

PLUMBING LEGEND	
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---	DOMESTIC HOT WATER (DHW)
--- US ---	UNBURIED SANITARY DRAINAGE (US)
--- S ---	BURIED SANITARY DRAINAGE (S)
--- UST ---	UNBURIED STORM DRAINAGE (UST)
--- ST ---	BURIED STORM DRAINAGE (ST)
○ ○ ○	PIPE UP, BRANCH DROPPING FROM TEE, PIPE DOWN
~	PIPE BREAK/CONTINUATION
⊗	FLOOR (F), ROOF (R), HUB (H), FUNNEL (FF), AREA (A) DRAIN
⊘	BALL VALVE
⊞	CHECK VALVE
⊞	GLOBE VALVE
⊞	PRESSURE REDUCING VALVE (PRV)
⊞	REDUCER
⊞	STRAINER
⊞	UNION
⊞	PRESSURE GAUGE WITH PETCOCK
--- CO ---	CLEAN OUT - EXPOSED
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⊞	SANITARY TRAP
⊞	EQUIPMENT/FIXTURE TAG

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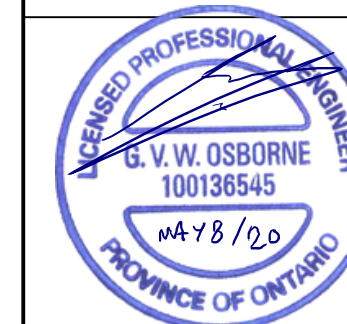
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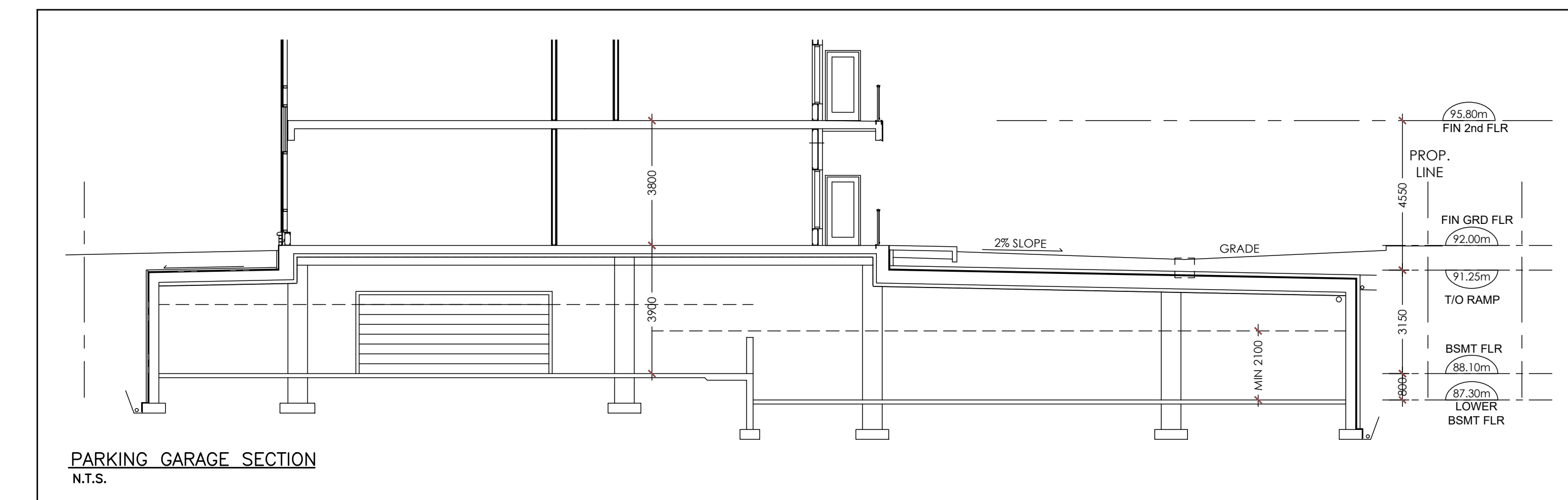
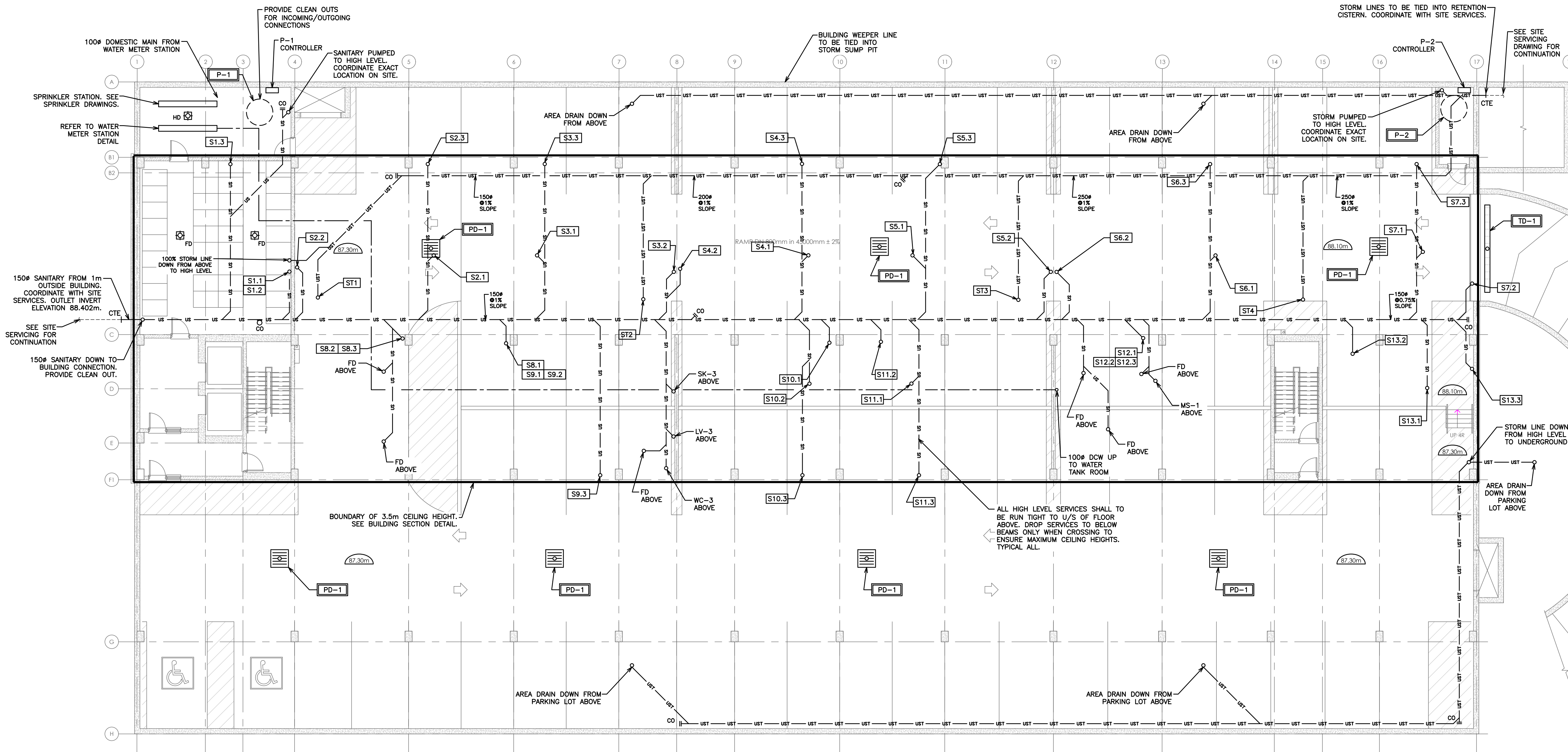
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KIYA DEVELOPMENTS LTD.
MECHANICAL PLUMBING UNDERGROUND

D.G. Biddle & Associates Limited
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SCALE: 1:125	PROJECT NO. 116194
DRAWN BY: B.C.A	DRAWING NO. M1.1
DESIGN BY: B.C.A/G.V.W.O	CAD FILE: 116194 M1
CHECKED BY: G.V.W.O	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT



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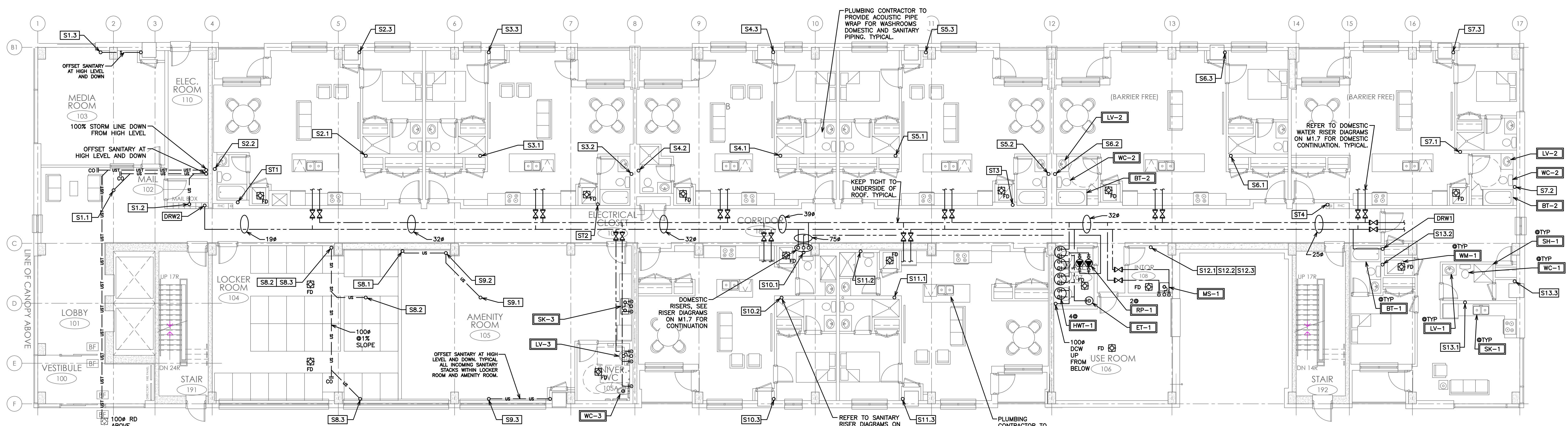
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DRAWN BY: B.C.A. DRAWING NO. M1.2

DESIGN BY: B.C.A./G.V.W.O.

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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. 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 SUBCONTRACTOR'S 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 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 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 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 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. 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 WORK 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.
 8.2. 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 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.

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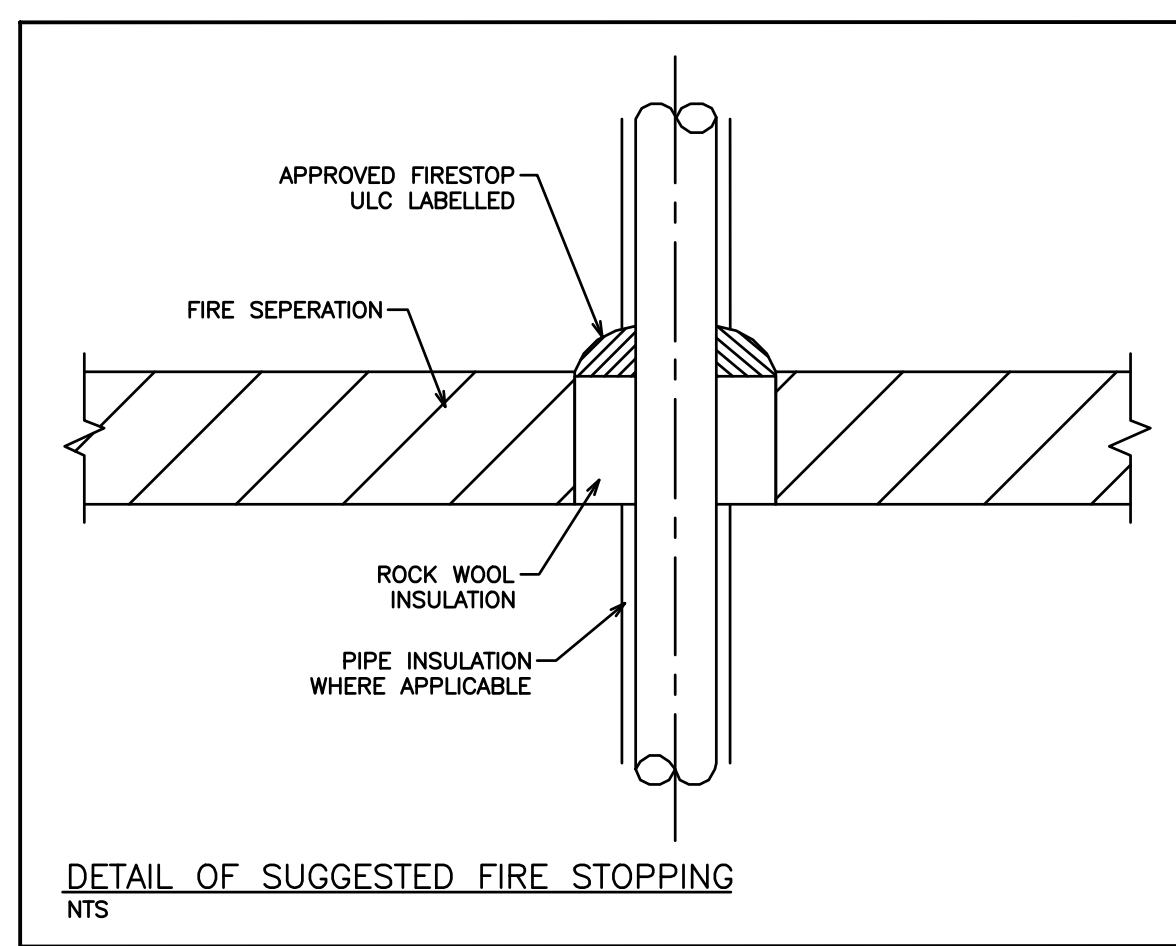
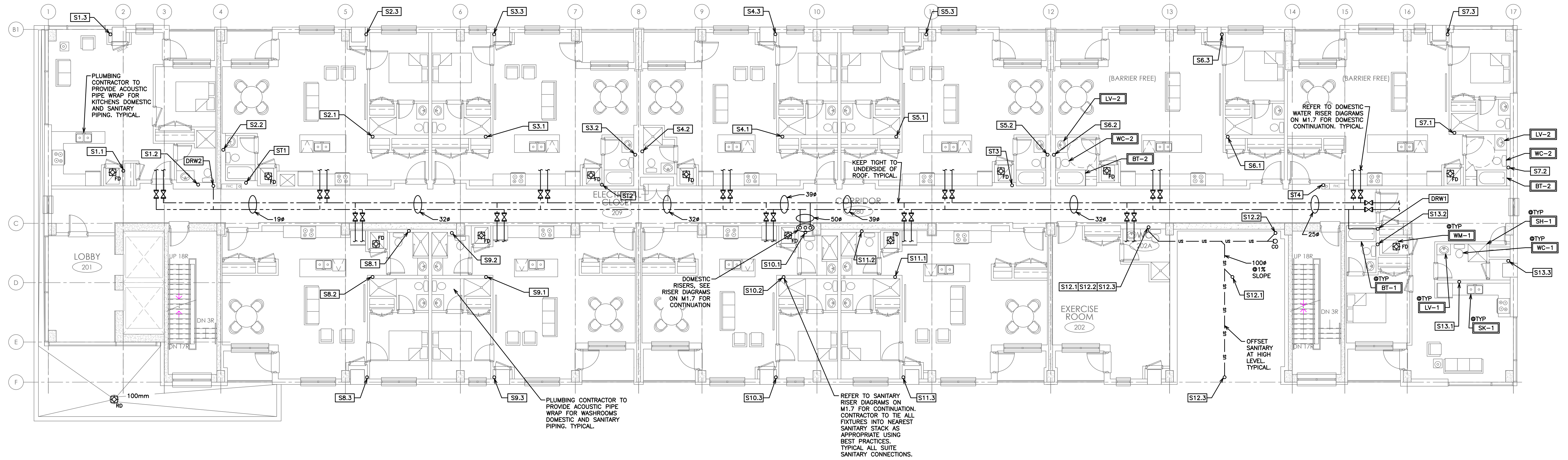
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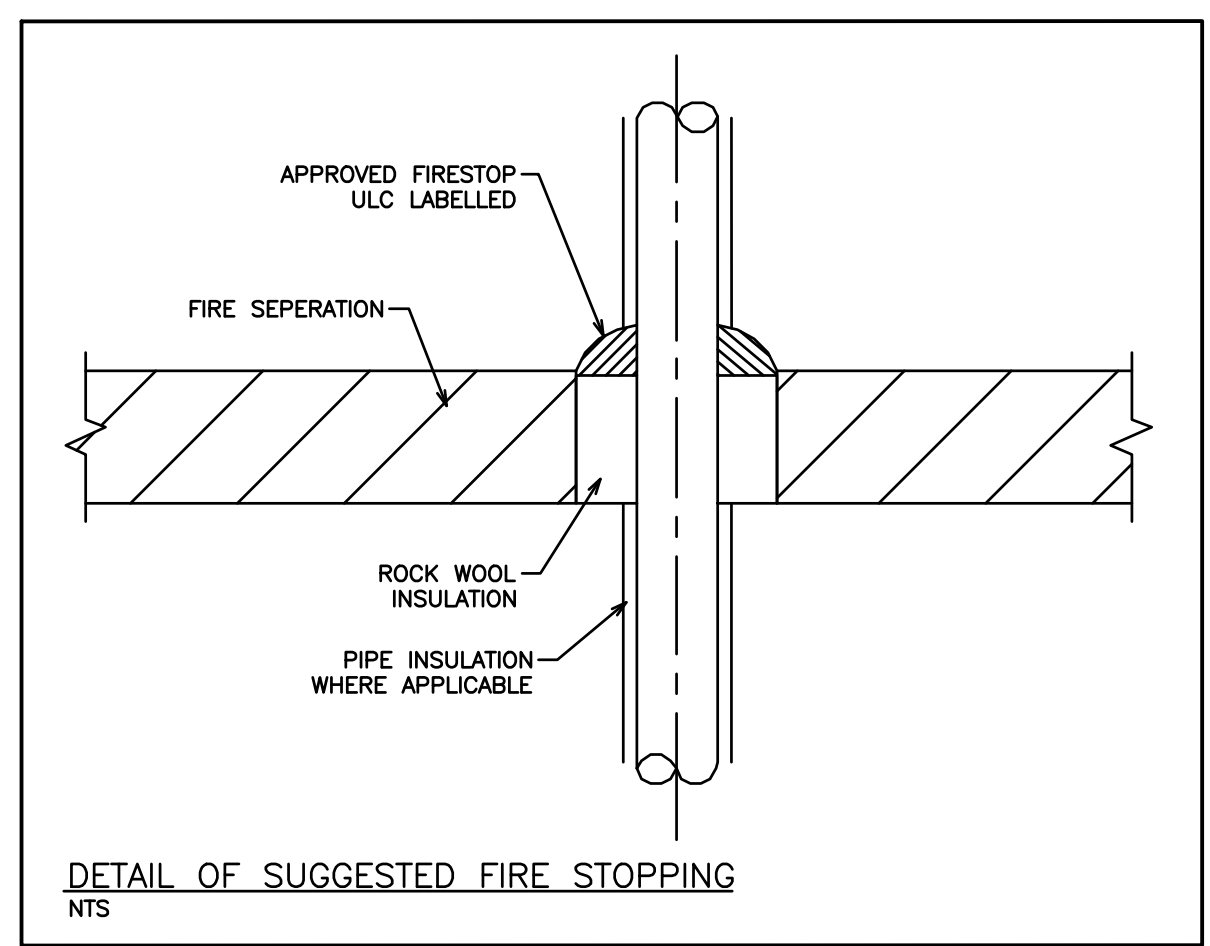
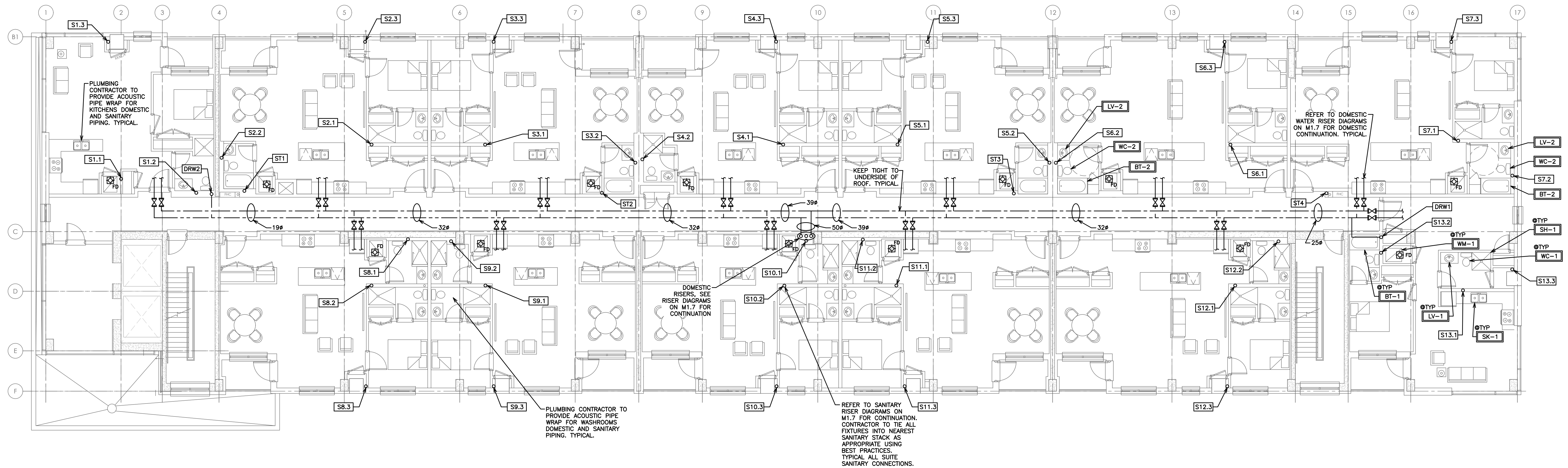
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MECHANICAL PLUMBING
SECOND FLOOR

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G.V.W. OSBORNE
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MAY 8 / 20
PROVINCE OF ONTARIO

SCALE: 1:100
DRAWN BY: B.C.A.
DESIGN BY: B.C.A./G.V.W.O
CHECKED BY: G.V.W.O
DATE: MAY 2020

PROJECT NO. 116194
DRAWING NO. M1.4
CAD FILE: 116194 M1
PLOT DATE: 05/08/20
SUBMISSION: PERMIT



NOTE:
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NOTES:

- COORDINATE BURIED SANITARY LINES WITH STRUCTURAL FOOTINGS.
- PIPING SHOWN FOR SCHEMATIC AND SCOPE OF WORK PURPOSES IN GENERAL LOCATION OF USE, COORDINATE EXACT ROUTING ON SITE AND WITH BEST PRACTICES.
- COORDINATE ALL HOLES THOUGH SLAB AND MASONRY WALLS WITH GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
- ALL HORIZONTAL SANITARY LINES EQUAL TO OR LESS THAN 3"φ TO BE RUN AT MINIMUM 2% SLOPE.
- RUN ALL DOMESTIC AND SANITARY PIPING TIGHT TO UNDERSIDE OF SLAB.
- PROVIDE ACCESS PANELS FOR ALL GROUND FLOOR SANITARY CLEAN OUTS WHERE SHOWN AND WHERE REQUIRED.
- ALL DOMESTIC PIPING INCLUDING PEX PIPING BOTH EXPOSED AND CONCEALED IS TO BE INSULATED. NO EXCEPTIONS.
- COORDINATE SHARED SPACES WITH GAS PIPING, SPRINKLER PIPING AND HVAC DUCTWORK.
- DOMESTIC COLD MAIN TO BE COPPER UP TO SUITE SHUT OFF. PEX TO BE USED WITHIN SUITES.
- PROVIDE CLEAN OUT AT THE BOTTOM OF EACH SANITARY/STORM STACK PRIOR TO UNDERGROUND.
- COORDINATE ACCESS DOORS/PANELS FOR ISOLATION VALVES AND CLEANOUTS WITH GENERAL CONTRACTOR.
- 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.

PLUMBING LEGEND	
---	DOMESTIC COLD WATER (DCW)
---	DOMESTIC HOT WATER (DHW)
--- US --- US ---	UNBURIED SANITARY DRAINAGE (US)
--- S --- S ---	BURIED SANITARY DRAINAGE (S)
--- UST --- UST ---	UNBURIED STORM DRAINAGE (UST)
--- ST --- ST ---	BURIED STORM DRAINAGE (ST)
○	PIPE UP, BRANCH DROPPING FROM TEE, PIPE DOWN
-	PIPE BREAK/CONTINUATION
⊠	FLOOR (F), ROOF (R), HUB (H), FUNNEL (FF), AREA (A) DRAIN
⊘	BALL VALVE
⊚	CHECK VALVE
⊙	GLOBE VALVE
⊖	PRESSURE REDUCING VALVE (PRV)
⊘	REDUCER
⊘	STRAINER
⊘	UNION
⊘	PRESSURE GAUGE WITH PETCOCK
--- S --- HCO	CLEAN OUT - EXPOSED
--- S --- CO	CLEAN OUT - IN FLOOR
⊘	SANITARY TRAP
WC-1	EQUIPMENT/FIXTURE TAG

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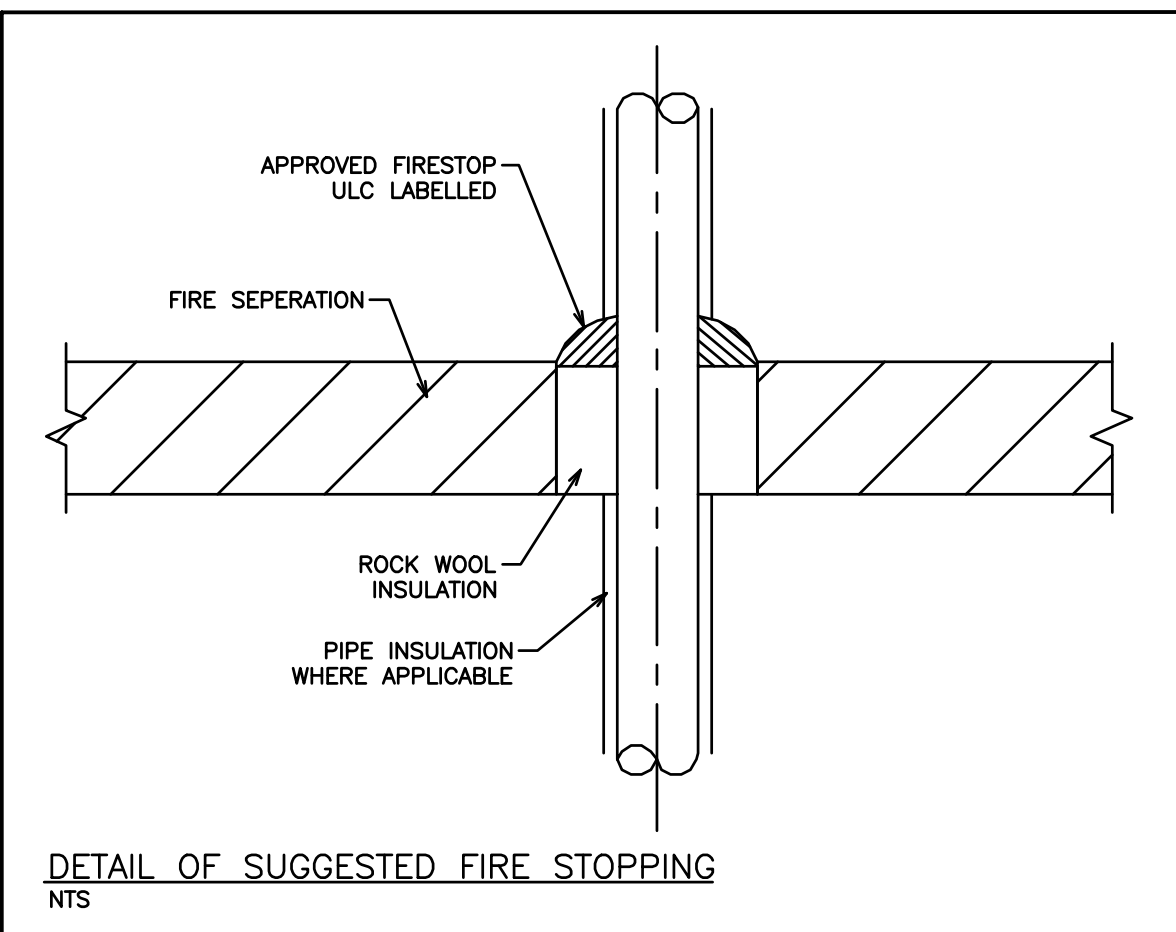
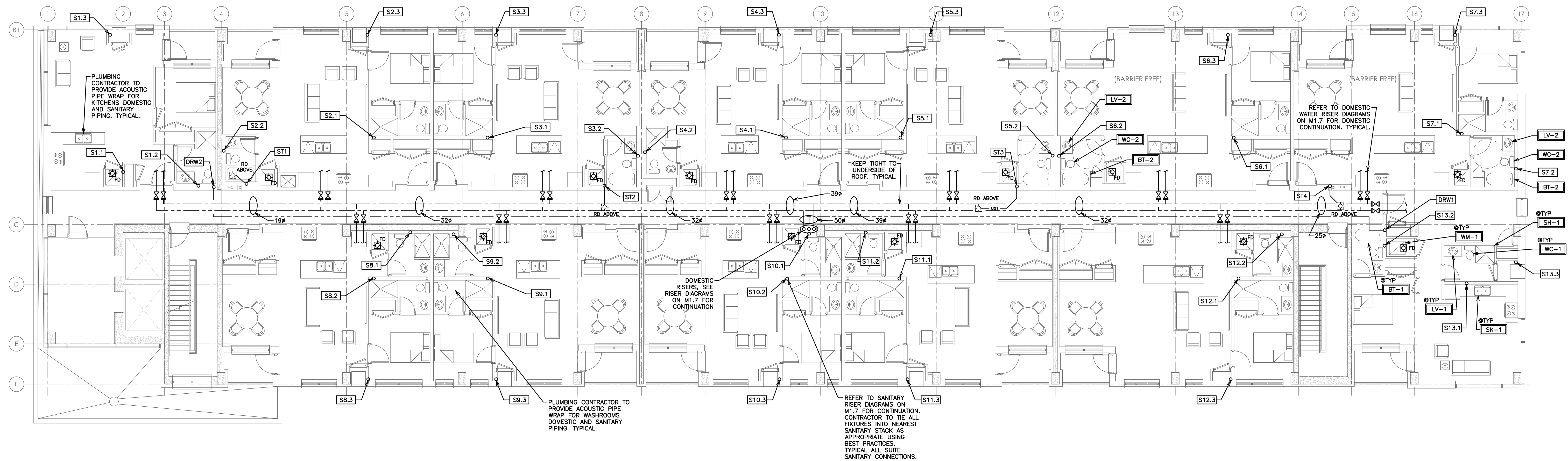
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TYPICAL FLOOR

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SCALE: 1:100 PROJECT NO. 116194
DRAWN BY: B.C.A. DRAWING NO. M1.5
DESIGN BY: B.C.A./G.V.W.O.
CHECKED BY: G.V.W.O. CAD FILE: 116194 M1
DATE: MAY 2020 PLOT DATE: 05/08/20 SUBMISSION: PERMIT



