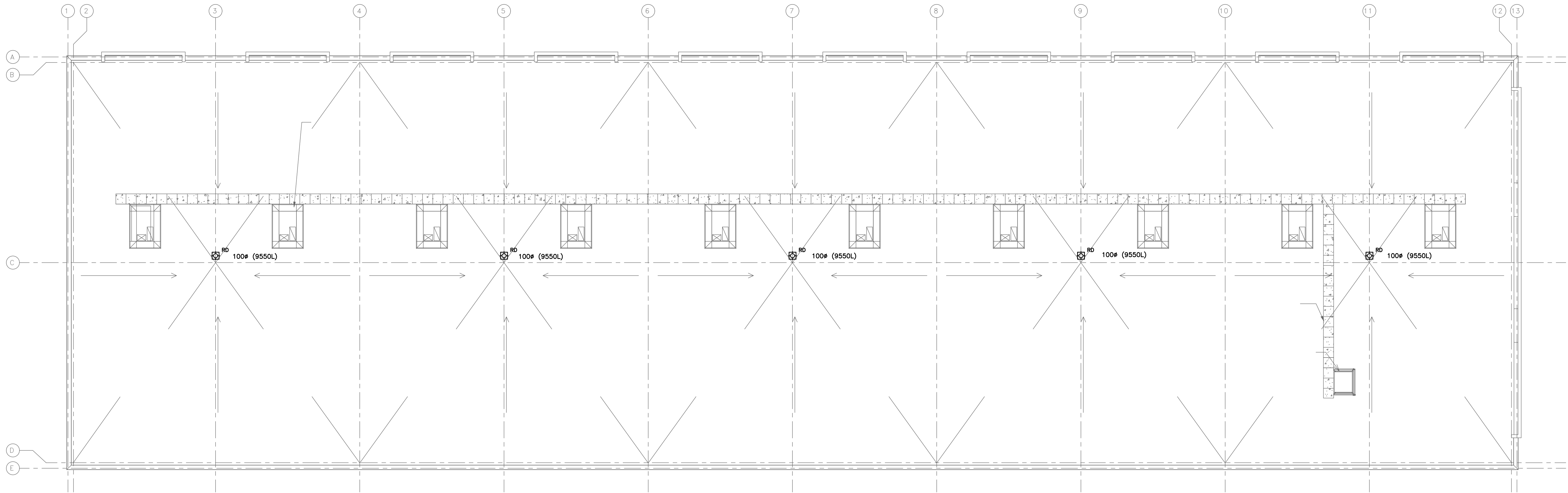
- TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND LICENSED IN THE WORKS BEING PROVIDED AND THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INCLUDED WHETHER SHOWN OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.
- PIPING SHOWN FOR SCHEMATIC AND SCOPE OF WORK PURPOSES IN GENERAL LOCATION OF USE, COORDINATE EXACT ROUTING ON SITE AND WITH BEST PRACTICES.
- ALL SANITARY AND STORM TO BE RUN AT A MINIMUM SLOPE. ALL HORIZONTAL SANITARY LINES EQUAL TO OR LESS THAN 3% TO BE RUN AT MINIMUM 2% SLOPE.
- RUN ALL DOMESTIC AND SANITARY PIPING TIGHT TO UNDERSIDE OF SLAB
- ALL PIPING SANITARY, STORM, AND DOMESTIC INCLUDING PEX PIPING BOTH EXPOSED AND CONCEALED SHALL ACCOMMODATE BOTH ACOUSTIC AND/OR INSULATION WRAP. CONTRACTOR TO COORDINATE. NO EXCEPTIONS.
- COORDINATE SHARED SPACES WITH ELECTRICAL, GAS PIPING, HVAC DUCTWORK AND SPRINKLER PIPING.
- COORDINATE ALL HOLES THOUGH SLAB AND MASONRY WALLS WITH GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.

- REFER TO DETAIL FOR SUGGESTED FIRE STOPPING OF PIPING THROUGH FIRE SEPARATIONS
- COORDINATE ACCESS DOORS/PANELS FOR ISOLATION VALVES AND CLEANOUTS WITH GENERAL CONTRACTOR
- PROVIDE CLEANOUTS AS REQUIRED BY CODE. SIZE OF CLEANOUTS TO BE SAME SIZE AS SANITARY/STORM LINES.
- PROVIDE CLEANOUT AT THE BOTTOM OF EACH SANITARY/STORM STACK.
- PROVIDE VENTS THROUGH ROOF AS REQUIRED BY CODE. CONTRACTOR TO SUPPLY VENTING DRAWING TO ENGINEER FOR APPROVAL BASED ON PROPOSED VENT LENGTHS AND BEST ROUTING BASED ON SITE CONDITIONS AND COORDINATION WITH OTHER TRADES. FINAL VENTING LAYOUT AND ROUTING TO BE RESPONSIBILITY OF CONTRACTOR.
- ALL NEW HOSE BIBBS TO BE COMPLETE WITH STRUCTURAL FOOTINGS.
- COORDINATE BURIED SANITARY LINES WITH STRUCTURAL FOOTINGS.
- THE CONSULTANT RESERVES THE RIGHT TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK, AT NO EXTRA COST TO THE OWNER.

PLUMBING LEGEND

— — — — —	DOMESTIC COLD WATER (DCW)
— — — — —	DOMESTIC HOT WATER (DHW)
— — — — —	UNBURIED SANITARY DRAINAGE (US)
— S — S —	BURIED SANITARY DRAINAGE (S)
— UST — UST —	UNBURIED STORM DRAINAGE (UST)
— ST — ST —	BURIED STORM DRAINAGE (ST)
— O — O —	PIPE UP, BRANCH DROPPING FROM TEE, PIPE DOWN
— — — — —	PIPE BREAK/CONTINUATION
— — — — —	FLOOR (F), ROOF (R), HUB (H), FUNNEL (FF), AREA (A) DRAIN
— — — — —	CLEAN OUT — EXPOSED
— — — — —	CLEAN OUT — IN FLOOR
— — — — —	SANITARY TRAP
— — — — —	EQUIPMENT/FIXTURE TAG

2	ISSUED FOR PERMIT	OCT 2025
1	ISSUED FOR COORDINATION	SEPT 2025
NO.	SUBMISSION	DATE
JASS GILL 725 LAKE ROAD, BOWMANVILLE, ON		
MECHANICAL PLUMBING BUILDING 1 LAYOUT		
D.G. BIDDLE & ASSOCIATES CONSULTING ENGINEERS & PLANNERS		
96 King Street East Oshawa, Ontario, L1H 1B6 Phone: 905-576-8500 info@dgbiddle.com dgbiddle.com		
PROFESSIONAL ENGINEER G.V.V. OSBORNE 100136545 Oct 17/25 PROVINCE OF ONTARIO		
SCALE:		1:125
DESIGNED BY:		J.T.C.
CHECKED BY:		J.T.C.
PROJECT NO.:		123081
DRAWING NO.:		M1.1



PLUMBING CONSTRUCTION AND COORDINATION NOTES:

1. TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND LICENSED IN THE WORKS BEING PROVIDED AND THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INCLUDED WHETHER SHOWN OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.
2. PIPING SHOWN FOR SCHEMATIC AND SCOPE OF WORK PURPOSES IN GENERAL LOCATION OF USE, COORDINATE EXACT ROUTING ON SITE AND WITH BEST PRACTICES.
3. ALL SANITARY AND STORM TO BE RUN AT A MINIMUM SLOPES. ALL HORIZONTAL SANITARY LINES EQUAL TO OR LESS THAN 3" TO BE RUN AT MINIMUM 2% SLOPE.
4. RUN ALL DOMESTIC AND SANITARY PIPING TIGHT TO UNDERSIDE OF SLAB
5. ALL PIPING SANITARY, STORM, AND DOMESTIC INCLUDING PEX PIPING BOTH EXPOSED AND CONCEALED SHALL ACCOMMODATE BOTH ACOUSTIC AND/OR INSULATION WRAP. CONTRACTOR TO COORDINATE. NO EXCEPTIONS.
6. COORDINATE SHARED SPACES WITH ELECTRICAL, GAS PIPING, HVAC DUCTWORK AND SPRINKLER PIPING.
7. COORDINATE ALL HOLES THOUGH SLAB AND MASONRY WALLS WITH GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.

8. REFER TO DETAIL FOR SUGGESTED FIRE STOPPING OF PIPING THROUGH FIRE SEPARATIONS
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11. PROVIDE CLEANOUT AT THE BOTTOM OF EACH SANITARY/STORM STACK.
12. PROVIDE VENTS THROUGH ROOF AS REQUIRED BY CODE. CONTRACTOR TO SUPPLY VENTING DRAWING TO ENGINEER FOR APPROVAL BASED ON PROPOSED VENT LENGTHS AND BEST ROUTING BASED ON SITE CONDITIONS AND COORDINATION WITH OTHER TRADES. FINAL VENTING LAYOUT AND ROUTING TO BE RESPONSIBILITY OF CONTRACTOR.
14. ALL NEW HOSE BIBBS TO BE COMPLETE WITH BACKFLOW PREVENTERS.
15. COORDINATE BURIED SANITARY LINES WITH STRUCTURAL FOOTINGS.
16. THE CONSULTANT RESERVES THE RIGHT TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK, AT NO EXTRA COST TO THE OWNER.

PLUMBING LEGEND

----	DOMESTIC COLD WATER (DCW)
----	DOMESTIC HOT WATER (DHW)
----	UNBURIED SANITARY DRAINAGE (US)
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XD	FLOOR (F), ROOF (R), HUB (H), FUNNEL (FF), AREA (A) DRAIN
— s — HCO	CLEAN OUT — EXPOSED
— s — ICO	CLEAN OUT — IN FLOOR
— S —	SANITARY TRAP
WC-1	EQUIPMENT/FIXTURE TAG

2	ISSUED FOR PERMIT	OCT 2025
1	ISSUED FOR COORDINATION	SEPT 2025
NO.	SUBMISSION	DATE

JASS GILL
725 LAKE ROAD, BOWMANVILLE, ON
**MECHANICAL PLUMBING
BUILDING 1 ROOF PLAN**

D.G. BIDDLE & ASSOCIATES
CONSULTING ENGINEERS & PLANNERS
96 King Street East
Oshawa, Ontario, L1H 1B6
Phone: 905-576-8500
info@dgbiddle.com
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SCALE: 1:125
DESIGNED BY: J.T.C.
CHECKED BY: J.T.C.
PROJECT NO.: 123081
DRAWING NO.: M1.2

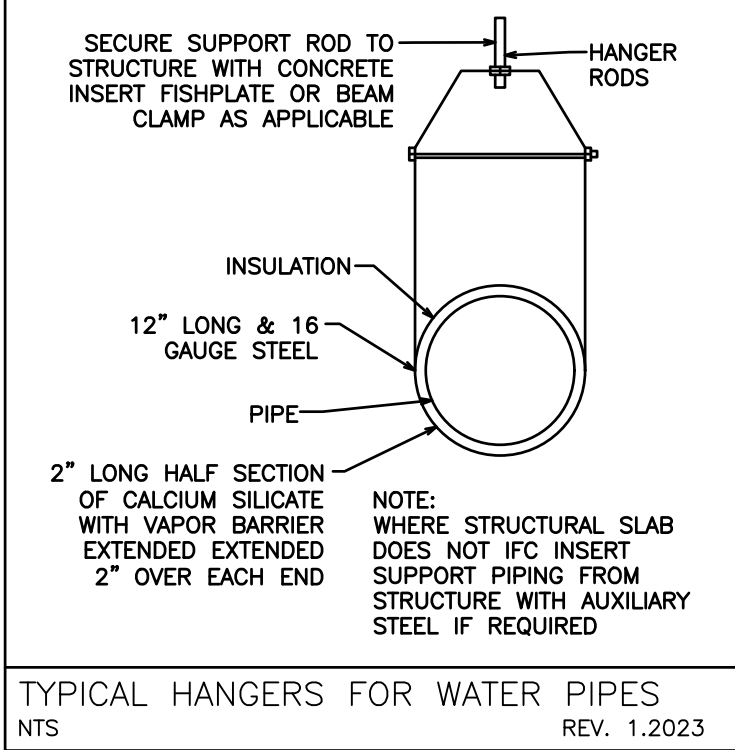
GENERAL REQUIREMENTS FOR MECHANICAL WORK

1. SCOPE OF WORK
- 1.1. CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.
- 1.2. THE GENERAL MECHANICAL SPECIFICATIONS SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.
- 1.3. COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C. ALL OTHER APPLICABLE CODES, REGULATIONS, BY-LAWS AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND INTERPRETATIONS OF THE AUTHORITIES HAVING JURISDICTION. THESE CODES AND STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.
2. EXAMINATION OF SITE AND INFORMATION
- 2.1. EACH SUBCONTRACTOR, BEFORE PRICING, SHALL EXAMINE THE SITE, THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND THEY SHALL FAMILIARIZE THEMSELVES WITH THE BUILDING CONSTRUCTION AND FINISH IN ORDER THAT THEIR TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.
3. RELATIONSHIP TO OTHER TRADES
- 3.1. THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS INSTALLING EQUIPMENT, PIPING, OTHER WORK, FOUNDATIONS, ETC., WHICH MAY AFFECT THEIR INSTALLATION, AND THEY SHALL ARRANGE THEIR EQUIPMENT, PIPING, ETC., IN PROPER RELATION WITH OTHER APPARATUS, AND WITH THE BUILDING CONSTRUCTION. THIS SUBCONTRACTOR SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER EQUIPMENT ACCORDINGLY.
- 3.2. SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.
- 3.3. THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENINGS, FOUNDATION WORK, HANGERS, INSERTS, ANCHORS, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF THE SUBCONTRACTORS WORK, AND THEY SHALL FURNISH ALL INFORMATION AND NECESSARY MATERIALS IN AMPLE TIME SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL SUPPLY AND CORRECTLY AND

