

MAPLELAWN/529 RICHMOND ROAD, OTTAWA

PHASE 2: EXTERIOR WORK, BOILER REPLACEMENT AND THIRD FLOOR INSULATION

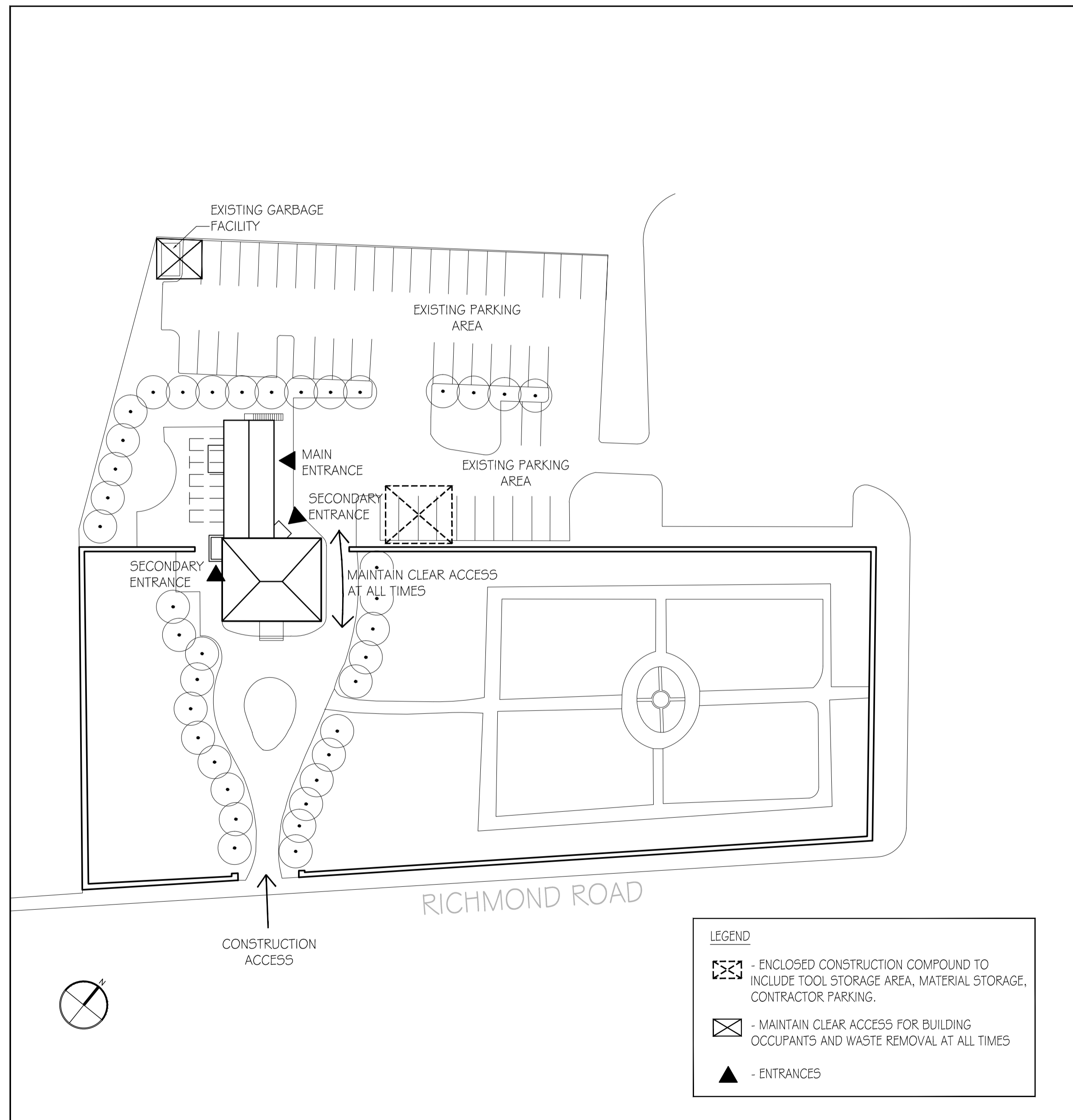
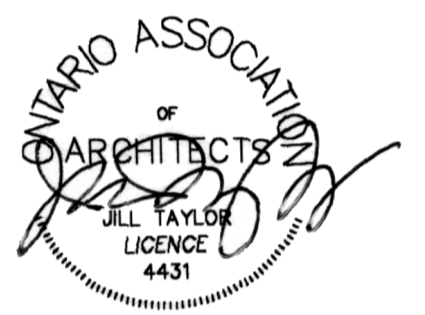
Real Estate Management, Design and Construction Branch
Direction de la gestion de l'immobilier, design et construction

Design and Construction Division
Division design et construction

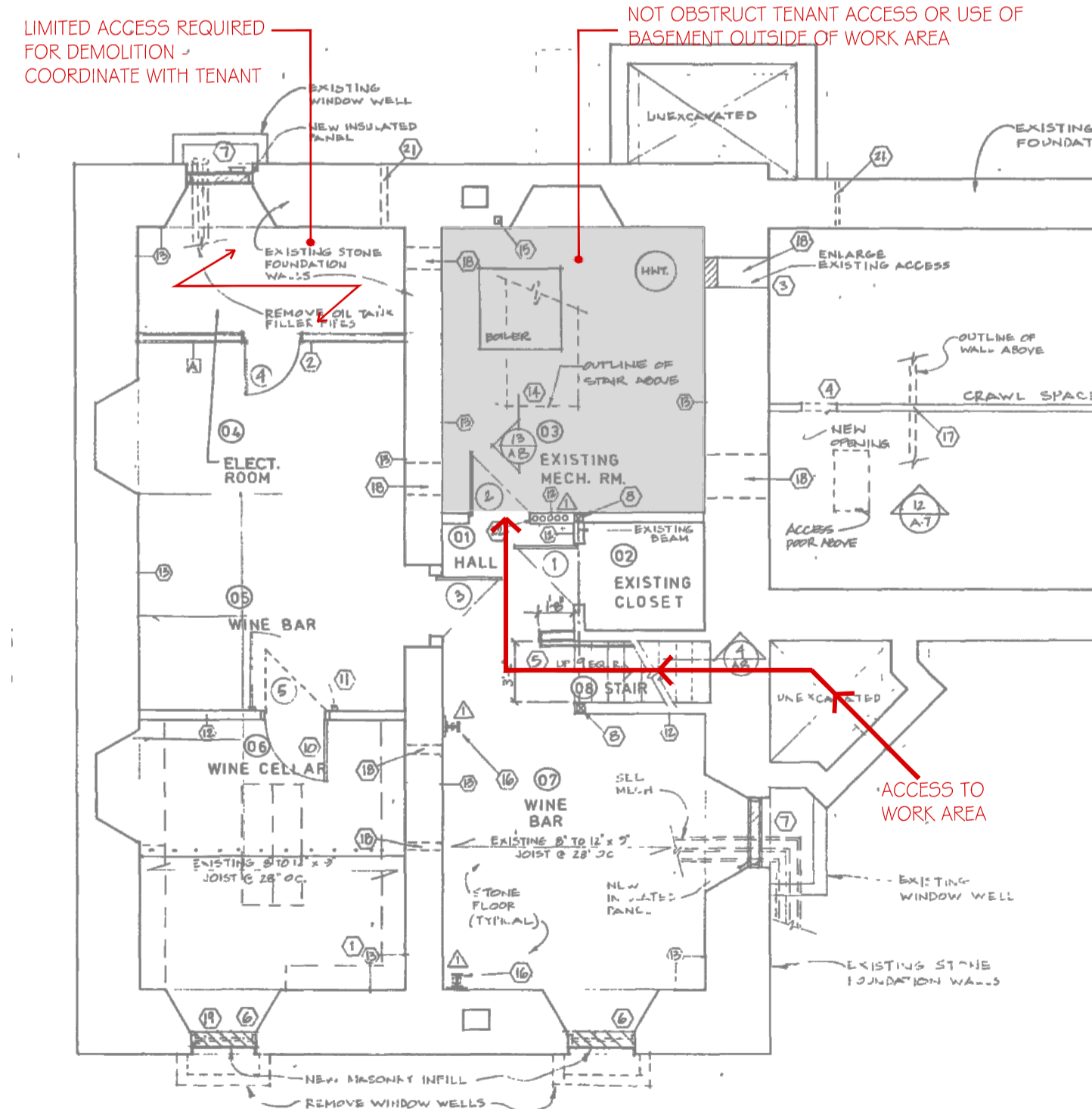
director - Claude Robert - directeur

consultant
expert-conseil

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1 SITE PLAN
A000 1:500



2 PARTIAL PLAN OF BASEMENT (ARCHIVAL DRAWING)
A000 NTS

DRAWING LIST:

- ARCHITECTURAL
A000 COVER SHEET, SITE PLAN AND PARTIAL BASEMENT PLAN
A100 ROOF PLAN, METAL ROOF PAINTING AND EXTERIOR PAINTING SCOPE
A101 WINDOW SCHEDULE, WINDOW AND DOOR RESTORATION SCOPE
A200 ELEVATIONS: WINDOW AND DOOR RESTORATION, METAL ROOF AND EXTERIOR PAINTING SCOPE
A300 BOILER REPLACEMENT AND THIRD FLOOR INSULATION SCOPES
- MECHANICAL AND ELECTRICAL
ME01 BOILER REPLACEMENT
ME02 SPECIFICATION

GENERAL NOTES:

- PROVIDE ITEMIZED PRICES FOR THE FOLLOWING DISTINCT SCOPES OF WORK:
 - REPLACEMENT OF BOILER, INCLUDING MECHANICAL WORK, ELECTRICAL WORK, AND WORK SHOWN ON DRAWING A300
 - INSULATION OF THIRD FLOOR ATTIC AS SHOWN ON DRAWING A300
 - PAINTING OF METAL ROOF AS SHOWN ON DRAWING A100 & A200
 - PAINTING OF EXTERIOR WOODWORK AS SHOWN ON DRAWING A100 & A200
 - RESTORATION OF WINDOWS AND DOORS AS SHOWN ON DRAWING A101, INCLUDING PAINTING OF EXTERIOR WOODWORK
- PARKING: CONTRACTOR PARKING WILL BE ALLOWED WITHIN THE CONSTRUCTION COMPOUND AREA SHOWN ONLY.
- PROVIDE WASTE BIN AS REQUIRED ADJACENT TO BUILDING. BIN MAY REMAIN ON SITE FOR 5 DAYS. IF BIN IS REQUIRED BEYOND THIS TWO DAY PERIOD, IT MUST BE REMOVED FROM SITE BY 3PM EACH DAY.
- MAINTAIN CLEAR ACCESS TO DRIVE AND BUILDING ENTRANCES AT ALL TIMES EXCEPT BY PRE-ARRANGEMENT WITH OWNER. WHERE CLOSURE OF AN ENTRANCE IS TO TAKE PLACE BY PRE-ARRANGEMENT:
 - ONLY ONE (1) ENTRANCE AT A TIME MAY BE CLOSED
 - NO CLOSURE AFTER 1 PM PERMITTED
- PROTECT EXISTING VEGETATION AND FLOWER BEDS ADJACENT TO BUILDING DURING CONSTRUCTION.
- HOURS OF WORK: SITE WILL BE AVAILABLE TO CONTRACTORS FROM 7AM TO 3 PM, MONDAY TO FRIDAY. WORK OUTSIDE THESE HOURS IS PERMITTED ONLY BY PRIOR ARRANGEMENT WITH NCC REPRESENTATIVE.
- WINDOW PROTECTION:
 - PROVIDE TEMPORARY PROTECTION AT WINDOW OPENINGS DURING RESTORATION OF FRAME
 - COMPLETE RESTORATION OF STORM WINDOWS AT EACH LOCATION. IF FABRICATION OF STORM WINDOWS IS REQUIRED, RE-INSTALL NEW STORM WINDOWS PRIOR THE WORK TO REMEDIFY INTERIOR WINDOW CASEMENTS OFF-SITE FOR RESTORATION.

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2	ISSUED FOR TENDER	2014.05.30
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MAPLELAWN 529 RICHMOND ROAD OTTAWA