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○ ○ ○	PIPE UP, BRANCH DROPPING FROM TEE, PIPE DOWN
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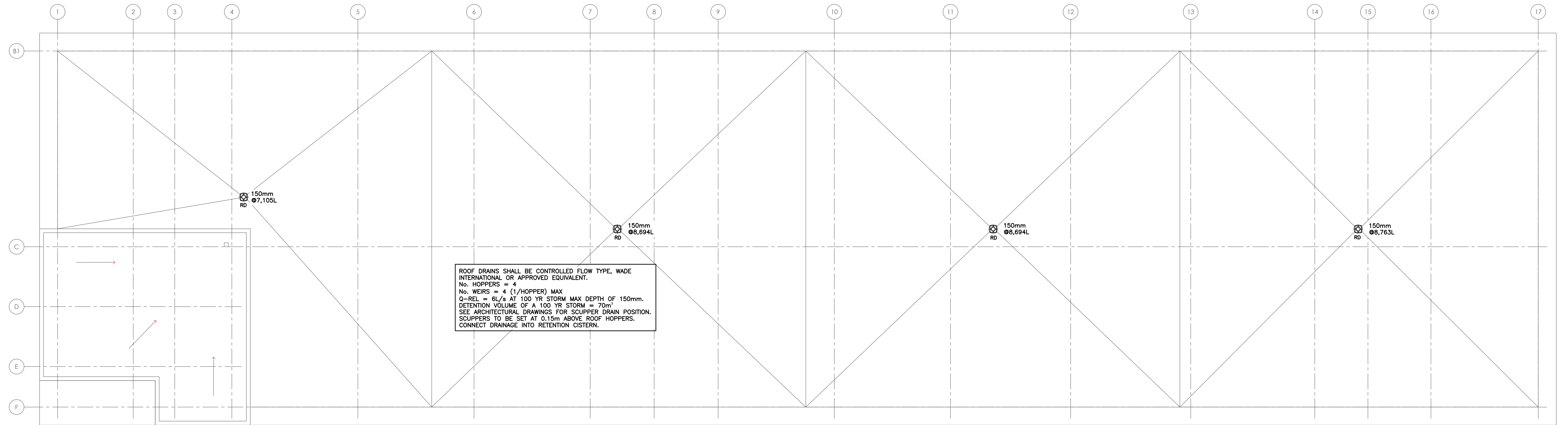
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G.V.W. OSBORNE
100138545
MAY 8 / 20
PROVINCE OF ONTARIO

SCALE: 1:100 PROJECT NO. 116194
DRAWN BY: B.C.A. DRAWING NO. M1.6
DESIGN BY: B.C.A./G.V.W.O
CHECKED BY: G.V.W.O CAD FILE: 116194 M1
DATE: MAY 2020 PLOT DATE: 05/08/20 SUBMISSION: PERMIT



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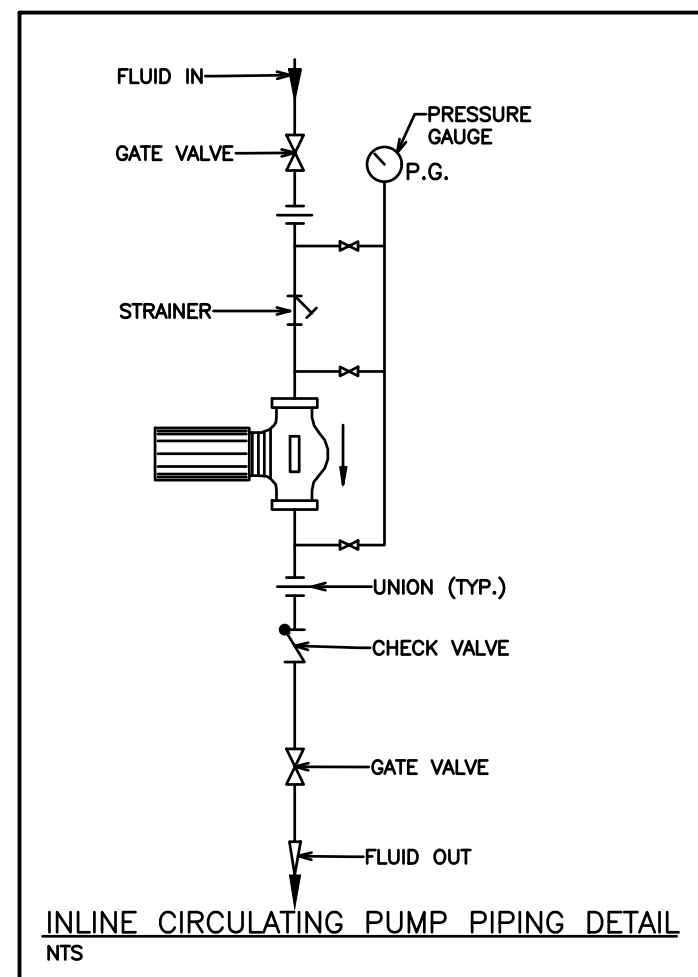
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MECHANICAL PLUMBING
 ROOF LAYOUT

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	SCALE:	1:100	PROJECT NO.	116194
	DRAWN BY:	B.C.A	DRAWING NO.	M1.7
	DESIGN BY:	B.C.A/G.V.W.O	CAD FILE:	116194 M1
	CHECKED BY:	G.V.W.O	PLOT DATE:	05/08/20
	DATE:	MAY 2020	SUBMISSION:	PERMIT



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 Btu*in./(h*F*Ft)	MEAN RATING TEMPERATURE, °F	NOMINAL PIPE OR TUBE SIZE (in)				
105°F-140°F	0.22-0.28	100	<1	1 TO <1-1/2	1-1/2 TO <4	4 TO <8	≥8
			1.0	1.0	1.5	1.5	1.5

RECIRC PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	FLOW	ELECTRICAL	ACCESSORIES & NOTES
RP-1	ARMSTRONG	S25	--gpm	115V	ALL BRONZE

DOMESTIC EXPANSION TANK SCHEDULE

TAG	MANUFACTURER	MODEL	CAPACITY	NOTES
ET-1	AMTROL	THERM-X-TROL, ST-60V-C	34 GAL	STAND MODEL

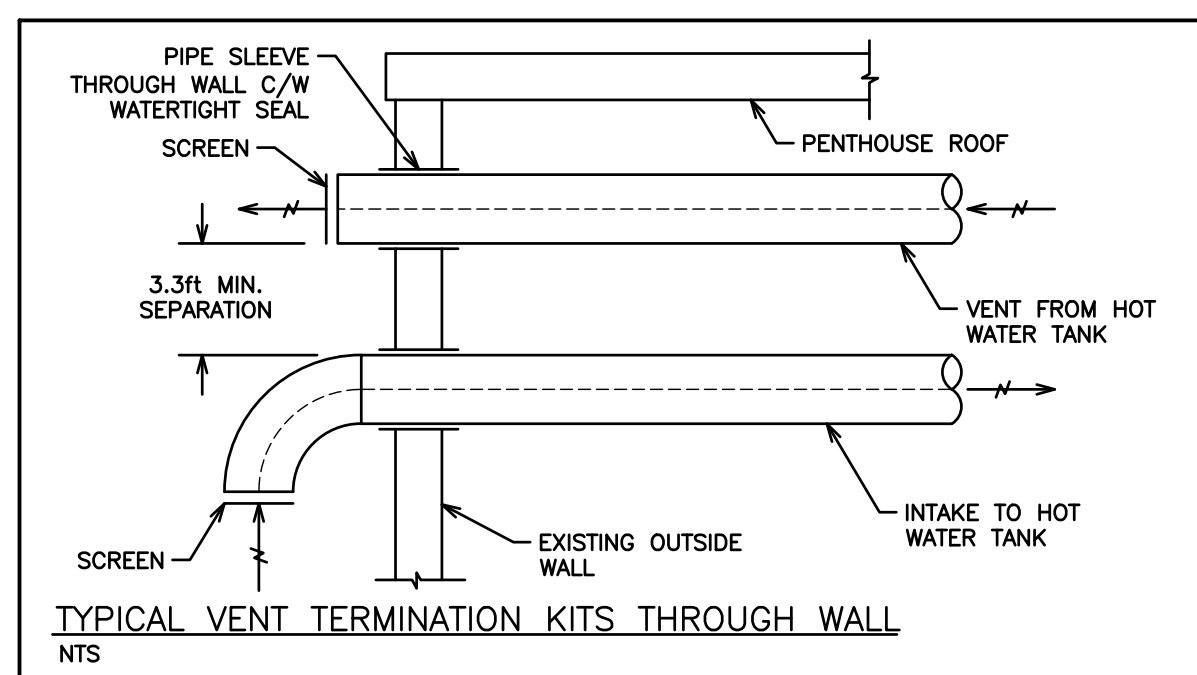
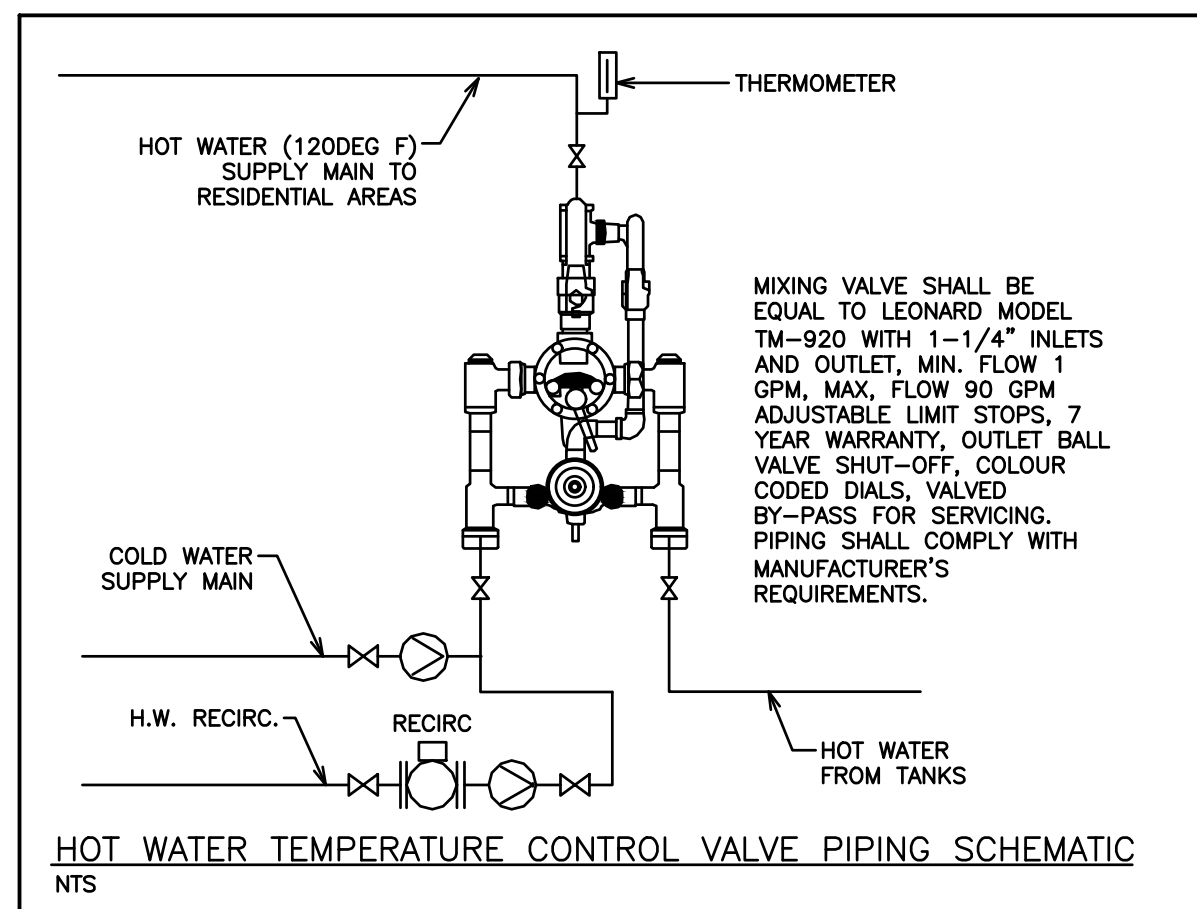
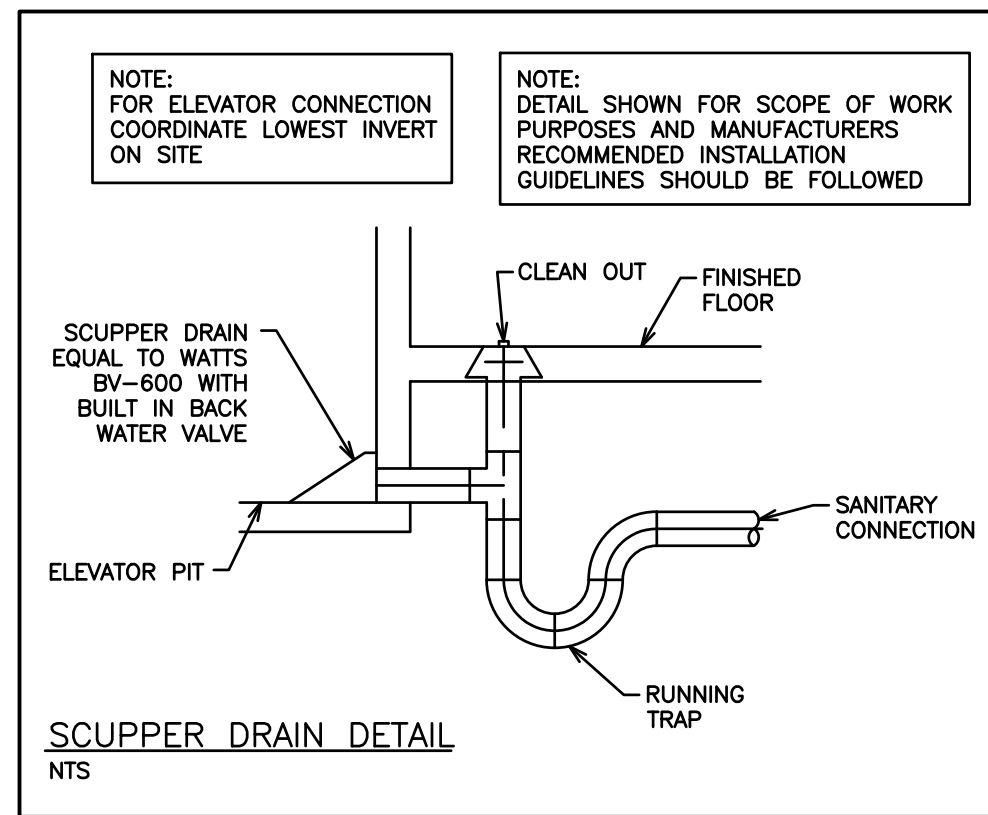
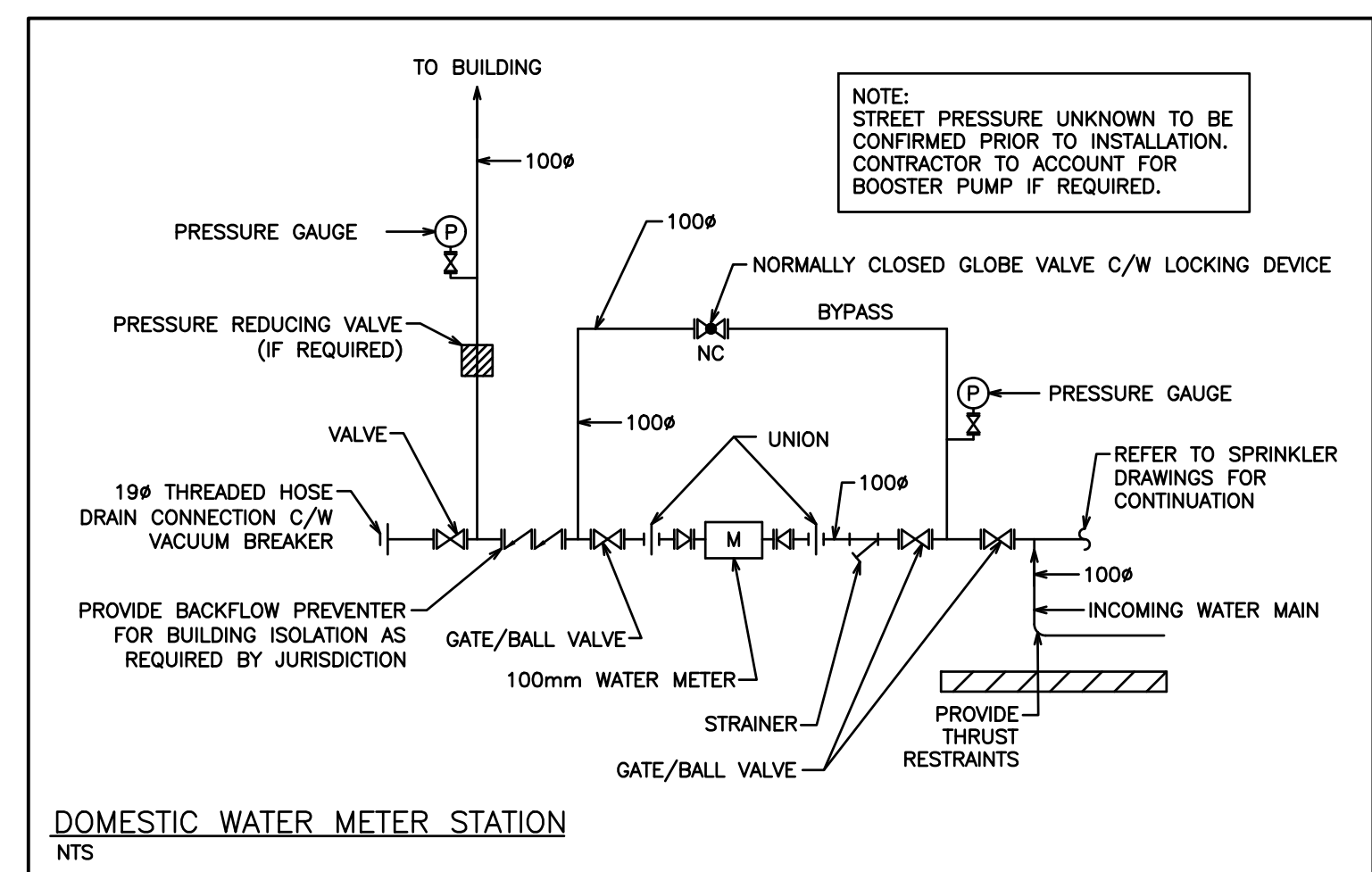
HOT WATER UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	INPUT	CAPACITY
HWT-1	BRADFORD WHITE	EF-100T-250E-3N(A)	250,000 btuh	100 Gal.

TYPICAL PIPE SIZES (MILLIMETERS)

	DCW	DHW	SANITARY	VENT
WATER CLOSET (TANK)	13#	-	75#	39#
LAVATORY	13#	13#	32#	32#
SHOWER/BATH TUB	13#	13#	39#	32#
SINK	13#	13#	39#	32#
JANITORS SINK	13#	13#	50#	32#
CLOTHES WASHER	13#	13#	39#	32#
DISHWASHER (DOMESTIC)	-	13#	39#	-
HOSEBIB & WALL HYDRANT	13#	-	-	-
2" FD	-	-	50#	-
3" FD	-	-	75#	-

- PLUMBING NOTES**
- GENERAL
 - FOR CONTINUATION OF SITE SERVICES REFER TO SITE SERVICE DRAWING BY OTHERS. CO-ORDINATE EXACT LOCATION AND INVERTS OF SERVICES.
 - PROVIDE CLEANOUTS AND TRAP PRIMING FOR SANITARY AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES. CLEANOUT SIZE TO BE SAME AS SANITARY LINES.
 - 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. ISOLATION VALVES TO BE PROVIDED AT ALL FIXTURES AND HOT WATER TANK.
 - PIPE INSULATION TO BE MIN. 1" FOR ALL NEW AND/OR EFFECTED DOMESTIC PIPING. IN EXPOSED AREAS PROVIDE CANVAS WRAP OVER INSULATION.
 - MATERIALS
 - 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.
 - ALL ABOVE GROUND DOMESTIC PIPING SHALL BE TYPE "L" COPPER OR PEX.
 - ALL BURIED DOMESTIC PIPING SHALL BE TYPE "K" COPPER.
 - ALL ABOVE GROUND DRAINAGE PIPING SHALL BE CAST IRON "M" PIPE.
 - ALL BURIED DRAINAGE PIPING SHALL BE DR26 PVC WITH CLASS P BEDDING.



PLUMBING FIXTURE SCHEDULE

* ALL FIXTURES ARE TO BE COORDINATED WITH OWNER PRIOR TO ORDERING

WC-1 - FLOOR MOUNTED TOILET - VITREOUS CHINA - TANK TYPE
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

WC-2 (BARRIER-FREE) - WATER CLOSET
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

LV-1 - LAVATORY
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

LV-2 (BARRIER-FREE) - LAVATORY
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

SK-1 - COUNTERTOP MOUNT SINK - SINGLE HANDLE FAUCET
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

SK-2 (BARRIER-FREE) - COUNTERTOP MOUNT SINK - SINGLE HANDLE FAUCET
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

DW-1 - DISHWASHER
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

WM-1 - WASHING MACHINE
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

SH-1 - SHOWER
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

SH-2 (BARRIER-FREE) - SHOWER
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

BT-1 - BATHTUB
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

BT-2 (BARRIER-FREE) - BATHTUB
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

MS-1 - MOP SINK
SPECIFICATIONS BY OWNER, SUPPLIED/INSTALLED BY CONTRACTOR

HB-1 - HYDRANT - CAST BRASS HOSE BIBB
Watts #SC8-1 Hydrant - cast brass, wall mount, Watts Model 8B tamper-proof vacuum breaker with break-away screw, adjustable packing nut cartridge, no kink faucet, 1/2" (13 mm) male NPT of copper sweat connection with tee handle.

HB-2 - HYDRANT - NON-FREEZE WALL HYDRANT WITH NB BOX, INTEGRAL VACUUM BREAKER
Watts #H1-725 Hydrant non-freeze hydrant, oil bronze head, seat casting and internal working parts, wall mount hydrant, concealed, bronze wall casing, chrome plated face, integral vacuum breaker, nickel bronze box and door, loose key, 3/4" (19 mm) hose connection, 3/4" (19 mm) female x 1" (25 mm) male pipe connection.

SD-1 - BACKWATER VALVE - PIT DRAIN WITH BACKWATER VALVE
Watts #BV-600 Backwater Valve - epoxy coated, cast iron body, backwater valve with bronze seat and flapper, epoxy coated cast iron grate and frame, secured angle grate, no hub outlet.

HD - FLOOR DRAIN - FINISHED AREA
Watts #FD-100-C-EG-50-7-6 Floor Drain - epoxy coated, cast iron body, reversible flashing clamp with primary and secondary weepholes, 5" (127 mm) diameter nickel bronze, adjustable round strainer, 4" x 9" (102 mm x 229 mm) oval cast iron funnel, vandal proof, trap primer connection with plug, no hub outlet.

FD - FLOOR DRAIN - FINISHED AREA
Watts #FD-100-C-7-6-A5-1 Floor Drain - epoxy coated, cast iron body, reversible flashing clamp with primary and secondary weepholes, trap primer connection with plug, vandal proof, no hub outlet. Watts -A5-1 5" (127 mm) diameter, nickel bronze, adjustable round strainer.

ACCESS DOOR - UNIVERSAL FLUSH
Acudor UF-5000 6 x 6 SPC Universal Flush, flush to frame door with rounded safety corners, carbon steel with prime coat baked enamel finish, 16 GA. (1.5 mm) up to 16" x 16"; 14 GA. (1.9 mm) over 16" x 16", 6" x 6" (152 mm x 152 mm), one piece frame outer flange welded to mounting frame, 18 GA. (1.2 mm) up to 16" x 16"; 16 GA. (1.5 mm) over 16" x 16", continuous, concealed hinge, stainless steel screwdriver operated cam latch.

ACCESS DOOR - FIRE-RATED INSULATED
Acudor #FI-5050 6 x 8 WCP Fire-rated insulated, self-closing door filled with 2" (51 mm) thick fire rated insulation. ULC-2 hour "B" label. Carbon steel with prime coat baked enamel finish, 20 GA. (1.0 mm) door, 8" x 8" (203 mm x 203 mm), 16 GA. (1.5 mm) frame, concealed hinge, knurled knob and flush key. When master keying is required, doors can be prepared for mortise cylinder locks. For ceilings: Warnock Hersey International - 3 hours max size 24 x 36. For walls: UL-1-1/2 hour "B" label.

TRAP SEAL PRIMER
P.P.P. #PT-4 Trap Seal Primer serving four drains, activated by a 3/4" (19 mm) normally closed solenoid valve, designed to interface with low voltage energy management systems control, 3/4" (19 mm) diameter connection anti-siphon atmospheric vacuum breaker.

TRAP SEAL PRIMER
P.P.P. #PRT-500 Trap Seal Primer - lead-free brass body flow sensing activation with minimum flow rate of 0.5 GPM at 20 psig, 1/2" (13 mm) diameter connection equipped with vacuum breaker ports and internal backflow protection.

BACKFLOW PREVENTER - LEAD FREE - DOUBLE CHECK VALVE ASSEMBLY
Watts LF57-NRS LEAD FREE - Double Check Valve Assembly - two independent, removable and serviceable tr-link check modules within a single housing, drip tight closure against reverse flow, 304 schedule 40 stainless steel housing and sleeve, stainless steel springs, reversible elastomeric discs, sleeved access port, two drip tight shut-off valves non-rising stem gate valves, four lead free, bronze body, nickel plated test cocks.

CLEANOUT - STACK CLEANOUT WITH BRASS PLUG WITH STAINLESS STEEL COVER
Watts #CO-480-RD Cleanout, cast iron body, removable, gasketed, brass plug, round cover, access cover, stainless steel cover, no hub outlet.

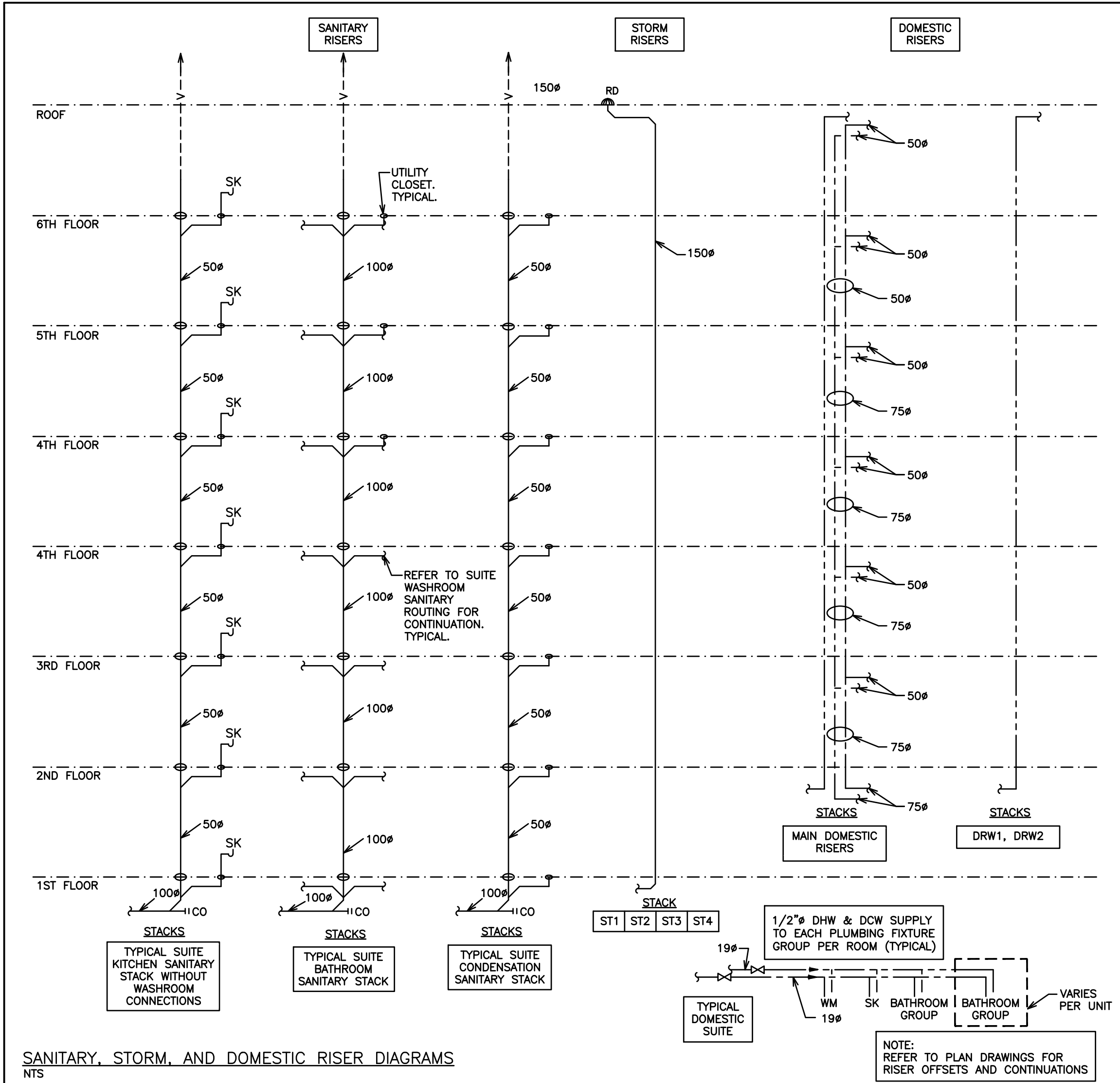
CLEANOUT - FLOOR CLEANOUT
Watts #CO-200-R-1-6-34G Cleanout - epoxy coated, cast iron body, ABS plug with neoprene gasket, vandal proof, no hub outlet.

