

205 GREENBANK RD, NEPEAN, ON K2H 8K9
MECHANICAL

GENERAL LEGEND	
SYMBOL	DESCRIPTION
—————	EXISTING PIPING/DUCTWORK/EQUIPMENT
—————	NEW PIPING/DUCTWORK/EQUIPMENT
— — — — —	EXISTING PIPING/DUCTWORK/EQUIPMENT BELOW SLAB
— — — — —	NEW PIPING/DUCTWORK/EQUIPMENT BELOW SLAB

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M20	Ph-2 – SECOND FLOOR – HVAC
M21	Ph-2 – ROOF LEVEL – HVAC

FIRE PROTECTION LEGEND	
	FIRE STANDPIPE
	SPRINKLER PIPE
	COMBINED STANDPIPE-SPRINKLER PIPE
	FIRE DEPARTMENT CONNECTION PIPE
	PIPE UP
	PIPE DOWN
	FIRE EXTINGUISHER C/W MOUNTING BRACKET
	RECESSED FIRE EXTINGUISHER
	SEMI-RECESSED FIRE EXTINGUISHER
	FIRE HOSE CABINET
	FIRE DEPARTMENT SAME-SIDE CONNECTION
ACVA ACVC	ALARM CHECK VALVE ASSEMBLY
DRY ALARM ACVA/ACVC	DRY PIPE ALARM CHECK VALVE ASSEMBLY
	DRY PIPE ALARM CHECK VALVE ASSEMBLY (SCHEMATIC)
	INSPECTOR TEST STATION ASSEMBLY
ISITS	INSPECTOR TEST STATION
	SUPERVISED ISOLATION VALVES
	ISOLATION VALVES
	CHECK VALVE
	DRIFT CHECK VALVE ASSEMBLY
QPS	FLOW SWITCH
LP	LOW PRESSURE SWITCH
PS	PRESSURE SWITCH
PG	PRESSURE GAUGE
PRV	PRESSURE REDUCING VALVE (PRV)
RV	RELIEF VALVE

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	PIPING BELOW GRADE/SLAB
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	SANITARY PIPING
	RAIN WATER LEADER
	FLOOR DRAIN (TYPE)
	PIPING OFFSET
	BRANCH PIPING DOWN
	PIPING DOWN
	PIPING UP
	REDUCER
	FLOW DIRECTION
	PIPE BREAK
	CAP
	P-TRAP
	DRAIN ASSEMBLY
	CLEAN OUT
	WALL CLEAN OUT
	FLOOR CLEAN OUT
	ISOLATION VALVES
	VALVE DRAIN
	PRESSURE REDUCING VALVE (PRV)
	CIRCUIT BALANCING VALVE (CBV)
	STRAINER
	CHECK VALVE

HVAC LEGEND	
SYMBOL	DESCRIPTION
	RECTANGULAR DUCTWORK
	ROUND DUCTWORK
	ACOUSTICALLY LINED DUCTWORK (RETURN OR SUPPLY)
	ROUND DUCTWORK OFFSET
	RECTANGULAR DUCTWORK OFFSET
	DUCTWORK UP
	DUCTWORK DOWN
	TAKE-OFF
	SQUARE PLAQUE DIFFUSER (TYPE)
	RETURN GRILLE (RG)
	CABINET FAN C/W UNIT MOUNTED GRILLE (TYPE)
	DIFFUSER TAG DIFFUSER TYPE AIRFLOW (L/S)(CFM) SIZE (mm)(in)
	GRILLE TAG GRILLE TYPE AIRFLOW (L/S)(CFM) DIMENSIONS (mm)(in)

GENERAL NOTES:

1. ALL WORK SHOWN OR IMPLIED ON THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH:
- A. ALL CODES AND LAWS APPLICABLE (OBC)
- B. INSTRUCTIONS TO BIDDERS
- C. IN ACCORDANCE WITH SMACNA-LATEST EDITION (DUCTWORK)
- D. IN ACCORDANCE WITH FM & NFPA (FIRE PROTECTION)
- E. IN ACCORDANCE WITH ULC STANDARDS
2. PRIOR TO SUBMITTING TENDERS, EACH TRADE SHALL EXAMINE THE SITE TO DETERMINE THE CONDITIONS WHICH MAY AFFECT THE PROPOSAL. THERE SHALL BE NO CLAIM FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO FULFILL THIS CONDITION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH, EXISTING CONDITIONS.
3. THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION.
4. MECHANICAL CONTRACTOR IS RESPONSIBLE TO FIELD MEASURE LOCATION OF NEW EQUIPMENT TO VERIFY CLEARANCES WITH THE MANUFACTURER PRIOR TO ORDERING.
5. THESE MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
6. THE WORD "PROVIDE" SHALL DENOTE "SUPPLY AND INSTALL". THE WORD "TAB" SHALL DENOTE "TESTING, ADJUSTING, AND BALANCING".
7. CONTRACTOR SHALL FOLLOW THE BIDDING DOCUMENT PROJECT SCHEDULE. UPON AWARD, CONTRACTOR SHALL SUBMIT WORK SCHEDULE TO PROJECT MANAGER & ENGINEER FOR APPROVAL.
8. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES AND THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SAFETY REQUIREMENTS TO ITS EMPLOYEES AND COMPLY WITH OCCUPATIONAL HEALTH AND SAFETY ACT.
9. CONTRACTOR TO PROVIDE, PRIOR TO COMMENCEMENT OF WORK, ONTARIO MINISTRY OF LABOUR CONTRACTOR REGISTRATION FORM AS WELL AS A CURRENT SIGNED AND DATED CORPORATE HEALTH AND SAFETY POLICY.
10. CONTRACTOR TO PROVIDE FOR THE USE OF HIS WORK FORCE A FIRST AID KIT ACCEPTABLE TO WSIB AND MOL.
11. PAY ALL REQUIRED FEES AND PERMITS.
12. WORKMANSHIP AND MATERIALS SHALL MATCH OR EXCEED THAT OF THE EXISTING AS PRESENTED BY THE PROJECT MANAGER.
13. ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE PROJECT MANAGER.
14. ALL CHANGES AND CONNECTIONS TO EXISTING SERVICES, REQUIRING THE SHUTDOWN OF THAT SERVICE SHALL BE DONE AT THE TIME DESIGNATED BY THE PROJECT MANAGER, UNLESS OTHERWISE STATED.
15. THE CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL TO THE DUTY OF THE PROJECT MANAGER. THE CLEANING OF THE AFFECTED AREA SHALL BE CONTINUOUS. PLACE DUST PROTECTION IN THE FORM OF COVER SHEETS OVER EQUIPMENT AND FURNITURE TO ENSURE NO DUST INFILTRATION.
16. EQUIPMENT REQUIRING CONNECTION TO AN ELECTRICAL POWER SOURCE SHALL BE CSA OR ULC APPROVED FOR USE AT LOCATION OF INSTALLATION.
17. COORDINATE MATERIAL STORAGE WITH THE SITE SUPERINTENDENT AND OTHER TRADES.
18. MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF EQUIPMENT SPECIFIED HEREIN SHALL BE CONSIDERED PART OF THIS SPECIFICATION.
19. SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE.
20. MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR HOSTING AND REMOVAL OF MECHANICAL EQUIPMENT. COSTS OF HOSTING OF EQUIPMENT WITH PROJECT MANAGER. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO PUBLIC AND PRIVATE PROPERTY. USE PROPER BARRIERS AND/OR PERSONNEL TO ENSURE HOSTING SAFETY FOR EMPLOYEES AND PUBLIC. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EQUIPMENT AND/OR PROPERTY DURING HOSTING. ARRANGE AND PAY FOR ANY REQUIRED PERMITS.
21. INSPECT ALL NEW AND/OR RELOCATED EQUIPMENT UPON DELIVERY AND/OR RELOCATION AND NOTIFY PROJECT ENGINEER OF ANY DAMAGE OR DEFICIENCIES.
22. ALL EQUIPMENT, PIPING, DUCTWORK AND WIRING SHALL BE SUSPENDED FROM THE BUILDING STRUCTURE. PROVIDE BLACK WITH WHITE WRITING LAMACOID PLATE ON ALL NEW EQUIPMENT. LABEL UNIT AS SHOWN ON DRAWINGS. LETTERING SIZE TO BE MINIMUM 25MM HIGH. MOUNT NEAR CONTROL SECTION OF THE UNIT.
23. PROVIDE CUTTING, PATCHING AND CORING OF ALL WALLS, CEILING AND OTHER SURFACES AS REQUIRED FOR MECHANICAL WORK. CHECK WITH BUILDING MANAGER PRIOR TO CORE DRILLING AND CUTTING OF FLOOR SLAB. PROVIDE BUILDING MANAGER PERMITS AND POLICES. PRIOR TO SLAB CUTTING OR CORING, SCAN THE SLAB USING GPR TECHNOLOGY AND COORDINATE DRILLING TO MINIMIZE CUTTING OF THE REINFORCING STEEL AND CONDUIT. FIRE STOP ALL NEW FIRE RATED PENETRATIONS. THE CONTRACTOR IS TO INCLUDE IN TENDER A PROPOSED WORK ASSEMBLY AFTER NORMAL WORKING HOURS. OBTAIN WRITTEN VERIFICATION OF LOCATIONS FROM THE STRUCTURAL ENGINEER OF RECORD PRIOR TO DRILLING. CUTTING TORCHES SHALL NOT BE USED FOR MAKING HOLES. PATCH ALL HOLES THROUGH SLAB WITH FIRE-STOP CAULKING (ULC LISTED). PATCHED SURFACES ARE TO BE PRIMED FINISHED, READY FOR FINAL COVERING BY OTHERS (COORDINATE WITH ROOFING CONTRACTOR).
24. FIRE PROTECTION CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS & DRAWINGS FOR ENGINEER REVIEW.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATION, DRAINING, REFILLING AND REACTIVATING OF WET PIPE SPRINKLER SYSTEM OR STANDPIPE ON A DAILY BASIS. COORDINATE WITH OWNER.
26. PIPING LAYOUT ILLUSTRATED ON DRAWINGS INDICATES GENERAL ROUTING OF PIPE WORK AND DOES NOT SHOW ALL FITTINGS AND OFFSETS REQUIRED FOR COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPING FITTINGS & OFFSETS REQUIRED FOR COORDINATED INSTALLATION WITH OTHER SYSTEMS (DUCTWORK, PIPING, CONDUITS, LIGHTS, ETC).
27. CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATION, DRAINING AND REFILLING OF DOMESTIC WATER SYSTEMS TO ALLOW PLUMBING FIXTURE REPLACEMENTS.
28. PROJECT FASTEN AIR HANDLING SYSTEM FROM CONSTRUCTION DUST. PROVIDE FILTER MEDIA ON RETURN OPENINGS; EXISTING SECURELY TO THE RETURN DUCT INLET; REPLACE DURING CONSTRUCTION AS REQUIRED. APPROVED MATERIAL: AIRGUARD T2200 OR APPROVED EQUIV.
29. DUCT SIZES INDICATED ON DRAWINGS WHERE ACQUALLY LINED ARE FREE AREA SIZES AND NOT SHEET METAL SIZES.
30. COORDINATE DUCTWORK ROUTING PRIOR TO DUCT FABRICATION; IF MODIFICATIONS ARE REQUIRED, REVISE DUCT SIZE TO MAINTAIN CROSS SECTIONAL AREA.
31. PRIOR TO CLOSING OF CEILINGS, MECHANICAL CONTRACTOR SHALL NOTIFY THE ENGINEER THAT AN INSPECTION IS REQUIRED BEFORE PROCEEDING.
32. CONTRACTOR TO NOTIFY PROJECT MANAGER 3 DAYS BEFORE SCHEDULED SUBSTANTIAL COMPLETION TO ARRANGE INTERIM INSPECTION AND EQUIPMENT COMMISSIONING. NOTIFY PROJECT MANAGER IN WRITING OF ANY CHANGES IN SCHEDULE.
33. WARRANTY PERIOD SHALL BE FOR TWELVE (12) MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY ENGINEER.
34. SUBMITTALS:
1. SUBMIT ONE(1) COPY OF SHOP DRAWINGS AND PRODUCT DATA IN ELECTRONIC PDF FORMAT FOR ENGINEER'S REVIEW PRIOR TO PURCHASING AND ORDERING. HARD COPY SHOP DRAWINGS WILL NOT BE ACCEPTED. REVIEWED ELECTRONIC SHOP DRAWINGS WILL BE RE-DISTRIBUTED AS PER PROJECT MANAGER'S INSTRUCTIONS. SHOP DRAWINGS SHALL INCLUDE ALL SPECIFIED EQUIPMENT & SYSTEMS.
2. PROVIDE SUBMITTALS IN ACCORDANCE WITH APPLICABLE CODES REQUIRED FOR OCCUPANCY INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. PLUMBING & UTILITIES:
2. HVAC:
1. SEISMIC CERTIFICATION LETTER SUBMITTED.
3. MECHANICAL SCOPE OF WORK CONSIDERED COMPLETE WHEN THE FOLLOWING ITEMS HAVE BEEN RECEIVED AND REVIEWED BY ENGINEER:
1. ALL SHOP DRAWINGS LISTED IN THIS SPECIFICATION.
2. BALANCING REPORT IN ACCORDANCE WITH TAB SECTION IN SPECIFICATIONS.
3. AS-BUILT DRAWINGS SHOWING AS-BUILT CONDITIONS COMPLETE WITH RED LINED MARKUPS TO PROJECT MANAGER WITH CONTRACTOR'S SIGNATURE.
4. START-UP REPORT FROM MANUFACTURER OF EQUIPMENT.
5. THREE (3) COPIES OF OPERATIONS AND MAINTENANCE MANUALS CONTAINING ALL ITEMS PREVIOUSLY PROVIDED BY ENGINEER. A THREE RING BINDER AND DIVIDERS ORGANIZING ALL SUBMISSIONS BY EACH MECHANICAL TRADE. OPERATIONS MANUAL TO ALSO INCLUDE THE FOLLOWING BUT SHALL NOT BE LIMITED TO:
1. LIST OF TRADES INVOLVED AND CONTACT INFORMATION.
2. CONTRACTOR'S LETTER OF WARRANTY.
3. ALL LETTERS REQUIRED FOR OCCUPANCY.

MECHANICAL SPECIFICATIONS:

- SEISMIC RESTRAINT:**
1. PROVIDE COMPLETE SEISMIC RESTRAINT SYSTEM FOR ALL MECHANICAL SYSTEMS AS PER ONTARIO BUILDING CODE, LATEST EDITION AND HPV-1.3.
 2. SEISMIC RESTRAINT DESIGN AND SUPERVISION SHALL BE CONDUCTED AND STAMPED BY A PROFESSIONAL SEISMIC ENGINEER. SUBMIT LETTER AND CALCULATION FOR ENGINEER'S REVIEW PRIOR TO SUBSTANTIAL COMPLETION. INSTALLATION OF INSTALLATION WITH STAMPED ENGINEER'S LETTER OF ACCEPTANCE. IF NO SEISMIC MEASURES ARE DEEMED REQUIRED THE SEISMIC ENGINEER SHALL SUPPLY A STAMPED AND SIGNED LETTER STATING SO.
- 2. FIRE EXTINGUISHERS:**
1. (FEI) STORED PRESSURE DRY CHEMICAL TYPE WITH HEAVY DUTY STEEL CYLINDER, POSITIVE ON/OFF OPERATION, WATERPROOF STAINLESS STEEL GAUGE, SHUT-OFF NOZZLE, ULC LABELED FOR A, B AND C CLASS PROTECTION C/PF RECESSED TYPE CABINET, SIZE 2.25 KG, 3A-10BC RATING.
 - 1. RECESSED TYPE CABINET: 18 GAUGE PRIMED & PAINTED TUB, WHITE BLACK ENAMEL FINISH, AND 14 GAUGE POLISHED STAINLESS STEEL HINGED DOOR AND CLEAR GLASS FRONT.
 - 2. ACCEPTABLE MATERIAL: NATIONAL FIRE CE-950-3 SERIES.
- 3. INSTALLATION OF PIPEWORK:**
1. CLEARANCES:
 - 1. PROVIDE CLEARANCES AROUND SYSTEMS, EQUIPMENT AND COMPONENTS FOR OBSERVATION OF OPERATION, INSPECTION, SERVICING, MAINTENANCE AND AS RECOMMENDED BY MANUFACTURER.
 2. DRAINAGE:
 - 1. INSTALL DRAIN VALVE AT LOW POINTS IN PIPING SYSTEMS AND AT THE BASE OF ALL RISERS.
 - 2. DRAIN VALVE: NPS 3/4" FULL PORT BALL VALVES UNLESS INDICATED OTHERWISE, WITH HOSE MALE THREAD, CAP AND DRAIN.
 3. PIPE WORK INSTALLATION:
 - 1. SCREWED FITTINGS TO BE JOINED WITH TEFLON TAPE.
 - 2. PROTECT OPENINGS AGAINST ENTRY OF FOREIGN MATERIAL.
 - 3. ASSEMBLE PIPING USING FITTINGS MANUFACTURED TO ANSI STANDARDS.
 - 4. EXCEPT WHERE INDICATED OTHERWISE, SLOPE PIPING IN DIRECTION OF FLOW FOR POSITIVE DRAINAGE AND VENTING.
 - 5. EXCEPT WHERE INDICATED, INSTALL SO AS TO PERMIT SEPARATE THERMAL INSULATION OF EACH PIPE.
 - 6. GROUP PIPING WHEREVER POSSIBLE AND AS INDICATED.
 - 7. USE ECCENTRIC REDUCERS AT PIPE SIZE CHANGES TO ENSURE POSITIVE DRAINAGE AND VENTING.
 4. SLEEVES:
 - 1. INSTALL WHERE PIPES PASS THROUGH CONCRETE STRUCTURES AND FIRE RATED ASSEMBLIES.
 - 2. MATERIAL: SCHEDULE 40 BLACK STEEL PIPE.
 - 3. PROVIDE SPACE FOR FIRE STOPPING. MAINTAIN FIRE RATING INTEGRITY. ENSURE NO CONTACT BETWEEN COPPER PIPE OR TUBE AND SLEEVE.
- 4. DOMESTIC HOT & COLD WATER PIPING:**
1. COPPER TUBE, HARD DRAIN, TYPE "L".
 2. WROUGHT COPPER FITTINGS.
 3. LEAD FREE SOLDER, BRAZE OR SILVER SOLDER (SILFOS 5, 5% SILVER)
- 5. DRAINAGE, WASTE & VENT PIPING:**
1. SLOPE SLOPE TYPE DWV ABOVE GRADE; SOLDER: 95/5, 50/50 TO ASTM B32-00EL, TYPE 50A.
 2. FIRE & SMOKE RESISTANT COATED DWV PVC PIPING & FITTINGS, IPEX SYSTEM XV 15/PVC-DB, ABOVE GRADE.
 3. CAST IRON ABOVE GRADE, MECHANICAL JOINTS: PROVIDE RUBBERLESS SOIL PIPE COUPLINGS CONSTRUCTED OF EXTRA WIDE 4 TO 6 BAND CORRUGATED TYPE 304 STAINLESS STEEL BANDS, WITH HEAVY DUTY WORM DRIVE CLAMPS.
 4. BELOW GRADE: PVC DR28 OR SYSTEM 15.
 5. SLOPE SANITARY DRAIN ACCORDING TO CODE.
 6. NO ROOF PENETRATION FOR VENT PIPING.
 6. INSTALL IN ACCORDANCE WITH CANADIAN PLUMBING CODE, PROVINCIAL PLUMBING CODE AND LOCAL AUTHORITY HAVING JURISDICTION.
- 6. THERMAL INSULATION FOR PIPING:**
1. GENERAL:
 - 1. COMPONENTS OF INSULATION SYSTEM SHALL HAVE MAXIMUM FLAME SMOKE DEVELOPED RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 IN ACCORDANCE WITH CAN-5102.
 2. TAC CODE A-1 FORMED MINERAL FIBRE WITHOUT VAPOUR BARRIER:
 - 1. APPLICATION: FOR PIPING, VALVES AND FITTINGS ON:
 - 1. DOMESTIC HOT WATER PIPING SYSTEMS.
 - 2. MATERIAL:
 - 1. MINERAL FIBRE: TO CAN/CGSB-51.9-92.
 - 2. MAXIMUM "K" FACTOR: TO CAN/CGSB-51.9-92.
 - 3. THICKNESS: 25MM
 3. TAC CODE A-3 FORMED MINERAL FIBRE WITH FACTORY APPLIED VAPOUR RETARDER JACKET:
 - 1. APPLICATION: FOR PIPING, VALVES AND FITTINGS ON:
 - 1. DOMESTIC COLD WATER PIPING SYSTEMS.
 - 2. ABOVE GROUND STORM PIPING SYSTEMS.
 - 2. MATERIAL:
 - 1. MINERAL FIBRE: TO CAN/CGSB-51.9-92.
 - 2. JACKET: TO CGSB 51-0P-50MA.
 - 3. MAXIMUM "K" FACTOR: TO CAN/CGSB-51.9-92.
 - 3. THICKNESS: 25MM
 4. FASTENINGS:
 - 1. FOR INSULATION SYSTEMS TAC CODE A-1:
 - 1. TAPE: SELF-ADHESIVE, ALUMINUM, REINFORCED, 50MM WIDE MINIMUM.
 - 2. CONTACT ADHESIVE: QUICK SETTING.
 - 3. CANVAS ADHESIVE: WASHABLE.
 - 4. THE WIRE: 1.5MM DIAMETER STAINLESS STEEL.
 - 5. BANDS: STAINLESS STEEL, 19MM WIDE, 0.5MM THICK.
 - 6. THERMAL INSULATING AND FINISHING CEMENT: TO CAN/CGSB-51.12-95.
 - 7. VAPOUR RETARDER LAP ADHESIVE: WATER BASED, FIRE RETARDANT TYPE, COMPATIBLE WITH INSULATION.
 - 8. INDOOR VAPOUR RETARDER FINISH: VINYL EMULSION TYPE ACRYLIC, COMPATIBLE WITH INSULATION.
 - 2. FOR INSULATION SYSTEMS TAC CODE: A-3.
 - 1. SECUREMENTS: TAPE AT 300 MM OC.
 - 2. SEALS: VAP LAP SEAL ADHESIVE, VAP LAGGING ADHESIVE.
 6. JACKETS:
 - 1. PVC:
 - 1. ONTARIO BUILDING CODE COMPLIANT FOR 25/50 FLAME SMOKE DEVELOPED.
 - 2. MINIMUM THICKNESS 0.015 MIL.
 - 3. COLOUR WHITE UNLESS OTHERWISE SPECIFIED.
 - 4. NON YELLING UV STABILIZED.
 - 5. MINIMUM SERVICE TEMPERATURE: -20°C.
 - 6. MAXIMUM SERVICE TEMPERATURE: 65°C.
 - 7. MOISTURE VAPOUR TRANSMISSION: 0.02 PERM.
 - 8. FASTENINGS:
 - 1. USE SOLVENT WELD ADHESIVE COMPATIBLE WITH INSULATION TO SEAL LAPS AND JOINTS.
 - 2. TACKS.
 - 3. PRESSURE SENSITIVE VINYL TAPE OF MATCHING COLOUR.
 - 9. APPLY ON ALL PIPING, VALVES AND FITTINGS EXCEPT ABOVE SUSPENDED CEILINGS.
- 7. VALVES:**
1. BALL VALVES:
 - 1. BODY AND CAP: CAST HIGH TENSILE BRONZE TO ASTM B62 OR BRASS TO ASTM B16/B16M 36000.
 - 2. STEM: TAMPERPROOF BALL DRIVE.
 - 3. STEM PACKING NUT: EXTERNAL TO BODY.
 - 4. BALL AND SEAT: REPLACEABLE CHROME PLATED BRASS SOLID FULL PORT BALL AND TEFLON SEATS.
 - 5. STEM SEAL: TIE WITH EXTERNAL PACKING NUT.
 - 6. OPERATOR: REMOVABLE LEVER HANDLE.
 - 7. ACCEPTABLE MATERIAL: CRANE, JENKINS, TOYO, VICTAULIC, KITZ.
- 8. PIPE TESTING AND CLEANING (DOMESTIC WATER):**
1. PRESSURE TEST ENTIRE DOMESTIC WATER SYSTEM (COLD AND HOT) FOR A PERIOD OF EIGHT(8) HOURS AT 1.5 BAR AND LEAK PRESSURE OR 150 PSI, WHICHEVER IS GREATER. PRIOR TO TEST ISOLATE EQUIPMENT AND OTHER PARTS WHICH ARE NOT DESIGNED TO WITHSTAND TEST PRESSURE OR MEDIA. BEAR COSTS FOR REPAIRS OR REPLACEMENT, RESTING, AND MAKING GOOD. ENGINEER TO DETERMINE WHETHER REPAIR OR REPLACEMENT IS APPROPRIATE.
 2. CLEANING AND FLUSHING OF NEW PIPING TO BE DONE PRIOR TO MAKING FINAL CONNECTION TO EXISTING SYSTEM.