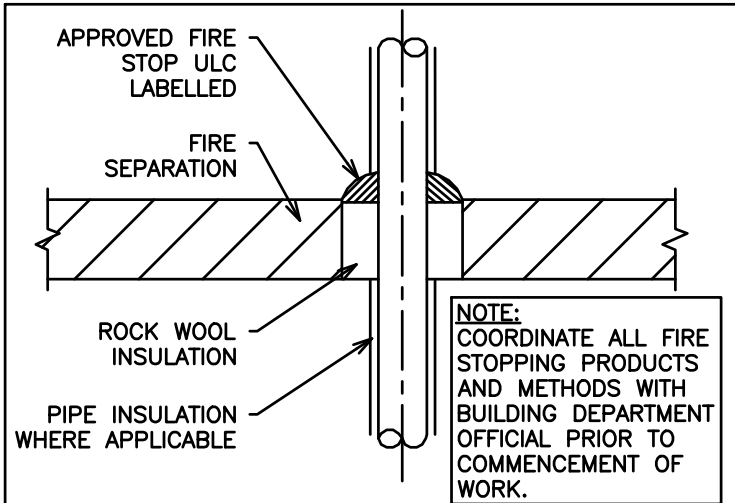
- 3.4. ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC. FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER THEM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS AT A LATER DATE, AND THE SUBSEQUENT PATCHING, ETC., THEREBY REQUIRED.
- 3.5. NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY TRADES-PERSONS SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.
- 3.6. EACH SUBCONTRACTOR IS TO BE AN EXPERT IN THEIR TRADE.
4. REQUIREMENTS OF INSPECTION DEPARTMENTS
- 4.1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.
- 4.2. EACH SUBCONTRACTOR SHALL PREPARE DRAWINGS IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.
- 4.3. IN THE EVENT THAT THE INSPECTION DEPARTMENT'S REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, THE SUBCONTRACTOR SHALL CONSULT ENGINEER BEFORE PROCEEDING WITH THE SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE GENERALLY ACCEPTABLE TO INSPECTION DEPARTMENTS AND MINOR SUPPLEMENTS NEED ONLY BE MADE BY SUBCONTRACTORS.
5. CERTIFICATES, PERMITS, FEES
- 5.1. SUBCONTRACTORS SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CONNECTIONS TO STORM, SANITARY, WATER AND GAS IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND THEY SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK

- INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.
6. GUARANTEE
- 6.1. THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND PROPER EFFICIENT OPERATION, AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE YEAR AFTER WRITTEN ACCEPTANCE OF THE WORK, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEMS OF EQUIPMENT.
- 6.2. ALL INJURIES TO ADJACENT WORK, PARTICULARLY PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT, CAUSED BY SUCH DEFECTS OF THIS SUBCONTRACTOR'S WORK OR BY SUBSEQUENT REPLACEMENT AND REPAIR, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR. ALL REPAIR WORK SHALL BE DONE BY TRADES RESPONSIBLE FOR THE ORIGINAL WORK.
7. DRAWINGS
- 7.1. THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR SPECIAL APPARATUS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWING IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND MAY BE ALTERED, AS APPROVED BY THE ENGINEER, TO MEET REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR THEIR WORK THROUGHOUT, AND THEY SHALL ARRANGE THEIR PIPING, WIRING AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO-OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.
- 7.2. ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.
- 7.3. ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE

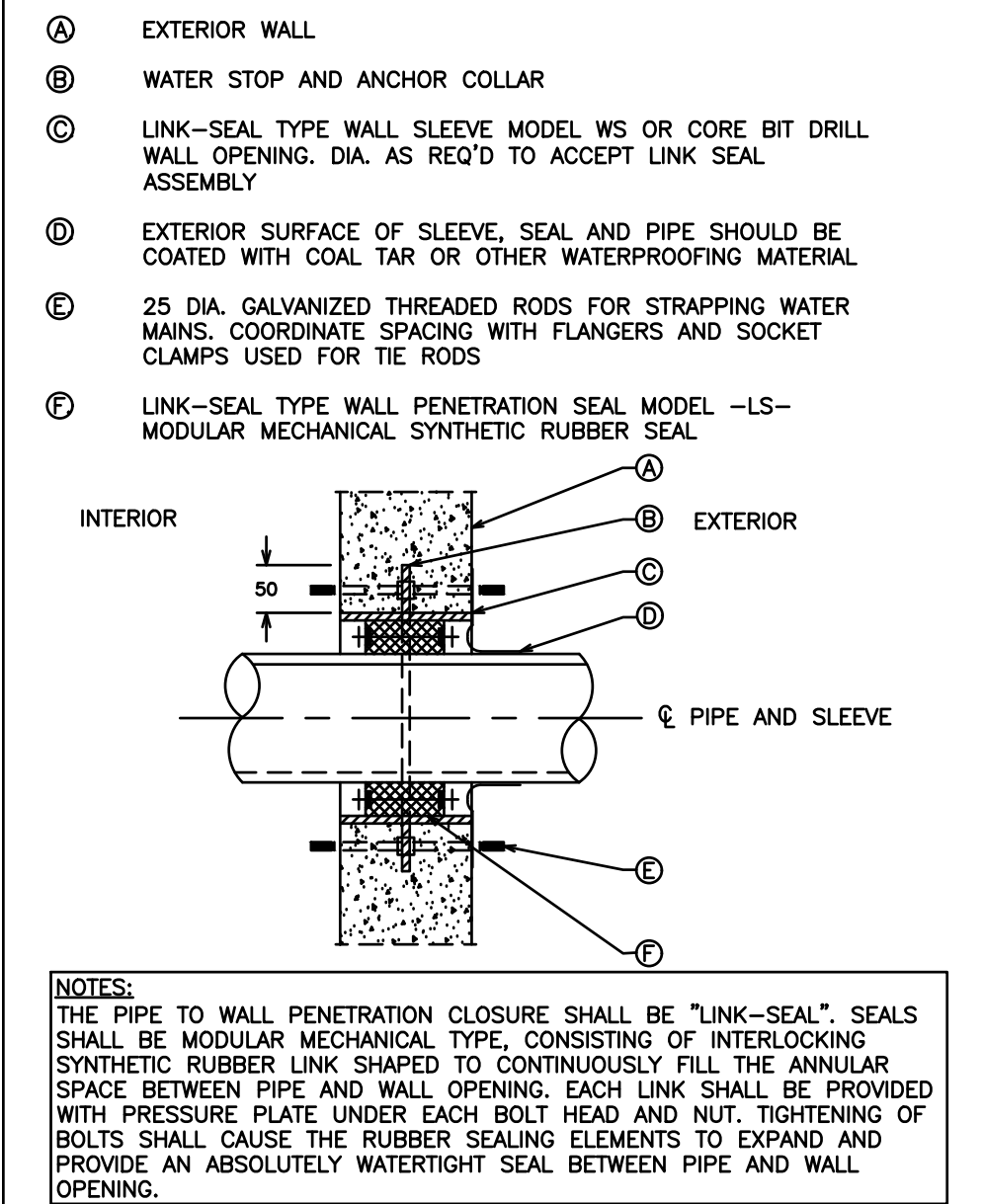
- WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.
8. RESPONSIBILITY AND LIABILITY
- 8.1. EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF THEIR WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH OTHER WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. THEY SHALL PROTECT FINISHED AND UNFINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED. THE SUBCONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING THEIR TENDER. THEY SHALL ABIDE BY DECISIONS GIVEN TO THEM IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON THEIR PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE THEM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.
9. CLEAN-UP
- 9.1. DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP THEIR WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS RESULTING FROM THEIR WORK.
- 9.2. UPON COMPLETION OF THEIR WORK THEY SHALL LEAVE THE PREMISES IN A BROOM-CLEAN CONDITION.
10. PROTECTION
- 10.1. SUBCONTRACTORS ARE TO PROTECT THEIR WORK FROM CONSTRUCTION DIRT OR DAMAGE FROM ANY CAUSE. SECURELY PLUG AND CAP ALL OPENINGS IN PIPE, EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.
11. ELECTRICAL WIRING AND CONTROLS
- 11.1. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADE INVOLVED SHALL PROVIDE STARTERS, THERMOSTATS, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.



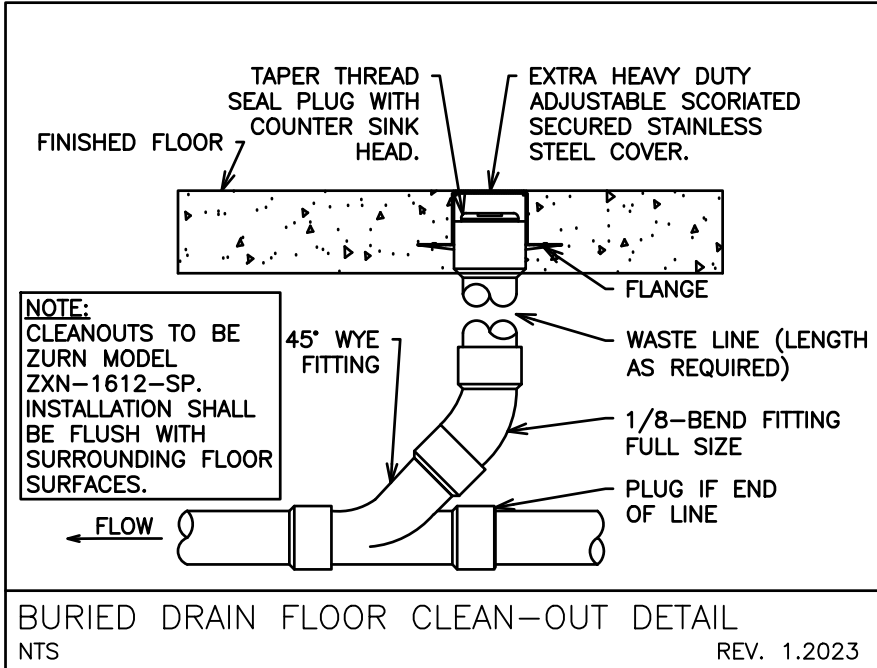
TYPICAL HANGERS FOR WATER PIPES
NTS
REV. 1.2023



FIRE STOPPING DETAIL
NTS
REV. 1.2023



PIPE PENETRATION THROUGH EXTERIOR WALL DETAIL
NTS
REV. 1.2023

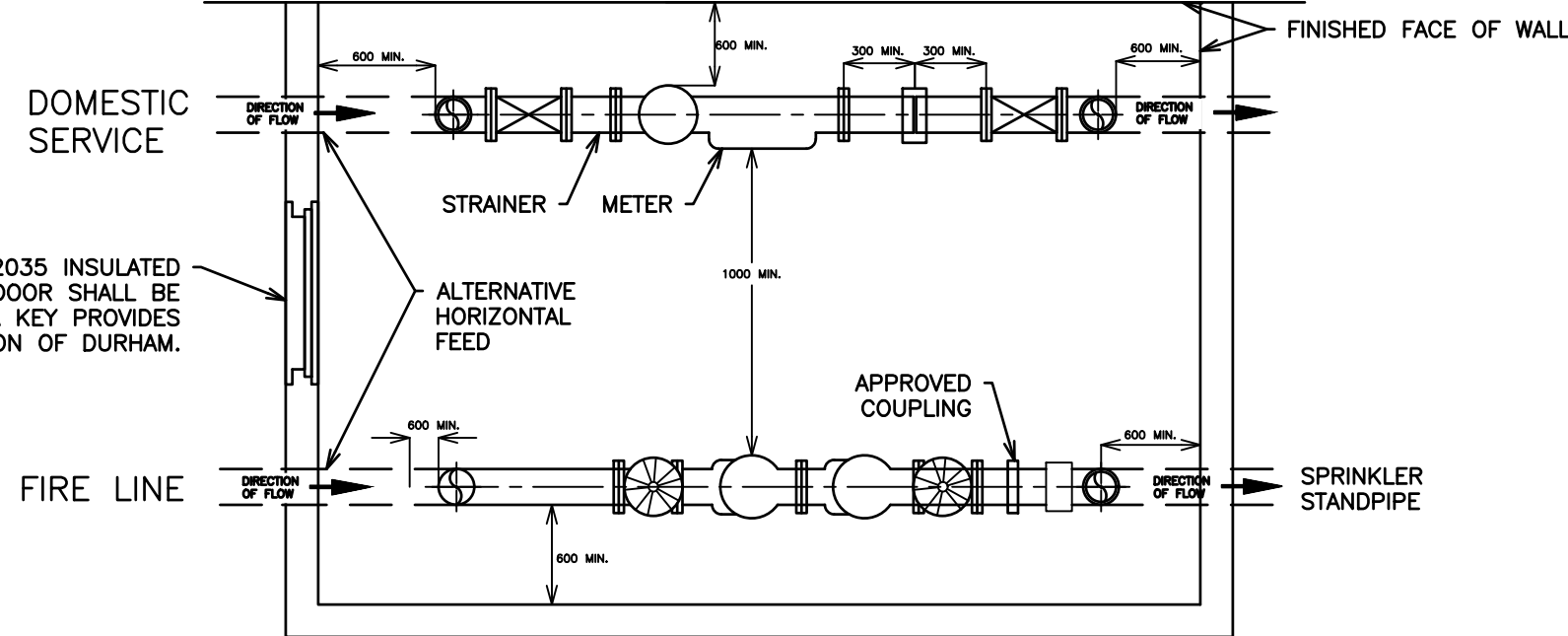


BURIED DRAIN FLOOR CLEAN-OUT DETAIL
NTS
REV. 1.2023

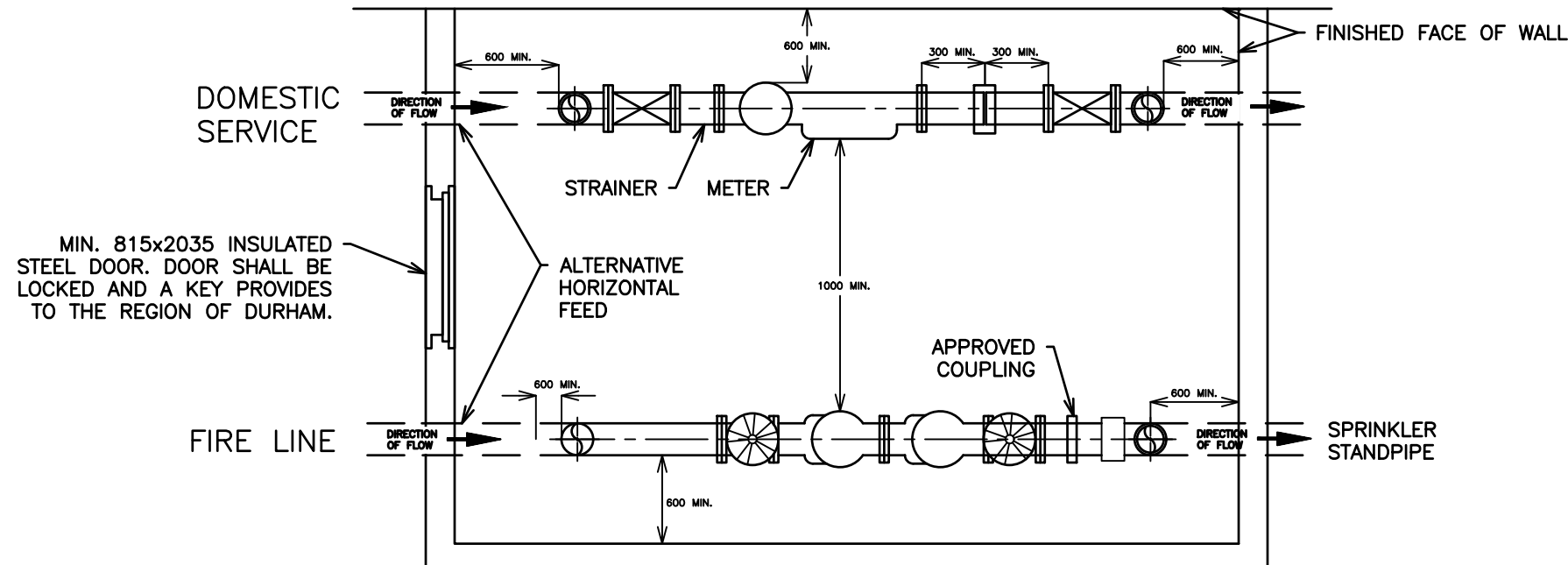
MINIMUM PIPE INSULATION THICKNESS - HEATING AND HOT WATER SYSTEMS BASED ON ASHRAE 90.1 TABLE 6.8.3A			
FLUID OPERATING TEMPERATURE RANGE (°F) AND USAGE	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (in)
	CONDUCTIVITY Btu-in./sq-ft-hr-°F	MEAN RATING TEMPERATURE, °F	
105°F-140°F	0.22-0.28	100	1.0 1.5 1.5 1.5 1.5