STORM/SANITARY PUMP SCHEDULE

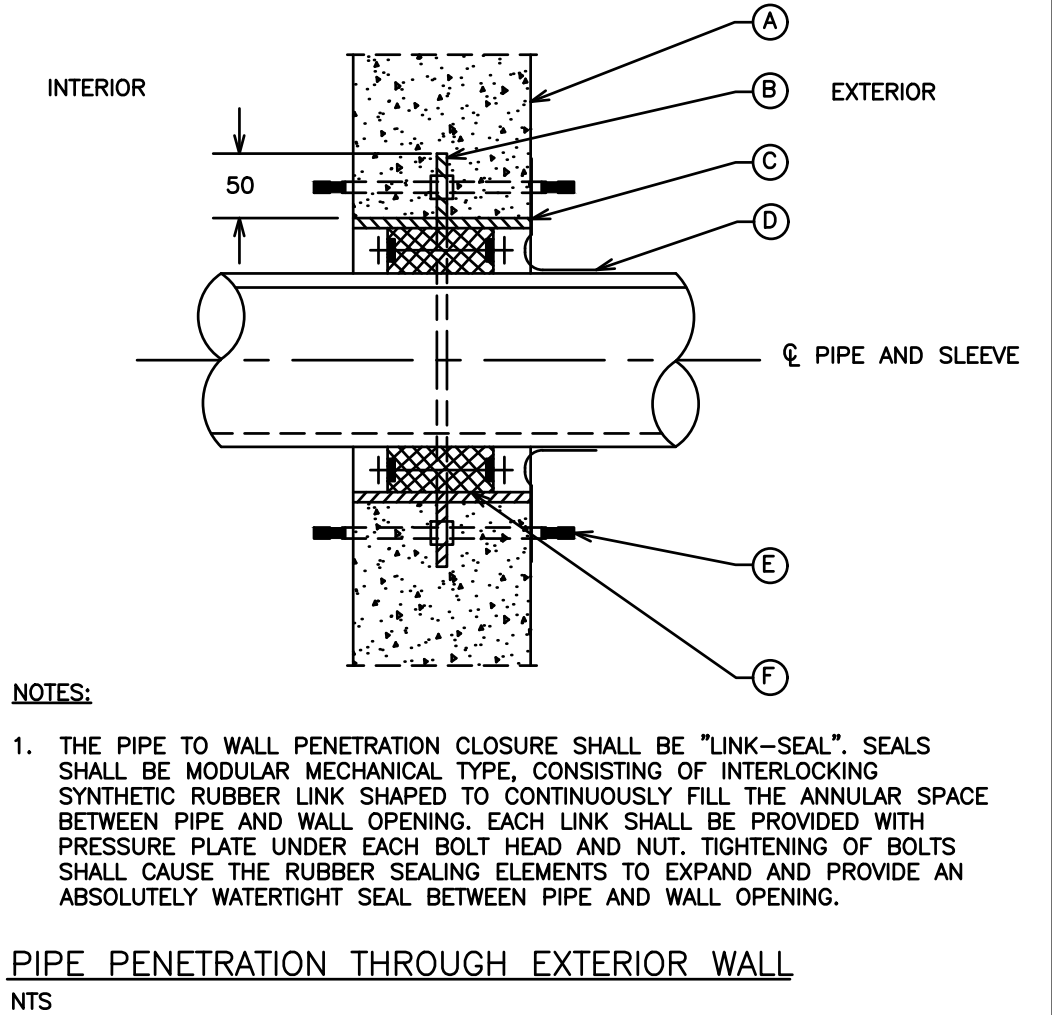
TAG	MANUFACTURER	MODEL	FLOW	PRESSURE	ELECTRICAL	PUMP CHAMBER	ACCESSORIES & NOTES
P-1	SCARBORO PUMP	--	--gpm	-- FEET	115V/1PH	--	DUPLEX C/W CONTROLLER
P-2	SCARBORO PUMP	--	--gpm	-- FEET	115V/1PH	--	DUPLEX C/W CONTROLLER

PUMP CHAMBER : --

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ITEM	DESCRIPTION
A.	EXTERIOR WALL
B.	WATER STOP AND ANCHOR COLLAR
C.	LINK-SEAL TYPE WALL SLEEVE MODEL WS OR CORE BIT DRILL WALL OPENING, DIA. AS REQ'D TO ACCEPT LINK SEAL ASSEMBLY
D.	EXTERIOR SURFACE OF SLEEVE, SEAL AND PIPE SHALL BE COATED WITH COAL TAR OR OTHER WATERPROOFING MATERIAL
E.	25 DIA. GALVANIZED THREADED RODS FOR STRAPPING WATER MAINS. COORDINATE SPACING WITH FLANGERS AND SOCKET CLAMPS USED FOR TIE RODS
F.	LINK-SEAL TYPE WALL PENETRATION SEAL MODEL -LS- MODULAR MECHANICAL SYNTHETIC RUBBER SEAL



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MECHANICAL PLUMBING NOTES

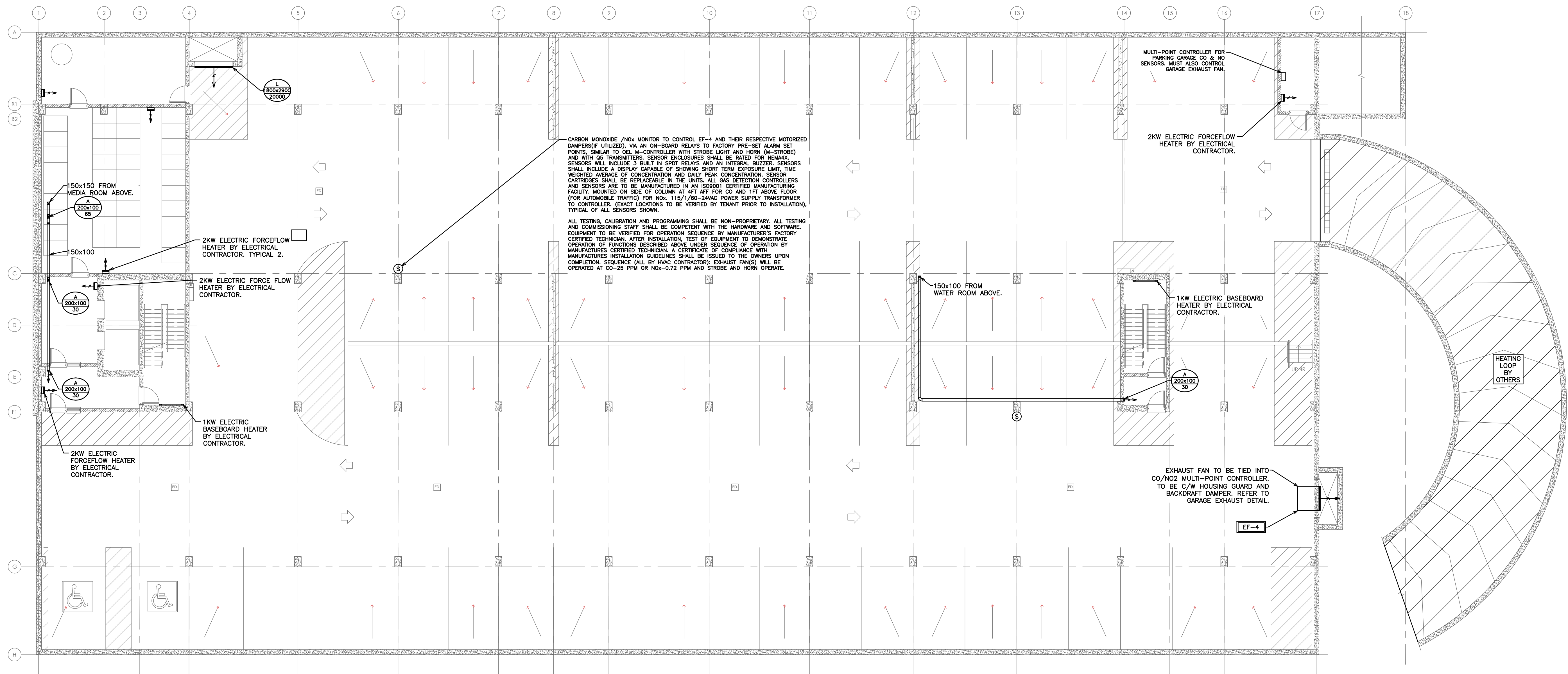
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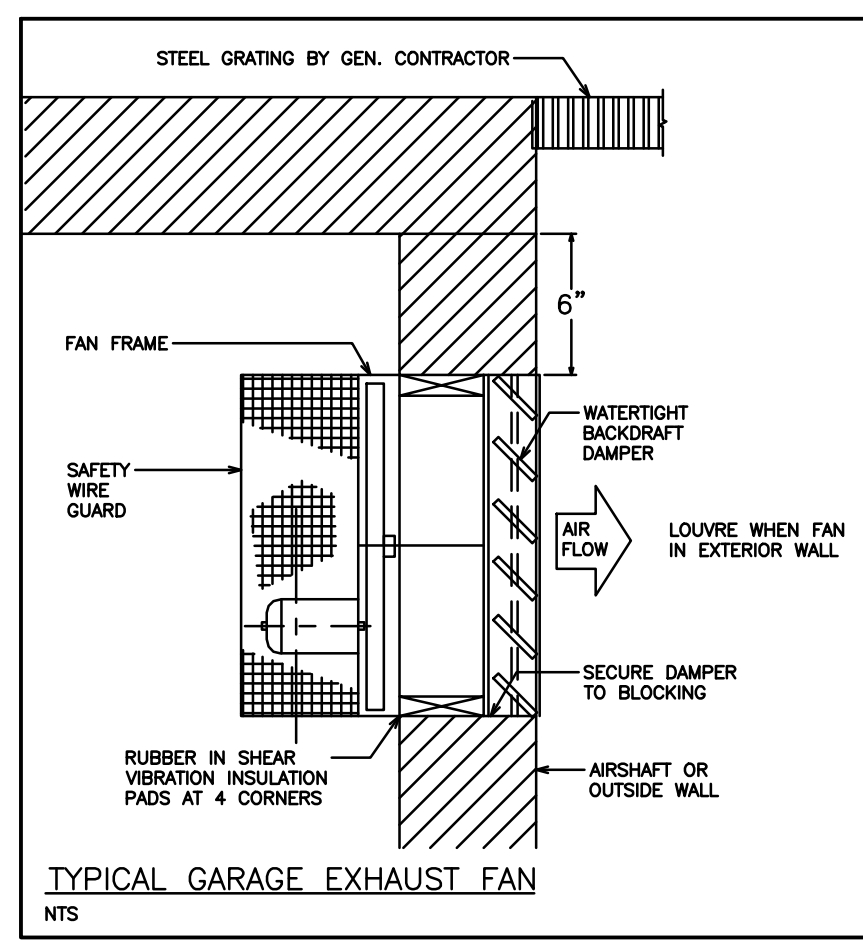
PROJECT NO. 116194
DRAWING NO. M1.8
CAD FILE: 116194 M1
PLOT DATE: 05/08/20
SUBMISSION: PERMIT

PROFESSIONAL ENGINEER
G.V.W. OSBORNE
100138545
MAY 8 / 20
PROVINCE OF ONTARIO



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.

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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
QTY @	A- GRILLE/DIFFUSER TYPE B- DIFFUSER NECK SIZE/GRILLE SIZE C- AIR QUANTITY (CFM)
	SENSOR AND ASSOCIATED CONTROL WIRING
	EQUIPMENT/FIXTURE TAG
	BALANCE DAMPER
	DIRECTION OF AIR FLOW
	DOOR GRILLE
	TURNING VANES
	THERMOSTAT EQUAL TO HONEYWELL TB8220U: 7-DAY PROGRAMMABLE C/W AUTO CHANGEOVER
	TIME CLOCK
	CO/NO ₂ SENSOR
	FIRE DAMPER

NO.	REVISION	DATE	BY	APPROVED
4	RE-ISSUED FOR PERMIT	05/08	G.O	G.V.W.O
3	ISSUED FOR PERMIT	03/30	G.O	G.V.W.O
2	RE- ISSUED FOR COORDINATION	03/20	G.O	G.V.W.O
1	ISSUED FOR COORDINATION	01/24	G.O	G.V.W.O

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KIYA DEVELOPMENTS LTD.

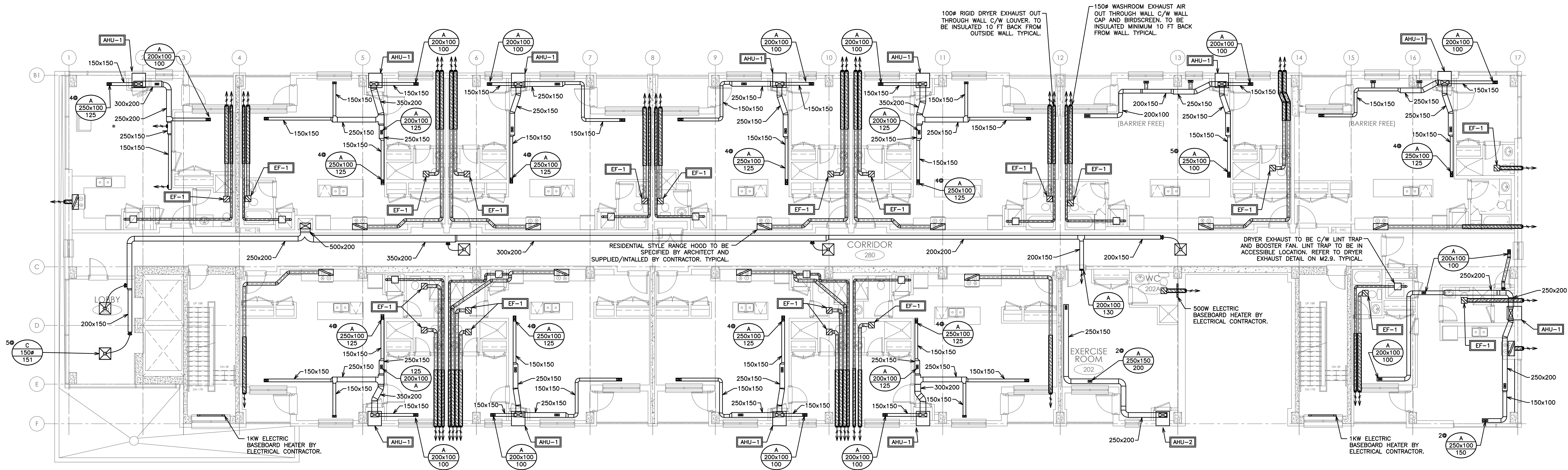
MECHANICAL HVAC
PARKING LEVEL

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consulting engineers and planners

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PROJECT NO. 116194
DRAWING NO. M2.1
SCALE: 1:125
DRAWN BY: J.T.C.
DESIGN BY: J.T.C./G.V.W.O
CHECKED BY: G.V.W.O
DATE: MAY 2020

CAD FILE: 116194 M2
PLOT DATE: 05/08/20
SUBMISSION: PERMIT



100# RIGID DRYER EXHAUST OUT THROUGH WALL C/W LOUVER, TO BE INSULATED 10 FT BACK FROM OUTSIDE WALL. TYPICAL.

150# WASHROOM EXHAUST AIR OUT THROUGH WALL C/W WALL CAP AND BIRDSCREEN, TO BE INSULATED MINIMUM 10 FT BACK FROM WALL. TYPICAL.

RESIDENTIAL STYLE RANGE HOOD TO BE SPECIFIED BY ARCHITECT AND SUPPLIED/INTALLED BY CONTRACTOR. TYPICAL.

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1KW ELECTRIC BASEBOARD HEATER BY ELECTRICAL CONTRACTOR.

500W ELECTRIC BASEBOARD HEATER BY ELECTRICAL CONTRACTOR.

1KW ELECTRIC BASEBOARD HEATER BY ELECTRICAL CONTRACTOR.

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	SUPPLY, RETURN, EXHAUST AIR GRILLE
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	EQUIPMENT/FIXTURE TAG
	BALANCE DAMPER
	DIRECTION OF AIR FLOW
	DOOR GRILLE
	TURNING VANES
	THERMOSTAT EQUAL TO HONEYWELL TB8220U: 7-DAY PROGRAMMABLE C/W AUTO CHANGEOVER
	TIME CLOCK
	FIRE DAMPER

NO.	REVISION	DATE	BY	APPROVED
4	RE-ISSUED FOR PERMIT	05/08	G.O.	G.V.W.O
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1	ISSUED FOR COORDINATION	01/24	G.O.	G.V.W.O

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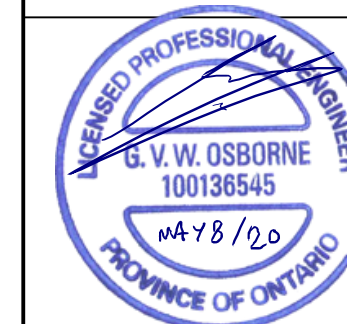
**MECHANICAL HVAC
SECOND FLOOR**

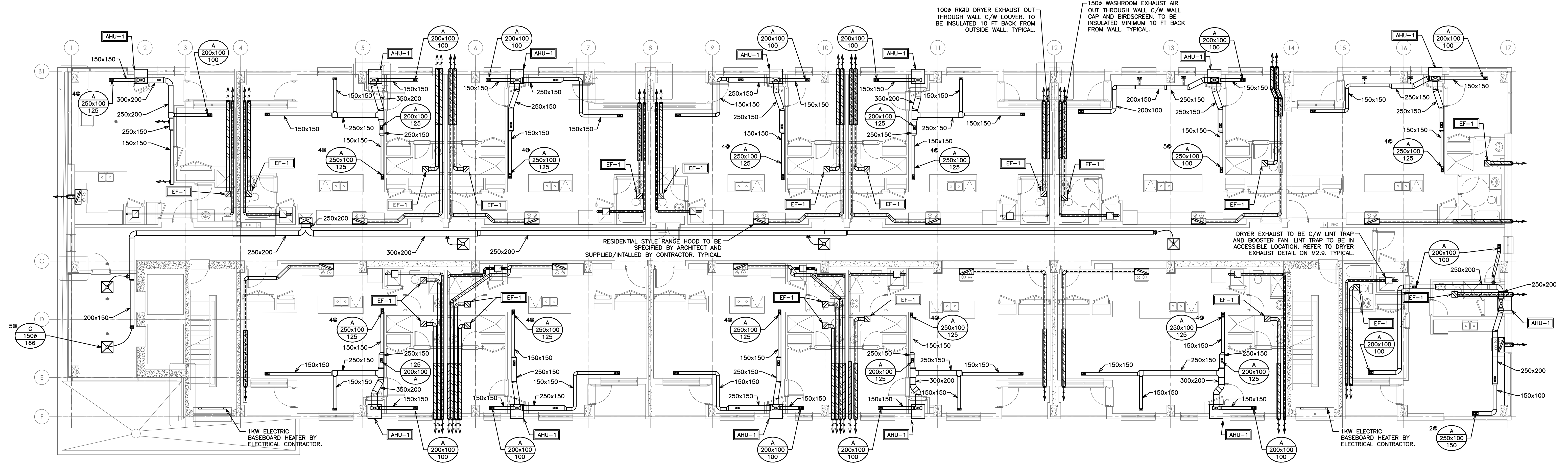
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PROJECT NO. 116194
DRAWING NO. M2.3
SCALE: 1:100
DESIGN BY: J.T.C./G.V.W.O
CHECKED BY: G.V.W.O
DATE: MAY 2020

CAD FILE: 116194 M2
PLOT DATE: 05/08/20
SUBMISSION: PERMIT





HVAC LEGEND	
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PROJECT NO.
116194

DRAWING NO.
M2.4

CAD FILE: 116194 M2
PLOT DATE: 05/08/20
SUBMISSION: PERMIT

SCALE: **1:100**

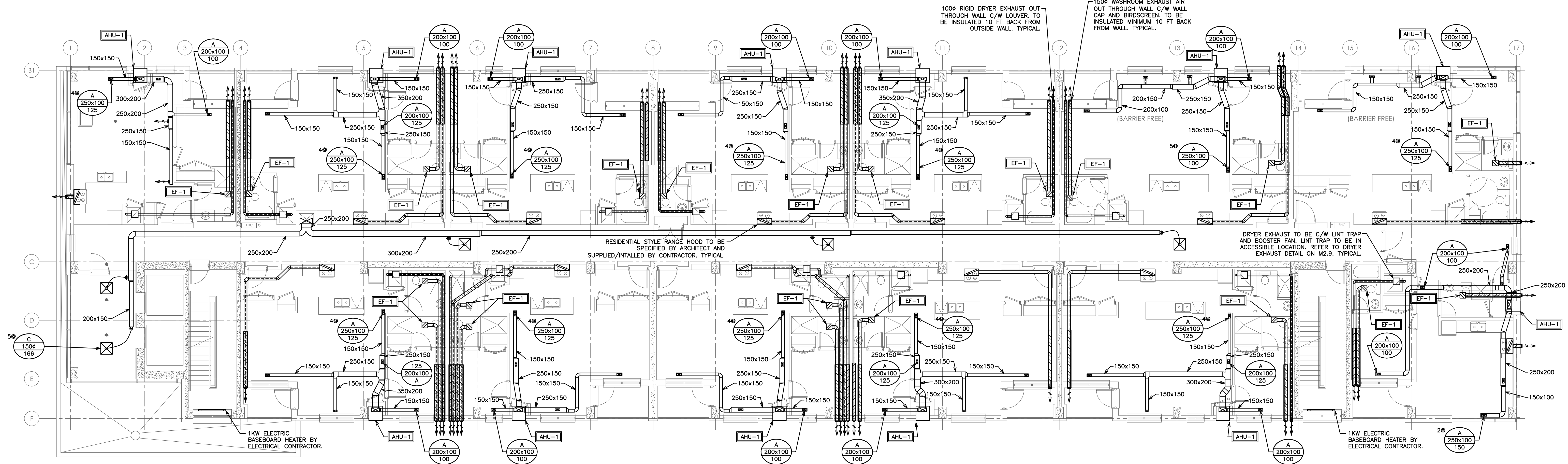
DRAWN BY: **J.T.C**

DESIGN BY: **J.T.C./G.V.W.O**

CHECKED BY: **G.V.W.O**

DATE: **MAY 2020**

PROFESSIONAL ENGINEER
G. V. W. OSBORNE
100138545
MAY 8 / 20
PROVINCE OF ONTARIO



RESIDENTIAL STYLE RANGE HOOD TO BE SPECIFIED BY ARCHITECT AND SUPPLIED/INSTALLED BY CONTRACTOR. TYPICAL.

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	TIME CLOCK
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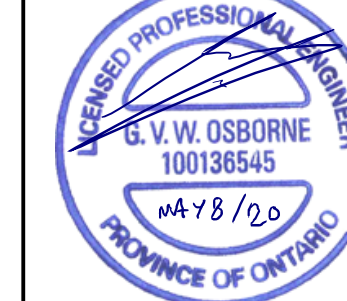
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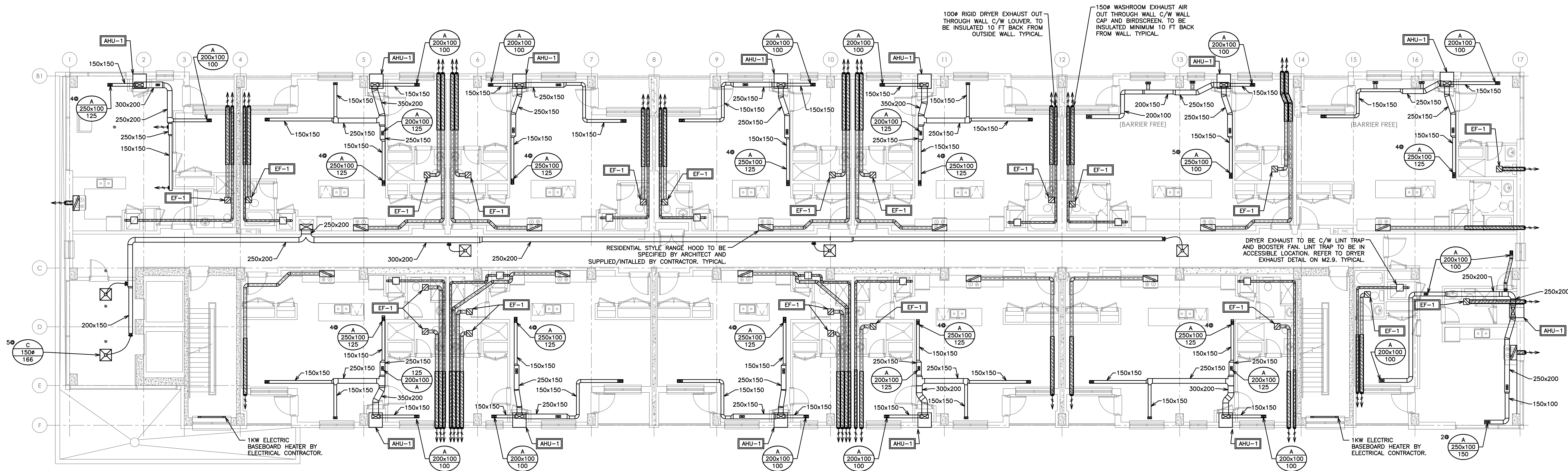
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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C.	DRAWING NO. M2.5
DESIGN BY: J.T.C./G.V.W.O.	CAD FILE: 116194 M2
CHECKED BY: G.V.W.O.	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT





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	SUPPLY, RETURN, EXHAUST AIR GRILLE			
	SIDE WALL GRILLE			
QTY @ <table border="1"><tr><td>A</td></tr><tr><td>B</td></tr><tr><td>C</td></tr></table>	A	B	C	A- GRILLE/DIFFUSER TYPE B- DIFFUSER NECK SIZE/GRILLE SIZE C- AIR QUANTITY (CFM)
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REVISIONS

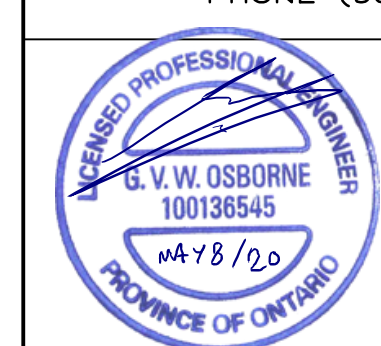
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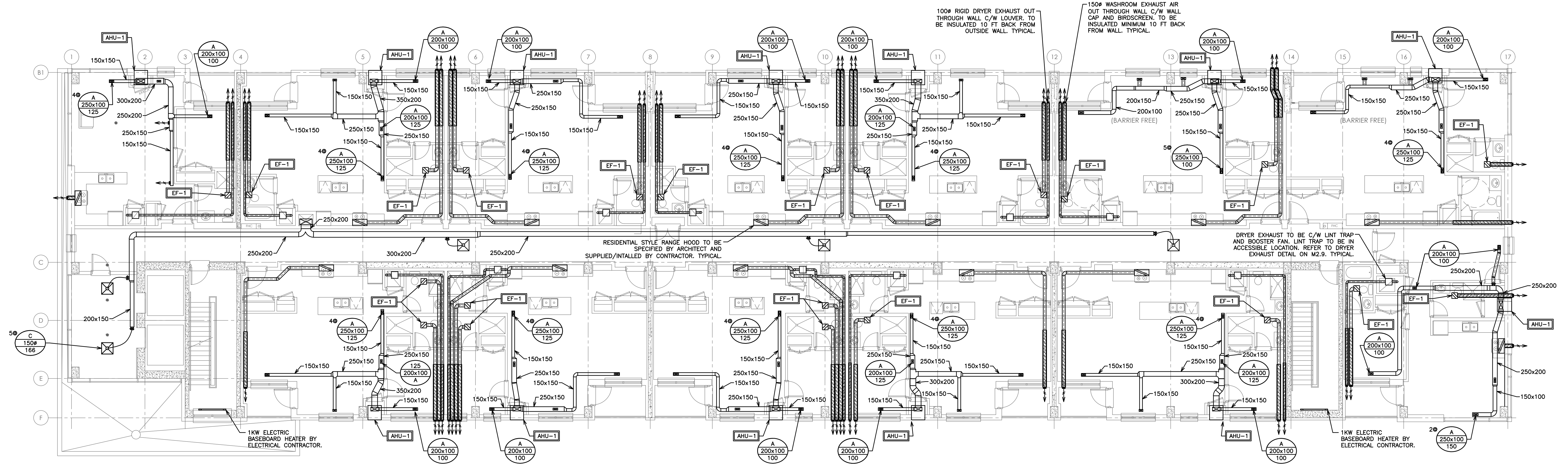
MECHANICAL HVAC FIFTH FLOOR

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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C.	DRAWING NO. M2.6
DESIGN BY: J.T.C./G.V.W.O.	
CHECKED BY: G.V.W.O.	CAD FILE: 116194_M2
DATE: MAY 2020	PLOT DATE: 05/08/20
	SUBMISSION: PERMIT





HVAC LEGEND	
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REVISIONS

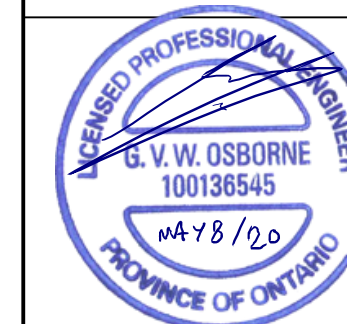
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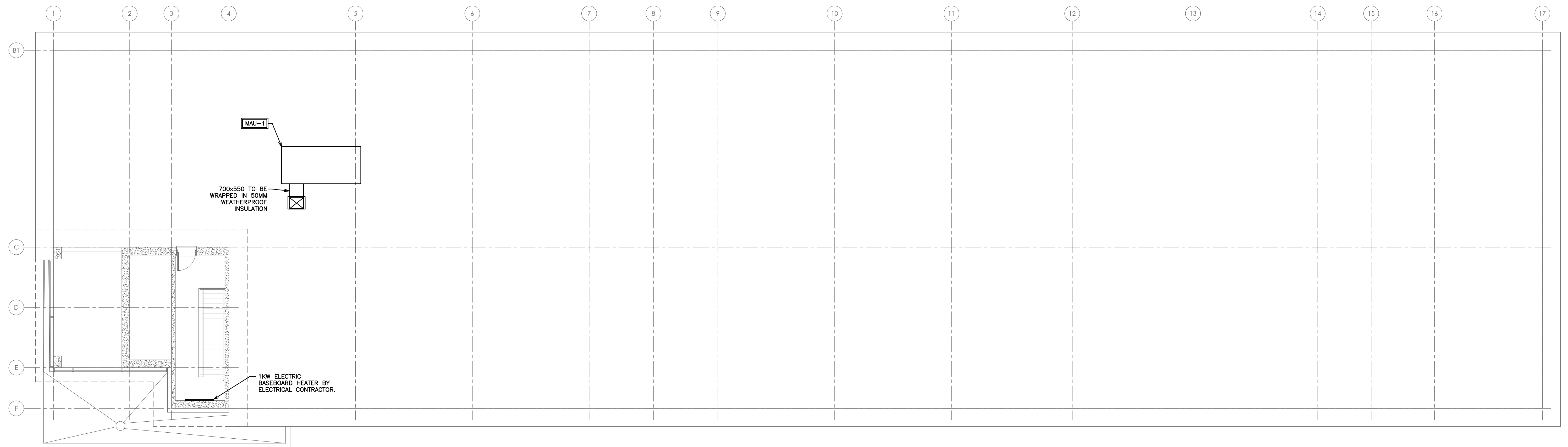
MECHANICAL HVAC SIXTH FLOOR

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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C.	DRAWING NO. M2.7
DESIGN BY: J.T.C./G.V.W.O	
CHECKED BY: G.V.W.O	CAD FILE: 116194 M2
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REVISIONS