9. BASES, PIPE HANGERS AND SUPPORTS:

1. BASES, HANGERS, SUPPORTS AND SWAY BRACES SHALL BE OF MANUFACTURED TYPE AND ASSEMBLED AS PER MANUFACTURER'S INSTRUCTIONS. ENSURE THAT SUPPORTS, GUIDES AND ANCHORS DO NOT TRANSMIT EXCESSIVE QUANTITIES OF HEAT TO BUILDING STRUCTURE. DESIGN HANGERS AND SUPPORTS TO OPERATE UNDER ALL OPERATING CONDITIONS. ALLOW FOR FREE EXPANSION AND CONTRACTION AND PREVENT THE TRANSMISSION OF EXCESSIVE STRESSES INTO PIPE WORK OR CONNECTED EQUIPMENT. PROVIDE FOR VERTICAL ADJUSTMENT AFTER INSTALLATION. DESIGN SHALL BE IN ACCORDANCE WITH MSS SP-58, CLASS 15.1 AND MSS SP-95.
2. SUPPORT FROM TOP OR BOTTOM OF STRUCTURAL MEMBERS, WHERE STRUCTURAL BEARING DOES NOT EXIST OR INSERTS ARE NOT IN SUITABLE LOCATIONS, PROVIDE SUPPLEMENTARY STRUCTURAL STEEL MEMBERS.
3. SUPPORTS MADE FROM WIRE, WOOD, ROPE OR ANY OTHER VULNERABLE MAKE-SHIFT MATERIAL ARE NOT PERMITTED.
4. FOR UNLANSATED COPPER PIPE OR TUBING THE CLAMPS AND SUPPORTS SHALL HAVE AN ELECTROPLATED COPPER FINISH.
5. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN PIPE DIRECTION AND FOR CONCENTRATION OF LOADS DUE TO WEIGHT OF VALVES, STRAINERS, ETC.
6. PIPE HANGERS AND SUPPORTS SHALL BE FINISHED WITH ZINC RICH PAINT AFTER MANUFACTURE.
7. PROVIDE INSULATION PROTECTION SHIELDS AS REQUIRED.
2. HANGER SPACING:
1. COPPER PIPING UP TO NPS 1 1/2" EVERY 5'FT.
2. HANGERS SHALL BE WITHIN 12" OF EACH ELBOW.
3. HANGERS SHALL BE SPACED AS FOLLOWS:
3. ROOF MOUNTED PIPE SUPPORTS:
1. SUPPORT TYPE 1 (S1): FREE-STANDING, ONE PIECE INJECTED MOULDED UV RESISTANT POLYPROPYLENE SHELL AND CHILLI AND MESH INJECTED INSULATION BASE WITH 300 MM HIGH U-SHAPED MOUNTING CHANNEL AND 13 MM STEEL RODS, NUTS & WASHERS.
1. ACCEPTABLE MATERIALS: A BETTER IDEA INC. MODEL EKP-S040 & EKP-S080, MIRO INDUSTRIES PPH.
- | MAXIMUM PIPE SIZE (INPS) | MAXIMUM STEEL PIPE SPACING | MAXIMUM COPPER PIPE SPACING |
|--------------------------|----------------------------|-----------------------------|
| UP TO 1-1/4" | 2.1M (7') | 1.8M (6') |
| 1-1/2" | 2.7M (9') | 2.4M (8') |
| 2" | 3.0M (10') | 2.7M (9') |
| 2-1/2" | 3.6M (12') | 3.0M (10') |
| 3" | 3.6M (12') | 3.0M (10') |
| 4" | 4.2M (14') | 3.6M (12') |
10. PIPE IDENTIFICATION:
1. PVC MARKERS, CONTINUOUS OPERATING TEMPERATURE OF 212°, 2" HIGH LETTERING FOR PIPING 3" OR LARGER, 3/4" HIGH LETTERING FOR 2 1/2" OR SMALLER. MATCH EXISTING BASE BUILDING STANDARD OR AS FOLLOWS:
- | CONTENTS: | BACKGROUND: | LABEL: |
|----------------------------|-------------|-----------------|
| DOMESTIC HOT WATER SUPPLY | GREEN | DOM. HW SUPPLY |
| DOMESTIC COLD WATER SUPPLY | GREEN | DOM. CWS |
| SEWAGE | GREEN | SEW. |
| PLUMBING VENT | RED | SEW. VENT |
| FIRE PROTECTION WATER | RED | FIRE PROT. WTR. |
| SPLINKERS | RED | SPLINKERS |
11. PLUMBING SPECIALTIES AND ACCESSORIES:
1. FLOOR DRAINS:
1. FDI: GENERAL DUTY, CAST IRON BODY, SQUARE, 5"X5", ADJUSTABLE HEAD, SEDIMENT BASKET, STAINLESS STEEL, TRAP PRIMING CONNECTION, INTERNAL SEEPAGE PAN, CLAMPING COLLAR AND SEDIMENT BASKET.
- ACCEPTABLE MATERIAL: WATTS FD-100 OR EQUIVALENT MFAB, ZURN & J.R. SMITH.
2. TRAP SEAL PRIMERS:
2. TYPE 1: FOR USE ON LAVATORY COLD WATER LINE.
1. BRASS TRAP SEAL PRIMER WITH REMOVABLE POCKET, INTEGRAL VACUUM BREAKER, GASKETTED ACCESS COVER 13 NPT (1/2") THREADED INLET AND OUTLET CONNECTIONS, COMPLETE WITH 13 NPT (1/2") SWEAT CONNECTION ADAPTERS AND 13 NPT (1/2") DRIP LINE CONNECTION.
2. TRAP SEAL PRIMERS ARE LISTED WITH I.A.P.M.O. AND CSA AND ARE TESTED AND CERTIFIED TO THE ASSE 1018.
3. TRAP SEAL PRIMERS SHALL BE INSTALLED MINIMUM 305 MM (12") ABOVE THE GRID OF A FLOOR DRAIN OR FLOOR LEVEL RM OF EQUIPMENT SERVED.
4. OPERATING RANGE FOR TRAP SEAL PRIMERS IS 138 KPA (20 PSI) TO 861 KPA (125 PSI).
5. ACCEPTABLE MATERIALS: PPP PRIME-PRO, MFAB MI-TSP C3, ZURN.
3. CLEANOUTS:
1. CLEANOUT PLUGS: HEAVY CAST IRON MALE FERRULE WITH BRASS SEAMS AND THREADED BRASS OR BRONZE PLUG. SEALING-CAULKED LEAD SEAT OR NEOPRENE GASKET.
1. ACCEPTABLE MATERIAL: ANCON, ENPOCO, J.R. SMITH & ZURN.
2. ACCESS COVERS:
1. WALL ACCESS: FACE OR WALL TYPE, STAINLESS STEEL ROUND COVER WITH FLUSH HEAD SECURING SCREWS, BEVELLED EDGE FRAME, COMPLETE WITH ANCHORING LUGS.
2. FLOOR ACCESS: ROUND CAST IRON BODY AND FRAME WITH ADJUSTABLE SECURED NICKEL BRONZE TOP AND:
1. FLUGS: BOLTED BRONZE WITH NEOPRENE GASKET.
2. COVER FOR UNFINISHED CONCRETE FLOORS: CAST IRON ROUND, GASKET, VANDAL-PROOF LOCKING SCREWS.
3. COVER FOR TERRAZZO FINISH: POLISHED NICKEL BRONZE WITH RECESSED COVER FOR FILLING WITH TERRAZZO, VANDAL-PROOF LOCKING SCREWS.
4. COVER FOR TILE AND LINOLEUM FLOORS: POLISHED NICKEL BRONZE WITH RECESSED COVER FOR LINOLEUM OR TILE INFL, COMPLETE WITH VANDAL-PROOF LOCKING SCREWS.
5. COVER FOR CARPETED FLOORS: POLISHED NICKEL BRONZE WITH DEEP FLANGE COVER FOR CARPET INFL, COMPLETE WITH CARPET RETAINER VANDAL-PROOF LOCKING SCREWS.
12. PLUMBING FIXTURE AND TRIM:
1. FIXTURES, TRIM:
1. HOT AND COLD WATER SUPPLIES TO EACH FIXTURE:
1. STOPS SUPPLIES SHALL BE ALL BRASS WITH FULL TURN BRASS SEAMS AND REPLACEABLE WASHER ATTACHMENT SHALL BE IPS INLET X COMPRESSION OD OUTLET TO FIXTURE. ALL FIXTURE STOP VALVES SHALL BE FULLY OPENED COVER TYPE.
2. CHROME PLATED IN ALL EXPOSED PLACES.
2. WASTE:
1. CAST BRASS ADJUSTABLE STYLE P-TRAP WITH CLEANOUT ON EACH FIXTURE NOT HAVING INTERNAL TRAP.
2. CHROME PLATED IN ALL EXPOSED PLACES.
3. SINK AND LAVATORY HEAVY GAUGE P-TRAPS SHALL BE CAST BRASS ADJUSTABLE STYLE WITH 17 GA. SEAMLESS BRASS VENT AND ASSOCIATED FITTING PIPE. NO ZINC ALLOWED.
- P-TRAPS TO BE REMOVABLE/UNION TYPE OR TO INCLUDE CLEANOUT.
4. LAVATORY STRAINERS SHALL BE CHROME PLATED CAST BRASS WITH 17 GA. SEAMLESS BRASS TAILPIPE.
5. ALL BARRIER-FREE LAVATORIES AND SINKS SHALL HAVE CHROME PLATED OFFSET TAIL PIECE IN ADDITION TO P-TRAP WITH CLEANOUT, INSULATE P-TRAP AND HOT & COLD WATER PIPES WITH PRE-FORMED & FINISHED SURFACE INSULATION, ARMAFLEX INSULATION AND TAPE NOT ACCEPTABLE.
6. URINAL WASTE PIPE & FITTINGS SHALL BE DWV PIP EQUIVALENT TO IPX SYSTEM 15, EXTEND PLASTIC PIPING UP TO COMBINED WASTE FROM ADJACENT LAVATORY OR OTHER PLUMBING FIXTURES ALLOWING DILUTION OF WASTE.
2. FIXTURES:
1. MANUFACTURE IN ACCORDANCE WITH CSA B45.
2. ALL PRODUCTS, WHERE APPLICABLE, SHALL BE MARKED WITH MANUFACTURER'S NAME OR PRODUCT #.
3. TRIM, FITTINGS: MANUFACTURE IN ACCORDANCE WITH CSA B125.
4. NUMBER, LOCATIONS: ARCHITECTURAL DRAWINGS TO GOVERN.
5. FIXTURES IN ANY ONE LOCATION TO BE PRODUCT OF ONE MANUFACTURER AND OF SAME TYPE.
6. TRIM IN ANY ONE LOCATION TO BE PRODUCT OF ONE MANUFACTURER AND OF SAME TYPE UNLESS OTHERWISE INDICATED.
7. CARRIERS: PROVIDE FOR ALL WALL MOUNTED PLUMBING FIXTURES.
8. ROUGH-IN OF FIXTURES: ROUGH-IN FOR EQUIPMENT SUPPLIED BY OTHERS TO BE COMPLETE WITH VALVES, SUPPLIES, MISTERS AND VENTS OPENED AND ASSOCIATED FITTING PIPE & REDUCERS.
9. CONTRACTOR IS RESPONSIBLE TO ENSURE INSTALLATION OF FIXTURES MEETS CSA-B651 WHERE BARRIER FREE IS REQUIRED.
10. CONTRACTOR IS RESPONSIBLE TO ENSURE PROPER OPERATION OF FIXTURES UP TO 80 PSI (550 KPA).

Client	
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2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-
DATE	REVISION	REF

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Project/Projet		
WINDVALE PENTECOSTAL CHURCH RENOVATION		
Drawing title/Titre du dessin		
TITLE PAGE, DRAWING LIST, LEGEND & GENERAL NOTES		
Scale Échelle	AS NOTED	Project no./No. du projet 2021-284
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Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
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13. DUCTWORK:

- .1 GENERAL:
- .1 DETAILS, CONSTRUCTION AND MATERIALS HEREIN SHALL BE AS PER SMACNA STANDARDS.
- .2 ALL MATERIALS SHALL CONFORM TO SMOKE AND FLAME SPREAD RATING LIMITATIONS STIPULATED IN THE PROVINCIAL BUILDING CODE OR AS SPECIFIED HEREIN.
- .3 ALL GALVANIZED DUCTWORK INDICATED TO BE FABRICATED FROM 0.2% COPPER CONTENT GALVANIZED SHEET STEEL WITH 1-1/4 CLASS ZINC COATING.
- .4 RECTANGULAR AND FITTINGS: GALVANIZED SHEET STEEL NOT LESS THAN THE FOLLOWING THICKNESS: 24 GA. – 750MM (30") WIDE SMALLER.
- .5 ROUND & OVAL DUCT AND FITTINGS SHALL BE SPIRAL GALVANIZED STEEL MEETING THE ASTM A-527-71 & NOT LESS THAN THE FOLLOWING THICKNESS: 26 GA. – 75MM TO 350MM (3" TO 14") DIA. 24 GA. – 350MM (14") DIA. & LARGER.
- .6 SEAL CLASSIFICATION: SMACNA SEAL CLASS A.
- .7 FLEXIBLE DUCTWORK SHALL BE ALUMINUM WITH TRIPLE LOCK MECHANICAL JOINTS WITH CIRCUMFERENTIAL CORRUGATIONS WITH FACTORY APPLIED, 25mm (1") THICK FLEXIBLE GLASS FIBRE THERMAL INSULATION WITH VAPOUR BARRIER AND VINYL JACKET. MATERIAL SHALL MEET NFPA BULLETIN 90A, PARAGRAPH 113 AND UL-181 CLASS-1. DUCT SHALL WITHSTAND A PRESSURE OF 10" W.C. MAXIMUM LENGTH OF FLEXIBLE DUCTWORK SHALL BE 1.5M (5') FROM DIFFUSER.
- .1 ACCEPTABLE MATERIAL: FLEXMASTER 1/L-1.

14. THERMAL INSULATION FOR DUCTING:

- .1 FLAME AND SMOKE:
- .1 IN ACCORDANCE WITH CAN/ULC S102:
- .1 MAXIMUM FLAME SPREAD RATING: 25.
- .2 MAXIMUM SMOKE DEVELOPED RATING: 50.
- .2 INSULATION:
- .1 MINERAL FIBRE AS SPECIFIED HEREIN INCLUDES GLASS FIBRE, ROCK WOOL, SLAG WOOL.
- .2 THERMAL CONDUCTIVITY ("K" FACTOR) NOT TO EXCEED SPECIFIED VALUES AT 24°C MEAN TEMPERATURE WHEN TESTED IN ACCORDANCE WITH ASTM C335/C335M.
- .3 RIGID MINERAL FIBRE BOARD TO CAN/CGSB-51.10, WITH FACTORY APPLIED VAPOUR RETARDER JACKET TO CGSB 51-6P-52MA.
- .4 MINERAL FIBRE BLANKET TO CAN/CGSB-51.11 FACED WITH FACTORY APPLIED VAPOUR RETARDER JACKET TO CGSB 51-6P-52MA.
- .1 MINERAL FIBRE: TO CAN/CGSB-51.11.
- .2 JACKET: TO CGSB 51-6P-52MA.
- .3 MAXIMUM "K" FACTOR: TO CAN/CGSB-51.11.
- .4 DENSITY: 24 KG/M3.
- .3 JACKETS:
- .1 FOR INSULATED EXPOSED DUCTWORK INDOORS:
- .1 CANVAS: 220 GM/M2 COTTON, PLAIN WEAVE, TREATED WITH DILUTE FIRE RETARDANT LAGGING ADHESIVE TO ASTM C921.
- .2 LAGGING ADHESIVE: COMPATIBLE WITH INSULATION.
- .3 ACRYLIC ADHESIVE:
- .1 THICKNESS: 0.18MM.
- .2 FINISH: WHITE.
- .3 PEEL ADHESION: 18N/25MM (850Z/IN).
- .4 PUNCTURE: 130N (30LBS).
- .5 UL 723 LISTED (10/20 FLAME/SMOKE RATING).
- .6 ACCEPTABLE MATERIAL: VENTURECLAD 1577CW.
- .2 FOR ALL EXPOSED DUCTWORK OUTDOORS:
- .1 ALUMINUM:
- .1 TO ASTM B209 WITH MOISTURE BARRIER.
- .2 THICKNESS: 0.50 MM SHEET.
- .3 FINISH: STUCCO EMBOSSED.
- .4 JACKET BANDING AND MECHANICAL SEALS:
- .1 19 MM (3/4") WIDE, 0.5 MM THICK STAINLESS STEEL.

- .4 ACCESSORIES:
- .1 VAPOUR RETARDER LAP ADHESIVE: WATER BASED, FIRE RETARDANT TYPE, COMPATIBLE WITH INSULATION.
- .2 INDOOR VAPOUR RETARDER FINISH: VINYL EMULSION TYPE ACRYLIC, COMPATIBLE WITH INSULATION.
- .3 INSULATING CEMENT: HYDRAULIC SETTING ON MINERAL WOOL, TO ASTM C449.
- .4 OUTDOOR VAPOUR RETARDER MASTIC:
- .1 VINYL EMULSION TYPE ACRYLIC, COMPATIBLE WITH INSULATION.
- .2 REINFORCING FABRIC: FIBROUS GLASS, UNREINFORCED 305 G/M2.
- .5 TAPE: SELF-ADHESIVE, ALUMINUM, REINFORCED, 75 MM (3") WIDE MINIMUM.
- .6 CONTACT ADHESIVE: QUICK-SETTING
- .7 CANVAS ADHESIVE: WASHABLE.
- .8 TIE WIRE: 1.5 MM STAINLESS STEEL.
- .9 BANDING: 19 MM (3/4") WIDE, 0.5 MM THICK STAINLESS STEEL.
- .10 FACING: 25 MM (1") GALVANIZED STEEL, HEXAGONAL WIRE MESH STITCHED ON ONE FACE OF INSULATION.
- .11 FASTENERS: 2 MM DIAMETER PINS WITH 38 MM (1 1/2") DIAMETER CLIPS, LENGTH TO SUIT THICKNESS OF INSULATION.
- .5 DUCTWORK INSULATION SCHEDULE:
- .1 INSULATION TYPES AND THICKNESSES: CONFORM TO FOLLOWING TABLE:
- | DUCT TYPE: | THICKNESS: |
|------------------------------------|------------|
| SUPPLY AIR | 25 (1") |
| OUTSIDE AIR TO MIXING PLENUM | 50 (2") |
| EXHAUST AIR WITHIN 3M FROM OUTSIDE | 50 (2") |
| DUCTWORK OUTSIDE | 50 (2") |
| ACOUSTICALLY LINED | NONE |

15. ACOUSTIC LINING:

- .1 GENERAL:
- .1 FIBROUS GLASS OR "TEXTILE" FIBROUS GLASS DUCT LINER: AIR STREAM SIDE FACED WITH MAT FACING.
- .2 FLAME SPREAD RATING SHALL NOT EXCEED 25. SMOKE DEVELOPMENT RATING SHALL NOT EXCEED 50 WHEN TESTED IN ACCORDANCE WITH CAN/ULC S102.
- .2 FLEXIBLE:
- .1 USE ON FLAT SURFACES WHERE INDICATED.
- .2 25 MM (1") THICK, TO CAN/CGSB-51.10, FIBROUS GLASS DUCT LINER.
- .3 DENSITY: 36 KG/M3 MINIMUM.
- .4 THERMAL RESISTANCE TO BE MINIMUM 0.76 M2°C/W FOR 25 MM THICKNESS WHEN TESTED IN ACCORDANCE WITH ASTM C177, AT 24°C MEAN TEMPERATURE.

- .3 FASTENERS:
- .1 WELD PINS 2.0 MM DIAMETER, LENGTH TO SUIT THICKNESS OF INSULATION. METAL RETAINING CLIPS, 32 MM SQUARE.
- .4 JOINT TAPE:
- .1 POLY-VINYL TREATED OPEN WEAVE FIBERGLASS MEMBRANE 50 MM WIDE.
- .5 SEALER:
- .1 MEET REQUIREMENTS OF NFPA (FIRE) 90A AND NFPA (FIRE) 90B.
- .2 FLAME SPREAD RATING SHALL NOT EXCEED 25. SMOKE DEVELOPMENT RATING SHALL NOT EXCEED 50. TEMPERATURE RANGE MINUS 68°C TO PLUS 93°C.
- .6 EDGES:
- .1 PROTECT LEADING AND TRAILING EDGES OF EACH DUCT SECTIONS WITH SHEET METAL NOSING TO 25MM OVERLAP AND FASTENED TO DUCT.

16. DAMPERS – BALANCING:

- .1 INSTALLATION:
- .1 DAMPERS ARE TO BE LOCATED IN EACH SUPPLY AIR BRANCH DUCT.
- .2 EACH GRILLE, REGISTER AND DIFFUSER CONNECTION TO HAVE BALANCING DAMPER LOCATED AS CLOSE AS POSSIBLE TO MAIN DUCTS.
- .2 SINGLE BLADE DAMPERS:
- .1 OF SAME MATERIAL AS DUCT, BUT ONE SHEET METAL THICKNESS HEAVIER. V-GROOVE STIFFENED.
- .2 SIZE AND CONFIGURATION TO RECOMMENDATIONS OF SMACNA, EXCEPT MAXIMUM HEIGHT 100MM.
- .3 LOCKING WITH SHAFT EXTENSION TO ACCOMMODATE INSULATION THICKNESS.
- .4 INSIDE AND OUTSIDE NYLON OR BRONZE END BEARINGS.
- .5 CHANNEL FRAME OF SAME MATERIAL AS ADJACENT DUCT, COMPLETE WITH ANGLE STOP.

17. DUCT ACCESSORIES:

- .1 FLEXIBLE CONNECTIONS:
- .1 FRAME: ALUMINUM METAL FRAME 24 GAUGE THICK WITH FABRIC CLENCHED BY MEANS OF DOUBLE LOCKED SEAMS.
- .2 MATERIAL:
- .1 FIRE RESISTANT, SELF EXTINGUISHING, NEOPRENE COATED GLASS FABRIC, TEMPERATURE RATED AT -40°F TO 200°F, DENSITY OF 0.25 PSF.
- .2 ACCESS DOORS:
- .1 SUPPLY & INSTALL AS NECESSARY TO GAIN ACCESS TO ALL CONCEALED MECHANICAL EQUIPMENT.
- .2 SIZES: FOR BODY ENTRY 24"x24", FOR HAND ENTRY 12"x12"
- .3 ROUNDED SAFETY CORNERS, CONCEALED HINGES, SCREWDRIVER LATCH, ANCHOR STRAPS, ABLE TO OPEN 180 DEGREES.
- .4 MATERIAL SHALL BE PRIME COATED STEEL UNLESS OTHERWISE NOTED.

18. IDENTIFICATION DUCTWORK SYSTEMS:

- .1 2" HIGH STENCILLED LETTERS AND DIRECTIONAL ARROWS 6" LONG X 2" HIGH.
- .2 COLOURS: BLACK, OR CO-ORDINATED WITH BASE COLOUR TO ENSURE STRONG CONTRAST.

19. GRILLES, REGISTERS AND DIFFUSER:

- .1 GENERAL:
- .1 TO MEET CAPACITY, PRESSURE DROP, TERMINAL VELOCITY, NOISE LEVEL, NECK VELOCITY AS INDICATED.
- .2 FRAMES:
- .1 FULL PERIMETER GASKETS.
- .2 PLASTER FRAMES WHERE SET INTO PLASTER OR GYPSUM BOARD AND AS SPECIFIED.
- .3 CONCEALED FASTENERS
- .3 CONCEALED OPERATORS
- .4 ACCEPTABLE MANUFACTURER: E.H. PRICE, NAILOR, TITUS, KRUEGER, METALARE.
- .2 SUPPLY DIFFUSERS:
- .1 TYPE SD1: STEEL, SQUARE DIFFUSER WITH FIXED PATTERN 24" X 24", DRYWALL MOUNTING AS INDICATED, OFF-WHITE.
- .1 ACCEPTABLE MATERIAL: TO MATCH EXISTING
- .2 TYPE SD2: ALUMINUM, [4" LONG], 2 X 1" SLOTS – 2-WAY ADJUSTABLE ALUMINUM PATTERN CONTROLLERS, OFF-WHITE FINISH, WITH ACOUSTICALLY LINED PLENUM, DRYWALL MOUNTING.
- .1 ACCEPTABLE MATERIAL: E.H. PRICE MODEL SDS100 OR EQUAL.
- .3 GRILLES:
- .1 TYPE RG1: ALUMINUM, 13 MM X 13 MM EGG GRATE TYPE FACE BARS, BAKED WHITE ENAMEL FINISH, DUCTED WHERE INDICATED, 1-BAR MOUNTED, SIZE 24" X 8" UNLESS OTHERWISE INDICATED.
- .1 ACCEPTABLE MATERIAL: E.H. PRICE MODEL 80 OR EQUAL.
- .2 TYPE EG1: STEEL CONSTRUCTION, 45° DEFLECTION, FIXED LOUVRES, 13 MM (1/2") SPACING, OFF-WHITE BAKED ENAMEL FINISH. SIZE AS INDICATED. ACCEPTABLE MATERIAL: E.H. PRICE MODEL 530 OR EQUAL.
- .3 TYPE DG1: ALUMINUM CONSTRUCTION, FIXED LOUVRES, 10 MM (3/8") SPACING, ALUMINUM FINISH. SIZE AS INDICATED. ACCEPTABLE MATERIAL: E.H. PRICE MODEL ATG.

20. FANS:

- .1 GENERAL:
- .1 STANDARD RATINGS:
- .1 AMCA 201 FOR FAN APPLICATION.
- .2 AMCA 3023 FOR APPLICATION OF SOME LOUDNESS RATINGS FOR NON-DUCTED AIR MOVING DEVICES.
- .3 AMCA 303 FOR APPLICATION OF SOUND POWER RATINGS FOR DUCTED AIR MOVING DEVICES.
- .4 PERFORMANCE: TO ANSI/AMCA 210 AND ANSI/ASHRAE 51. UNIT TO BEAR AMCA CERTIFIED SEAL.
- .2 PWL SOUND RATINGS TO COMPLY WITH AMCA 303, TESTED TO ANSI/AMCA 300 UNIT TO BEAR AMCA CERTIFIED SOUND RATING SEAL.
- .3 ANGLE MOUNTING BRACKETS CAN BE ADJUSTED TO ANY TYPICAL CEILING MATERIAL THICKNESS.
- .4 PERFORMANCE: AS INDICATED ON DRAWING SCHEDULE
- .5 ACCEPTABLE MATERIAL: GREENHECK, PENN, LOREN COOK, TWIN CITY FAN.
- .2 IN-LINE CABINET FAN:
- .1 FAN HOUSING CONSTRUCTION OF CORROSION RESISTANT GALVANIZED STEEL C/W SOUND ABSORBING LINED INSULATION.
- .2 REMOVABLE BOTTOM HOUSING PANEL ALLOWS EASY ACCESS TO THE POWER ASSEMBLY FOR INSPECTION OR SERVICE.
- .3 OUTLET DUCT CONNECTION WITH INTEGRAL BACKDRAFT DAMPER CAN BE CONVERTED FROM HORIZONTAL TO VERTICAL DISCHARGE.
- .4 FAN SCROLL IS CONSTRUCTED OF GALVANIZED STEEL.
- .5 FAN WHEELS ARE DOUBLE WIDTH FORWARD CURVED CENTRIFUGAL TYPE. ALL WHEELS ARE DYNAMICALLY BALANCED FOR VIBRATION FREE OPERATION.
- .6 MOTORS 115/60/1: ALL MOTORS ARE SIZED TO MATCH FAN LOADS, HAVE THERMAL OVERLOAD PROTECTION AND ARE MOUNTED ON VIBRATION ISOLATORS. POWER ASSEMBLIES CAN BE EASILY UNPLUGGED AND REMOVED FOR INSPECTION OR SERVICE.

21. CONTROLS:

- .1 ALL 24VDC (LOW VOLTAGE) CONTROLS BY DV-25.
- .2 PROVIDE EMT CONDUIT C/W STEEL COUPLINGS AND FITTINGS FOR CONTROL WIRING IN EXPOSED OR EXTERIOR LOCATIONS. REFER TO ELECTRICAL SPECIFICATIONS FOR INSTALLATION DETAILS.
- .3 PROVIDE FT-6 FIRE RATED CABLE FOR CONTROL WIRING IN CONCEALED AREAS.