PLUMBING NOTES

1. GENERAL
- 1.1. FOR CONTINUATION OF SITE SERVICES REFER TO SITE SERVICE DRAWING BY OTHERS. CO-ORDINATE EXACT LOCATION AND INVERTS OF SERVICES.
- 1.2. PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES. CLEANOUTS SIZE TO BE SAME AS SANITARY LINES.
- 1.3. PROVIDE COMPLETE PLUMBING VENT SYSTEM AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES, INCLUDING MIN. 3" VENT AT UPSTREAM END(S) OF SANITARY BUILDING DRAIN.
- 1.4. ISOLATION VALVES TO BE PROVIDED AT ALL FIXTURES AND HOT WATER TANK.
- 1.5. PIPE INSULATION TO BE 25mm FOR ALL NEW AND/OR EFFECTED DOMESTIC PIPING. IN EXPOSED AREAS PROVIDE CANVAS WRAP OVER INSULATION.
2. MATERIALS
- 2.1. ALL PVC OR ABS TYPE PIPING TO BE USED ABOVE GROUND SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AND SHALL BE CONFIRMED TO BE ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION. IF ACCEPTABLE AND USED, IT SHALL BE PROVIDED WITH U.L.C. LISTED AND APPROVED FIRE STOP DEVICE AT ALL PENETRATIONS OF ANY FIRE SEPARATION.
- 2.2. ALL ABOVE GROUND DOMESTIC PIPING SHALL BE TYPE 'L' COPPER.
- 2.3. ALL BURIED DOMESTIC PIPING SHALL BE TYPE 'K' COPPER.
- 2.4. ALL ABOVE GROUND DRAINAGE PIPING SHALL BE CAST IRON 'M' PIPE.
- 2.5. ALL BURIED DRAINAGE PIPING SHALL BE DR26 PVC WITH CLASS P BEDDING.



PLAN VIEW: TYPICAL VERTICAL DOMESTIC INSTALLATION/HORIZONTAL FIRE LINE INSTULATION



PLAN VIEW: TYPICAL DOMESTIC INSTALLATION/VERTICAL FIRE LINE INSTULATION

- NOTES
1. FOR DETAILS OF BACKFLOW PREVENTION DEVICE SEE S-240.040.
2. FOR DETAILS OF DOMESTIC LINE LAYOUT SEE S-240.040.
3. FOR DETAILS OF METER, VALVE, PRO READ RECEPACLE AND WIRE INSTALLATION SEE S-240.010.



WORKS DEPARTMENT

COMBINED METER ROOM,
BACKFLOW PREVENTION DEVICE
ROOM LAYOUT SPRINKLER
SYSTEM

DWG. DATE 2008 04
REVISION NO.: 1
REV. DATE: 2013 04
SCALE: N.T.S
S-240.051

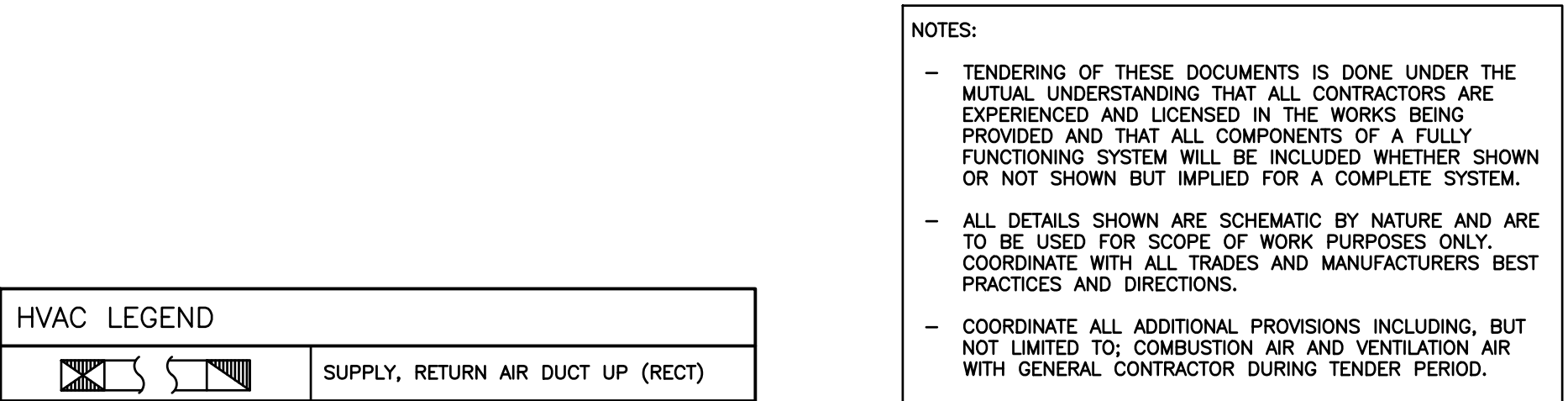
2	ISSUED FOR PERMIT	OCT 2025
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NO.	SUBMISSION	DATE

JASS GILL
725 LAKE ROAD, BOWMANVILLE, ON
MECHANICAL PLUMBING
NOTES AND DETAILS


D.G. BIDDLE & ASSOCIATES
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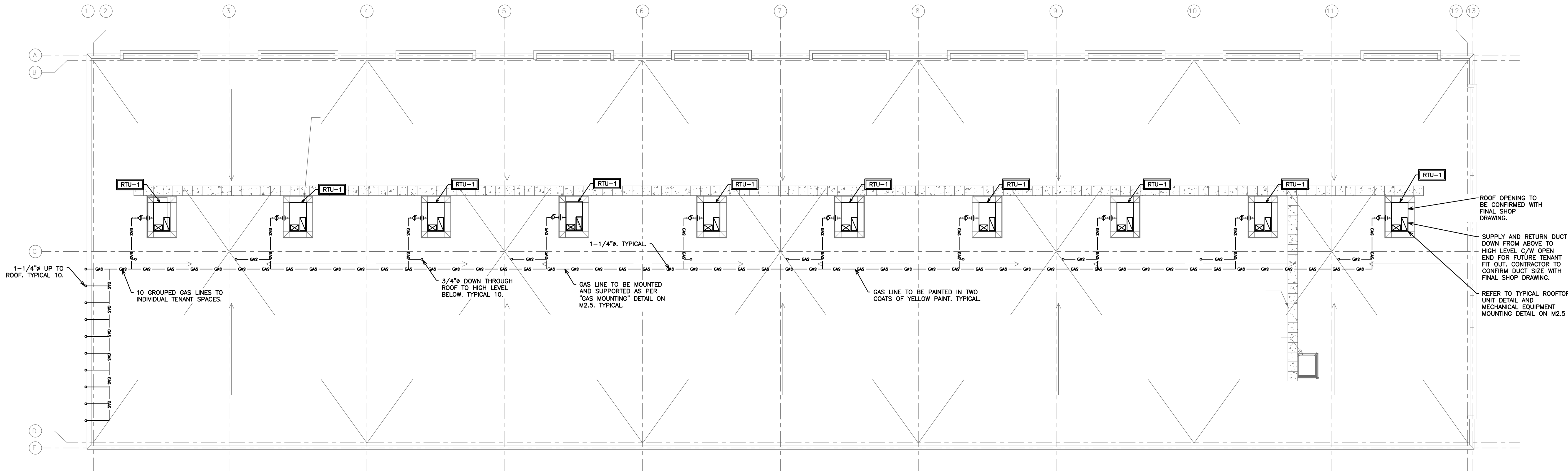
SCALE:	1:125
DESIGNED BY:	J.T.C.
CHECKED BY:	J.T.C.
PROJECT NO.:	123081
DRAWING NO.:	M1.3



2	ISSUED FOR PERMIT	OCT 2025
1	ISSUED FOR COORD	SEPT 2025
NO.	SUBMISSION	DATE



SCALE:	1:125
DESIGNED BY:	J.T.C.
CHECKED BY:	J.T.C.
PROJECT NO.:	123081
DRAWING NO.:	M2.1



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 - ALL DETAILS SHOWN ARE SCHEMATIC BY NATURE AND ARE TO BE USED FOR SCOPE OF WORK PURPOSES ONLY. COORDINATE WITH ALL TRADES AND MANUFACTURERS BEST PRACTICES AND DIRECTIONS.
 - COORDINATE ALL ADDITIONAL PROVISIONS INCLUDING, BUT NOT LIMITED TO; COMBUSTION AIR AND VENTILATION AIR WITH GENERAL CONTRACTOR DURING TENDER PERIOD.

HVAC LEGEND	
	SUPPLY, RETURN AIR DUCT UP (RECT)
	SUPPLY, RETURN AIR DUCT DOWN (RECT)
	SUPPLY, RETURN AIR DUCT UP (ROUND)
	SUPPLY, RETURN AIR DUCT DOWN (ROUND)
	SUPPLY, RETURN, EXHAUST AIR GRILLE
	SIDE WALL GRILLE
	A- GRILLE/DIFFUSER TYPE B- DIFFUSER NECK SIZE/GRILLE SIZE C- AIR QUANTITY (CFM)
	SENSOR AND ASSOCIATED CONTROL WIRING
	EQUIPMENT/FIXTURE TAG
	DIRECTION OF AIR FLOW
	THERMOSTAT EQUAL TO HONEYWELL TB8220U: 7-DAY PROGRAMMABLE C/W AUTO CHANGEOVER
	TIME CLOCK
	ACOUSTIC LINED DUCT
	GAS LINE
	GAS METER
	PIPE UP, PIPE DOWN
	SHUTOFF VALVE
	UNION
	PIPE BREAK/CONTINUATION

2	ISSUED FOR PERMIT	OCT 2025
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JASS GILL
725 LAKE ROAD, BOWMANVILLE, ON