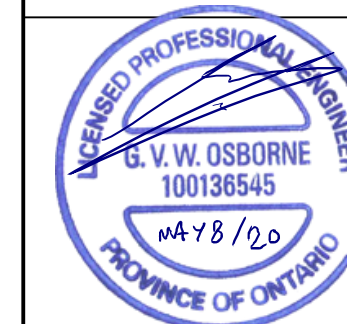
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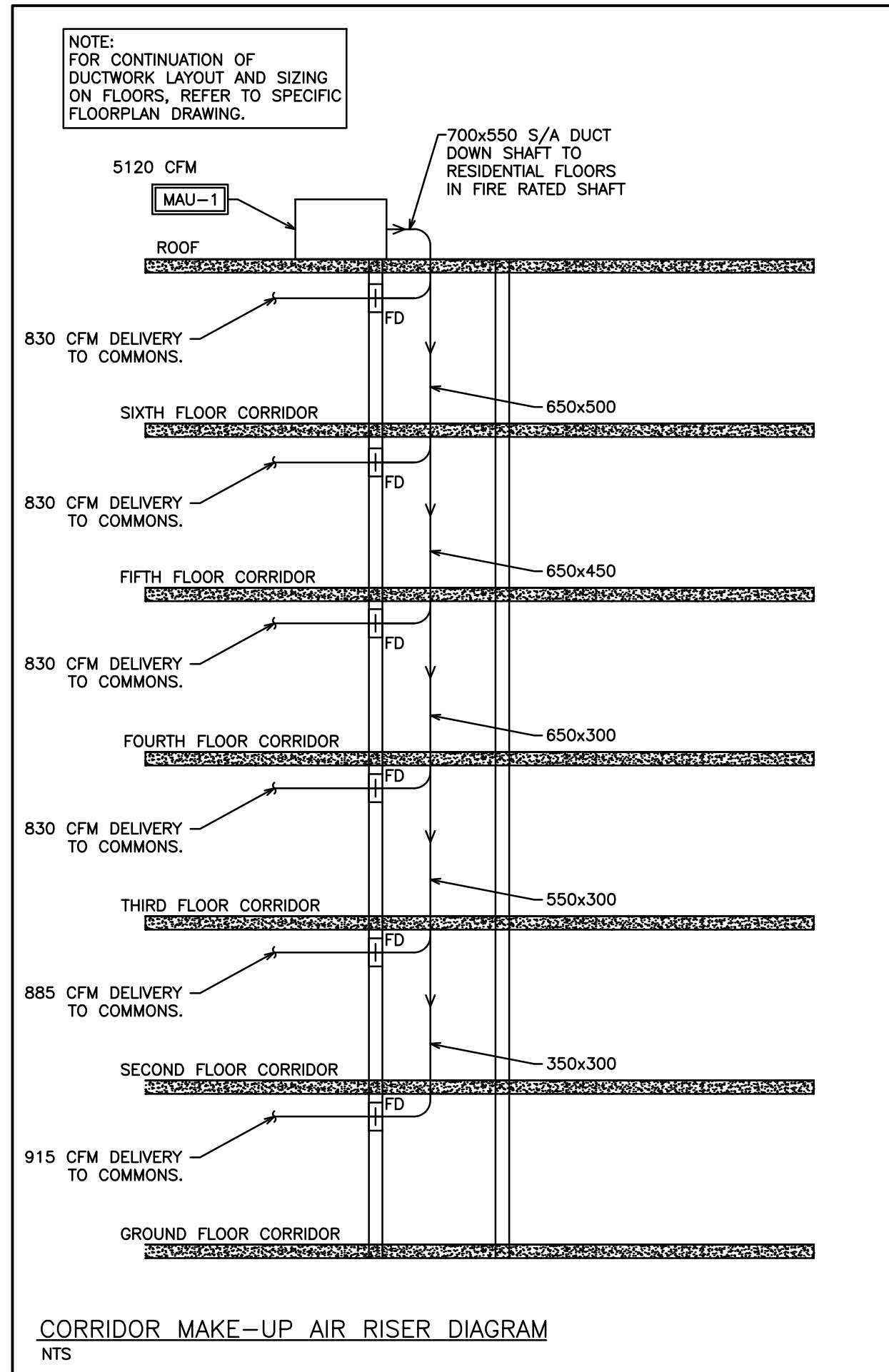
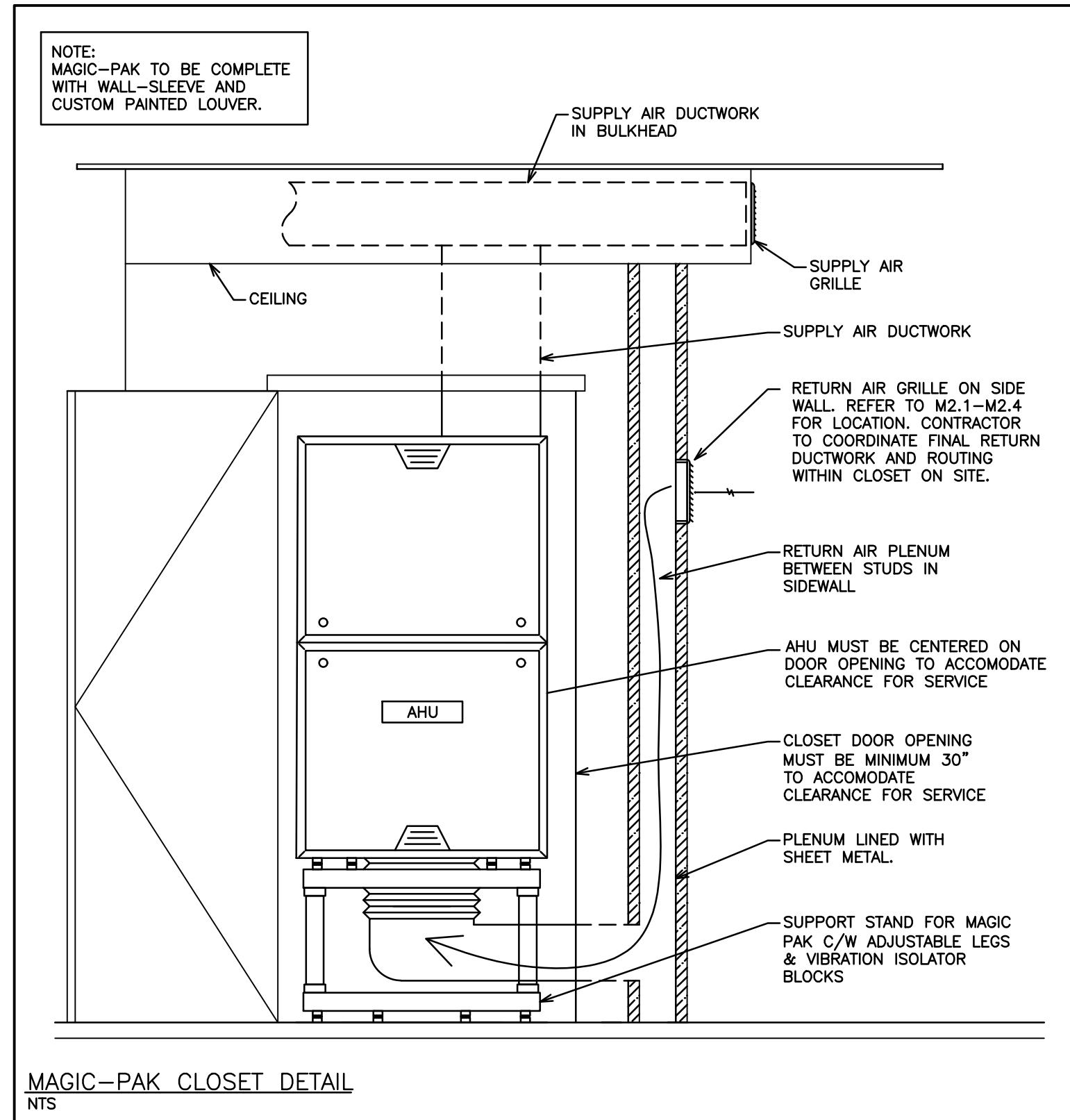
MECHANICAL HVAC ROOF LAYOUT

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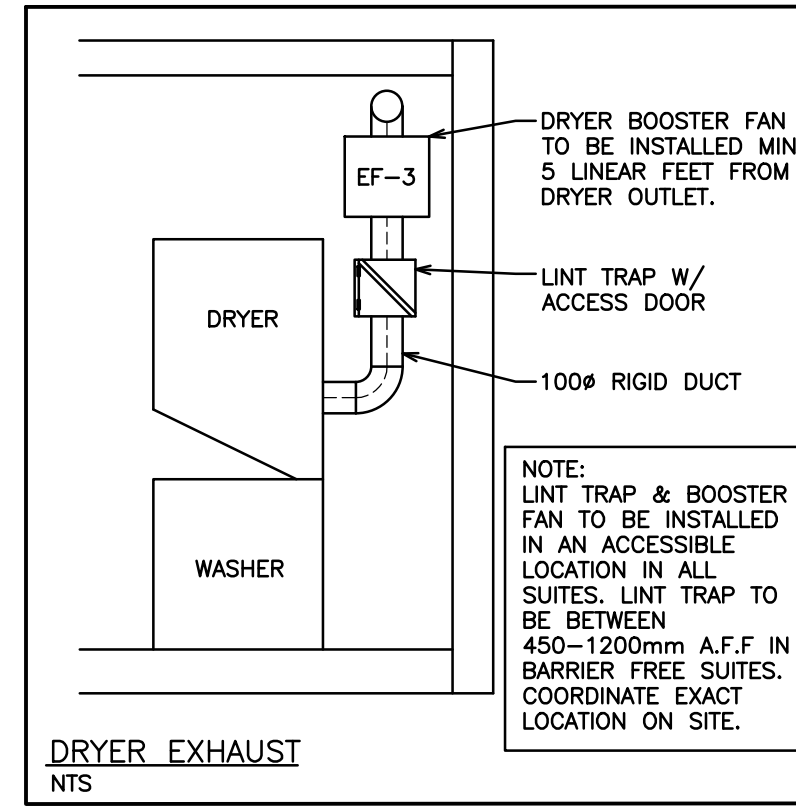
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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C	DRAWING NO. M2.8
DESIGN BY: J.T.C/G.V.W.O	
CHECKED BY: G.V.W.O	CAD FILE: 116194 M2
DATE: MAY 2020	PLOT DATE: 05/08/20 SUBMISSION: PERMIT





- HVAC NOTES**
- GENERAL
 - COORDINATE EXACT LOCATION OF GRILLES AND DIFFUSERS WITH REFLECTED CEILING PLAN OR LIGHTING PLAN IF AVAILABLE. LIGHTING LOCATIONS TAKE PRIORITY.
 - 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.
 - PROVIDE 4" FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO AIR HANDLING UNITS.
 - PROVIDE ACOUSTIC INSULATION IN FIRST 5' OF SUPPLY AND RETURN AIR DUCTS OFF AIR HANDLING UNITS AND AS INDICATED ON DRAWINGS.
 - PROVIDE EXTERNAL INSULATION ON ALL SUPPLY AIR DUCTS AND ON ALL EXHAUST DUCTS WITHIN 10' OF OUTSIDE WALLS AND ROOF.
 - BRANCH DUCTWORK TO DIFFUSERS TO BE SAME SIZE AS DIFFUSER NECK.
 - PROVIDE TURNING VANES IN ALL SQUARE ELBOWS FOR SUPPLY AIR DUCTS.
 - 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.
 - PROVIDE TRAP AT OUTLET OF DRAIN FOR ROOFTOP HVAC EQUIPMENT
 - PROVIDE FIRE STOPPING AROUND OPENINGS THROUGH FIRE SEPARATIONS.
 - FIRE DAMPERS
 - PROVIDE FIRE DAMPERS AT ALL FIRE SEPARATIONS. FIRE DAMPERS SHALL BE C/W LINKAGE OUT OF THE AIR STREAM. FIRE DAMPER RATING TO MATCH THE RATING OF THE SEPARATION CROSSED.
 - TESTS AND BALANCING
 - 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.
 - AIR TEST AND BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCING COMPANY. THE AIR BALANCING COMPANY SHALL BE APPROVED BY THE ENGINEER.
 - SCOPE OF BALANCING WORK:
 - ALL LISTED AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN 5% OF THE NOTED DESIGN AIR VOLUMES AS PER PLANS AND SPECIFICATIONS.
 - 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.
 - MATERIALS
 - DUCTWORK
 - 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 (B90), HAVING A THICKNESS OF 0.054mm AND WEIGHING NOT LESS THAN 0.31kg/m² ON EACH SURFACE.
 - PROVIDE INSTRUMENTATION TEST PORTS IN DUCTS FOR PILOT
- INSTALLATION MUST CONFORM TO LATEST NFPA/CUA 90A SPECIFICATIONS. ONLY USE UL/C APPROVED EQUIPMENT. PROVIDE DUCT ACCESS DOORS AND BREAK AWAY FLANGES FOR ALL FIRE DAMPERS IN CONFORMANCE WITH CODE AND INSTALLATION INSTRUCTIONS.
- TUBE INSERTION WITH CAM-ACTION HANDLE, MOULDED NEOPRENE GASKET AND EXPANSION PLUG, ZINC COATED STEEL CONSTRUCTION.
 - FLEXIBLE CONNECTIONS
 - PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS WITH UL APPROVED FABRIC OF 6" MINIMUM WIDTH AND WEIGHING NOT LESS THAN 0.8136kg/m².
 - INSULATION
 - PROVIDE 1" INTERNAL ACOUSTIC INSULATION ON:
 - THE FIRST 5' OFF SUPPLY AND RETURN DUCTS OFF ALL AIR HANDLING UNITS.
 - PROVIDE 1" EXTERNAL INSULATION ON:
 - ALL INDOOR & OUTDOOR REFRIGERATION PIPING
 - ALL SUPPLY AIR DUCTS WHICH ARE NOT LOCATED IN A RETURN AIR PLENUM.
 - EXHAUST DUCTS THROUGH ATTICS AND 10' BACK FROM WALL
 - PROVIDE 2" EXTERNAL INSULATION ON:
 - ALL SUPPLY AND RETURN AIR DUCTS THROUGH ATTICS OR UN-INSULATED AREAS
 - CONTROL WIRING
 - ALL CONTROL WIRING SHALL BE RUN PARALLEL TO BUILDING LINES AND TIGHT TO ROOF DECK OR WALLS.
 - ALL CONCEALED INDOOR CONTROL WIRING SHALL BE RUN IN LVT.
 - 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.
 - ALL OUTDOOR CONTROL WIRING SHALL BE RUN IN LIQUIDTIGHT.
 - FLEXIBLE CABLE MUST BE STRAPPED TO SUPPORT WITHIN 12" OF TERMINATION BOX OR EQUIPMENT.



REGISTER, DIFFUSER AND GRILLE SCHEDULE

TAG	MANUFACTURER	MODEL	DESCRIPTION	FINISH/COLOUR	NOTES
A	PRICE	5200-F-S-A	LOUVERED FACE SUPPLY C/W DAMPER	TO BE DETERMINED BY ARCHITECT	SHOWN ON DRAWINGS
B	PRICE	5350-F-L-A	LOUVERED FACE RETURN	TO BE DETERMINED BY ARCHITECT	SHOWN ON DRAWINGS
C	PRICE	SCD-31-3C	600x600 SQUARE CONE DIFFUSER	TO BE DETERMINED BY ARCHITECT	SHOWN ON DRAWINGS
L	VENTEX	2420	STORMPROOF LOUVER	TO BE DETERMINED BY ARCHITECT	SHOWN ON DRAWINGS

EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL	AIR FLOW	MOUNTING	VOLTAGE	CONTROLS	ACCESSORIES
EF-1	GREENHECK	SP-B70	70 CFM	CEILING	120V	SWITCH	BACKDRAFT DAMPER
EF-2	GREENHECK	SQ-xx	415 CFM	INLINE	120V	TIME CLOCK	BACKDRAFT DAMPER
EF-3	REVERSOMATIC	TLD-200	100 CFM	INLINE	120V	PRESSURE SENSOR	BACKDRAFT DAMPER
EF-4	GREENHECK	SBE-1H54	20,000 CFM	INLINE	120V	CO/NO2 SENSOR	BACKDRAFT DAMPER

NOTES: ADDITIONAL COSTS INCURRED AS A RESULT OF ANY ALTERNATIVE MODELS ARE AT THE EXPENSE OF THE CONTRACTOR

AIR HANDLING UNIT SCHEDULE

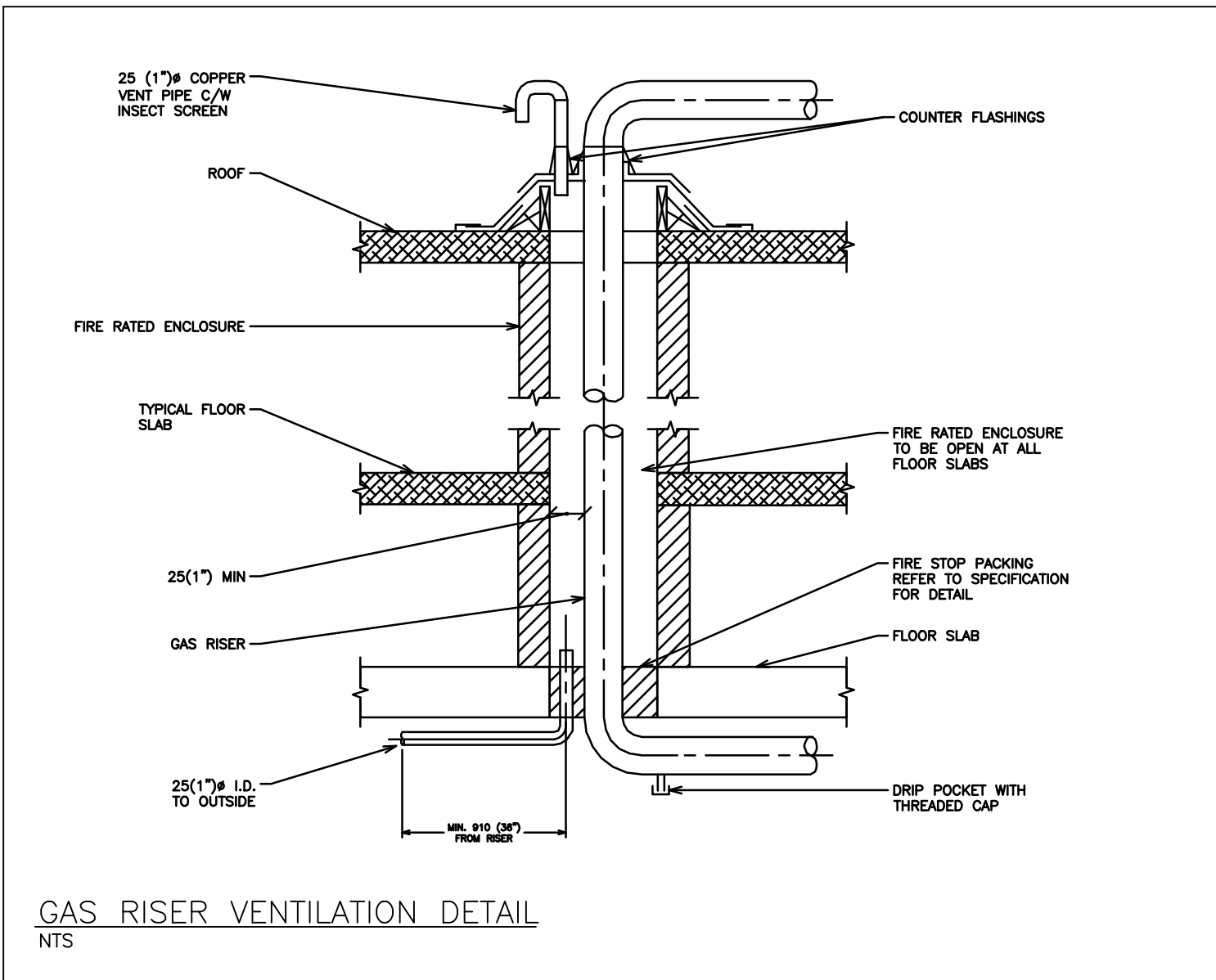
TAG	MANUFACTURER	MODEL	AIR FLOW	HEATING (INPUT/OUTPUT)	COOLING	VOLTAGE	CONTROLS	OPTIONS
AHU-1	MAGIC-PAK	HWC9N3311P18	600 cfm	33/31 MBH	17,000 BTU/h	208V	7 DAY PROGRAMMABLE THERMOSTAT	WALL SLEEVE, DECORATIVE CUSTOM PAINTED LOUVER
AHU-2	MAGIC-PAK	HWC9N2211P12	400 cfm	22/20.5 MBH	11,800 BTU/h	208V	7 DAY PROGRAMMABLE THERMOSTAT	WALL SLEEVE, DECORATIVE CUSTOM PAINTED LOUVER

MAKE-UP AIR UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	AIR FLOW	COOLING	HEATING (IN/OUT)	DIMENSIONS (L x W x H)	WEIGHT	ELECTRICAL	FEATURES
MAU-1	DAIKIN	DPS020A	5,120 CFM	268 MBH	600/480 MBH	162" x 76.5" x 94.5"	3737 lb	208V/60/3PH	1,2,3,4,5,6,7,8

FEATURES:

- MODULATING GAS HEAT
- NON-FUSED DISCONNECT SWITCH
- FIELD POWERED 115V GFI OUTLET
- FULL PERIMETER ROOF CURB WITH HORIZONTAL DISCHARGE
- FILTER SECTION AND INTAKE HOOD
- ECM MOTOR
- REMOTE PANEL
- LOW TEMP CUTOUT



NO.	REVISION	DATE	BY	APPROVED
4	RE-ISSUED FOR PERMIT	05/08	G.O	G.V.W.O
3	ISSUED FOR PERMIT	03/30	G.O	G.V.W.O
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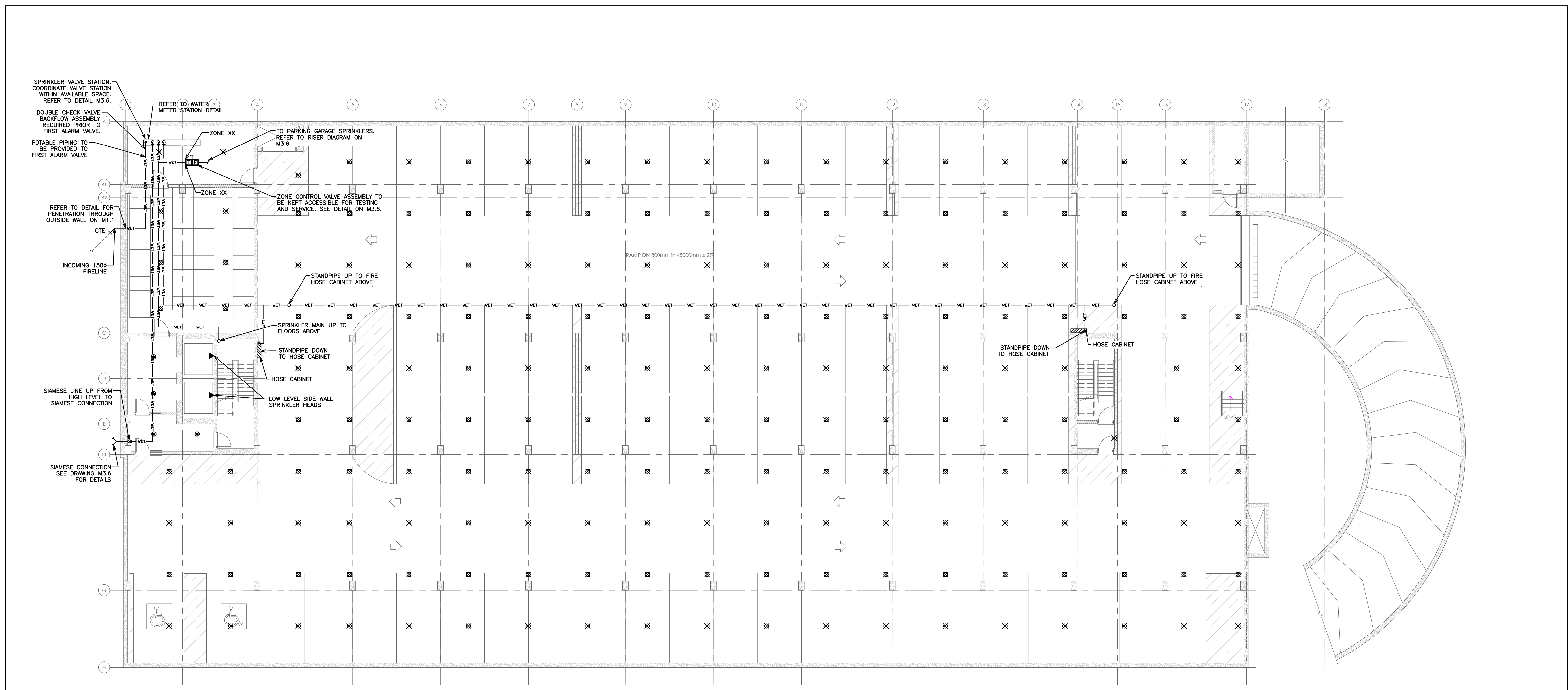
MECHANICAL HVAC NOTES & DETAILS

D.G. Biddle & Associates Limited
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96 KING STREET EAST • OSHAWA, ON L1H 1B6
PHONE (905)576-8500 FAX (905)576-9730
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PROJECT NO. 116194
DRAWN BY: J.T.C
DESIGN BY: J.T.C./G.V.W.O
CHECKED BY: G.V.W.O
DATE: MAY 2020

PROVINCE OF ONTARIO
G. V. W. OSBORNE
100138545
MAY 8 / 20

CAD FILE: 116194 M2
PLOT DATE: 05/08/20
SUBMISSION: PERMIT



SPRINKLER VALVE STATION. COORDINATE VALVE STATION WITHIN AVAILABLE SPACE. REFER TO DETAIL M3.6.

DOUBLE CHECK VALVE BACKFLOW ASSEMBLY REQUIRED PRIOR TO FIRST ALARM VALVE.

POTABLE PIPING TO BE PROVIDED TO FIRST ALARM VALVE.

REFER TO WATER METER STATION DETAIL

TO PARKING GARAGE SPRINKLERS. REFER TO RISER DIAGRAM ON M3.6.

ZONE CONTROL VALVE ASSEMBLY TO BE KEPT ACCESSIBLE FOR TESTING AND SERVICE. SEE DETAIL ON M3.6.

REFER TO DETAIL FOR PENETRATION THROUGH OUTSIDE WALL ON M1.1

INCOMING 150# FIRELINE

STANDPIPE UP TO FIRE HOSE CABINET ABOVE

SPRINKLER MAIN UP TO FLOORS ABOVE

STANDPIPE DOWN TO HOSE CABINET

HOSE CABINET

LOW LEVEL SIDE WALL SPRINKLER HEADS

SIAMOSE LINE UP FROM HIGH LEVEL TO SIAMOSE CONNECTION

SIAMOSE CONNECTION SEE DRAWING M3.6 FOR DETAILS

STANDPIPE UP TO FIRE HOSE CABINET ABOVE

STANDPIPE DOWN TO HOSE CABINET

HOSE CABINET

TENDER NOTES:

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- PROVIDE SPRINKLER SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR OUR REVIEW PRIOR TO INSTALLATION OF PIPING FOR THESE SYSTEMS.

NOTE: 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.

NOTES:

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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.

SPRINKLER LEGEND

— VET — VET —	SPRINKLER LINE (WET)
⊙	SEMI-RECESSED PENDENT SPRINKLER HEAD C/W ESCUTCHEON
⊗	UPRIGHT SPRINKLER HEAD
▲	SIWALL SPRINKLER HEAD

4	RE-ISSUED FOR PERMIT	05/08	G.O.	G.V.W.O
3	ISSUED FOR PERMIT	03/30	G.O.	G.V.W.O
2	RE-ISSUED FOR COORDINATION	03/20	G.O.	G.V.W.O
1	ISSUED FOR COORDINATION	01/24	G.O.	G.V.W.O
NO.	REVISION	DATE	BY	APPROVED

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KIYA DEVELOPMENTS LTD.