22. TESTING, ADJUSTING AND BALANCING (TAB):

- .1 GENERAL:
- .1 TAB MEANS TO TEST, ADJUST AND BALANCE TO PERFORM IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS AND TO DO ALL OTHER WORK AS SPECIFIED IN THIS SECTION.
- .2 QUALIFICATIONS:
- .1 NAMES OF ALL PERSONNEL IT IS PROPOSED TO PERFORM TAB TO BE SUBMITTED TO AND APPROVED OF TAB PERSONNEL BY ENGINEER WITHIN 14 DAYS OF AWARD OF CONTRACT.
- .2 PROVIDE DOCUMENTATION CONFIRMING QUALIFICATIONS, SUCCESSFUL EXPERIENCE.
- .3 THE FOLLOWING ARE ACCEPTABLE TAB CONTRACTORS:
- AERODYNAMICS & ASSOCIATES TESTING SERVICES LTD. (N.B.C.T.A., ASHRAE)
- BRASSARD ADJUSTMENTS & CALIBRATIONS INC.

- CAPITAL AIRFLOW LTD.
- EVENFLOW BALANCING
- KANATA AIR BALANCING & ENGINEERING (C.A.A.B.C.)
- MAXIMA TECHNICAL SERVICES INC.
- TAB INSPECTING

- .4 ADJUST AND REGULATE EQUIPMENT AND SYSTEMS SO AS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS AND TO ACHIEVE SPECIFIED INTERACTION WITH ALL OTHER RELATED SYSTEMS UNDER ALL NORMAL AND EMERGENCY LOADS AND OPERATING CONDITIONS.
- .5 BALANCE SYSTEMS AND EQUIPMENT TO REGULATE FLOW RATES TO MATCH LOAD REQUIREMENTS OVER FULL OPERATING RANGES.
- .6 SCHEDULE TIME REQUIRED FOR TAB (INCLUDING REPAIRS, RE-TESTING) INTO PROJECT CONSTRUCTION AND COMPLETION SCHEDULE SO AS TO ENSURE COMPLETION BEFORE ACCEPTANCE OF PROJECT.
- .7 DO TAB OF EACH SYSTEM INDEPENDENTLY AND SUBSEQUENTLY, WHERE INTERLOCKED WITH OTHER SYSTEMS, IN UNISON WITH THOSE SYSTEMS.
- .8 COORDINATE TAB WITH CONTROLS, MECHANICAL AND ELECTRICAL CONTRACTORS.
- .9 FOLLOW START-UP PROCEDURES AS RECOMMENDED BY MANUFACTURER.
- .10 ADJUST OR REPLACE SHEAVES AS REQUIRED TO MEET DESIGN PERFORMANCE. DO TAB OF COMPLETE MECHANICAL SYSTEMS OVER ENTIRE OPERATING RANGE IN ACCORDANCE WITH MOST STRINGENT CONDITIONS OF AABC (ASSOCIATED AIR BALANCE COUNCIL) & NABC (NATIONAL AIR BALANCE COUNCIL).

.2 PURPOSE:

- .1 TEST TO VERIFY PROPER AND SAFE OPERATION, DETERMINE ACTUAL POINT OF PERFORMANCE, EVALUATE QUALITATIVE AND QUANTITATIVE PERFORMANCE OF EQUIPMENT, SYSTEMS AND CONTROLS AT DESIGN, AVERAGE AND LOW LOADS USING ACTUAL OR SIMULATED LOADS.

.3 TOLERANCES:

- .1 DO TAB TO FOLLOWING TOLERANCES OF DESIGN VALUES:
- .1 HVAC SYSTEMS: PLUS OR MINUS 5%.
- .2 HYDRONIC SYSTEMS: PLUS OR MINUS 10%.

.4 TAB REPORT:

- .1 FORMAT TO BE IN ACCORDANCE WITH ASSOCIATED AIR BALANCING COUNCIL (AABC/CAABC).
- .2 THE UNIT OF MEASURE SHOULD BE CONSISTENT WITH THOSE ON TENDERED DRAWINGS AND BE IDENTIFIED TO QUANTITIES RECORDED.
- .3 TAB REPORT TO SHOW ALL RESULTS IN SI UNITS OR IMPERIAL (IP), TO MATCH DRAWINGS AND SPECIFICATIONS, AND TO INCLUDE:
- .1 PROJECT RECORD DRAWINGS.
- .2 SYSTEM SCHEMATICS.
- .3 SUBMIT 1 COPY OF TAB REPORT TO ENGINEER FOR VERIFICATION AND APPROVAL, IN ENGLISH.

.5 SYSTEMS:

- .1 AIR SYSTEMS: INCLUDE BOTH SPECIFIED AND MEASURED DATA.
- .1 AIR HANDLING EQUIPMENT:
- .1 MAXIMUM AIR FLOW VOLUME.
- .2 FAN TOTAL PRESSURE.
- .3 MOTOR VOLTS, AMPS AND POWER.
- .4 MINIMUM OUTSIDE AIR VOLUME.
- .5 FAN ROTATIONAL SPEED.
- .6 FAN POWER, CALCULATE FAN EFFICIENCY.
- .7 INLET AND OUTLET DRY BULB, WET BULB AND DEWPOINT TEMPERATURES.
- .8 EQUIPMENT STATIC PRESSURE PROFILE.
- .2 DUCT AIR QUANTITIES – MAINS AND BRANCHES:
- .1 DUCT SIZE.
- .2 NUMBER OF PRESSURE/VELOCITY READINGS PER TRAVERSE.
- .3 SUM OF VELOCITY MEASUREMENTS.
- .4 AVERAGE VELOCITY.
- .5 DUCT AIR FLOW VOLUME.
- .3 WAREHOUSE AIR INTAKE LOUVER:
- .1 AIR BALANCER TO ADJUST PERCENTAGE OPENING TO ENSURE LOW SPEED OPERATION OF EF2 WITHOUT OBSTRUCTION.
- .6 VERIFICATION:
- .1 ALL REPORTED RESULTS SUBJECT TO VERIFICATION BY ENGINEER.
- .2 NUMBER AND LOCATION OF VERIFIED RESULTS TO BE AT DISCRETION OF ENGINEER.
- .3 BEAR COSTS TO REPEAT TAB AS REQUIRED TO SATISFACTION OF ENGINEER.
- .4 PRODUCE "AS-BUILT" FULL SYSTEM SCHEMATICS. USE AS-BUILT DRAWINGS FOR REFERENCE.
- .5 TAB TO BE CONSIDERED COMPLETE ONLY WHEN FINAL TAB REPORT RECEIVED AND APPROVED BY ENGINEER.

23. COMMISSIONING:

- .1 GENERAL:
- .1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FUNCTIONAL PERFORMANCE TESTS. THESE TESTS ENSURE THAT ALL EQUIPMENT AND SYSTEMS OPERATE IN ACCORDANCE WITH DESIGN INTENT. THE TESTS ARE DYNAMIC TESTS, AND TEST THE SYSTEMS THROUGH ALL POSSIBLE MODES OF OPERATION.
- .2 IN THE FUNCTIONAL PERFORMANCE TESTS, ALL HVAC MECHANICAL SYSTEMS (INCLUDING CONTROL SYSTEMS) AND ELECTRICAL SYSTEMS SHALL BE CHECKED FOR THE FOLLOWING:
- .1 VERIFY THAT EACH SYSTEM AND SUB-SYSTEM IS OPERATING.
- .2 COMPLES WITH CONTRACT SPECIFICATIONS AND THE DESIGN INTENT DOCUMENT THROUGH THE ENTIRE RANGE OF OPERATING CONDITIONS.
- .3 RE-TESTING OF CORRECTED ITEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- .4 DEFICIENCIES IN SYSTEM, SUB-SYSTEM, OR ELEMENT PERFORMANCE WILL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER. DEFICIENCIES WILL BE RESOLVED ON A CASE-BY-CASE BASIS.
- .2 FUNCTIONAL PERFORMANCE TEST:
- .1 THE CONTRACTOR SHALL PERFORM FUNCTIONAL PERFORMANCE TESTING. THE CONTRACTOR SHALL MAINTAIN AN EQUIPMENT AND SYSTEM CHECKLIST TO TRACK PROGRESS SO IT CAN BE USED TO SCHEDULE START-UPS AND TESTING.
- .1 EQUIPMENT CHECKLIST & SYSTEM CHECKLIST:
- .1 CONTROLS AUTOMATION.
- .2 VAV DIFFUSERS/BASEBOARD HEATER CONTROLS.
- .3 DEFICIENCY RESOLUTION FOR SYSTEM COMMISSIONING:
- .1 IF ACCEPTABLE PERFORMANCE CANNOT BE ACHIEVED, THEN THE NECESSARY CORRECTIVE MEASURES SHALL BE CARRIED OUT. THE ENGINEER AND/OR CONTRACTOR WILL ISSUE APPROPRIATE DIRECTIONS IN THIS REGARD.
- .2 THE ALLOCATION OF COST OF DEFICIENCY RESOLUTION SHALL BE DETERMINED BY THE CONSTRUCTION MANAGER AND ENGINEER, ON A CASE-BY-CASE BASIS.

Client

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2021-10-01	ISSUED FOR 66% COSTING	--
2021-08-27	ISSUED FOR 66% REVIEW	--
2021-06-18	ISSUED FOR 33% REVIEW	--
DATE	REVISION	REF

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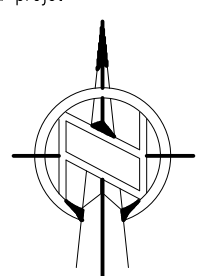


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Project/Projet Nord du projet	Seal/Sceau
	

Project/Projet	Project no./No. du projet
WOODVALE PENTECOSTAL CHURCH RENOVATION	2021-284
Drawing/Title du dessin	Drawing/Dessin
SPECIFICATIONS	
Scale Échelle	AS NOTED
Design by Conçu par	U.UKEJE
Drawn by Dessiné par	U.UKEJE
Reviewed by Examiné par	P.CHAN
Date November 21	Revision no: 0
	Acad file/Fichier: 2\2021\2021-284\WEDM

M2

OF 21

ROOFTOP UNIT SCHEDULE																														
TAG	LOCATION	AREA SERVED	SUPPLY FAN DATA (VSD)					GAS HEATING SECTION					DIMENSIONS & WEIGHT				DX COOLING COIL DATA				ELECTRICAL DATA		SOUND POWER LEVEL (dB)						MANUFACTURER & MODEL	REMARKS
			FAN TYPE	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (in WG)	POWER INPUT (kW)	MOTOR HP	MAX INPUT (MBH)	MAX OUTPUT (MBH)	E.A.T. (°F)	L.A.T. (°F)	STAGES	L	W	H	WEIGHT (lb)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	E.A.T. (DB/°WB) (°F)	L.A.T. (DB/°WB) (°F)	V/PH/Hz	MCA/MOP	OCTAVE BAND	125	250	500	1000	2000		
RTU-1	Ph-1: ROOF	Ph-1: RM 304/305		505	0.75				28.9	38.9	92.7					5.5	5.5	75.6 / 66.8	65.4 / 63.4	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. CAV.	
RTU-2	Ph-1: ROOF	Ph-1: GYMNASORIUM	CENTRIFUGAL	5250					285	-7.2	77.5		97	107	56	1763	152	100	84.8 / 69.6	55 / 53.8	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. CAV.
RTU-3	Ph-2: ROOF	Ph-2: RM: 108,119,109,203,204,205, 202,201	CENTRIFUGAL	3971	0.8				145	49.3	85.3		87	85	41	1600	102	81	78.8 / 65.3	55.8 / 54.6	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. VVT SWITCH OVER CONTROL SYSTEM.
RTU-4	Ph-2: ROOF	Ph-2: RM107	CENTRIFUGAL	3,592	1.2				165	40.9	83.8		87	85	41	1600	125	88	79.8 / 67	56.8 / 55.7	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. VVT SWITCH OVER CONTROL SYSTEM.
RTU-5	Ph-2: ROOF	Ph-2: RM102, 115, 213, 103, MULTI PURP. RM2		12,100	1.3				660	32.2	80.6		245	97.5	72.88		500	305	80.9 / 67.6	55.1 / 54	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. VVT SWITCH OVER CONTROL SYSTEM.
RTU-6	Ph-2: ROOF	Ph-2: LEVEL 2 OFFICE AREAS	CENTRIFUGAL	5,579	0.8				225.6	47.1	87		87	85	41	1600	136	105	78.6 / 65.2	55.6 / 54.5	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. VVT SWITCH OVER CONTROL SYSTEM.
RTU-7	Ph-2: ROOF	Ph-2: KITCHEN	CENTRIFUGAL	5,579	0.8				225.6	47.1	87		87	85	41	1600	136	105	78.6 / 65.2	55.6 / 54.5	230/3/60									C/W HOT GAS BY-PASS. 24" SEISMIC CURB. VVT SWITCH OVER CONTROL SYSTEM.
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. 2. ALL CONTROLS TO BE BY DIV. 25.																														

FAN SCHEDULE													
TAG	LOCATION	FUNCTION	FAN DATA						ELECTRIC DATA			BASIS OF DESIGN	REMARKS
			TYPE	DRIVE (BELT/DIRECT)	AIR FLOW (CFM)	ESP (IN WG)	MAX FAN SPEED (RPM)	SONES	MOTOR HP	MAX BHP (W)	V/PH/Hz		
EF1	WASHROOM	W/R EXHAUST	INLINE	DIRECT	88	--	--	--	--	0.04hp	115/1/60	COOK GC148 -- GEMINI	
EF2	Ph2-ROOF	Ph2 -- KITCHEN-RM117	UPBLAST	DIRECT	500	--	--	--	--	0.04hp	115/1/60		
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. 2. DISCONNECT SWITCH BY DIV. 26. 3. SPEED SWITCHES SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR, LOW VOLTAGE WIRING TO BE CONDUIT AND BY MECHANICAL. 4. MANUFACTURER NAME & MODEL NUMBER REPRESENT ACCEPTABLE QUALITY STANDARD ONLY.													

FORCE FLOW UNIT SCHEDULE										
TAG	LOCATION	ARRANGEMENT	AIR FLOW (CFM)	CAPACITY (MBH)	LAT (°C)	DIMENSIONS (mmL x mmH x mmD)	ELECTRICAL DATA		BASIS OF DESIGN	REMARKS
							MOTOR SIZE (HP)	V/PH/Hz		
FF1	AS INDICATED	CEILING FORCED-AIR DIFFUSER	310	10.25	—	—	—	208/1/60	REZNOR: ECR/ECS	COORDINATE FINISH WITH ARCHITECT
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. [2. DESIGN BASED ON 35% PROPYLENE GLYCOL.]										

GRILLE AND DIFFUSER SCHEDULE						
UNIT NO.	TYPE	MODULE (IN)	INLET (IN)	MOUNT	BASIS OF DESIGN	REMARKS
SD1	SQUARE PLAQUE DIFFUSER	24X24	12	CEILING	EH PRICE	FINISH: COORDINATE WITH ARCHITECT
RC1	RETURN AIR GRILLE	24X24	AS INDICATED	WALL	EH PRICE \$10	FINISH: COORDINATE WITH ARCHITECT
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. 2. MANUFACTURER NAME & MODEL NUMBER REPRESENT ACCEPTABLE QUALITY STANDARD ONLY.						

ELECTRIC INSTANTANEOUS WATER HEATER SCHEDULE								
TAG	LOCATION	INPUT (kW)	TEMPERATURE RISE (°C) @ 0.5GPM	ELECTRICAL DATA		BASIS OF DESIGN	DIMENSIONS HxWxD (in)	REMARKS
				AMPS	V/PH/Hz			
IWH	WASHROOM, BREAKROOM & KITCHEN	7.3	37	33	220/1/60	(1x40)A	RHEEM RTEX-08	12½"x8½"x3½"
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. 2. MANUFACTURER NAME & MODEL NUMBER REPRESENT ACCEPTABLE QUALITY STANDARD ONLY. 3. ALTERNATIVE MATERIALS MAY BE APPROVED AFTER REVIEW OF TECHNICAL INFORMATION BY ENGINEER.								

BACKFLOW PREVENTER SCHEDULE					
TAG	LOCATION	FUNCTION	CONNECTION SIZE (mm)	BASIS OF DESIGN	REMARKS
BFP1	BASEMENT WATER ENTRY	DCW PREMISES ISOLATION	75#	WATTS 957	C/W NRS GATE VALVE AND STRAINER
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.					

EXPANSION TANK SCHEDULE											
TAG	LOCATION	FUNCTION	TYPE (DIAPHRAGM/ BLADDER)	OPERATING PRESSURE		MAX RATED OPERATING TEMP (°C)	TANK VOLUME (L)	ACCEPTANCE VOLUME (L)	ORIENTATION (HORIZONTAL/ VERTICAL)	BASIS OF DESIGN	REMARKS
				MIN (kPa)	MAX (kPa)						
ET1	BASEMENT WATER ENTRY	DOMESTIC WATER LOOP	DIAPHRAGM	296	552	93	33	12	VERTICAL STAND	AMTROL THERM-X-TROL ST-20VC-DD	ASME CERTIFIED C/W FLOOR MOUNTED SEISMIC RESTRAINTS
NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS. 2. PRE-CHARGE PRESSURE TO BE EQUIVALENT TO MINIMUM OPERATING PRESSURE.											

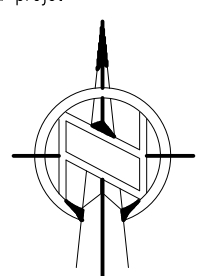
GAS CONSUMPTION		
EQUIPMENT	QTY	INPUT (BTU/hr)
RTU	5	1,100,000

PLUMBING FIXTURES													
PRODUCT TAG NUMBER	DOMESTIC COLD WATER (in)	DOMESTIC HOT WATER (in)	SANITARY (in)	FIXTURE TYPE	LOCATION	MANUFACTURER	MODEL	COLOUR	TRIM	MANUFACTURER/ MODEL	ACCESSORIES	NOTES	
WC1	½	—	3	FLOOR MOUNT WATER CLOSET GRAVITY TANK	OFFICE WASHROOM	AMERICAN STANDARD	2621.101	WHITE	—	—	ELONGATED CLOSED FRONT, COVER	CADET CONCEALED TRAPWAY RIGHT HEIGHT ELONGATED COMPLETE TOILET	
WC2	½	—	3	FLOOR MOUNT WATER CLOSET GRAVITY TANK BARRIER FREE	UNIVERSAL WASHROOM	AMERICAN STANDARD	2621.101	WHITE	—	—	ELONGATED OPEN FRONT, NO SEAT	CADET CONCEALED TRAPWAY RIGHT HEIGHT ELONGATED COMPLETE TOILET	
LAV1	½	½	1¼	WALL MOUNT LAVATORY BARRIER FREE	SUITE WASHROOM	AMERICAN STANDARD	DECLYN 0321.026.020	WHITE	FAUCET: AMERICAN STANDARD 7075.054	—	BRASS OFF-SET TRAP W/CLEAN-OUT, BRASS QUARTER TURN STOPS, CHECK STOPS, ESCUTCHEON PLATES	—	
LAV2	½	½	1¼	WALL MOUNT LAVATORY	TENANT WASHROOM/ COMMON AREAS	AMERICAN STANDARD	68300.02	WHITE	FAUCET: MOEN VICHY 6710	—	BRASS OFF-SET TRAP W/CLEAN-OUT, BRASS QUARTER TURN STOPS, CHECK STOPS, ESCUTCHEON PLATES	—	
S1	½	½	1½	UNDERMOUNT	AS INDICATED	KOHLER	K-3894-NA	STAINLESS STEEL	FAUCET: MOEN ALIGN 7565	—	C/W WITH PULL DOWN KITCHEN FAUCET. BRASS TAILPIECE, PVC P-TRAP W/ CLEAN-OUT, INLINE CHECK STOPS, BRASS QUARTER TURN STOPS	—	
S2	½	½	1½	UNDERMOUNT	Ph2-RM219	KINDRED	KSS4UA-90	STAINLESS STEEL	FAUCET: MOEN ALIGN 7565	—	C/W WITH PULL DOWN KITCHEN FAUCET. BRASS TAILPIECE, PVC P-TRAP W/ CLEAN-OUT, INLINE CHECK STOPS, BRASS QUARTER TURN STOPS	—	
S3	½	½	1½	UNDERMOUNT	AS INDICATED	KINDRED	KSS5UA-90	STAINLESS STEEL	FAUCET: MOEN ALIGN 7565	—	C/W WITH PULL DOWN KITCHEN FAUCET. BRASS TAILPIECE, PVC P-TRAP W/ CLEAN-OUT, INLINE CHECK STOPS, BRASS QUARTER TURN STOPS	—	
S4	½	½	1½	UNDERMOUNT-DOUBLE BOWL	AS INDICATED	KINDRED	KSD1UA-90	STAINLESS STEEL	FAUCET: MOEN ALIGN 7565	—	C/W WITH PULL DOWN KITCHEN FAUCET. BRASS TAILPIECE, PVC P-TRAP W/ CLEAN-OUT, INLINE CHECK STOPS, BRASS QUARTER TURN STOPS	—	
S5	½	½	1½	UNDERMOUNT-TRIPLE BOWL	Ph2-RM117	KINDRED	BROOKMORE: BTU1841-9	STAINLESS STEEL	FAUCET: MOEN ALIGN 7565	—	C/W WITH PULL DOWN KITCHEN FAUCET. BRASS TAILPIECE, PVC P-TRAP W/ CLEAN-OUT, INLINE CHECK STOPS, BRASS QUARTER TURN STOPS	—	
MS	½	½	3	MOLDED STONE MOP SERVICE BASIN	AS INDICATED	FIAT	MSB-2424		MOP BRACKET 889 CC, VINYL BUMPER E-77 SS WALL GUARD, HOSE AND BRACKET 832 AA & 830-AA FAUCET	—	PROVIDE BFP FOR HOPE BIBB FOR SOAP SUPPLY 138 DCW CONNECTION		
SH1	½	½	3	SHOWER BASIN	AS INDICATED	AMERICAN STANDARD	A80090-FCO		FAUCET: AMERICAN STANDARD 1660.731 MIXING VALVE: R10000-UNWS & R10700-UNWS	—			
SHD	½	½	3	SHOWER HEAD & FAUCET	AS INDICATED	AMERICAN STANDARD	1660.731		MIXING VALVE: R10000-UNWS & R10700-UNWS	—			
NOTES: 1. COORDINATE EXACT PIPING LOCATIONS ON SITE. 2. VENT TO MEET OBC REQUIREMENTS, VENTING THROUGH SLOPED ROOFS NOT PERMITTED. 3. ALL SINKS IDENTIFIED AS BUILT-IN. BASINS BY GENERAL TRADES. ALL OTHER ASSOCIATED ACCESSORIES AND TRIM BY MECHANICAL. ALL PIPEWORK TO BE INSTALLED NEATLY AND COORDINATED WITH ALL OTHER TRADES. 4. MANUFACTURER NAME & MODEL NUMBER REPRESENT ACCEPTABLE QUALITY STANDARD ONLY. 5. MINIMUM UNDERGROUND SANITARY PIPING SIZE TO BE 75#.													