PHASE 2

drawing
dessin

COVER SHEET
SITE PLAN
PARTIAL BASEMENT PLAN

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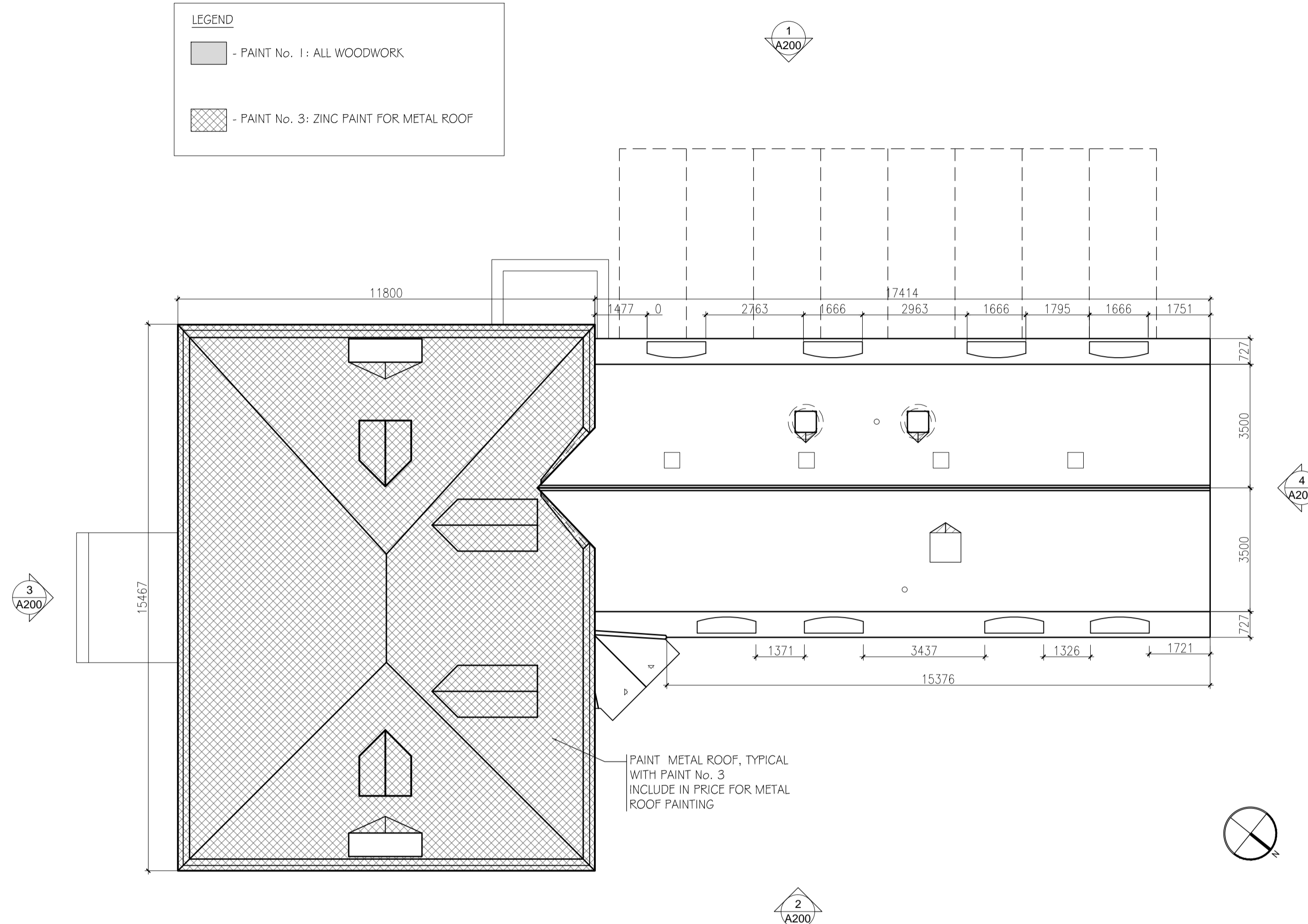
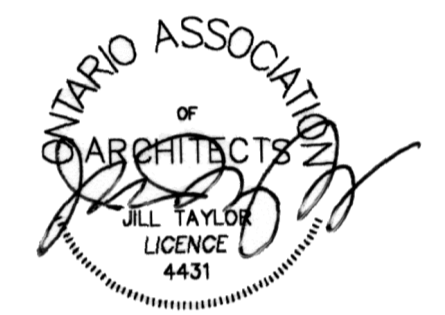
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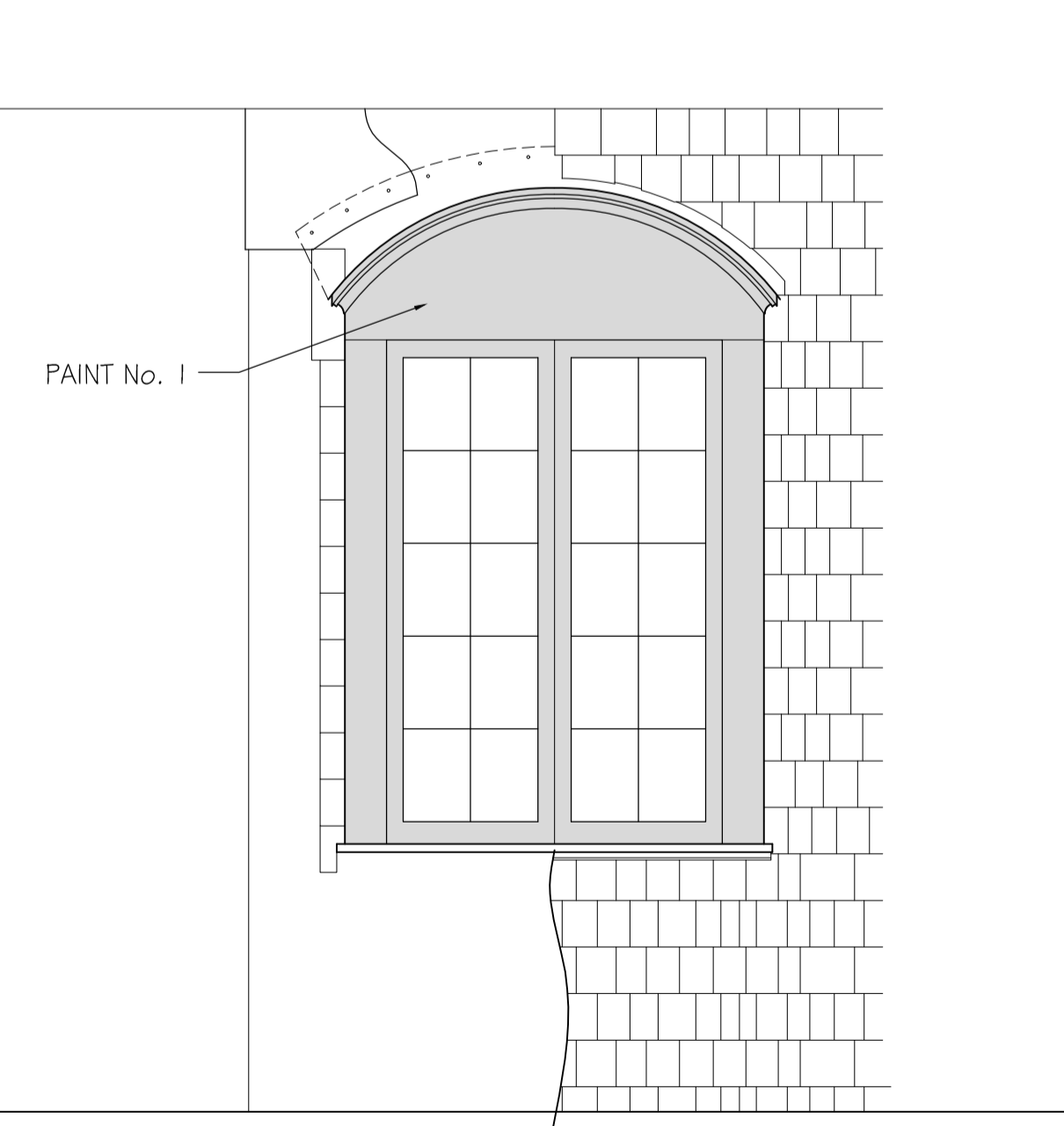
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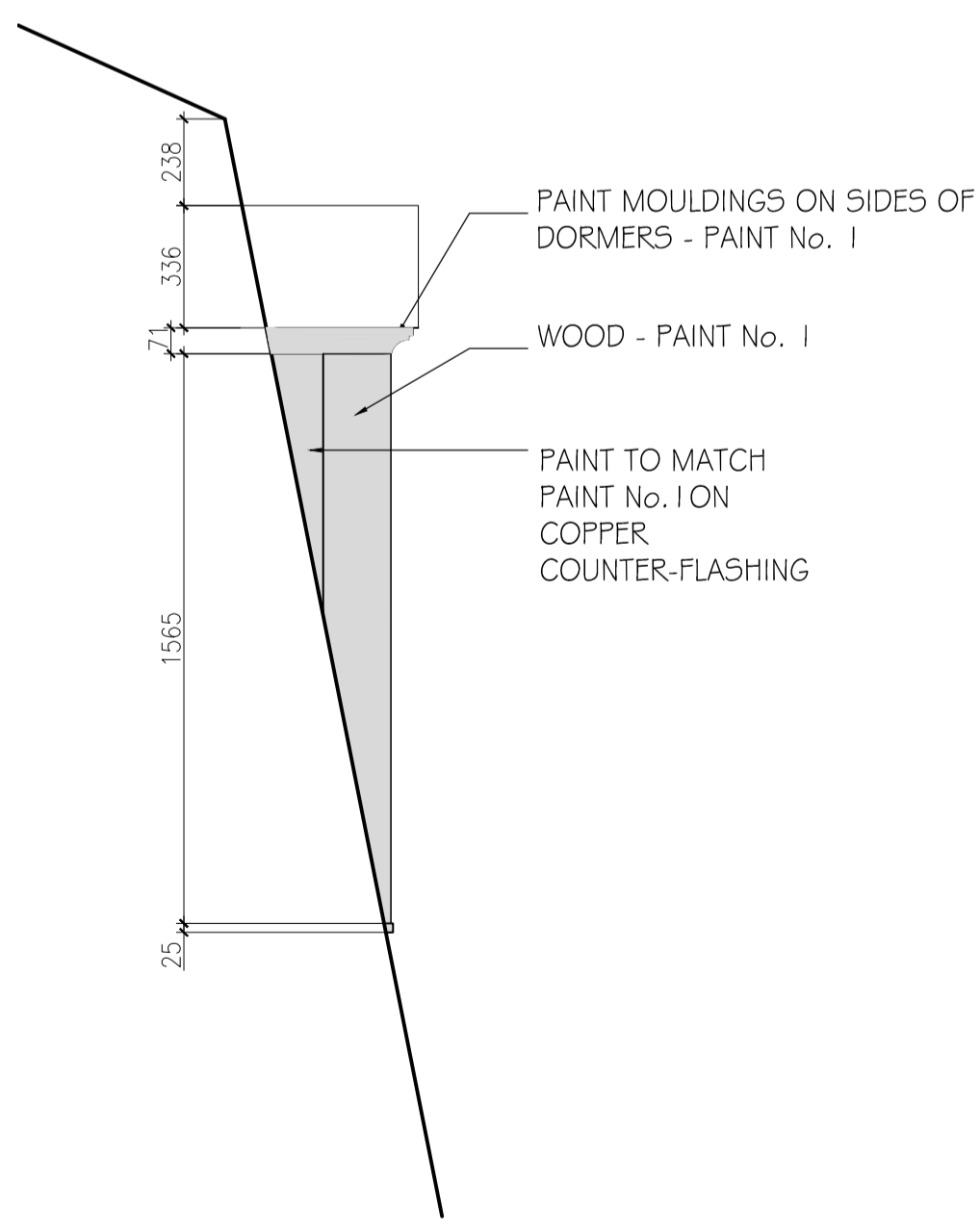
EXTERIOR PAINTING SCOPE METAL ROOF PAINTING SCOPE



1 ROOF PLAN
A100 1:100



2 DORMER WINDOW ELEVATION, TYP.
A100 1:20



3 SIDE ELEVATION OF DORMER
A100 1:20



4 TYPICAL EDGE OF METAL ROOF
A100 NTS



5 TYPICAL DORMER
A100 NTS

GENERAL NOTES: METAL ROOF PAINTING

1. PREPARE SURFACE WITH WATER-BASED DEGREASER AND POWER WASH.
2. BRUSH ON ONE (1) COAT ACRYLIC PRIMER AND TWO (2) COATS ACRYLIC TOP COATS.
3. PROVIDE MOCK UP CONSISTING OF ONE (1) DORMER ROOF FOR REVIEW PRIOR TO PROCEEDING WITH WORK.

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ROOF PLAN
METAL ROOF PAINTING
EXTERIOR PAINTING

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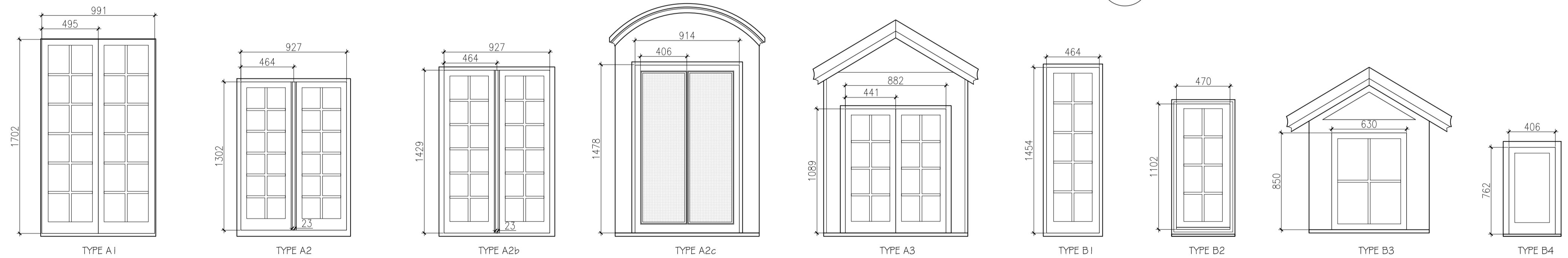
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A100

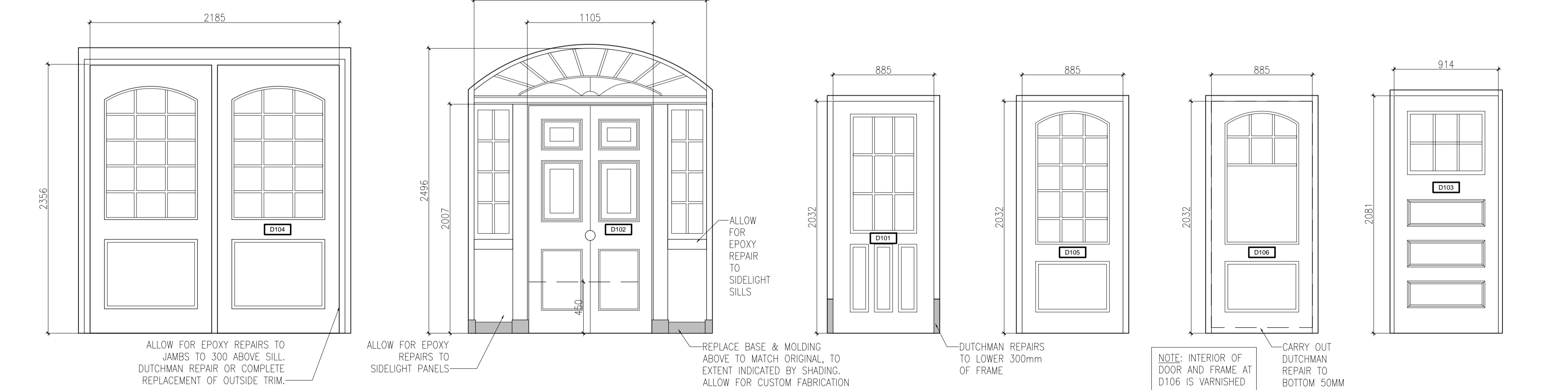
WINDOW SCHEDULE										
NUMBER	TYPE	PAINT INTERIOR	STAIN & VARNISH INTERIOR	REPLACE SILL	NEW STORM	NEW SCREEN	REPLACE GLAZING	NEW DRIP	WEATHER STRIPPING	ADDITIONAL COMMENTS
W101	A1	Yes							F	Strip and paint behind shutters
W102	A1	Yes							F	
W103	A1	Yes					1 lite		F	Adjust interior shutters to eliminate sticking
W104	A1	Yes							F	Adjust interior shutters to eliminate sticking
W105	A1	Yes			Yes				F	Adjust interior shutters to eliminate sticking. Strip and paint behind shutters
W106	A1	Yes			Yes				F	Strip and paint behind shutters
W107	A2b		Yes						HB	
W108	A2b		Yes				2 lites		HB	
W109	A1	Yes			Yes				SB	Replace missing glazing bar. Strip and paint behind shutters.
W110	A2b	Yes							HB	
W111	A2b		Yes				3 lites		HB	
W112	A2b		Yes				1 lite		HB	
W113	B1	Yes							SB	
W114	B2	Yes			Yes				SB	Allow for epoxy repairs to entire casement
W115	A2	Yes							SB	
W116	A1	Yes			Yes				SB	Strip and paint behind shutters
W201	A1	Yes							SB	
W202	A1	Yes							SB	
W203	A1	Yes							SB	
W204	A1	Yes							SB	Allow for 1 dutchman to sill
W205	A1	Yes							SB	Allow for 1 dutchman to lower corner of casement
W206	A1	Yes			Yes				SB	Replace lower rail and 150mm of stiles on casements
W207	A1	Yes			Yes				SB	
W208	A2c	Yes				Yes			HB	Repair and paint int. surround
W209	A2c	Yes				Yes			HB	Repair and paint int. surround
W210	A2c	Yes				Yes			HB	
W211	A2c	Yes							HB	Allow for replacement of bottom rail and epoxy repairs to stiles of outer casement
W212	A1	Yes			Yes				SB	Allow for 1 dutchman at interior sill
W213	B4	Yes							SB	Repair and paint int. surround
W214	A1	Yes							SB	
W215	A1	Yes				Yes			SB	Repair and paint int. surround
W216	A2c	Yes				Yes			HB	Lower casement: rebuild with epoxy
W217	A2c	Yes				Yes			HB	
W218	A2c	Yes			Yes				HB	
W219	A2c	Yes			Yes				HB	Allow for epoxy repairs to entire casement
W301	B3	Yes		Yes					SB	Allow for epoxy repairs to entire casement, sill, and frame
W302	A3	Yes			Yes				SB	Allow for epoxy repairs to entire casement, sill, and frame. Replace bottom rail of exist. storm. Allow for dutchman to lower meeting stiles. Allow for epoxy repairs or replacement of exterior casing.
W303	A3	Yes							SB	Allow for epoxy repairs to entire casement, sill, and frame. Replace bottom rail of exist. storm. Allow for dutchman to lower meeting stiles. Allow for epoxy repairs or replacement of exterior casing.
W304	B3	Yes							SB	Replace bottom rail of exist. storm

*Weatherstripping Legend: SB - Spring Bronze HB - Hooked Bronze to match existing F - Self-adhesive Foam Gasket



1 TYPICAL WINDOW PLAN & SECTION
A101 1:5

2 TYPICAL WINDOW TYPES
A101 1:25



3 DOOR ELEVATIONS
A101 1:25

WINDOW AND DOOR RESTORATION SCOPE

WINDOW AND DOOR SCOPE:

- EXTERIOR (ALL NOTES APPLY TO BOTH WINDOWS AND DOORS UNLESS OTHERWISE INDICATED):
 - REMOVE ALL PAINT FROM EXTERIOR OF FRAME AND FROM ALL CASEMENTS AND DOORS DOWN TO BARE WOOD USING SANDING AND/OR HEAT STRIPPING FOR INTERIOR FRAME, REMOVE ALL DAMAGED OR FLAKING PAINT. FILL ANY UNEVEN SURFACE, INCLUDING AREAS WHERE FLAKING PAINT HAS BEEN REMOVED, TO PROVIDE A SMOOTH SUBSTRATE.
 - REMOVE ALL EXISTING GLAZING PUTTY & GLASS
 - ALLOW FOR 10% REPLACEMENT OF GLASS
 - REPAIR DAMAGED WOOD AS NOTED ON SCHEDULES AND DRAWINGS, USING EPOXY REPAIRS & WOOD DUTCHMEN.
 - REPLACE ASTRAGALS WITH NEW TO MATCH EXISTING WHERE REQUIRED. ALLOW FOR 25% REPLACEMENT FOR PRICING PURPOSES.
 - WHERE NOTED ON SCHEDULE, REPLACE SILL TO EXTENT SHOWN ON I/A101.
 - ALLOW FOR CLAMPING AND GLUING RAIL AND STILE JOINTS.
 - REPAIR STRIPPED SCREW HOLES WHERE FASTENERS ARE TO BE REINSTALLED FOR INTERIOR OR EXTERIOR HARDWARE, ON FRAMES AND CASEMENTS, USING 9mm WOOD DOWELS GLUED IN PLACE. ALLOW FOR 30% REPAIR OF SCREW HOLES FOR PRICING PURPOSES.
 - ALLOW FOR FILLING OF WOOD SILLS AND BOTTOM 150mm OF FRAMES WITH EPOXY FILL SKIM COAT.
 - ALLOW FOR EPOXY REPAIR AT BOTTOM 150mm OF WOOD DOORS UNLESS NOTED OTHERWISE.
 - FILL ALL HOLES, ETC.
 - REPLACE GLAZING PUTTY
 - PAINT. BACK PRIME ANY NEW WOOD PRIOR TO INSTALLATION.
 - PROVIDE NEW SEALANT BETWEEN FRAME AND STONE (WINDOWS) PROVIDE NEW WEATHERSTRIPPING TO INNER CASEMENT ONLY - ALL FOUR SIDES OF FRAME & EDGE OF ONE CASEMENT BEHIND ASTRAGAL. SEE SCHEDULE.
 - (DOORS) PROVIDE NEW SPRING BRONZE WEATHERSTRIPPING TO HEAD AND JAMBS. INSTALL NEW SWEEPS (SUPPLY UNDER CASH ALLOWANCE).
 - ALLOW FOR MINOR PLASTIC REPAIRS TO ALL DOORS AND FRAMES.
 - PROVIDE MOCK UP OF TYPICAL WINDOWS OF TYPE A1, A2b, A3 INCLUDING WEATHERSTRIPPING INSTALLATION.
- HARDWARE:
 - REMOVE ALL HARDWARE, CLEAN, AND LABEL AS TO ORIGINAL LOCATION.
 - AT CONCLUSION OF RESTORATION, REINSTALL EXISTING SALVAGED HARDWARE.
 - ALL FASTENERS TO BE SOLID BRASS, SLOT HEAD, CUT THREADS. REPLACE ANY EXISTING FASTENERS THAT DO NOT MEET THESE REQUIREMENTS WITH NEW.
 - WHERE DIRECTED BY NCC REPRESENTATIVE, INSTALL NEW HARDWARE PURCHASED UNDER CASH ALLOWANCE IN PLACE OF ORIGINAL HARDWARE.
- REPLACEMENT WINDOWS AND SCREENS:
 - WHERE INDICATED ON SCHEDULES, FABRICATE NEW EXTERIOR CASEMENTS TO MATCH EXISTING.
 - DUPLICATE RAIL & GLAZING BAR PROFILES OF EXISTING WINDOWS. ALLOW FOR FABRICATION OF CUSTOM MOLDING KNIVES IF REQUIRED.
 - PROVIDE SHOP DRAWINGS
 - WHERE INDICATED ON SCHEDULES, FABRICATE NEW EXTERIOR SCREENS, PROFILES OF RAILS & STILES TO MATCH PROFILES OF NEW CASEMENTS. SCREENING TO BE HEAVY-DUTY BLACK METAL.
 - PROVIDE SHOP DRAWINGS.
- SPECIAL NOTES, DOOR D102:
 - REMOVE ALL PAINT AND HARDWARE FROM DOOR IN SHOP AND REVIEW WITH NCC REPRESENTATIVE PRIOR TO PROCEEDING.
 - ALLOW FOR EPOXY REPAIR TO DOOR PANELS, RAIL, AND STILES TO 450 ABOVE SILL IN BASE PRICE.
 - PROVIDE ALTERNATE PRICE TO
 - DISASSEMBLE RAILS AND STILES
 - CARRY OUT DUTCHMAN REPAIR OF LOWER 450mm OF STILES
 - REPLACE BOTTOM RAIL AND TWO LOWER PANELS WITH NEW TO MATCH EXISTING.
- UNIT PRICES:
 - PROVIDE UNIT PRICES FOR THE FOLLOWING WORK BEYOND WHAT IS SHOWN ON DRAWINGS AND SCHEDULES:
 - REPAIR OF STRIPPED SCREW HOLES WITH WOOD DOWEL, PER SCREW HOLE
 - EPOXY REPAIR OF DAMAGED WOOD, PER REPAIR
 - DUTCHMAN REPAIR OF DAMAGED WOOD, PER REPAIR
 - FABRICATION OF NEW CASEMENT PAIR TO MATCH EXISTING (WINDOW TYPE 1A)
 - REPLACEMENT OF WOOD SILL TO EXTENT SHOWN ON I/A101