**MECHANICAL HVAC
BUILDING 1 ROOF PLAN**

D.G. BIDDLE & ASSOCIATES
CONSULTING ENGINEERS & PLANNERS

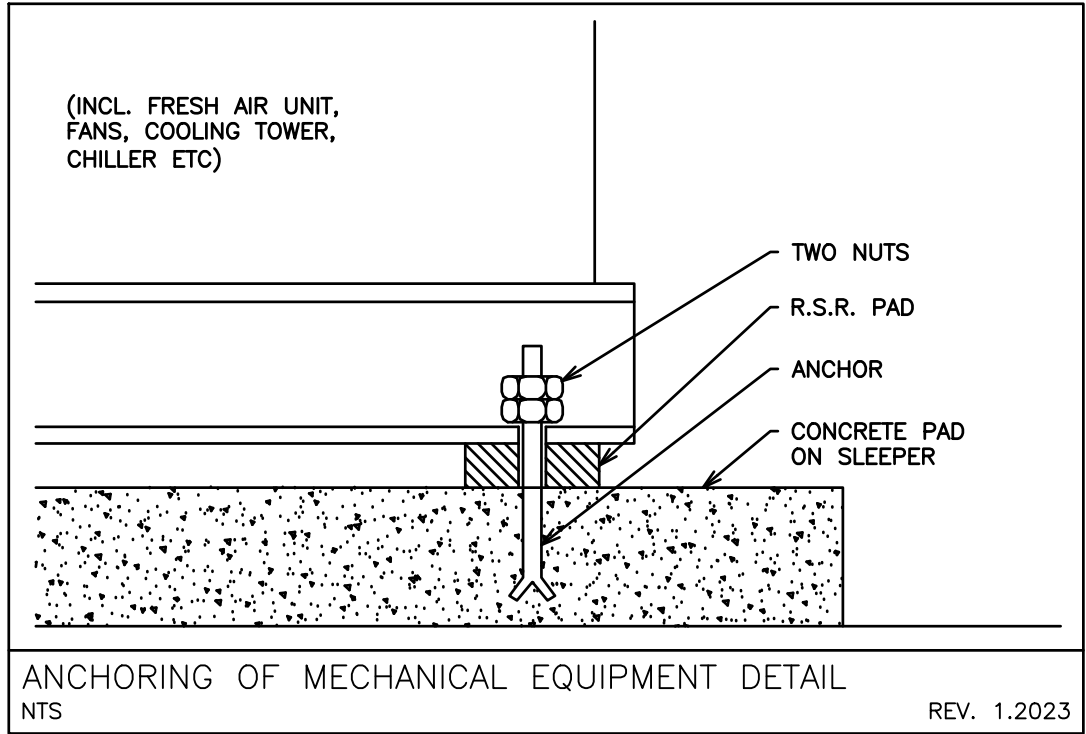
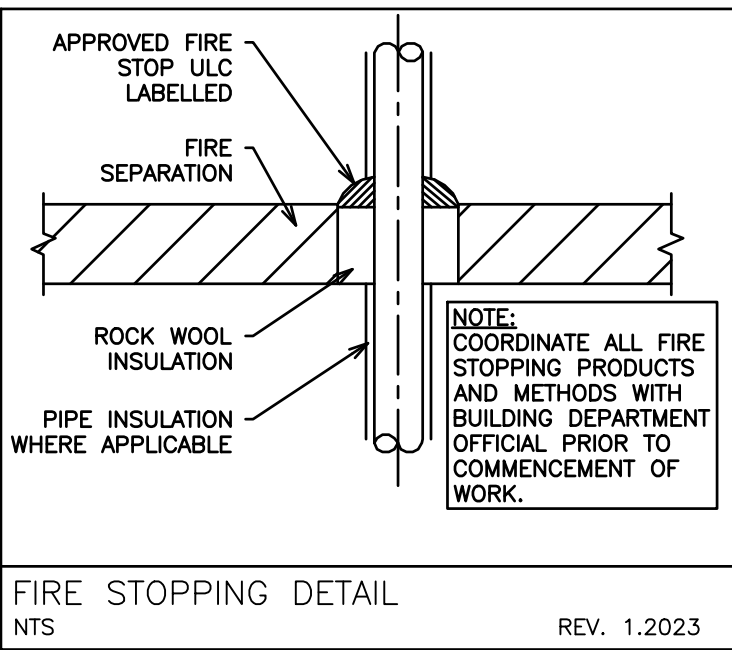
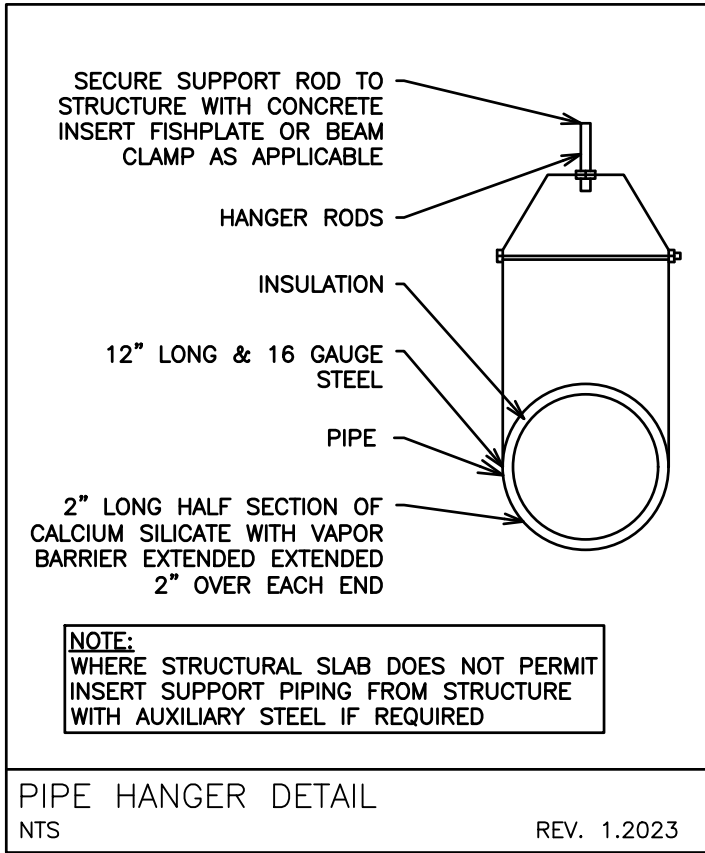
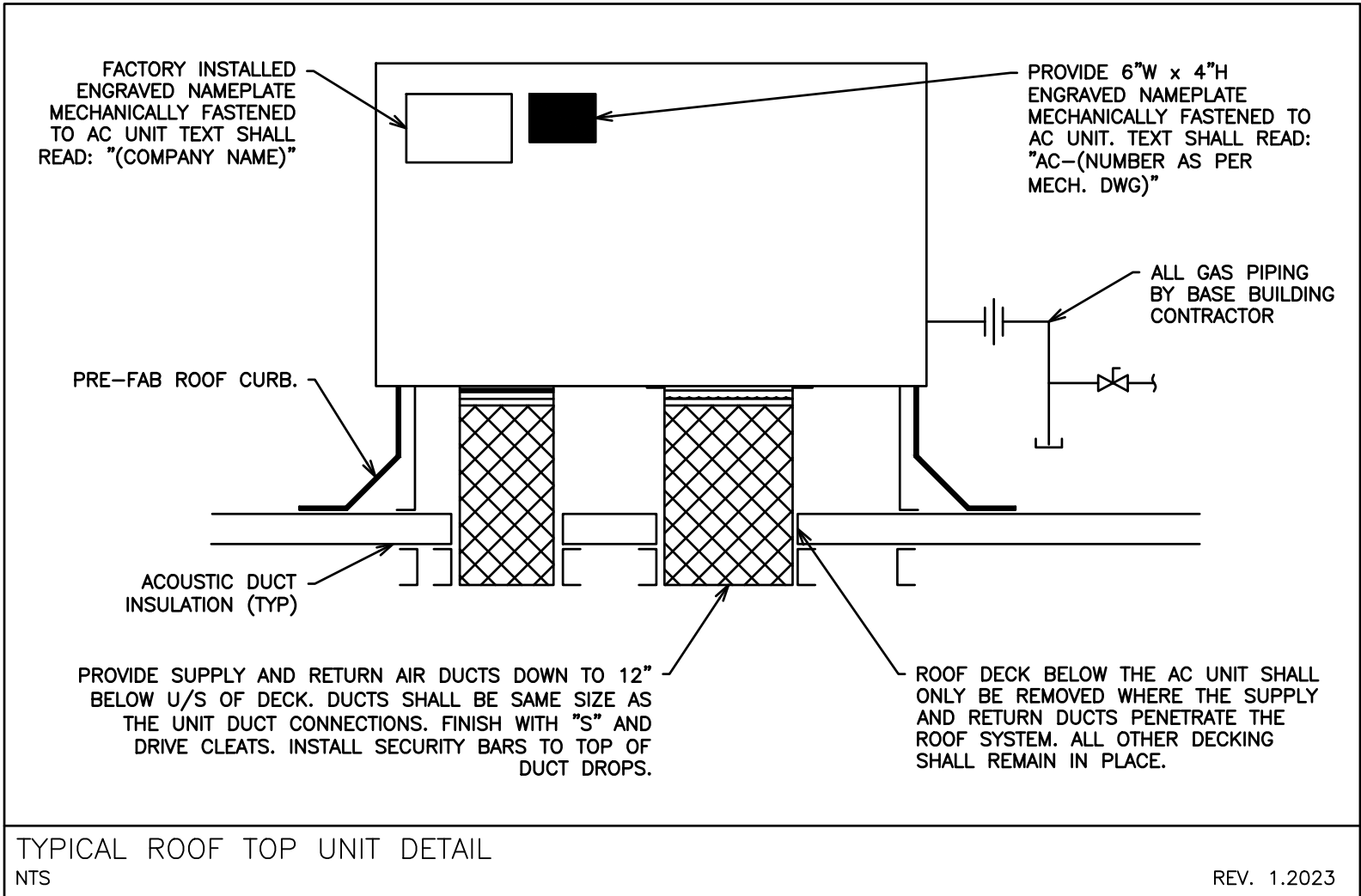
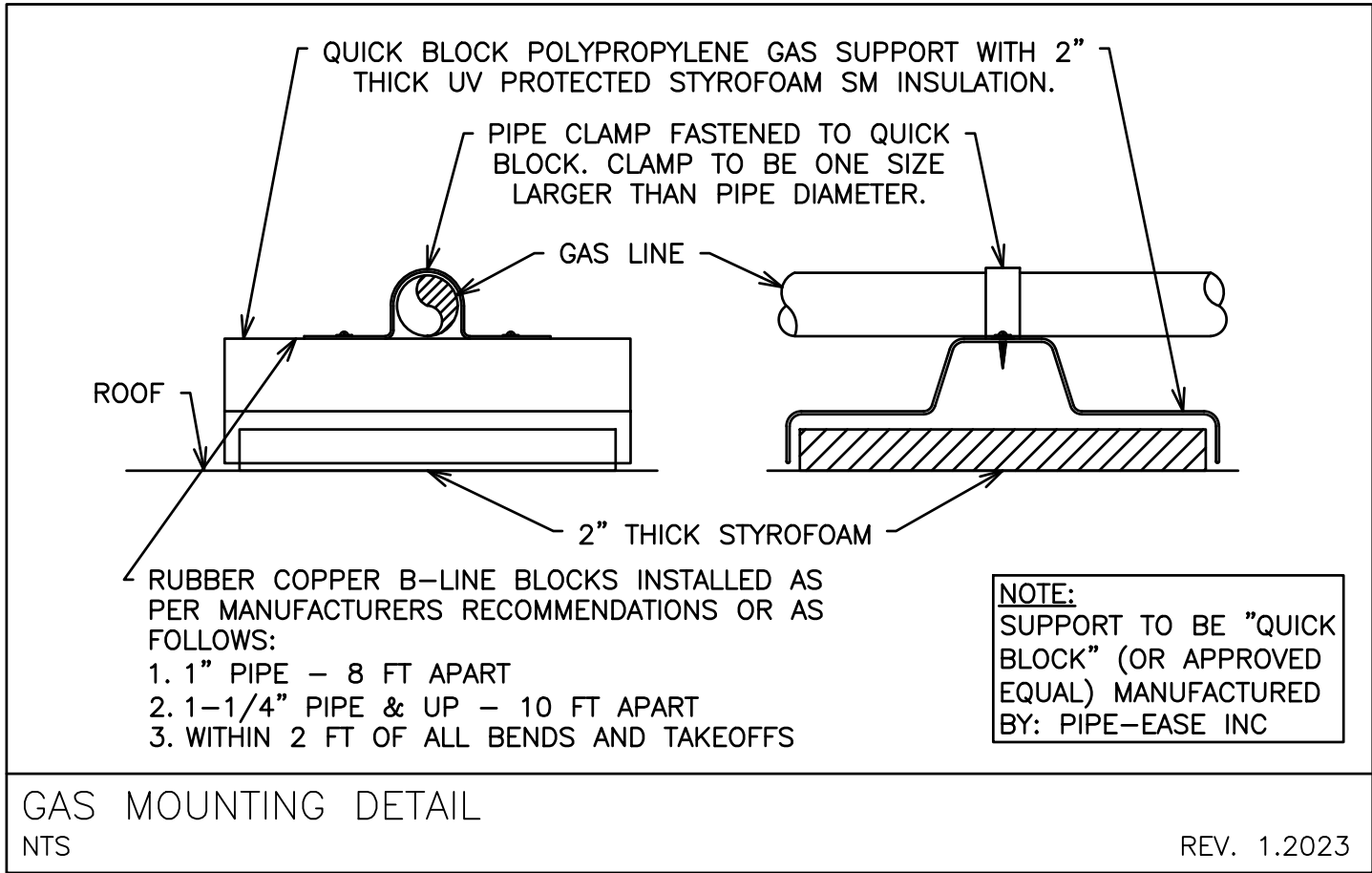
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SCALE:	1:125
DESIGNED BY:	J.T.C.
CHECKED BY:	J.T.C.
PROJECT NO.:	123081
DRAWING NO.:	M2.2


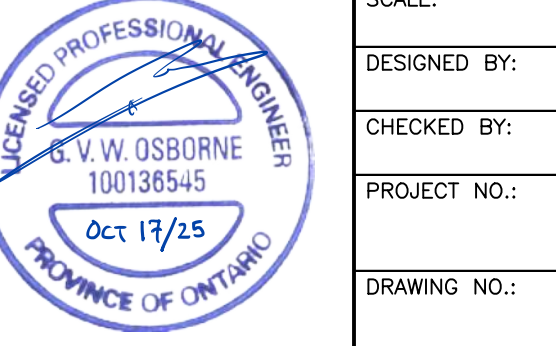
ROOF TOP UNIT SCHEDULE									
TAG	MANUFACTURER	MODEL	AIR FLOW	COOLING	HEATING IN/OUT	FRESH AIR	MOUNTING	CONTROLS	ACCESSORIES
RTU-1	YORK	ZQG04S2A1AA1C321A4	1200 CFM	35.6 MBH	112/90 MBH	---	ROOF	7 DAY PROGRAMMABLE THERMOSTAT	EXTENDED ROOF CURB, ECONOMIZER, PROPANE CONVERSION KIT

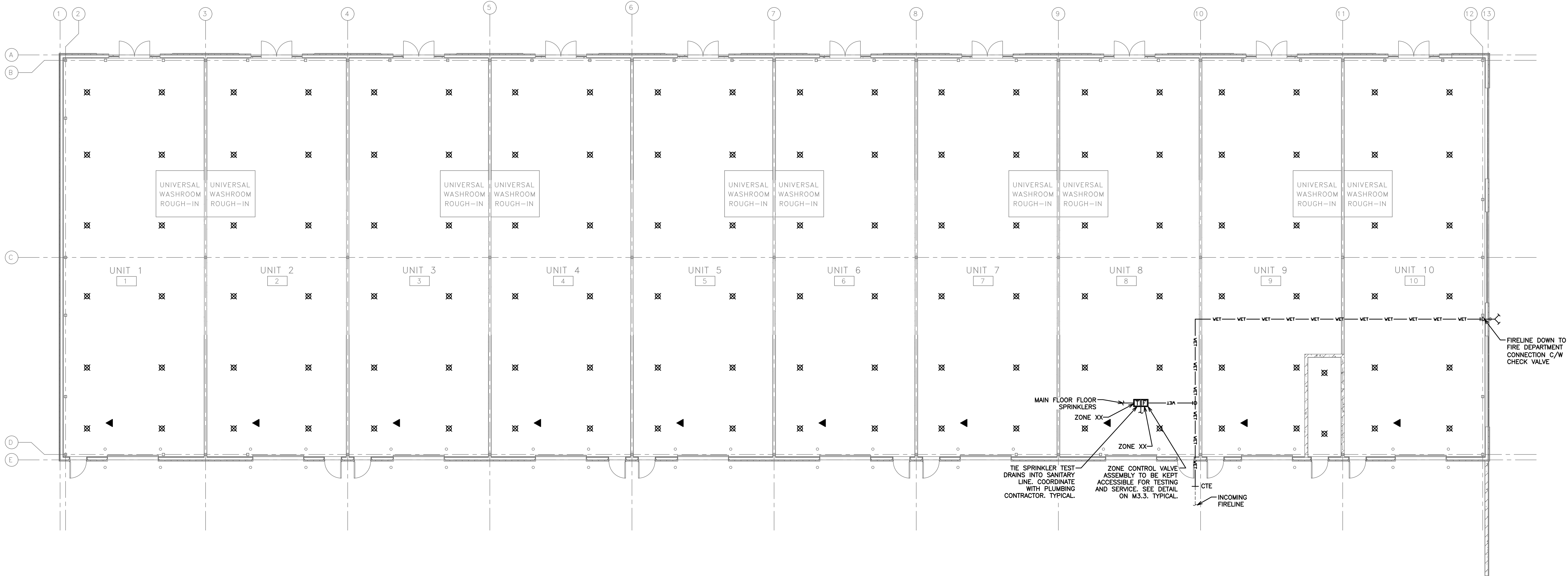
EXHAUST FAN SCHEDULE						
TAG	MANUFACTURER	MODEL	AIR FLOW	MOUNTING	VOLTAGE	CONTROLS
EF-1	GREENHECK	SP-B190	150 CFM	CEILING	120V	REVERSE ACTING THERMOSTAT
NOTES: ADDITIONAL COSTS INCURRED AS A RESULT OF ANY ALTERNATIVE MODELS ARE AT THE EXPENSE OF THE CONTRACTOR						