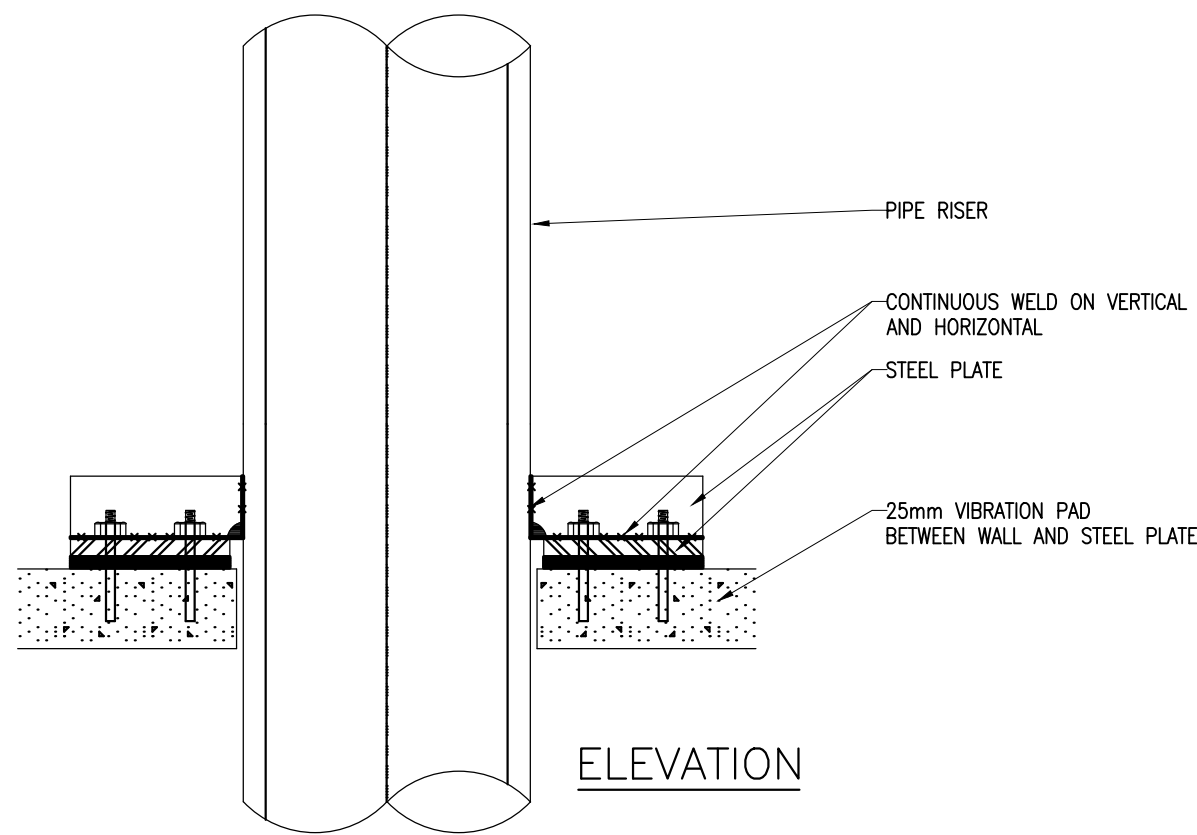
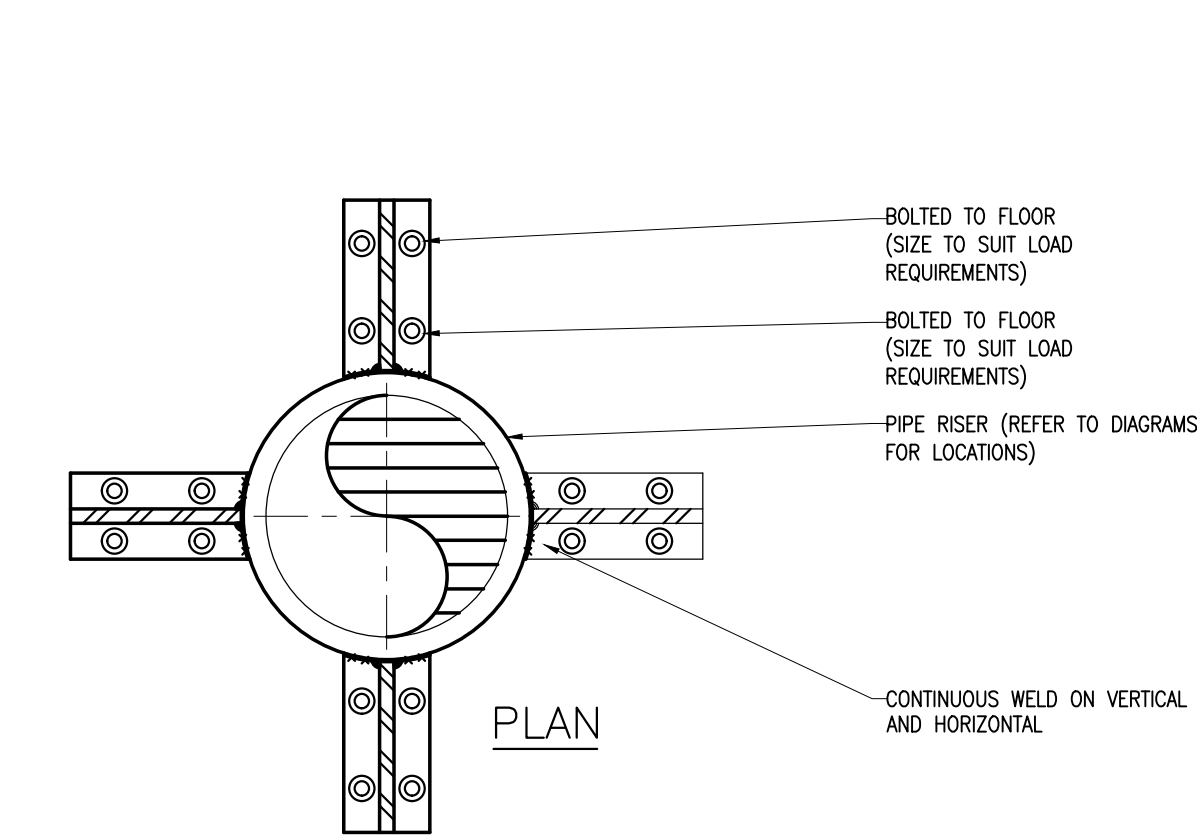
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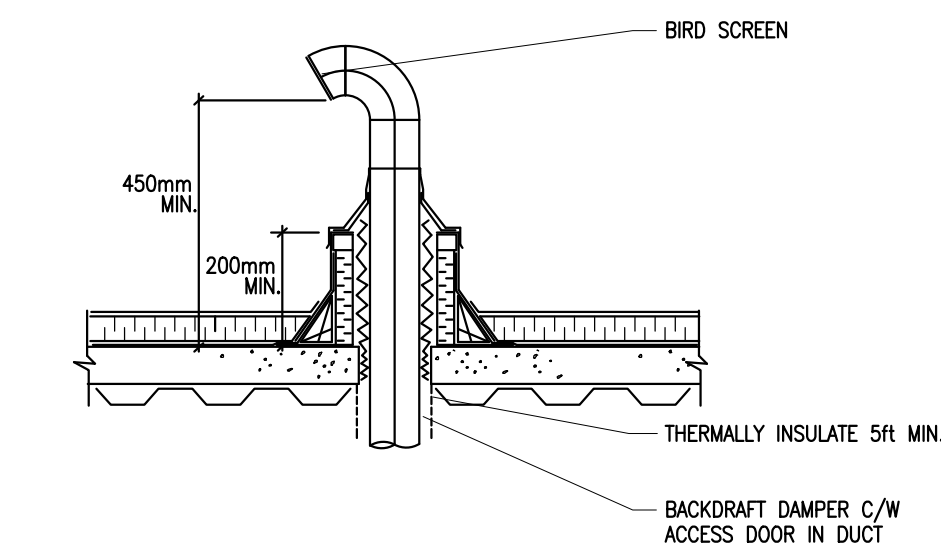
Project/north Nord du projet	Seal/Sceau
	

Project/Projet WOODVALE PENTECOSTAL CHURCH RENOVATION	
Drawing title/Titre du dessin SCHEDULES	
Scale Échelle	AS NOTED 2021-284
Design by Conçu par	U.UKEJE
Drawn by Dessiné par	U.UKEJE
Reviewed by Examiné par	P.CHAN
Date Date	November 21
Revision no: Acad file/Fichier:	0 Z:\2021\2021-284\MECH
Project no./No. du projet 2021-284	
Drawing/Dessin	
M3	
OF 21	



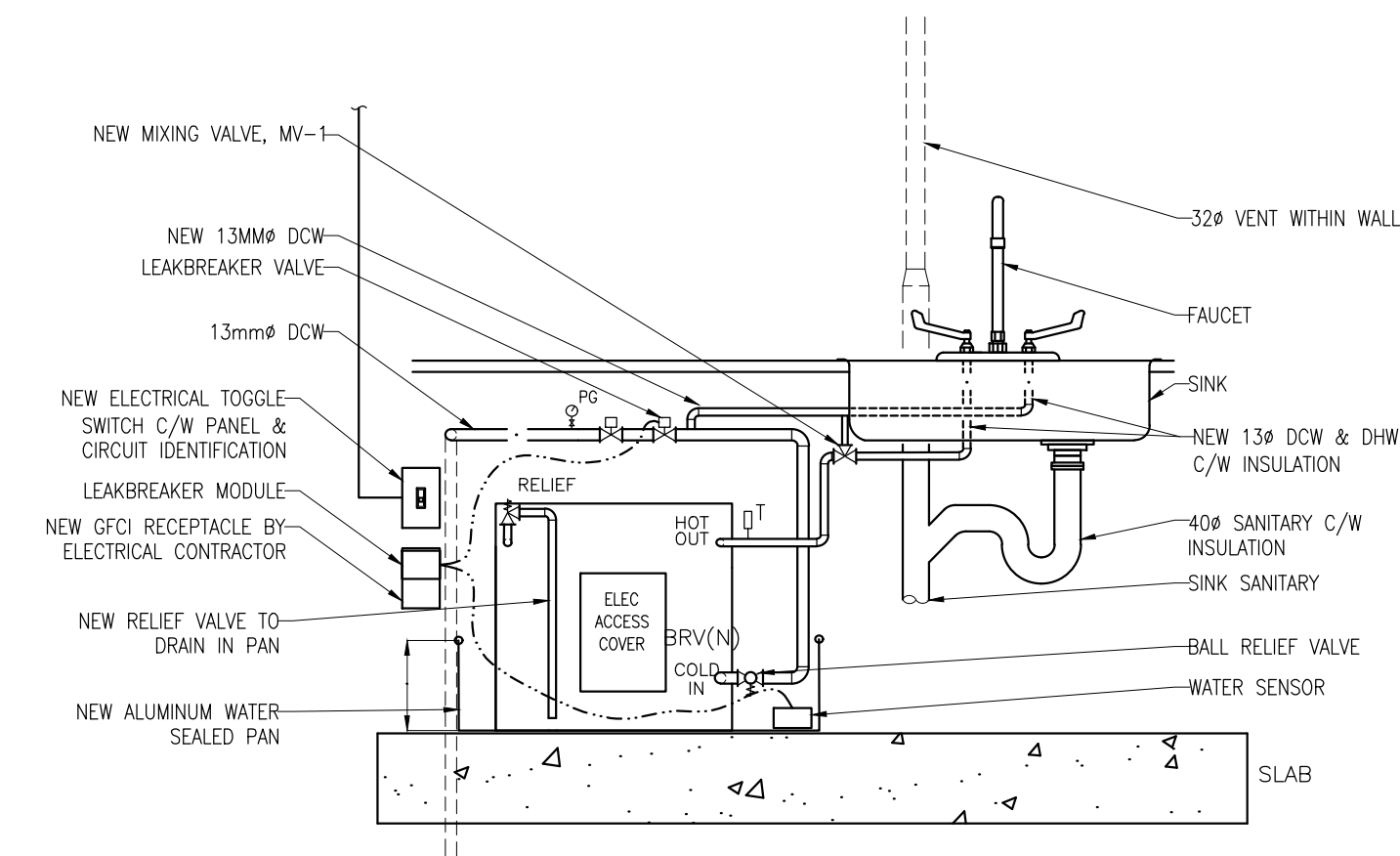
1
M4
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FLOOR MOUNTED
PIPE ANCHOR DETAIL



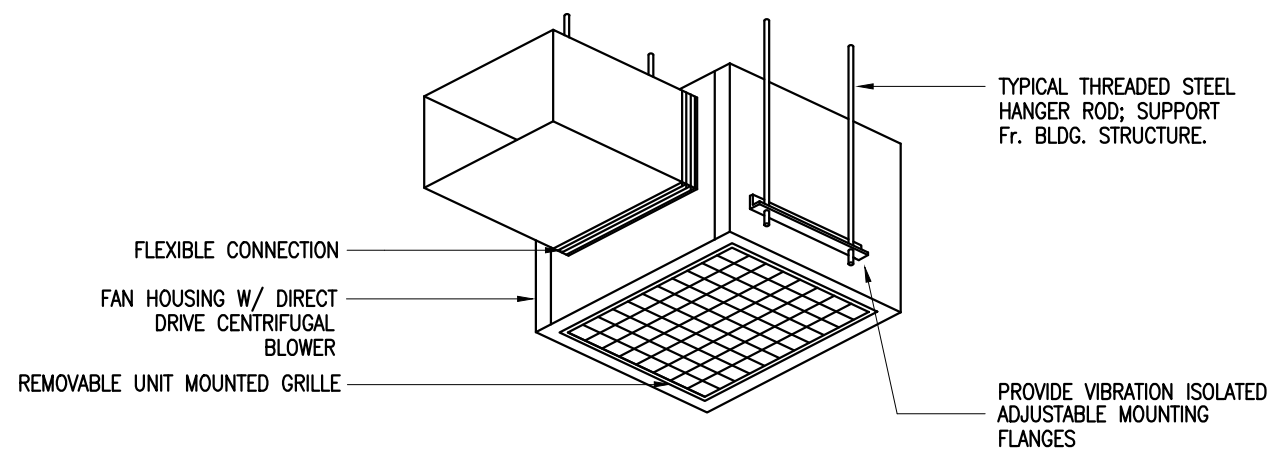
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TYPICAL EXHAUST GOOSENECK DETAIL



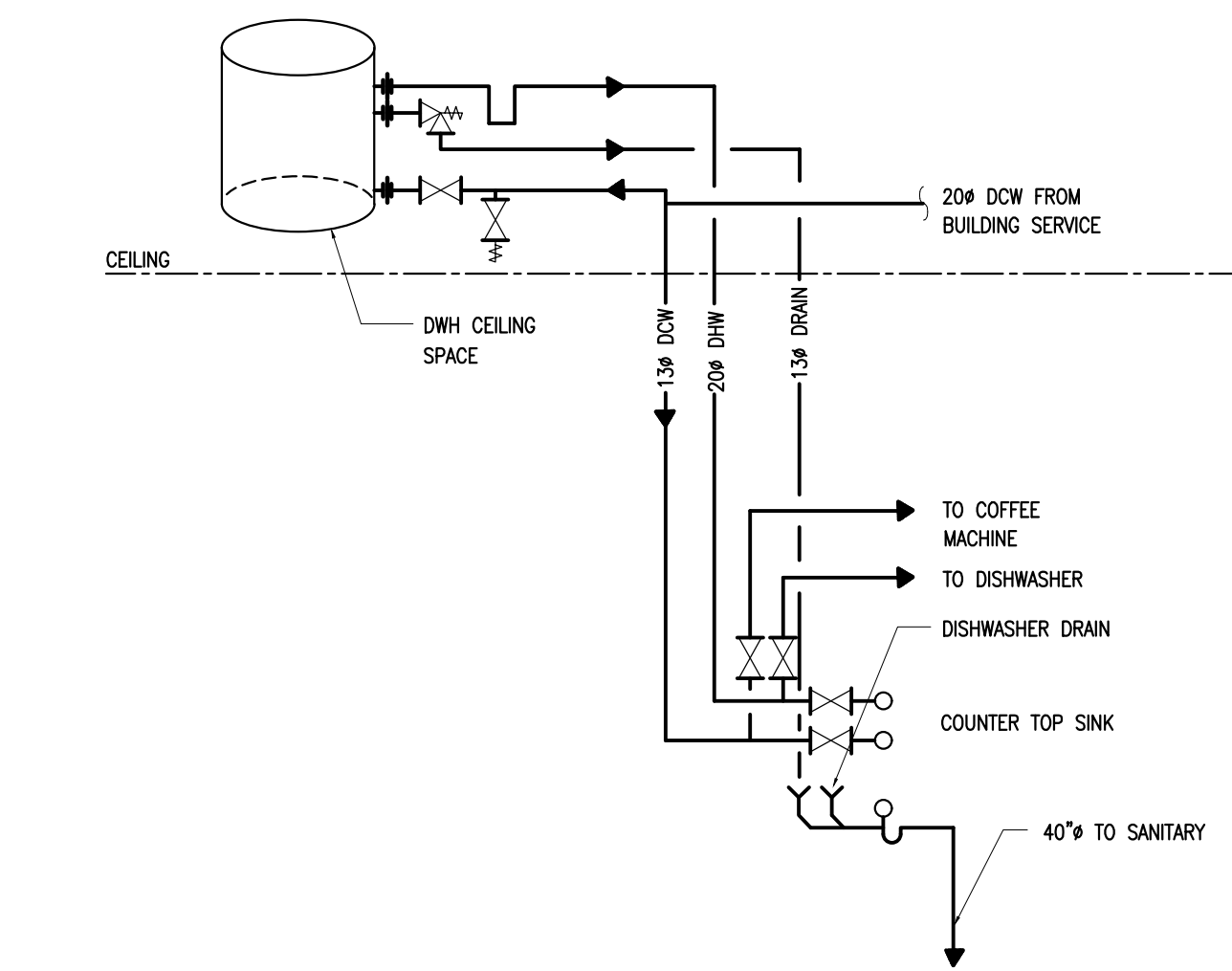
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TYPICAL DOMESTIC HOT WATER TANK DETAIL



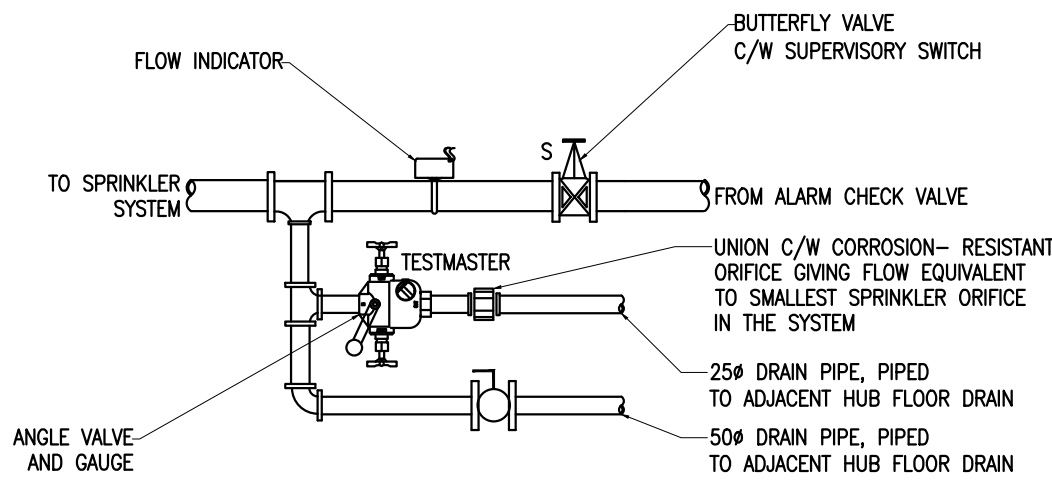
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M4
N.T.S.

TYPICAL WASHROOM EXHAUST FAN
INSTALLATION DETAIL



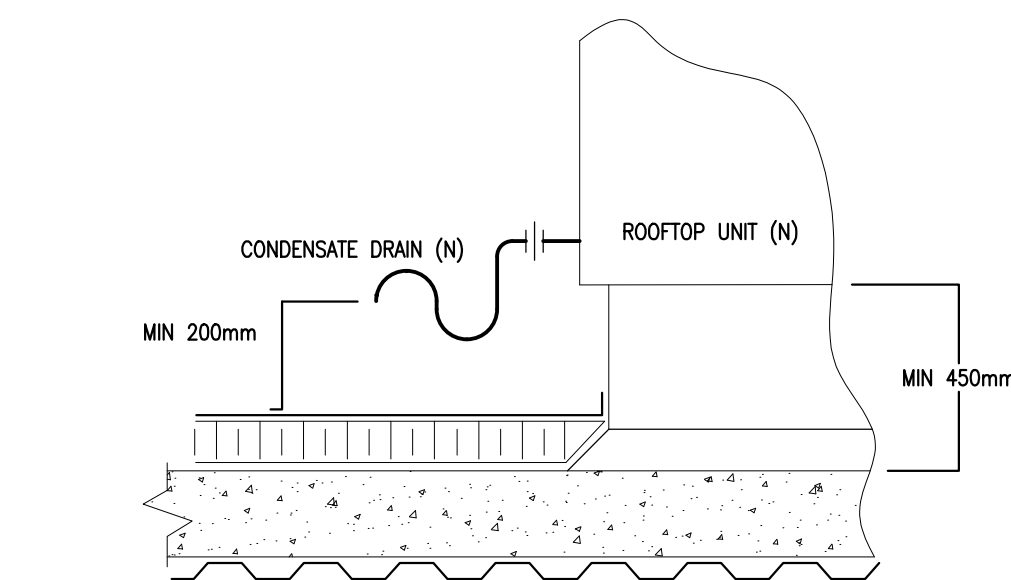
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TYPICAL DOMESTIC HOT WATER TANK DETAIL



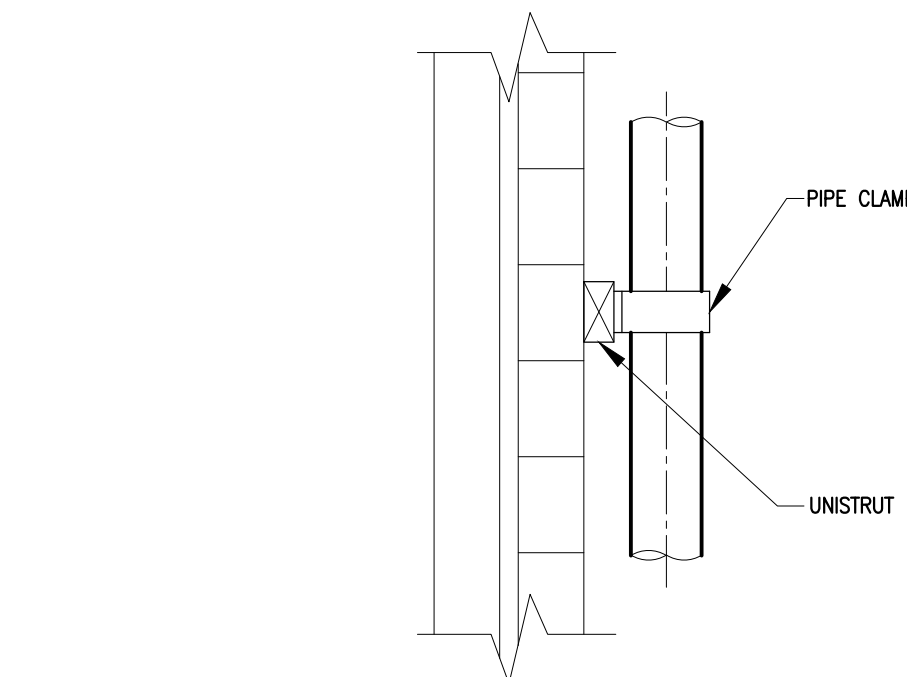
3
M4
N.T.S.

FIRE PROTECTION
INSPECTORS TEST STATION DETAIL



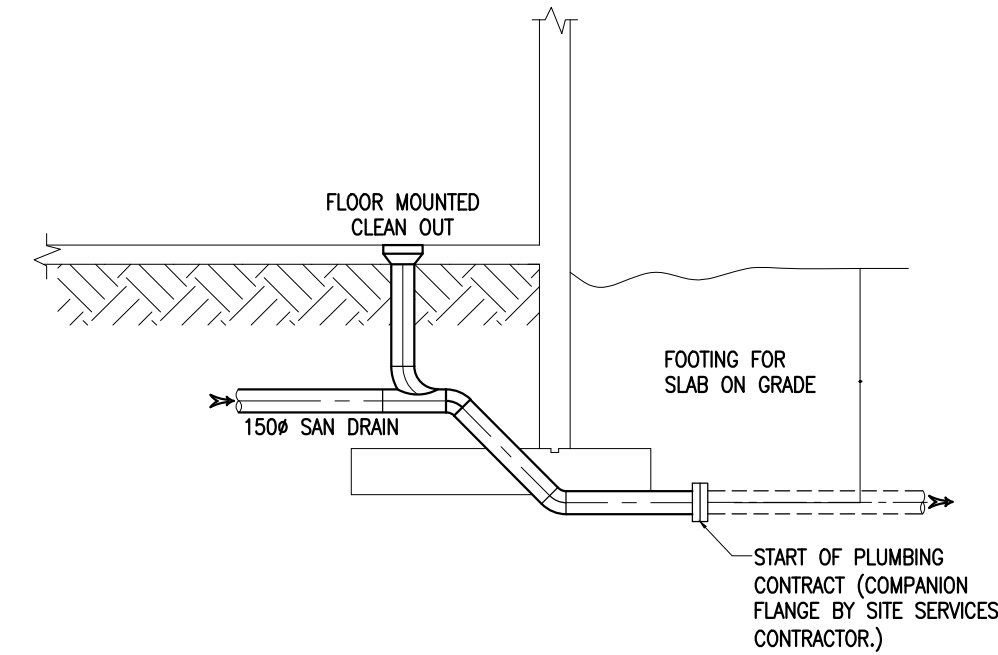
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N.T.S.

TYPICAL ROOFTOP UNIT
CONDENSATE DRAIN DETAIL



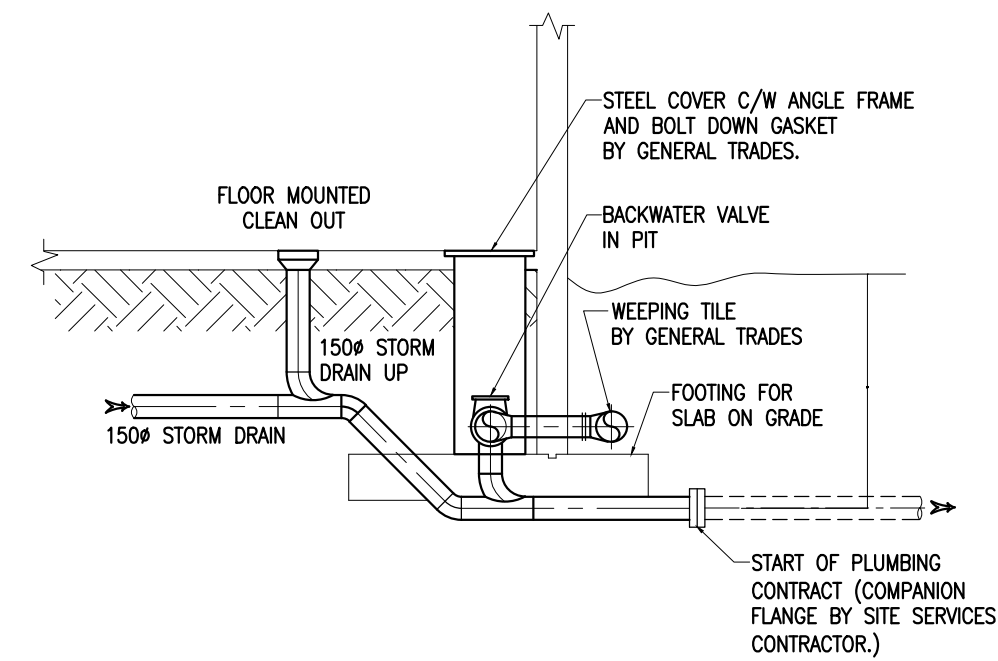
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VERTICAL PIPE CLAMP DETAIL



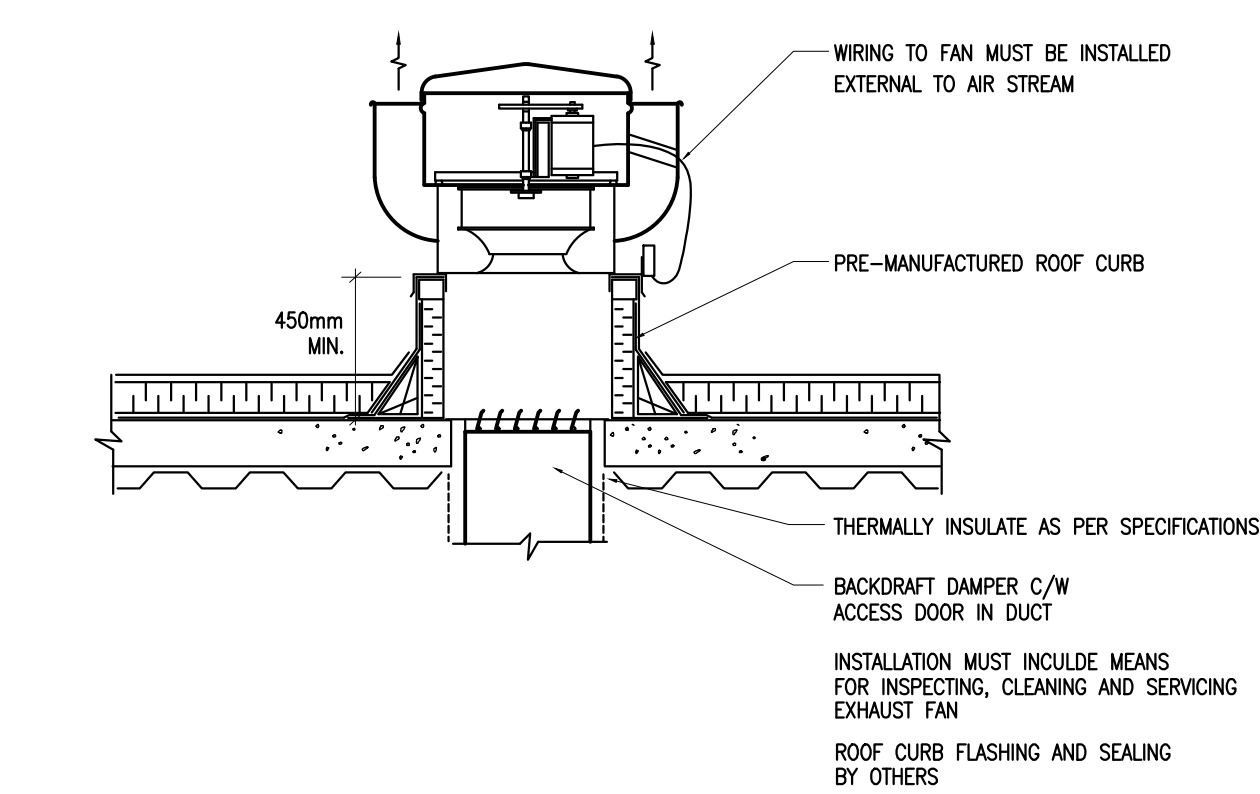
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N.T.S.