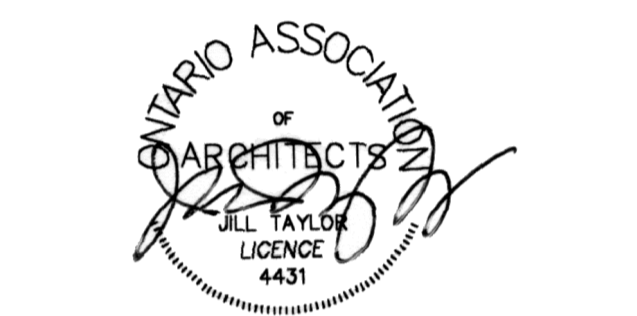
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PHASE 2

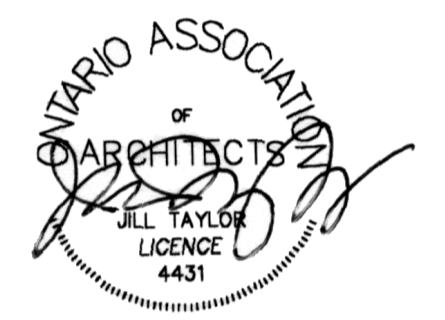
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WINDOW SCHEDULE,
WINDOW & DOOR ELEVATIONS
NOTES AND DETAILS

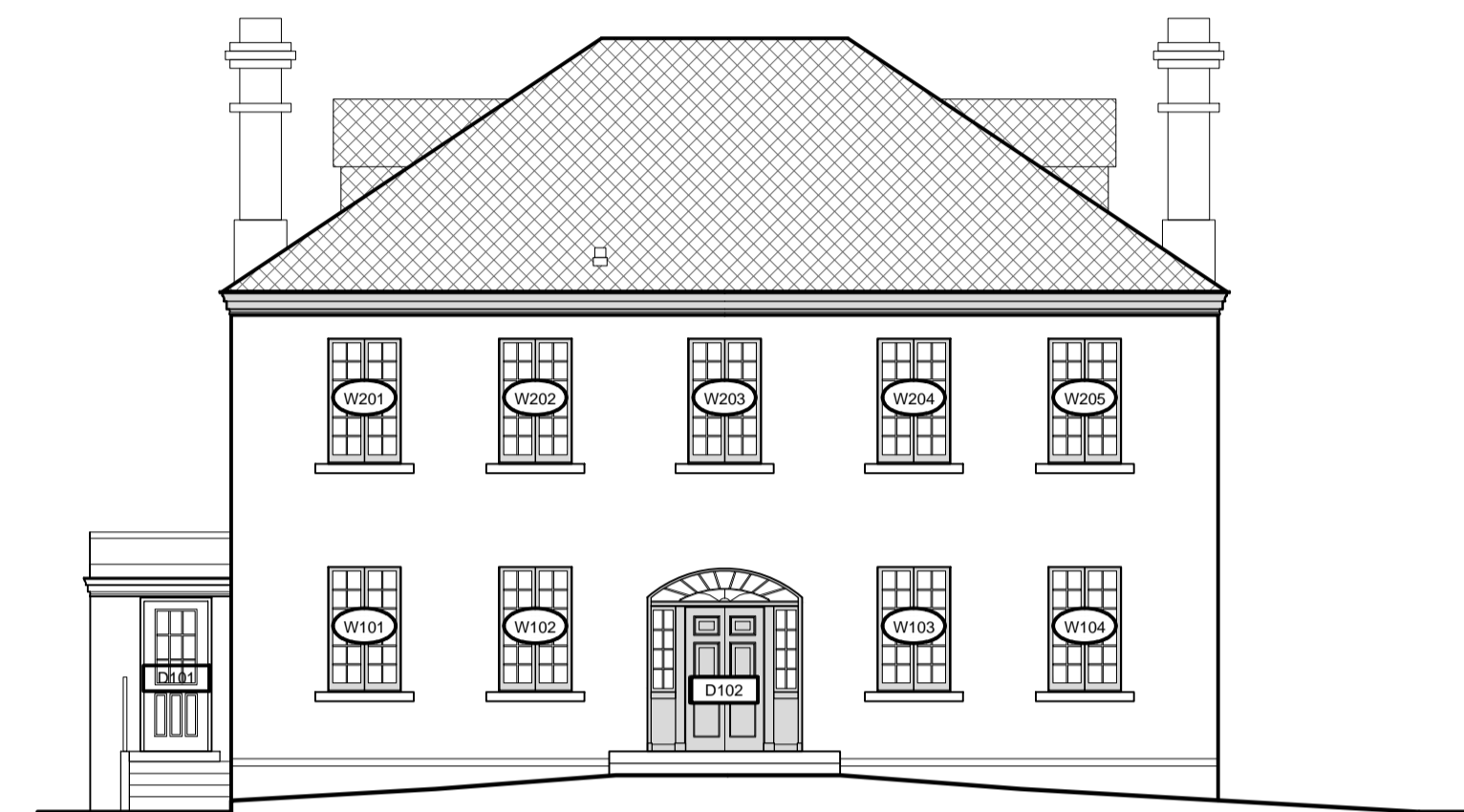
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WINDOW AND DOOR RESTORATION SCOPE EXTERIOR PAINTING SCOPE METAL ROOF PAINTING SCOPE