GAS UNIT HEATER SCHEDULE					
TAG	MANUFACTURER	MODEL	MOUNTING	HEATING IN/OUT	VOLTAGE
UH-1	REZNOR	UDXC45	SUSPENDED	45/37 MBH	120V



HVAC NOTES		
1. GENERAL	1.1. COORDINATE EXACT LOCATION OF GRILLES AND DIFFUSERS WITH REFLECTED CEILING PLAN OR LIGHTING PLAN IF AVAILABLE. LIGHTING LOCATIONS TAKE PRIORITY.	1.2. CONFIRM EXACT LOCATION OF THERMOSTATS/SENSORS WITH OWNER. MOUNT THERMOSTATS/SENSORS AT 4' ABOVE FINISHED FLOOR. ENSURE THERMOSTAT/SENSOR LOCATIONS WILL NOT BE AFFECTED BY DIRECT SUNLIGHT, COLD WALLS OR MILLWORK.
1.3. PROVIDE 4" FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO AIR HANDLING UNITS.	1.4. PROVIDE ACOUSTIC INSULATION IN FIRST 5' OF SUPPLY AND RETURN AIR DUCTS OFF AIR HANDLING UNITS AND AS INDICATED ON DRAWINGS.	1.5. PROVIDE EXTERNAL INSULATION ON ALL SUPPLY AIR DUCTS AND ON ALL EXHAUST DUCTS WITHIN 10' OF OUTSIDE WALLS AND ROOF.
1.6. BRANCH DUCTWORK TO DIFFUSERS TO BE SAME SIZE AS DIFFUSER NECK.	1.7. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS FOR SUPPLY AIR DUCTS.	1.8. FLEXIBLE DUCT SHALL BE MAXIMUM 10' IN LENGTH AND SHALL BE SECURELY FASTENED TO DUCTS AND DIFFUSERS. PROVIDE HANGERS AND FLEXIBLE DUCTWORK WITHOUT SHARP 90'S, SAGGING, OR CRUSHING OF DUCT.
1.9. PROVIDE TRAP AT OUTLET OF DRAIN FOR ROOFTOP HVAC EQUIPMENT	1.10. PROVIDE FIRE STOPPING AROUND OPENINGS THROUGH FIRE SEPARATIONS.	2. FIRE DAMPERS
2.0. PROVIDE FIRE DAMPERS AT ALL FIRE SEPARATIONS. FIRE DAMPERS SHALL BE C/W LINKAGE OUT OF THE AIR STREAM. FIRE DAMPER		
3. TESTS AND BALANCING	3.1. BALANCING DAMPERS SHALL BE INSTALLED AT ALL TAKE-OFFS FROM BRANCH DUCTS, AND ALL BRANCH DUCT CONNECTIONS TO MAIN DUCTS. BALANCING DAMPERS SHALL BE MANUALLY OPERATED OPPOSED BLADE TYPE, SPLITTER TYPE OR BUTTERFLY TYPE. COMPLETE WITH LOCKING QUADRANT OPERATOR.	3.2. AIR TEST AND BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCING COMPANY. THE AIR BALANCING COMPANY SHALL BE APPROVED BY THE ENGINEER.
3.3. SCOPE OF BALANCING WORK:	3.3.1. ALL LISTED AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN 5% OF THE NOTED DESIGN AIR VOLUMES AS PER PLANS AND SPECIFICATIONS.	3.3.2. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE HVAC SYSTEM FULLY OPERATIONAL TWO WEEKS BEFORE TURNOVER TO THE OWNER. THIS WILL INCLUDE THE REQUIREMENT TO INSTALL CLEAN FILTERS IN ALL RELATED HVAC EQUIPMENT BEFORE TIME OF AIR TESTING AND TO MAKE ALL AIR SYSTEMS FULLY OPERATIONAL.
4. MATERIALS	4.1. DUCTWORK	4.1.1. IN CONFORMANCE WITH SMACNA, ASHRAE, OBC, NFPA 90A SHEET METAL SHALL BE BEST QUALITY LOCK FORMING GALVANIZED SHEET METAL. GALVANIZING SHALL BE TO ASTM A525 (G90), HAVING A THICKNESS OF 0.054mm AND WEIGHING NOT LESS THAN 0.31kg/m ² ON EACH SURFACE.
	4.2. INSULATION	4.2.1. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS WITH UL APPROVED FABRIC OF 6" MINIMUM WIDTH AND WEIGHING NOT LESS THAN 0.8136kg/m ² .
	4.3. INSULATION	4.3.1. PROVIDE 1" INTERNAL ACOUSTIC INSULATION ON: 4.3.1.1. THE FIRST 5' OFF SUPPLY AND RETURN DUCTS OFF ALL AIR HANDLING UNITS. 4.3.2. PROVIDE 1" EXTERNAL INSULATION ON: 4.3.2.1. ALL INDOOR & OUTDOOR REFRIGERATION PIPING 4.3.2.2. ALL SUPPLY AIR DUCTS WHICH ARE NOT LOCATED IN A RETURN AIR PLENUM, 4.3.2.3. EXHAUST DUCTS THROUGH ATTICS AND 10' BACK FROM WALL. 4.3.3. PROVIDE 2" EXTERNAL INSULATION ON: 4.3.3.1. ALL SUPPLY AND RETURN AIR DUCTS THROUGH ATTICS OR UN-INSULATED AREAS
	5. CONTROL WIRING	5.1. ALL CONTROL WIRING SHALL BE RUN PARALLEL TO BUILDING LINES AND TIGHT TO ROOF DECK OR WALLS. 5.2. ALL CONCEALED INDOOR CONTROL WIRING SHALL BE RUN IN LVT. 5.3. ALL EXPOSED INDOOR CONTROL WIRING IN UNFINISHED AREAS, T-BAR CEILING SPACES, ATTICS AND CRAWL SPACES SHALL BE RUN IN EMT CONDUIT WITH FINAL CONNECTION IN BX TO EQUIPMENT/COMPONENTS. 5.4. ALL OUTDOOR CONTROL WIRING SHALL BE RUN IN LIQUIDTIGHT. FLEXIBLE CABLE MUST BE STRAPPED TO SUPPORT WITHIN 12" OF TERMINATION BOX OR EQUIPMENT.

2	ISSUED FOR PERMIT	OCT 2025
1	ISSUED FOR COORD	SEPT 2025
NO.	SUBMISSION	DATE
JASS GILL 725 LAKE ROAD, BOWMANVILLE, ON		
MECHANICAL HVAC NOTES AND DETAILS		
 D.G. BIDDLE & ASSOCIATES CONSULTING ENGINEERS & PLANNERS		
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MAIN FLOOR FLOOR-
SPRINKLERS
ZONE XX
ZONE XX
TIE SPRINKLER TEST
DRAINS INTO SANITARY
LINE. COORDINATE
WITH PLUMBING
CONTRACTOR. TYPICAL.
ZONE CONTROL VALVE
ASSEMBLY TO BE KEPT
ACCESSIBLE FOR TESTING
AND SERVICE. SEE DETAIL
ON M3.3. TYPICAL.
INCOMING
FIRELINE
CTE

FIRELINE DOWN TO
FIRE DEPARTMENT
CONNECTION C/W
CHECK VALVE

SPRINKLER LEGEND	
—VET—VET—VET—	SPRINKLER LINE
⊙	SEMI-RECESSED PENDENT SPRINKLER HEAD C/W ESCUTCHEON
⊗	UPRIGHT SPRINKLER HEAD
▲	SIDEWALL SPRINKLER HEAD
—	PIPE BREAK/CONTINUATION

2	ISSUED FOR PERMIT	OCT 2025
1	ISSUED FOR COORDINATION	SEPT 2025
NO.	SUBMISSION	DATE

JASS GILL
725 LAKE ROAD, BOWMANVILLE, ON
**MECHANICAL SPRINKLER
BUILDING 1 LAYOUT**



**D.G. BIDDLE
& ASSOCIATES**
CONSULTING ENGINEERS & PLANNERS

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PROJECT NO.:	123081
DRAWING NO.:	M3.1



FIRE PROTECTION NOTES:

THE ENTIRE BUILDING IS SPRINKLERED.
IN HEATED AREAS A WET SPRINKLER SYSTEM WILL BE PROVIDED.
IN UNHEATED AREAS A DRY SPRINKLER SYSTEM WILL BE PROVIDED.
THE CONTRACTOR SHALL PROVIDE A HYDRAULICALLY DESIGNED STANDPIPE AND SPRINKLER SYSTEM TO THE APPROVAL OF LOCAL AUTHORITIES. THE DESIGN DOCUMENTS SHALL BE SEALED BY A PROFESSIONAL ENGINEER.

THESE DRAWINGS ARE INTENDED TO ESTABLISH BASIC GUIDELINES, ASSUME FULL RESPONSIBILITY FOR THE LAYOUT AND DETAILS OF ALL FIRE PROTECTION WORK TO MEET THE REQUIREMENTS OF N.F.P.A. & GOVERNING CODES OR REGULATIONS AND TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND INSURER FOR THE OWNER.

USE THE LATEST MECHANICAL, ELECTRICAL, ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS FOR LAYOUTS AND INSTALLATIONS.

CONTRACTOR TO PROVIDE HYDRAULIC FIRE PROTECTION CALCULATIONS AND FIRE PROTECTION DRAWINGS IN SHOP DRAWING FORMAT TO THE AUTHORITIES HAVING JURISDICTION AND ONE COPY TO THE ENGINEER PRIOR TO ANY INSTALLATION.

HAZARDS	
LIGHT HAZARD (0.1 gpm over 1500 sq.ft.)	ALL AREAS EXCEPT BELOW (INCLUDING ATTIC)
ORDINARY HAZARD I (0.15 gpm over 1500 sq.ft.)	STORAGE LOCKERS, MACHINE, GARBAGE, MECHANICAL AND ELECTRICAL ROOMS

HAZARDS	
LIGHT HAZARD (0.1 gpm over 1500 sq.ft.)	ALL AREAS EXCEPT BELOW (INCLUDING ATTIC)
ORDINARY HAZARD I (0.15 gpm over 1500 sq.ft.)	STORAGE LOCKERS, MACHINE, GARBAGE, MECHANICAL AND ELECTRICAL ROOMS

ALL AREAS EXCEPT BELOW (INCLUDING ATTIC)

STORAGE LOCKERS, MACHINE, GARBAGE, MECHANICAL AND ELECTRICAL ROOMS

STORAGE LOCKERS, MACHINE, GARBAGE,
MECHANICAL AND ELECTRICAL ROOMS

SPRINKLER NOTES

<ol style="list-style-type: none">1. CONFIRM EXISTING CONDITIONS PRIOR TO PRICING AND INSTALLATION.2. PROVIDE VALVES, HEADS, AND PIPING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SPRINKLER SYSTEM IN CONFORMANCE WITH NFPA 13 AND LOCAL CODES.3. PROVIDE FIRE EXTINGUISHERS AS PER DRAWINGS, NFPA 10, AND AS REQUIRED BY LOCAL FIRE PREVENTION SERVICES. ALLOW FOR FOUR (4) ADDITIONAL FIRE EXTINGUISHERS, FROM THAT SHOW ON DRAWINGS AND TO BE LOCATED AT THE DISCRETION OF THE FIRE PREVENTION SERVICES.4. SPRINKLER CONTRACTOR TO COORDINATE WITH GRILLE, AND LIGHT LOCATIONS AND WITH MECHANICAL AND ELECTRICAL DRAWINGS PRIOR TO LOCATING SPRINKLER HEADS. CONTRACTOR IS TO VERIFY HEAD LAYOUT ON SITE TO ENSURE ADEQUATE COVERAGE AS PER NFPA 13.5. CONTRACTOR SHALL DETERMINE BEST ROUTING OF SPRINKLER PIPING BY COORDINATING WITH ALL DRAWINGS. REFER SPECIFICALLY TO M1-PLUMBING, M2-DUCTWORK AND GAS PIPING. COORDINATE WITH ALL OTHER TRADES ON SITE PRIOR TO INSTALLATION OF PIPING.6. CONCEAL ALL NEW PIPING IN CEILING SPACE OR BULKHEADS.7. PROVIDE ACCESS DOORS IN GYROCK CEILINGS AND WALLS FOR ACCESS TO VALVES, ETC. WHERE REQUIRED.8. COORDINATE INTERLOCK OF SPRINKLER SYSTEM INTO FIRE ALARM SYSTEM WITH ELECTRICAL CONTRACTOR.9. ALL REQUIRED CUTTING AND CORING BY SPRINKLER CONTRACTOR. ALL PATCHING BY GENERAL CONTRACTOR.10. PROVIDE DESIGN DRAWINGS COMPLETE WITH HYDRAULIC CALCULATIONS FOR SUBMITTAL AND REVIEW BY ENGINEER AND REVIEWING AUTHORITIES.11. SYSTEM SHALL BE TESTED AS PER SPECIFICATIONS AND WITNESSED BY THE ENGINEER.12. COORDINATE TESTING OF DEVICES INTERLOCKED WITH FIRE ALARM SYSTEM WITH CONTRACTOR.13. PROVIDE MATERIAL AND TEST CERTIFICATES UPON COMPLETION OF INSTALLATION AND TESTING TO ENGINEER AND REVIEWING AUTHORITIES.
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GENERAL REQUIREMENTS FOR MECHANICAL WORK