MAIN SANITARY DRAIN DETAIL



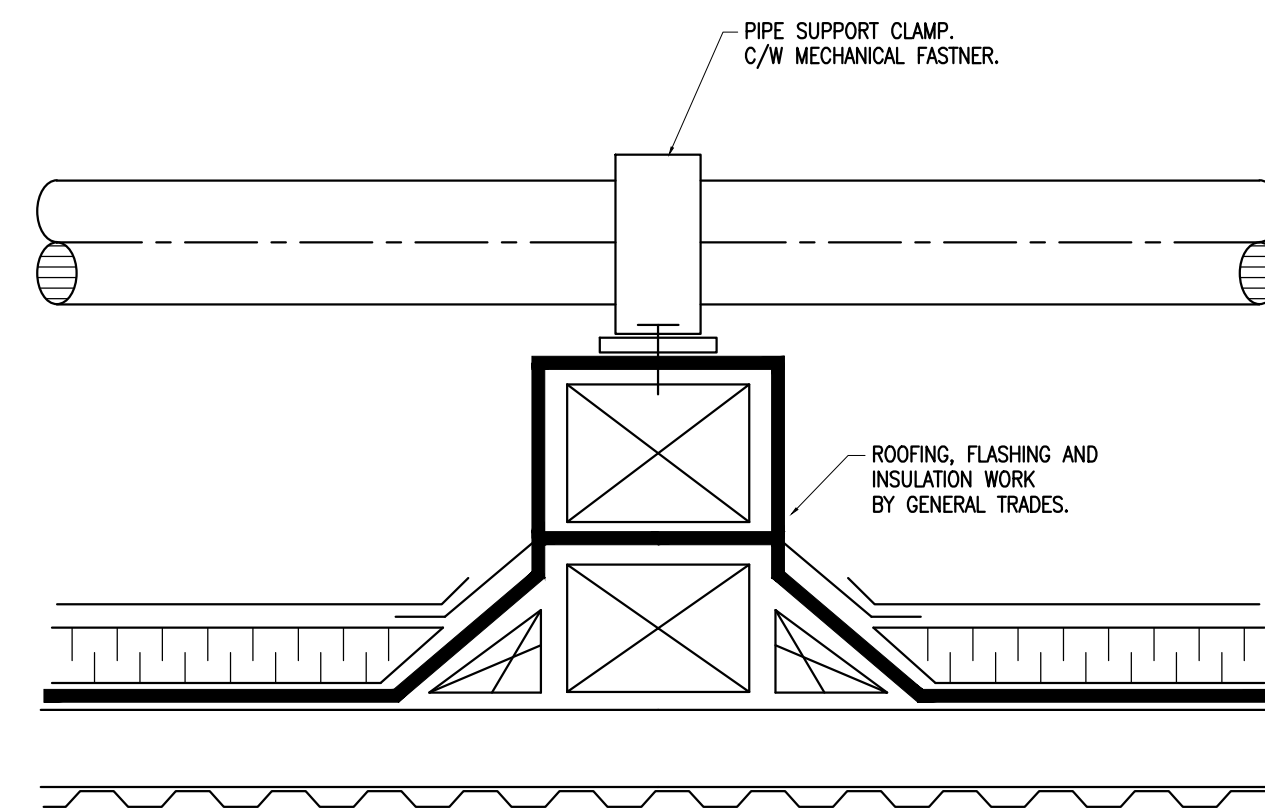
7
M4
N.T.S.

MAIN STORM DRAIN DETAIL



11
M4
N.T.S.

TYPICAL UPBLAST EXHAUST FAN DETAIL



12
M4
N.T.S.

ROOF PIPE SUPPORT DETAIL

Client

2021-11-12	ISSUED FOR 70% REVIEW	-
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Project/north
Nord du projet

Seal/Scéau

Project/Projet

**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing title/Titre du dessin

DETAILS

Scale
Échelle

AS NOTED
2021-284

Project no./No. du projet

Design by
Conçu par

U.UKEJE

Drawn by
Dessiné par

U.UKEJE

Reviewed by
Examiné par

P.CHAN

Date

November 21

Revision no:

0

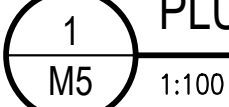
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M4

OF

21



1:100

Date Date Design by Drawn by Checked by Reviewed by Examined by	AS NOTED U.UKEJE U.UKEJE P.CHAN	Project no./No. du projet 2021-284 Drawing/Dessin M5 OF 21
Date Date November 21	Revision no: 0	Acad file/Fichier: Z:\2021\2021-284\ME5

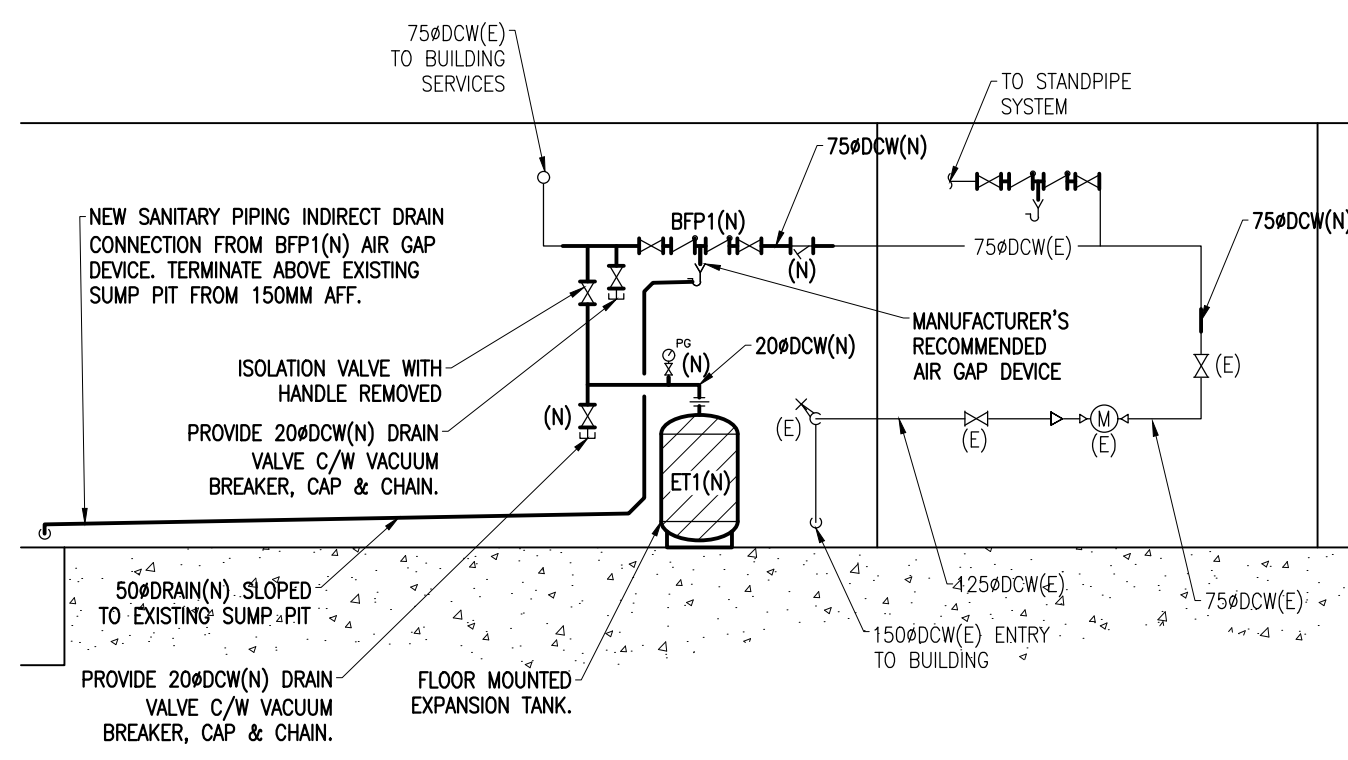
OF 21



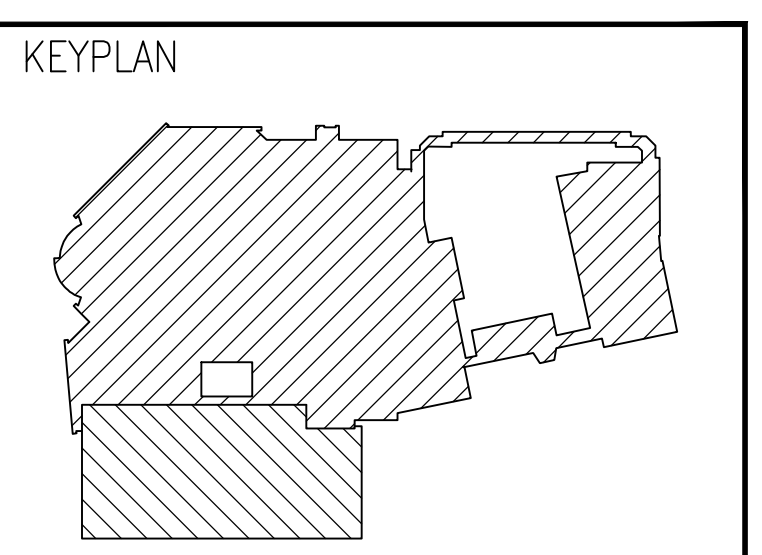
1
M6
1:100
LEVEL 1
FIRE PROTECTION & PLUMBING - NEW WORK

- FIRE & PLUMBING: NEW WORK**
- 1 PROVIDE NEW SPRINKLERS AND RELOCATE EXISTING SPRINKLERS C/W ASSOCIATE BRANCH PIPING AS INDICATED.
 - 2 PROVIDE NEW FHC AS INDICATED.
 - 3 PROVIDE FIRE STOP AT EXISTING PIPES PASSING THROUGH FLOOR AND CEILING SLAB AS REQUIRED. PATCH ALL UN-USED SLAB CORES AS REQUIRED.
 - 4 PROVIDE NEW FIXTURES C/W ALL ASSOCIATED ACCESSORIES AND PLUMBING SERVICES AS INDICATED. CONNECT ALL NEW SANITARY DRAINS TO VENT.

- WATER ENTRY ROOM NEW WORK**
- 1 PROVIDE NEW RP BACKFLOW PREVENTER (BFP) FOR DOMESTIC COLD WATER (DCW) PREMISES ISOLATION C/W ASSOCIATED DCW PIPING, ISOLATION VALVES, STRAINER, VALVES & FITTINGS, AS INDICATED ON DRAWING 1/M6. STRAINERS SHALL BE INSTALLED IN HORIZONTAL ORIENTATION WITH LEG FACING DOWNWARDS. PROVIDE NEW DRAIN VALVE C/W VACUUM BREAKER, CAP & CHAIN, AS INDICATED.
 - 2 PROVIDE NEW SLOPED DRAIN PIPING FROM BACKFLOW PREVENTER RELIEF PORT C/W MANUFACTURER'S AIR GAP FITTING) TO EXISTING SUMP PIT. DRAIN PIPING SHALL MATCH SIZE OF AIR GAP FITTING.
 - 3 CONTRACTOR SHALL ALLOW FOR DRAINING AND FILLING OF DOMESTIC WATER SYSTEMS AS REQUIRED TO COMPLETE WORK.
 - 4 TEST BACKFLOW PREVENTER IN ACCORDANCE WITH CSA-B64.10.1 AND PROVIDE TEST REPORTS TO ENGINEER.
 - 5 PROVIDE NEW EXPANSION TANK ET1 C/W ASSOCIATED THERMALLY INSULATED DOMESTIC COLD WATER (DCW) PIPING, ISOLATION VALVE, AND ACCESSORIES, AS INDICATED ON DRAWING 2/M6. EXPANSION TANK SHALL BE BOLTED TO SLAB THROUGH MANUFACTURER'S SEISMIC RESTRAINTS VIA 3/8" DIAMETER CARBON STEEL WEDGE ANCHORS WITH MINIMUM 2" EFFECTIVE EMBEDMENT, EQUAL TO HILTI KWIK BOLT TZ. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EXPANSION TANK SHALL BE FIELD CHARGED TO MINIMUM OPERATING SYSTEM PRESSURE, AND TAGGED WITH CHARGED PRESSURE FOR VISUAL INSPECTION BY ENGINEER ON SITE. REFER TO EXPANSION TANK DETAIL 1/M6. DCW PIPE THERMAL INSULATION SHALL MATCH EXISTING.



2
M6
1:100
WATER ENTRY ROOM
BACKFLOW PREVENTER NEW WORK



DATE	REVISION	REF
2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-

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Project/Projet
Nord du projet

Seal/Scellu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing title/Titre du dessin
**Ph-1 - GROUND FLOOR - FIRE
PROTECTION AND PLUMBING -
NEW WORK**

Scale
Échelle
AS NOTED
2021-284

Design by
Conçu par
U.UKEJE

Drawn by
Dessiné par
U.UKEJE

Reviewed by
Examiné par
P.CHAN

Date
November 21

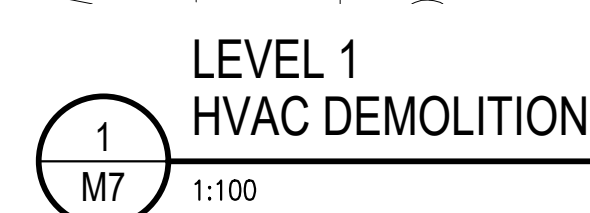
Project no./No. du projet
2021-284

Drawing/Desin
M6

OF
21

Revision no:
0

Acad file/Fichier:
2/2021/2021-284/WEED



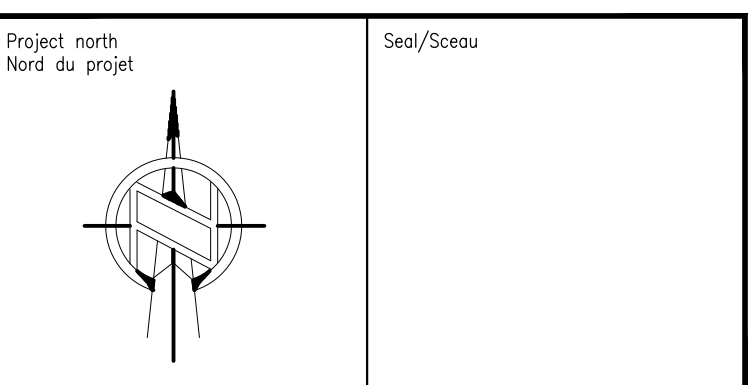
1 REMOVE EXISTING DIFFUSERS & GRILLES C/W BRANCH DUCTWORK AS INDICATED.

2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-
DATE	REVISION	REF

L'INGÉNIEUR DÉCLINE TOUTE RESPONSABILITÉ DÉCOULANT DE PROBLÈMES FAISANT SUITE AU NON RESPECT DES PLANS, DEVIS, ET DE L'INTENTION DU CONCEPTE QU'ILS ÉLABORE, OU DE TOUTS LES PROBLÈMES POUVANT RÉSULTER DU DÉFAUT D'OBTENIR ET / OU DE SUIVRE LES CONSEILS DE L'INGÉNIEUR EN CE QUI CONCERNE LES ERREURS, OMISSIONS, INCONSISTANCES, AMBIGUITÉS OU CONFLITS ALLÉGUÉS.

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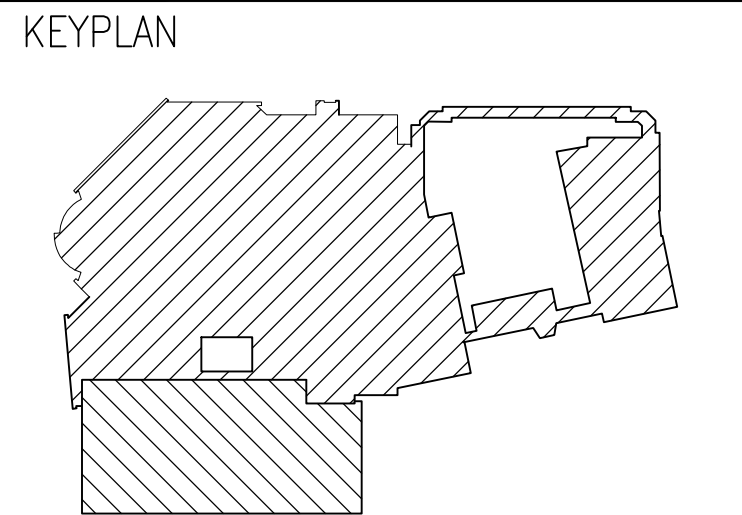
Drawing title/Titre du dessin

Ph-1 - GROUND FLOOR - HVAC -
REMOVAL

Scale Échelle	AS NOTED	Project no./No. du projet 2021-284	
Design by Conçu par	U.UKEJE	Drawing/Dessin	
Drawn by Dessiné par	U.UKEJE		
Reviewed by Examiné par	P.CHAN		
Date Date	November 21	Revision no: 0	Acad file/Fichier: Z\2021\2021-284\MECH



- HVAC: NEW WORK**
- 1 PROVIDE NEW DUCTWORK AS INDICATED.
 - 2 PROVIDE NEW DIFFUSERS AND RELOCATE EXISTING DIFFUSERS C/W BRANCH DUCTWORK AS INDICATED.
 - 3 PROVIDE NEW WASHROOM EXHAUST FAN C/W ALL ASSOCIATED DUCTWORK, CONTROLS & ACCESSORIES AS INDICATED.
 - 4 PROVIDE NEW TEMPERATURES SENSORS C/W CONTROL WIRING AS INDICATED.
 - 5 BALANCE DAMPERS, TO THE FLOWS INDICATED. SUBMIT BALANCING REPORT FOR ENGINEERS REVIEW.



DATE	REVISION	REF
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2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-

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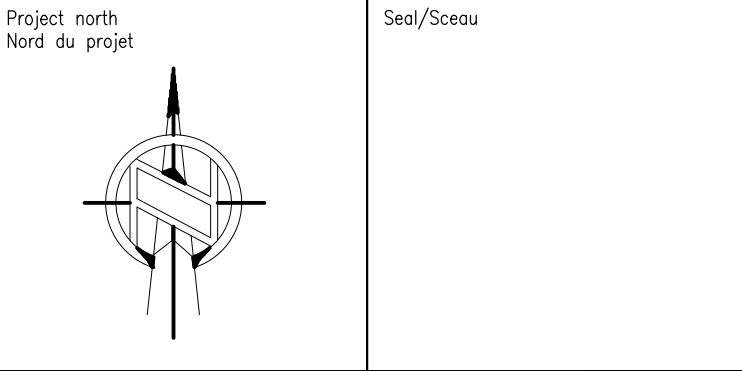
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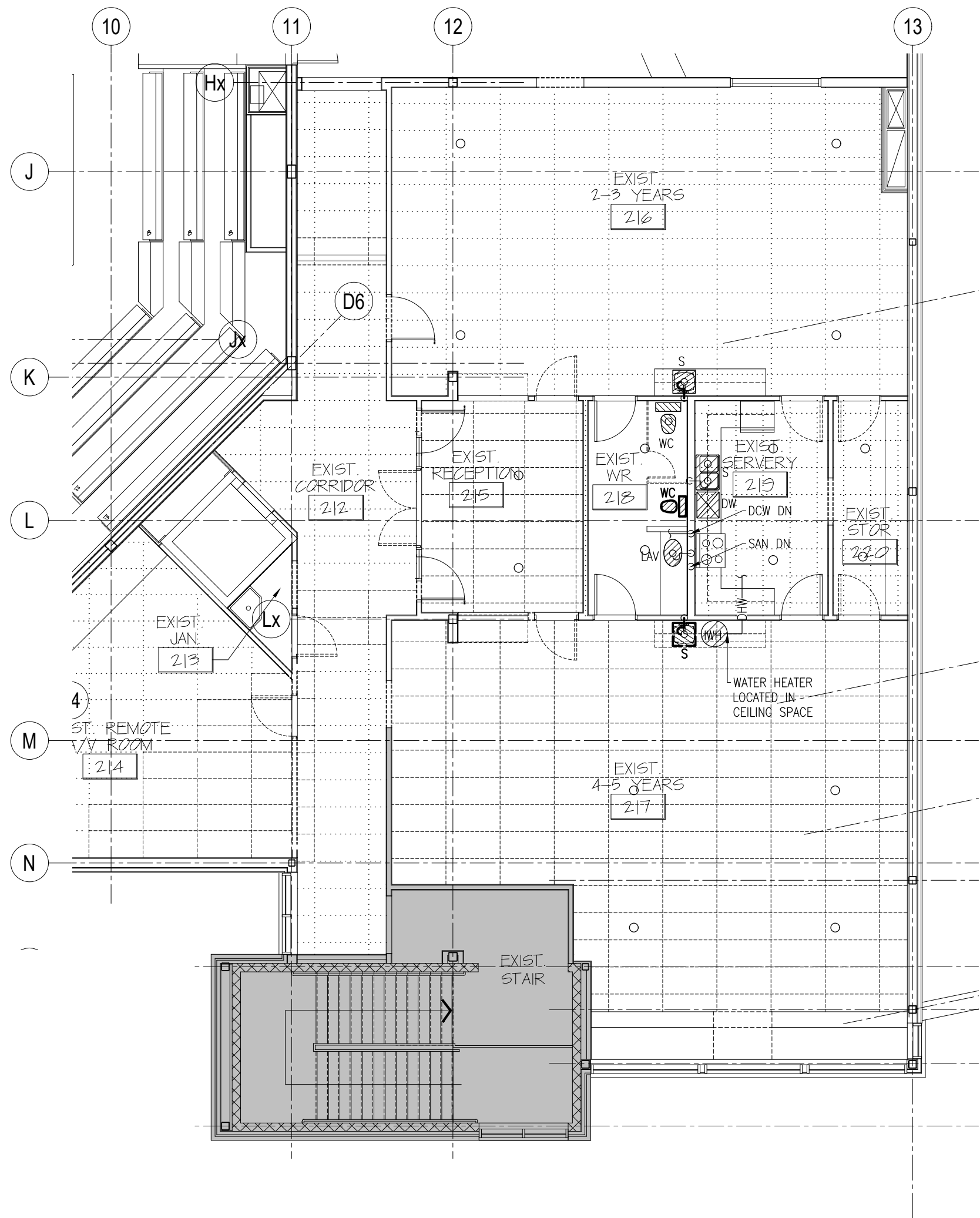
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Project/Projet
WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing/Title/Titre du dessin
Ph-1 - GROUND FLOOR - HVAC - NEW WORK

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin M8
Drawn by Dessiné par	U.UKEJE	OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 21/2021/2021-284/WEED



LEVEL 2 - FIRE PROTECTION & PLUMBING
DEMOLITION

1
M9

1:100

PLUMBING: REMOVAL

1 REMOVE EXISTING PIPING C/W ALL ASSOCIATED ACCESSORIES AS INDICATED.

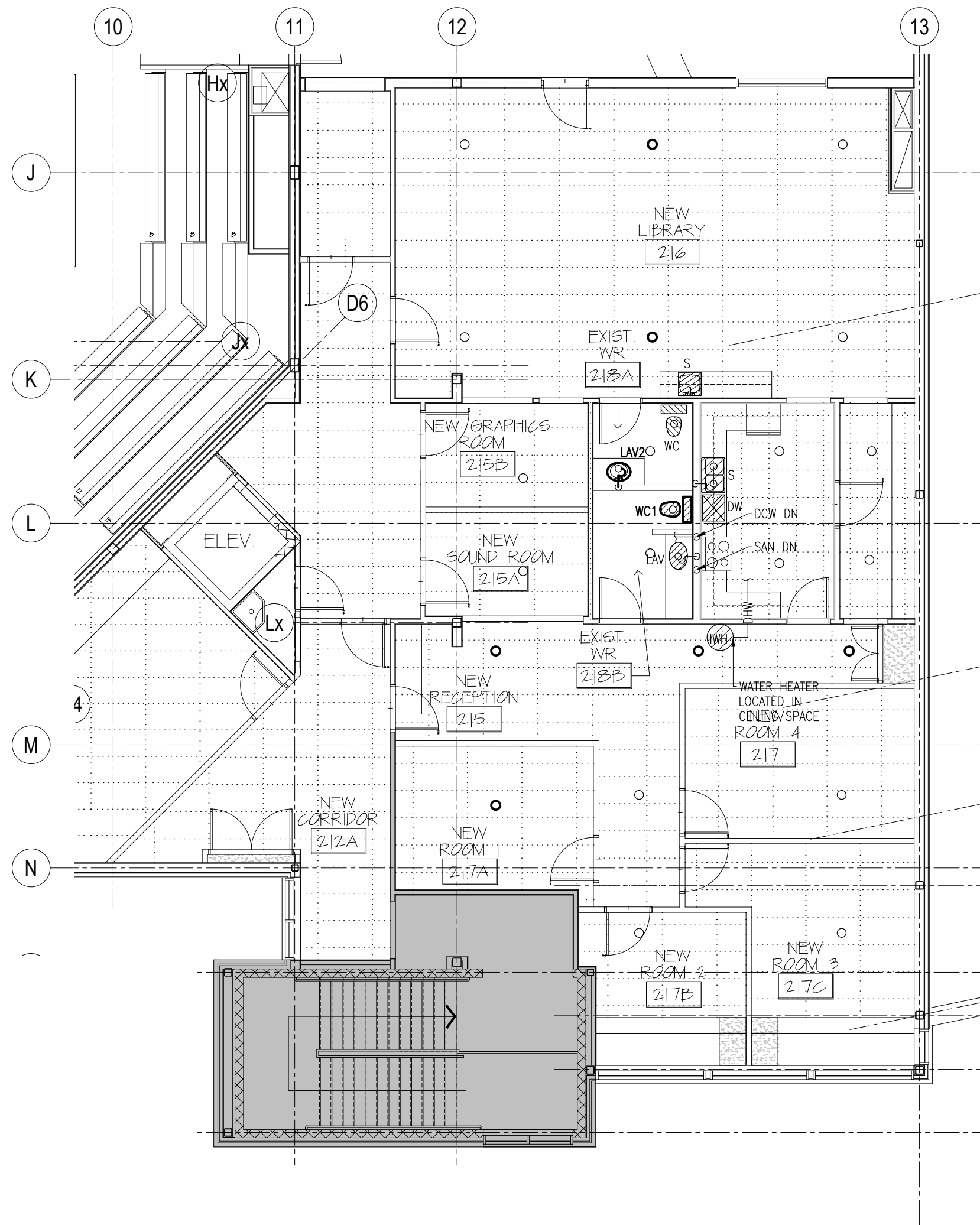
2 REMOVE EXISTING PLUMBING FIXTURE C/W ALL ASSOCIATED PIPING, VALVES & ACCESSORIES AS INDICATED.