1 WEST ELEVATION
A200 1:100

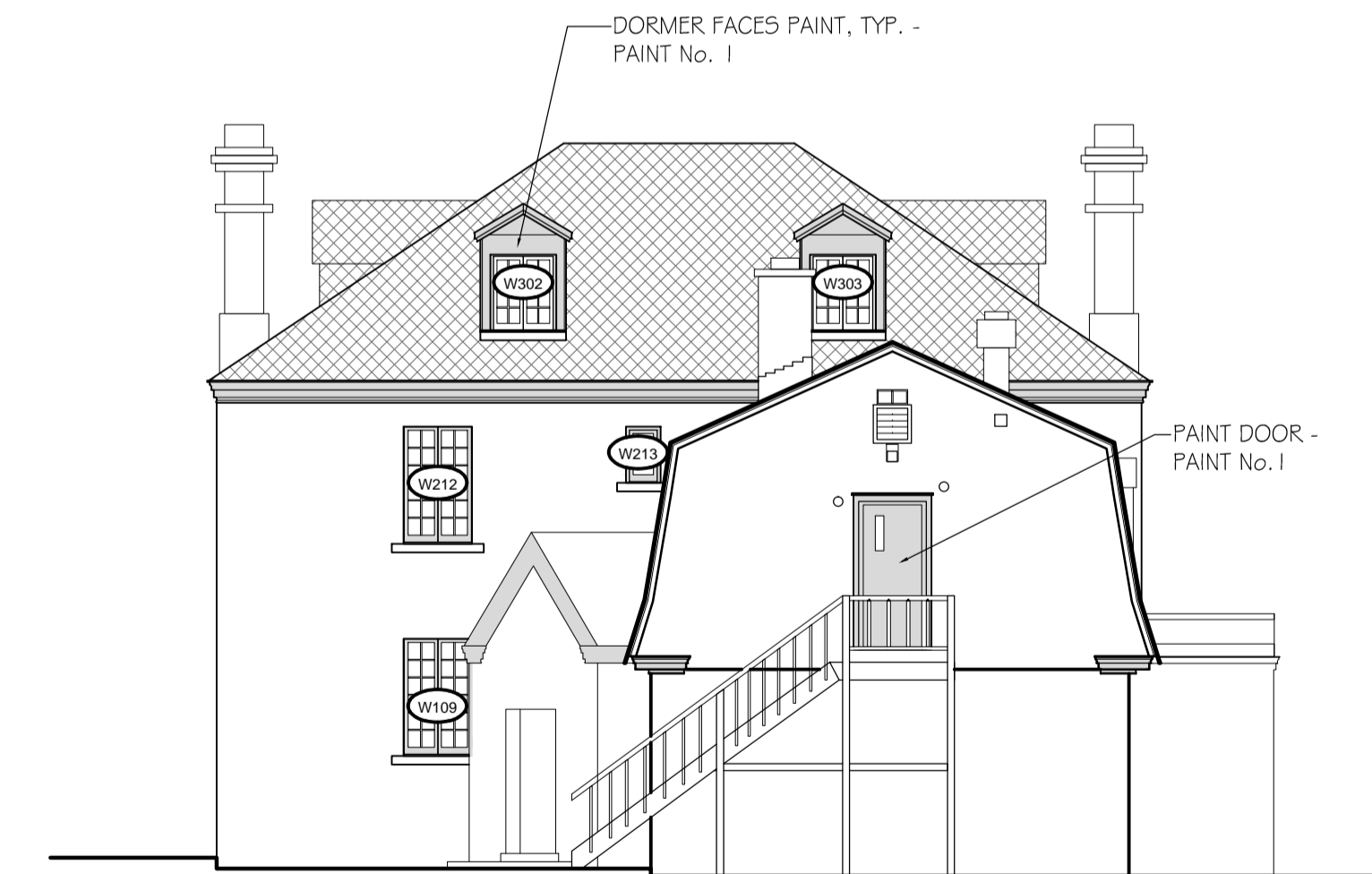


3 SOUTH ELEVATION
A200 1:100

LEGEND	
	- PAINT No. 1: ALL WOODWORK
	- PAINT No. 3: ZINC PAINT FOR METAL ROOF



2 EAST ELEVATION
A200 1:100



4 NORTH ELEVATION
A200 1:100

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ELEVATIONS

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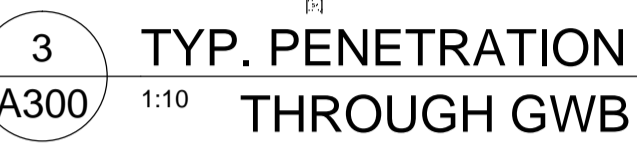
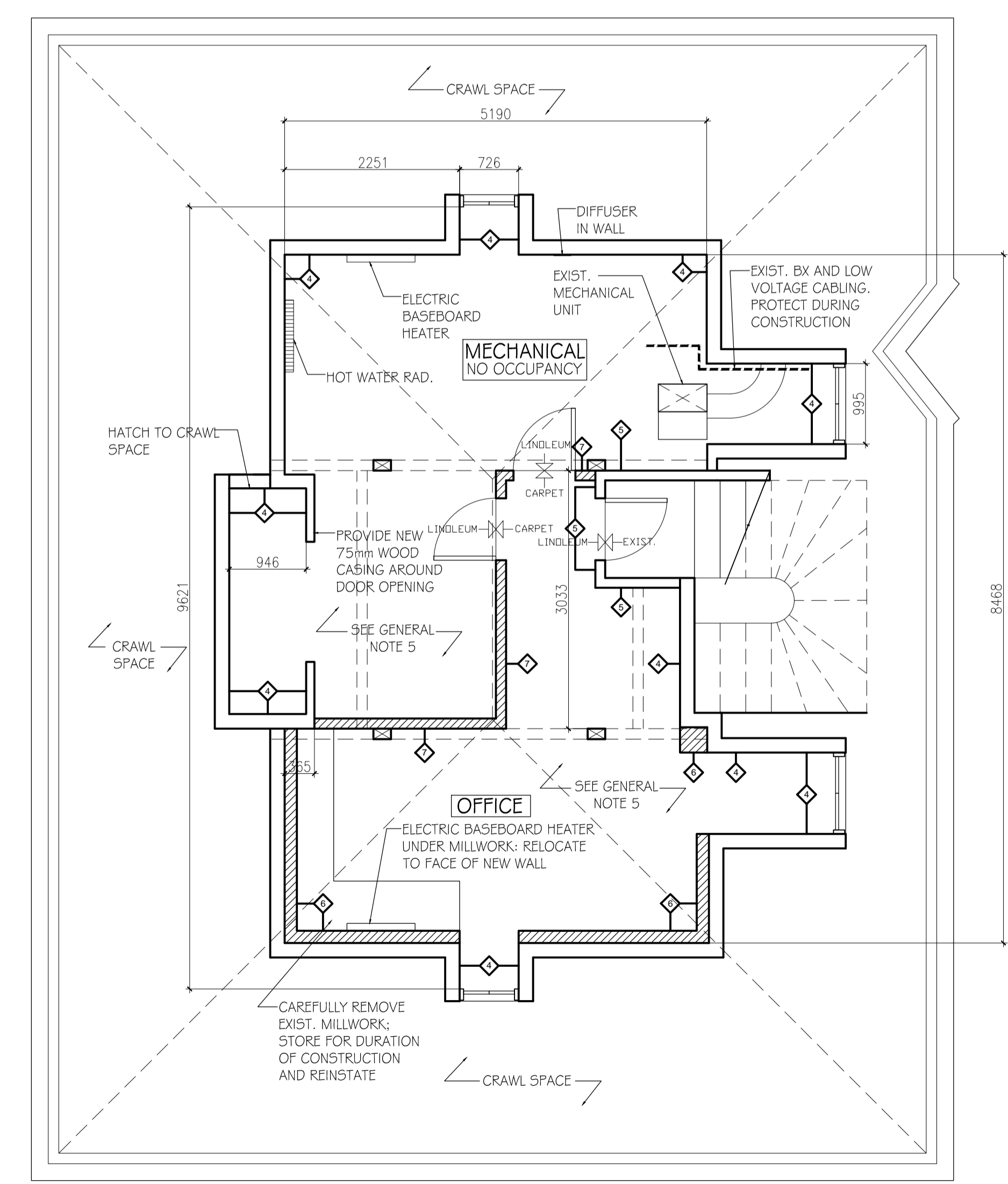
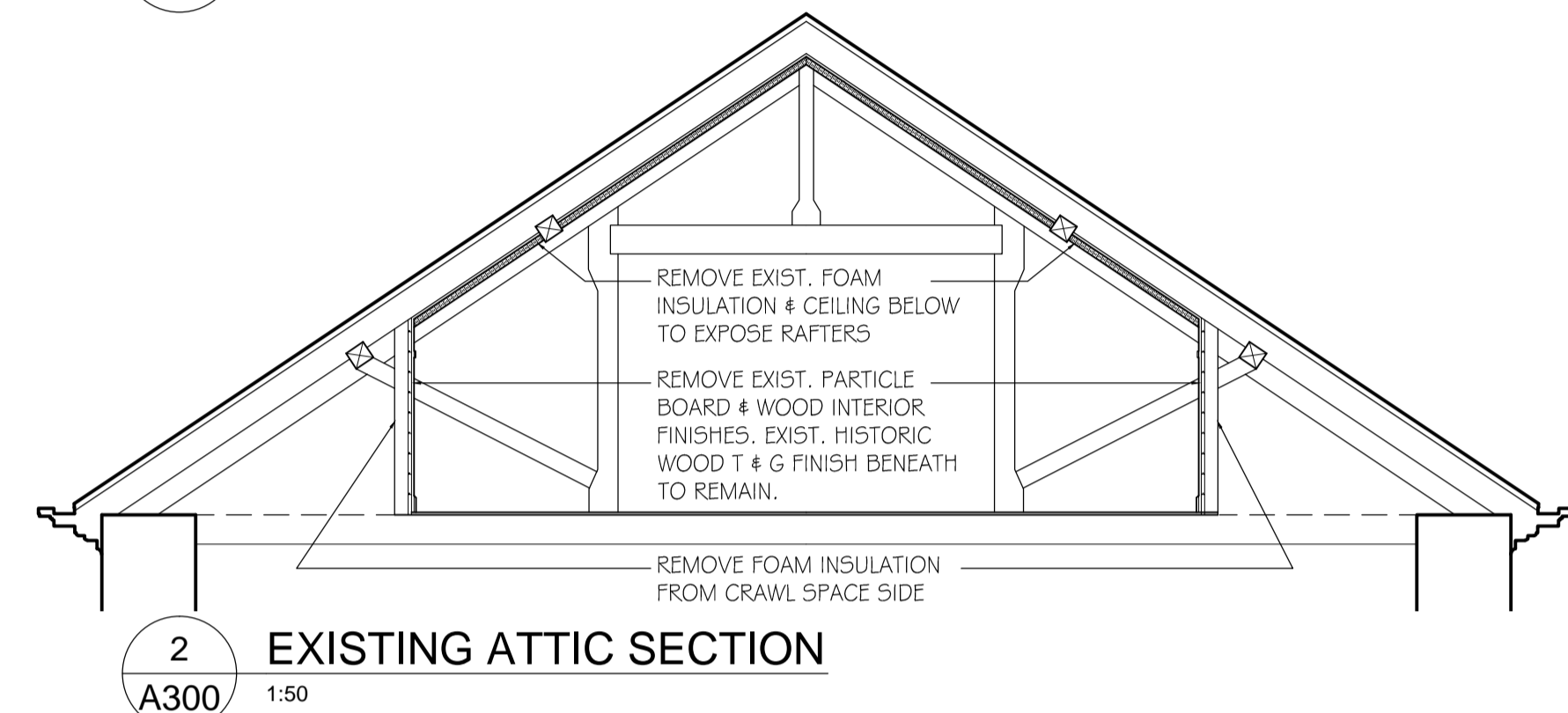
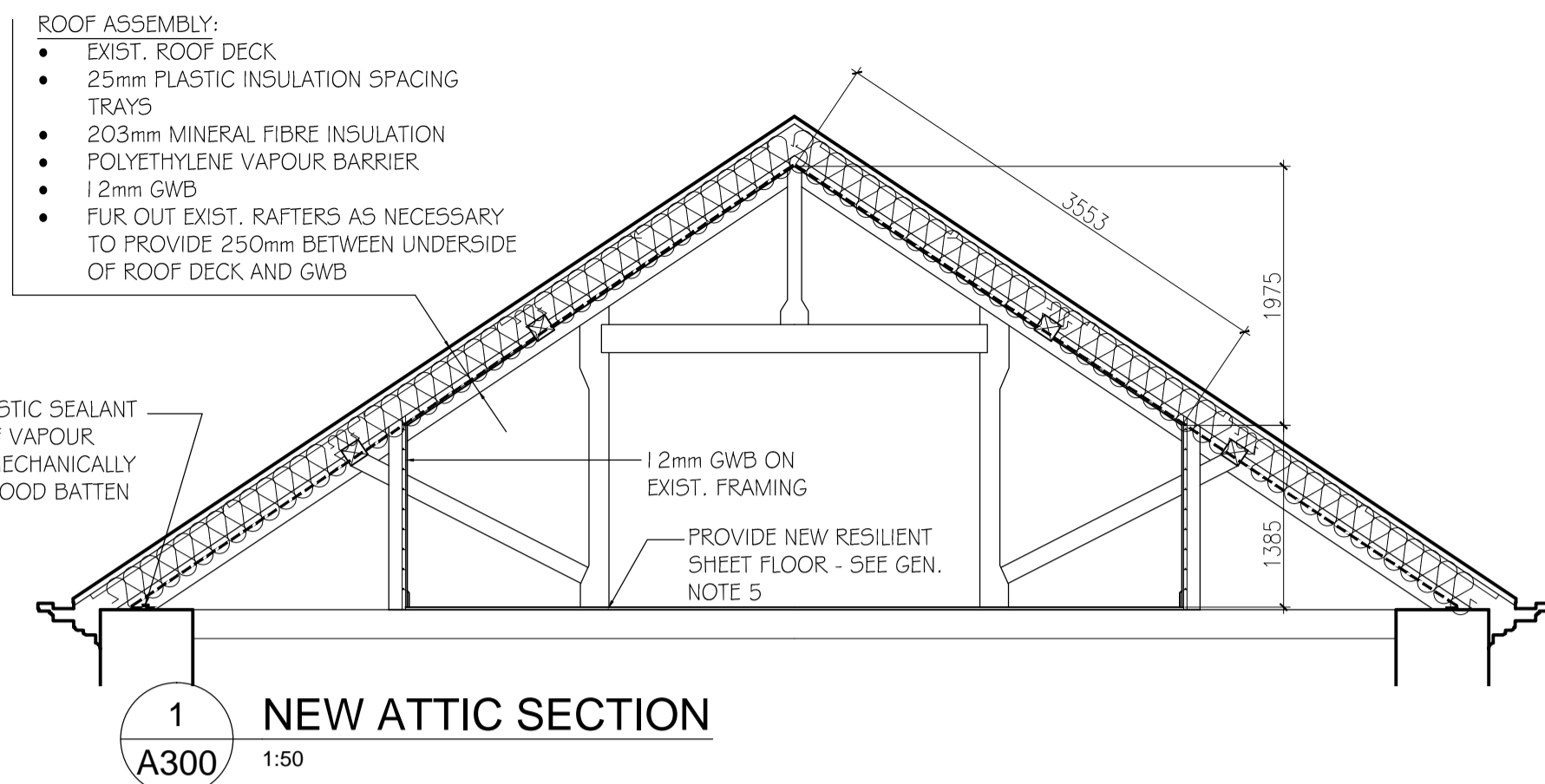
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BOILER REPLACEMENT SCOPE



THIRD FLOOR INSULATION SCOPE

GENERAL NOTES, THIRD FLOOR INSULATION SCOPE:

- DETAILS OF ATTIC FRAMING HAVE NOT BEEN FULLY DOCUMENTED. VERIFY CONDITIONS ON SITE DURING DEMOLITION AND REPORT VARIATIONS FROM CONDITIONS SHOWN TO NCC REPRESENTATIVE PRIOR TO PROCEEDING.
- ALLOW FOR DISCONNECTION AND RECONNECTION OF EXISTING LIGHTING, SWITCHES, AND ELECTRICAL OUTLETS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW INSULATION, VAPOUR BARRIER, AND GWB.
- CONTRACTOR TO REVIEW MECH. AND ELECT. WITHIN THE SPACE PRIOR TO TENDER AND MAKE NECESSARY ALLOWANCES FOR REMOVAL AND RECONNECTION TO COMPLETE SCOPE OF WORK, INCLUDING RELOCATING RECEPTACLES, SWITCHES, ETC. TO THE FACE OF NEW WALLS WHERE EXISTING WALLS ARE FURRED OUT. ADDITIONAL COSTS WILL NOT BE ALLOWED EXCEPT FOR CONDITIONS CONCEALED AT TIME OF VISIT. WHERE INSULATED DUCTWORK IS REMOVED AND RECONNECTED, ALLOW FOR NEW INSULATION TO MATCH EXISTING.
- ALL PENETRATIONS THROUGH NEW GWB FINISHES FOR EXISTING DUCTWORK, PIPING, ETC. TO BE SEALED TIGHT. FINISH ALL PENETRATIONS WITH PAINTABLE SEALANT.
- PROVIDE COMPLETE DUST PROTECTION OVER EXISTING FLOORING DURING CONSTRUCTION. AT CONCLUSION OF CONSTRUCTION, REMOVE EXIST. CARPET AND LINOLEUM SHEET FLOORING AND PROVIDE NEW LINOLEUM FLOORING AND CARPET ON NEW 6mm OSB UNDERLAYMENT. (SEE PLAN). ALLOW FOR NEAT PATCHING TO EXISTING WOOD FLOOR AROUND EXIST. PENETRATIONS.
- DOOR: PROVIDE NEW SOLID-CORE WOOD DOOR AND FRAME, PAINTED, COMPLETE WITH CLOSER AND CYLINDER LOCK WITH STORE-ROOM FUNCTION.
- LINOLEUM: PROVIDE 2.5mm LINOLEUM FLOORING, COLOUR TO BE SELECTED FROM MANUFACTURER'S COMPLETE LINE.
- CARPET: SUPPLIED UNDER CASH ALLOWANCE.

WALL TYPES:

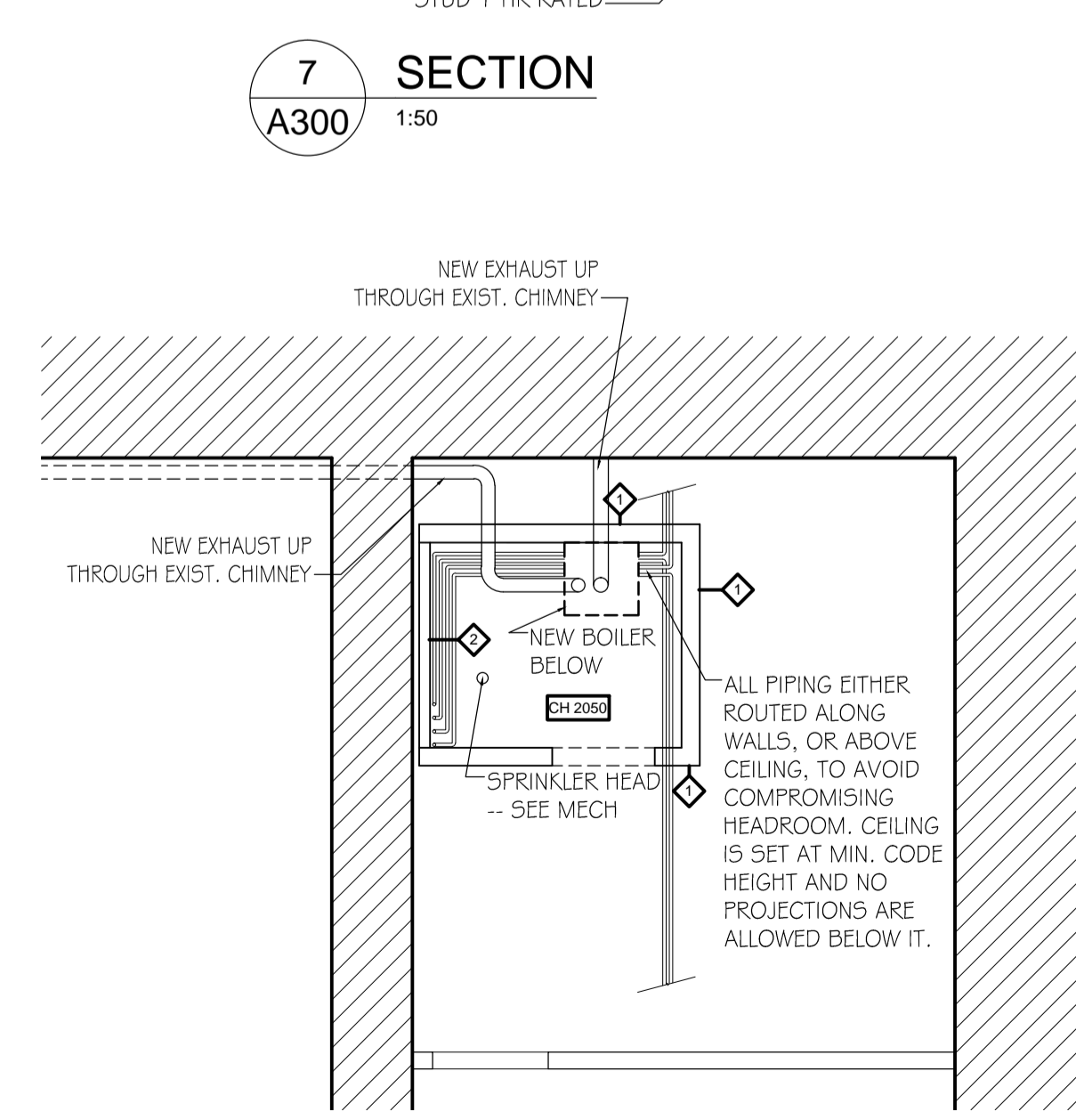
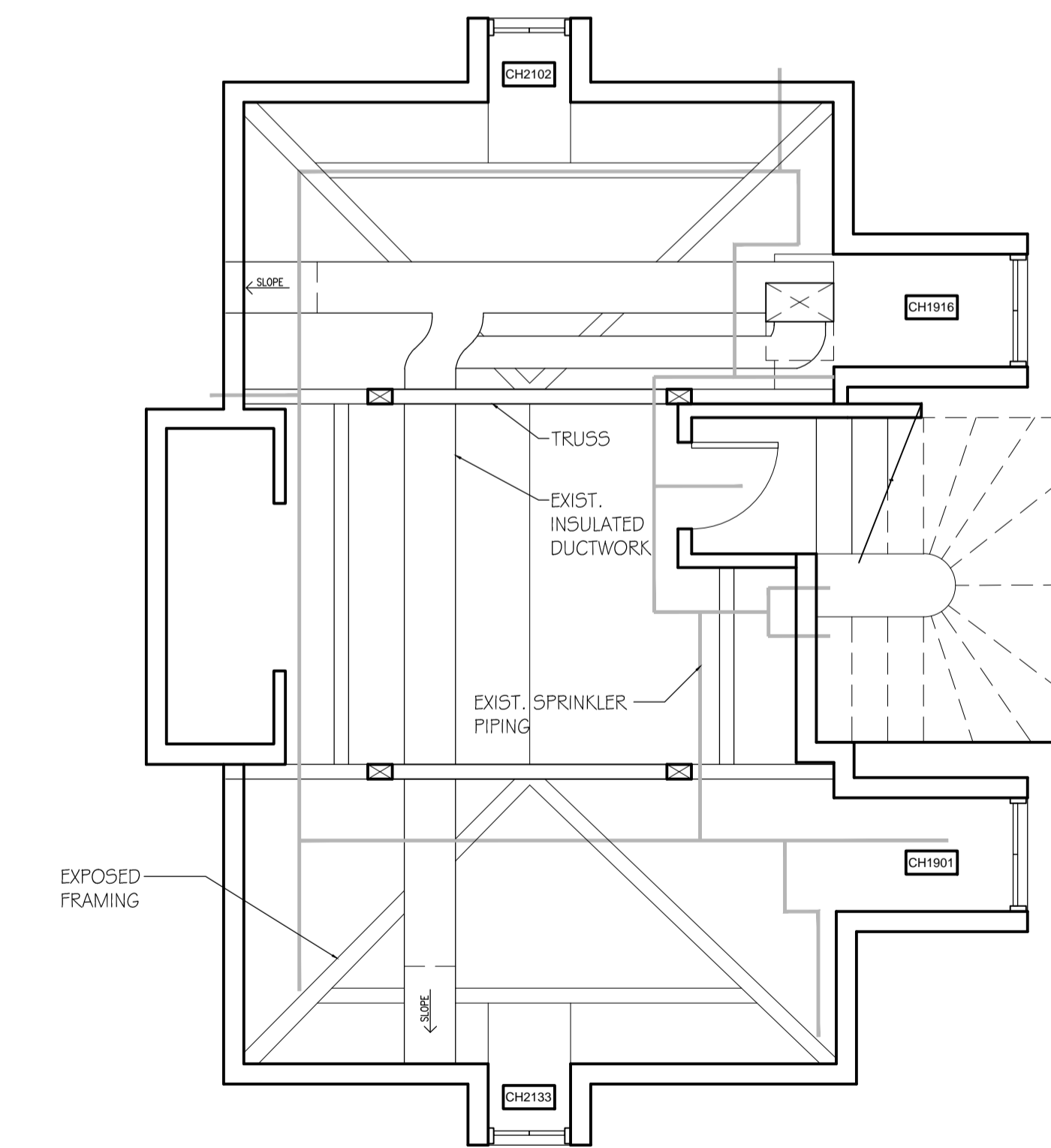
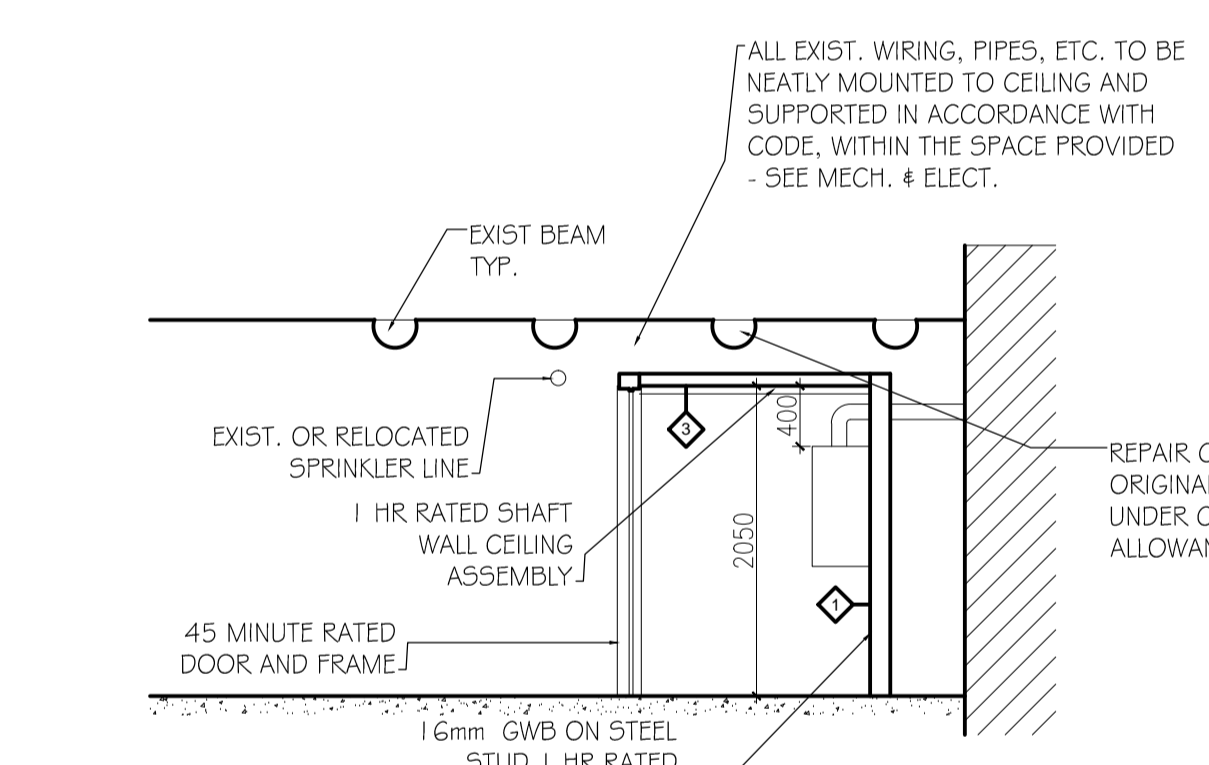
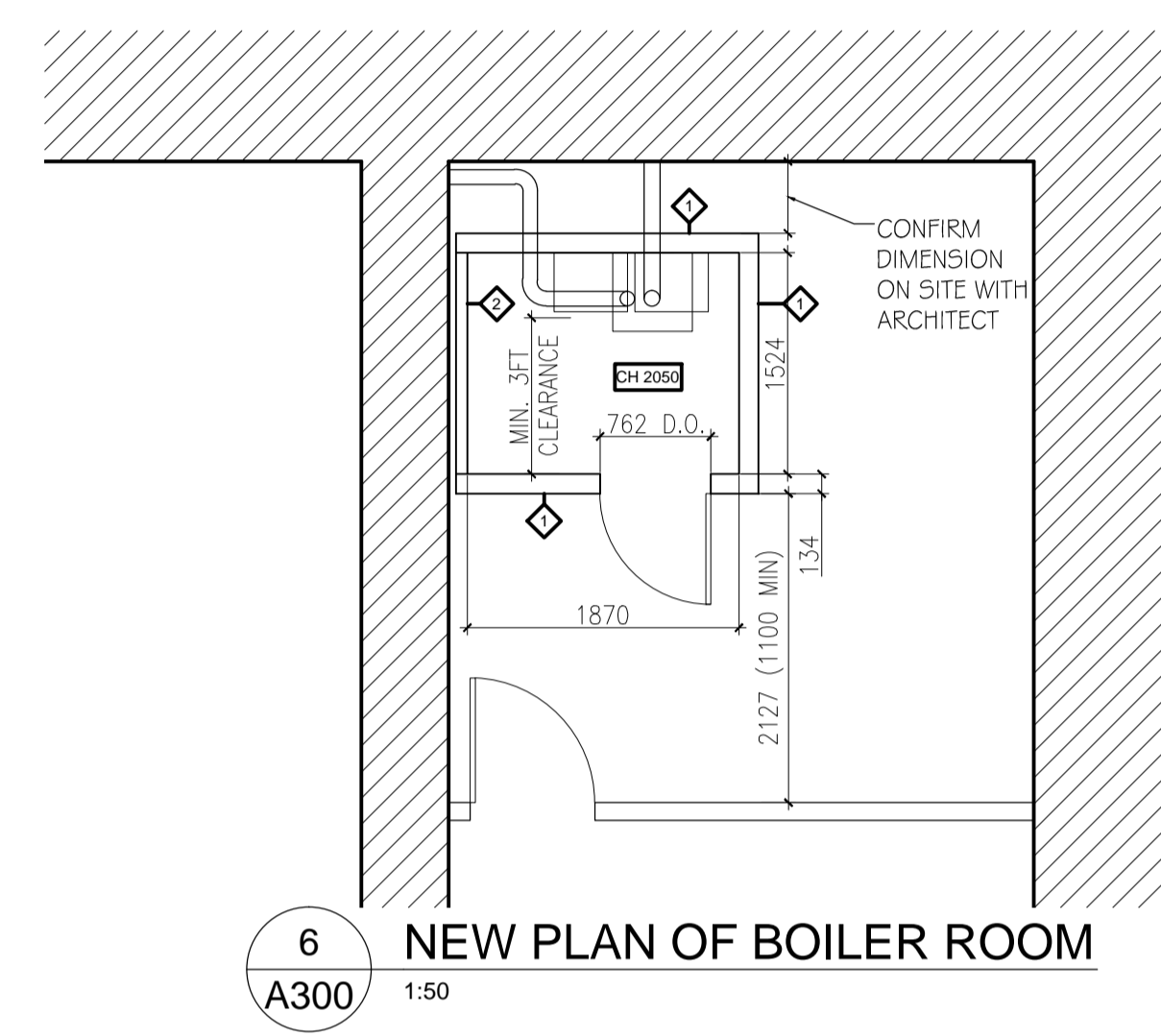
- 12mm GWB ON EXIST. FRAMING, CW NEW 100mm DEEP WOOD BASE - PRIME AND PAINT
- EXISTING 1 HR FIRE RATED GWB ASSEMBLY TO REMAIN - PRIME AND PAINT (ATTIC SIDE ONLY)
- 12mm GWB ON NEW 30x89 FRAMING, CW NEW 100mm DEEP WOOD BASE - PRIME AND PAINT
- 12mm GWB ON NEW 30x89 FRAMING, BOTH SIDES CW NEW 100mm DEEP WOOD BASE - PRIME AND PAINT

GENERAL NOTES, BOILER REPLACEMENT SCOPE:

- DOOR: PROVIDE NEW HOLLOW METAL DOOR AND FRAME, 45 MINUTE RATED, COMPLETE WITH CLOSER AND CYLINDER LOCK WITH STORE-ROOM FUNCTION.

WALL TYPES:

- NEW FIRE RATED DRYWALL ASSEMBLY - 1 HR FIRE RATED: 15.9mm M.R. SHEETROCK FIRECODE GWB, 92mm 25 GAUGE STEEL STUDS AT 600mm O.C., 15.9mm M.R. SHEETROCK FIRECODE GWB - PRIME AND PAINT
- 79mm SHAFT WALL, 1 HR FIRE RATED GWB ASSEMBLY, ULC W452 SYSTEM A - PRIME AND PAINT
- 1 HR FIRE RATED SHAFT WALL CEILING ASSEMBLY, ULC W452 - PRIME AND PAINT

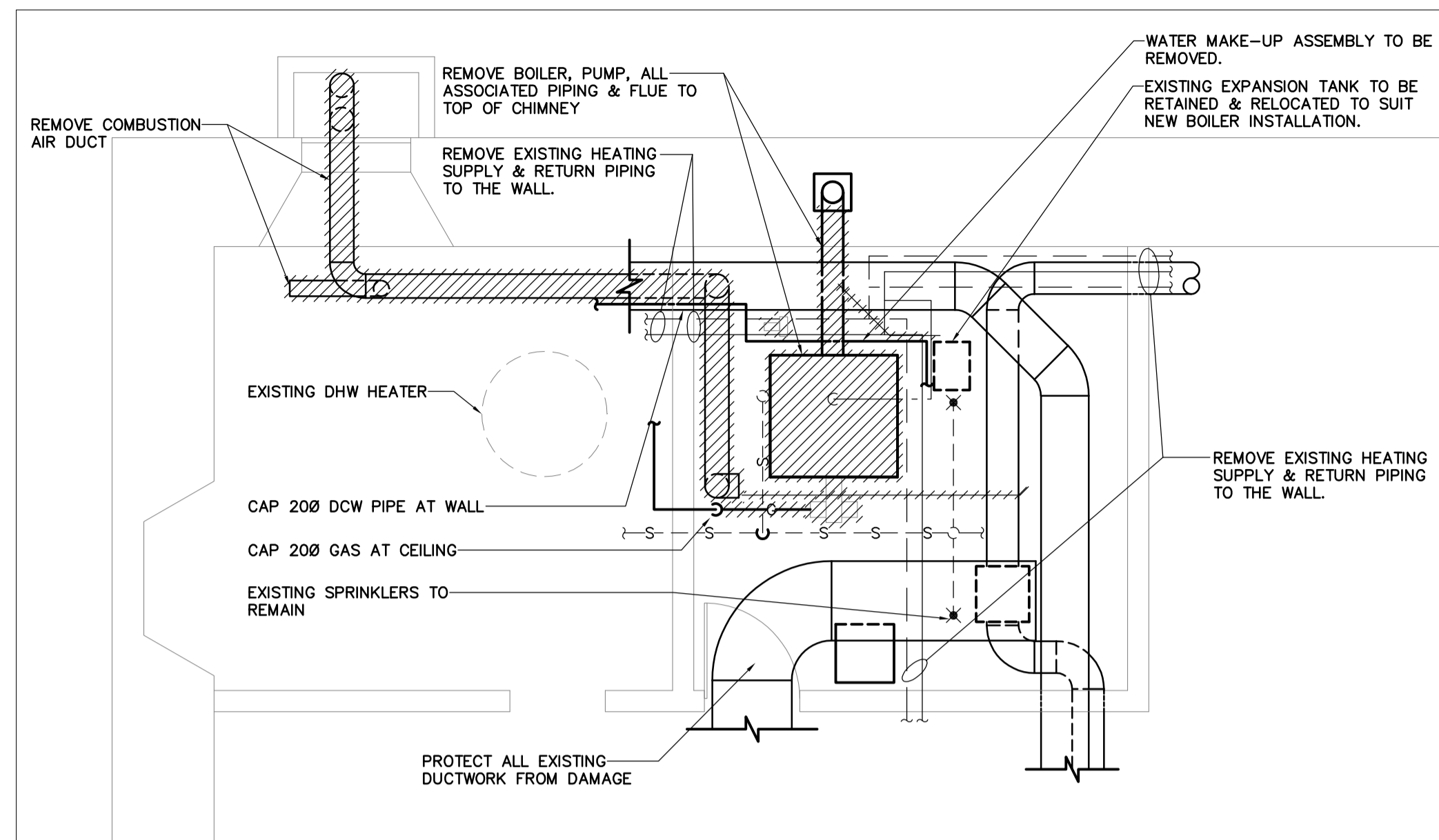


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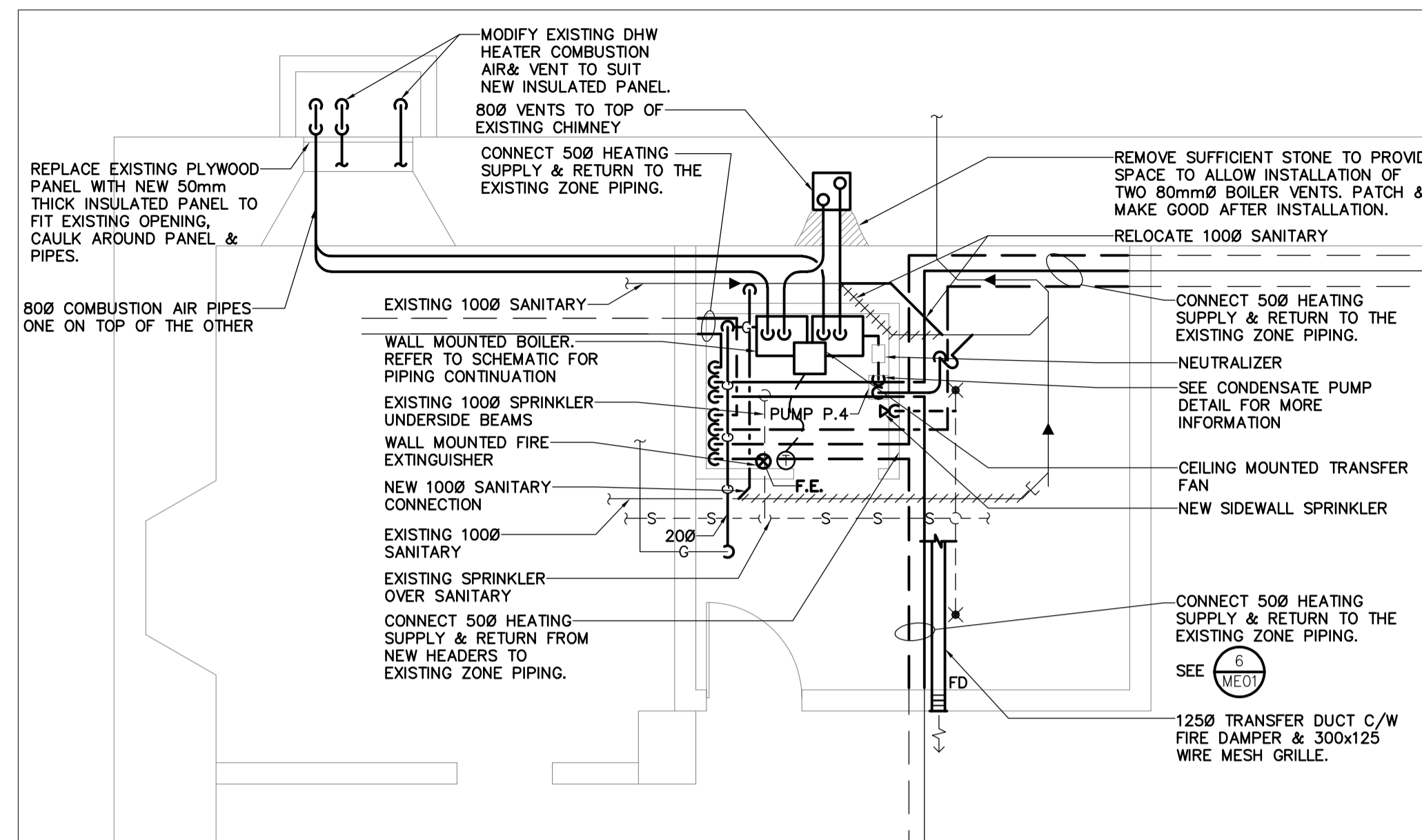
BOILER REPLACEMENT AND THIRD FLOOR INSULATION

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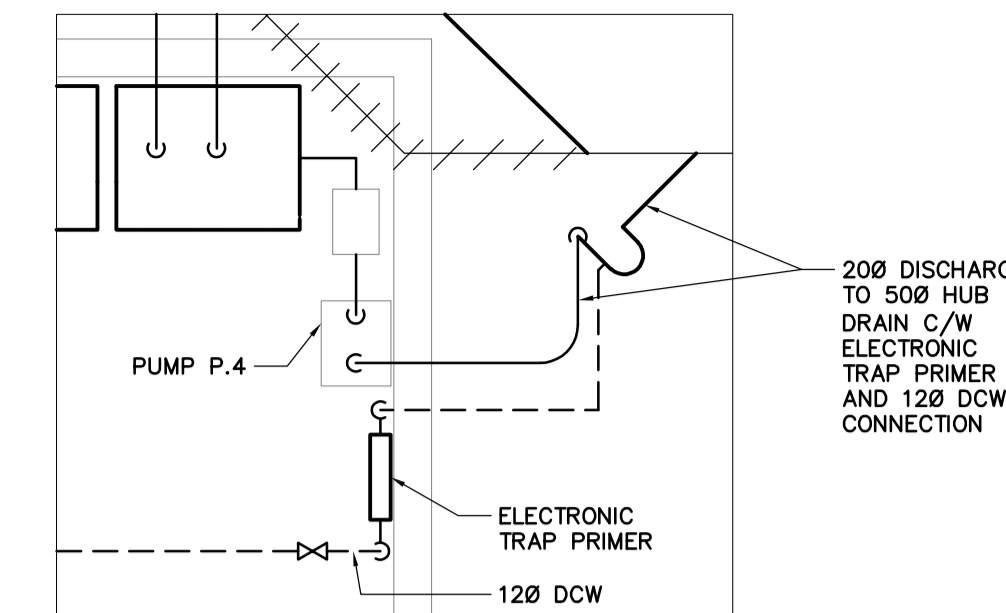
1 PART BASEMENT FLOOR PLAN DEMOLITION - MECHANICAL

ME01 1:50



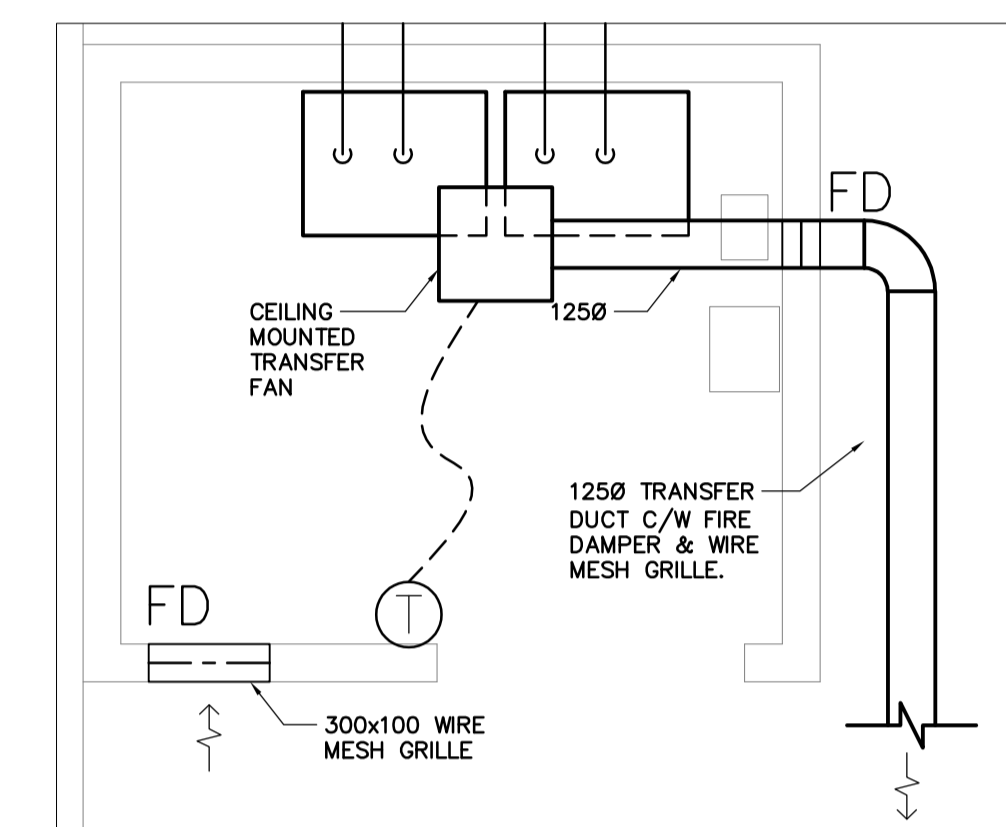
2 PART BASEMENT FLOOR PLAN NEW - MECHANICAL

ME01 1:50



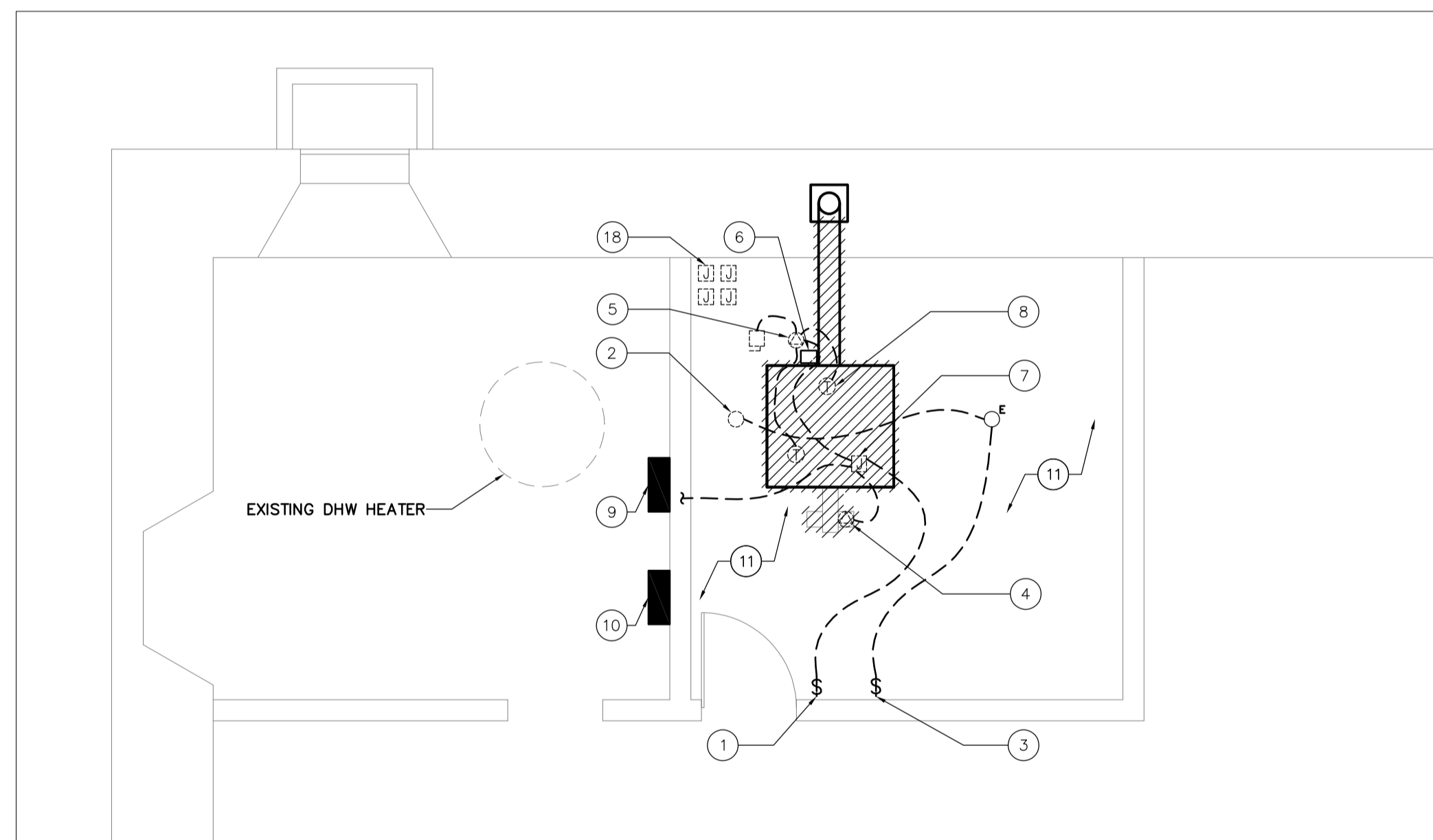
3 CONDENSATE PUMP DETAIL

ME01 1:20



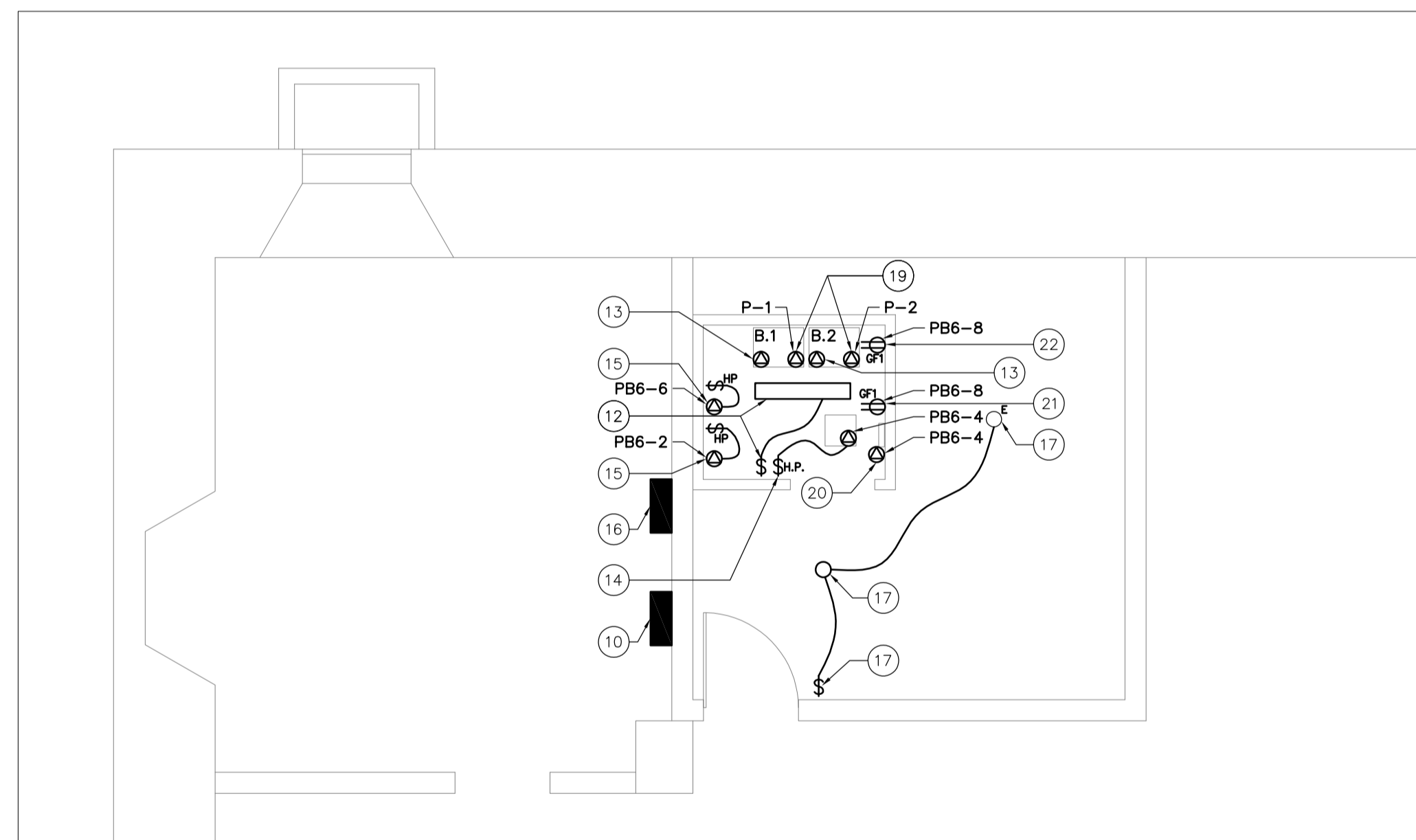
4 TRANSFER EXHAUST AIR DUCT DETAIL

ME01 1:20



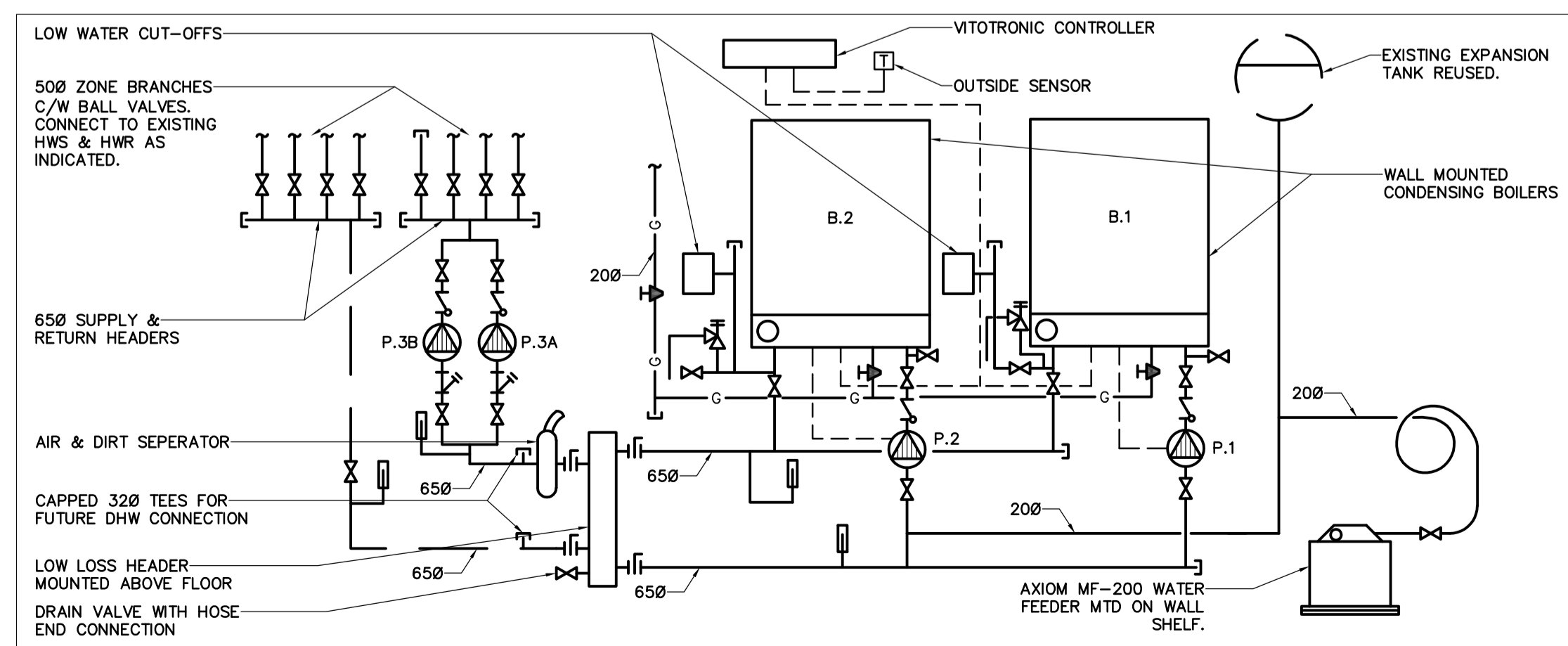
4 PART BASEMENT FLOOR PLAN DEMOLITION - ELECTRICAL

ME01 1:50



5 PART BASEMENT FLOOR PLAN NEW - ELECTRICAL

ME01 1:50



6 SCHEMATIC - BOILER PIPING

ME01 N.T.S.

- ELECTRICAL DRAWING NOTES**
- DISCONNECT AND REMOVE EXISTING WALL MOUNTED SWITCH CONTROL FOR BOILER BEING REMOVED C/W ALL WIRING BACK TO SOURCE AND MAKE SAFE. RETAIN EXISTING CIRCUIT FOR NEW BOILERS.
 - DISCONNECT AND RELOCATE EXISTING PORCELAIN LAMP HOLDER LIGHT TO NEW LOCATION. REFER TO NEW WORK FOR RELOCATION.
 - DISCONNECT AND REMOVE EXISTING WALL MOUNTED LIGHT SWITCH C/W ALL WIRING FOR LIGHTING BEING REMOVED.
 - DISCONNECT EXISTING BOILER CONNECTION AND REMOVE ALL WIRING, JUNCTION BOXES BACK TO SOURCE AND MAKE SAFE.
 - DISCONNECT EXISTING PUMP CONNECTION AND REMOVE ALL WIRING, JUNCTION BOXES BACK TO SOURCE AND MAKE SAFE. RETAIN CIRCUIT FOR NEW WORK.
 - DISCONNECT EXISTING CONNECTION WATTS LEVEL CONTROLLER AND REMOVE ALL WIRING, JUNCTION BOXES BACK TO SOURCE AND MAKE SAFE.
 - DISCONNECT AND REMOVE EXISTING JUNCTION BOX WIRING AT CEILING AND CONNECTIONS FOR BOILER AND ASSOCIATED EQUIPMENT BACK TO SOURCE AND MAKE SAFE.
 - DISCONNECT, REMOVE AC90 WIRING CONNECTIONS FOR BOILER TEMPERATURE SENSORS.
 - EXISTING PANEL PB5, 120/240V, 3PH., 3W (SQUARE 'D'-0024L-1 SER G1). PROVIDE 1-20A, 1P BREAKER IN PANEL.
 - EXISTING PANEL PB6, 120/240V, 3PH., 3W (SIEMENS EQ LOAD CENTRE). PROVIDE 4-15A, 1P NEW BREAKERS IN PANEL.
 - LOCATE, TRACE ALL EXISTING COMMUNICATION/TELECOM CABLING CURRENTLY RUNNING WITHIN AND THROUGH EXISTING BOILER ROOM AND PROVIDE REMOVAL OF ALL REDUNDANT CABLING DURING DEMOLITION. MAINTAIN EXISTING CABLING STILL IN USE AND PROVIDE INDEPENDENT SUPPORT TO AVOID INTERFERENCE FROM EXISTING OTHER SYSTEMS. CONFIRM AND COORDINATE ON SITE WITH BUILDING TENANT TO PROVIDE NOTICE OF WORK INVOLVED BEFORE STARTING REMOVALS.
 - PROVIDE NEW LIGHT FIXTURE, 1 LAMP -T8, 32WATT, 120V WITH WIRE GUARD SURFACE MOUNTED AT NEW BOILER ROOM CEILING C/W NEW LIGHT SWITCH CONTROL.
 - PROVIDE 120V HARDWIRE CONNECTION OF BOILER UNIT (B-1, B-2). CONFIRM EXACT LOCATION ON SITE TO SUIT BOTH. CONNECT TO EXISTING BOILER CIRCUIT FROM DEMOLITION.
 - PROVIDE 120V, 1Ø, CONNECTION TO NEW TRANSFER FAN, AND CONNECT TO CIRCUIT INDICATED.
 - PROVIDE 120V, 1PH., CONNECTION TO NEW PUMPS P-3A, AND P-3B, 5/8HP C/W MANUAL MOTOR STARTER DISCONNECT SWITCH. CONNECT PUMPS P-1 AND P-2 TO BE CONNECTED TO CIRCUIT 23.
 - EXISTING PANEL PB5, 120/240V, 3PH., 4W (SQUARE 'D'-0024L-1 SER G1). ALLOW FOR 1 - 20A, 1P, 120V NEW BREAKER FOR NEW BOILER PUMPS P-1 AND P-2 TO BE CONNECTED TO CIRCUIT 23.
 - PROVIDE NEW LIGHT SWITCH AND CONNECT TO RELOCATED LAMP HOLDER AND EXISTING LAMP HOLDER LIGHT FIXTURE. RECONNECT, REWIRE TO EXISTING LIGHT CIRCUIT.
 - RELOCATE EXISTING JUNCTION BOXES (4) TO NEW ACCESSIBLE LOCATION OUTSIDE NEW BOILER ROOM AREA. TRACE EXISTING CIRCUITS FEEDING BOXES, EXTEND AND PROVIDE ADDITIONAL WIRING TO SUIT NEW ACCESSIBLE LOCATION.
 - PROVIDE 120V, 1Ø CONNECTION TO NEW ELECTRONIC TRAP PRIMER, FROM PANEL PB6.
 - PROVIDE 120V, 15A GFI, DUPLEX RECEPTACLE FOR CONDENSATE PUMP PLUG-IN. CONNECT TO PANEL PB6.0
 - PROVIDE 120V, 15A GFI, DUPLEX RECEPTACLE FOR EACH BOILER CONTROL PLUG-IN. CONNECT TO CIRCUIT INDICATED.

MECHANICAL LEGEND	
SYMBOLS	DESCRIPTION
—	EXISTING HOT WATER PIPE RETURN
—	EXISTING HOT WATER PIPE SUPPLY
—HWR	HOT WATER PIPE RETURN
—HWS	HOT WATER PIPE SUPPLY
—S	EXISTING SPRINKLER PIPE
—S	NEW SPRINKLER PIPE
—G	NEW GAS PIPE
—G	EXISTING GAS PIPE
F.E.	FIRE EXTINGUISHER
FD	FIRE DAMPER
×	UPRIGHT SPRINKLER HEAD
▷	SIDEWALL SPRINKLER HEAD
◀	PLUMBING FLOW ARROW

ELECTRICAL LEGEND	
SYMBOLS	DESCRIPTION
□	DISCONNECT SWITCH
⊕	LIGHT SWITCH
□	JUNCTION BOX
⊕	EXISTING LIGHT TO REMAIN
⊕	DUPLEX RECEPTACLE, GFI TYPE, 120V, 20A
⊕	MOTOR RATED SWITCH
⊕	NEW HARDWIRE CONNECTION
⊕	THERMOSTAT
—	NEW WORK
—	EXISTING TO REMAIN
---	EQUIPMENT TO BE REMOVED

issued or revised
émis ou révisé

no.	description	date
3	ISSUED FOR TENDER	2014.05.30
2	RE-ISSUED FOR CLIENT REVIEW	2014.05.16
1	ISSUE FOR CLIENT REVIEW	2014.03.31

project
projet

MAPLELAWN 529 RICHMOND
ROAD OTTAWA

PHASE 2

drawing
dessin

BOILER REPLACEMENT

approved by
approuvé par J.M.

designed by
conçu par N.B.

drawn by
dessiné par M.B.

date 2014.05.16 scale AS SHOWN

NCC project no. sheet no.
no. du projet de la CCN no. de la feuille

RD-5155-05

ME01

MECHANICAL SPECIFICATION

- SCOPE OF WORK:
 - PROVIDE LABOUR, EQUIPMENT AND SERVICES NECESSARY TO PROPERLY COMPLETE THE MECHANICAL WORK INDICATED ON DRAWINGS.
 - PERMITS AND FEES:
 - OBTAIN AND PAY FOR PERMITS AND FEES NECESSARY FOR THE EXECUTION OF THE MECHANICAL WORK. CONFORM TO ALL APPLICABLE CODES AND BY-LAWS. OBTAIN CERTIFICATES OF ACCEPTANCE FROM ALL THE INSPECTION AUTHORITIES.
 - SITE VISIT:
 - ACQUIRE FULL WORKING KNOWLEDGE OF BUILDING SITE AND ANY EXISTING CONDITIONS WHICH MAY AFFECT THE WORK. VISIT SITE PRIOR TO TENDER SUBMISSION.
 - PROTECTION:
 - TAKE PRECAUTIONS TO PROTECT THE OCCUPANTS AND BUILDING FROM INJURY OR DAMAGE DUE TO CONSTRUCTION ACTIVITIES.
 - CONTRACT DRAWINGS:
 - CONTRACT DRAWINGS FOR MECHANICAL WORK ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND GENERAL ARRANGEMENT OF EQUIPMENT, COMPONENTS AND PIPING. BEFORE INSTALLATION, VERIFY THE PHYSICAL LOCATION OF ALL EQUIPMENT WITH OTHER TRADES AND REPORT ANY OBSTRUCTIONS OR INTERFERENCES. NO EXTRA PAYMENTS ARISING FROM FAILURE TO MAKE THIS VERIFICATION WILL BE CONSIDERED.
 - EXISTING SERVICES:
 - GIVE THE OWNER AMPLE NOTICE OF EACH NECESSARY INTERRUPTION TO EXISTING MECHANICAL AND ELECTRICAL SYSTEMS DURING THE COURSE OF THE WORK. KEEP THE DURATION OF INTERRUPTIONS AS SHORT AS POSSIBLE. THE OWNER RESERVES THE RIGHT TO DENY APPROVAL FOR AN INTERRUPTION ON ANY SPECIFIC DATE OR TIME. IN THIS CASE, AN ALTERNATIVE TIME SHALL BE MUTUALLY SELECTED.
 - CUTTING AND PATCHING:
 - CUTTING AND PATCHING NOT BY MECHANICAL DIVISION.
 - MECHANICAL CONTRACTOR TO LOCATE REQUIRED OPENINGS AND CO-ORDINATE WITH GENERAL CONTRACTOR AND STRUCTURAL ENGINEER.
 - DEMOLITION:
 - REMOVE FROM THE CONSTRUCTION SITE EXISTING MECHANICAL EQUIPMENT WHICH BECOMES OBSOLETE AS A RESULT OF THE WORK EXCEPT AS OTHERWISE STATED. DISPOSE DEMOLITION MATERIAL IN A ENVIRONMENTAL FRIENDLY MANNER.
 - SHOP DRAWINGS:
 - SUBMIT TO THE ENGINEER FOR APPROVAL ONE (1) COPY OF SHOP DRAWINGS FOR ALL NEW EQUIPMENT, PRODUCTS AND SYSTEMS INCLUDING WIRING DIAGRAMS AND CONTROL SCHEMATICS.
 - WARRANTY:
 - WARRANTY ALL WORK FOR TWELVE (12) MONTHS FROM DATE OF ACCEPTANCE, EXCEPT WHERE NOTED OTHERWISE.
 - MATERIALS:
 - MATERIALS AND EQUIPMENT TO BE NEW, UNLESS OTHERWISE INDICATED, AND FREE FROM DAMAGE, BLEMISHES, OXIDATION, ETC. MATERIALS USED FOR SIMILAR PURPOSES AND FUNCTIONS SHALL BE THE PRODUCT OF ONE MANUFACTURER UNLESS SPECIFIED OTHERWISE.
 - ACCESSORIES:
 - PROVIDE ACCESSORY ITEMS OR MATERIALS REQUIRED SUCH AS EQUIPMENT SUPPORTS, FABRICATED BASES, BRACKETS, CLEATS, CONNECTORS, SEALANTS, LUBRICANTS, CLEANERS, PROTECTION, ETC., TO ENSURE COMPLETE AND TOTALLY FUNCTIONAL SYSTEMS ARE PROVIDED TO THE OWNER.
 - SEISMIC PROTECTION:
 - THE DESIGN AND CONSTRUCTION OF ALL MECHANICAL AND ELECTRICAL COMPONENTS AND THEIR CONNECTIONS, INCLUDING, BUT NOT LIMITED TO, MACHINERY, FIXTURES, DUCTS, AND PIPES (INCLUDING CONTENTS), TO BE IN ACCORDANCE WITH ONTARIO BUILDING CODE 2006, DESIGN OF STRUCTURAL SEISMIC ELEMENTS, INCLUDING CONNECTIONS, TO BE PERFORMED BY A REGISTERED STRUCTURAL ENGINEER ENGAGED BY THE CONTRACTOR AND LICENSED IN THE PROVINCE OF ONTARIO, WHO SHALL SEAL AND SIGN THE DESIGN DRAWINGS. THE SEALED DRAWINGS SHALL BE SUBMITTED ALONG WITH THE MECHANICAL AND ELECTRICAL SHOP DRAWINGS FOR REVIEW. THE STRUCTURAL ENGINEER WHO SEALS THE DRAWINGS SHALL CARRY OUT SUFFICIENT ON-SITE REVIEW OF THE MECHANICAL/ELECTRICAL WORK TO ENSURE AND TO CERTIFY IN WRITING THAT THE WORK IS IN GENERAL COMPLIANCE WITH HIS DESIGN.
 - THERMAL INSULATION FOR PIPING:
 - THERMO-CANVAS JACKETS, C/W ULC S-102 LABEL:
 - HAZARD CLASSIFICATION NOT TO EXCEED FLAME-SPREAD RATING OF 25, SMOKE DEVELOPED 50.
 - USE 225G THERMO-CANVAS JACKET ON ALL INSULATED, EXPOSED VALVES, PIPING AND FITTINGS.
 - INSULATION:
 - PREFORMED MINERAL FIBRE INSULATION WITH INTEGRAL JACKET SHALL BE COMPOSED OF INCOMBUSTIBLE, FINE DIAMETER, GLASS FIBRES OR MINERAL WOOL FIBRES, BONDED TOGETHER WITH AN INERT THERMOSETTING RESIN AND HAVE A FACTORY-APPLIED, AIR-SERVICE TYPE VAPOUR BARRIER JACKET. INSULATION TO BE PERFORMED INTO 36-INCH CYLINDRICAL SECTIONS OR SEGMENTS TO SUIT STANDARD PIPE SIZES. REFER INSULATION THICKNESS SEE SCHEDULE HEREIN.
 - PIPE INSULATION SCHEDULE:

SERVICE	THICKNESS
DOMESTIC COLD WATER	25 mm
HOT WATER HEATING	25 mm
- PIPING MATERIAL SCHEDULE:

SERVICE	PIPE	JOINT	FITTING	PRESSURE RATING
DOMESTIC COLD WATER SUPPLIES	TYPE L COPPER	LEAD FREE SOLDER	WROUGHT OR CAST	ASTM B88
PLUMBING VENTS 50 MM OR LESS 62 MM OR MORE	DWV COPPER CAST IRON	LEAD FREE SOLDER MJ	COPPER DRAINAGE CAST IRON	PLUMBING CODE
ABOVE GRADE SANITARY AND STORM DRAIN UP TO 40 MM 50 MM OR LARGER	DWV COPPER CAST IRON	LEAD FREE SOLDER MJ	COPPER DRAINAGE CAST IRON	PLUMBING CODE
SPRINKLER	SCHEDULE 40 STEEL	WELDED OR VICTAULIC	MALLEABLE OR VICTAULIC	300 psi (2070 kPa)
NATURAL GAS 32 MM OR LESS 40 MM OR GREATER	TYPE K & L COPPER SCHEDULE 40 STEEL	FLARED BRASS CONNECTORS ALL WELDED	FLARED BRASS STEEL BUTT WELDED FITTINGS	ASTM-B88 125 psi (860 kPa)
HEATING PIPING	SCHEDULE 40 STEEL	SCREWED	MALLEABLE STEEL	1035kPa
- PIPING INSTALLATION:
 - INSTALL PIPING STRAIGHT AND PARALLEL WITH BUILDING LINES USING CORRECT PITCH FOR DRAINAGE AND VENTING. USE STANDARD FITTINGS FOR CHANGES IN DIRECTION.
 - USE DIELECTRIC COUPLINGS FOR JOINING PIPES OF DISSIMILAR METALS.
 - INSTALL UNIONS TO ALLOW THE REMOVAL OF EQUIPMENT.
 - PROVIDE SPRINKLER PIPING TO NFPA 13 (LATEST EDITION)
- BOILERS:
 - TWO GAS-FIRED, WALL-MOUNTED, CONDENSING TYPE WITH THE FOLLOWING:
 - BOILERS' CERTIFICATION:
 - ALL INDIVIDUAL COMPONENTS SHALL BE ACCEPTED AS PART OF THE SYSTEM UNDER THE GOVERNING BODY HAVING JURISDICTION. FIELD APPROVAL SHALL NOT BE REQUIRED FOR ANY COMPONENT. BOILER SHALL BE CSA APPROVED AND SHALL BE BUILT IN COMPLIANCE WITH ASME SECTION IV, CARRYING THE "I" STAMP
 - THE BOILER SHALL BE CERTIFIED BY A THIRD PARTY TO MEET OR EXCEED "ECOLOGO" PROGRAM ENVIRONMENTAL, QUALITY AND PERFORMANCE CRITERIA FOR BOILERS AS PUBLISHED BY THE GOVERNMENT OF CANADA. RELEVANT CERTIFICATION CRITERIA DOCUMENT: C0D-012: HOT WATER HEATING BOILER - GAS-FIRED CONDENSING.
 - THE BOILER SHALL HAVE THE FOLLOWING APPROVALS AND LISTING, OR BE IN COMPLIANCE:
 - CSA, CRN, ASME, I-B=R, MA STATE APPROVAL, AHRI (GAMA), ENERGY STAR.
 - ALL ELECTRICAL WIRING IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF:
 - CSA C22.1 CANADIAN ELECTRICAL CODE AND/OR LOCAL ELECTRICAL CODE (FOR CANADA)
 - ANSI/NFPA 70 NATIONAL ELECTRICAL CODE (FOR U.S.)
 - CAPACITY: CSA INPUT 17.5-62 KW, CSA OUTPUT 16-57 KW. BOILER WATER RANGE: 20 - 80°C, INDOOR/OUTDOOR CONTROLLER, LOW WATER CUT-OUT AND SAFETY RELIEF VALVE.
 - FLUE AND COMBUSTION AIR CONNECTION: 80 MM STAINLESS STEEL (CATEGORY IV) TO BE DESIGNED AND PROVIDED AS PART OF THE COMPLETE BOILER PACKAGE.
 - NEUTRALIZATION UNIT AND LITTLE GIANT CONDENSATE PUMP WITH POWER CORD (P-4).
 - BOILER PUMP P-1: 1.40 L/S AT 60 KPA - GRUNDFOS UPS26-99FC OR WIL0 EQUIVALENT.
 - LOW LOSS HEADER C/W INSULATED JACKET.
- ACCEPTABLE PRODUCT: VISSMANN B2HA 60, OR BODERUS, DEDIETRICH APPROVED EQUAL.
- PROVIDE VITOTRONIC SEQUENCING CONTROLLER.
- REMOTE PANEL: VISSMANN VITOTROL 300A (TO REPLACE EXISTING ROOM THERMOSTAT).
- BOILER MANUFACTURER'S TECHNICAL REPRESENTATIVE TO COMMISSION BOILERS, PERFORM START UP, MAKE COMBUSTION TESTS AND ISSUE REPORT WITH THE TEST RESULTS. SUBMIT THE REPORT TO THE NCC REPRESENTATIVE AND PLACE COPIES IN THE OWNER MANUAL. THE TECHNICAL REPRESENTATIVE WILL ALSO INSTRUCT THE BUILDING STAFF ON THE BOILER OPERATION AND THE REMOTE PANEL.
- HYDRONIC SPECIALTIES:
 - EXPANSION TANK: REUSE EXISTING.
 - AIR SEPARATOR - EXPANSION TANK FITTING: ADJUSTABLE VENT PIPE AND BUILT-IN MANUAL VENT VALVE - AMTROL OR APPROVED EQUAL.
 - PIPE LINE STRAINER: BRONZE BODY.
 - VORTEX DIRT AND AIR SEPARATOR: LINE SIZE SPIROVENT OR APPROVED EQUAL.
 - SYSTEM FEEDER, PRESSURE PUMP IN STORAGE TANK C/W LOW LEVEL CUT-OUT WITH AUDIBLE ALARM. UNIT MOUNTED ON WALL SHELF. AXIOM MF-200 OR APPROVED EQUAL.
 - DIELECTRIC COUPLINGS: USE WHERE CONNECTING DISSIMILAR METALS.
- THERMOMETERS AND GAUGES:
 - DIRECT READING, INDUSTRIAL, VARIABLE ANGLE TYPE, LIQUID FILLED, 125 MM SCALE LENGTH THERMOMETERS. INSTALL WHERE INDICATED.
 - 112 MM DIAL PRESSURE GAUGES, STAINLESS STEEL BOURDON TUBE WITH 0.5% ACCURACY FULL SCALE.
- IDENTIFICATION:
 - PROVIDE MANUFACTURED PERMANENT IDENTIFICATION LABELS ON PIPES AND ARROWS INDICATING DIRECTION OF FLOW.
 - BRADY OR APPROVED EQUAL.
- IN-LINE CIRCULATORS:
 - WET ROTOR TYPE.
 - CAST IRON VOLUTE, STAINLESS STEEL SHAFT, SEALING RING AND BEARING PLATE.
 - NON-OVERLOADING MOTOR WITH THERMAL PROTECTION COOLED AND LUBRICATED BY THE PUMPED FLUID.
 - PUMPS P-1 AND P.2 TO BE PROVIDED AS PART OF THE BOILER PACKAGE.
 - PUMPS P-3A & P-3B: 1.76 L/S AT 66 KPA, 450 W, 120/1/60, WLO TOP S 1.5 X 30 OR APPROVED EQUAL .
 - ACCEPTABLE PRODUCTS: WLO, GRUNDFOS.
- FIRE PROTECTION:
 - PORTABLE EXTINGUISHER:
 - EQUAL TO "FLAG" MULTI-PURPOSE DRY CHEMICAL UNITS RATED AT:
 - 2A-10BC (4" Ø - 16½" H)
 - WALL BRACKETS: TO SUIT EXTINGUISHER.
 - SPRINKLERS
 - PROVIDE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13 (LATEST EDITION).
 - HEAD: SIDEWALL C/W PROTECTIVE CAGE.
- RIGID DUCTWORK:
 - FABRICATE AND INSTALL LOW PRESSURE SHEET METAL DUCTWORK AND FITTINGS IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS (LATEST EDITION). SIZES INDICATED ARE CLEAR INSIDE DIMENSIONS (FREE AREA).
- TRANSFER FAN:
 - CEILING FAN: CAPACITY 35 L/S AT 32 Pa. 35 WATTS 120/1/60 C/W WALL THERMOSTAT.
 - ACCEPTABLE PRODUCT: COOK MODEL GC-120 OR APPROVED EQUAL.
- FIRE DAMPER:
 - PROVIDE "OUT-OF-AIRSTREAM" FIRE DAMPER WITH LABELS, MEETING THE REQUIREMENTS OF NFPA-90A, CUA-90A AND THE ONTARIO BUILDING CODE IN LOCATIONS INDICATED. INSTALL ACCORDING TO SMACNA STANDARDS. PROVIDE DUCT ACCESS DOORS.
- CONTROLS:
 - ALL LOW VOLTAGE CONTROL WIRING TO BE PROVIDED UNDER THE MECHANICAL DIVISION.
 - REMOVE EXISTING WALL MOUNTED THERMOSTAT ON GROUND FLOOR AND REPLACE WITH REMOTE PANEL (SEE BOILERS). PROVIDE NEW CONTROL WIRING BETWEEN REMOTE PANEL AND BOILERS.
- FLUSHING AND CLEANING:
 - FLUSH AND CLEAN THE EXISTING PIPING/RADIATOR SYSTEM PRIOR TO CONNECTING TO THE NEW COMPONENTS.
 - FILL WITH A SOLUTION OF WATER AND 3% (BY WEIGHT) OF NON-FOAMING, PHOSPHATE FREE DETERGENT. CIRCULATE FOR A MINIMUM OF 8 HOURS. REGULARLY REMOVE AND CLEAN STRAINERS.
 - REFILL WITH CLEAN WATER AND CIRCULATE FOR AT LEAST 4 HOURS OR UNTIL THE WATER SAMPLES ARE CLEAR OF DEBRIS AND CONTAMINANTS. REGULARLY CLEAN STRAINERS.
 - AFTER ALL DEBRIS AND CONTAMINANTS HAVE BEEN REMOVED, DRAIN THE WATER AND FILL THE SYSTEM WITH DEMINERALIZED WATER. LEAVE AN ADDITIONAL 5 LITRES OF DEMINERALIZED WATER AT THE SITE AFTER COMPLETION OF THE WORK.
- OPERATION AND MAINTENANCE MANUAL:
 - INCORPORATE ALL THE EQUIPMENT OPERATING AND MAINTENANCE LITERATURE IN THREE SETS. SUBMIT TO THE NCC IN THREE RING BINDERS.
 - INCLUDE THE BOILER COMMISSIONING REPORT AND COMBUSTION TEST RESULTS.
 - PROVIDE COPIES OF THE WARRANTIES FOR ALL EQUIPMENT SUPPLIED IN ADDITION TO THE CONTRACTOR'S WARRANTY.
- BALANCING:
 - DURING THE FIRST HEATING SEASON ADJUST THE INDOOR/OUTDOOR TEMPERATURE CONTROL SYSTEM AND THE FLOW TO EACH ZONE TO ENSURE EVEN TEMPERATURE THROUGHOUT THE BUILDING. ALLOW FOR MINIMUM OF TWO VISITS.
- AS BUILT DRAWINGS:
 - AT THE COMPLETION OF THE PROJECT SUBMIT "AS BUILT" DRAWINGS SHOWING ALL DEVIATIONS FROM THE ORIGINAL DESIGN.