**MECHANICAL SPRINKLER
PARKING LEVEL**

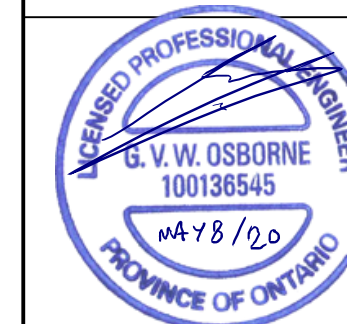
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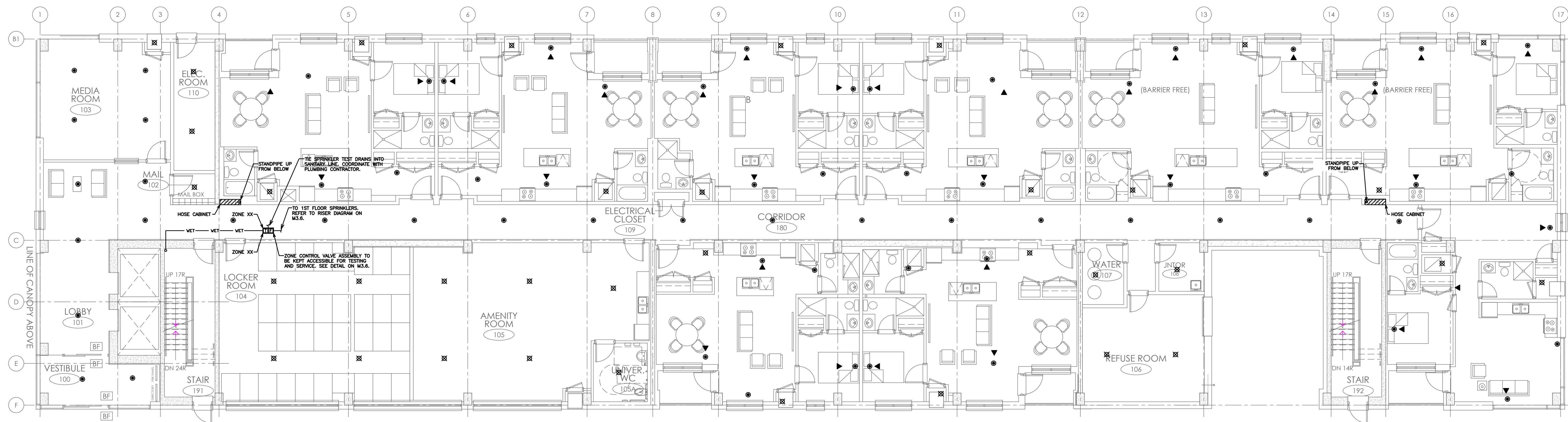
96 KING STREET EAST • OSHAWA, ON L1H 1B6
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INFO@DGBIDDLE.COM

PROJECT NO. 116194
DRAWING NO. M3.1

SCALE: 1:125
DRAWN BY: K.J.K.
DESIGN BY: B.C.A.
CHECKED BY: G.V.W.O
DATE: MAY 2020

CAD FILE: 116194 M3
PLOT DATE: 05/08/20
SUBMISSION: PERMIT





- NOTES:**
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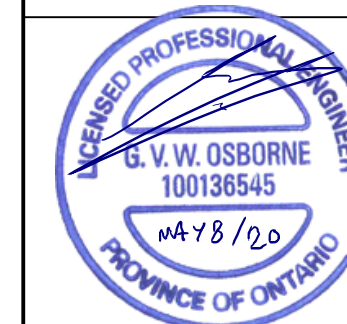
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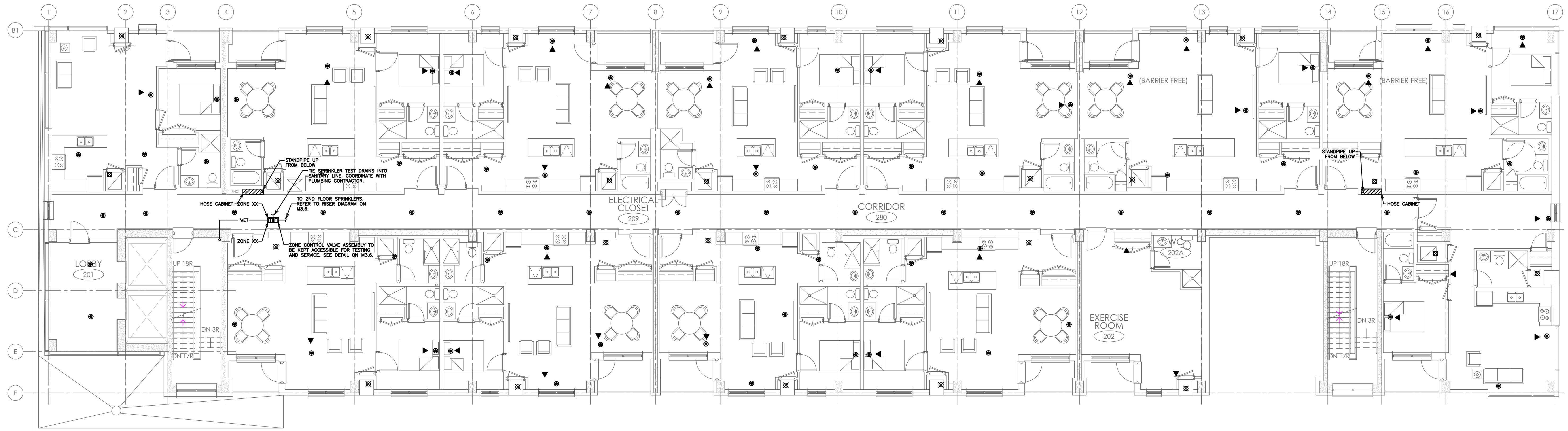
REVISIONS			
NO.	REVISION	DATE	BY APPROVED
4	RE-ISSUED FOR PERMIT	05/08	G.O G.V.W.O
3	ISSUED FOR PERMIT	03/30	G.O G.V.W.O
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1	ISSUED FOR COORDINATION	01/24	G.O G.V.W.O

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KIYA DEVELOPMENTS LTD.
**MECHANICAL SPRINKLER
GROUND FLOOR**

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96 KING STREET EAST • OSHAWA, ON L1H 1B6
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INFO@DGBIDDLE.COM

SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: K.J.K.	DRAWING NO. M3.2
DESIGN BY: B.C.A.	
CHECKED BY: G.V.W.O	CAD FILE: 116194 M3
DATE: MAY 2020	PLOT DATE: 05/08/20 SUBMISSION: PERMIT





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SPRINKLER LEGEND	
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⊙	SEMI-RECESSED PENDENT SPRINKLER HEAD C/W ESCUTCHEON
⊗	UPRIGHT SPRINKLER HEAD
▲	SIDEWALL SPRINKLER HEAD

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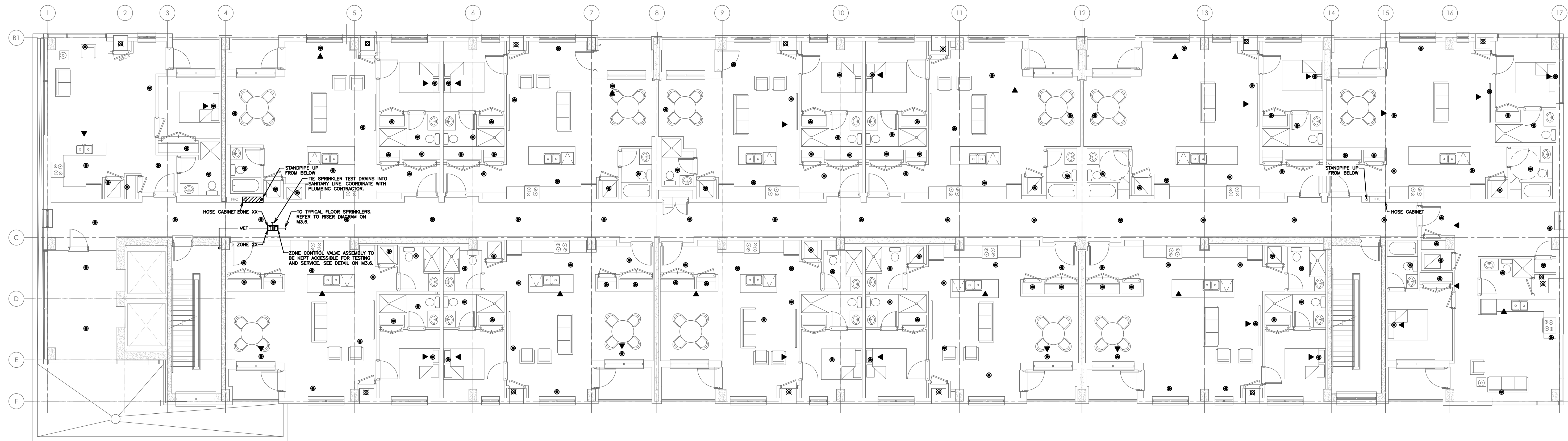
REVISIONS
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MECHANICAL SPRINKLER SECOND FLOOR

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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: K.J.K.	DRAWING NO. M3.3
DESIGN BY: B.C.A.	CAD FILE: 116194 M3
CHECKED BY: G.V.W.O	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT





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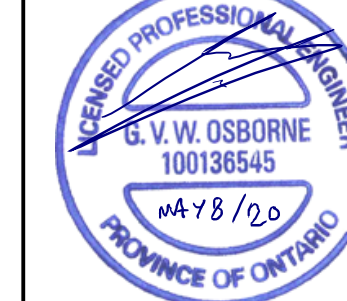
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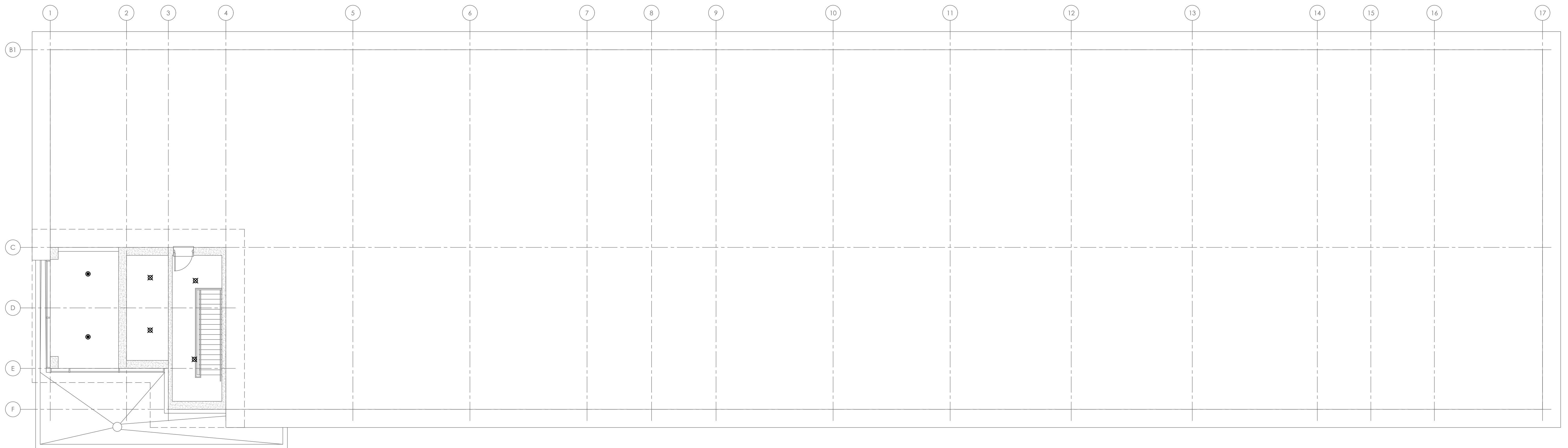
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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: K.J.K.	DRAWING NO. M3.4
DESIGN BY: B.C.A.	CAD FILE: 116194 M3
CHECKED BY: G.V.W.O	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT





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2	RE-ISSUED FOR COORDINATION	03/20	G.O	G.V.W.O
1	ISSUED FOR COORDINATION	01/24	G.O	G.V.W.O

REVISIONS

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KIYA DEVELOPMENTS LTD.

MECHANICAL SPRINKLER ROOF LAYOUT

D.G. Biddle & Associates Limited
consulting engineers and planners
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PHONE (905)576-8500 • FAX (905)576-9730
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	SCALE:	1:100	PROJECT NO.	116194
	DRAWN BY:	K.J.K.	DRAWING NO.	M3.5
	DESIGN BY:	B.C.A.	CAD FILE:	116194 M3
	CHECKED BY:	G.V.W.O	PLOT DATE:	05/08/20
	DATE:	MAY 2020	SUBMISSION:	PERMIT

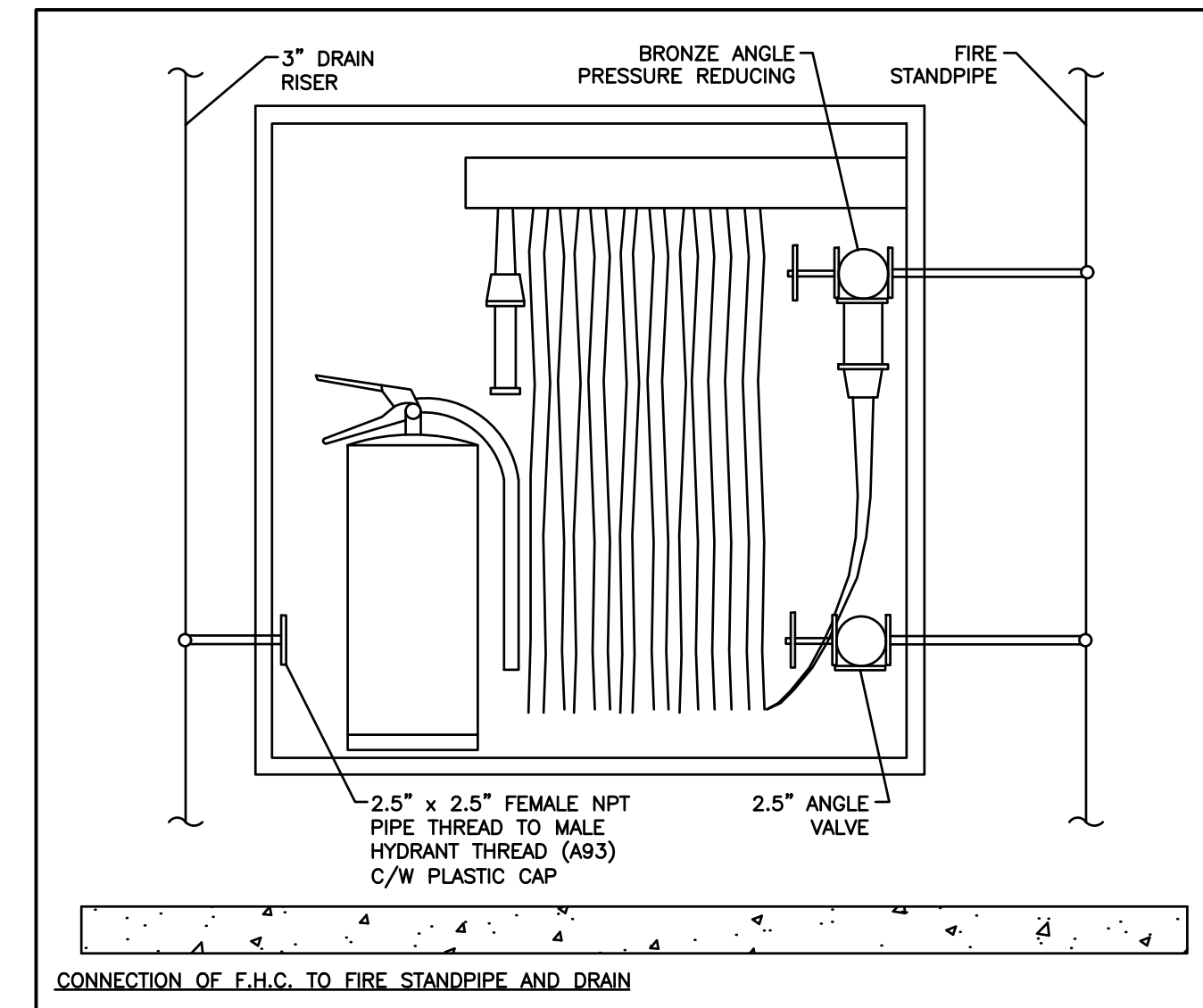
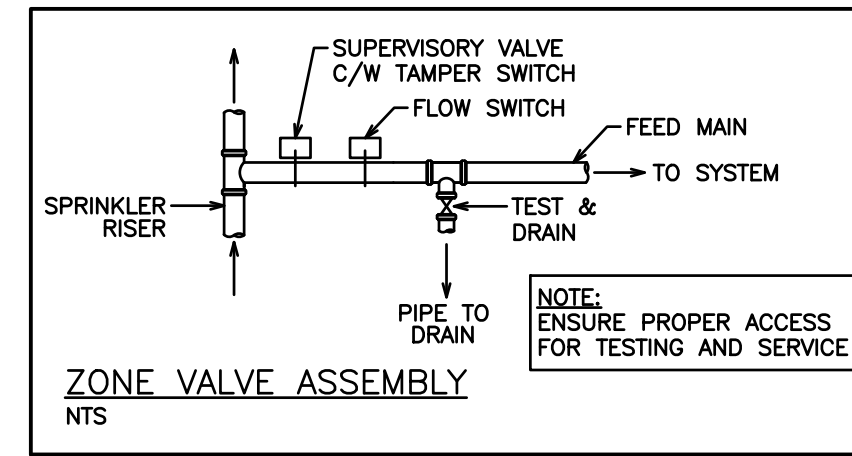
SPRINKLER NOTES:

1. CONFIRM CONDITIONS PRIOR TO PRICING AND INSTALLATION.
2. PROVIDE WET SYSTEM FOR BUILDING.
3. PROVIDE VALVES, HEADS, AND PIPING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SPRINKLER SYSTEM IN CONFORMANCE WITH NFPA 13-2016 AND LOCAL CODES.
4. 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 SHOWN ON DRAWINGS AND TO BE LOCATED AT THE DISCRETION OF THE FIRE PREVENTION SERVICES.
5. 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 13-2016.
6. 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.
7. CONCEAL ALL NEW PIPING IN CEILING SPACE OR BULKHEADS.
8. PROVIDE LOCKABLE ACCESS DOORS IN DROPPED DRYWALL CEILINGS AND WALLS FOR ACCESS TO VALVES, ETC. WHERE REQUIRED.
9. COORDINATE INTERLOCK OF SPRINKLER SYSTEM INTO FIRE ALARM SYSTEM WITH ELECTRICAL CONTRACTOR.
10. ALL REQUIRED CUTTING AND CORING BY SPRINKLER CONTRACTOR. ALL PATCHING BY GENERAL CONTRACTOR.
11. PROVIDE DESIGN DRAWINGS COMPLETE WITH HYDRAULIC CALCULATIONS FOR SUBMITTAL AND REVIEW BY ENGINEER AND REVIEWING AUTHORITIES.
12. SYSTEM SHALL BE TESTED AS PER SPECIFICATIONS AND WITNESSED BY THE ENGINEER.
13. COORDINATE TESTING OF DEVICES INTERLOCKED WITH FIRE ALARM SYSTEM WITH CONTRACTOR.
14. PROVIDE MATERIAL AND TEST CERTIFICATES UPON COMPLETION OF INSTALLATION AND TESTING TO ENGINEER AND REVIEWING AUTHORITIES.

NOTE:
SPRINKLER SYSTEM IS TO BE INSTALLED OR EXTENDED IN CONFORMANCE WITH THE ONTARIO BUILDING CODE DIVISION B 3.2.5. AND NFPA 13-2016.

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.

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.)	UNDERGROUND PARKING GARAGE, STORAGE LOCKERS, MACHINE, GARBAGE, MECHANICAL AND ELECTRICAL ROOMS



NOTE:
STANDPIPE SYSTEM IS TO BE INSTALLED OR EXTENDED IN CONFORMANCE WITH THE ONTARIO BUILDING CODE DIVISION B 3.2.9. AND NFPA 13-2016.

NOTE:
ENTIRE BUILDING SHALL BE PROTECTED BY WITH SPRINKLER AND STANDPIPE SYSTEM.

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.)	UNDERGROUND PARKING GARAGE, STORAGE LOCKERS, MACHINE, GARBAGE, MECHANICAL AND ELECTRICAL ROOMS

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.

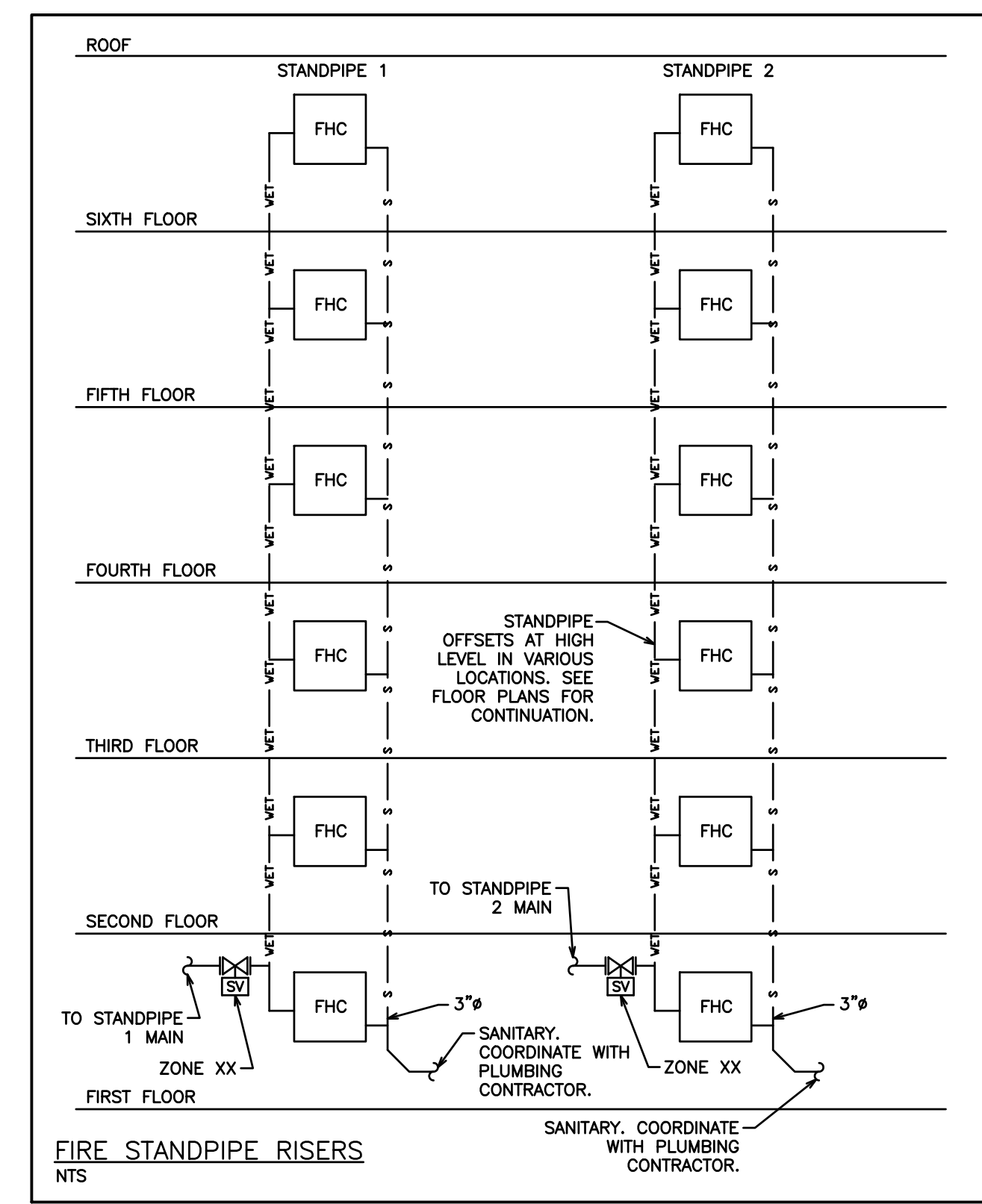
THESE DRAWINGS ARE INTENDED TO ESTABLISH BASIC GUIDELINES. ASSUME FULL RESPONSIBILITY FOR THE LAYOUT AND DETAILS OF ALL FIRE PROTECTION WORK TO MEET THE REQUIREMENTS OF N.F.P.A. & GOVERNING CODES OR REGULATIONS AND TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND INSURER FOR THE OWNER.

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

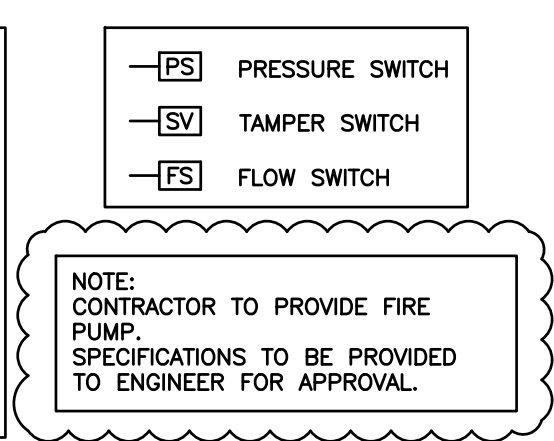
CONTRACTOR TO PROVIDE HYDRAULIC FIRE PROTECTION CALCULATIONS AND FIRE PROTECTION DRAWINGS IN SHOP DRAWING FORMAT TO THE AUTHORITIES HAVING JURISDICTION AND ONE COPY TO THE ENGINEER PRIOR TO ANY INSTALLATION.

GENERAL REQUIREMENTS FOR MECHANICAL WORK

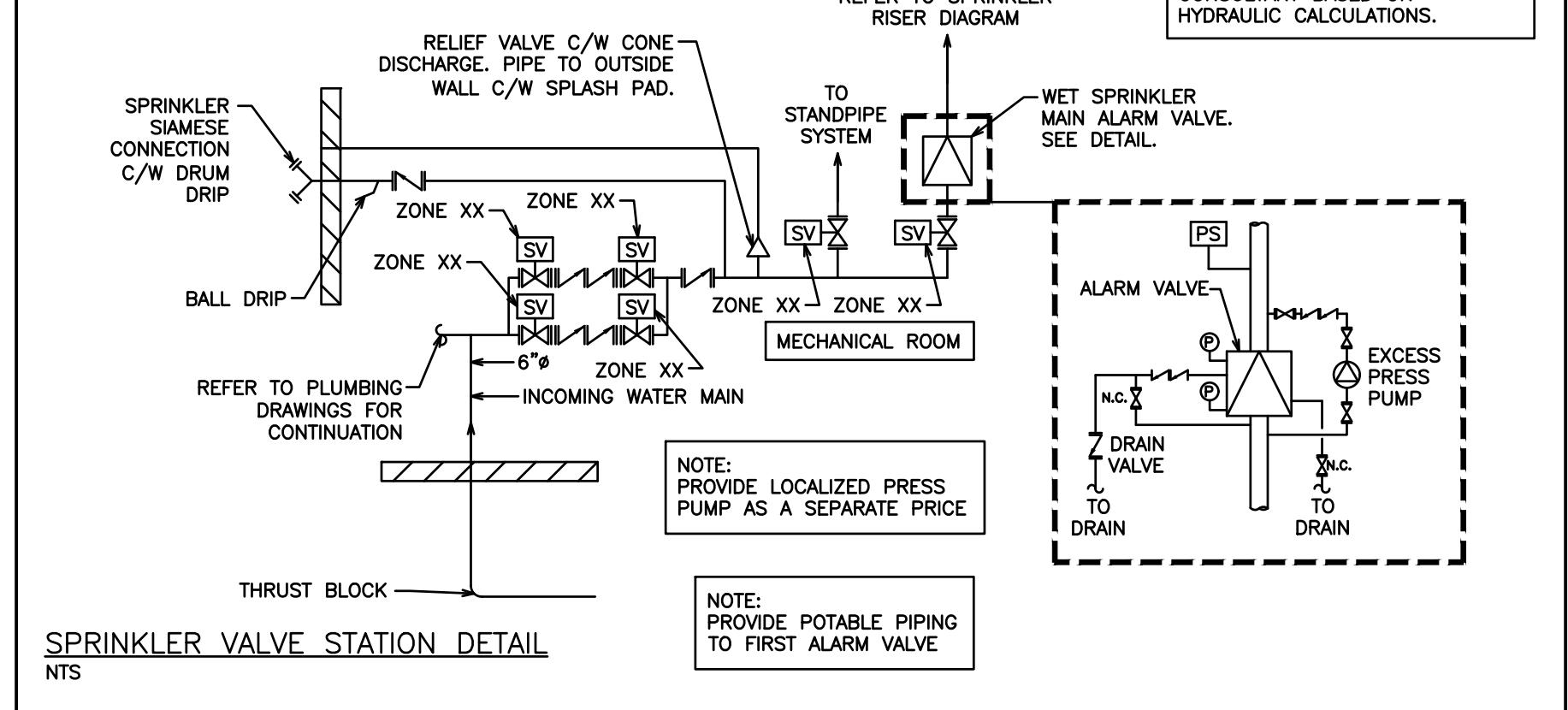
1. SCOPE OF WORK
 - 1.1. CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.
 - 1.2. THE GENERAL MECHANICAL SPECIFICATIONS SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.
 - 1.3. COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF 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 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 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 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 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 USUALLY 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.
 - 8.2. 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 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, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.



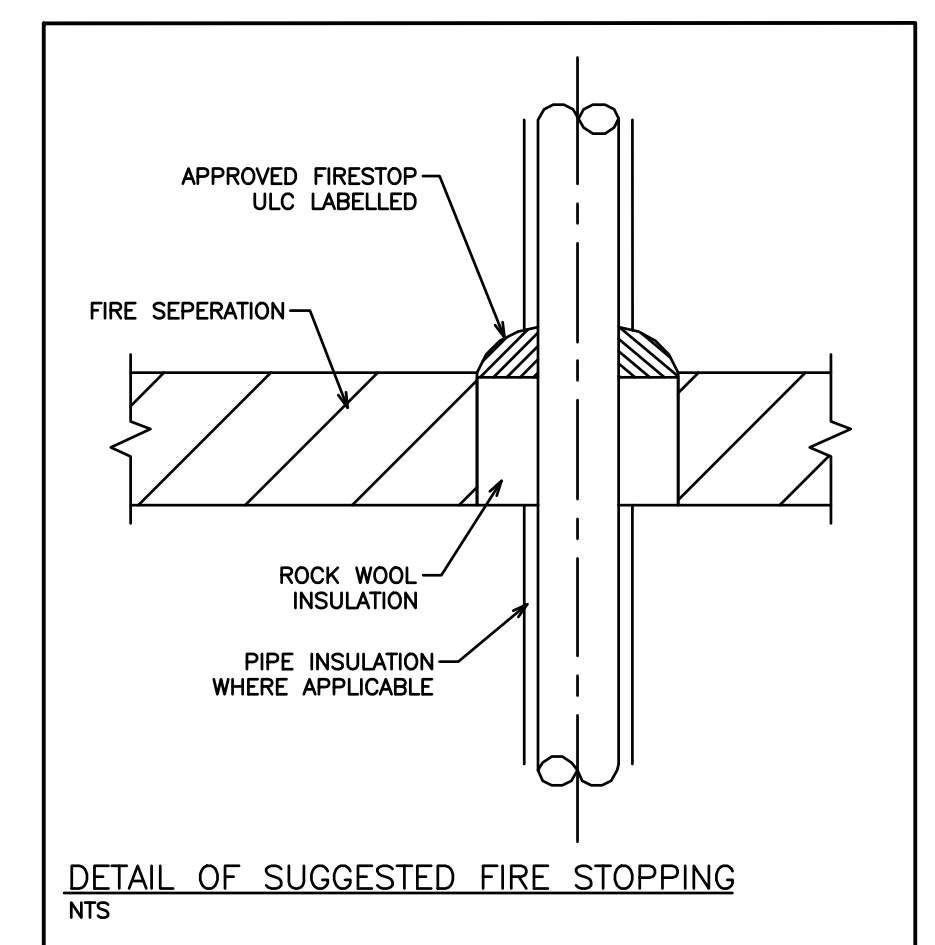
- NOTES:**
1. ALL VALVES MUST BE MONITORED THROUGH FIRE ALARM SYSTEM. COORDINATE TIE-IN OF ALL SPRINKLER SUPERVISORIES AND ALARMS INTO FIRE ALARM SYSTEM. COORDINATE WITH FIRE ALARM CONTRACTOR.
 2. PROVIDE THRUST BLOCKS AND INTERIOR SUPPORTS FOR WATER MAIN AS REQUIRED BY CODE AND LOCAL JURISDICTIONS.
 3. PROVIDE INTERIOR PIPE SUPPORTS IN CONFORMANCE WITH NFPA 13.
 4. EXCESS PRESSURE PUMPS TO BE FED FROM EMERGENCY POWER SYSTEM.



NOTE:
THIS DIAGRAM IS FOR COORDINATION AND GENERAL LAYOUT ONLY. THE FINAL SYSTEM DESIGN WILL BE PROVIDED BY A QUALIFIED FIRE PROTECTION CONSULTANT. IT IS THE DUTY OF THIS CONSULTANT TO COORDINATE THE ACTUAL NUMBER AND LOCATIONS OF DEVICES REQUIRING ELECTRICAL CONNECTIONS AND CONNECTIONS TO THE FIRE ALARM SYSTEM WITH THE ELECTRICAL AND OTHER TRADES AS REQUIRED. THE PIPE SIZING WILL BE PROVIDED BY THIS CONSULTANT BASED ON HYDRAULIC CALCULATIONS.



- NOTE:
1. DESIGN AND INSTALLATION OF SPRINKLER SYSTEM SHALL BE IN CONFORMANCE WITH REQUIREMENTS OF NFPA 13-2016 EDITION, AND OBC-2012 EDITION.
 2. DESIGN AND INSTALLATION OF BUILDING STANDPIPE SYSTEM SHALL BE IN CONFORMANCE WITH REQUIREMENTS OF NFPA 14-2016 EDITION AND OBC 2012 EDITION INCLUDING LATEST AMENDMENTS.
 3. PROVIDE SPRINKLER AND STAND PIPE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR OUR REVIEW PRIOR TO INSTALLATION OF PIPING FOR THESE SYSTEMS.