FIRE & PLUMBING: NEW WORK

1 PROVIDE NEW SPRINKLERS AND RELOCATE EXISTING SPRINKLERS C/W ASSOCIATE BRANCH PIPING AS INDICATED.

2 PROVIDE FIRE STOP AT EXISTING PIPES PASSING THROUGH FLOOR AND CEILING SLAB AS REQUIRED. PATCH ALL UN-USED SLAB CORES AS REQUIRED.

3 PROVIDE NEW FIXTURES C/W ALL ASSOCIATED ACCESSORIES AND PLUMBING SERVICES AS INDICATED. CONNECT ALL NEW SANITARY DRAINS TO VENT.

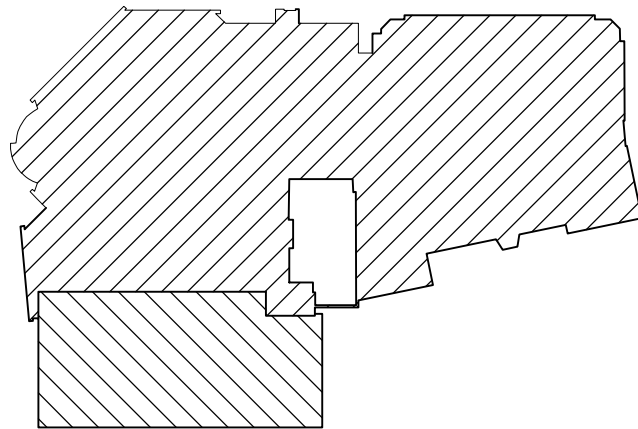


LEVEL 2 - FIRE PROTECTION & PLUMBING
NEW WORK

2
M9

1:100

KEYPLAN



DATE	REVISION	REF
2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-

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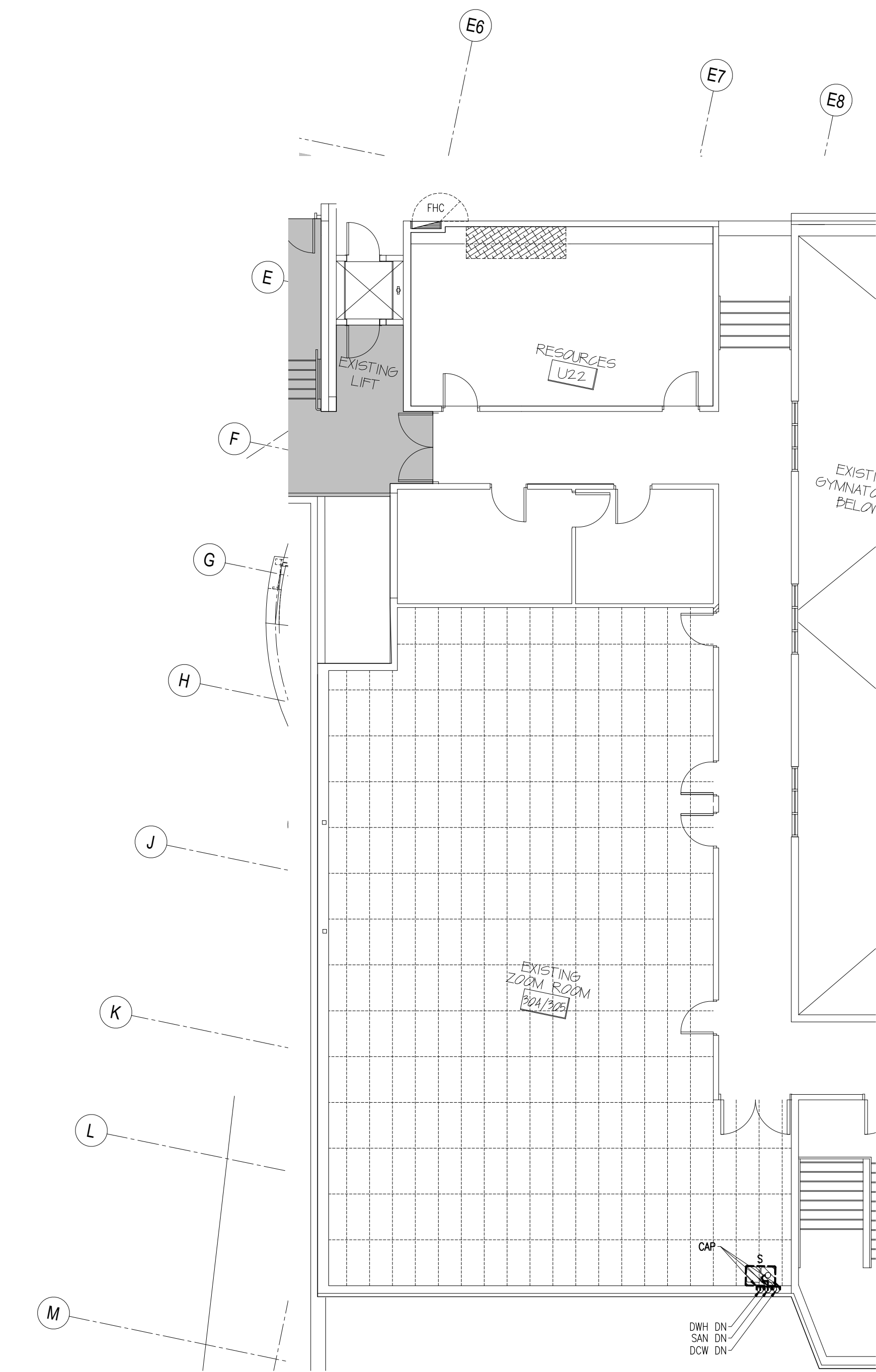
Project north
Nord du projet

Seal/Scieu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing title/Titre du dessin
**Ph-1 - LEVEL 2 - FIRE
PROTECTION AND PLUMBING -
REMOVAL & NEW WORK - 1**

Scale Échelle	AS NOTED	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M9 OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 21/2021/2021-284/MEPH

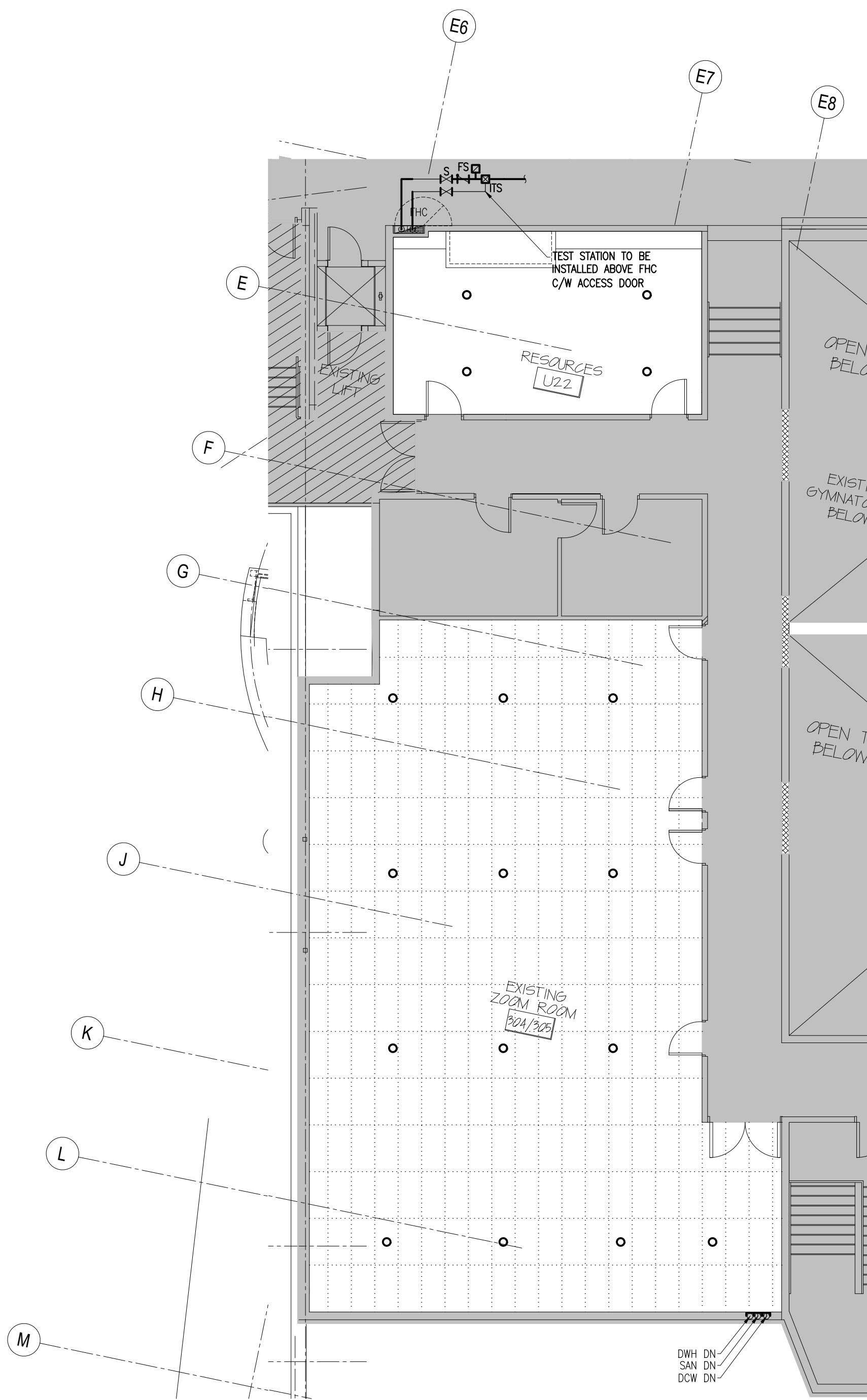


LEVEL 2 - ROOM 304/305
FIRE PROTECTION & PLUMBING DEMOLITION

1
M10 1:100

- PLUMBING: REMOVAL**
- 1 REMOVE EXISTING PIPING C/W ALL ASSOCIATED ACCESSORIES AS INDICATED.
 - 2 REMOVE EXISTING PLUMBING FIXTURE C/W ALL ASSOCIATED PIPING, VALVES & ACCESSORIES AS INDICATED.

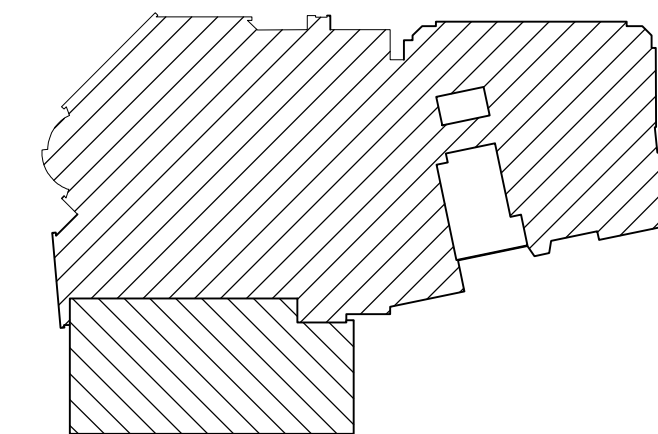
- FIRE & PLUMBING: NEW WORK**
- 1 PROVIDE NEW SPRINKLERS AND RELOCATE EXISTING SPRINKLERS C/W ASSOCIATE BRANCH PIPING AS INDICATED.
 - 2 PROVIDE FIRE STOP AT EXISTING PIPES PASSING THROUGH FLOOR AND CEILING SLAB AS REQUIRED. PATCH ALL UN-USED SLAB CORES AS REQUIRED.
 - 3 PROVIDE NEW FIXTURES C/W ALL ASSOCIATED ACCESSORIES AND PLUMBING SERVICES AS INDICATED. CONNECT ALL NEW SANITARY DRAINS TO VENT.



LEVEL 2 - ROOM 304/305
FIRE PROTECTION & PLUMBING NEW WORK

1
M10 1:100

KEYPLAN



DATE	REVISION	REF
2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
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Project north
Nord du projet

Seal/Scieu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing title/Titre du dessin
**Ph-1 - LEVEL 2 - FIRE
PROTECTION AND PLUMBING -
REMOVAL & NEW WORK - 2**

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin M10
Drawn by Dessiné par	U.UKEJE	OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 2/2021/2021-284/WEED

1 REMOVE EXISTING DIFFUSERS & GRILLES C/W BRANCH DUCTWORK AS INDICATED.

- [illegible]



Architectural floor plan of the second floor of the National Library of Medicine. The plan shows a large staircase area on the left, a central corridor system, and several rooms. Key rooms include:

- NEW LIBRARY 216
- NEW GRAPHIC ROOM 215F
- NEW SOUND ROOM 215A
- NEW RECEPTION 215
- NEW CORRIDOR 212A
- NEW ROOM 217A
- NEW ROOM 2 217B
- NEW ROOM 3 217C

The plan is marked with grid lines J through P and 12 through 13. Other labels include Hx, Jx, D6, ELEV., Lx, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D71, D72, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D93, D94, D95, D96, D97, D98, D99, D100.

2 HV
M11 1:100

2021-11-12	ISSUED FOR 70% REVIEW	-
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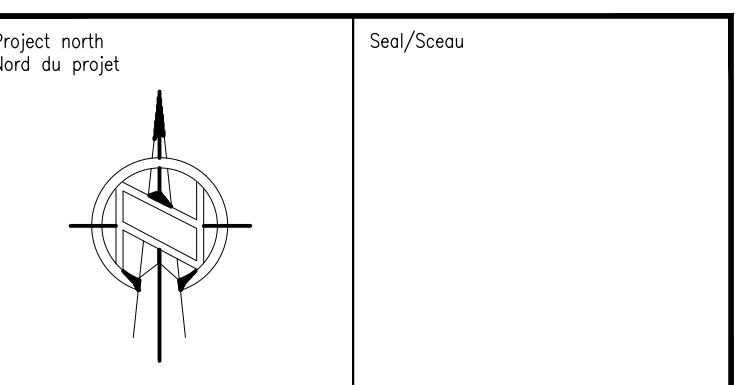
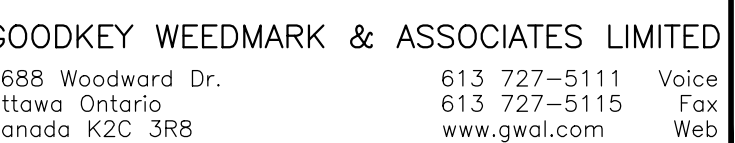
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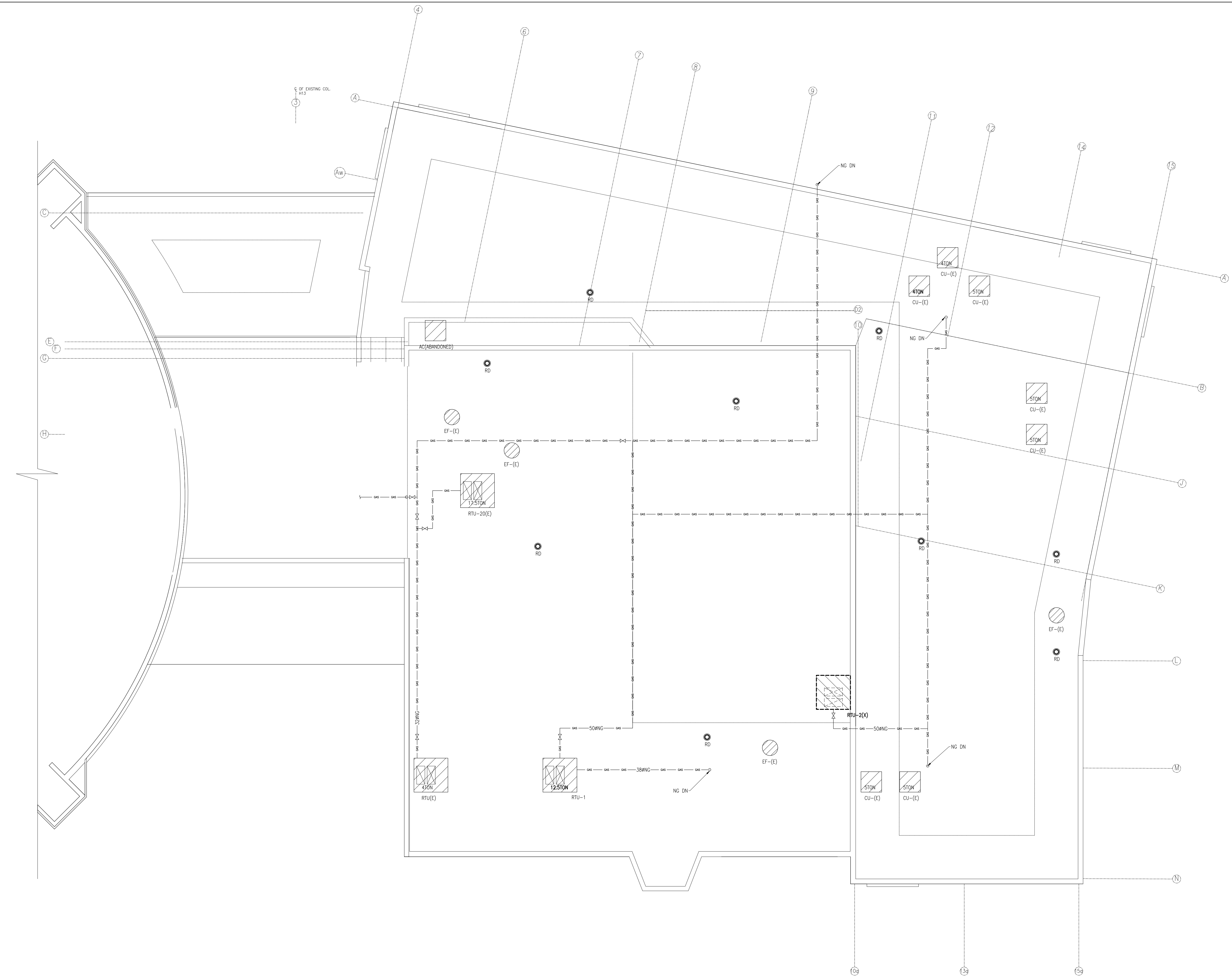
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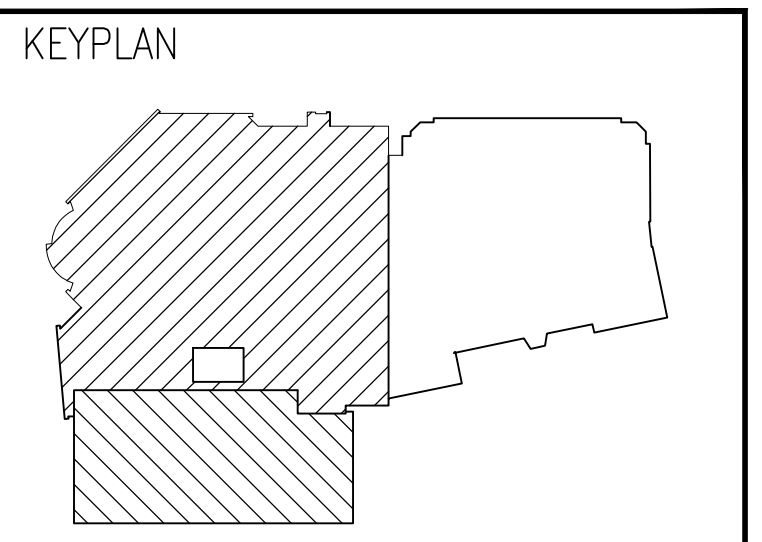
Ph-1 - LEVEL 2 - HVAC -
REMOVAL & NEW WORK - 1

Acadicate schelle	AS NOTED	Project no./No. du projet 2021-284	
Design by Conçu par	U.UKEJE	Drawing/Dessin	
Drawn by Dessiné par	U.UKEJE	M11	
Reviewed by Examiné par	P.CHAN		
Date November 21	Date	Revision no: 0	Acad file/Fichier: 23/2021-2021-284/MECH



1
M12
1:100

ROOF LEVEL
HVAC REMOVAL



DATE	REVISION	REF
2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-

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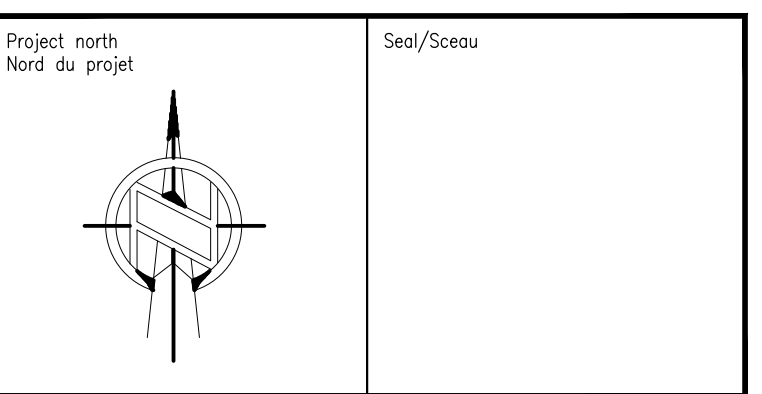
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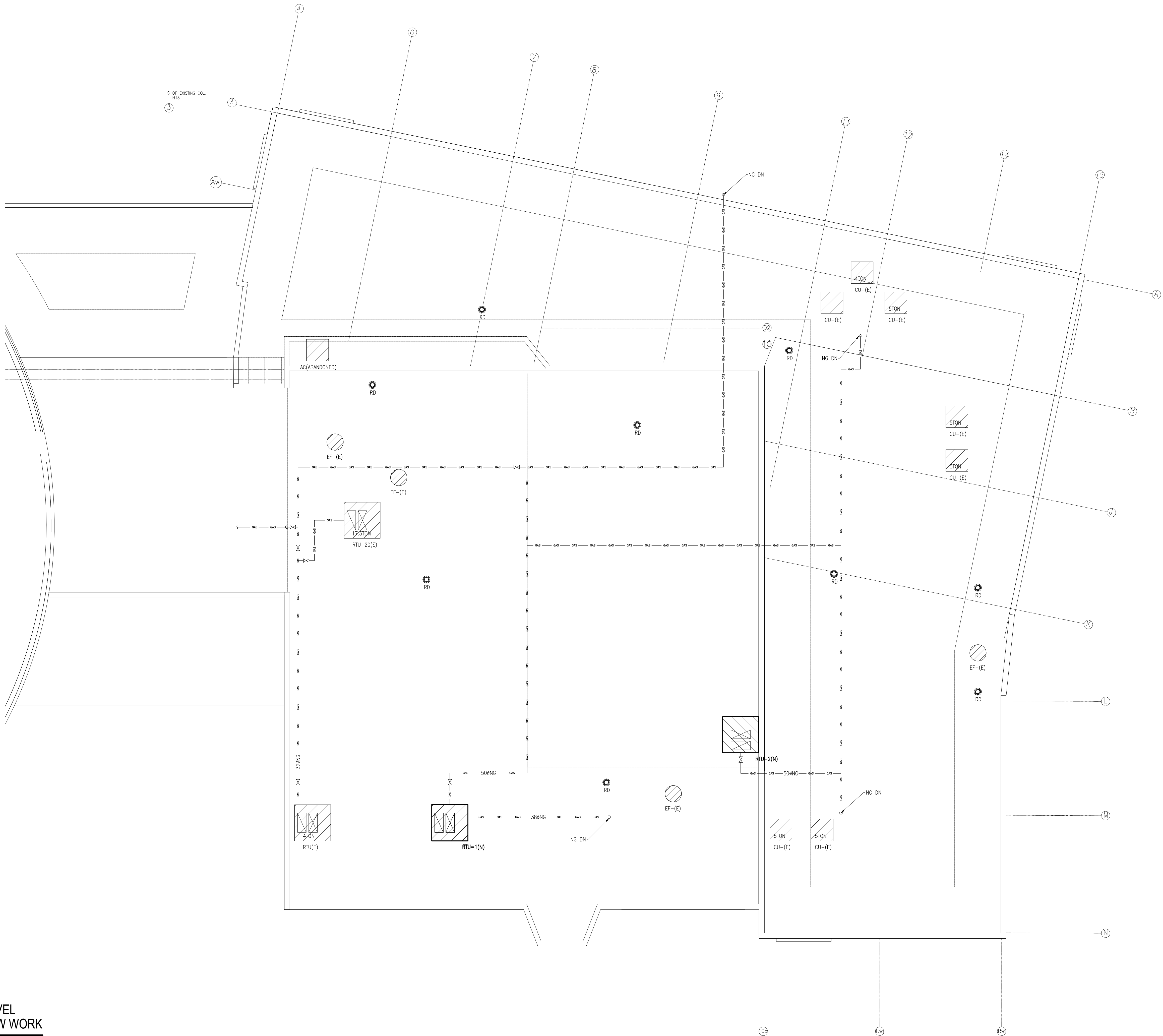
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Project/Projet
WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing title/Titre du dessin
Ph-1 - ROOF LEVEL - HVAC - REMOVAL

Scale Échelle	AS NOTED	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M12 OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 21/2021/2021-284/MECH



Client

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2021-06-18	ISSUED FOR 33% REVIEW	-

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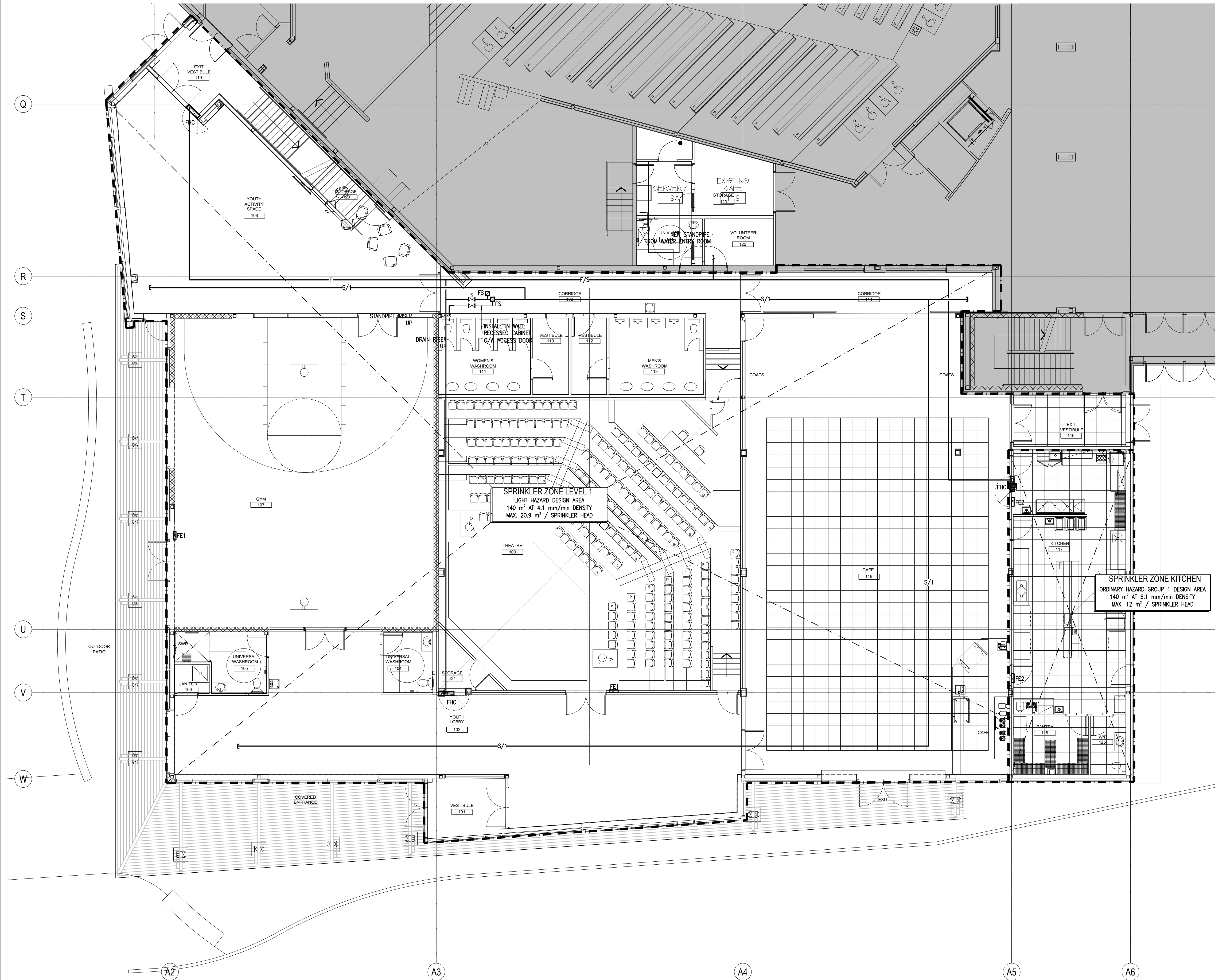
Project north
Nord du projet

Seal/Scieu

Project/Projet
WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing title/Titre du dessin
Ph-1 - ROOF LEVEL - HVAC - NEW WORK

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M13 OF 21
Reviewed by Examiné par	P.CHAN	
Date	November 21	Revision no: 0
		Acad file/Fichier: Z:\2021\2021-284\WEDM



- GENERAL NOTES
1. COORDINATE WITH ALL OTHER TRADES.

2. PROVIDE SPRINKLER SYSTEM COVERAGE FOR ALL AREAS IN ACCORDANCE WITH NFPA-13 REQUIREMENTS.

3. AT THE COMPLETION OF THE PROJECT, FIRE PROTECTION CONTRACTOR TO PROVIDE AN ENGINEER'S STAMPED REPORT CONFIRMING INSTALLATION OF SEISMIC BRACING TO OBC AND NFPA 13.

4. AT THE COMPLETION OF THE PROJECT, FIRE PROTECTION CONTRACTOR TO PROVIDE AN ENGINEER'S STAMPED LETTER CONFIRMING SYSTEM IS IN COMPLIANCE TO NFPA 13.

5. CONTRACTOR TO PROVIDE INTERFERENCE DRAWINGS FOR PIPING WHERE CONGESTED. COORDINATE INTERFERENCE DRAWINGS WITH ALL OTHER TRADES.

6. ALL EXPOSED SPRINKLER HEADS IN SERVICE ROOMS, SHALL HAVE CHROME PLATED WIRE GUARDS.

7. PROVIDE FIRE STOPPING WHERE PIPE PENETRATES FIRE SEPARATIONS. REFERENCE ARCHITECTURAL DRAWINGS.

8. PROPOSED SPRINKLER MAIN LOCATIONS SHALL BE COORDINATED BY F.P. CONTRACTOR WITH ALL OTHER TRADES.

9. ALLOW FOR PIPE OFFSETS AS REQUIRED TO SUIT INTERFERENCES.

10. PROVIDE HOSE END VALVE WITH CHAIN AND CAP AT ALL LOW POINTS TO ALLOW FOR DRAINAGE.

11. ALL DRYWALL AREAS SHALL HAVE CONCEALED SPRINKLER HEADS.

12. SPRINKLER PIPING SHALL BE COORDINATED WITH ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.

13. PROVIDE INTERMEDIATE TEMPERATURE CLASSIFICATION SPRINKLERS HEADS IN SERVICE ROOMS.

14. PROVIDE HIGH TEMPERATURE CLASSIFICATION SPRINKLER HEADS AT TOP OF ELEVATOR HOISTWAY

15. SPRINKLER HEAD UNDER STAIR LANDING SHALL BE CONCEALED TYPE IN DRYWALL. RUN PIPING CONCEALED TIGHT TO STRUCTURE AND OFFSET TO MAIN CEILING SPACE. REFERENCE ARCHITECTURAL DRAWINGS FOR DETAILS.

16. PROVIDE SEMI-PENDANT SPRINKLER HEADS IN ACOUSTIC TILE CEILINGS. USE ESCUTCHEONS.

17. PROVIDE CONCEALED SPRINKLER HEADS IN DRYWALL CEILINGS.

18. PROVIDE UP-RIGHT SPRINKLER HEADS IN ROOMS WITH EXPOSED CEILINGS (TYPICAL).

19. PROVIDE FIRE EXTINGUISHER WITH RECESSED WALL CABINETS, SEMI RECESSED OR SURFACE MOUNTED. INSTALL IN ACCORDANCE WITH ONTARIO FIRE CODE. SURFACE FIRE EXTINGUISHERS SHALL COME C/W WALL BRACKET AND 150MMx150MM HARD WOOD BACK PLATE.

20. REFERENCE ARCHITECTURAL DRAWINGS FOR CEILING TYPES & ELEVATIONS.

21. ALL EXPOSED SPRINKLER PIPING SHALL HAVE WHITE ESCUTCHEONS WHERE EXPOSED.

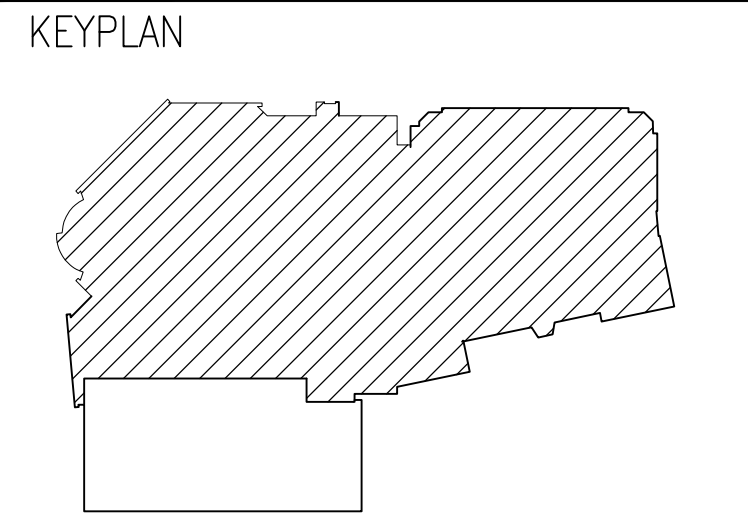
22. ALL VESTIBULES & EXIT STAIR HEADS WITHIN 2.5m FROM EXIT DOOR SHALL BE DRY-FLEX CONCEALED HEAD PIPED FROM ADJACENT SPACE. LOCATE SPRINKLER HEAD AWAY FROM EXIT DOOR.

23. SURFACE-MOUNTED AND WALL RECESSED FIRE EXTINGUISHERS TO BE INSTALLED IN 102F-PG-FR-8"Wx17"Hx5"D(X" RETURN) FIRE RATED EXTINGUISHER CABINET. REFER TO SCHEDULE FOR DETAILS.

24. FE1 TO BE CLASS ABC RATED FIRE EXTINGUISHER.

24. FE2 TO BE CLASS K RATED FIRE EXTINGUISHER.

25. PROVIDE KITCHEN SUPPRESSION SYSTEM TO RANGE HOOD IN CENTRAL KITCHEN (RM117).



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Project north
Nord du projet

Seal/Scéau

Project/Projet

WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing title/Titre du dessin

Ph-2 - GROUND FLOOR - FIRE PROTECTION

Scale
Échelle

AS NOTED

Project no./No. du projet

2021-284

Design by
Conçu par

U.UKEJE

Drawing/Dessin

U.UKEJE

Drawn by
Dessiné par

U.UKEJE

Reviewed by
Examiné par

P.CHAN

Date

November 21

Revision no:

0

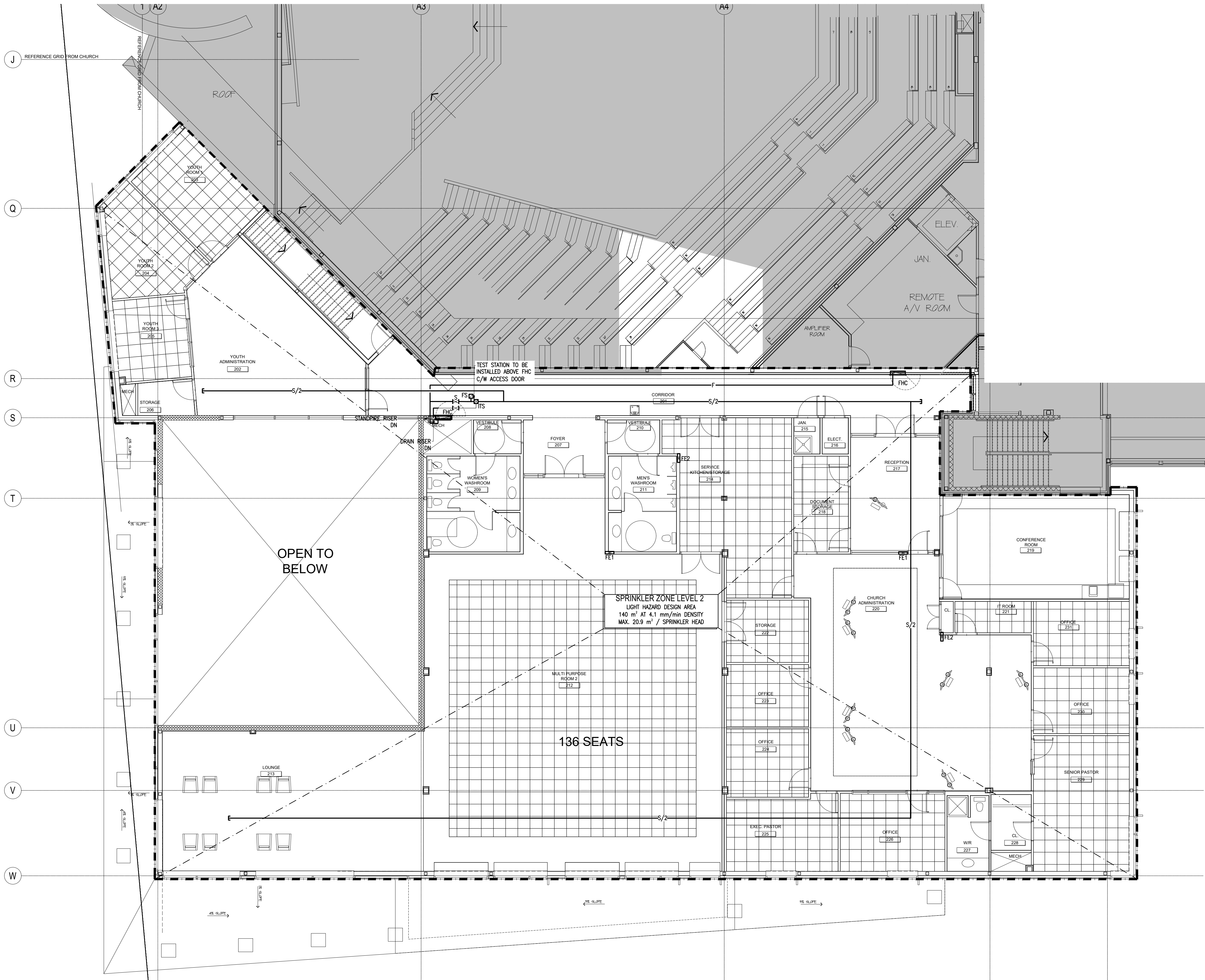
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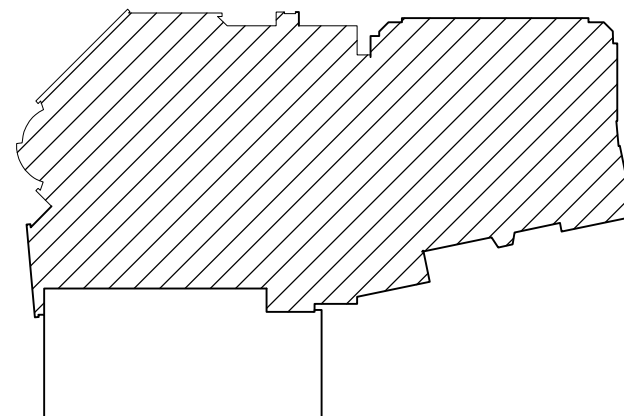
21



GENERAL NOTES

- COORDINATE WITH ALL OTHER TRADES.
- PROVIDE SPRINKLER SYSTEM COVERAGE FOR ALL AREAS IN ACCORDANCE WITH NFPA-13 REQUIREMENTS.
- AT THE COMPLETION OF THE PROJECT, FIRE PROTECTION CONTRACTOR TO PROVIDE AN ENGINEER'S STAMPED REPORT CONFIRMING INSTALLATION OF SEISMIC BRACING TO OBC AND NFPA 13.
- AT THE COMPLETION OF THE PROJECT, FIRE PROTECTION CONTRACTOR TO PROVIDE AN ENGINEER'S STAMPED LETTER CONFIRMING SYSTEM IS IN COMPLIANCE TO NFPA 13.
- CONTRACTOR TO PROVIDE INTERFERENCE DRAWINGS FOR PIPING WHERE CONGESTED. COORDINATE INTERFERENCE DRAWINGS WITH ALL OTHER TRADES.
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- PROVIDE FIRE STOPPING WHERE PIPE PENETRATES FIRE SEPARATIONS. REFERENCE ARCHITECTURAL DRAWINGS.
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- ALL DRYWALL AREAS SHALL HAVE CONCEALED SPRINKLER HEADS.
- SPRINKLER PIPING SHALL BE COORDINATED WITH ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
- PROVIDE INTERMEDIATE TEMPERATURE CLASSIFICATION SPRINKLERS HEADS IN SERVICE ROOMS.
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- PROVIDE CONCEALED SPRINKLER HEADS IN DRYWALL CEILINGS.
- PROVIDE UP-RIGHT SPRINKLER HEADS IN ROOMS WITH EXPOSED CEILINGS (TYPICAL).
- PROVIDE FIRE EXTINGUISHER WITH RECESSED WALL CABINETS, SEMI RECESSED OR SURFACE MOUNTED. INSTALL IN ACCORDANCE WITH ONTARIO FIRE CODE. SURFACE FIRE EXTINGUISHERS SHALL COME C/W WALL BRACKET AND 150MMx150MM HARD WOOD BACK PLATE.
- REFERENCE ARCHITECTURAL DRAWINGS FOR CEILING TYPES & ELEVATIONS.
- ALL EXPOSED SPRINKLER PIPING SHALL HAVE WHITE ESCUTCHEONS WHERE EXPOSED.
- ALL VESTIBULES & EXIT STAIR HEADS WITHIN 2.5m FROM EXIT DOOR SHALL BE DRY-PLEX CONCEALED HEAD PIPED FROM ADJACENT SPACE. LOCATE SPRINKLER HEAD AWAY FROM EXIT DOOR.
- SURFACE-MOUNTED AND WALL RECESSED FIRE EXTINGUISHERS TO BE INSTALLED IN 102F-FG-FR-8"X17"X5" (20"X" RETURN) FIRE RATED EXTINGUISHER CABINET. REFER TO SCHEDULE FOR DETAILS.
- FE1 TO BE CLASS ABC RATED FIRE EXTINGUISHER.
- FE2 TO BE CLASS K RATED FIRE EXTINGUISHER.
- PROVIDE KITCHEN SUPPRESSION SYSTEM TO RANGE HOOD IN CENTRAL KITCHEN (RM117).

KEYPLAN



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2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
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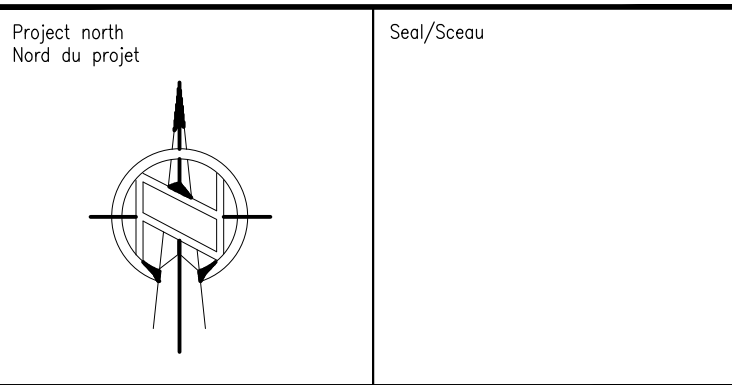
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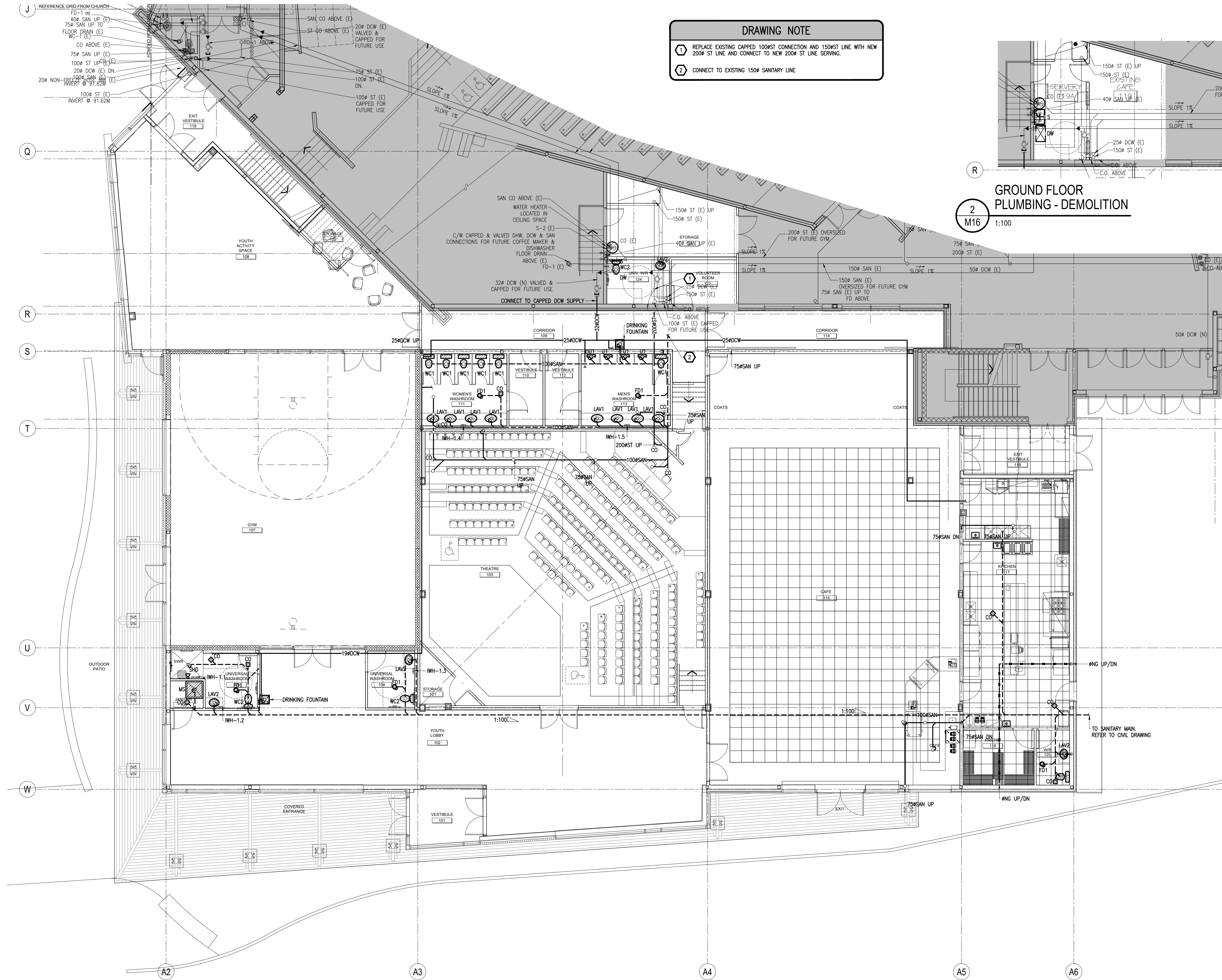


WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing title/Titre du dessin
Ph-2 - SECOND FLOOR - FIRE PROTECTION

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Desin
Drawn by Dessiné par	U.UKEJE	M15
Reviewed by Examiné par	P.CHAN	OF 21
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 2\2021\2021-284\WEDM

LEVEL 2
FIRE PROTECTION
2
M15
1:100



DRAWING NOTE

1 REPLACE EXISTING CAPPED 100*ST CONNECTION AND 150*ST LINE WITH NEW 200* ST LINE AND CONNECT TO NEW 200* ST LINE SERVING.

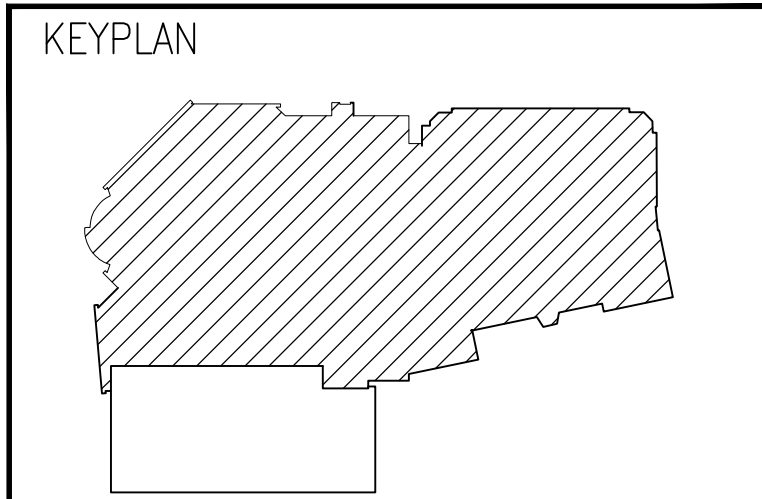
2 CONNECT TO EXISTING 150* SANITARY LINE

GROUND FLOOR PLUMBING - DEMOLITION

2
M16
1:100

GROUND FLOOR PLUMBING - NEW WORK

1
M16
1:100



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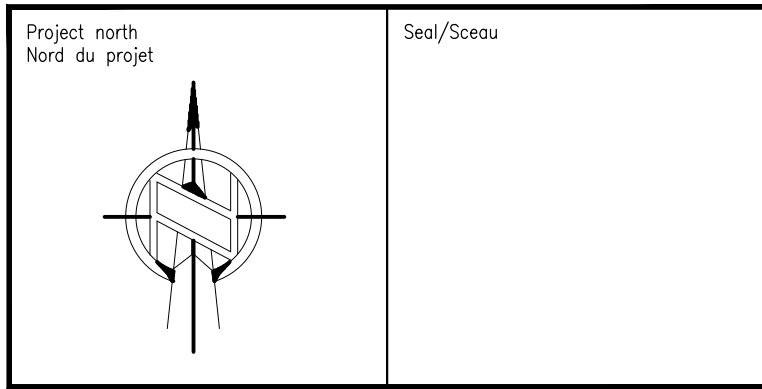
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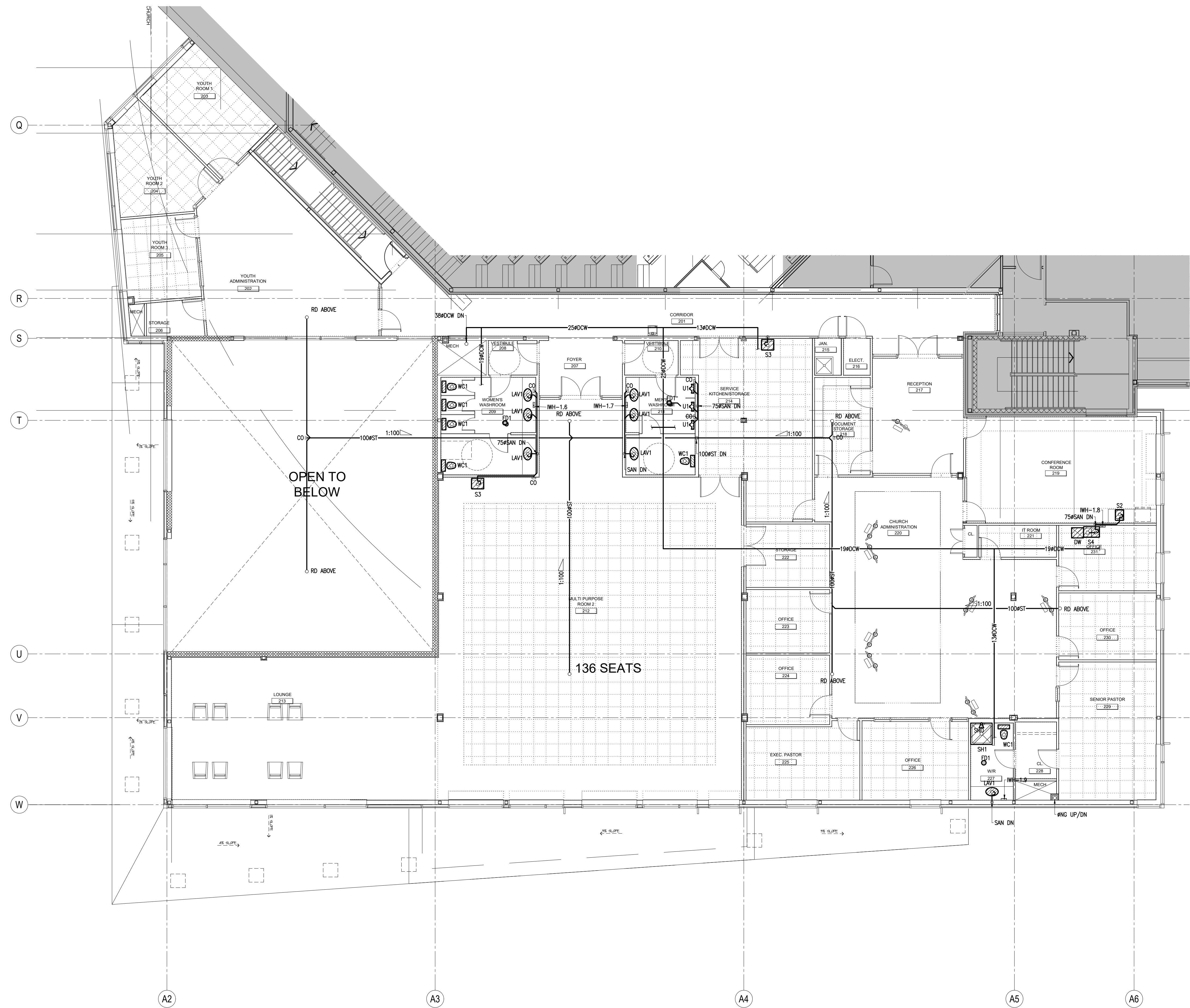
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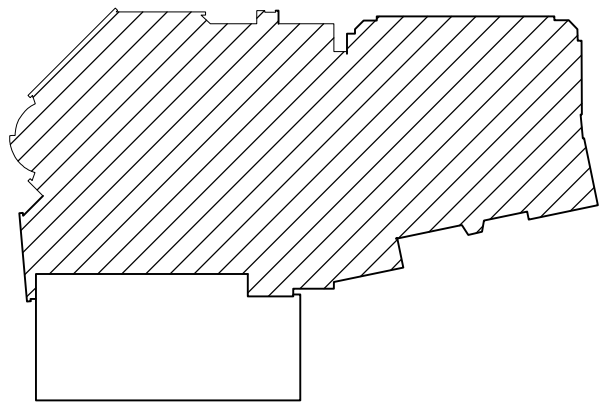
Project/Projet	
WOODVALE PENTECOSTAL CHURCH RENOVATION	
Drawing title/Titre du dessin	
Ph-2 - GROUND FLOOR - PLUMBING	
Scale Échelle	AS NOTED 2021-284
Design by Conçu par	U.UKEJE
Drawn by Dessiné par	U.UKEJE
Reviewed by Examiné par	P.CHAN
Date	November 21
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M16	
OF 21	



LEVEL 2
PLUMBING
1
M17
1:100

Client

KEYPLAN



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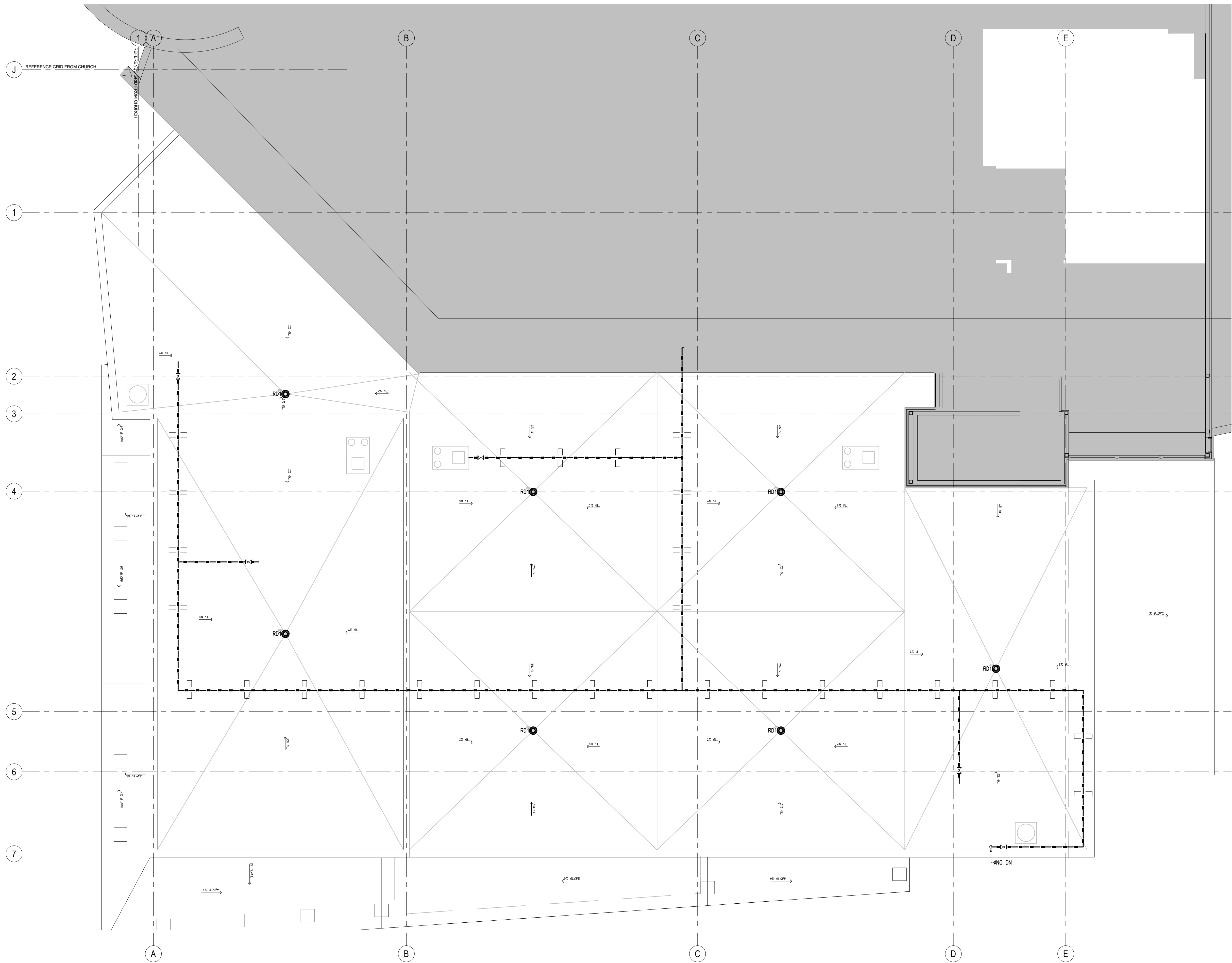
Project/north
Nord du projet

Seal/Scieu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing title/Titre du dessin
Ph-2 - SECOND FLOOR - PLUMBING

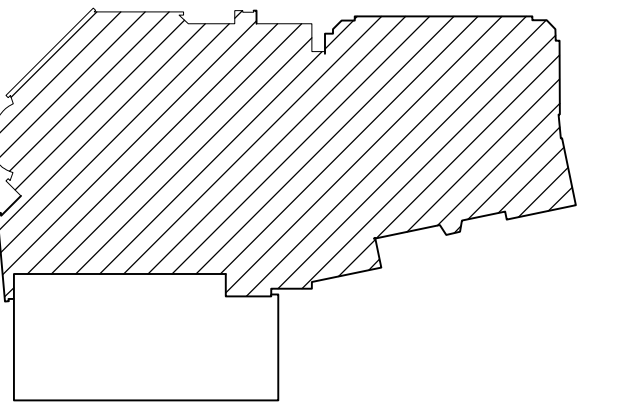
Scale Échelle	AS NOTED 2021-284	Project no./No. du projet
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Drawn by Dessiné par	U.UKEJE	M17
Reviewed by Examiné par	P.CHAN	OF 21
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2
M18
1:100

Client

KEYPLAN



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2021-06-18	ISSUED FOR 33% REVIEW	-

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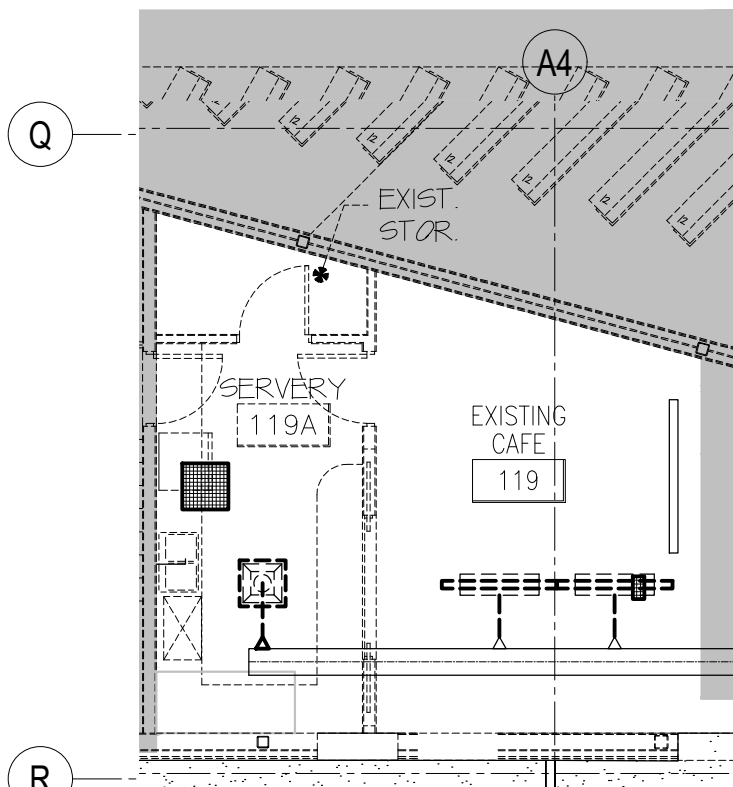
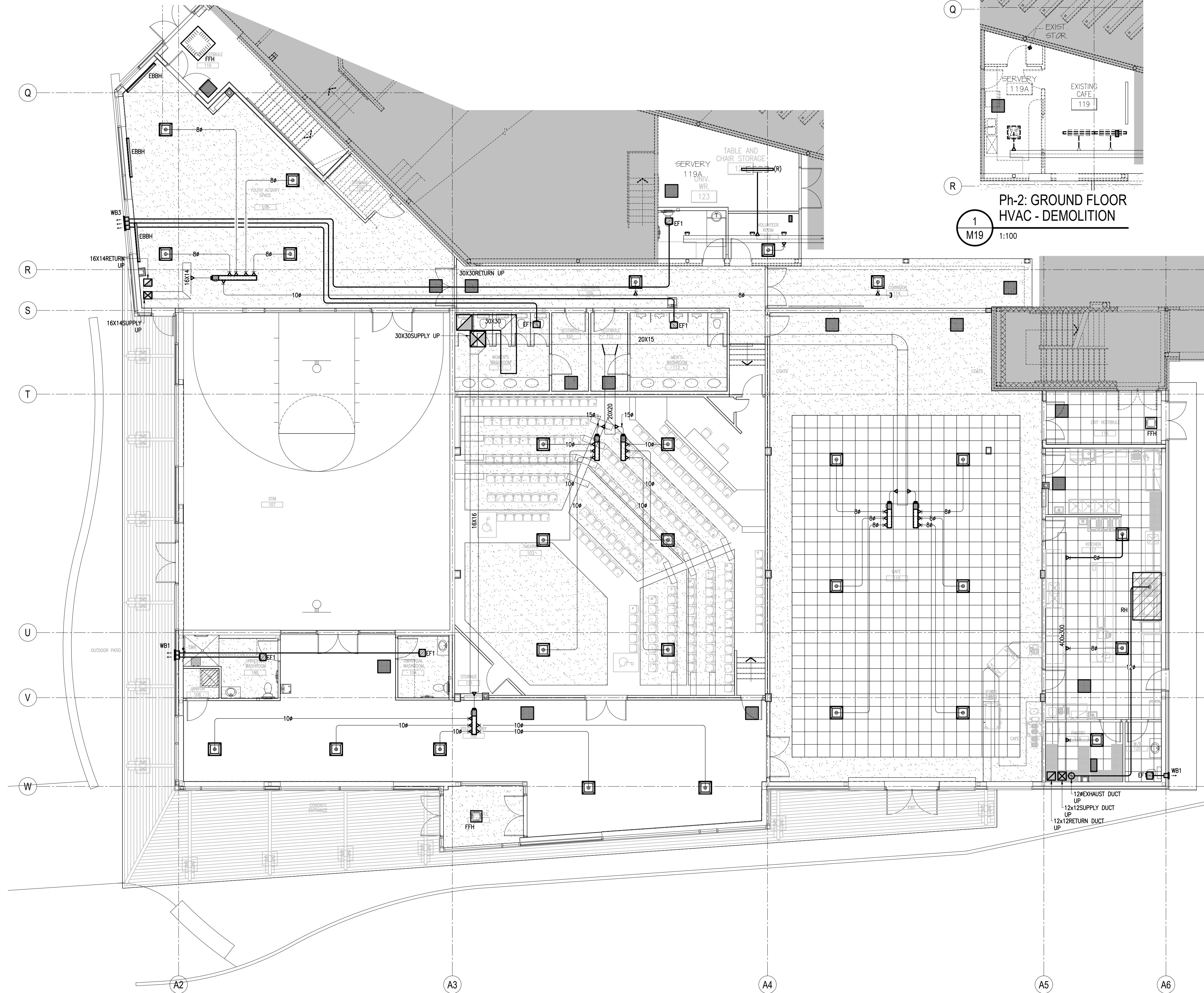
Project north
Nord du projet

Seal/Scieu

Project/Projet
WOODVALE PENTECOSTAL CHURCH RENOVATION

Drawing title/Titre du dessin
Ph-2 - ROOF LEVEL - PLUMBING

Scale Échelle	AS NOTED	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M18
Reviewed by Examiné par	P.CHAN	OF 21
Date November 21	Revision no: 0	Acad file/Fichier: Z:\2021\2021-284\WEDM



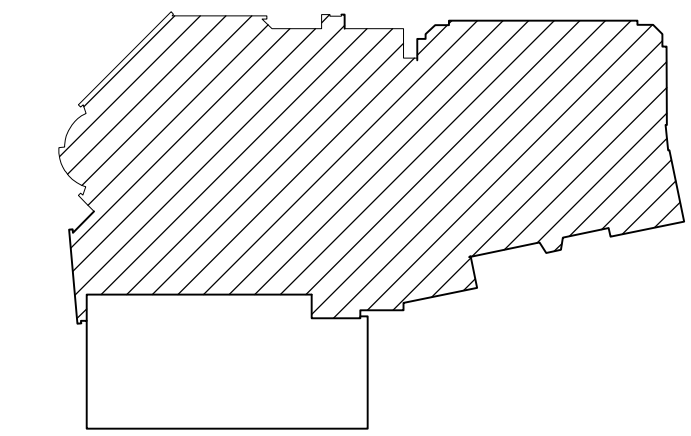
Ph-2: GROUND FLOOR
HVAC - DEMOLITION

1
M19
1:100

Ph-2: GROUND FLOOR
HVAC - NEW WORK

1
M19
1:100

KEYPLAN



2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-
DATE	REVISION	REF.

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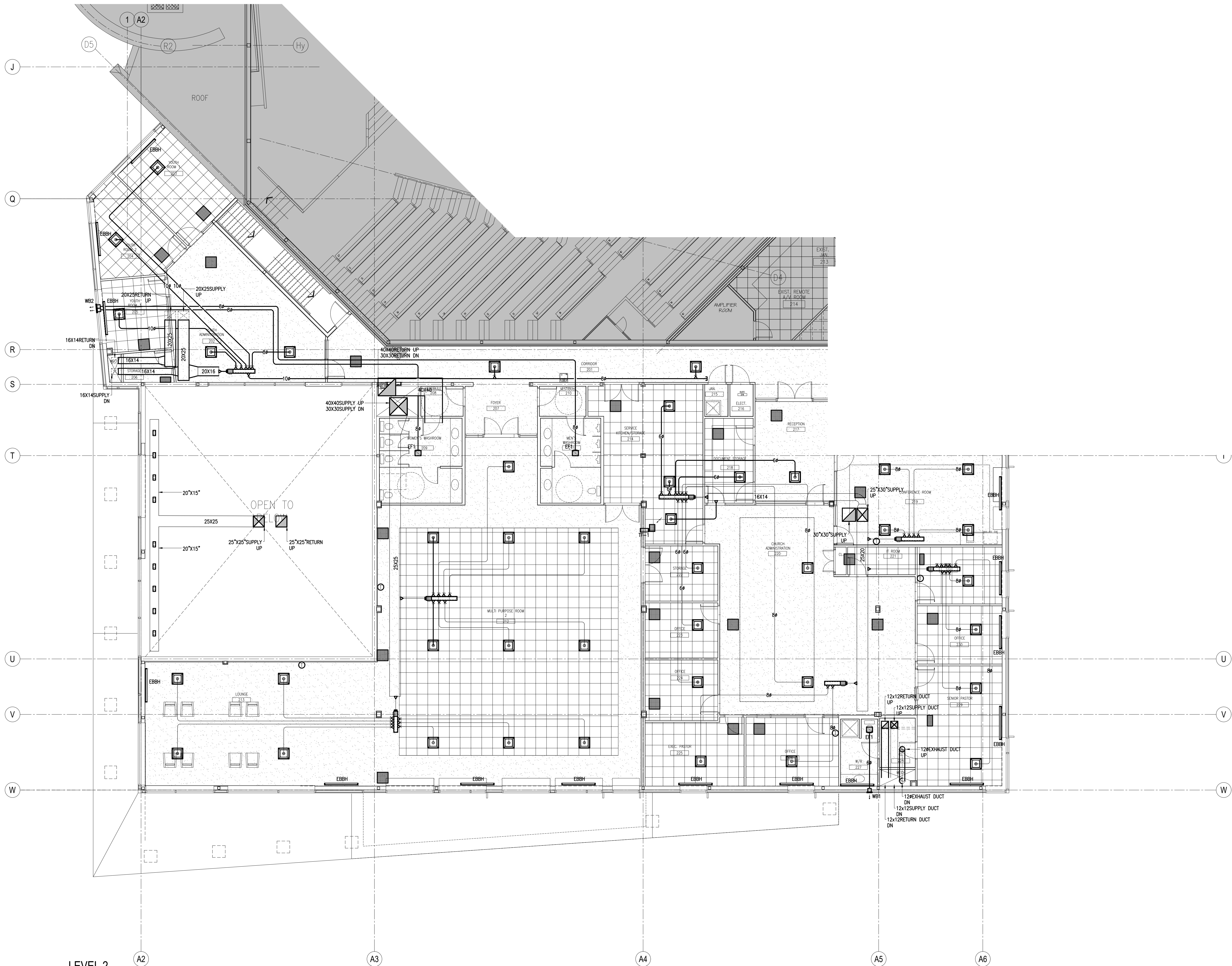
Project/north
Nord du projet

Seal/Scieu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

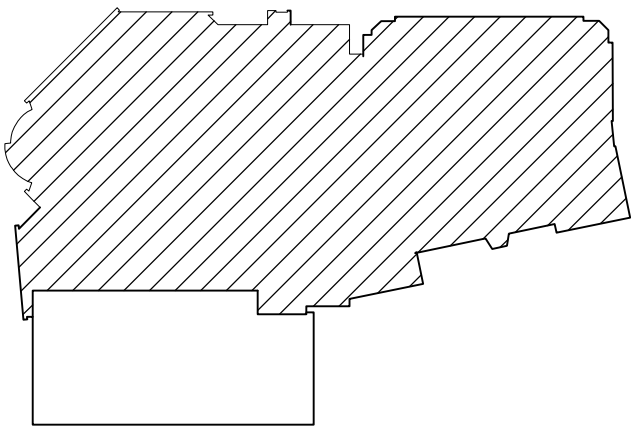
Drawing title/Titre du dessin
Ph-2 - GROUND FLOOR - HVAC

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M19 OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0 Acad file/Fichier: 21/2021/2021-284/WEED



Client

KEYPLAN



2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
2021-08-27	ISSUED FOR 66% REVIEW	-
2021-06-18	ISSUED FOR 33% REVIEW	-
DATE	REVISION	REF

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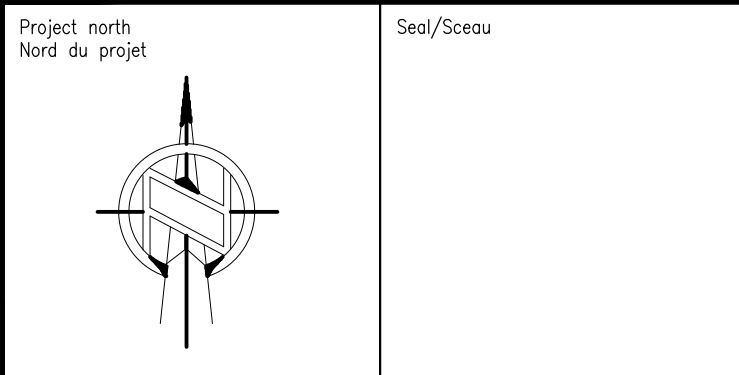
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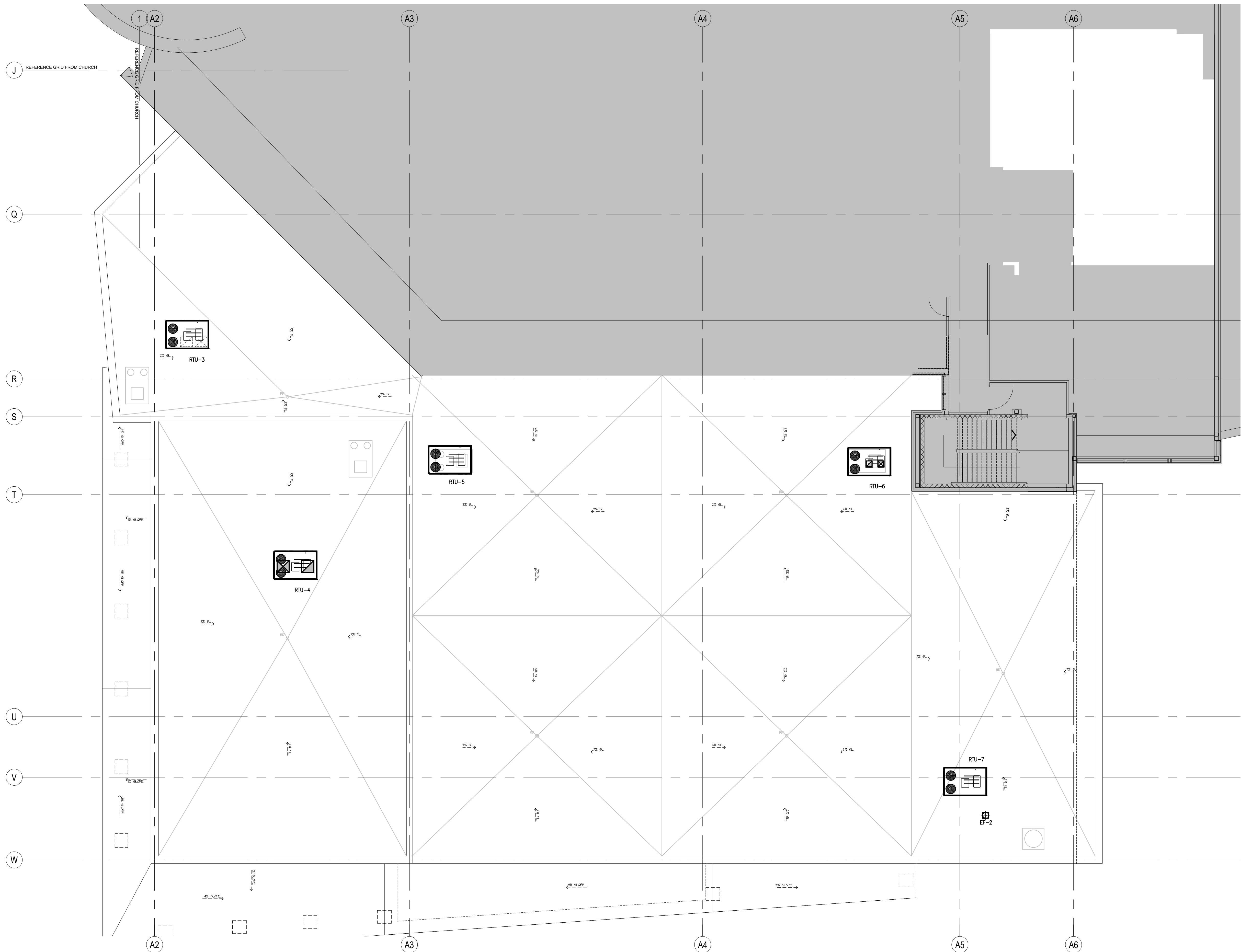
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WOODVALE PENTECOSTAL CHURCH RENOVATION

Ph-2 - SECOND FLOOR - HVAC

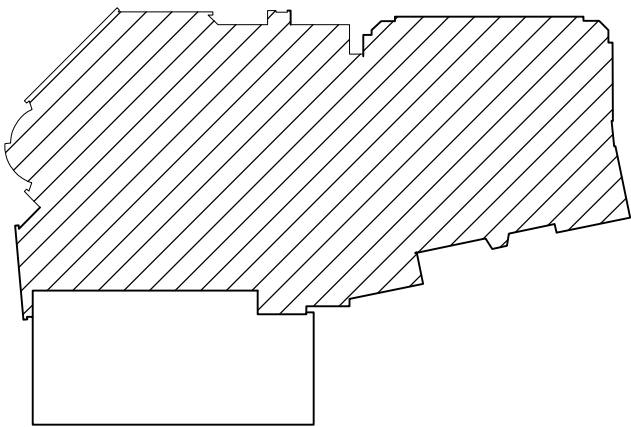
Scale Échelle	AS NOTED	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin
Drawn by Dessiné par	U.UKEJE	M20
Reviewed by Examiné par	P.CHAN	OF 21
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 21/2021/2021-284/MEPH



2
M21
ROOF LEVEL
HVAC
1:100

Client

KEYPLAN



DATE	REVISION	REF
2021-11-12	ISSUED FOR 70% REVIEW	-
2021-10-01	ISSUED FOR 66% COSTING	-
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Project/north
Nord du projet

Seal/Scieu

Project/Projet
**WOODVALE PENTECOSTAL
CHURCH RENOVATION**

Drawing/Title/Titre du dessin
Ph-2 - ROOF LEVEL - HVAC

Scale Échelle	AS NOTED 2021-284	Project no./No. du projet 2021-284
Design by Conçu par	U.UKEJE	Drawing/Dessin M21
Drawn by Dessiné par	U.UKEJE	OF 21
Reviewed by Examiné par	P.CHAN	
Date Date	November 21	Revision no: 0
		Acad file/Fichier: 2/2021/2021-284/M21