ELECTRICAL SPECIFICATION

GENERAL PROVISIONS

- GENERAL CONDITIONS
 - CONFORM TO REQUIREMENTS OF THE GENERAL CONDITIONS. PROVIDE ALL LABOUR, MATERIALS, PRODUCTS, EQUIPMENT, SERVICES AND ALL IDENTICALS REQUIRED TO COMPLETE, TEST AND COMMISSION ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS AND/OR NOTED HEREUNDER.
 - ELECTRICAL WORK SHALL BE CARRIED OUT BY A CONTRACTOR HOLDING A VALID CONTRACTOR'S LICENSE AND QUALIFIED ELECTRICIANS WHO HOLD VALID ONTARIO CERTIFICATES OF QUALIFICATION.
 - CODES AND STANDARDS
 - DO COMPLETE INSTALLATION IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING BUT NOT NECESSARILY LIMITED TO CURRENT ELECTRICAL CODE CSA C22.1, PERTINENT ESA (ELECTRICAL SAFETY AUTHORITY) BULLETINS AND THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.
 - EXISTING SERVICES
 - GIVE THE OWNER/TENANT AMPLE NOTICE OF EACH NECESSARY INTERRUPTION OF ELECTRICAL SERVICE DURING THE COURSE OF THE WORK. UNAVOIDABLE INTERRUPTIONS TO EXISTING SYSTEMS/INSTALLATIONS, IF ANY, SHALL BE OF THE SHORTEST POSSIBLE DURATION AND EACH SUCH INTERRUPTION SHALL REQUIRE THE SPECIFIC APPROVAL OF THE OWNER/TENANT. SUBMIT A SCHEDULE OF ALL ANTICIPATED INTERRUPTIONS, IDENTIFYING EXACTLY WHAT THE INTERRUPTION IS, HOW LONG IT WILL BE, WHEN IT IS PLANNED TO OCCUR AND WHICH AREA(S) WILL BE AFFECTED. GIVE THE OWNER A MINIMUM OF 24 HOURS NOTICE RELATED TO EACH NECESSARY INTERRUPTION. THE OWNER/TENANT RESERVES THE RIGHT TO DENY APPROVAL FOR AN INTERRUPTION ON ANY SPECIFIC DATE OR TIME. IN THIS CASE, AN ALTERNATIVE TIME SHALL BE MUTUALLY SELECTED. REFER ALSO TO PHASING/ WORK SCHEDULE OF THE PROJECT.
 - DEMOLITION
 - REFER TO DEMOLITION NOTES ON DRAWING. RENDER SAFE THE INSTALLATIONS AT LOCATIONS FROM WHICH THE EXISTING INSTALLATIONS AND EQUIPMENT HAS BEEN REMOVED AS PART OF THIS WORK. REMOVE FROM THE SITE ALL EXISTING EQUIPMENT AND MATERIALS, WHICH BECOMES OBSOLETE AS A RESULT OF THIS WORK EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
- ### GENERAL MATERIALS
- MATERIALS AND EQUIPMENT
 - EQUIPMENT AND MATERIAL SUPPLIED AS PART OF THE ELECTRICAL WORK SHALL BE NEW AND CSA APPROVED FOR THE APPLICATION.
 - CONDUIT
 - WIRING SHALL BE IN CONDUIT UNLESS SPECIFICALLY INDICATED OTHERWISE. PROVIDE EMT THROUGHOUT EXCEPT WHERE SPECIFIED OTHERWISE. CONCEAL IN CEILING SPACE OR WALL CAVITIES CONDUITS/RACEWAYS IN ALL AREAS EXCEPT IN MECHANICAL AND ELECTRICAL ROOMS OR WHERE SPECIFICALLY INDICATED OTHERWISE. SURFACE MOUNTED RACEWAY IN FINISHED AREAS ONLY AS PERMITTED BY CONSULTANT. INSTALL CONDUITS PARALLEL TO BUILDING LINES. INSTALL MINIMUM 600MM AND MAXIMUM 1000MM LENGTH OF FLEXIBLE GALVANIZED STEEL CONDUIT FOR CONNECTIONS TO EQUIPMENT WHICH MAY VIBRATE (SUCH AS EQUIPMENT WITH MOTORS), AND TO EQUIPMENT NOT PERMANENTLY FIXED OR WHICH MUST BE MOVED FOR SERVICING. INSTALL LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT FOR SUCH APPLICATIONS IN DAMP LOCATIONS.
 - FASTENING AND SUPPORTS
 - USE LEAD ANCHORS TO SECURE EQUIPMENT TO SOLID MASONRY, TILE AND PLASTER SURFACES. USE EXPANDABLE INSERTS TO SECURE EQUIPMENT TO POURED CONCRETE. USE TOGGLE BOLTS TO SECURE EQUIPMENT TO HOLLOW MASONRY WALLS OR SUSPENDED CEILINGS. SUPPORT GROUPS OF CONDUITS AND CABLES, AND EQUIPMENT ON 41MM X 41MM X 2.5MM THICK GALVANIZED CHANNELS EQUAL TO UNISTRUT P-SERIES, USING CLIPS, SPRING LOADED BOLT, CABLE CLAMPS AND THE LIKE, DESIGNED AS ACCESSORIES TO BASIC CHANNEL MEMBERS. FOR SURFACE MOUNTING OF TWO OR MORE CONDUITS USE CHANNELS AT 1.5 M OR LESS ON CENTRE SPACING.
 - WIRING
 - TYPE RW-90 COPPER, 600V TO MAXIMUM #10 AWG AND 1000V #8 AND LARGER, XLPE INSULATION, SOLID CONDUCTORS TO #10 AWG, STRANDED CONDUCTORS #8 AWG AND LARGER. MINIMUM BRANCH CIRCUIT CONDUCTORS SHALL BE #12 AWG EXCEPT FOR 120V CONTROL CIRCUITS. MINIMUM SIZE OF WIRE SHALL BE #14 AWG. WIRING FOR BRANCH CIRCUITS SHALL BE SIZED TO LIMIT THE VOLTAGE DROP FROM THE PANELBOARD TO THE FURTHEST OUTLET TO 2% WHEN CARRYING 80% OF THE BRANCH CIRCUIT BREAKER RATED CURRENT.
 - FOR 120V CIRCUITS USING SHARED NEUTRALS, MINIMUM WIRE SIZES SHALL BE:
 - #12 AWG FOR CIRCUITS UP TO 30 M.
 - #10 AWG FOR RUNS IN EXCESS OF 30 M UP TO A DISTANCE THAT ENSURES COMPLIANCE WITH ITEM 1. ABOVE. #10 AWG SHALL BE USED FOR THE ENTIRE LENGTH OF RUN, STARTING FROM THE PROTECTION DEVICE.
 - ALL SHARED NEUTRALS SHALL BE OVERSIZED, #10 AWG OR LARGER FOR #12 AWG PHASE CONDUCTORS. THIS APPLIES TO POWER AS WELL AS LIGHTING CIRCUITS.
 - TWIST-ON PRESSURE TYPE WIRE CONNECTORS FOR #10 AWG AND SMALLER AND COMPRESSION SLEEVE TYPE FOR #8 AWG AND LARGER.
 - TYPE AC-90 WILL BE PERMITTED FROM CONDUIT SYSTEM JUNCTION BOXES TO WIRING DEVICE EQUIPEMENT MAX. HORIZONTAL 3 METERS FROM JUNCTION BOX TO WALL.
 - MOULDLED CASE BREAKERS (TO MATCH EXISTING)
 - BOLT-ON MOULDLED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40°C AMBIENT. COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS. MOULDLED CASE CIRCUIT BREAKER TO OPERATE AUTOMATICALLY BY MEANS OF THERMAL AND MAGNETIC TRIPPING DEVICES TO PROVIDE INVERSE TIME CURRENT TRIPPING AND INSTANTANEOUS TRIPPING FOR SHORT CIRCUIT PROTECTION.
 - INTERRUPTING CAPACITY OF NEW BREAKERS MUST BE GREATER THAN OR EQUAL TO THE INTERRUPTING RATING OF BREAKERS WITHIN EXISTING PANELS AFFECTED BY WORK. IF INTERRUPTING RATINGS DIFFER BETWEEN BREAKERS THE HIGHEST INTERRUPTING RATING MUST BE SELECTED. IF A SERIES RATING IS INDICATED ON PANEL CONTRACTOR IS RESPONSIBLE FOR PURCHASING BREAKERS, WHICH MAINTAIN THE SERIES RATING. BREAKERS SUPPLIED BY CONTRACTOR MUST MATCH THE MANUFACTURER OF PANEL.
 - DISCONNECT SWITCHES
 - HEAVY DUTY DISCONNECT SWITCHES, EEMAC 1 IN DRY LOCATIONS, EEMAC 3R IN DAMP LOCATIONS, QUICK-MAKE/QUICK-BREAK MECHANISMS, VISIBLE BLADES, ARC QUENCHER FOR SWITCHES RATED 600V, MECHANICALLY INTERLOCKED COVER TO PREVENT OPENING IN 'ON' POSITION, EXCEPT BY DEFEAT MECHANISM. ON-OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER. PROVISION FOR PADLOCKING IN BOTH 'ON' AND 'OFF' POSITIONS.
 - MANUAL MOTOR CONTROLLER SUITABLE FOR MOTOR DISCONNECT; MEETING REQUIREMENTS OF CSA C22.2-NO.14, CEC RULE 28-602 (3)(b) AND UL 508 SUITABLE FOR MOTOR DISCONNECT.
- ### ELECTRICAL GENERAL NOTES:
- THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. COORDINATE ALL REMOVALS AFFECTED BY OTHER TRADES.
 - CONTRACTOR TO TRACE AND VERIFY ALL EXISTING CIRCUITS. VERIFY EXACT ROUTING OF CONDUITS AND LOCATION OF BOXES ON SITE PRIOR TO REMOVAL. THE CONTRACTOR IS TO MAINTAIN THE INTEGRITY OF CIRCUITS BY EXTENDING WIRING AND CONDUIT AS REQUIRED TO RETAIN POWER TO RECEPTACLES, LIGHTING THAT MAY BE ON THE SAME CIRCUIT.
 - UNLESS OTHERWISE NOTED, MATERIALS FOR REMOVAL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE TAKEN FROM SITE AND DISPOSED OF IN ACCORDANCE WITH BUILDING STANDARDS.
 - MAINTAIN EXISTING REMAINING CIRCUITS AND ALL SYSTEMS WHICH PASS THROUGH ALL AREAS OF CONSTRUCTION. PROVIDE NECESSARY MATERIALS TO MAINTAIN SYSTEMS THAT ARE REMAINING.
 - REINSTATE ALL EXISTING SYSTEMS REMAINING IMMEDIATELY THAT ARE INTERRUPTED DURING CONSTRUCTION. PROVIDE MATERIALS AS NECESSARY TO MAINTAIN SYSTEMS THAT ARE INTERRUPTED.
 - ELECTRICAL CONTRACTOR SHALL REMOVE ALL REDUNDANT WIRING AND CONDUITS BACK TO SOURCE AND MAKE ELECTRICALLY SAFE. ELECTRICAL CONTRACTOR SHALL DISPOSE OF THE EXISTING REDUNDANT CONDUIT AND WIRING.
 - ELECTRICAL CONTRACTOR SHALL TEST AND ENSURE ALL EQUIPMENT IS WORKING AT THE END OF EACH DAY.
 - ELECTRICAL SHALL CONFIRM THE EXISTING AND NEW REQUIREMENTS TO ENSURE CORRECT RATINGS AND SYSTEM SIZES, BEFORE PLACING ORDER.
 - COORDINATE WITH BUILDING MANAGEMENT FOR ANY/ ALL SYSTEM SHUTDOWNS DURING THE DEMOLITION OR CONSTRUCTION PHASE OF CONTRACT FOR COORDINATION PURPOSES. ALLOW FOR ALL REQUIRED SHUTDOWNS TO BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS. SHUTDOWN OF SYSTEM TO BE RE-ENERGIZED AND FULLY OPERATIONAL AT THE END OF SAME DAY'S WORK SHIFT.
 - THESE DRAWINGS INDICATE KNOWN CONDITIONS AND MAY NOT INDICATE ALL DEMOLITION REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE DURING THE TENDER PERIOD TO BECOME FAMILIAR WITH THE SITE.
 - PROVIDE ALL TEMPORARY SERVICES THROUGHOUT DEMOLITION AND CONSTRUCTION OF CONTRACT AREA. THESE TEMPORARY SERVICES INCLUDE POWER, LIGHTING COVERAGE WHERE REQUIRED. ALL TEMPORARY SYSTEMS ARE TO BE REMOVED AT THE END OF CONTRACT.
 - FIRESTOP (ULC LISTED) ALL NEW FIRE RATED PENETRATIONS.



Real Estate Management, Design and Construction Branch
Direction de la gestion de l'immobilier, design et construction

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issued or revised
émis ou révisé

no.	description	date
3	ISSUED FOR TENDER	2014.05.30
2	RE-ISSUED FOR CLIENT REVIEW	2014.05.16
1	ISSUE FOR CLIENT REVIEW	2014.03.31

project
projet

MAPLELAWN 529 RICHMOND
ROAD OTTAWA

PHASE 2

drawing
dessin

SPECIFICATIONS

approved by
approuvé par J.M.

designed by
conçu par N.B.

drawn by
dessiné par M.B.

date 2014.05.16 scale
échelle AS SHOWN

NCC project no. sheet no.
no. du projet de la CCN no. de la feuille

RD-5155-05 ME02