1. SCOPE OF WORK
 - 1.1. CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.
 - 1.2. THE GENERAL MECHANICAL SPECIFICATIONS SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.
 - 1.3. CONFORM WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C., ALL OTHER APPLICABLE CODES, REGULATIONS, BY-LAWS AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND INTERPRETATIONS OF THE AUTHORITIES HAVING JURISDICTION. THESE CODES AND STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.
2. EXAMINATION OF SITE AND INFORMATION
 - 2.1. EACH SUBCONTRACTOR, BEFORE WORK, SHALL EXAMINE THE SITE, THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND THEY SHALL FAMILIARIZE THEMSELVES WITH THE BUILDING CONSTRUCTION AND FINISH IN ORDER THAT THEIR TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.
3. RELATIONSHIP TO OTHER TRADES
 - 3.1. THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS INSTALLING EQUIPMENT, PIPING, OTHER ELECTRICAL, AND FOUNDATIONS, ETC., WHILE THEY AFFECT THEIR INSTALLATION, AND THEY SHALL ARRANGE THEIR EQUIPMENT, PIPING, ETC., IN PROPER RELATION WITH OTHER APPARATUS, AND WITH THE BUILDING CONSTRUCTION. THIS SUBCONTRACTOR SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER THEREOF THAT ACCORDS WITH THE REQUIREMENTS OF THE PROJECT.
 - 3.2. SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.
 - 3.3. THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENINGS, FOUNDATION WORK, HANGERS, INSERTS, ANCHORS, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF THE SUBCONTRACTORS WORK, AND THEY SHALL FURNISH ALL INFORMATION AND NECESSARY MATERIALS IN AMPLE TIME, SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL APPLY AND CORRECTLY AND ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC.
 - 3.4. FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER THEM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS AT A LATER DATE AND THE SUBSEQUENT PATCHING, ETC., THEREBY INCURRED.
 - 3.5. NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY TRADES-PERSONS SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.
 - 3.6. EACH SUBCONTRACTOR IS TO BE AN EXPERT IN THEIR TRADE.
4. REQUIREMENTS OF INSPECTION DEPARTMENTS
 - 4.1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.
 - 4.2. EACH SUBCONTRACTOR SHALL PREPARE DRAWINGS IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.
 - 4.3. IN THE EVENT THAT THE INSPECTION DEPARTMENT'S REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, THE SUBCONTRACTOR SHALL CONSULT ENGINEER BEFORE PROCEEDING WITH THE SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE NOT NECESSARILY ACCEPTABLE TO INSPECTION DEPARTMENTS AND MINOR SUEPCTIONS NEED ONLY BE MADE BY SUBCONTRACTORS.
5. CERTIFICATES, PERMITS, FEES
 - 5.1. THIS SUBCONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CONNECTIONS TO STORM, SANITARY, WATER AND GAS IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND THEY SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.
6. GUARANTEE
 - 6.1. THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND THEY SHALL BE RESPONSIBLE FOR ANY SUCH DEFECTS FROM ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE YEAR AFTER WRITTEN ACCEPTANCE OF THEIR WORK, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER, WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT ABSOLUTE ANY LONGER WARRANTIES ON SPECIFIC ITEMS OF EQUIPMENT.
 - 6.2. ALL INJURIES TO ADJACENT WORK, PARTICULARLY PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO EQUIPMENT, SHALL BE REPAIRED BY THIS SUBCONTRACTOR AT THE EXPENSE OF THE SUBCONTRACTOR. IF REPLACEMENT AND REPAIR, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR, ALL REPAIR WORK SHALL BE DONE BY TRADES RESPONSIBLE FOR THE ORIGINAL WORK.
7. DRAWINGS
 - 7.1. THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR SPECIAL APPARATUS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWING IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND MAY BE ALTERED, AS APPROVED BY THE ENGINEER, TO MEET REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR THEIR WORK THROUGHOUT, AND THEY SHALL ARRANGE THEIR PIPING, WIRING AND APPARATUS TO COMPLY WITH THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO-OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.
 - 7.2. SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.
 - 7.3. ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.
8. RESPONSIBILITY AND LIABILITY
 - 8.1. EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF THEIR WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH OTHER WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. THEY SHALL BE RESPONSIBLE FOR ANY SUCH DEFECTS OF THIS SUBCONTRACTOR AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED.
 - 8.2. THE SUBCONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS. THE ENGINEER'S DECISIONS SHALL BE FINAL. THE SUBCONTRACTOR SHALL BE RESPONSIBLE IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON THEIR PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE THEM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.
9. CLEAN-UP
 - 9.1. DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP THEIR WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS RESULTING FROM THEIR WORK.
 - 9.2. UPON COMPLETION OF THEIR WORK THEY SHALL LEAVE THE PREMISES IN A BROOM-CLEAN CONDITION.
10. PROTECTION
 - 10.1. SUBCONTRACTORS ARE TO PROTECT THEIR WORK FROM CONSTRUCTION DIRT OR DAMAGE FROM ANY CAUSE. SECURELY PLUG AND CAP ALL OPENINGS IN PIPE, EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.
11. ELECTRICAL WIRING AND CONTROLS
 - 11.1. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADES SHALL PROVIDE STARTERS, THERMOSTAT VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.



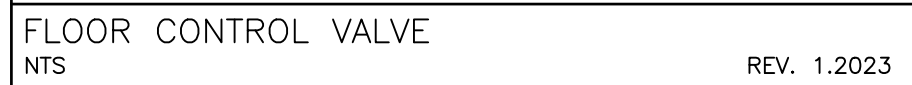
NOTES

1. FOR DETAILS OF BACKFLOW PREVENTION DEVICE SEE S-240.040.
2. FOR DETAILS OF DOMESTIC LINE LAYOUT SEE S-240.040.
3. FOR DETAILS OF METER, VALVE, PRO READ RECEPTACLE AND WIRE INSTALLATION SEE S-240.010.



DWG. DATE 2008 04
REVISION NO.: 1
REV. DATE: 2013 04
SCALE: N.T.S

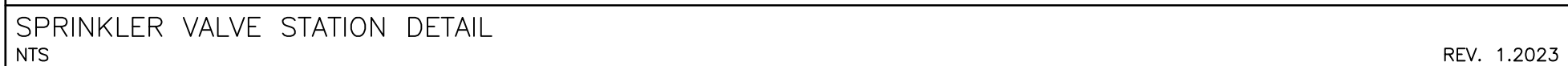
S-240.051



SPRINKLER INSTALLATION AND COORDINATION NOTES:


1. ENTIRE BUILDING SHALL BE PROTECTED WITH SPRINKLER SYSTEM.
2. SPRINKLER HEAD LAYOUT SHOWN FOR SCHEMATIC PURPOSES ONLY. THE SPRINKLER CONTRACTOR IS REQUIRED TO DESIGN AND INSTALL A COMPLETE SPRINKLER SYSTEM IN CONFORMANCE WITH NFPA 13-2016 UNDER BASE CONTRACT.
3. DESIGN DRAWINGS TO INCLUDE ALL PIPING COMPLETE INCLUDING VALVES, RELATED COMPONENTS AND HYDRAULIC CALCULATIONS.
4. NO EXTRA TO BE PROVIDED FOR ADDITIONAL SPRINKLER HEAD REQUIREMENTS. SPRINKLER HEADS SHOWN FOR SCHEMATIC PURPOSES ONLY. THE SPRINKLER CONTRACTOR IS REQUIRED TO DESIGN AND INSTALL A COMPLETE SPRINKLER SYSTEM.
5. TYPICAL BULKHEADS DETAILS ARE FOR ILLUSTRATION PURPOSES ONLY. CONTRACTOR TO PROVIDE AND REVIEW ARCHITECTURAL DRAWINGS FOR CEILING PLANS WHEN PRICING PROJECT. FINAL SITE COORDINATION BETWEEN ALL TRADES WILL DETERMINE ACTUAL ROUTING.
6. COORDINATE SHARED SPACES WITH GAS PIPING, HVAC DUCTWORK AND PLUMBING PIPING.
7. CLEARANCES TO BUILDING SERVICES/EQUIPMENT INCLUDING LIGHTING FIXTURES AND HVAC SYSTEMS SHALL BE IN CONFORMANCE WITH NFPA 13-2016 REQUIREMENTS.
8. REFER TO DETAIL FOR SUGGESTED FIRE STOPPING OF PIPING THROUGH FIRE SEPARATIONS.
9. ALL VALVES TO BE SUPERVISED BY FIRE ALARM SYSTEM AND LABELED TO MATCH FIRE ALARM SYSTEM.
10. TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND AWARE OF THE WORKS BEING PROVIDED AND THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INDICATED ON WORKER SHEETS OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.
11. SPRINKLER SYSTEM IS TO BE INSTALLED OR EXTENDED IN CONFORMANCE WITH THE ONTARIO BUILDING CODE DIV. B. 3.2.5 & NFPA 13-2013.
12. PORTABLE FIRE EXTINGUISHERS MUST BE INSTALLED IN CONFORMANCE WITH THE ONTARIO FIRE CODE.

1. ENTIRE BUILDING SHALL BE PROTECTED WITH SPRINKLER SYSTEM.
2. SPRINKLER HEAD LAYOUT SHOWN FOR SCHEMATIC PURPOSES ONLY. THE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR SCHEMATIC PURPOSES ONLY. THE SPRINKLER SYSTEM IS IN CONFORMANCE WITH NFPA 13-2016 UNDER BASE CONTRACT.
3. DESIGN DRAWINGS TO INCLUDE ALL PIPING COMPLETE WITH SIZES, VALVES, ASSOCIATED COMPONENTS AND HYDRAULIC CALCULATIONS.
4. NO EXTRA TO BE PROVIDED FOR ADDITIONAL SPRINKLER HEAD REQUIREMENTS. SPRINKLER HEADS SHOWN FOR SCHEMATIC PURPOSES ONLY. THE SPRINKLER CONTRACTOR IS REQUIRED TO DESIGN AND INSTALL A COMPLETE SPRINKLER SYSTEM.
5. TYPICAL BULKHEADS DETAILS ARE FOR ILLUSTRATION ONLY. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL MECHANICAL DRAWINGS FOR CEILING PLANS WHEN PRICING PROJECT. FINAL SITE COORDINATION BETWEEN ALL TRADES WILL DETERMINE ACTUAL ROUTING.
6. COORDINATE SHARED SPACES WITH GAS PIPING, HVAC DUCTWORK AND PLUMBING PIPING.
7. CLEARANCES TO BUILDING SERVICES/EQUIPMENT INCLUDING LIGHTING FIXTURES AND HVAC SYSTEMS SHALL BE IN CONFORMANCE WITH NFPA 13-2016 REQUIREMENTS.
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9. ALL VALVES TO BE SUPERVISED BY FIRE ALARM SYSTEM AND LABELED TO MATCH FIRE ALARM SYSTEM.
10. TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND LICENSED IN THE PROVINCE OF ONTARIO. BEING THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INCLUDED WHETHER SHOWN OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.
11. SPRINKLER SYSTEM IS TO BE INSTALLED OR AMENDED IN CONFORMANCE WITH THE ONTARIO BUILDING CODE DIV. B, 3.2.5 & NFPA 13-2013.
12. PORTABLE FIRE EXTINGUISHERS MUST BE INSTALLED IN CONFORMANCE WITH THE ONTARIO FIRE CODE.



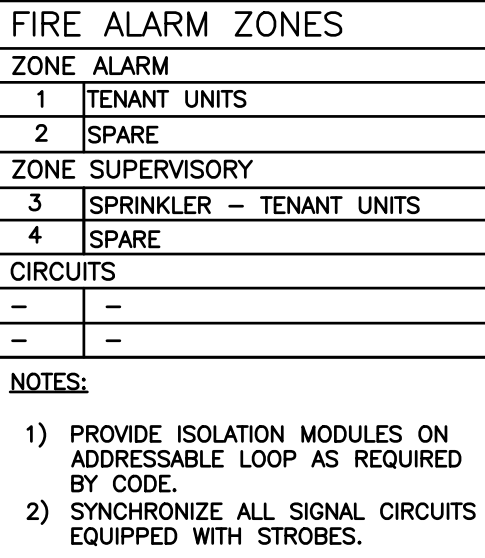
JASS GILL
725 LAKE ROAD, BOWMANVILLE, ON




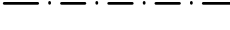














MECHANICAL SPRINKLER
NOTES AND DETAILS

 **D.G. BIDDLE
& ASSOCIATES**
CONSULTING ENGINEERS & PLANNERS

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SCALE:	1:125
DESIGNED BY:	J.T.C.
CHECKED BY:	J.T.C.
PROJECT NO.:	123081
DRAWING NO.:	M3.2



LIGHTING LEGEND	
	SINGLE POLE, SINGLE THROW TOGGLE SWITCH, ONE, TWO, OR THREE GANGED ('3' DENOTES 3-WAY)
	SUSPENDED 4' LED STRIP LIGHT, 120V/1PH
	LITHONIA WALLPACK
	SWITCHWIRING
	EXIT SIGN WITH EMERGENCY LIGHTING EQUAL TO LUMACELL LAC WITH BACK-UP BATTERY PACK
	DOUBLE HEAD EMERGENCY LIGHT EQUAL TO LUMACELL MQM2LD10
	BACK UP BATTERY PACK
	RECEPTACLE
	208V POWER SUPPLY
	120V POWER SUPPLY
	ELECTRICAL PANEL
	ELECTRICAL DISCONNECT
	WIRING
	GFI RATED RECEPTACLE
	WEATHERPROOF
	SEPARATE CIRCUIT
	EQUIPMENT/FIXTURE TAG
	SPRINKLER FLOW SWITCH
	SUPERVISORY VALVE