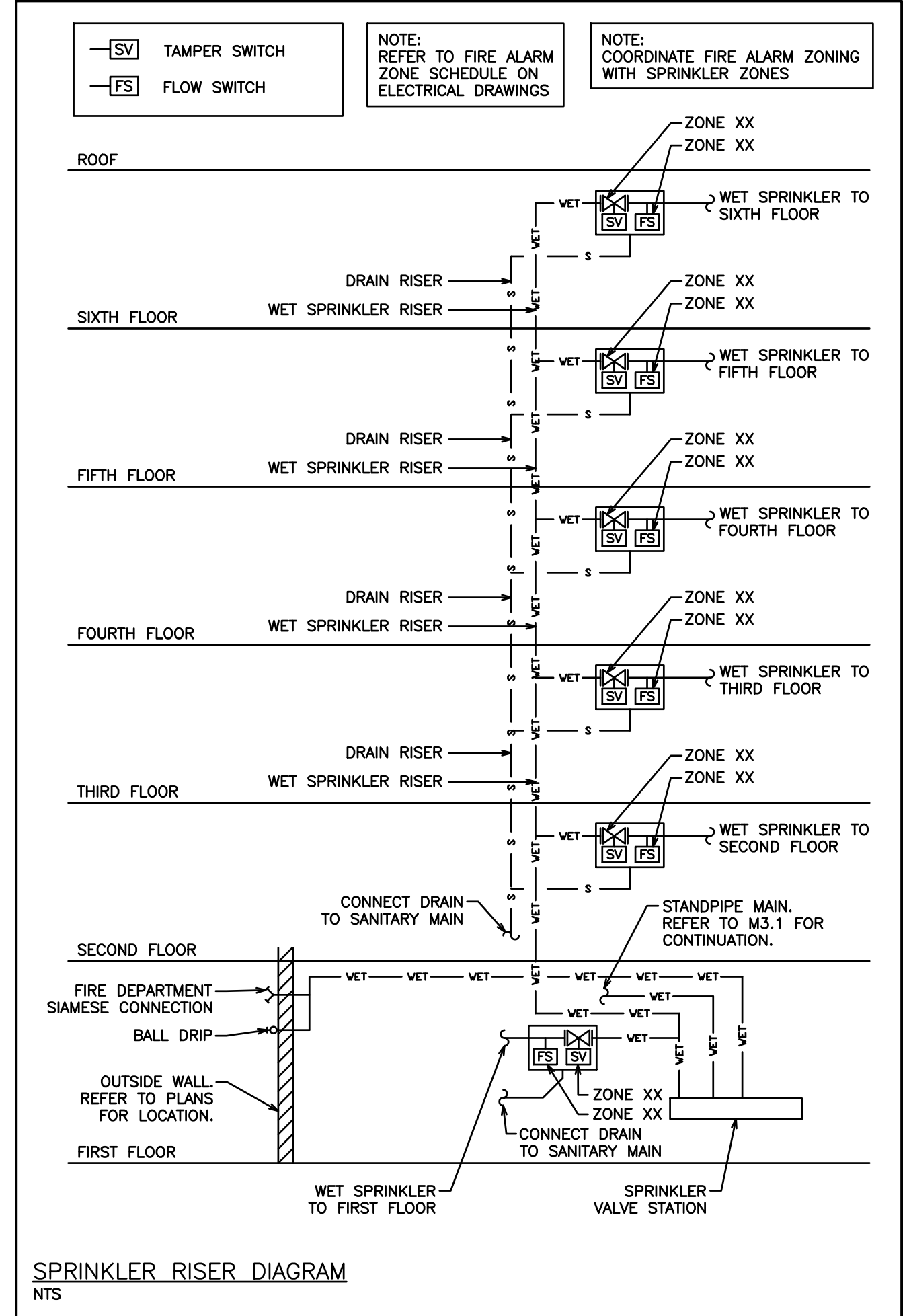
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NO.	REVISION	DATE	BY	APPROVED
4	RE-ISSUED FOR PERMIT	05/08	G.O	G.V.W.O
3	ISSUED FOR PERMIT	03/30	G.O	G.V.W.O
2	RE-ISSUED FOR COORDINATION	03/20	G.O	G.V.W.O
1	ISSUED FOR COORDINATION	01/24	G.O	G.V.W.O

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MECHANICAL SPRINKLER NOTES

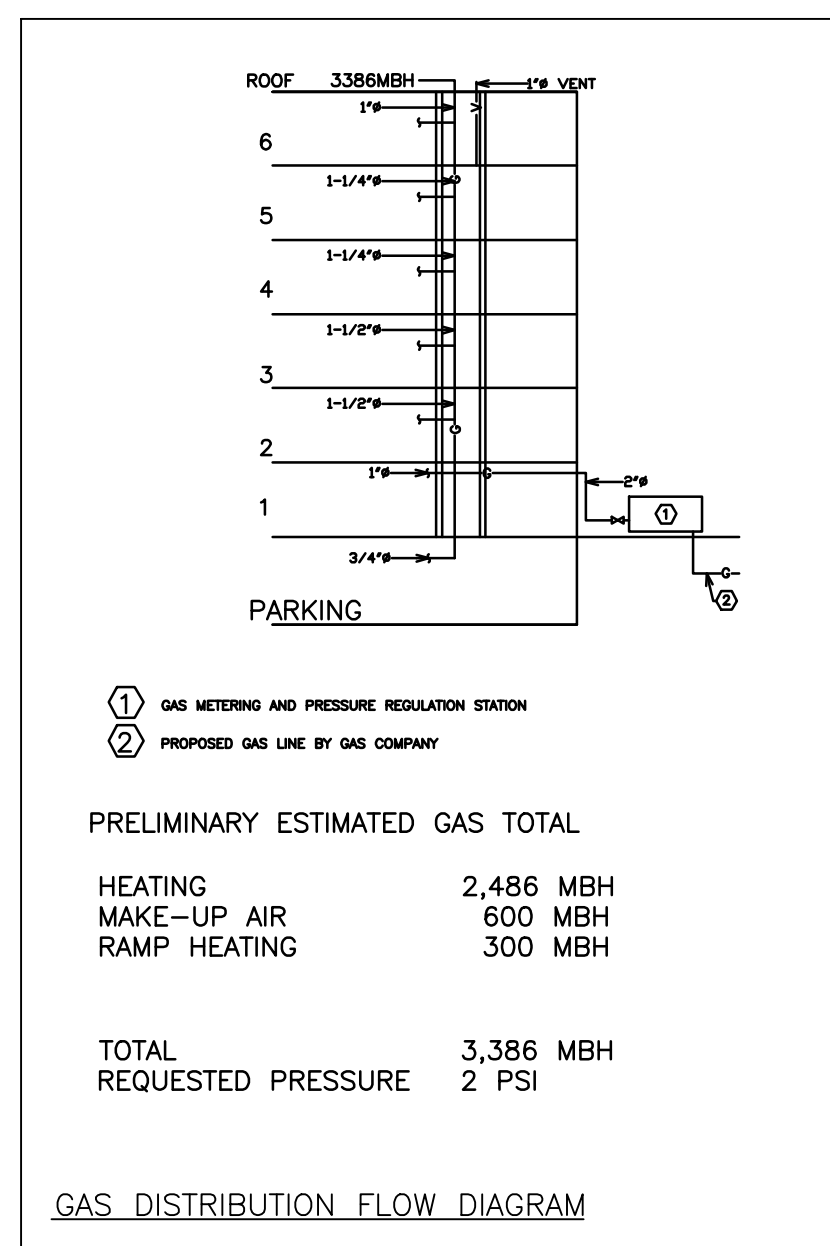
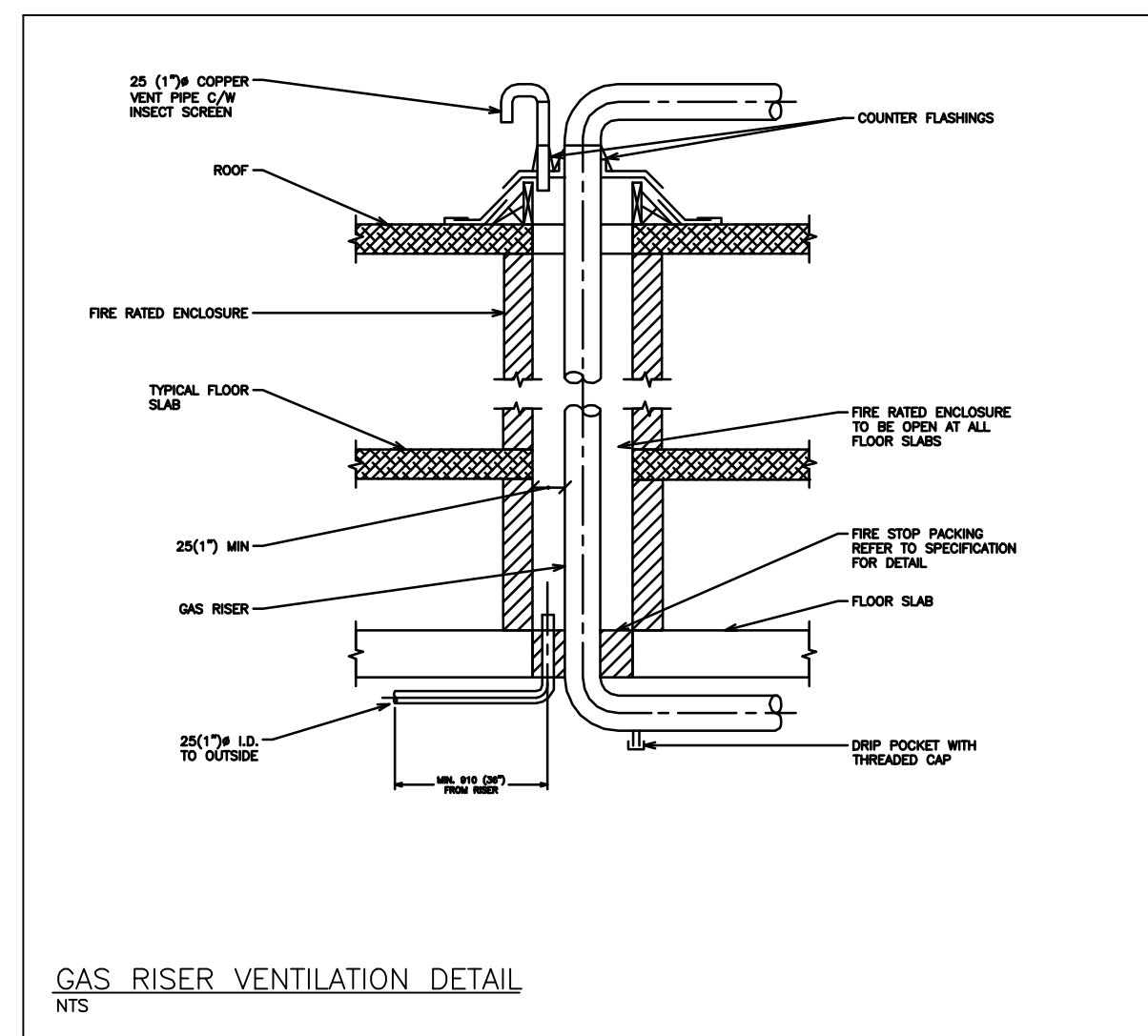
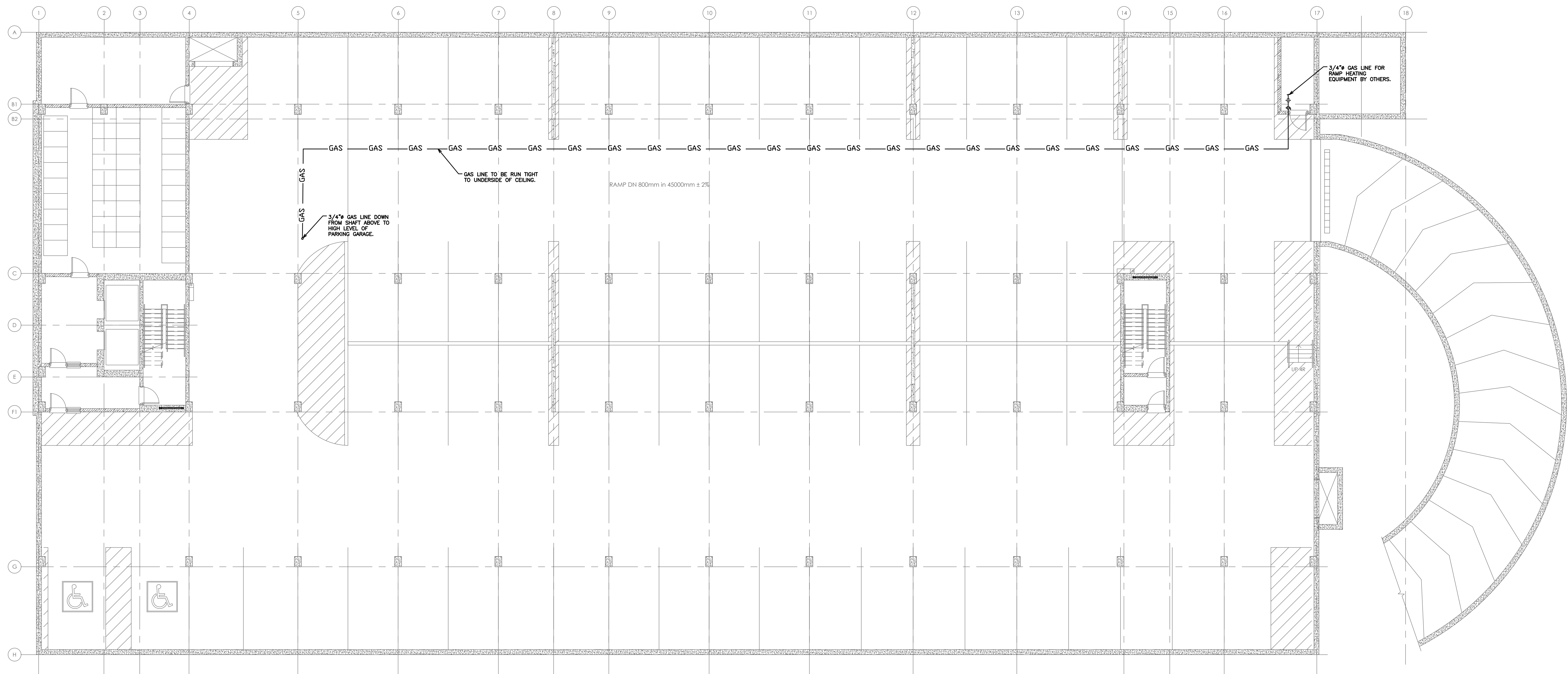
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PROJECT NO. 116194
DRAWING NO. M3.6

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DRAWN BY: K.J.K.
DESIGN BY: B.C.A.
CHECKED BY: G.V.W.O
DATE: MAY 2020

CAD FILE: 116194 M3
PLOT DATE: 05/08/20
SUBMISSION: PERMIT



NOTE:
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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.

GAS LEGEND	
—	GAS LINE
⊠	GAS METER
→	PIPE UP, PIPE DOWN
⊘	SHUTOFF VALVE
—○—	UNION
-	PIPE BREAK/CONTINUATION

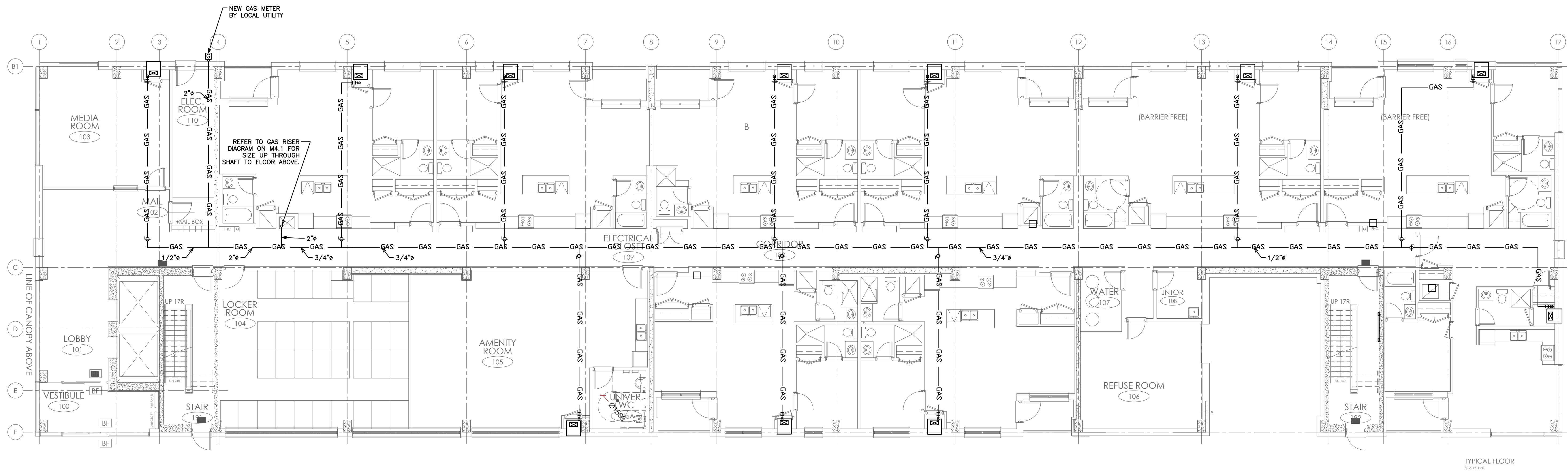
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MECHANICAL GAS PARKING LEVEL

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	DESIGN BY: J.T.C./G.V.W.O.	CAD FILE: 116194 M2
	CHECKED BY: G.V.W.O.	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT	



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GAS LEGEND

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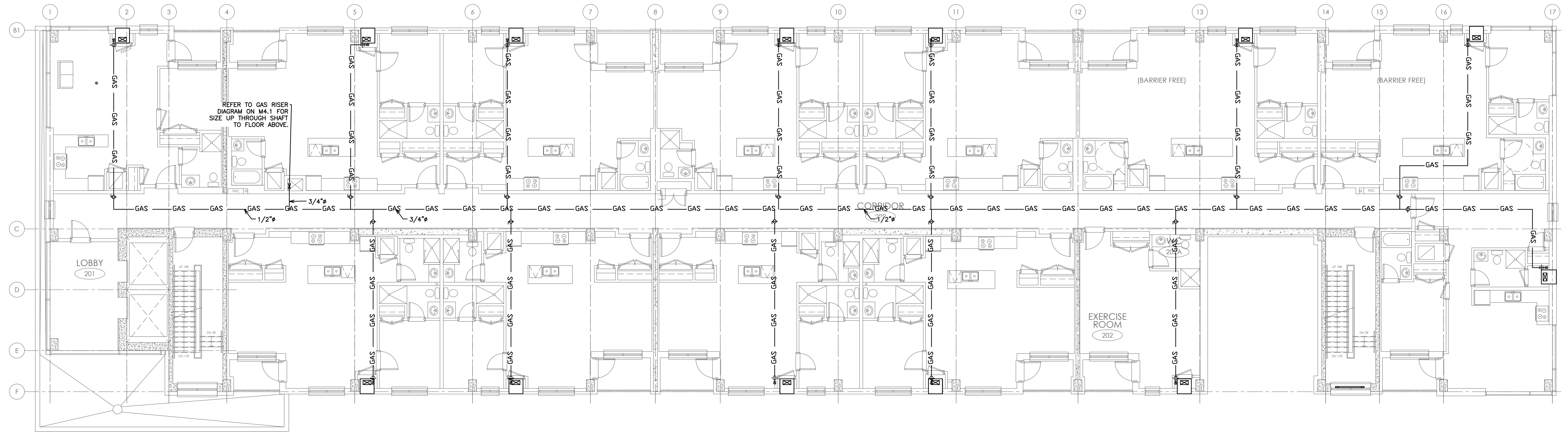
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MECHANICAL GAS
GROUND FLOOR

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	DRAWN BY: J.T.C	DRAWING NO. M4.2
	DESIGN BY: J.T.C./G.V.W.O	CAD FILE: 116194 M2
	CHECKED BY: G.V.W.O DATE: MAY 2020	PLOT DATE: 05/08/20 SUBMISSION: PERMIT



REFER TO GAS RISER DIAGRAM ON M4.1 FOR SIZE UP THROUGH SHAFT TO FLOOR ABOVE.

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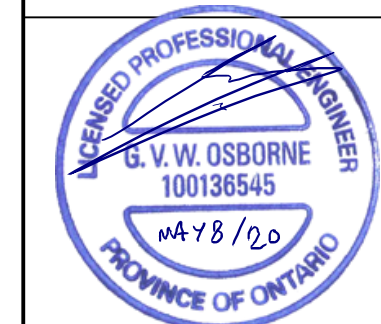
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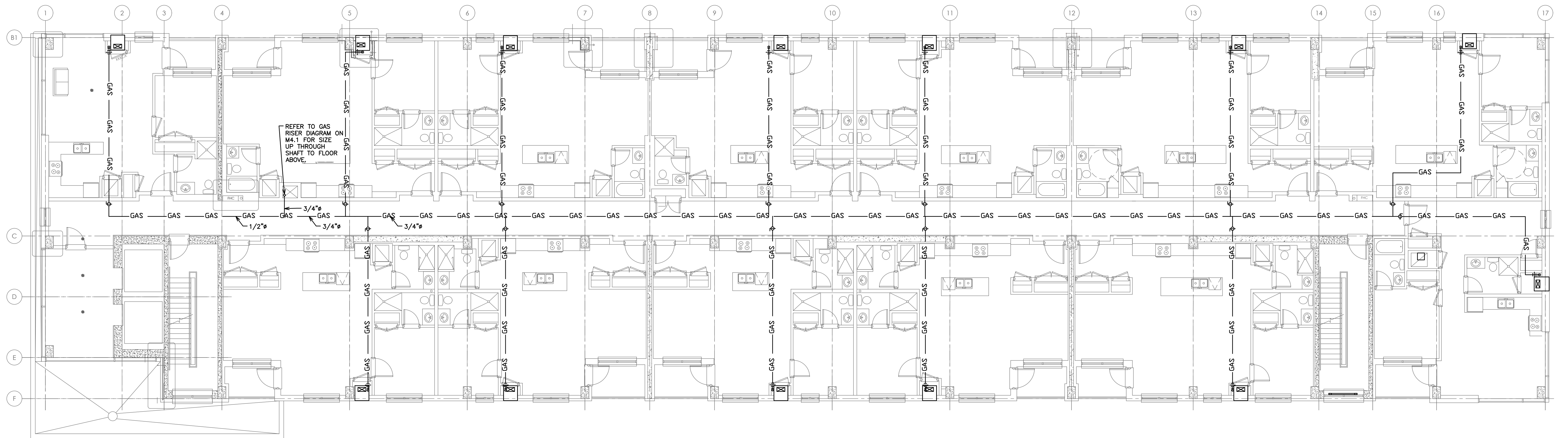
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MECHANICAL GAS SECOND FLOOR

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SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C.	DRAWING NO. M4.3
DESIGN BY: J.T.C./G.V.W.O	CAD FILE: 116194 M2
CHECKED BY: G.V.W.O	PLOT DATE: 05/08/20
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	SHUTOFF VALVE
	UNION
-	PIPE BREAK/CONTINUATION

NO.	REVISION	DATE	BY	APPROVED
2	RE-ISSUED FOR PERMIT	05/08	G.O	G.V.W.O
1	ISSUED FOR PERMIT	03/30	G.O	G.V.W.O

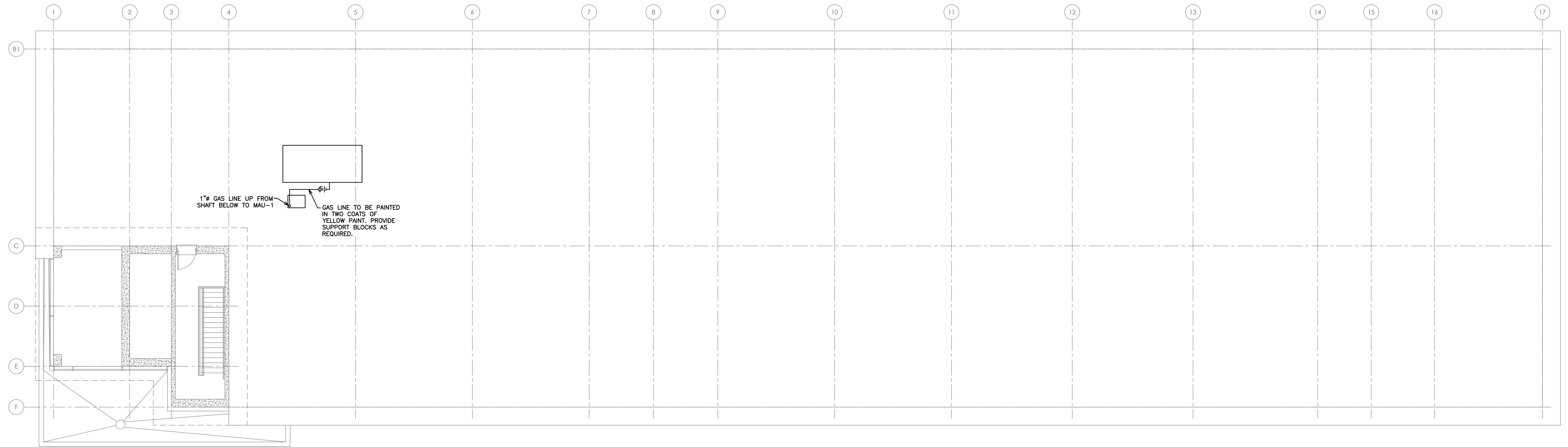
513 DUNDAS STREET EAST, WHITBY, ONTARIO
KIYA DEVELOPMENTS LTD.

MECHANICAL GAS TYPICAL FLOOR 3-6

D.G. Biddle & Associates Limited
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PHONE (905)576-8500 • FAX (905)576-9730
INFO@DGBIDDLE.COM

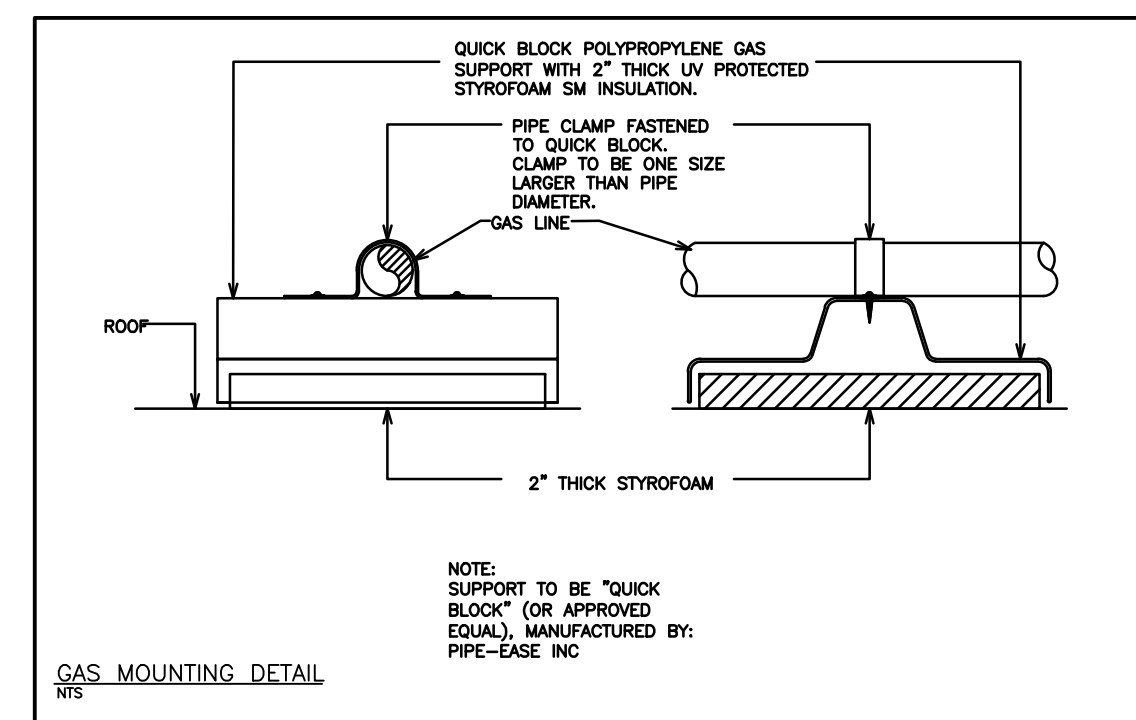
G. V. W. OSBORNE
100138545
MAY 8 / 20
PROVINCE OF ONTARIO

SCALE: 1:100	PROJECT NO. 116194
DRAWN BY: J.T.C	DRAWING NO. M4.4
DESIGN BY: J.T.C./G.V.W.O	CAD FILE: 116194 M2
CHECKED BY: G.V.W.O	PLOT DATE: 05/08/20
DATE: MAY 2020	SUBMISSION: PERMIT



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:
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GAS LEGEND	
— GAS —	GAS LINE
⊞	GAS METER
—○—	PIPE UP, PIPE DOWN
— —	SHUTOFF VALVE
— — —	UNION
- - -	PIPE BREAK/CONTINUATION

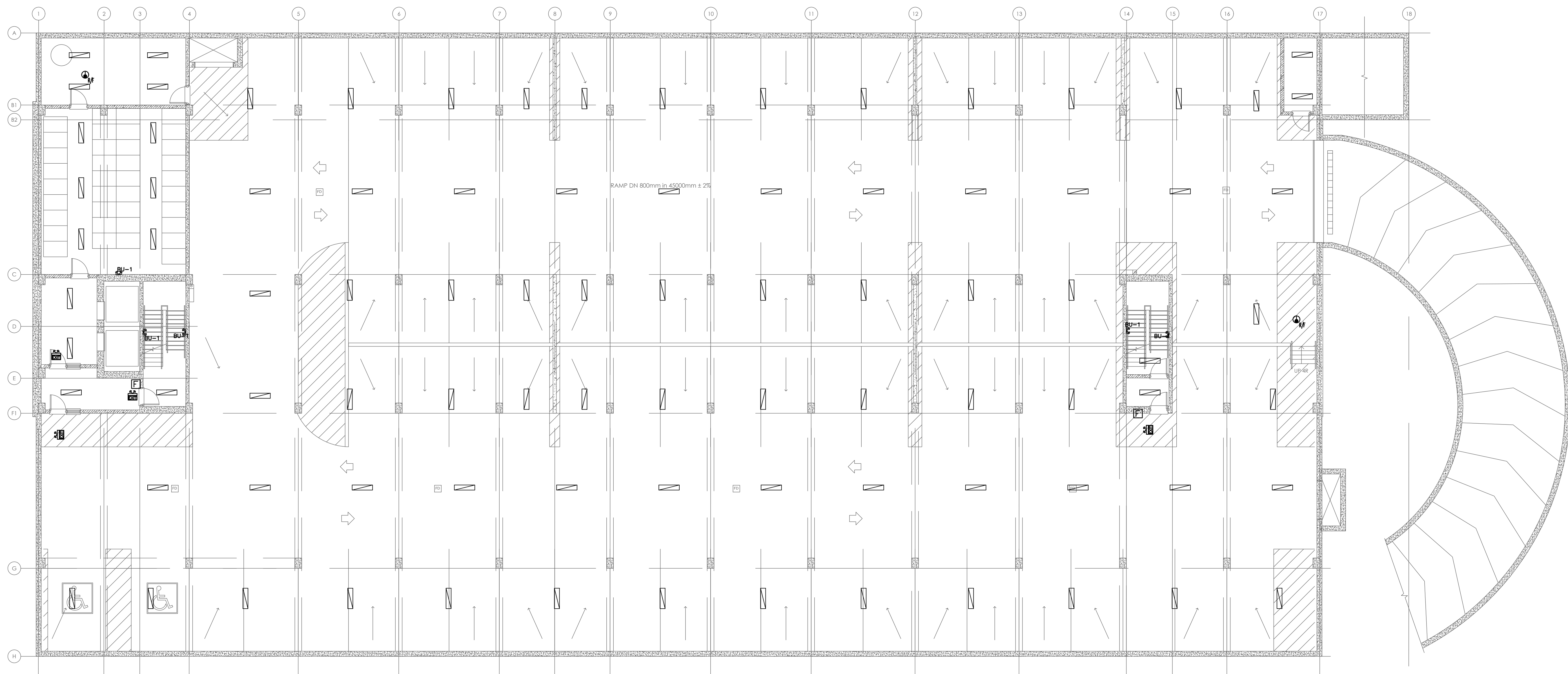
REVISIONS				
NO.	REVISION	DATE	BY	APPROVED
2	RE-ISSUED FOR PERMIT	05/08	G.O	G.V.W.O
1	ISSUED FOR PERMIT	03/30	G.O	G.V.W.O