1. GENERAL:
 - 1.1. ARRANGE FOR ESA INSTALLATION PERMIT AND INSPECTION AND FORWARD A COPY OF THE ESA CERTIFICATE TO THE ENGINEER UPON ACCEPTANCE.
 - 1.2. ENSURE THAT ALL ELECTRICAL EQUIPMENT SUPPLIED BY OTHER TRADES IS SUITABLE FOR THE RESPECTIVE VOLTAGE, CONFIRM ANY REQUIREMENTS FOR SPECIAL INSTALLATION.
 - 1.3. ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS DIVISION SHALL BE CARRIED OUT Y THIS DIVISION, NO CHASING BEYONDWORK WILL BE ALLOWED. ANY DAMAGE TO THE WORK BY ANY DAMAGE TO THE WORK BY WORK OF THIS DIVISION.
 - 1.4. SUBMIT 4 COPIES OF SHOP DRAWINGS FOR REVIEW AND RECORDS.
 - 1.5. ALL MATERIALS USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY CLASS A APPROVED AND OF ONE MANUFACTURER, WHEREVER TRADE NAMES ARE USED, THE MANUFACTURER'S NAME, THESE MATERIALS SHALL BE OF BEST AVAILABLE QUALITY AND MANUFACTURE, OBTAIN AND PAY FOR SPECIAL HOUR INSPECTION OF SPECIFIED NON-CLASS A ELECTRICAL EQUIPMENT.
 - 1.6. PROVIDE ALL CONDUIT, WIRING, SWITCHES, OUTLETS, DEVICES, ETC., AS REQUIRED, MAKE FINAL CONNECTIONS TO VIBRATING EQUIPMENT WITH FLEXIBLE CONDUIT.
 - 1.7. PROVIDE ALL CONDUIT, WIRING, SWITCHES, OUTLETS, DEVICES REQUIRED FOR THE WORK OF THIS DIVISION, PROVIDE CONDUIT FOR ALL SERVICES PENETRATING THE FLOOR SLAB, SEAL ALL PENETRATIONS THROUGH FLOOR SLABS WITH AN APPROVED NON-SHRINKING, FIREPROOF AND FIREPROOF SEALANT APPROVED BY ARCHITECT. NO CONDUITS OR EQUIPMENT SHALL BE MOUNTED DIRECTLY ON ROOF DECK, PROVIDE ALL NECESSARY UNITS AND MATERIALS, INCLUDING TIES TO ENABLE SUPPORT FROM TOP CHORD OF JOISTS.
 - 1.8. ALL CONDUIT SHALL BE RIGID STEEL TIGHT WALLED OR EMT THINWALL WITH STEEL SET SCREW COUPLINGS AND CONNECTORS INSULATED THROUGHOUT. ALL WIREMOUNTED CONDUIT EXPOSED CONDUITS AND WIREMOUNTED CLOSURES SHALL BE NEAT IN
2. APPEARANCE, RUN PARALLEL TO BUILDING LINES AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH NYLON FISH WIRE.
 - 1.1. ALL WIRING SHALL BE MINIMUM #12 GAUGE COPPER, EXCEPT AS OTHERWISE NOTED. ALL WIRING SHALL BE 600 VOLT TYPE RW90. CONDUIT SHALL BE MINIMUM 1/2" DIA. ALL WIRING SHALL BE IN SPACE FOR FINAL CONNECTION TO LIGHT FIXTURE AND FROM CEILING DISTRIBUTION BOXES DOWN PATTERNS TO RECEPTALS ONLY. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 AWG. MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 3 PERCENT. PROVIDE GROUND WIRES WITH ALL FEEDERS AND CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND HYDROCARBON CONTAMINANTS WITH OTHER TRADES. OBTAIN HYDRO APPROVAL. PRIOR TO LAYING OUT, OTHER TRADES IN LAYING OUT OF THE WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER TRADES. CARRY OUT WORK PROMPTLY WHICH MAY INTERFERE WITH THE WORK SCHEDULE OF OTHER TRADES.
 - 1.2. MECHANICAL TRADES WIRING: PROVIDE ALL CONDUIT, WIRING, SPLITTERS, OUTLET BOXES AND CONNECTOR SWITCHES AS SHOWN ON DRAWINGS. ALL OTHERS AS CONTROL PANELS PROVIDED UNDER DIVISION 15. INSTALL, STARTERS AND WIRE COMPLETE. CLEARLY MARK ALL EXPOSED CONDUIT, PULL BOXES, JUNCTION BOXES, ETC., TO INDICATE THE NATURE OF THE SERVICE.
 - 1.3. ALL ALL LUGS AND ALL LUGS AND ALL LUGS AND ALL LUGS. PROVIDE LAMINACED NAMEPLATES AND TYPEWRITTEN DIRECTORIES FOR ALL PANELS.
 - 1.4. PROVIDE ALL EQUIPMENT BEFORE FINAL ACCEPTANCE IS GIVEN FOR THE WORK.
 - 1.5. AFTER THE WORK IS COMPLETED, GIVE A WRITTEN GUARANTEE FOR ONE YEAR COVERING WORKMANSHIP AND MATERIALS. REPAIR OR REPLACE, WITHOUT DELAY, ANY DEFECTS OR DAMAGE DUE TO WORKMANSHIP OR MATERIALS WHICH IN THE OWNER'S OPINION, ARE NOT DUE TO MISUSE OR NEGLECT.

- 2.1. MATERIALS
- 2.1.1. COVER PLATES:
 - COVER PLATES FOR RECEPTACLES, SWITCHES, PILOT LIGHTS, TELEPHONE OUTLETS AND OTHER DEVICES REQUIRING COVER PLATES FOR FLUSH MOUNTED BOXES SHALL BE METAL, STAINLESS STEEL #18-8 TYPE 302, UNLESS OTHERWISE NOTED.
- 2.1.2. WEATHERPROOF COVER PLATES SHALL BE DECAST CORROSION RESISTANT ALUMINUM TYPE WITH TWO SEPARATE LIDS FOR DUPLEX RECEPTACLES SUITABLE FOR MOUNTING ON F.S. TYPE BOXES. ALL WEATHERPROOF COVER PLATES SHALL HAVE RUBBER OR NEOPRENE GASKETS.
- 2.1.3. PLATES FOR SURFACE MOUNTED CAST BOXES SHALL BE DECAST FORMED STEEL. COVER PLATES FOR FLUSH MOUNTED EQUIPMENT SHALL BE SUPPLIED OF QUALITY AND PERFORMANCE SPECIFIED BY THE MANUFACTURER OF THE EQUIPMENT.
- 2.1.4. COVER PLATES SHALL NOT CARRY MANUFACTURER'S NAME.
- 2.1.5. COVER PLATES OF QUALITY SPECIFIED SHALL BE PASS & SEYMOUR, BRYANT LEVITON, SMITH & STONE OR HARVEY HUBBELL.
- 2.2. LIGHT SWITCHES:
 - SWITCH TYPE SHALL BE, UNLESS OTHERWISE INDICATED, BRYANT LEVITON WHITE WITH WHITE SPECIFICATION GRADE, 120V AND QUALITY GRADE. ALL SWITCHES SHALL BE OF QUALITY AS MANUFACTURED BY BRYANT, P & S, ARROW HART, LEVITON AND HUBBELL SHALL BE CONSIDERED AS ACCEPTABLE AS SPECIFIED ALTERNATES.
- 2.3. RECEPTACLES:
 - RECEPTACLES SHALL BE, UNLESS OTHERWISE INDICATED, U GROUND TYPE, WHITE SCREW TERMINAL TYPE.
- 2.3.2. RECEPTACLES SHALL BE SPECIFIED TO CONFORM TO ALL LOCATIONS AND OUTLETS PRIOR TO INSTALLATION. ALLOW TO RELOCATE ANY OUTLET WITHIN 10' OF SPECIFIED LOCATION, PROVIDED INSTALLATION IS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

1. DISTRIBUTION PANELS TO BE LOCATED IN ELECTRICAL ROOM AND EACH UNIT.
2. PANEL SCHEDULES AND CIRCUITING BY MASTER ELECTRICIAN UNDER THEIR ESA
3. ELECTRICAL PANELS TO BE PROVIDED WITH THE FOLLOWING:
 - A. CABLE VOICE AND DATA OUTLETS ARE SHOWN FOR SCOPE OF WORK
 - B. PURPOSES ONLY. CONTRACTOR TO COORDINATE EXACT LOCATIONS WITH OWNER
 - C. ORDERING AND DELIVERY TO BE THE CONTRACTOR'S RESPONSIBILITY
4. REFER TO ARCHITECTURAL DOOR SCHEDULE FOR ALL DOOR POWER REQUIREMENTS. PROVIDE ANY POWER REQUIRED AND BREAKERS TO NEAREST ELECTRICAL PANEL. REFER TO ELECTRICAL PANEL SCHEDULE FOR APPROPRIATE LIGHTING SHOWN IS FOR SCHEMATIC AND SCOPE OF WORK PURPOSES ONLY.
5. CONTRACTOR TO COORDINATE EXACT LOCATION AND ORIENTATION ON SITE.
6. DISCONNECTS AND CIRCUITS WITH BARRIER FREE AREAS TO BE MOUNTED AS PER O.B.C. 3.8.5.1(1)(C). ALL SWITCHES IN BARRIER FREE AREA SHALL BE MOUNTED NO LESS THAN 900MM AND NOT MORE THAN 1100MM ABOVE FINISHED FLOOR. SWITCHES FOR ALL OTHER AREAS SHALL BE MOUNTED AT THE TOP OF THE FACE.
7. ALL RECEPTACLES SHALL BE MOUNTED AT 450MM ABOVE FINISHED FLOOR.
8. CONTRACTOR TO COORDINATE EXACT LOCATIONS, QUANTITIES AND SPECIFICATIONS OF ALL LIGHTING ON-SITE WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
9. CONTRACTOR TO COORDINATE AN ADDITIONAL LIGHTING, RECEPTACLE AND COMMUNICATION OUTLET REQUIREMENTS WITH CLIENT PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR TO PROVIDE ALL DISCONNECTS, STARTERS, AND ANY OTHER DEVICES NECESSARY FOR COMPLETE AND WORKING SYSTEM. NOT ALL MOTOR DEVICES ARE SHOWN.
11. REFER TO SITE LIGHTING PHOTOMETRIC DRAWINGS BY OTHERS FOR EXTERIOR BUILDING AND LOT LIGHTING.

TAG	MANUFACTURER	MODEL
(BU-1) & (BU-2)	LUMACELL	RG12S-200-2-LD10-AT

1. SCOPE OF WORK

1.1. CONFORM TO ALL DRAWINGS RELATED TO THIS PROJECT.

1.2. CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C., ALL OTHER APPLICABLE CODES, REGULATIONS, BY-LAWS AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION. THESE CODES AND STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.

2. EXAMINATION OF SITE AND INFORMATION

2.1. EACH SUBCONTRACTOR BEFORE TENDERING, SHALL EXAMINE THE SITE, THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND THEY SHALL FAMILIARIZE THEMSELVES WITH ALL THE REQUIREMENTS OF THE DRAWINGS IN ORDER THAT THEIR TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.

2.2. IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY THAT MATERIAL AND EQUIPMENT BE BROUGHT TO THE SITE IN SUCH ASSEMBLIES AND SIZES AS TO ENTER INTO THE SPACE WHERE THEY ARE TO BE LOCATED AND TO BE SMALL ENOUGH TO BE HOISTED INTO THE SPACE WITHOUT THE NEED OF ANY CUTTING, PATCHING, ETC., INVOLVED IN GETTING LARGE ASSEMBLIES INTO PLACE. SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR.

3. RELATIONSHIP TO OTHER TRADES

3.1. THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER SUBCONTRACTORS INSTALLING EQUIPMENT, PIPING, OTHER WORK, FOUNDATIONS, ETC., WHICH MAY AFFECT THEIR INSTALLATION, AND THEY SHALL ARRANGE THEIR EQUIPMENT, PIPING, ETC., IN PROPER RELATION TO OTHER TRADES WITH WHICH THEY ARE BUILDING CONSTRUCTION. THIS SUBCONTRACTOR SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT ORDER EQUIPMENT AND MATERIALS.

3.2. SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.

3.3. THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENING FOUNDATIONS, INSURANCE, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF THE SUBCONTRACTORS WORK, AND THEY SHALL FURNISH THE MATERIALS AND THE NECESSARY MATERIALS IN AMPLE TIME SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL SUPPLY AND CORRECTLY AND ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC.

3.4. FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER THEM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS, AND THE SUBSEQUENT PATCHING, ETC., THEREBY REQUIRED.

3.5. NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY PERSONS SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.

3.6. EACH SUBCONTRACTOR IS TO BE AN EXPERT IN THEIR TRADE.

4. SHOP DRAWINGS

4.1. EACH SUBCONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW OF MATERIAL, EQUIPMENT, AND CONSTRUCTION. THE ARCHITECT'S REVISIONS SHALL SHOW IN DETAIL THE DESIGN AND CONSTRUCTION AND PERFORMANCE OF ALL APPARATUS, ETC.

4.2. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND MANUFACTURER'S SPECIFICATIONS OF ANY EQUIPMENT IS GENERAL AND IS NOT INTENDED TO SERVE AS A FINAL CHECK AND IT SHALL NOT RELIEVE THE SUBCONTRACTOR OF THE RESPONSIBILITY OF THE DESIGN AND CONSTRUCTION. CHECKING THE DRAWINGS THEMSELVES, OR OF FURNISHING ANY OF THE MATERIALS AND PERFORMING THE WORK REQUIRED BY THE DRAWINGS AND SPECIFICATIONS TO THE FULL EXTENT OF THIS SPECIFICATION.

4.3. BEFORE SUBMISSION, THIS SUBCONTRACTOR SHALL CHECK ALL SHOP DRAWINGS AND SPECIFICATIONS FOR ACCURACY AND SHALL BE SATISFIED THAT THE DRAWINGS ARE CORRECT AND THAT THE EQUIPMENT WILL FIT PROPERLY IN THE ALLOTTED SPACE. THE SHOP DRAWINGS SHALL BE STAMPED BY THIS

- SUBCONTRACTOR WITH THE WORD "REVIEWED," THE DATE OF APPROVAL, AND THE FIRM'S NAME PRIOR TO SUBMISSION.
5. REQUIREMENTS FOR INSPECTION AND TESTS:
 - 5.1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THE SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.
 - 5.2. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.
 - 5.3. IN THE EVENT THE SUBCONTRACTOR'S INTERPRETATION OF THE REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, THE SUBCONTRACTOR SHALL CONSULT ENGINEER BEFORE PROCEEDING WITH THE SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE GENERALLY ACCEPTABLE TO THE MUNICIPALITY AND PROVINCE, AND MINOR SUPPLEMENTS NEEDED ONLY BE MADE BY SUBCONTRACTORS.
6. CERTIFICATES, PERMITS, FEES
 - 6.1. SUBCONTRACTORS SHALL OBTAIN ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CLOSINGS TO THE MUNICIPALITY. THE SUBCONTRACTOR IS IN CHARGE IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND THEY SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE OF COMPLIANCE WITH ALL LAWS AND REGULATIONS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.
7. GUARANTEE
 - 7.1. THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK HEREIN SPECIFIED IN ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND

PROPER EFFICIENT OPERATION, AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK OF ANY ONE YEAR, SHALL BE REPAIRED BY THE SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER, WHERE SUCH DEFECTS OCCUR, OR ARE DISCOVERED. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTY OR SPECIFIC ITEMS OF EQUIPMENT.

7.2. THE SUBCONTRACTOR SHALL MAINTAIN PLASTER, PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT, CAUSED BY SUCH DEFECTS OF THIS SUBCONTRACTOR'S WORK. THE COST OF REPLACEMENT AND REPAIR, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR. ALL REPAIR WORK SHALL BE DONE BY TRADES RESPONSIBLE FOR THE ORIGINAL WORK.

8. DRAWINGS

8.1. THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR SPECIAL MATERIALS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWING IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND MAY BE ALTERED, AS APPROPRIATE, IN ORDER TO MEET THE REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE MEASUREMENT OF ALL MATERIALS, LAYOUT, AND THEY SHALL ARRANGE THEIR PIPING, WIRING AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER. THEY SHALL CO-OPERATE WITH OTHER SUBCONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.

8.2. THE SUBCONTRACTOR IS PARTICULARLY CAUTIONED THAT SMALL SCALE ENGINEERS' PLANS SHALL NOT BE RELIED UPON FOR THEIR OWN DETAIL DRAWINGS WHERE NECESSARY FOR PROPER CO-ORDINATION OF THE WORK.

8.3. ITEMS SPECIFIED BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.

8.4. ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.

- 9.1. RESPONSIBILITY AND LIABILITY
9.1.1. EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF THE WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH THE OTHER WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. THEY SHALL BE RESPONSIBLE FOR FINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED.
- 9.2. THE SUBCONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING THEIR TENDER. THEY SHALL ABIDE BY DECISIONS GIVEN TO THEM IN WRITING WITH THE SAME EFFECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON THEIR PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES SHALL BE THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.
10. CLEAN-UP
10.1. DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP THEIR WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS OR WASTE ON THEIR WORK.
- 10.2. UPON COMPLETION OF THEIR WORK THEY SHALL LEAVE THE PREMISES IN A BROOM-CLEAN CONDITION.
11. PROTECTION
11.1. SUBCONTRACTORS ARE TO PROTECT THEIR WORK FROM CONSTRUCTION INJURY OR DAMAGE FROM ANY CAUSE. SECURELY PROTECT CAP ALL OPENINGS, EXISTING EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.
12. ELECTRICAL WIRING AND CONTROLS
12.1. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADES SHALL PROTECT STARTERS, THERMOSTATS, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.

BUILDING 1 ELECTRICAL LAYOUT



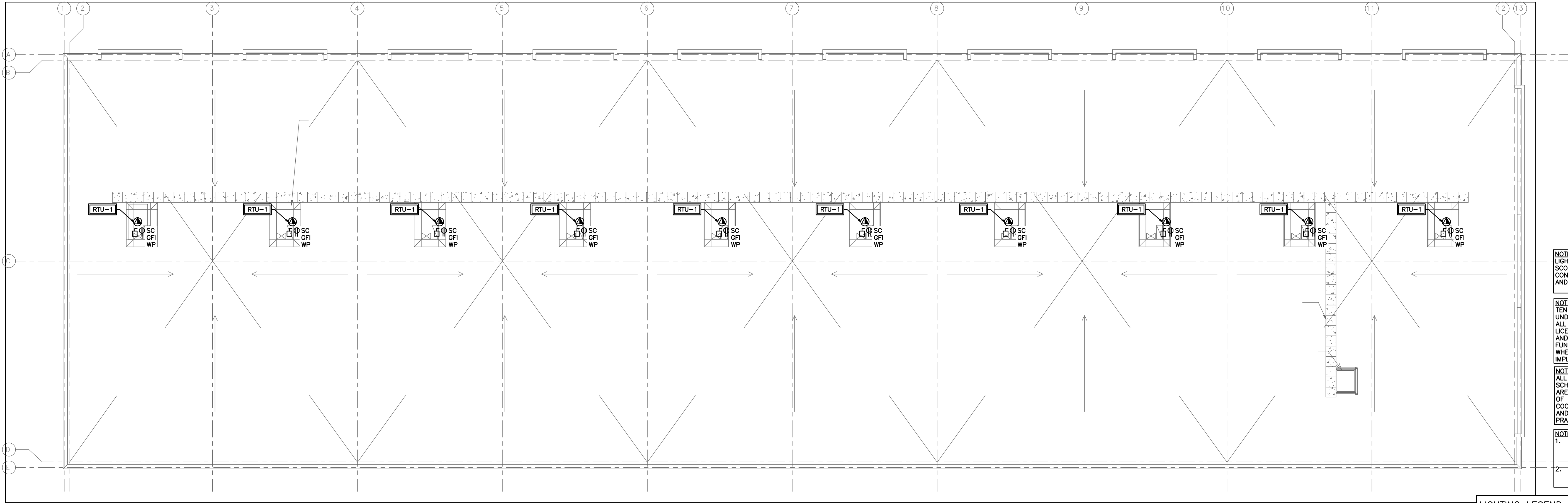
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SCALE:	1:125
DESIGNED BY:	L.J.D
CHECKED BY:	G.V.W.O
PROJECT NO.:	123081
DRAWING NO.:	5/1

17/10/2025
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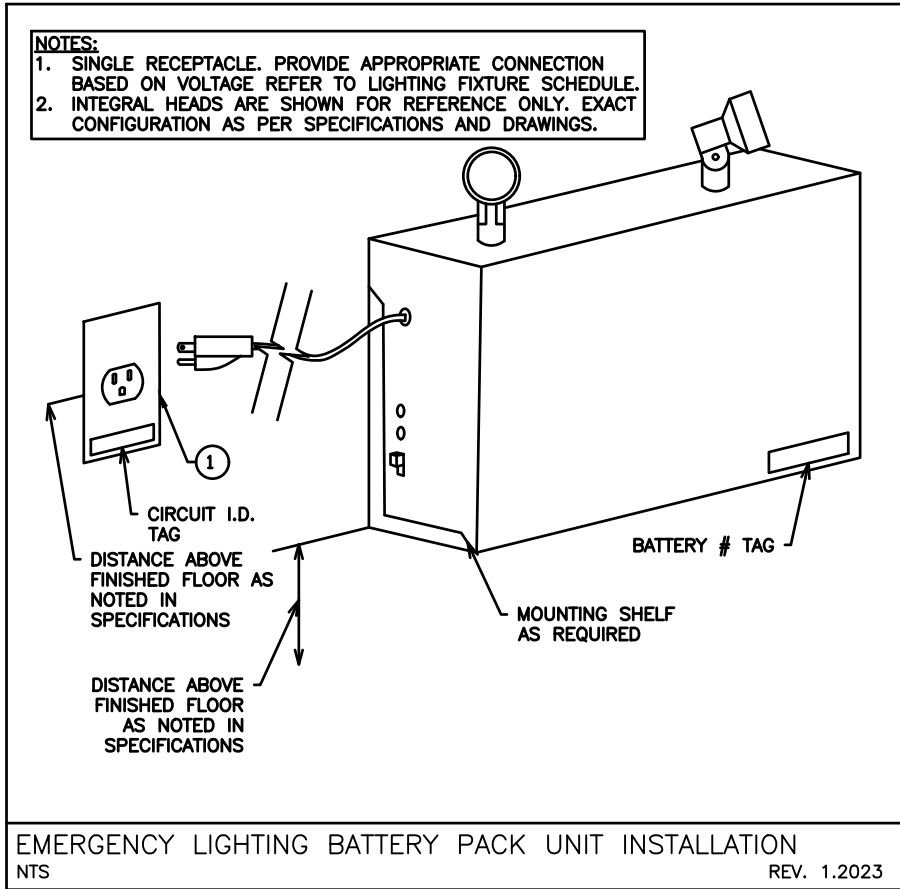


NOTE:
LIGHTING SHOWN IS FOR SCHEMATIC AND SCOPE OF WORK PURPOSES ONLY. CONTRACTOR TO COORDINATE EXACT LOCATION AND ORIENTATION ON SITE.

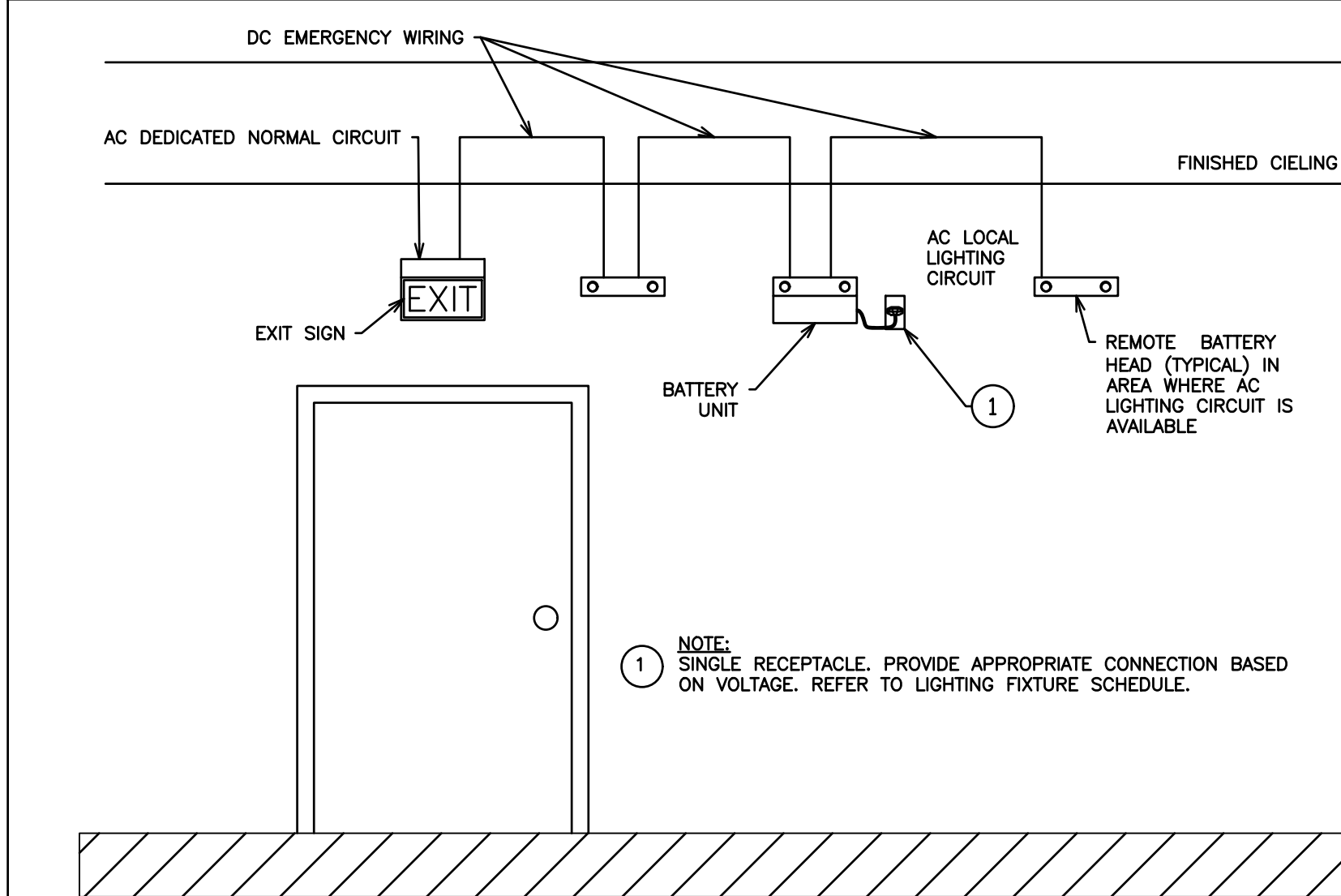
NOTE:
TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND LICENSED IN THE WORKS BEING PROVIDED AND THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INCLUDED WHETHER SHOWN OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.

NOTE:
ALL DETAILS SHOWN ARE SCHEMATIC BY NATURE AND ARE TO BE USED FOR SCOPE OF WORK PURPOSES ONLY. COORDINATE WITH ALL TRADES AND MANUFACTURERS BEST PRACTICES AND DIRECTIONS.

NOTE:
1. ALL SWITCHES IN BARRIER FREE AREAS SHALL BE MOUNTED NO LESS THAN 3ft AND NOT MORE THAN 4ft AFF.
2. SWITCHES FOR ALL OTHER AREAS SHALL BE MOUNTED AT 4ft AFF.



EMERGENCY LIGHTING BATTERY PACK UNIT INSTALLATION
NTS REV. 1.2023



EMERGENCY BATTERY PACK AND EXIT SIGNAGE
NTS REV. 1.2023

LIGHTING FIXTURES

BUILDING LIGHTING SCHEDULE

TAG	SYMBOL	DESCRIPTION	MOUNTING	LED COLOR	WATTAGE	MODEL NUMBER
A		LITHONIA CSS 4' LED STRIP LIGHT	SUSPENDED	4000K	35.3 W	CS2 L48 4000LM MVOLT 40K 80 CRI

ELECTRIC FORCE FLOW HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	COLOUR	MOUNTING	HEATING	AIR FLOW	VOLTAGE	DIMENSIONS	CONTROLS
FF-1	OUELLET	OACO2000	WHITE	SURFACE	2000 Watts	160 cfm	208V	16-1/8"W x 22-1/16"H x 4-5/16"D	BUILT IN TAMPERPROOF THERMOSTAT

NOTES: ADDITIONAL COSTS INCURRED AS A RESULT OF ANY ALTERNATIVE MODELS ARE AT THE EXPENSE OF THE CONTRACTOR. CONFIRM WITH ALL DRAWINGS & SITE CONDITIONS PRIOR TO ORDERING.

LIGHTING LEGEND

	SINGLE POLE, SINGLE THROW TOGGLE SWITCH, ONE, TWO, OR THREE GANGED ('3' DENOTES 3-WAY)
	SUSPENDED 4' LED STRIP LIGHT, 120V/1PH
	SWITCHWIRING
	EXIT SIGN WITH EMERGENCY LIGHTING EQUAL TO LUMACELL LAC WITH BACK-UP BATTERY PACK
	DOUBLE HEAD EMERGENCY LIGHT EQUAL TO LUMACELL MQM2LD10
	BACK UP BATTERY PACK
	RECEPTACLE
	208V POWER SUPPLY
	120V POWER SUPPLY
	ELECTRICAL PANEL
	ELECTRICAL DISCONNECT
	WIRING
	GFI RATED RECEPTACLE
	WEATHERPROOF
	SEPARATE CIRCUIT
	EQUIPMENT/FIXTURE TAG
	SPRINKLER FLOW SWITCH
	SUPERVISORY VALVE

725 LAKE ROAD, BOWMANVILLE
MUNICIPALITY OF CLARINGTON

BUILDING 1 ROOFTOP ELECTRICAL LAYOUT

D.G. BIDDLE & ASSOCIATES
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