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	SCALE: 1:100	PROJECT NO. 116194
	DRAWN BY: J.T.C	DRAWING NO. M4.5
	DESIGN BY: J.T.C/G.V.W.O	
	CHECKED BY: G.V.W.O DATE: MAY 2020	CAD FILE: 116194 M2 PLOT DATE: 05/08/20 SUBMISSION: PERMIT



ELECTRICAL LEGEND		ELECTRICAL LEGEND	
⊕	RECEPTACLE	[BAT]	BATTERY PACK AND CHARGER
⊕	208V 1PH GROUNDED RECEPTACLE	[FAL]	FIRE ALARM ANNUNCIATOR PANEL
⊕ GFI	GROUND FAULT RECEPTACLE	BU-1	BATTERY TAG
⊕ WP	WEATHER PROOF RECEPTACLE	[PC]	PHOTOCELL
⊕ SC	SEPARATE CIRCUIT RECEPTACLE	[H]	HEAT DETECTOR TEMPERATURE AND RATE OF RISE
⊕	600V SINGLE PHASE DIRECT CONNECTION	[S]	SMOKE ALARM
⊕	600V 3PH DIRECT CONNECTION	[S D]	SMOKE DETECTOR AND C/O COMBO
⊕	208V SINGLE PHASE DIRECT CONNECTION	[H]	HORN / STROBE COMBO
⊕	208V 3PH DIRECT CONNECTION	[F]	FIRE HORN
⊕	120V SINGLE PHASE DIRECT CONNECTION	[S]	SINGLE LED FIRE HEAD
[P]	PUSH BUTTON	[S]	DOUBLE LED FIRE HEAD
[T]	TELEPHONE	[F]	FIRE STROBE
[D]	DISCONNECT	[M]	MANUAL PULL STATION
[TV]	TV COAXIAL CONNECTION	[R]	SUITE ELECTRICAL PANEL RECESSED
[OS]	OCCUPANCY SENSOR	[R]	SUITE TELECOMMUNICATIONS PANEL RECESSED
[FAC]	FIRE ALARM CONTROL PANEL		

LIGHTING LEGEND	
[Symbol]	SPECIFICATIONS BY OWNER
[Symbol]	SPECIFICATIONS BY OWNER
[Symbol]	SPECIFICATIONS BY OWNER

NOTE:
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NO.	REVISION	DATE	BY	APPROVED
4.	RE-ISSUED FOR PERMIT	MAY 8	J.C.	G.V.W.O
3.	ISSUED FOR PERMIT	MAR 30	A.P.	G.V.W.O
2.	ISSUED FOR COORDINATION	MAR 23	A.P.	G.V.W.O
1.	ISSUED FOR COORDINATION	JAN 24	A.P.	G.V.W.O

REVISIONS

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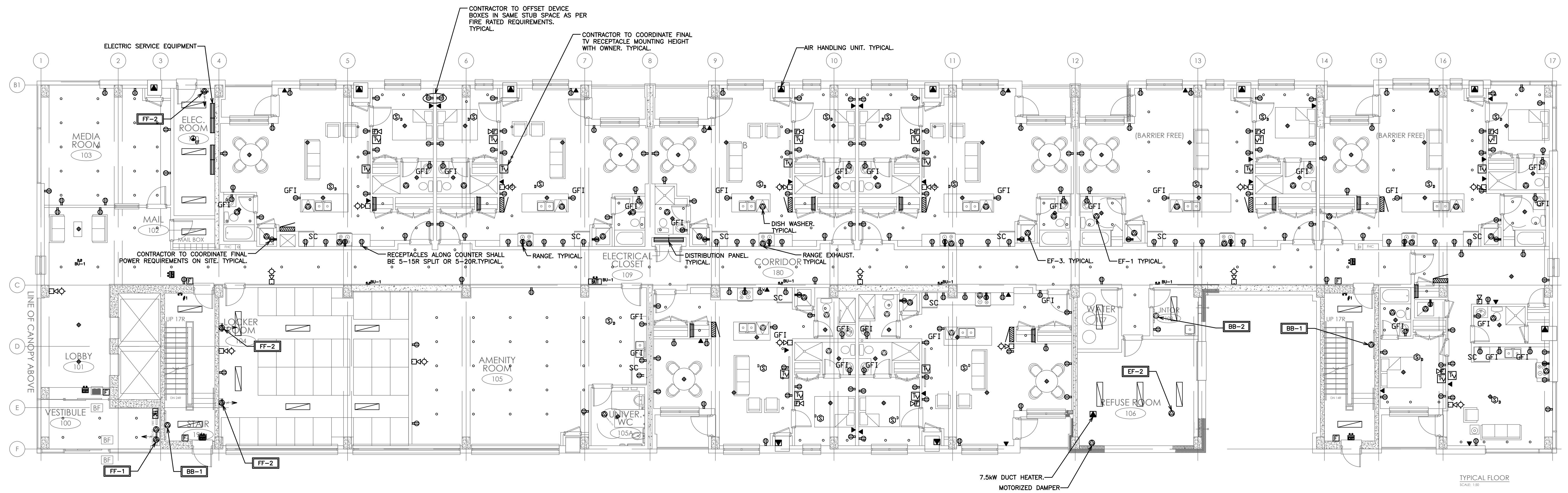
ELECTRICAL PLAN
PARKING

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G.V.W. OSBORNE
 100138545
 MAY 8 / 20
 PROVINCE OF ONTARIO

SCALE:	1:125	PROJECT NO.	116194
DRAWN BY:	A.P.	DRAWING NO.	E1
DESIGN BY:	A.P.	CAD FILE:	116194 E
CHECKED BY:	G.V.W.O	PLOT DATE:	05/08/20
DATE:	MAY 2020	SUBMISSION:	PERMIT



ELECTRICAL LEGEND		ELECTRICAL LEGEND	
⊕	RECEPTACLE	BATT	BATTERY PACK AND CHARGER
⊕	208V 1PH GROUNDED RECEPTACLE	FAP	FIRE ALARM ANNUNCIATOR PANEL
⊕ GFI	GROUND FAULT RECEPTACLE	BU-1	BATTERY TAG
⊕ WP	WEATHER PROOF RECEPTACLE	PC	PHOTOCELL
⊕ SC	SEPARATE CIRCUIT RECEPTACLE	⊕ R/F	HEAT DETECTOR TEMPERATURE AND RATE OF RISE
⊕	600V SINGLE PHASE DIRECT CONNECTION	⊕	SMOKE ALARM
⊕	600V 3PH DIRECT CONNECTION	⊕ D	SMOKE DETECTOR AND C/O COMBO
⊕	208V SINGLE PHASE DIRECT CONNECTION	⊕	HORN / STROBE COMBO
⊕	208V 3PH DIRECT CONNECTION	⊕	FIRE HORN
⊕	120V SINGLE PHASE DIRECT CONNECTION	⊕	SINGLE LED FIRE HEAD
⊕	PUSH BUTTON	⊕	FIRE EXIT SIGN
⊕	TELEPHONE	⊕	DOUBLE LED FIRE HEAD
⊕	DISCONNECT	⊕	FIRE STROBE
⊕	TV COAXIAL CONNECTION	⊕	MANUAL PULL STATION
⊕	OCCUPANCY SENSOR	⊕	SUITE ELECTRICAL PANEL RECESSED
⊕	FIRE ALARM CONTROL PANEL	⊕	SUITE TELECOMMUNICATIONS PANEL RECESSED

LIGHTING LEGEND	
⊕	SPECIFICATIONS BY OWNER
⊕	SPECIFICATIONS BY OWNER
⊕	SPECIFICATIONS BY OWNER

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NO.	REVISION	DATE	BY	APPROVED
4.	RE-ISSUED FOR PERMIT	MAY 8	J.C.	G.V.W.O
3.	ISSUED FOR PERMIT	MAR 30	A.P.	G.V.W.O
2.	ISSUED FOR COORDINATION	MAR 23	A.P.	G.V.W.O
1.	ISSUED FOR COORDINATION	JAN 24	A.P.	G.V.W.O

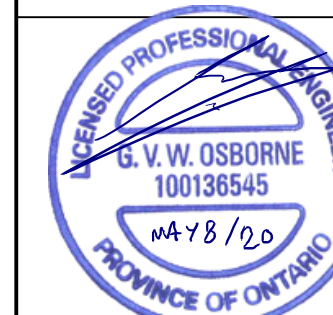
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KIYA DEVELOPMENTS LTD.

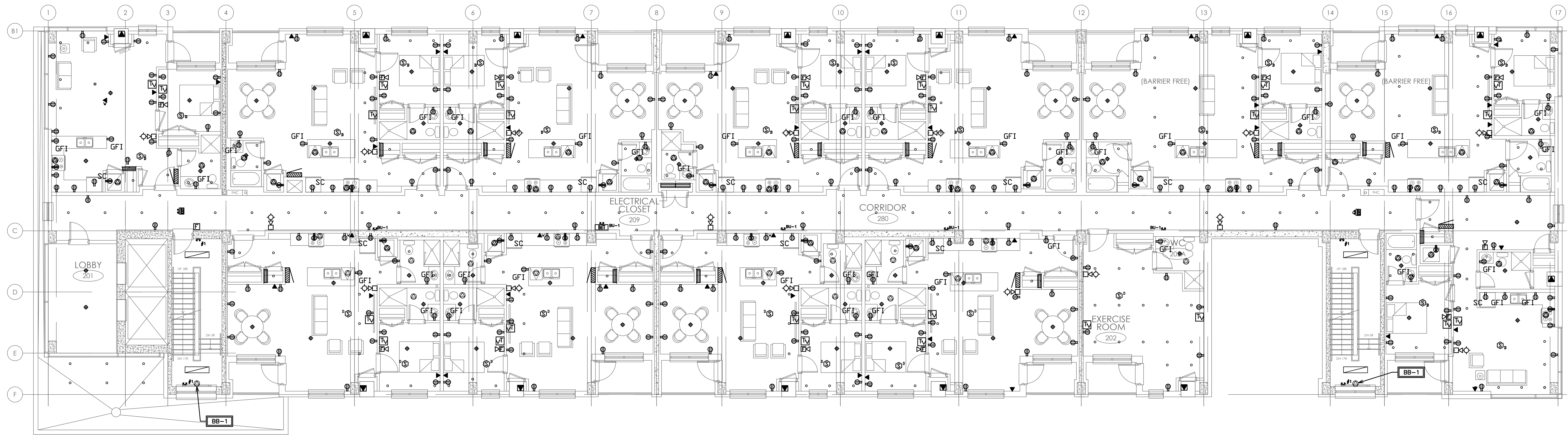
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PHONE (905) 576-8500 • FAX (905) 576-9730
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SCALE:	1:100	PROJECT NO.	116194
DRAWN BY:	A.P.	DRAWING NO.	E2
DESIGN BY:	A.P.	CHECKED BY:	G.V.W.O
CHECKED BY:	G.V.W.O	DATE:	MAY 2020
DATE:	MAY 2020	CAD FILE:	116194 E
		PLOT DATE:	05/08/20
		SUBMISSION:	PERMIT



ELECTRICAL LEGEND		ELECTRICAL LEGEND	
⊕	RECEPTACLE	BB-1	BATTERY PACK AND CHARGER
⊕	208V 1PH GROUNDED RECEPTACLE	FAM	FIRE ALARM ANNUCIATOR PANEL
⊕ GFI	GROUND FAULT RECEPTACLE	BU-1	BATTERY TAG
⊕ WP	WEATHER PROOF RECEPTACLE	PC	PHOTOCELL
⊕ SC	SEPARATE CIRCUIT RECEPTACLE	⊕ H	HEAT DETECTOR TEMPERATURE AND RATE OF RISE
⊕	600V SINGLE PHASE DIRECT CONNECTION	⊕	SMOKE ALARM
⊕	600V 3PH DIRECT CONNECTION	⊕ D	SMOKE DETECTOR AND C/O COMBO
⊕	208V SINGLE PHASE DIRECT CONNECTION	⊕	HORN / STROBE COMBO
⊕	208V 3PH DIRECT CONNECTION	⊕	FIRE HORN
⊕	120V SINGLE PHASE DIRECT CONNECTION	⊕	SINGLE LED FIRE HEAD
⊕	PUSH BUTTON	⊕	FIRE EXIT SIGN
⊕	TELEPHONE	⊕	DOUBLE LED FIRE HEAD
⊕	DISCONNECT	⊕	FIRE STROBE
⊕	TV COAXIAL CONNECTION	⊕	MANUAL PULL STATION
⊕	OCCUPANCY SENSOR	⊕	SUITE ELECTRICAL PANEL RECESSED
⊕	FIRE ALARM CONTROL PANEL	⊕	SUITE TELECOMMUNICATIONS PANEL RECESSED

LIGHTING LEGEND	
▬	SPECIFICATIONS BY OWNER
•	SPECIFICATIONS BY OWNER
◆	SPECIFICATIONS BY OWNER

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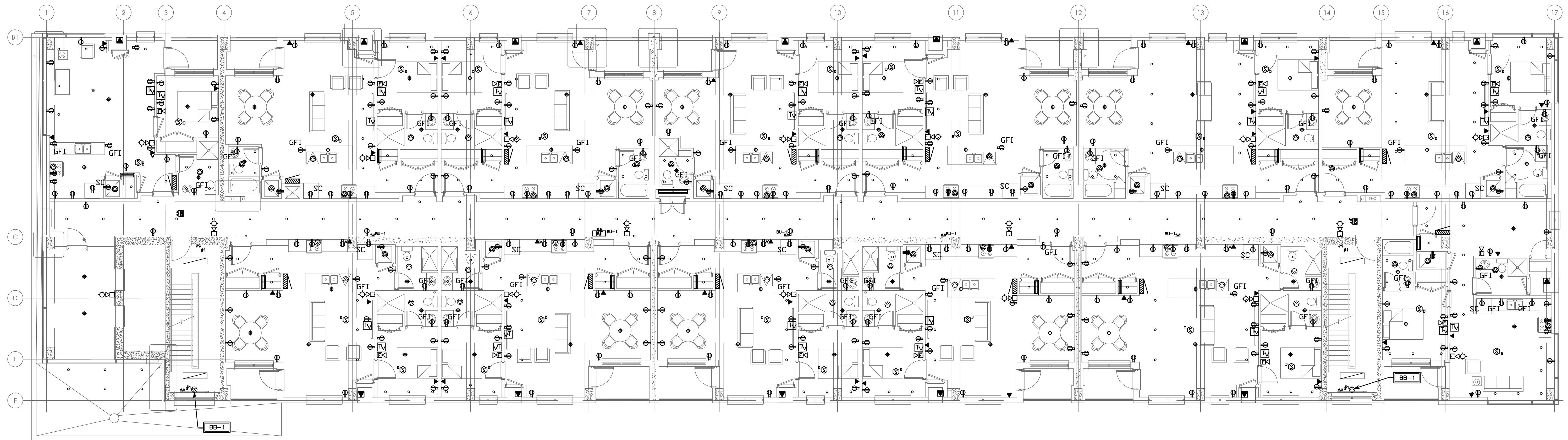
NO.	REVISION	DATE	BY	APPROVED
4.	RE-ISSUED FOR PERMIT	MAY 8	J.C.	G.V.W.O
3.	ISSUED FOR PERMIT	MAR 30	A.P.	G.V.W.O
2.	ISSUED FOR COORDINATION	MAR 23	A.P.	G.V.W.O
1.	ISSUED FOR COORDINATION	JAN 24	A.P.	G.V.W.O

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	SCALE: 1:100	PROJECT NO. 116194
	DRAWN BY: A.P.	DRAWING NO. E3
DESIGN BY: A.P.	CHECKED BY: G.V.W.O	CAD FILE: 116194 E
DATE: MAY 2020		PLOT DATE: 05/08/20



ELECTRICAL LEGEND		ELECTRICAL LEGEND	
⊕	RECEPTACLE	BATT	BATTERY PACK AND CHARGER
⊕	208V 1PH GROUNDED RECEPTACLE	FAM	FIRE ALARM ANNUCIATOR PANEL
⊕ GFI	GROUND FAULT RECEPTACLE	BU-1	BATTERY TAG
⊕ WP	WEATHER PROOF RECEPTACLE	PC	PHOTOCELL
⊕ SC	SEPARATE CIRCUIT RECEPTACLE	⊕ M	HEAT DETECTOR TEMPERATURE AND RATE OF RISE
⊕	600V SINGLE PHASE DIRECT CONNECTION	⊕	SMOKE ALARM
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⊕	TELEPHONE	⊕	DOUBLE LED FIRE HEAD
⊕	DISCONNECT	⊕	FIRE STROBE
⊕	TV COAXIAL CONNECTION	⊕	MANUAL PULL STATION
⊕	OCCUPANCY SENSOR	⊕	SUITE ELECTRICAL PANEL RECESSED
⊕	FIRE ALARM CONTROL PANEL	⊕	SUITE TELECOMMUNICATIONS PANEL RECESSED

LIGHTING LEGEND	
⊕	SPECIFICATIONS BY OWNER
⊕	SPECIFICATIONS BY OWNER
⊕	SPECIFICATIONS BY OWNER

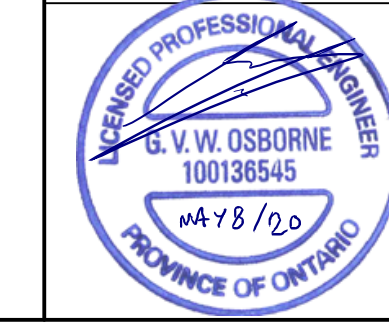
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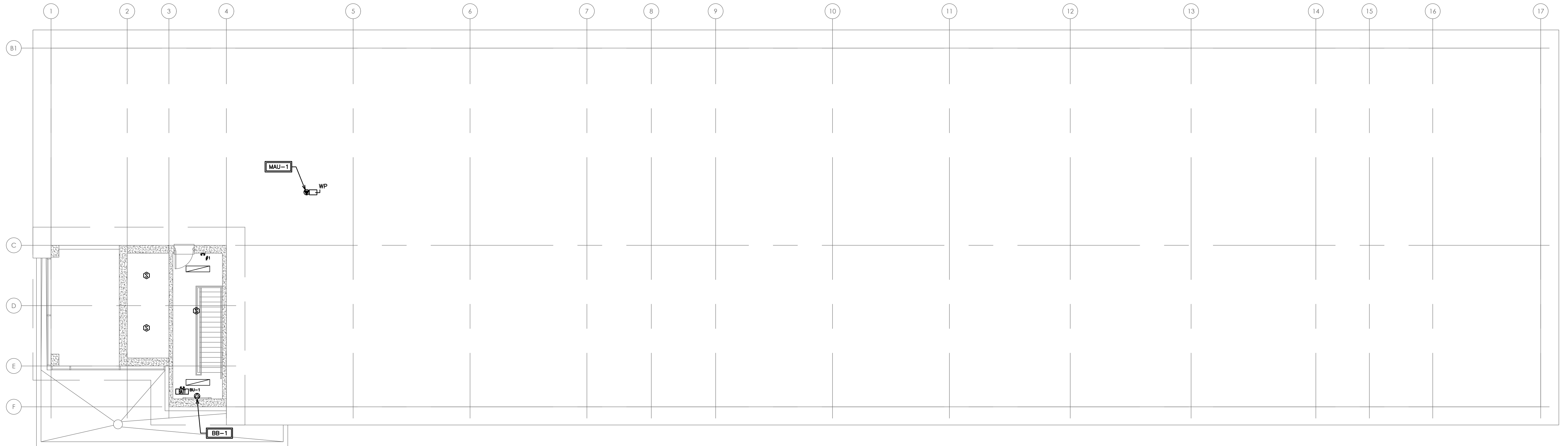
NO.	REVISION	DATE	BY	APPROVED
4.	RE-ISSUED FOR PERMIT	MAY 8	J.C.	G.V.W.O
3.	ISSUED FOR PERMIT	MAR 30	A.P.	G.V.W.O
2.	ISSUED FOR COORDINATION	MAR 23	A.P.	G.V.W.O
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ELECTRICAL PLAN
 FLOOR 3 - 6

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SCALE:	1:100	PROJECT NO.	116194
DRAWN BY:	A.P.	DRAWING NO.	E4
DESIGN BY:	A.P.	CAD FILE:	116194 E
CHECKED BY:	G.V.W.O	PLOT DATE:	05/08/20
DATE:	MAY 2020	SUBMISSION:	PERMIT





ELECTRICAL LEGEND		ELECTRICAL LEGEND	
	RECEPTACLE		BATTERY PACK AND CHARGER
	208V 1PH GROUNDED RECEPTACLE		FIRE ALARM ANNUCIATOR PANEL
	GROUND FAULT RECEPTACLE		BATTERY TAG
	WEATHER PROOF RECEPTACLE		PHOTOCELL
	SEPARATE CIRCUIT RECEPTACLE		HEAT DETECTOR TEMPERATURE AND RATE OF RISE
	600V SINGLE PHASE DIRECT CONNECTION		SMOKE ALARM
	600V 3PH DIRECT CONNECTION		SMOKE DETECTOR AND C/O COMBO
	208V SINGLE PHASE DIRECT CONNECTION		HORN / STROBE COMBO
	208V 3PH DIRECT CONNECTION		FIRE HORN
	120V SINGLE PHASE DIRECT CONNECTION		SINGLE LED FIRE HEAD
	PUSH BUTTON		FIRE EXIT SIGN
	TELEPHONE		DOUBLE LED FIRE HEAD
	DISCONNECT		FIRE STROBE
	TV COAXIAL CONNECTION		MANUAL PULL STATION
	OCCUPANCY SENSOR		SUITE ELECTRICAL PANEL RECESSED
	FIRE ALARM CONTROL PANEL		SUITE TELECOMMUNICATIONS PANEL RECESSED

LIGHTING LEGEND	
	SPECIFICATIONS BY OWNER
	SPECIFICATIONS BY OWNER
	SPECIFICATIONS BY OWNER

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4.	RE-ISSUED FOR PERMIT	MAY 8	J.C.	G.V.W.O
3.	ISSUED FOR PERMIT	MAR 30	A.P.	G.V.W.O
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REVISIONS

513 DUNDAS STREET EAST
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ELECTRICAL PLAN
 ROOF

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 PHONE (905)576-8500 • FAX (905)576-9730
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	SCALE: 1:100	PROJECT NO. 116194
	DRAWN BY: A.P.	DRAWING NO. E5
DESIGN BY: A.P.	CHECKED BY: G.V.W.O	CAD FILE: 116194 E
DATE: MAY 2020		PLOT DATE: 05/08/20 SUBMISSION: PERMIT

GENERAL

A. APPLICABLE STANDARDS

OF THE FOLLOWING ARE MADE A PART HEREOF AND SHALL BE CONSIDERED THE SAME AS IF ATTACHED HERETO. THE LATEST PUBLISHED ISSUE OR EDITION AVAILABLE DURING BIDDING PERIOD SHALL PREVAIL:

- CANADIAN STANDARD ASSOCIATED (C.S.A.)
CANADIAN INSTITUTE OF STEEL CONSTRUCTION (C.I.S.C.)
AMERICAN SOCIETY OF TESTING AND MATERIALS (A.S.T.M.)
CANADIAN WELDING BUREAU (C.W.B.)
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (I.E.E.E.)
CANADIAN ELECTRICAL CODE (C.E.C.)
ELECTRICAL & ELECTRONICS MANUFACTURERS ASSOCIATION OF CANADA (E.E.M.A.C.)
NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.)
CANADIAN UNDERWRITERS' ASSOCIATED (C.U.A.)
LOCAL AND PROVINCIAL CODES, LAWS, REGULATIONS, AND ORDINANCES GOVERNING THE WORK.
CANADIAN GOVERNMENT SPECIFICATIONS BOARD (C.G.S.B)
ILLUMINATING ENGINEERING SOCIETY APPLICATION VOLUME 1981
LOCAL BY LAW
ONTARIO HYDRO BULLETINS FOR SUBSTATION (GROUNDING & LAYOUT)

B. EXAMINATION OF DRAWINGS

CONFIRM LOCATION OF OUTLETS FOR EQUIPMENT SUPPLIED BY OTHER TRADES.

ALL ITEMS NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE PROVIDED. LOCATION OF OUTLETS AND EQUIPMENT - EXCEPT WHERE SHOWN IN DIMENSIONED DETAIL, THE LOCATION OF OUTLETS, EQUIPMENT, CONDUIT, ETC., IS ONLY APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED BY THE CONTRACTOR.

C. LIABILITY

THE SUBCONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT HIS WORK AND FOR ANY DAMAGE CAUSED TO THE OWNER OR OTHER SUBCONTRACTORS BY IMPROPER LOCATION OF CARRYING OUT HIS WORK.

WHERE ANY EQUIPMENT SUPPLIED BY THIS SUBCONTRACTOR MUST BE BUILT IN WITH THE WORK OF OTHER TRADES, SUCH AS MASONRY OR PLASTERING THIS SUBCONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE EQUIPMENT TO BE BUILT IN OR MEASUREMENTS TO ALLOW NECESSARY OPENINGS TO BE LEFT.

ALL CONDUITS WHICH ARE TO BE CONCEALED SHALL BE INSTALLED NEATLY AND CLOSELY TO THE BUILDING STRUCTURE SO THAT THE NECESSARY FURRING CAN BE KEPT AS SMALL AS POSSIBLE. ANY CONDUITS OR OTHER WORK WHICH ARE NOT, IN THE OPINION OF THE ENGINEER, INSTALLED AS THEY SHOULD BE, SHALL BE TAKEN OUT AND REPLACES WITHOUT COST TO THE OWNER. REPLACE EXISTING PAVEMENT, CURBS, SIDEWALKS, SODDING, SHRUBS AND OTHER ITEMS REMOVED, DISTURBED OR DAMAGED IN CONNECTION WITH THE WORK.

D. CHANGES

DO BIDDLE & ASSOCIATES SHALL HAVE THE RIGHT ANY TIME TO CHANGE THE LOCATION OF OUTLETS AND EQUIPMENT UP TO TEN FEET WITHOUT ADDITIONAL EXPENSE, PROVIDED THAT NOTIFICATION OF SUCH CHANGE IS GIVEN PRIOR TO INSTALLATION OF THE WORK.

E. SHOP DRAWINGS

SUBMIT FOR APPROVAL OF THE ENGINEER, DRAWINGS, ASSEMBLY AND DATA SHEETS WHICH SHALL PROVIDE ALL PERTINENT INFORMATION NECESSARY TO EVALUATE EACH ITEM (THE ITEM SHALL BE CLEARLY IDENTIFIED), SUBMIT ONE COPY OF REPRODUCIBLE DIGITAL PDF.

- AS REQUIRED, THE FOLLOWING INFORMATION SHALL BE:
- PRINCIPLE DIMENSIONS AND DETAILS OF CONSTRUCTION.
- WEIGHTS OF PRINCIPLE PARTS AND TOTAL WEIGHTS WITH INFORMATION REQUIRED FOR THE DESIGN OF SUPPORTS AND FOUNDATIONS.
- PERFORMANCE DATA.
- DATA ON ELECTRIC MOTORS, INCLUDING BRAKE H.P. OF DRIVEN EQUIPMENT, NAMEPLATE RATINGS AND CLASSES, AND STARTING AND RUNNING FULL LOAD CURRENTS.
- APPROVAL STAMP OF UNDERWRITERS AND OTHER AUTHORITIES HAVING JURISDICTION OF EQUIPMENT REQUIRING SUCH APPROVAL.
- ALL PERTINENT MANUFACTURER'S TEST REPORTS.
- CERTIFIED PERFORMANCE GUARANTEES (AS REQUIRED BY DO BIDDLE & ASSOCIATES).

F. OPERATION AND MAINTENANCE MANUALS AND COMPLETE PARTS LIST

FURNISH FOR EACH ITEM OF EQUIPMENT A MANUAL, IN QUANTITIES REQUIRED, SHOWING ALL ASSEMBLIES AND SINGULAR PARTS AND INCLUDING MANUFACTURER'S RECOMMENDED START-UP AND OPERATING PROCEDURES AND MAINTENANCE SCHEDULES. SHOP DRAWINGS RECOMMENDED SPARE PARTS AND SUPPLIERS THEREOF SHALL BE INCLUDED WITH THE MANUAL.

G. EQUIPMENT IDENTIFICATION

N/A

A. EARTHWORK

WHEN INCLUDED IN THE SCOPE OF WORK, WILL BE AS FOLLOWS: TRENCHES AND EXCAVATIONS SHALL BE CONSTRUCTED TO THE PROPER WIDTHS AND DEPTHS; EXISTING PIPING, DUCT BANKS, WATER OR SERVICE LINES OR STRUCTURES, IF ENCOUNTERED, SHALL BE SUPPORTED AND PROTECTED AND, IF DAMAGED, RESTORED TO ORIGINAL CONDITIONS.

ALL TUNNELING, BLASTING OR PUDDLING MUST BE APPROVED BY CONTRACTOR. EXCAVATED MATERIAL SHALL NOT BE PLACES WHERE IT INTERFERES WITH THE WORK OF OTHER TRADES OR SUBCONTRACTORS. EXCAVATIONS SHALL BE STORED AND BRACED TO PREVENT CAVING OR EROSION DURING EXCAVATING AND INSTALLATION OF WORK. EXCAVATIONS SHALL BE KEPT DRY, AND FREE FROM TRASH AND FROST. SHORING AND BRACING SHALL BE REMOVED IN STAGED AS BACK-FILLING PROGRESSES.

UNLESS OTHERWISE SPECIFIED, MATERIAL USED FOR BACKFILL SHALL BE SELECTED EARTH, SAND OR GRAVEL MEETING CONTRACTOR'S APPROVAL. MATERIAL SHALL BE FREE FROM TRASH, VEGETATION, ROCKS, CLODS, FROZEN OR OTHER UNSUITABLE MATERIAL. BACKFILL SHALL HAVE OPTIMUM MOISTURE CONTENT TO OBTAIN MAXIMUM COMPACTION.

BACKFILLING OPERATION SHALL NOT PROCEED UNTIL WORK HAS BEEN INSPECTED, TESTED, AND APPROVED. BACKFILL MATERIAL SHALL BE PLACED IN EVENLY DISTRIBUTED LAYERS NOT EXCEEDING 12 INCHES IN DEPTH AND SHALL BE COMPACTED TO A DENSITY SO THAT NO SETTLING IN THE COMPLETED WORK OCCURS.

EXCESS MATERIAL NOT REQUIRED FOR BACKFILLING SHALL BE DISPOSED OF WHERE DIRECTED BY THE CONTRACTOR.

B. CONCRETE WORK

WHEN INCLUDED IN THE SCOPE OF WORK SHALL BE AS FOLLOWS: THE MATERIALS, PROPORTIONING, MIXING, CONVEYING, PLACING, CURING AND PROTECTION OF THE CONCRETE WORK AS SHOWN ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH C.S.A STANDARD A23.3.

C. UNDERGROUND DUCT SYSTEM

ALL DUCT BANKS SHALL BE ENCLOSED IN A CONCRETE ENVELOPE OF THE DIMENSIONS SHOWN ON THE DRAWINGS. WHEN DIMENSIONS ARE NOT SHOWN, THE DUCT BANK SHALL BE PROVIDED WITH A MINIMUM OF THREE (3) INCHES OF CONCRETE BETWEEN DUCTS AND MINIMUM OF THREE (3) INCHES OF CONCRETE ON THE TOP, BOTTOM AND SIDES. REINFORCING STEEL SHALL ONLY BE PROVIDED WHERE SHOWN. OR AS PER ESA REQUIREMENTS AS CONFIRMED ON SITE WITH LOCAL INSPECTOR.

UNLESS OTHERWISE SHOWN, TOPS OF DUCT BANKS SHALL NOT BE LESS THAN THIRTY (30) INCHES BELOW GRADE LEVEL. DUCT BANKS SHALL BE SLOPED TO AVOID POCKETS AND PERMIT THE DUCTS TO DRAIN. DUCTS SHALL BE ACCURATELY POSITIONED ON NON-METALLIC SPACERS SPECIALLY DESIGNED FOR THE ARRANGEMENT SHOWN.

ALL JOINTS IN THE DUCT SYSTEM SHALL BE WATERTIGHT. THE ASSEMBLED DUCT BANKS SHALL BE CLEARED OF ALL FOREIGN MATERIAL IMMEDIATELY BEFORE PLACING CONCRETE.

BEFORE ENDS OF "SPARE" OR "EMPTY" DUCTS ARE PLUGGED, EACH SHALL BE CLEARED OF OBSTRUCTIONS AND SWABBED CLEAN. SEE NOTE RE: PULL ROPE IN "EMPTY" CONDUITS.

BEFORE INSERTION OF CONDUCTORS, DUCTS SHALL BE CLEARED OF ALL OBSTRUCTION REMOVED AND ENDS BE FREE OF BURRS.

D. CONDUITS

CONDUIT SHALL BE CONCEALED IN WALLS OR ABOVE FINISH CEILING. IN THE FINISHED AREAS, CONDUITS SHALL BE RUN EXPOSED INSIDE THE BUILDING IN UNFINISHED PLANT AND WAREHOUSE AREAS. CONCEALED CONDUIT SHALL BE RUN IN AS DIRECT A LINE AS POSSIBLE. BENDS SHALL BE OF THE LONG SWEEP TYPE.

EXPOSED CONDUIT SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES TO THE LINES OF THE BUILDING. CONDUIT SHALL BE SECURELY SUPPORTED AND FASTENED.

CONDUIT SHALL BE INSTALLED ENTIRELY FREE FROM OTHER PIPING, VALVES, OR OTHER MECHANICAL EQUIPMENT, AND SHALL NOT BE INSTALLED WITHIN SIX (6) INCHES OF HOT WATER OR STEAM PIPING OR HEATING FLAME.

COUPLINGS AND CONNECTORS USED ON ELECTRIC METALLIC TUBING SHALL OF THE SCREW TYPE. INDENTING TYPE FITTINGS SHALL NOT BE USED.

THREADED JOINTS OR EXTERIOR CONDUIT OF GALVANIZED STEEL PLACE IN CONCRETE OR IN CONTACT WITH THE EARTH SHALL HAVE THREADS PAINTED WITH RUST INHIBITING PAINT.

UNLESS OTHERWISE INDICATED, RIGID METALLIC CONDUIT INSTALLED UNDERGROUND OR IN BELOW A CONCRETE SLAB IN CONTACT WITH THE EARTH SHALL BE PROVIDED WITH A MINIMUM COVER OF 3 INCHES OF CONCRETE ON ALL SIDES. WHERE CONDUIT IS INDICATED TO BE INSTALLED DIRECTLY IN CONTACT WITH THE EARTH, THE OUTER SURFACE OF THE CONDUIT SHALL BE COATED WITH BITUMINOUS PAINT.

SUBCONTRACTORS SHALL PROVIDE ALL SLEEVES, NIPPLES AND OPENINGS REQUIRED FOR THE INSTALLATION OF CONDUIT.

SLEEVES SHALL PROJECT 2 INCHES ABOVE FLOOR. CONDUITS ENTERING BELOW WATER TABLE SHALL COMPRESSION GLAND FITTINGS MADE FOR THE PURPOSE.

CONDUITS PASSING FROM ONE AREA TO ANOTHER OF DIFFERENT VAPOR PRESSURE SHALL BE PROVIDED SUITABLE VAPOR SEALS. SEALING COMPOUND SHALL HAVE APPROVAL OF DO BIDDLE & ASSOCIATES LTD. REFER TO DRAWINGS.

SUBCONTRACTOR SHALL PROTECT ALL CONDUIT FROM DAMAGE AND THE ENTRANCE OF WATER AND FOREIGN MATTER DURING THE CONSTRUCTION PERIOD. WATER TIGHT STOPPERS OR CAPS SHALL BE INSTALLED IMMEDIATELY AFTER THE CONDUIT IS INSTALLED AND REMOVED ONLY WHEN WIRE IS TO BE INSTALLED.

UNLESS NOTED OTHERWISE ON THE DRAWINGS, THERE SHALL BE NO CONDUITS INSTALLED IN CONCRETE FLOOR SLAB OR BELOW CONCRETE FLOOR SLAB. ALL CONDUITS IN FURRED CEILING, SPACES, BLOCKS OR THE WALLS, UNFINISHED AREA AND MECHANICAL ROOM SHALL BE EMT THINWALL.

INSULATE BUSHINGS SHALL BE USED ON ENDS OF ALL CONDUITS IN OUTLET BOXES, JUNCTION BOXES, PUL BOXES, PANELS, ETC., TO PROTECT THE CONDUCTOR INSULATION DURING INSTALLATION.

PROVIDE CONDUIT EXPANSION JOINTS WHERE CONDUIT CROSSES BUILDING EXPANSION JOINTS.

FLEXIBLE METALLIC CONDUIT SHALL BE USED TO MAKE THE FINAL CONNECTION TO ALL EQUIPMENT WHICH IS SUBJECT TO ROTATION AND VIBRATION AND GENERATION NOISE.

ALL EMPTY CONDUITS SHALL BE IDENTIFIED AND SHALL HAVE 3/16" MINIMUM POLYPROPYLENE ROPE INSTALLED AND SECURED AT BOTH ENDS.

FOR PUMPS AND WET LOCATIONS "LIQUID-TIGHT" FLEXIBLE CONDUIT SHALL BE COMPLETE WITH INSULATED WATERTIGHT CONNECTORS.

CONDUITS INSTALLED IN SUSPENDED CEILING, ABOVE PLASTER OR SIMILAR CEILING SHALL NOT CROSS OR OTHERWISE IMPEDE THE USE OF ACCESS OPENINGS IN SUCH A CEILING.

WHERE RUNS OF CONDUIT AND CABLES ARE SHOWN, ONLY THE GENERAL LOCATION AND ROUTING ARE INDICATED. ALL CONDUITS AND CABLES SHALL BE INSTALLED IN SUCH A MANNER AS TO PROVIDE MAXIMUM HEAD ROOM AND TO INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF THE SPACE THROUGH WHICH THEY PASS. THE CONDUIT SHALL BE INSTALLED AS CLOSE TO THE BUILDING STRUCTURE AS POSSIBLE, SO THAT, WHERE CONCEALED THE NECESSARY FURRING CAN BE KEPT TO A MINIMUM.

WHERE CONDUITS ARE EXPOSED, CONDUITS WITH SUITABLE COVERS WILL BE USED. EACH CONDUIT FITTING SHALL BE OF A TYPE SUITABLE TO ITS PARTICULAR USE AND OF A TYPE WHICH WILL ALLOW INSTALLATION OF FURTHER CONDUITS WITHOUT BLOCKING THE COVERS OF EXISTING CONDUITS.

THERE SHALL BE NO CONDUITS CX CABLE OR INSULATED CONDUCTORS INSTALLED IN FLUTE SPACE OF ROOF DECK.

UNLESS INDICATED OTHERWISE ON THE DRAWINGS, RIGID P.V.C CONDUIT INSTALLED UNDERGROUND FOR BUILDING EXTERIOR EQUIPMENT SHALL BE WITH A MINIMUM OF 3 INCHES OF CONCRETE ON ALL SIDES.

E. HANGER, SUPPORTS, BRACES AND FASTENERS

HANGERS, SUPPORTS, BRACES AND FASTENERS SHALL BE OF THE TYPE BEST SUITED FOR METHOD OF INSTALLATION.

INSTALLATION OF HANGERS AND SUPPORTS SHALL BE MADE TO STRUCTURAL STEEL, MASONRY AND POURED CONCRETE. HANGERS AND SUPPORTS SHALL NOT BE INSTALLED TO METAL DECK, STEEL BRACING OR BRIDGING, PIPING OR OTHER CONDUIT. ALL SUPPORTS FROM OPEN WEB STEEL JOIST SHALL BE TAKEN AT PANEL POINTS ONLY.

FASTENED FOR SUPPORTS AND HANGERS TO STEEL SHALL BE MADE WITH BEAM CLAMPS, U-BOLTS, STUD WELDINGS OR OTHER APPROVED DEVICES. FASTENERS FOR SUPPORTS AND HANGERS TO CONCRETE SHALL BE MADE WITH ONE PIECE MALLEABLE IRON OR WROUGHT STEEL INSERTS AND KEYHOLE SLOTS FOR ATTACHMENT IN FORMS, WITH SELF-DRILLING TYPE EXPANSION SHIELDS WITH INSIDE THREADS AND EXPANSION PLUGS, OR WITH OTHER APPROVED TYPE DEVICES.

PROVIDE ALL NECESSARY BRACES, BRACKETS, RACKS, TRAPEZE SUPPORTS, PLATFORMS, ANGLE IRON SUPPORTS, CHANNEL BASES, ETC., FOR ALL ELECTRICAL EQUIPMENT.

WALL MOUNTED OUTDOOR LIGHTING FIXTURES SHALL NOT BE SUPPORTED ON METAL SIDING BUT SHALL BE SUPPORTED INDEPENDENTLY ON SIDING FROM BUILDING STRUCTURAL STEEL. PROVIDE SUPPORTING BRACKETS TO BUILDING STEEL AS REQUIRED.

ELECTRICAL ENCLOSURES SHALL BE FURRED FROM OUTSIDE WALLS AND INTERIOR WALLS OF WET AREAS AS REQUIRED.

ELECTRICAL EQUIPMENT, FIXTURES, CONDUIT, BOXES, ETC., SHALL NOT BE ATTACHED TO, NOR SUPPORTED BY THE UNDERSIDE OF STEEL DECK BUT SHALL BE SUPPORTED BY STRUCTURAL MEMBERS. THERE SHALL BE ABSOLUTELY NO PENETRATION OF STEEL DECK.

RODS SHALL BE THREADED 2" AT EACH END. NO CONTINUOUS THREAD.

RAMSET HILTI, OR REMINGTON LAW VELOCITY TYPE FASTENERS ARE ALLOWS ON STEEL COLUMNS. PROVIDE ANGLE SUPPORTS FOR COLUMN MOUNTED DRY TYPE TRANSFORMERS.

F. BREAKER PANELS

ALL PANELS SHALL HAVE INTERCHANGEABLE MASTER KEYS AND SHALL BE OF CSA SPECIFIED GAUGE STEEL WITH CONCEALED DOOR HINGES AND FLUSH LOCK. FLUSH MOUNTED PANELS SHALL NOT HAVE EXPOSED SCREWS, NUTS OF BOLT-HEADS.

LOCKING CLIPS SHALL BE PROVIDED FOR 20 PER CENT OF BREAKERS.

PROVIDE NEATLY TYPED IDENTIFICATION CARDS, COMPLETE WITH CLEAR CELLULOID INSERTS SHOWING ALL CIRCUITS FROM EACH PANELBOARD AND THESE CARDS SHALL BE MOUNTED IN THEIR RESPECTIVE PANELBOARDS.

UNLESS NOTED OTHERWISE, PROVIDE MINIMUM OF 2-1/2" DIAMETER EMPTY CONDUITS FROM EACH FLUSH MOUNTED PANELS. CONDUITS TO BE TERMINATED 6" ABOVE FINISHED CEILING IN CEILING SPACE.

G. DISCONNECT SWITCHES

ALL DISCONNECT SWITCHES, WHETHER USED ON DISTRIBUTION SPLITTERS OR AS AN ISOLATION SWITCH SHALL BE OF THE QUICK-MAKE, QUICK-BREAK TYPE WITH INTERLOCKING COVER AND PROVISION FOR LOCKING COVER AND PROVISION FOR LOCKING IN THE "OFF" POSITION. PROVISION SHALL BE MADE TO DEFEAT DOOR INTERLOCK WITH SCREWDRIVER.

FUSED SWITCHES SHALL HAVE STEEL SPRING REINFORCED FUSE CLIPS. PROVIDE A DISCONNECT SWITCH AHEAD OF ALL MOTORS, STARTERS AND ELECTRICAL EQUIPMENT, WHERE REQUIRED TO MEET CODE REGULATIONS, WHETHER THE EQUIPMENT IS SUPPLIED OR INSTALLED UNDER THE ELECTRICAL DIVISION OF ANY OTHER DIVISION.

H. CONDUCTORS

SINGLE CONDUCTOR WIRING WITH SWITCHGEAR, DISTRIBUTION PANELS OR OTHER LARGE ENCLOSURES SHALL BE NEATLY BUNDLED, DRESSED AND BOUND TO THE FRAMEWORK OF THE ENCLOSURE OR OTHER MEMBERS PLACE FOR THIS PURPOSE, TO PREVENT LOOSE OR FREE HANGING CONDUCTORS.

SINGLE CONDUCTOR CABLES MUST BE TERMINATED AS PER MANUFACTURER'S RECOMMENDATIONS TO PREVENT SHEATH OVERHEATING MANUFACTURER'S CONFIGURATIONS, AND INSTALLATION RECOMMENDATIONS MUST BE FOLLOWED COMPLETELY.

ALL CONTROL WIRING SHALL BE COPPER CONDUCTOR MATERIAL.

UNLESS NOTED OTHERWISE ON THE DWGS., THE WIRE FOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS SHALL BE NO. 12 AWG FOR RUNS UP TO 90 FEET AND NO. 10 FOR RUNS OVER 90 FEET. WIRE FOR BRANCH CIRCUITS GREATER THAN 20 AMPS SHALL BE SIZED FOR THE VOLTAGE DROP AT THE OUTLET TO 2 PER CENT, AND IN NO CASE SHALL THE WIRE TO BE SMALLER THAN NO. 10 AWG.

UNLESS NOTED OTHERWISE ON THE DWGS., CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID COPPER. CONDUCTORS LARGER THAN NO. 10 AWG SHALL BE STRANDED COPPER. ALL WIRING, EXCEPT AS CLASSIFIED BELOW OR AS SHOWN ON DRAWINGS SHALL BE TYPE T-90 (THHN) FOR SIZES NO. 3/10 AND SMALLER AND TYPE RQ-90 FOR SIZES NO. 4/10 AND LARGER.

CONTROL CONDUCTORS FOR BUILDING SERVICES EQUIPMENT SHALL BE IDENTIFIED WITH SELF-ADHESIVE FABRIC TAPES. NUMBERS AND/OR SHALL APPEAR AT EACH WIRE TERMINATION AND CORRESPOND WITH WIRE NUMBERING AS SHOWN ON SCHEMATIC DRAWINGS. WIRE MARKERS SHALL BE OF THE SAME MANUFACTURE AND STYLE THROUGHOUT.

CONNECTORS FOR GENERAL LIGHTING CIRCUITS SHALL BE: IDEAL WING NUT 450 SERIES; OR EQUAL FIVE SIZE UP TO AND INCLUDING NO. 8 AWG, CONDUCTORS NO. 6 AWG AND LARGER SHALL BE CONNECTED USING A "SPLIT-BOLT AND NUT" AND BEING WRAPPED WITH A PVC INSULATING TAPE SUITABLE FOR TEMPERATURE AND ENVIRONMENT.

MOTOR CONNECTIONS SHALL BE RING TYPE COMPRESSION CONNECTORS AND NUT-BOLT WITH A PVC TAPING OVER THE ASSEMBLY.

ALUMINUM CONDUCTORS IF USED SHALL BE TERMINATED IN APPROVED T&B COMPRESSION TYPE CONNECTORS AND INSTALLED WITH APPROPRIATE HIGH PRESSURE TOOLS FOR POSITIVE COMPRESSION RING TO RELEASE.

AC-90 (BX90), COPPER CONDUCTOR CABLE MAY BE USED (MAXIMUM 9'-0" LENGTH) IN FINISHED CEILING AND WALL AREAS FOR FINAL CONNECTIONS TO LIGHTS, SWITCHES & RECEPTACLES.

I. EQUIPMENT LOCATIONS & CHANGES

THE LOCATIONS OF SWITCHES, THERMOSTATS, OUTLETS AND CONTROL DEVICES ARE SHOWN DIAGRAMMATICALLY ONLY. MOUNT SWITCHES, THERMOSTATS AND OTHER CONTROLS AS CLOSE TO DOOR JAMES AND OTHER OPENINGS AS POSSIBLE, MAINTAINING A MINIMUM OF 4" FROM TRIMS OF DOORS, EXCEPT WHERE INSTALLED IN DOOR FRAMES OF METAL PARTITIONS. ENSURE THAT THESE LOCATIONS MEET WITH THE APPROVAL OF DO BIDDLE & ASSOCIATES LTD. CHECK ALL DOOR SWINGS AND INSTALL SWITCHES ON STRIKE SIDE OF DOOR.

THE LOCATION OF ANY OUTLET MAY BE CHANGED PRIOR TO INSTALLATION, WITHOUT A CHANGE TO THE DRAWING WHICH THEY PASS. THE OUTLET SHALL BE INSTALLED AS CLOSE TO THE BUILDING STRUCTURE AS POSSIBLE, SO THAT, WHERE CONCEALED THE NECESSARY FURRING CAN BE KEPT TO A MINIMUM.

LOADS. MOUNTING HEIGHTS SHALL BE AS SHOWN ON THE DRAWING OR AS DIRECTED.

THERMOSTATS, PRESSURE SWITCHES, AND OTHER CONTROL DEVICES WHICH ARE CONTROLLING HVAC AND OTHER MECHANICAL EQUIPMENT SHALL BE LOCATED AS PER MECHANICAL DRAWINGS.

J. TELEPHONE SYSTEM

TELEPHONE CONDUIT AND EQUIPMENT SHALL BE IN CONFORMITY WITH THE REQUIREMENTS AND SUBJECT TO APPROVAL OF THE SERVING COMPANY.

PROVIDE 3/4" THICK PAINTED GRAY PLYWOOD BACKGROUND IN TELEPHONE CLOSET OR AT TELEPHONE SERVICE ENTRANCE LOCATION.

THE TELEPHONE CONDUIT SYSTEM SHALL BE SEPARATE AND INDEPENDENT OF ALL OTHER SYSTEMS. PROVIDE ONE DUPLEX RECEPTACLE WITH SEPARATE 15 AMPERE, 115 VOLT CIRCUIT FOR TELEPHONE SERVICE EQUIPMENT.

K. GROUNDING

THE NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT AND ENCLOSURES INCLUDING CONDUITS, SUPPORTS, CABINETS, TRANSFORMER TANKS, MOTOR FRAMES, SWITCHGEAR ENCLOSURE, CONTROL PANELS ETC., WHICH ARE INSTALLED OR CONNECTED UNDER THIS SUBCONTRACT, SHALL BE PROPERLY GROUNDING BY CONNECTION TO THE GROUNDING SYSTEM REGARDLESS OF WHETHER OR NOT THESE CONNECTIONS ARE SHOWN ON THE DRAWINGS.

THE GROUNDING INSTALLATION SHALL HAVE PROVISION FOR BOTH SYSTEM AND EQUIPMENT GROUNDS. THESE GROUNDING SYSTEMS ARE TO BE EFFECTIVELY ISOLATED FROM EACH OTHER EXCEPT AT THE SERVICE CONNECTION.

LOCAL REQUIREMENTS OF THE INSPECTION AUTHORITY HAVING JURISDICTION SHALL GOVERN IN ALL MATTERS OF INTERPRETATION.

IF WATER SERVICE IS USED FOR GROUNDING POINT, IT SHALL BE ASCERTAINED THAT THE WATER PIPING IS ELECTRICALLY CONTINUOUS AT JOINTS AND IS OF CONDUCTING MATERIAL.

WHERE GROUND CABLES ENTER AND LEAVE FERROUS CONDUITS, THEY SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO THE END OF THE RACEWAY. WHERE GROUND CABLE PASSES THROUGH FERROUS FLOORING OR FRAMING, CONNECTION SHALL BE MADE TO SUCH METAL.

GROUNDING OR INCOMING SERVICE AND EQUIPMENT WILL BE IN ACCORDANCE WITH LOCAL INSPECTION DEPARTMENT/ LOCAL UTILITY COMPANY.

L. LIGHTING FIXTURES

SHALL BE LOCATED SO AS TO CLEAR PIPING, DUCTS, AIR DIFFUSERS, GRILLES, ACCESS PANELS, MECHANICAL EQUIPMENTS, ETC.

INSTALLED UNITS SHALL BE PROPERLY SUSPENDED OR SUPPORTED WITH NO SAGGING OR DISTORTION, AND AT PROPER ELEVATION.

CONTINUOUS ROW UNITS SHALL BE PROPERLY ALIGNED.

UNLESS SPECIFIED OTHERWISE, ALL FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. FIXTURE STUDS OR OTHER SECURE METHODS OF ATTACHMENT WILL BE USED. IF CHAIN HANGER MOUNTED, CLOSED LINK TYPE CHAIN WILL BE USED. CHAIN WILL SUPPORT TEN TIMES FIXTURE WEIGHT AND CHAIN ENDS SHALL BE S-HOOKS.

FOR SUSPENDED CEILING, UNLESS SPECIFIED OTHERWISE SURFACE MOUNTED, OR SUSPENDED FIXTURES SHALL NOT BE SUPPORTED FROM THE CEILING SUSPENSION SYSTEM. INDEPENDENT SUPPORTS SUITABLY ATTACHED TO THE BUILDING STRUCTURE, SHALL BE PROVIDED.

M. CLEANING & PAINTING

SURFACES OF EXPOSED CONDUIT, SHALL BE CLEANED OF DIRT, RUST, SCALE, GREASE AND OTHER FOREIGN MATTER AND BE LEFT IN CONDITION SUITABLE TO CONTRACTOR AND ACCEPTABLE FOR PAINTING. EQUIPMENT FURNISHED WITHOUT SHOP APPLIED FINISH SHALL BE SHOP PRIMED.

CONCEALED SURFACES OF METAL RACK, FRAMES, AND BOXES SHALL BE POINTED BEFORE MOUNTING ALL EQUIPMENT FABRICATED FROM STEEL OR IRON SUCH AS PANELS, CABINETS, ENCLOSURES, ETC., SHALL BE FACTORY POINTED. ALL PARTS OF ASSEMBLY SHALL BE THOROUGHLY CLEANED AND DEGREASED PRIOR TO APPLICATION OF THE RUST INHIBITING PRIMER AND FINISHED WITH CEMA 2Y-1 LIGHT GRAY ENAMEL. ALL PAINTING SHALL BE FREE FROM SAGS, VOIDS, RUNS OR DRIPS.

ALL MISCELLANEOUS METAL ITEMS SUCH AS MOUNTING ANGLES, CHANNELS, OR PIPE ANCHORS, BASES, INSERTS, SHALL BE DELIVERED TO THE JOBSITE PRIME PAINTED. ALL CUT METAL OR DAMAGED FINISHED PANELBOARDS TO ENSURE PROPER PROTECTIVE CO-ORDINATION OF THESE UNITS. SUBMIT THE CO-ORDINATION CURVES AND SETTINGS OF ALL BREAKERS TO THE OWNER'S REPRESENTATIVE WITH A DIGITAL PDF.

ALL DEBRIS CREATED BY THE EXECUTION OF THE ELECTRICAL WORK, WILL BE REMOVED AND DISPOSED OFF THE SITE.

N. CUTTING & PATCHING

SUBCONTRACTOR SHALL WORK IN ADVANCE OF THE WORK OF OTHERS WHEREVER POSSIBLE IN ORDER TO MINIMIZE CUTTING AND PATCHING. WHERE SUCH PROCEDURES IS IMPOSSIBLE, CUTTING SHALL BE DONE IN A NEAT MANNER BY THIS CONTRACTOR AND ALL SUCH CUTTING SHALL BE PATCHED BY THE CONTRACTOR WHOSE WORK IS CUT AND THE COST OF PATCHING SHALL BE PAID BY THIS CONTRACTOR.

THE ELECTRICAL SUBCONTRACTOR SHALL SEAL AND MAKE WEATHER-TIGHT ALL OPENINGS REQUIRED FOR CONDUIT OR CABLE PASSING FROM INTERIOR TO EXTERIOR AREAS.

INSPECTION & TEST

A. GENERAL

CO-ORDINATION OF PROTECTIVE DEVICES: CARRY OUT ALL NECESSARY WORK TO ENSURE THE PROPER CO-ORDINATION OF PROTECTIVE DEVICES THROUGHOUT THE ELECTRICAL SYSTEM (FUSES AND CIRCUIT BREAKERS). CO-ORDINATE WITH POWER SUPPLY UTILITIES. EMPLOY THE SERVICE OF REPRESENTATIVES OF THE MANUFACTURERS OF HIGH VOLTAGE SWITCHGEAR, MAIN UNIT SUBSTATION & DISTRIBUTION PANELBOARDS TO ENSURE PROPER PROTECTIVE CO-ORDINATION OF THESE UNITS. SUBMIT THE CO-ORDINATION CURVES AND SETTINGS OF ALL BREAKERS TO THE OWNER'S REPRESENTATIVE WITH A DIGITAL PDF.

WIRING AND CONNECTIONS SHALL BE TESTED FOR CONTINUITY, GROUNDS AND SHORT CIRCUITS BEFORE ANY EQUIPMENT OR FIXTURES ARE ENERGIZED.

ENSURE THE CORRECT VOLTAGE AT ALL POINTS IN THE SYSTEM BEFORE AND AFTER ENERGIZING THE CONNECTED LOADS.

LIGHTING SWITCHING SHALL BE TESTED FOR CORRECT OPERATIONS.

RECEPTACLES SHALL BE CHECKED FOR CORRECT AND UNIFORM PHASE POSITIONS. GROUND PIN LOCATIONS SHALL BE CHECKED AS WELL AS GROUNDING EFFECTIVENESS.

B. INSULATION RESISTANCE

ALL INSULATION SHALL BE PROOF TESTED, AFTER INSTALLATION, AND BEFORE ACTUALLY ENERGIZING THE CONNECTED LOADS.

ALL UNDERGROUND CIRCUITS, AND CIRCUITS IN GROUND FLOOR SLABS, 600 VOLTS AND BELOW, SHALL BE TESTED BY CONTRACTOR. SUBMIT WRITTEN REPORT TO THE CONTRACTOR.

CORRECT OR REPLACE ANY DEFECTIVE OR GROUNDED CIRCUIT AND MAKE WIRE BY WIRE TEST.

TEST GROUND RESISTANCE ON ALL GROUNDING SYSTEMS. GROUND TEST SHALL BE MADE WITH THE 2 ELECTRODE AC OR DC VOLTAGE DROP METHOD TO ESTABLISH THAT THEY MEET ESA REQUIREMENTS.

C. MECHANICAL

OVERLOAD DEVICES SHALL BE CHECKED TO ENSURE THEY SUIT THE LOAD THAT THEY CONTROL.

ENSURE THE PROPER PHASE ROTATION OF ALL APPROPRIATE CIRCUITS BEFORE ENERGIZING LOADS.

CONTROL CIRCUITS SHALL BE CHECKED OUT FOR PROPER FUNCTIONING AND FAIL-SAFE QUALITIES.

CO-OPERATE WITH MECHANICAL SUBCONTRACTOR SO THAT DEVICES SUCH AS LIMIT SWITCHES, LEVEL CONTROLS, PRESSURE CONTROLS, THERMOSTATS, ETC. ARE SET FOR OPERATING CONDITIONS.

CO-OPERATE WITH MECHANICAL SUBCONTRACTOR SO THAT RUNNING LOADS OF MOTORS ARE CHECKED AGAINST NAMEPLATE DATA. OVERLOADS SHALL BE REPORTED.

D. COMPLETION OF CONTRACT

SYSTEM SHALL BE COMPLETE, TESTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE, AND/OR ENGINEER, AND/OR MANUFACTURER'S REPRESENTATIVE, AND READY FOR USE, WITH ALL EQUIPMENT OPERATING SATISFACTORILY.

SUBMIT TO DO BIDDLE & ASSOCIATES LTD. THE FINAL ELECTRICAL INSPECTION CERTIFICATE, FIRE ALARM SYSTEM VERIFICATION REPORT, AND THE OTHER GUARANTEES ENSURING THE WORK MEETS ALL REQUIREMENTS AND REGULATIONS OF AUTHORITIES AND COMPLIES WITH DRAWINGS AND SPECIFICATIONS.

E. CONDUIT RUN & WIRING FOR A.C. POWER

SUPPLY TO NIGHT LIGHT CIRCUIT, BAT. PACK UNITS AND EXIT LIGHTS SHALL BE MADE SEPARATE THAN OUR LIGHTING AND POWER RUN CONDUIT, SO THAT IN FUTURE, NIGHT LIGHT BAT. PACKS AND EXIT LIGHTS CAN BE CONNECTED DIRECTLY TO GENERATOR (FUTURE) UNITS.

RUN NEUTRAL WIRE TO ALL 120V & 347V SWITCHES (CONTROLLING THE LIGHTING IN ROOMS &/OR OFFICES AREA), FOR FUTURE CONNECTION TO EMS PANEL (IF APPLICABLE).

ABBREVIATIONS

Table with 2 columns: SYMBOL and DESCRIPTION. Lists abbreviations such as A/C, AFT, AFG, AL, ARCH, ATS, AWG, BLDG, C, CAP, CAT.NO., CB, CCT, CLG, COL, CONT., C/U, CU, C/W, DIA., DISC., DN, EM, FT, GFI, HP, HTR, IG, IN, JB, JKT, KVA, KW, LA, LG, LP, MCB, MCC, MECH., MIN., MLO, MTD, NC, NIC, NL, NO., NTS, O/H, PB, PF, PH, PNL, PP, P/T, PWC, QTY, REC., RGC, RP, RT, SC, S/D, STD, STRD, SURF., SWBD, SWGR, TEL., T'STAT, XFMR, U/G, VT, W, WD, WP, Y, Δ.

FEEDER SCHEDULE table with columns for circuit number, description, and load details. Includes entries like 1 - 3#12 - 1/2-C, 17 - 3#2/0 - 1 1/2-C, 33 - 2RUNS 3#500MCM - 2-3-C, etc.

ELECTRIC BASEBOARD HEATER SCHEDULE table with columns: TAG, MANUFACTURER, MODEL, COLOUR, HEATING, VOLTAGE, DIMENSIONS, CONTROLS. Includes entries for BB-1 and BB-2.

ELECTRIC FORCE FLOW HEATER SCHEDULE table with columns: TAG, MANUFACTURER, MODEL, COLOUR, MOUNTING, HEATING, AIR FLOW, VOLTAGE, DIMENSIONS, CONTROLS. Includes entries for FF-1 and FF-2.

Revisions table with columns: NO., REVISION, DATE, BY, APPROVED. Shows revision 4 (ISSUED FOR PERMIT) dated MAY 8, J.C., G.V.W.O.

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ELECTRICAL PLAN
NOTES

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Project information table including SCALE: N.T.S., PROJECT NO.: 116194, DRAWN BY: A.P., DESIGN BY: A.P., CHECKED BY: G.V.W.O., DATE: MAY 2020, and CAD FILE: 116194 E.PLOT DATE: