

DRAWING SHEET LIST:

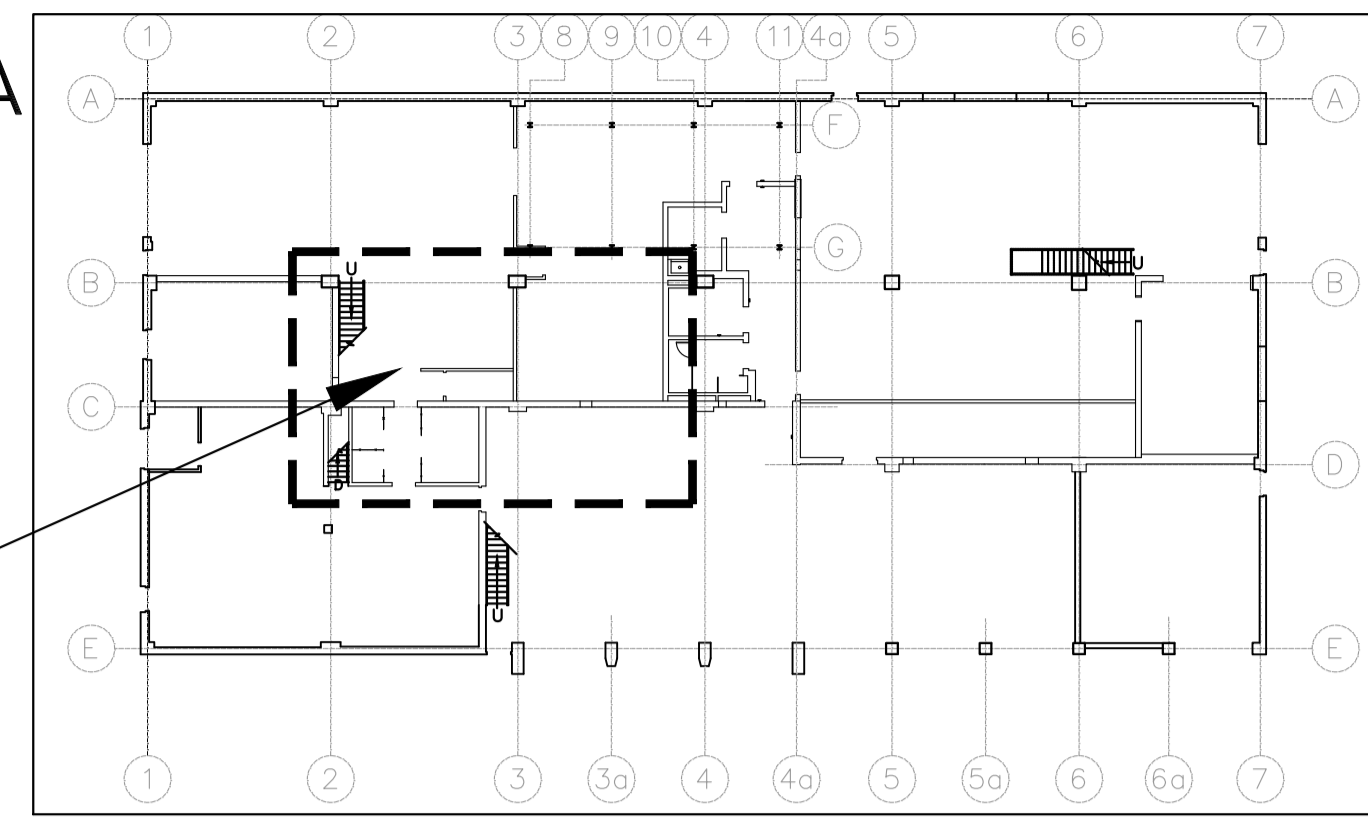
STRUCTURAL	5749-S01	- STRUCTURAL: PART BASEMENT AND GROUND FLOOR PLANS AND DETAILS
ARCHITECTURAL	5749-A0	- COVER SHEET - GENERAL DRAWING LIST - PROJECT INFO - KEY PLANS - MISC PHOTOS
	5749-A1	ROOMS 01, 101A and 130A - DEMOLITION/NEW FLOOR PLANS - MISC WALL SECTION AND DETAILS - DRAWING NOTES
MECHANICAL	5749-M01	- U62-M-LEGEND AND DRAWING LIST
	5749-M02	- U62-M-BSMT & FL01 - HVAC & PIPING DEMOLITION
	5749-M03	- U62-M- FL02 & ROOF - HYDRONIC PIPING DEMOLITION
	5749-M04	- U62-M- BSMT & FL01 - HYDRONIC PIPING NEW WORK
	5749-M05	- U62-M- FL02 & ROOF - HYDRONIC PIPING NEW WORK
	5749-M06	- U62-M- HYDRONIC SINGLE LINE DIAGRAM AND CONTROL SCHEMATIC
	5749-M07	- U62-M- EQUIPMENT SCHEDULE
	5749-M08	- U62-M- DETAILS
ELECTRICAL	5749-E001	- U62_E_DRAWING LIST AND SYMBOLS
	5749-E100	- U62_E_FL01 AND BSMT ELECTRICAL LAYOUTS
	5749-E101	- U62_E_FL02 ELECTRICAL LAYOUTS
	5749-E200	- U62_E_SCHEDULES AND LAYOUTS
	5749-E201	- U62_E_PANEL SCHEDULES AND PARTIAL EMERGENCY SINGLE LINE DIAGRAM
SPECIFICATIONS:	SEE SEPARATE BINED MANUAL	

NATIONAL RESEARCH COUNCIL CANADA
Uplands Campus,
Institutes and Laboratories
Ottawa, Ontario, Canada

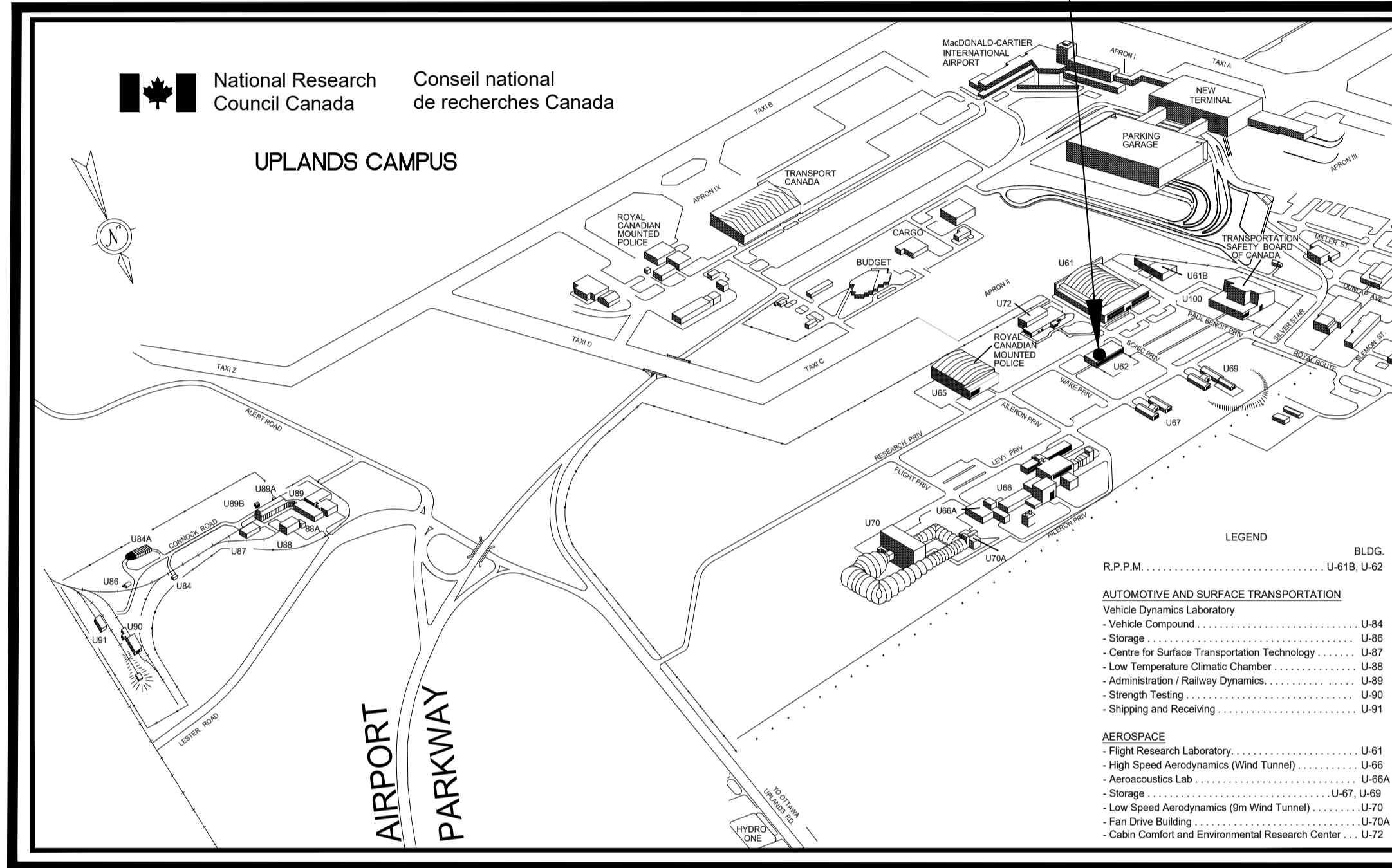
PREPARED BY: REAL PROPERTY PLANNING AND MANAGEMENT (RPPM),
ENGINEERING SERVICES
1200 MONTREAL ROAD, M-19 (RM 340),
OTTAWA, ONTARIO, CANADA K1A 0R6

PROJECT: PROJECT NO. = 5749
BUILDING U-62 (UPLANDS CAMPUS)
U62 - Boiler Replacement - Tool Storage Renos
(Rms 01, 101A and 130A)

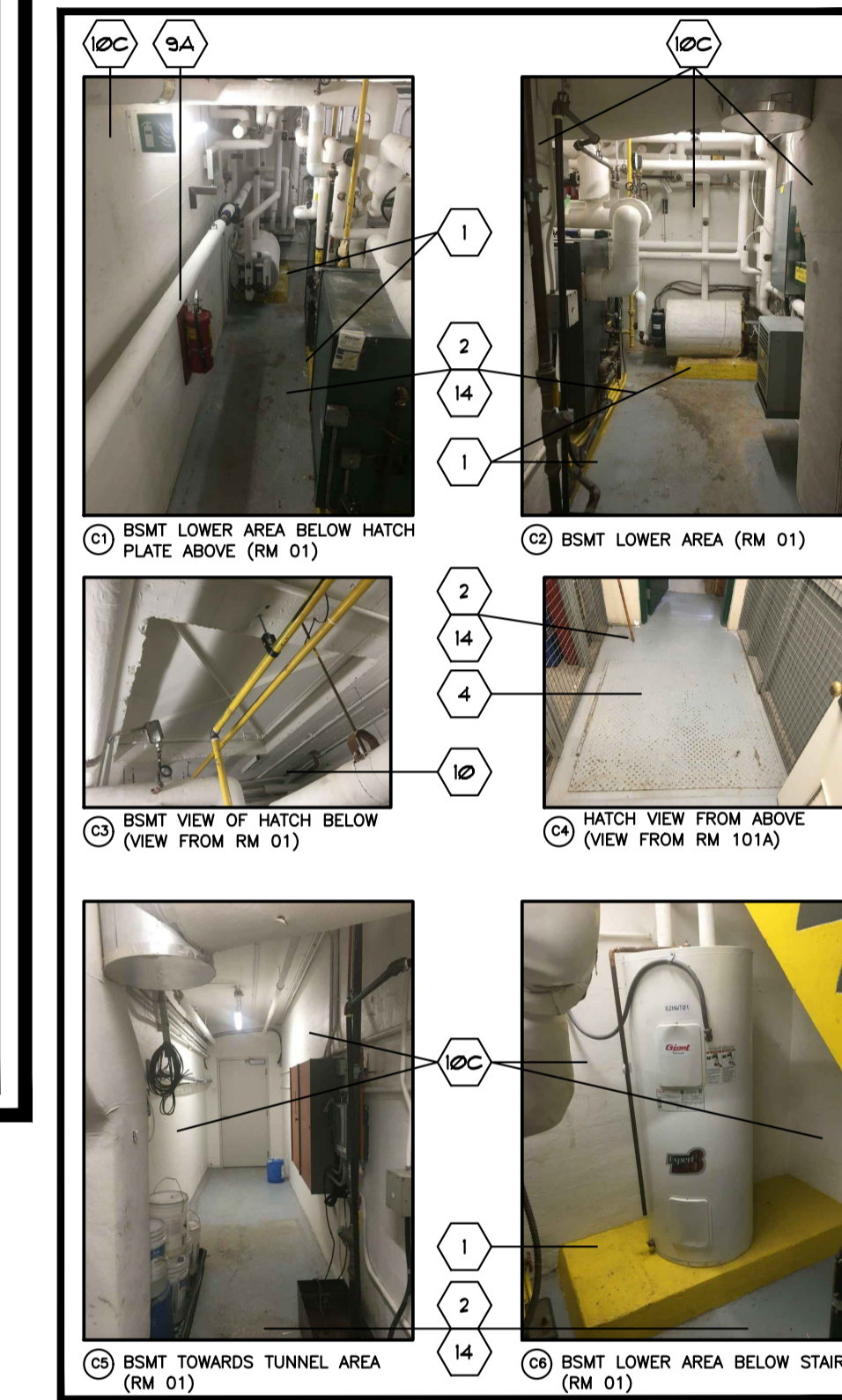
BUILDING U-62
RMS :01, 101A,130A



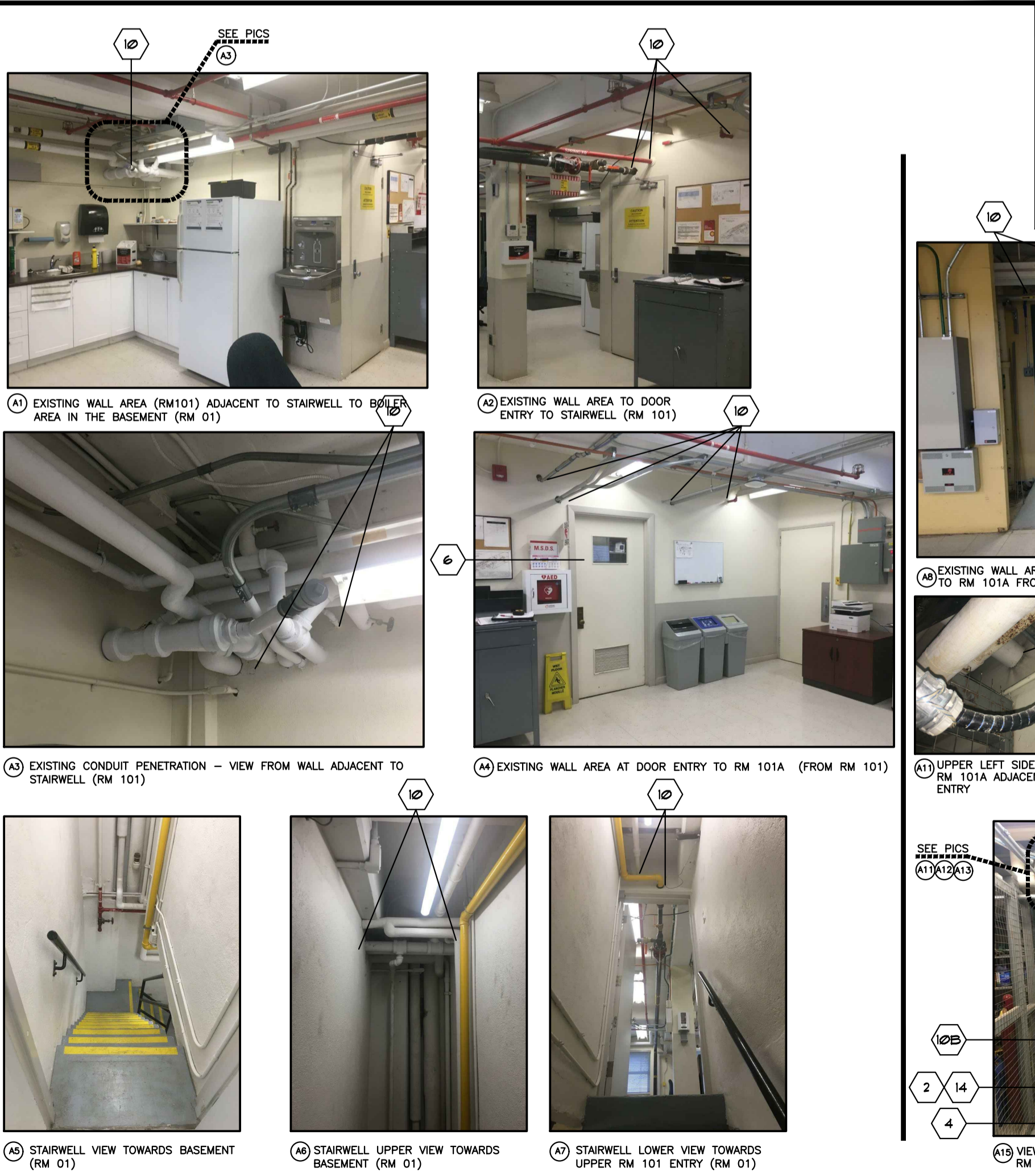
2 KEY PLAN - BUILDING U62
SCALE = N.T.S.



1 KEY PLAN 3D-LOCATION UPLANDS CAMPUS
SCALE = N.T.S.



EXISTING PICTURES (SERIES C) - EXISTING BASEMENT AT TUNNEL ENTRY (RM 01) BELOW BOILER AREA (RM 101A) (SEE 1/A01 FOR LOCATION)
SCALE = N.T.S.



EXISTING PICTURES (SERIES A) - (EXISTING OFFICE (RM 101) & NEW BOILER AREA (RM 101A))(SEE 1/A01 FOR LOCATION)
SCALE = N.T.S.



EXISTING PICTURES (SERIES B) - EXISTING BAY AREA (RM 113) & NEW STORAGE AREA (RM 130A) (SEE 1/A01 FOR LOCATION)
SCALE = N.T.S.

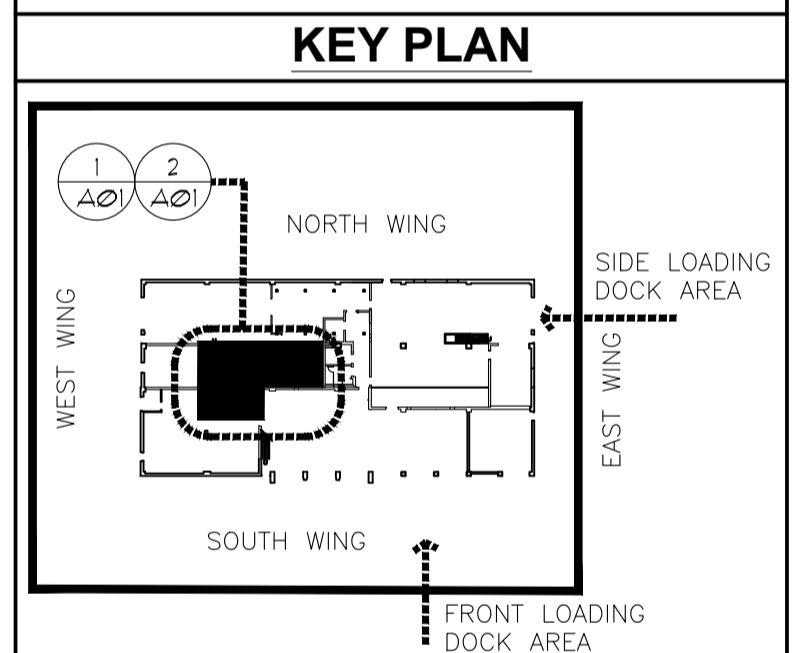
National Research Council Canada
Real Property Planning and Management (RPPM)

Conseil national de recherches Canada
Planification et gestion des biens immobiliers (PGBI)



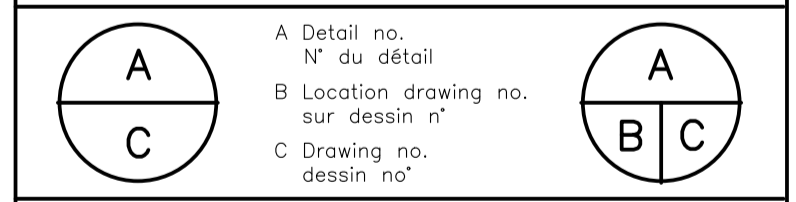
- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- CONTRACTORS MUST PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION OF THEIR WORK. MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- G.C. TO PATCH AND MAKE GOOD ALL WALLS, CEILING AND FLOORS WHERE MECHANICAL, ELECTRICAL & ARCHITECTURAL ITEMS HAVE BEEN REMOVED.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.

No.	Date	Revision	By:	For:
1	01 FEB 2021	ISSUED FOR TENDER	JCW	
0	20 JAN 2021	FINAL DESIGN-TRANSLATION	JCW	
0	08 DEC 2020	DESIGN PRELIMINARY REVIEW	JCW	



BUILDING U-62
NOT TO SCALE

Verify all dimensions and site conditions and be responsible for same
Vérifier toutes les dimensions et toutes les conditions du chantier et assumer les responsabilités s'y rattachant



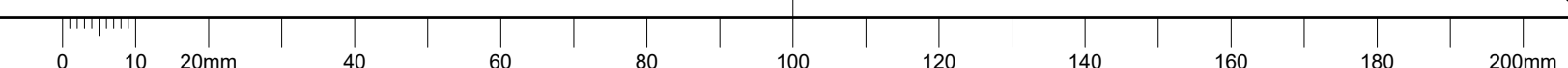
project: U62 - Boiler Replacement - Tool Storage Renos (Rms 01, 101A and 130A)

UPLANDS CAMPUS

drawing: COVER SHEET
- GENERAL DRAWING LIST
- PROJECT INFO
- KEY PLANS
- MISC PHOTOS

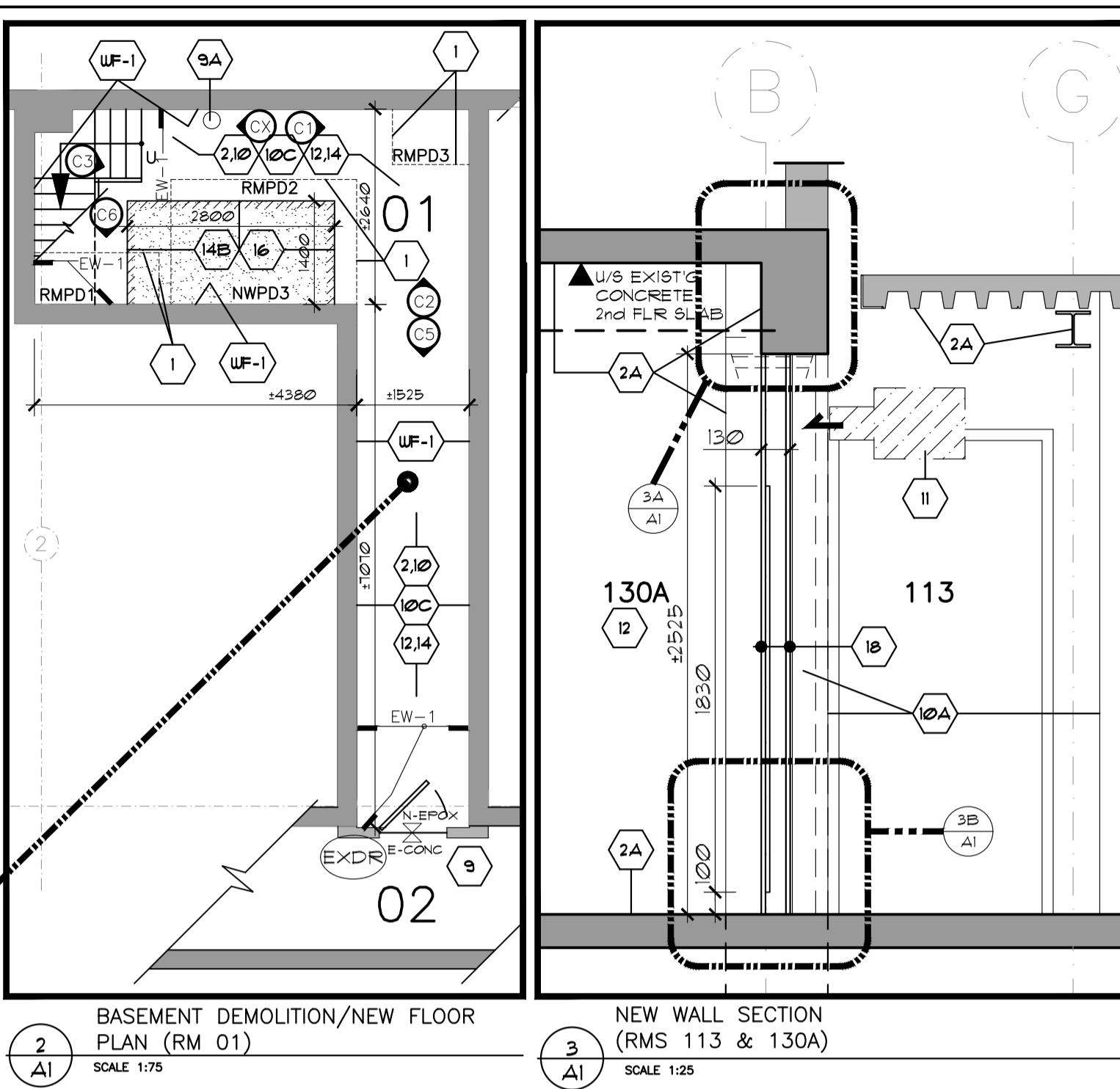
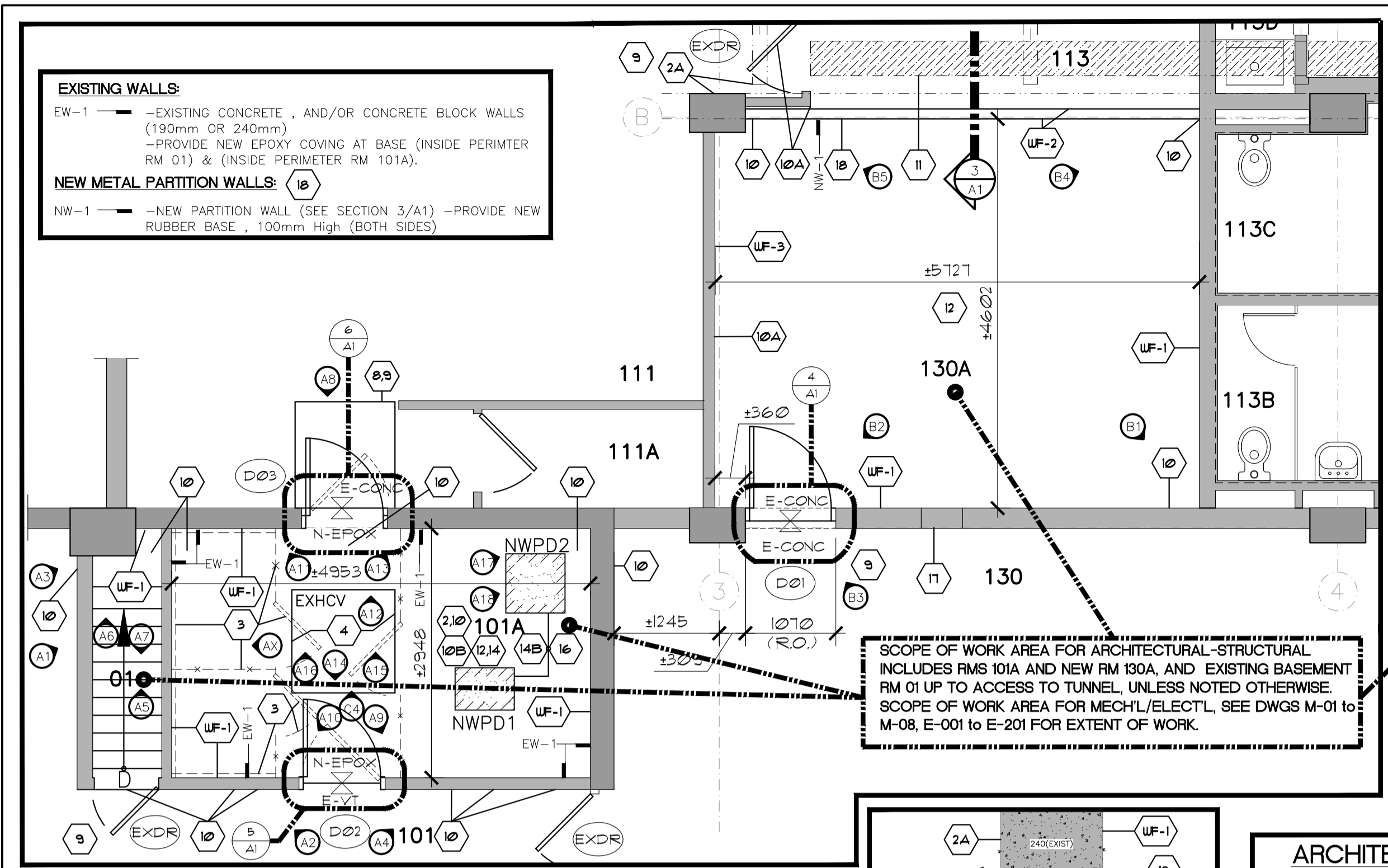
designed by	J-C. W.	conçu	date	JAN 2021	date
drawn by	J-C.W.	dessiné	scale	AS SHOWN	échelle
checked by	SH /M.R.	vérifié	sheet	A0	of/de
approved	MR./MKENNEDY	approuvé	W.O.no.	A1-011227-21	D.T.no.
dwg.no.	5749-A0	dessin n°			

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fichier CDAO

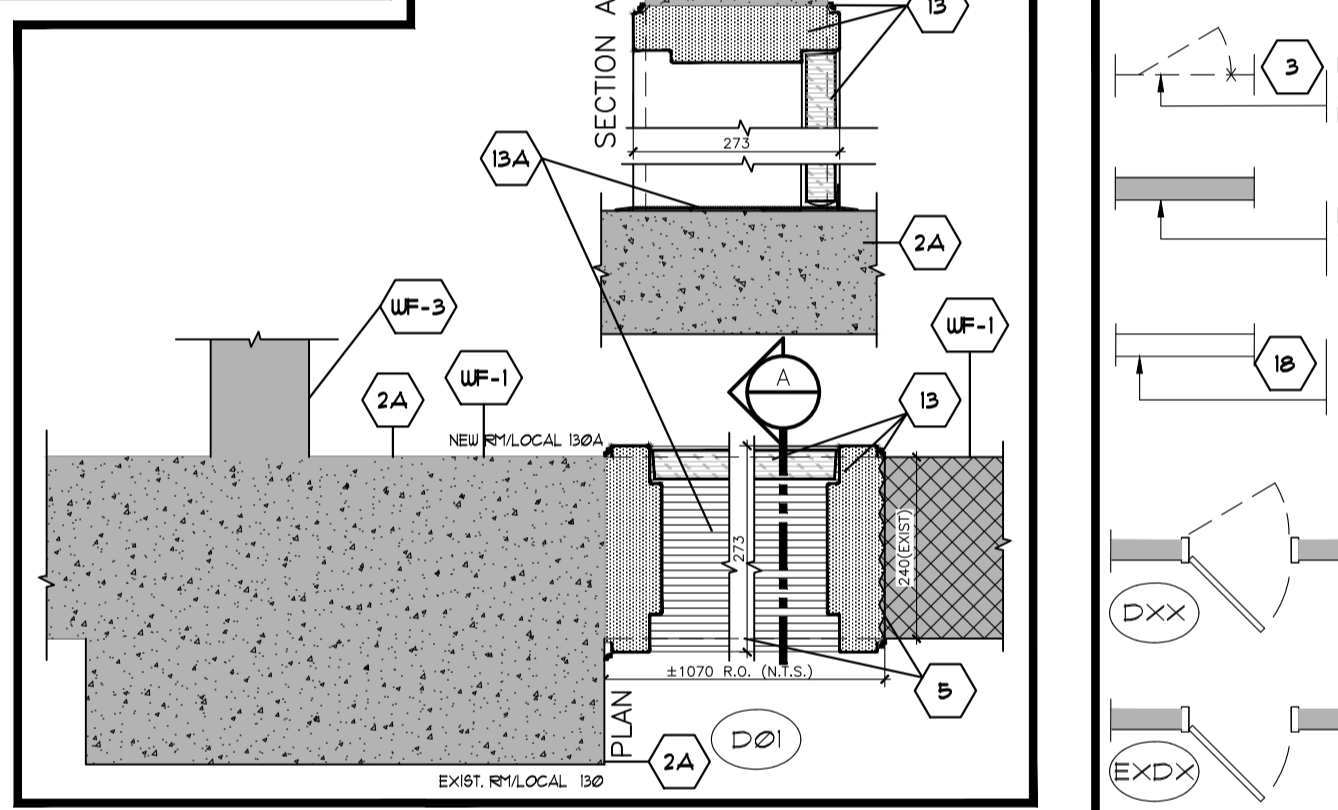
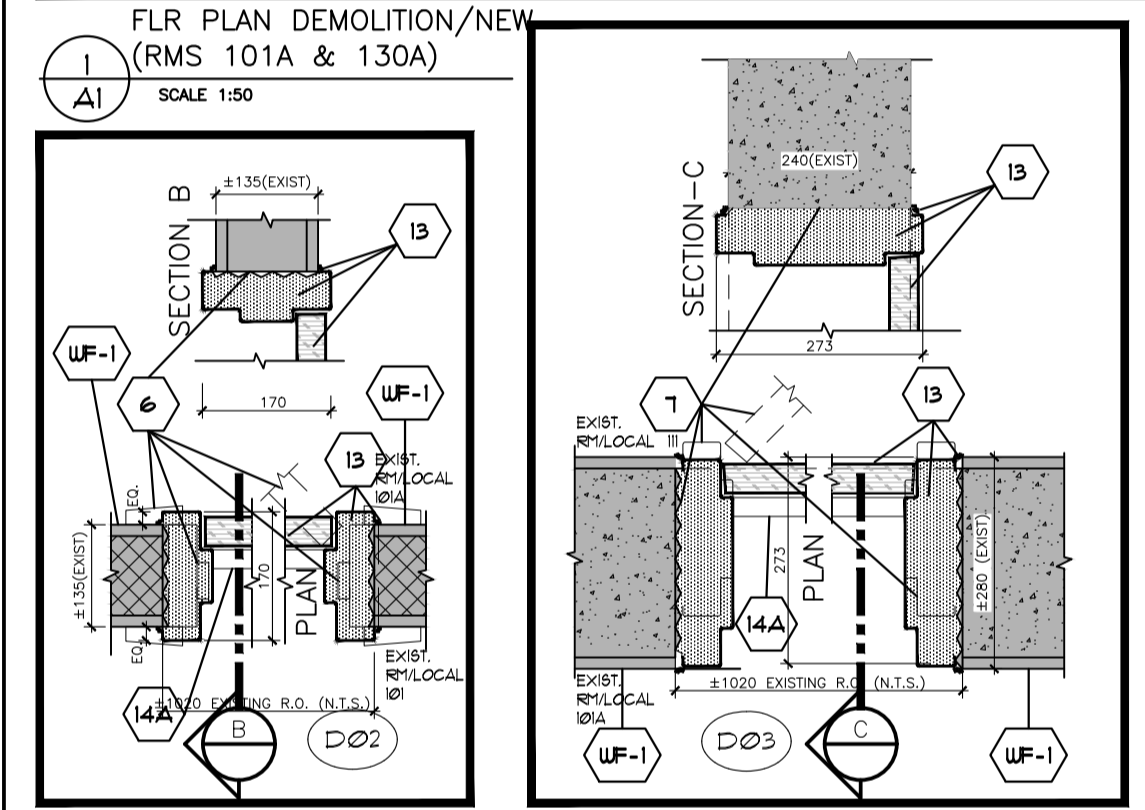




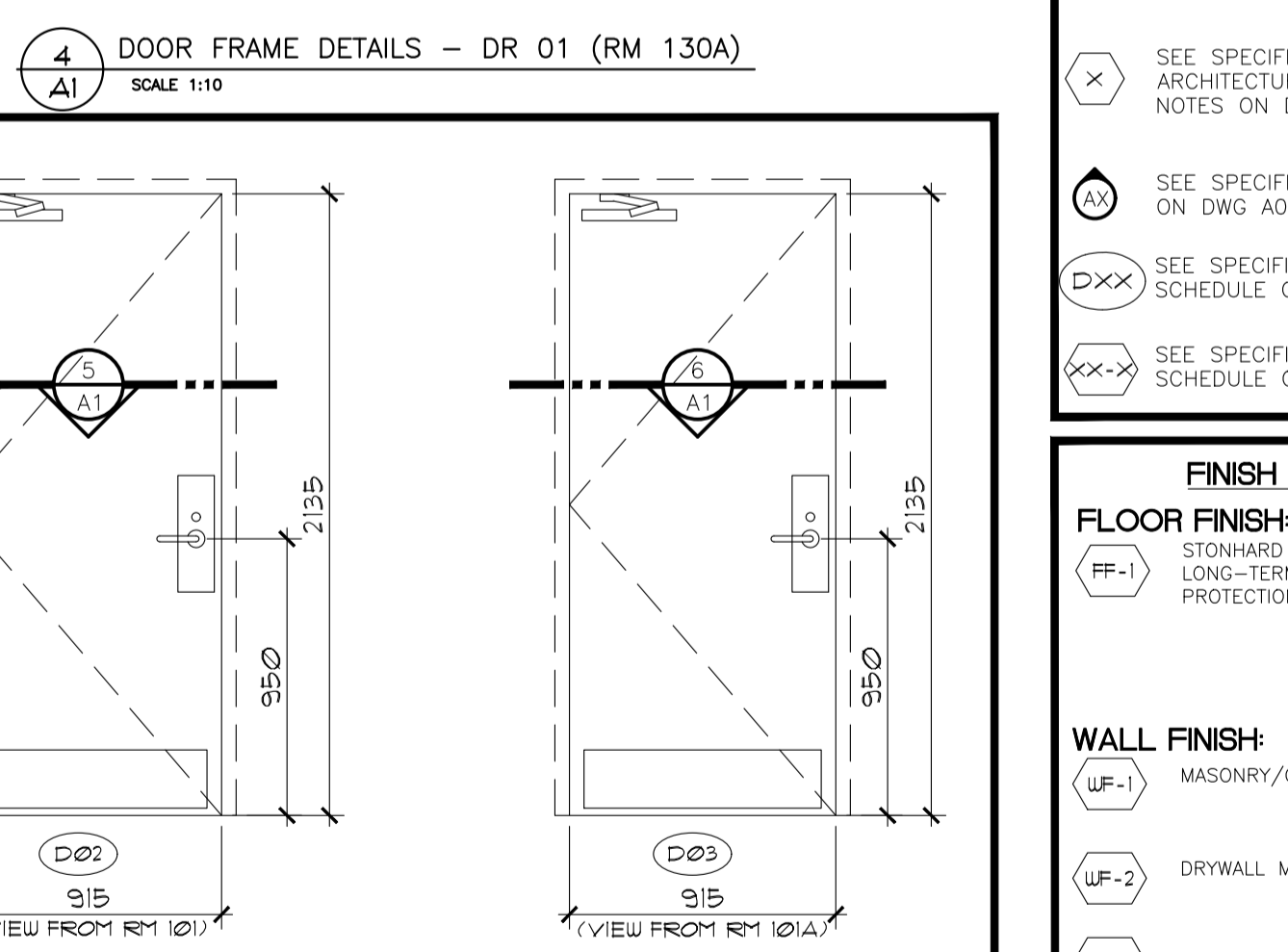
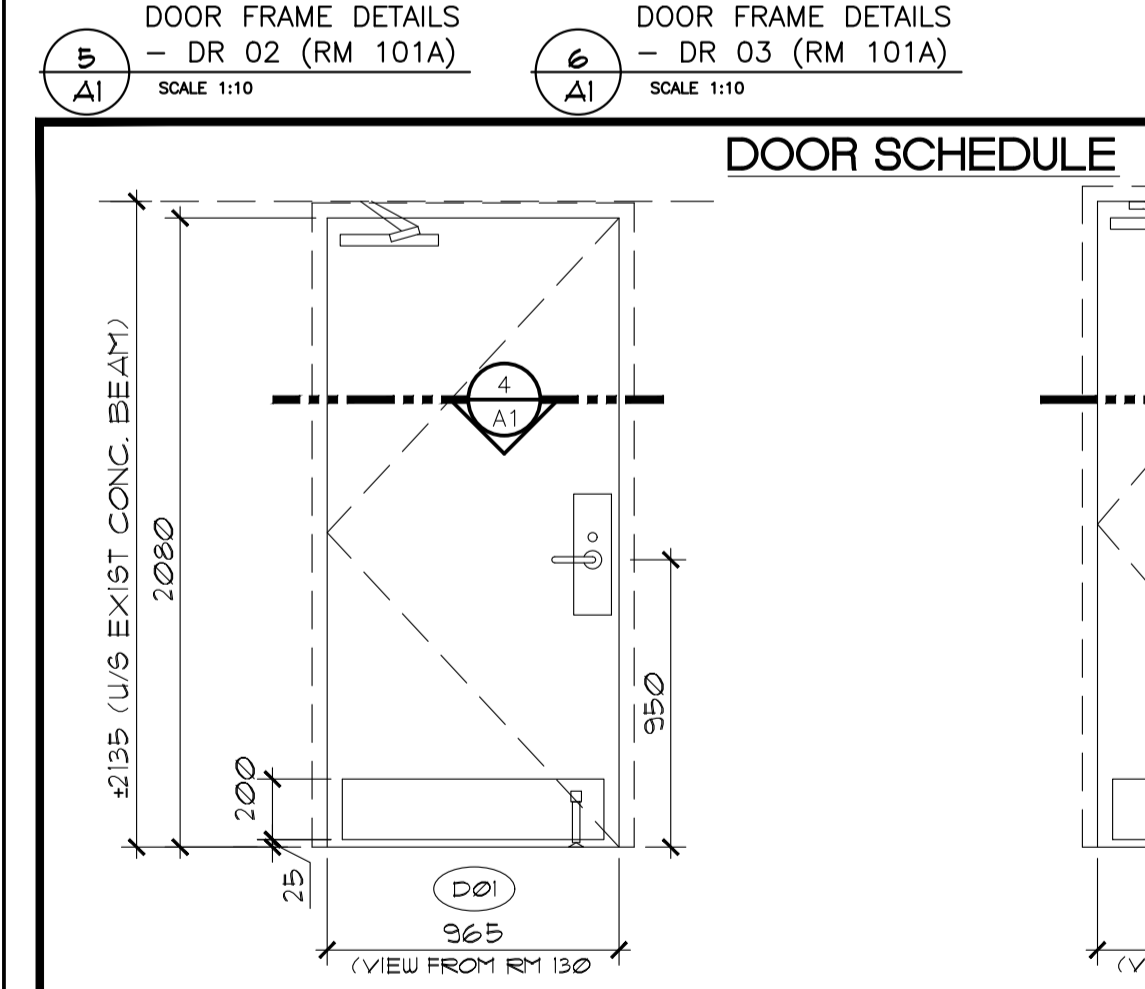
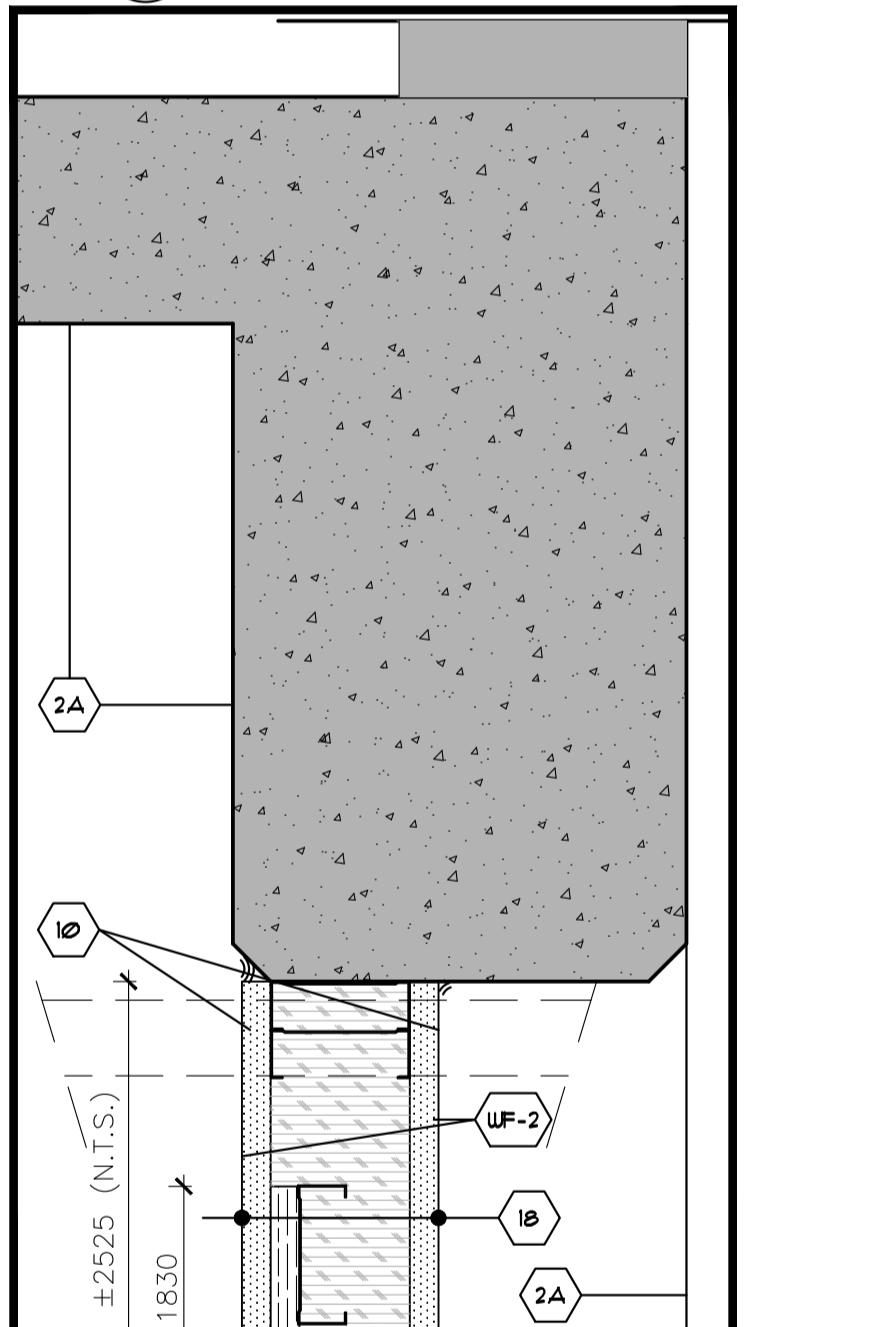
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- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- CONTRACTORS MUST PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION OF THEIR WORK. MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- G.C. TO PATCH AND MAKE GOOD ALL WALLS, CEILING AND FLOORS WHERE MECHANICAL, ELECTRICAL & ARCHITECTURAL ITEMS HAVE BEEN REMOVED.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.



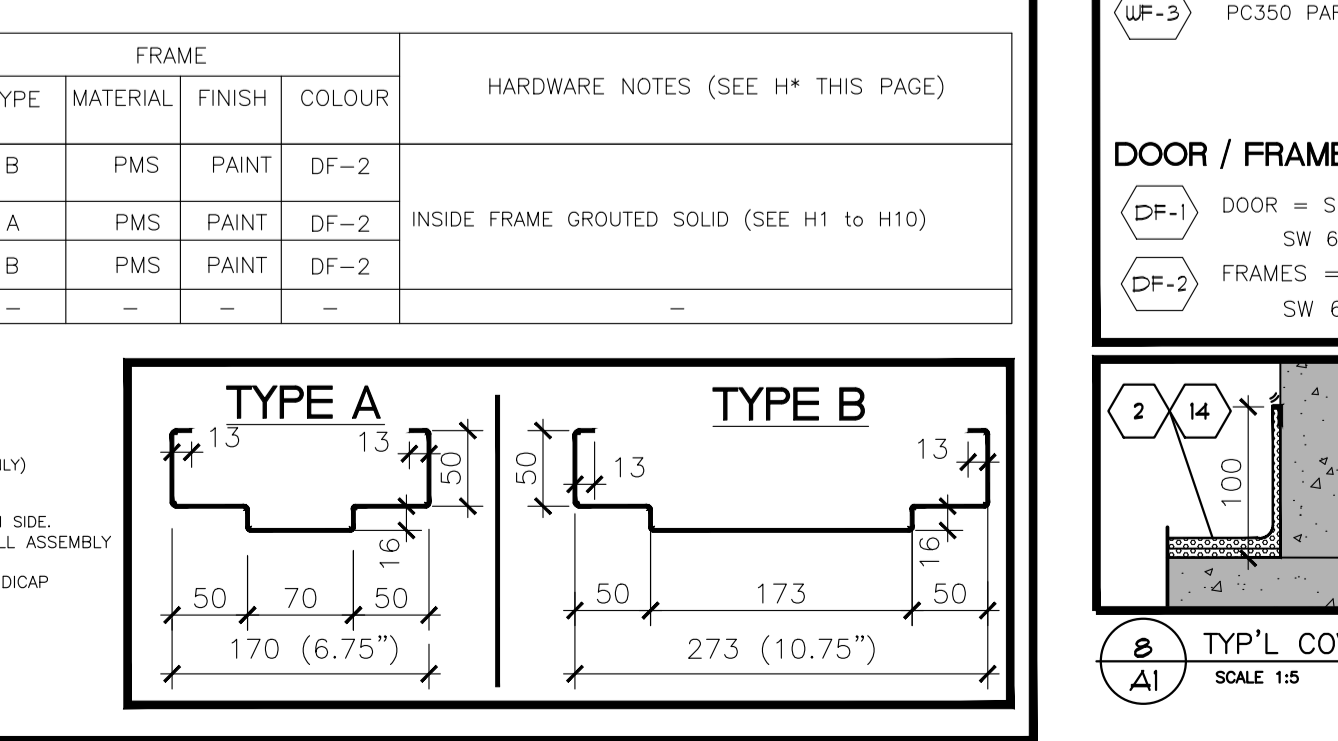
- ### ARCHITECTURAL NOTES:
- DEMOLISH EXISTING CONCRETE PADS IN RM 01 (SEE ARCH'L LEGEND FOR APPROX SIZE AS REFERENCE ONLY). GRIND AND MAKE SMOOTH FLOOR AND ALL ADJOINING EXISTING WALL SURFACES. WHERE EXISTING WALLS FALL OUTSIDE NEW HOUSEKEEPERS, CUT AND FILL GAPS AND REPAIR FLOOR SURFACE TO SUIT NEW FLOORING IN SCOPE OF WORK. (ALSO SEE STRUCTURAL DWG S01 FOR MORE INFO.)
 - EXISTING CONCRETE FLOOR SLAB FINISH TO BE PREPARED TO SUIT NEW FLOORING FINISH AS PER MANUFACTURING SPECS.
 - EXISTING CONCRETE/STEEL BEAMS-COLUMN AND FLOOR CONCRETE SLAB STRUCTURE TO REMAIN.
 - IN EXISTING STORAGE RM 101A, REMOVE CHAIN LINK PARTITION INCLUDING ALL SUPPORTING STRUCTURE AND GATES, REMOVE ALL WALL MOUNTED PANELS AND SHELVING. REPAIR ALL HOLES LEFT FROM REMOVALS FOR SMOOTH FINISH PRIOR TO NEW PAINT APPLICATION. DISCARD AND COORDINATE WITH NRC REPRESENTATIVE.
 - EXISTING STEEL COVER HATCH PLATE TO REMAIN (APPROX 1320mm x 1320mm). ENSURE NEW EPOXY FLOORING FINISH FLUSH WITH PERIMETER PLATE TRIM. PAINT TOP PLATE TO MATCH NEW FLOORING COLOR (LIGHT GRAY).
 - DEMOLISH EXISTING CONCRETE MASONRY (CMU) UNITS TO U/S OF CONCRETE BEAM. SAWCUT AND ADJUST ROUGH OPENING IN EXISTING MASONRY WALL TO SUIT NEW INSTALLATION C/W CLEAN VERTICAL CUT THROUGHOUT WIDTH OF CMU. ENSURE NO DAMAGES TO ADJACENT WALL FINISHES. REPAIR AND FILL WITH SMOOTH PARGING AT TRANSITIONS AND JUNCTIONS OF NEW INSTALLATION. (SEE ARCH'L DETAIL 4/A1).
 - REMOVE EXISTING WOOD DOOR AND WOOD FRAMES, SAWCUT AND ADJUST ROUGH OPENING IN EXISTING MASONRY WALL TO SUIT NEW INSTALLATION C/W CLEAN VERTICAL CUT THROUGHOUT WIDTH OF CMU. ENSURE NO DAMAGES TO ADJACENT WALL FINISHES. REPAIR AND FILL AS NECESSARY TO MATCH EXISTING AT TRANSITIONS AND JUNCTIONS WITH EXISTING. (SEE ARCH'L DETAIL 6/A1).
 - REMOVE EXISTING METAL DOOR AND METAL FRAMES, SAWCUT AND ADJUST ROUGH OPENING IN EXISTING MASONRY WALL TO SUIT NEW INSTALLATION C/W CLEAN VERTICAL CUT THROUGHOUT WIDTH OF CMU. ENSURE NO DAMAGES TO ADJACENT WALL FINISHES. REPAIR AND FILL AS NECESSARY AT TRANSITIONS AND JUNCTIONS WITH EXISTING. (SEE ARCH'L DETAIL 6/A1).
 - EXISTING CONCRETE FLOOR SLOPED RAMP TO REMAIN.
 - IN GENERAL AREA OF WORK, G.C. TO ERECT TEMPORARY PROTECTIVE ENCLOSURE C/W SEALED ACCESS. COORDINATE EXISTING DOORS TO SHOPS AREA FOR SCHEDULED CLOSURE. COORDINATE WITH NRC REPRESENTATIVE.
 - REMOVE FIRE EXTINGUISHER AND MOUNTING PLATE, HANDOVER TO DEPARTMENTAL REPRESENTATIVE AND REINSTALL AT END OF PROJECT AT A LOCATION DIRECTED BY NRC DEPARTMENTAL REPRESENTATIVE.
 - THROUGHOUT AREA AFFECTED BY WORK, ALL PENETRATIONS WITHIN SURFACES AT FLOOR CONCRETE SLAB, WITHIN EXISTING MASONRY WALL AREAS, FILL ALL UN-USED HOLES AND VISIBLE CONDUIT PIPING SPACES LEFT BY PENETRATIONS FROM PREVIOUS WORK. INCLUDE ALL PENETRATIONS AFFECTED WITHIN NEW SCOPE OF THIS PROJECT WITH NON SHRINK GROUT AND/OR FIRESTOP SEAL. WHERE EXISTING/NEW ELECTRICAL/DATA CONDUIT PASSES THROUGH EXISTING/NEW WALL, PROVIDE "EZ-PATH" SERIES 22 DEVICE (C/W ADJUSTABLE SLEEVE, WALL PLATES AND GASKETS BOTH SIDES) TO FILL VOID AROUND CONDUITS AND FILL WITH FIRESTOP SEAL.
 - EXISTING P350 PARTITION AND DOOR BEYOND TO REMAIN.
 - ON ALL WALLS IN EXISTING RM 101A, PATCH WALLS. PROVIDE A GYPSUM SKIM COAT AND PREP WALLS TO RECEIVE ONE COAT PRIMER AND TWO COAT PAINT FINISH. FULL WALL HEIGHT.
 - IN BASEMENT RM 01, ON ALL WALLS REMOVE ALL FLAKING/LOOSE PAINT, REMOVE ALL REDUNDANT SCREWS, UNISTRUT ETC. FOLLOW ALL FEDERAL, PROVINCIAL AND LOCAL REGULATIONS FOR LEAD PAINT ABATEMENT. COORDINATE WITH SPECIFICATION SECTION 02 83 00 - LEAD PRECAUTIONARY MEASURES.
 - EXISTING HVAC DUCTWORK TO REMAIN. CONFIRM EXTENT WITH NRC REPRESENTATIVE.
 - EXISTING LIGHTING FIXTURES TO REMAIN CONFIRM EXTENT WITH NRC REPRESENTATIVE.
 - NEW METAL DOOR AND FRAME. SEE DOOR SCHEDULE FOR TYPE AND ACCESSORIES (7/A01). ENSURE FULL CALULATING PERMETET AT ALL WALL JUNCTIONS AND FINISHES. PROVIDE GROUT FILL INSIDE FRAME (DRS NO 1,2 & 3) AS INDICATED ON ARCH'L DETAILS 4,5,6/A01.
 - PROVIDE NEW THIN TRESHOLD (SEE DOOR SCHEDULE)
 - INSTALL NEW EPOXY FLOOR SYSTEM COMPLETE WITH INTEGRAL COVE BASE (100mm Hg) WITH METAL COVE TERMINATION STRIP AS PER DETAILS AND MANUFACTURER SPECS. COORDINATE ON SITE FOR EXTENT WITH FLOORING MANUFACTURER. & NRC REF. FLOORING FINISH SURFACE TO BE SLIP RESISTANT C/W TROWEL EPOXY MORTAR-BASE. REFER TO WALL TYPE DETAILS ON DWG A1. (STAIRS AND RAMP NOT INCLUDED).
 - PROVIDE RUBBER TRANSITION STRIP (LIGHT GRAY) BETWEEN NEW AND EXISTING FLOORING FINISH.
 - ON TOP SURFACE OF NEW CONCRETE HOUSEKEEPING PAD, INSTALL EPOXY FLOOR SYSTEM BY STONEHARD STONKOTE 054 (OR APPROVED EQUIVALENT), TEXTURED ULTRA-SLIP RESISTANT SURFACE. (COLOUR SAFETY YELLOW THROUGHOUT INCLUDING BASE PERIMETER COVE).
 - PROVIDE MATCHING NEW RUBBER BASE (100mm High) ON NEW WALL (FACING EXISTING RM 113 AND NEW RM 130A ONLY). ENSURE CLEAN CUT WITH EXISTING AND PROVIDE CAULKING AT ALL PERIMETER JUNCTIONS. (COLOR LIGHT GRAY).
 - PROVIDE NEW REINFORCED CONCRETE PAD TO SUIT NEW BOILER/TANK SYSTEM AS OUTLINED IN MECH'L/PLUMBING DWG. FOR EXTENT OF CONCRETE SLAB PAD DETAILS. SEE STRUCTURAL DWG S01. COORDINATE WITH NRC REPRESENTATIVE FOR EXACT LOCATION AND OFFSET FROM WALLS. (ALSO SEE ARCH'L COVING DETAIL BA/A1)
 - AT EXISTING MASONRY ROUGH OPENING IN WALL, PROVIDE CMU'S INFILL TO MATCH SURFACES AND FINISHES.
 - NEW METAL PARTITION WALL TO U/S OF CONCRETE BEAM.
 - *92mm METAL STUDS AT 400mm O.C c/w ROCKWOOL FIREPROOF SOUND ATTENUATION BATTS - CAVITY FILLED
 - *19mm TYPE "X" GYPSUMBOARD EACH SIDE
 - *19mm PLINTWOOD BACKING ON INTERIOR FACE OF FRAMING (NEW RM 130A SIDE)
 - *100mm RUBBER BASE (LIGHT GRAY)
 - *WALL PAINT AS PER WALL FINISH SCHEDULE
 - *PROVIDE SEAL CAULK AT TOP AND BOTTOM OF WALL (BOTH SIDES)



- ### ARCHITECTURAL PLAN LEGEND:
- EXISTING INTERIOR WIRE MESH, GATES, SUPPORTS AND HARDWARE TO BE REMOVED AND DISCARDED TO NRC REPRESENTATIVE.
 - EXISTING INTERIOR (MASONRY CONCRETE BLOCK WALLS) TO REMAIN.
 - NEW METAL PARTITION WALL TO U/S OF CONCRETE BEAM. SEE WALL SECTION 3/A1
 - Denotes: NEW METAL DOOR AND FRAMES IN EXISTING MASONRY WALL. REMOVE EXISTING DOOR AND FRAME. SEE DOOR SCHEDULE.
 - Denotes: EXISTING METAL DOOR AND FRAMES TO REMAIN IN EXISTING WALL.
 - SEE SPECIFIC ARCHITECTURAL NOTES ON DWG A1.
 - SEE SPECIFIC PICTURES ON DWG A0.
 - SEE SPECIFIC DOOR SCHEDULE ON DWG A1.
 - SEE SPECIFIC FINISH SCHEDULE ON DWG A1.
 - NEW CONCRETE PAD (SEE STRUCT DWG S1)
 - NWPD1: ±700mmx500mmx100mm
 - NWPD2: ±700mmx700mmx100mm
 - NWPD3: ±1400mmx2800mmx100mm
 - RMPD1: ±700mmx1710mmx150mm
 - RMPD2: ±1600mmx2510mmx125mm
 - RMPD3: ±750mmx1040mmx150mm



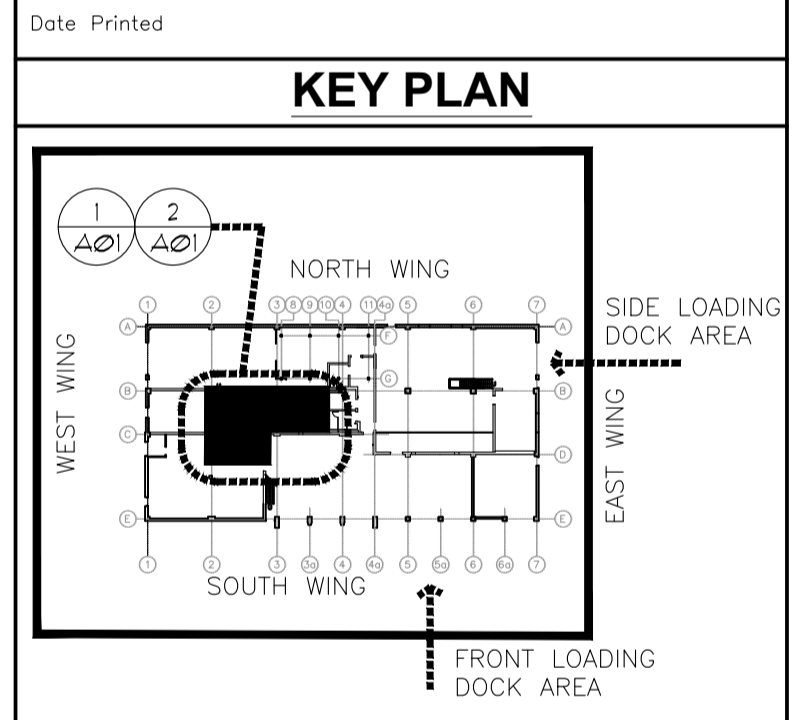
DOOR NO.	DOOR				FRAME				HARDWARE NOTES (SEE H* THIS PAGE)				
	TYPE	WIDTH	HEIGHT	CLOSURE (RATING)	MATERIAL	FINISH	COLOUR	GLAZ'G		TYPE	MATERIAL	FINISH	COLOUR
D01	D01	965mm	2070mm	45min	HM	PAINT	DF-1	N/A	B	PMS	PAINT	DF-2	INSIDE FRAME GROUTED SOLID (SEE H1 TO H10)
D02	D02	915mm	2135mm	45min	HM	PAINT	DF-1	N/A	A	PMS	PAINT	DF-2	
D03	D03	915mm	2135mm	45min	HM	PAINT	DF-1	N/A	B	PMS	PAINT	DF-2	
EXDR	-	-	-	-	-	-	-	-	-	-	-	-	-



- ### FINISH SCHEDULE (RMS 101A, 130A)
- FLOOR FINISH:**
- FF-1 STONHARD EPOXY FLOORING (OR APPROVED EQUAL) C/W LONG-TERM ABRASION AND CORROSION RESISTANCE, MOISTURE PROTECTION C/W EASY CLEANING AND MAINTENANCE
 - STONEKOTE "054" EPOXY GLOSS FINISH
 - STONFLEX MP7 JOINT FILL AND CTS CONCRETE CRACK TREATMENT
 - COLOR (SILVER GRAY)
- WALL FINISH:**
- UF-1 MASONRY/CONCRETE EXISTING WALLS TO BE PAINTED
 - SHERMAN WILLIAMS (OR APPROVED EQUAL)
 - SW 6253 (OLYMPUS WHITE) - EGG SHELL
 - UF-2 DRYWALL METAL PARTITION NEW WALL TO BE PAINTED
 - SHERMAN WILLIAMS (OR APPROVED EQUAL)
 - SW 6253 (OLYMPUS WHITE) - EGG SHELL
 - UF-3 PC350 PARTITION EXISTING WALL TO BE PAINTED
 - EXCLUDE TRIMS AND FLOOR BASE
 - SHERMAN WILLIAMS (OR APPROVED EQUAL)
 - SW 6253 (OLYMPUS WHITE) - EGG SHELL
- DOOR / FRAME FINISH (PRE-MANUFACTURE PRIMED)**
- CF-1 DOOR = SHERMAN WILLIAMS (OR APPROVED EQUAL) SW 6254 (LAZY GRAY) - EGG SHELL
 - CF-2 FRAMES = SHERMAN WILLIAMS (OR APPROVED EQUAL) SW 6255 (MORNING FOG) - EGG SHELL

- ### ABBREVIATION LEGEND:
- | | | | |
|----------------------------------|--------------------------|--------------------------|----------------------------|
| AFF. ABOVE FINISHED FLOOR | EX. EXTERIOR | EXP. EXPANSION | G.P. OPPOSITE |
| AL. ALUMINUM | EXT. EXTERIOR | EXTER. EXTERIOR | POL. POLYETHYLENE |
| APPROX. APPROXIMATELY | FIN. FINISH | FIN. FINISH | PRES. PRESSURE TREATED |
| AS. APPROXIMATELY | FIN. FINISH | FIN. FINISH | REF. REFERENCE |
| CONC. CONCRETE | F. R. FIRE RATED | FIRE RATED | R. O. ROUGH OPENING |
| COMP. COMPLETE | GEN. GENERAL CONTRACTOR | GEN. GENERAL CONTRACTOR | SH. SPRINKLER HEAD |
| CONSTR. CONSTRUCTION | HW. HORIZONTAL | HW. HORIZONTAL | SH. SPRINKLER HEAD REMOVED |
| COMP. COMPLETE WITH | I. D. INSIDE DIAMETER | I. D. INSIDE DIAMETER | SPC. SPECIFICATION |
| CONSTR. COMPLETE WITH | INSUL. INSULATION | INSUL. INSULATION | SQ. SQUARE |
| DIAG. DIAGRAM | INT. INTERIOR | INT. INTERIOR | ST. STAINLESS STEEL |
| E.A.P. EXISTING ACCESS | INSUL. INSULATION | INSUL. INSULATION | STR. STRUCTURAL |
| E.F.D. EXISTING FLOOR DRAIN | M.D. MOTION DETECTOR | M.D. MOTION DETECTOR | SUP. SUPPORTED |
| E.F.P. EXISTING FLOOR PLATE | M.S. MOP SINK | MOP SINK | T. & G. TONGUE & GROOVE |
| EX. EXISTING | M.S. MOP SINK | MOP SINK | T. & G. TONGUE & GROOVE |
| EX. SH. EXISTING SHOWER | N. I. C. NOT IN CONTRACT | N. I. C. NOT IN CONTRACT | T. TOP OF FRAME |
| EX. DR. EXISTING DRAIN COVER | O. D. OUTSIDE DIAMETER | O. D. OUTSIDE DIAMETER | TYP. TYPICAL |
| EX. DR. EXISTING DRAIN COVER | O. D. OUTSIDE DIAMETER | O. D. OUTSIDE DIAMETER | UND. UNDERSIDE |
| E.E.P. EXISTING ELECTRICAL PANEL | O. F. OUTSIDE FRAME | O. F. OUTSIDE FRAME | V. VERTICAL |
| E.P. NEW ELECTRICAL PANEL | O. F. OUTSIDE FRAME | O. F. OUTSIDE FRAME | |

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1	01 FEB 2021	ISSUED FOR TENDER	JCW
0	20 JAN 2021	FINAL DESIGN-TRANSLATION	JCW
0	DEC 2020	DESIGN PRELIMINARY REVIEW	JCW



BUILDING U-62
 NOT TO SCALE

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et toutes les conditions du chantier et assumer les responsabilités s'y rattachant

project: U62 - Boiler Replacement - Tool Storage Renos (Rms 01, 101a and 130A) projet

designed: J-C. W. conçu: JAN 2021 date

drawn: J-C.W. dessiné: AS SHOWN échelle

checked: SH/M.R. vérifié: A1 et de A1 feuille

approved: M.R./MKENNEDY approuvé: W.O.No. A1-011227-21 D.T.No.

dwg.no.: 5749-A1 dessin n°

Acad File: 5749-U62-ARCH.dwg fichier CDAO

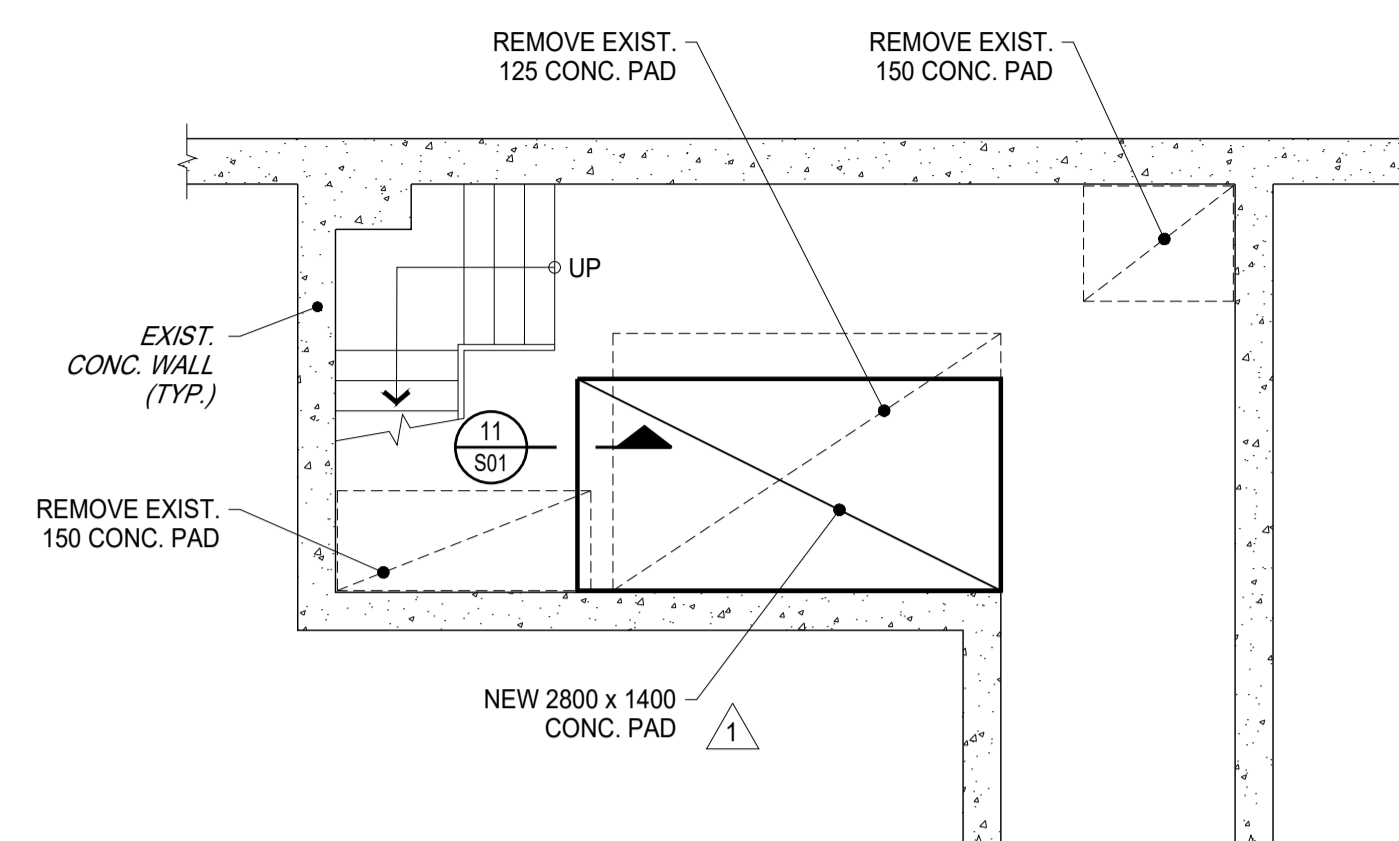


GENERAL NOTES:

- COORDINATE LOCATION OF NEW HOUSEKEEPING PADS WITH MECHANICAL AND WITH NRC DEPARTMENTAL REPRESENTATIVE.

CONCRETE:

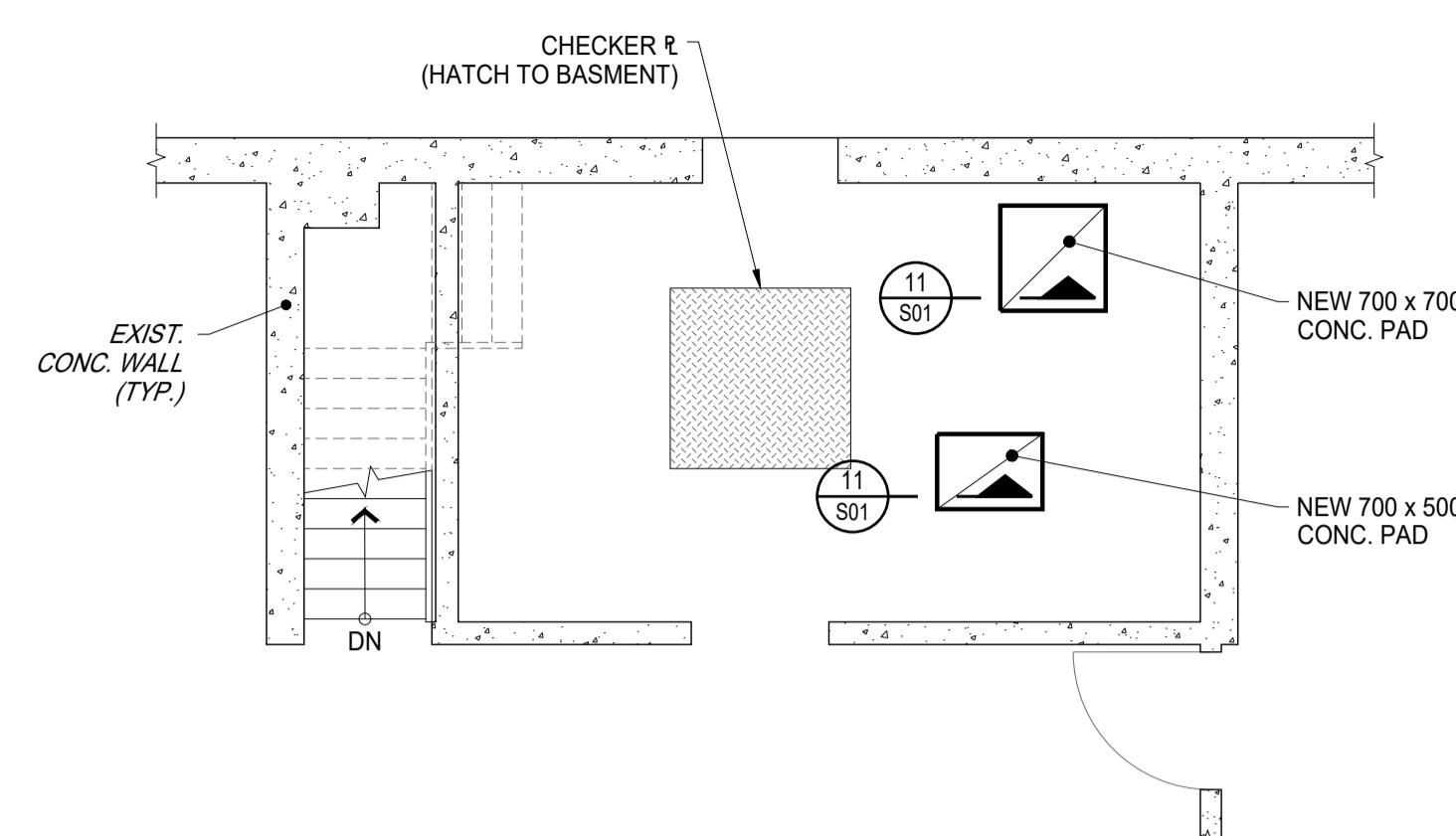
- CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 25 MPa.
- FOR EACH CONCRETE POUR, THE CONTRACTOR SHALL TAKE THREE CONCRETE COMPRESSION TEST CYLINDERS. ONE SHALL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS.
- REINFORCING STEEL SHALL CONFORM TO CSA G30.18-09, GRADE 400.
- CONCRETE HOUSEKEEPING PADS SHALL RECEIVE A WOOD FLOAT FINISH.
- ALL CONCRETE WORK SHALL CONFORM TO CSA A23.1-14 AND CSA A23.2-14.
- NOTIFY THE ENGINEER BEFORE EACH CONCRETE POUR.



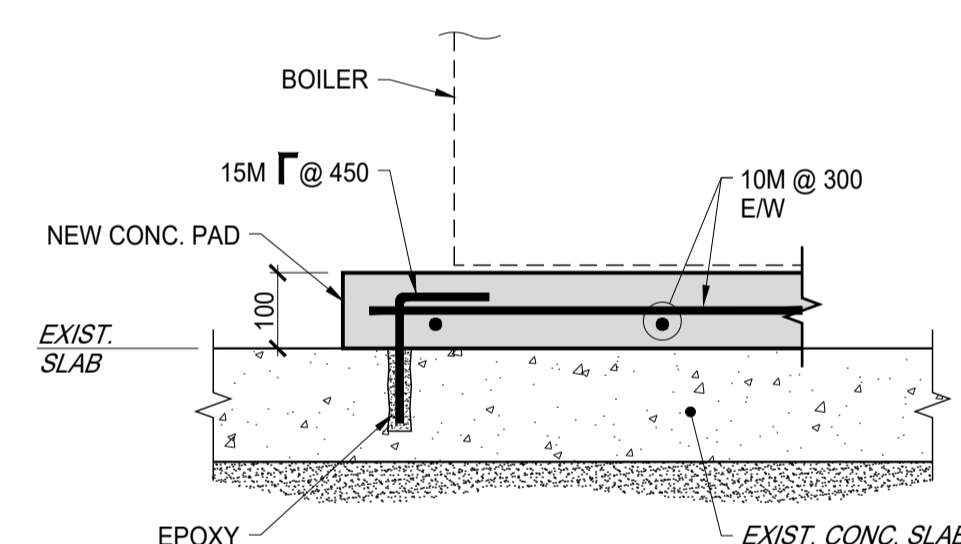
PART BASEMENT FLOOR PLAN
 SCALE = 1:50

DEMOLITION NOTES:

- DEMOLISH & REMOVE EXISTING 125 & 150 THICK CONCRETE HOUSEKEEPING PADS.
- WHERE EXISTING DOWELS FALL OUTSIDE NEW HOUSEKEEPING PADS, REPAIR FLOOR.



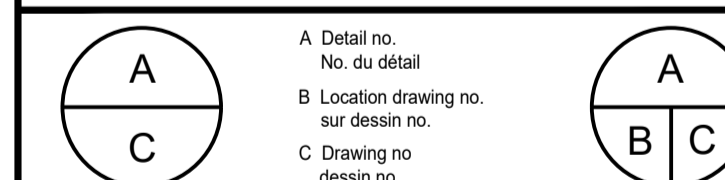
PART GROUND FLOOR PLAN - ROOM 101A
 SCALE = 1:50



11 SECTION (TYPICAL)
 S01 SCALE = 1:10

No.	Date	Revision	By:	Pr:
1	JAN. 14/2021	ISSUED FOR TENDER	R.L.	
0	APRIL 6/2020	PRELIMINARY	R.L.	

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project	BUILDING U-62 BOILER REPLACEMENT			projet
drawing	UPLANDS CAMPUS STRUCTURAL: PART BASEMENT AND GROUND FLOOR PLANS AND DETAILS			dessin
designed	R.L.	conçu	date	MARCH, 2020
drawn	D.M.D.	dessiné	scale	AS SHOWN
checked	R.L.	vérifié	sheet	S01 of S01
approved		approuvé	W.O.no.	D.T.no.
dwg no.	5749-S01			dessin no.



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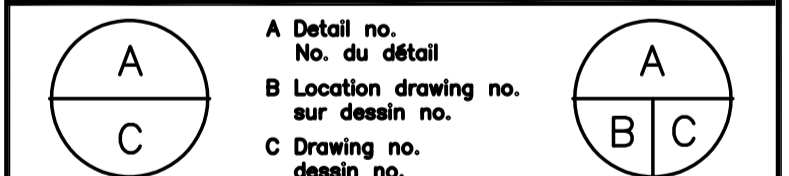
300-2611 QUEENSWAY DRIVE
 OTTAWA ONTARIO CANADA K2B 9K2
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No.	Date	Revision	By:	Par:
C	18 12 2020	ISSUED FOR TENDER		P.B
B	06 09 2019	ISSUED FOR 99%		P.B
A	27 06 2019	ISSUED FOR 66%		P.B

Date Printed / Date imprimée

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project / projet
 U62 Boiler Replacement

NRC, Building U62, 1920 Research Road, Ottawa, ON

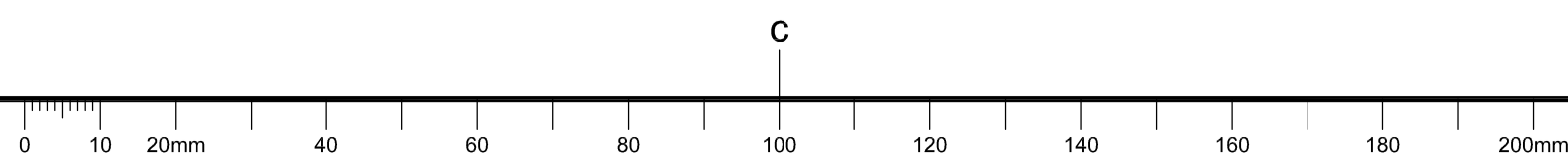
drawing / dessin
 U62-M-LEGEND AND DRAWING LIST

designed / conçu	date	drawn / dessiné	scale / échelle
AZ/BB		AZ/BB	AS SHOWN
checked / vérifié	sheet / feuille	of / de	approved / approuvé
PB			PB
approved / approuvé	W.O.no.	D.T.no.	dwg.no. / dessin no.
			5749-M01

SYMBOLS

SYMBOL	DESCRIPTION
62BLR-XX	BOILER
62EXT-XX	EXPANSION TANK
62HWP-XX	HEATING WATER PUMP
62BFP-XX	BOILER PUMP
62UNH-XX	UNIT HEATER
62BB-XX	HYDRONIC BASE BOARD HEATER
62VSD-XX	VARIOUS SPEED DRIVE
62HWT-XX	HOT WATER TANK
(Solid line)	TYPICAL EXISTING
(Dashed line)	TYPICAL NEW
(Dashed line with diagonal hatching)	TYPICAL DEMOLITION / REMOVALS
DHWR	DOM HOT WATER RETURN
DCW	DOM COLD WATER
DHW	DOM HOT WATER
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
G	NATURAL GAS
CD	CONDENSATE DRAIN
(Arrow pointing down)	PIPE DOWN
(Arrow pointing up)	PIPE UP
(T-shaped symbol)	PIPE CAP
(Two parallel lines)	UNION
(Valve symbol)	MANUAL VALVE
(Valve symbol with CBV)	CIRCUIT BALANCING VALVE
(Valve symbol with CV)	CONTROL VALVE
(Strainer symbol)	STRAINER
(BFP symbol)	REDUCED PRESSURE BACKFLOW PREVENTER
(TRV symbol)	TEMPERATURE / PRESSURE RELIEF VALVE
(PRV symbol)	PRESSURE REDUCING VALVE
(Steam trap symbol)	STEAM TRAP
(DPS symbol)	DIFFERENTIAL PRESSURE SENSOR
(CHE symbol)	CHEMICAL POT FEEDER
(Thermometer symbol)	THERMOMETER
(Pressure gauge symbol)	PRESSURE GAUGE WITH SHUT-OFF BALL VALVE
(In line pump symbol)	IN LINE PUMP
(Temperature sensor symbol)	TEMPERATURE SENSOR
(Existing duct symbol)	EXISTING DUCT
(Circular air duct up symbol)	CIRCULAR AIR DUCT UP
(Circular air duct down symbol)	CIRCULAR AIR DUCT DOWN
HB	HOSE BIBB
CTE	CONNECT TO EXISTING
(Detail callout symbol)	DETAIL
(Location of detail symbol)	LOCATION OF DETAIL

DRAWING LIST	
5749-M-01	U62-M-LEGEND AND DRAWING LIST
5749-M-02	U62-M-BSMT & FLO1-HVAC & PIPING DEMOLITION
5749-M-03	U62-M-FLO2 & ROOF-HVAC & HYDRONIC PIPING DEMOLITION
5749-M-04	U62-M-BSMT & FLO1-HVAC & HYDRONIC PIPING NEW WORK
5749-M-05	U62-M-FLO2 & ROOF-HVAC & HYDRONIC PIPING NEW WORK
5749-M-06	U62-M-HYDRONIC DIAGRAM AND CONTROL SCHEMATIC
5749-M-07	U62-M-EQUIPMENT SCHEDULES
5749-M-08	U62-M-DETAILS



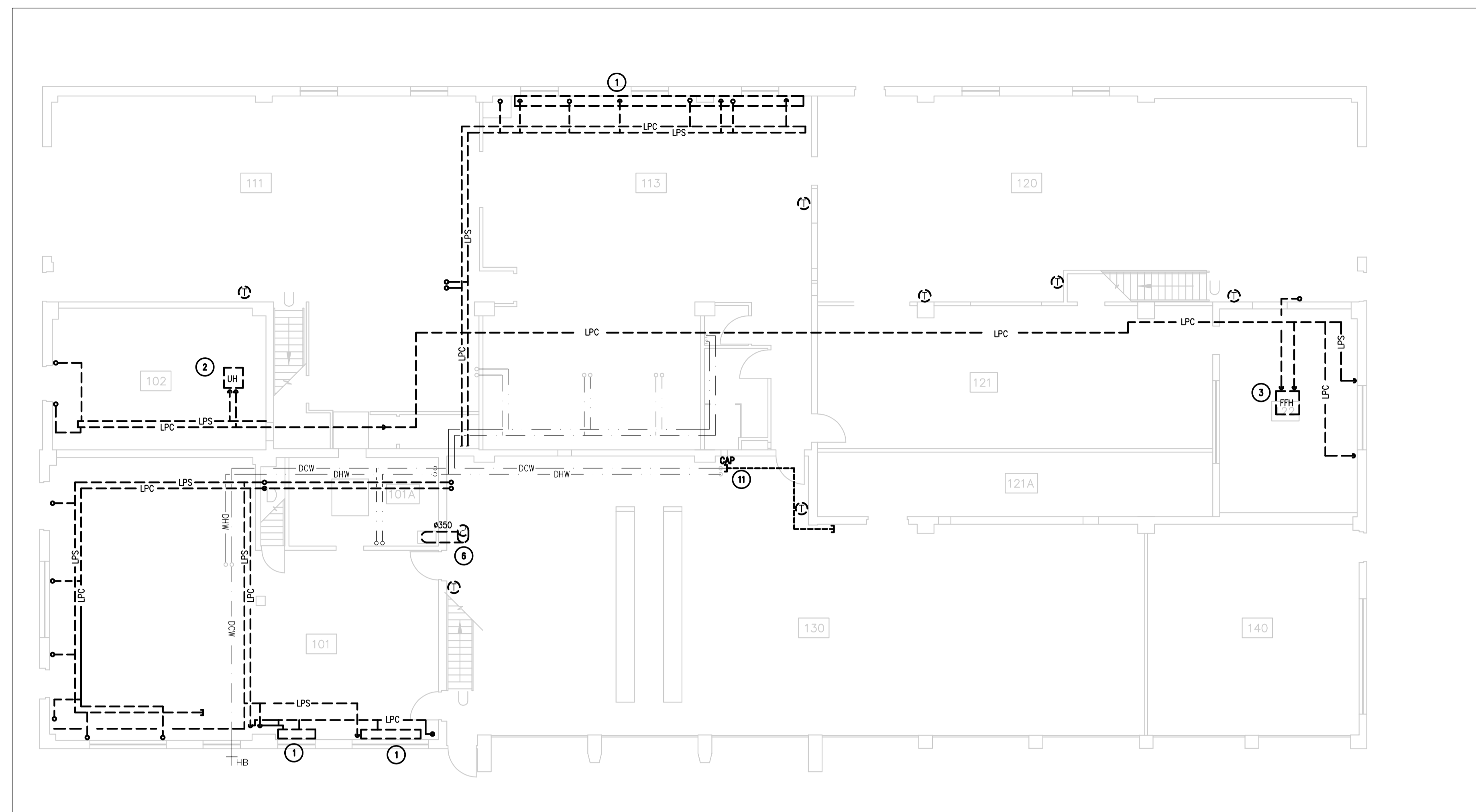
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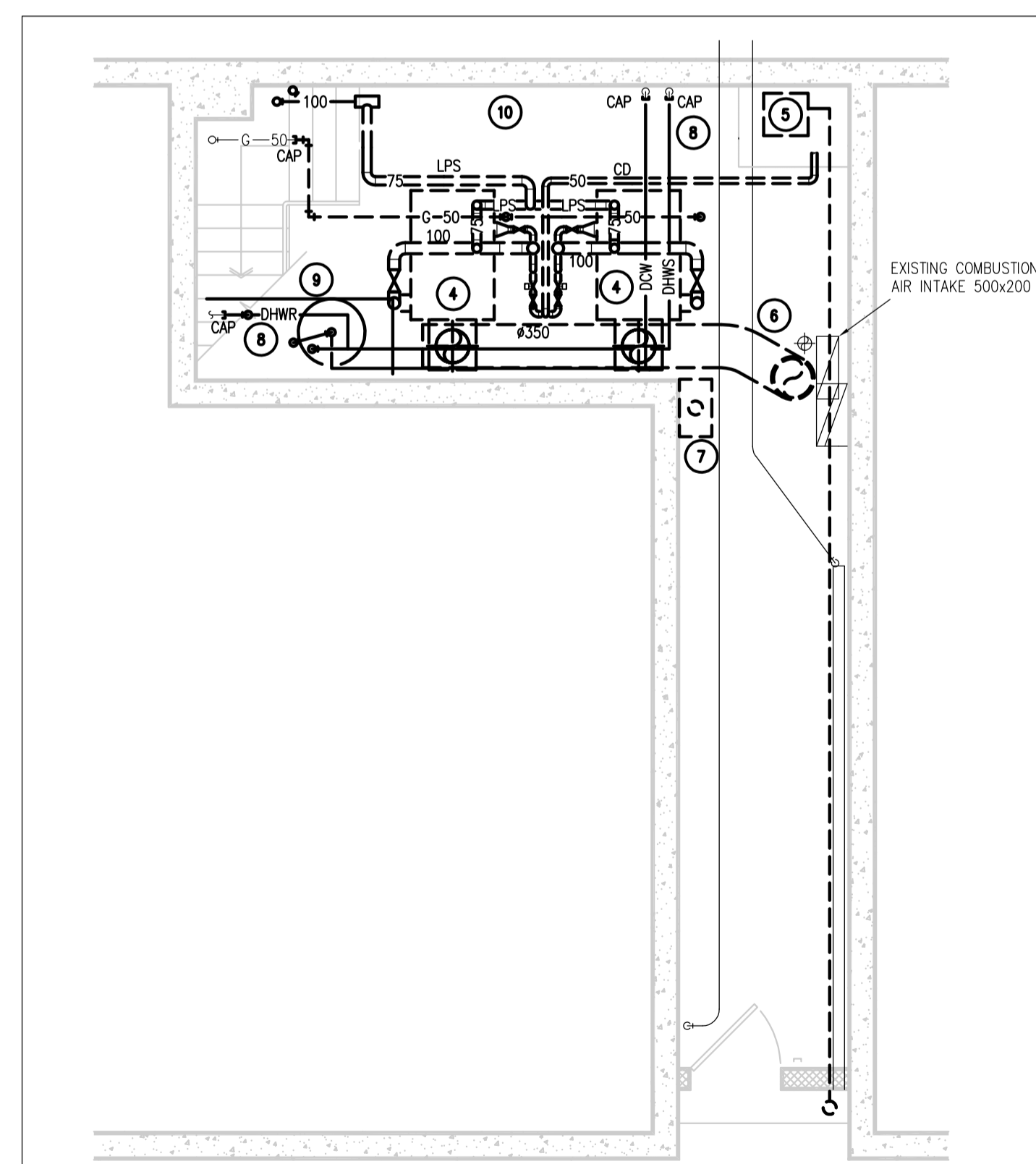
GENERAL NOTE:

- THE DEMOLITION SCOPE INCLUDES THE REMOVAL OF ALL LOW PRESSURE STEAM, CONDENSATE PIPING, STEAM TRAPS, VALVES INCLUDING THE ASSOCIATE PIPE ACCESSORIES AND PIPE MOUNTING HARDWARE.
- CLEAN, DEGREASE AND APPLY AN EPOXY COATING TO SEAL FLOOR IN ENTIRE MECHANICAL ROOM BEFORE ANY NEW WORK IS DONE.
- ASBESTOS CONTAINING MATERIAL (ACM). NOTE THAT ALL PIPING CONTAINS ACM. REFER TO DSR REPORT PREPARED BY NRC. ACM REMOVAL INCLUDED IN SCOPE OF WORK. A ACM CONSULTANT WILL BE RETAINED BY NRC TO PERFORM SITE REVIEWS AND AIR MONITORING.

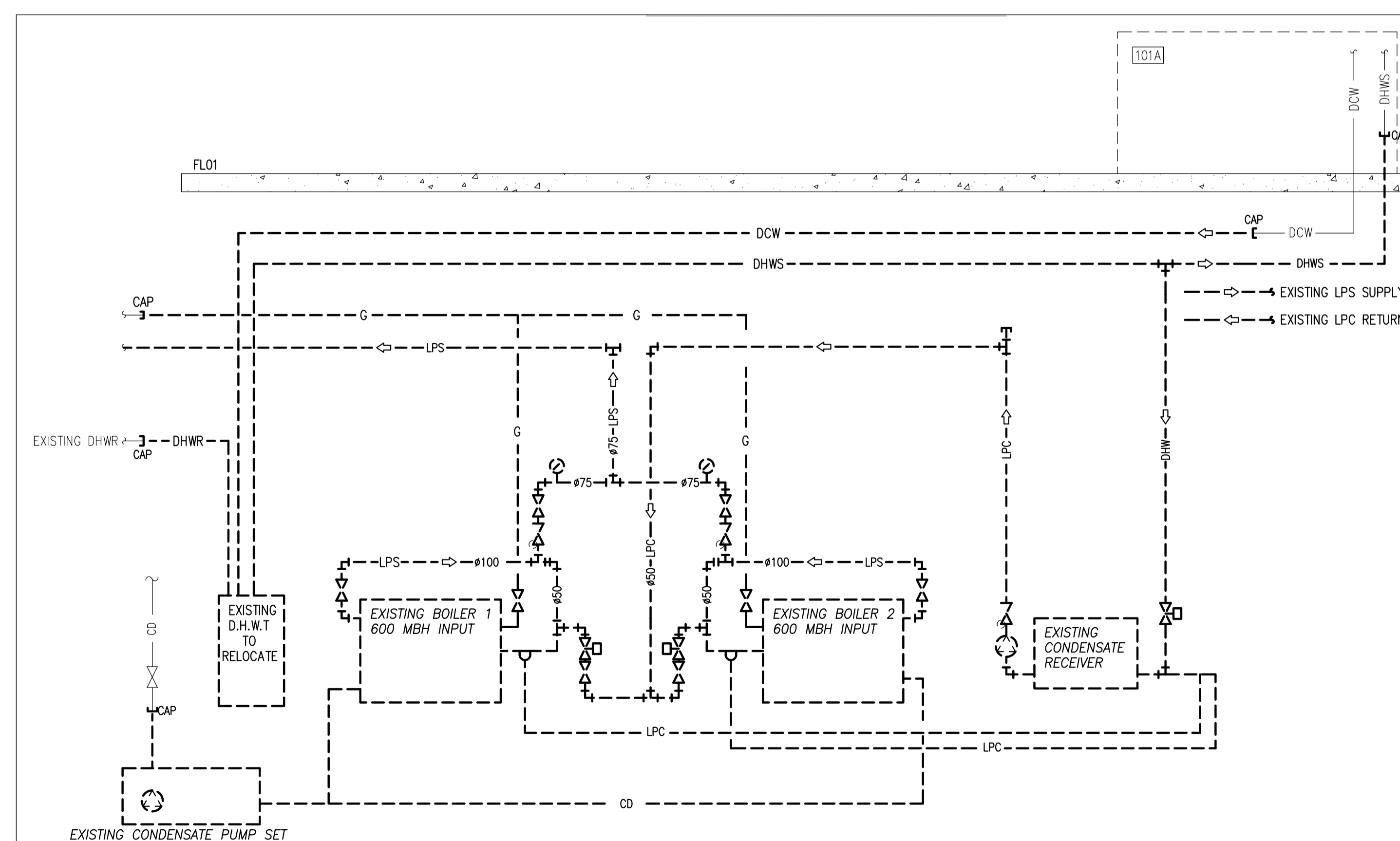
DEMOLITION NOTES:

- REMOVE EXISTING PERIMETER BASEBOARD COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, THERMOSTATS, SUPPORTS AND ACCESSORIES AS INDICATED. TYPICAL FOR ALL.
- REMOVE EXISTING UNIT HEATERS COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, THERMOSTATS, SUPPORTS AND ACCESSORIES AS INDICATED.
- REMOVE EXISTING FORCE FLOW UNIT COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, THERMOSTATS, SUPPORTS AND ACCESSORIES AS INDICATED.
- REMOVE EXISTING STEAM BOILER COMPLETE WITH ALL ASSOCIATED ACCESSORIES.
- REMOVE EXISTING LOW PRESSURE CONDENSATE TANK AND CONDENSATE PUMP COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, SUPPORTS AND ACCESSORIES AS INDICATED.
- REMOVE EXISTING EXHAUST FLUE IN ITS ENTIRETY. TEMPORARILY CAP ROOF OPENING.
- REMOVE EXISTING PUMP SET COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, SUPPORTS AND ACCESSORIES UP TO ISOLATION VALVE.
- DEMOLISH ALL EXISTING DCW AND DHW CONNECTED TO EXISTING WATER HEATER TANK AND CAP THEM AS INDICATED.
- TEMPORARY REMOVE EXISTING D.H.W.T AND PROTECT UNTIL RE-INSTALLATION ON FIRST FLOOR.
- DEMOLISH HOUSEKEEPING PADS UNDER EXISTING EQUIPMENT.
- DEMOLISH EXISTING DCW PIPE AND CAP IT AS INDICATED.

1 FLO1-HVAC AND PIPING DEMOLITION
 MO2 SCALE = 1:100



2 BSMT-HVAC & HYDRONIC PIPING DEMOLITION
 MO2 SCALE = 1:50



3 BOILER PIPING DIAGRAM DEMOLITION
 MO2 SCALE = NTS

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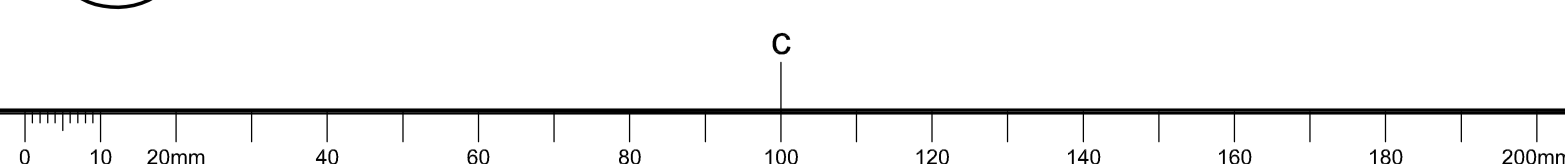
A	A Detail no. No. du détail	A
B	B Location drawing no. sur dessin no.	B
C	C Drawing no. dessin no.	C

project U62 Boiler Replacement projet

NRC, Building U62, 1920 Research Road, Ottawa, ON
 drawing U62-M-BSMT & FLO1- HVAC & PIPING DEMOLITION dessin

designed	conçu	date	date
AZ/BB			
drawn	dessiné	scale	échelle
AZ/BB		AS SHOWN	
checked	vérifié	sheet	of/de feuille
PB			
approved	approuvé	W.O.no.	D.T.no.
PB			

dwg.no. 5749-M02 dessin no.





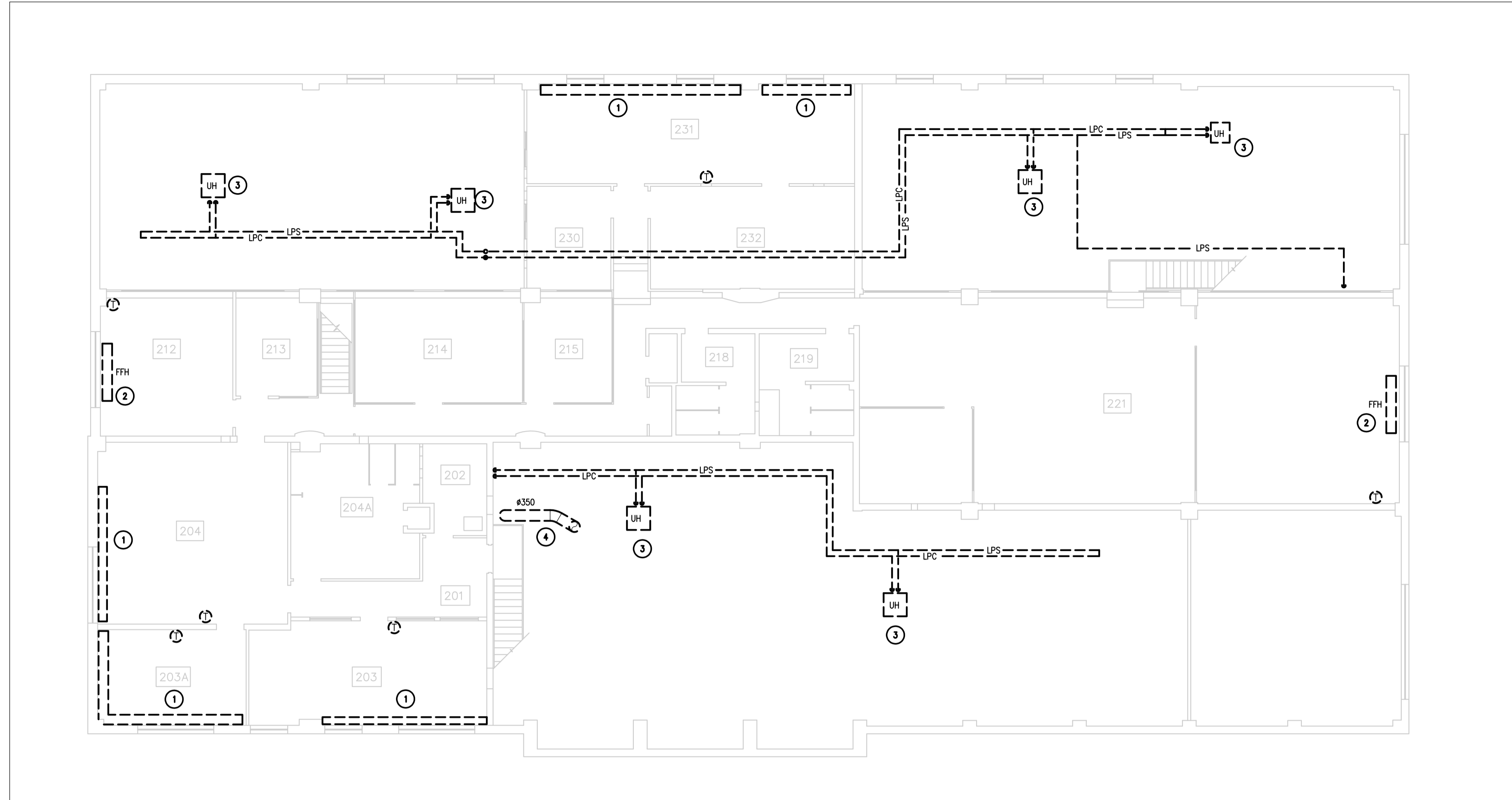
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KEY PLAN PLAN CLÉ



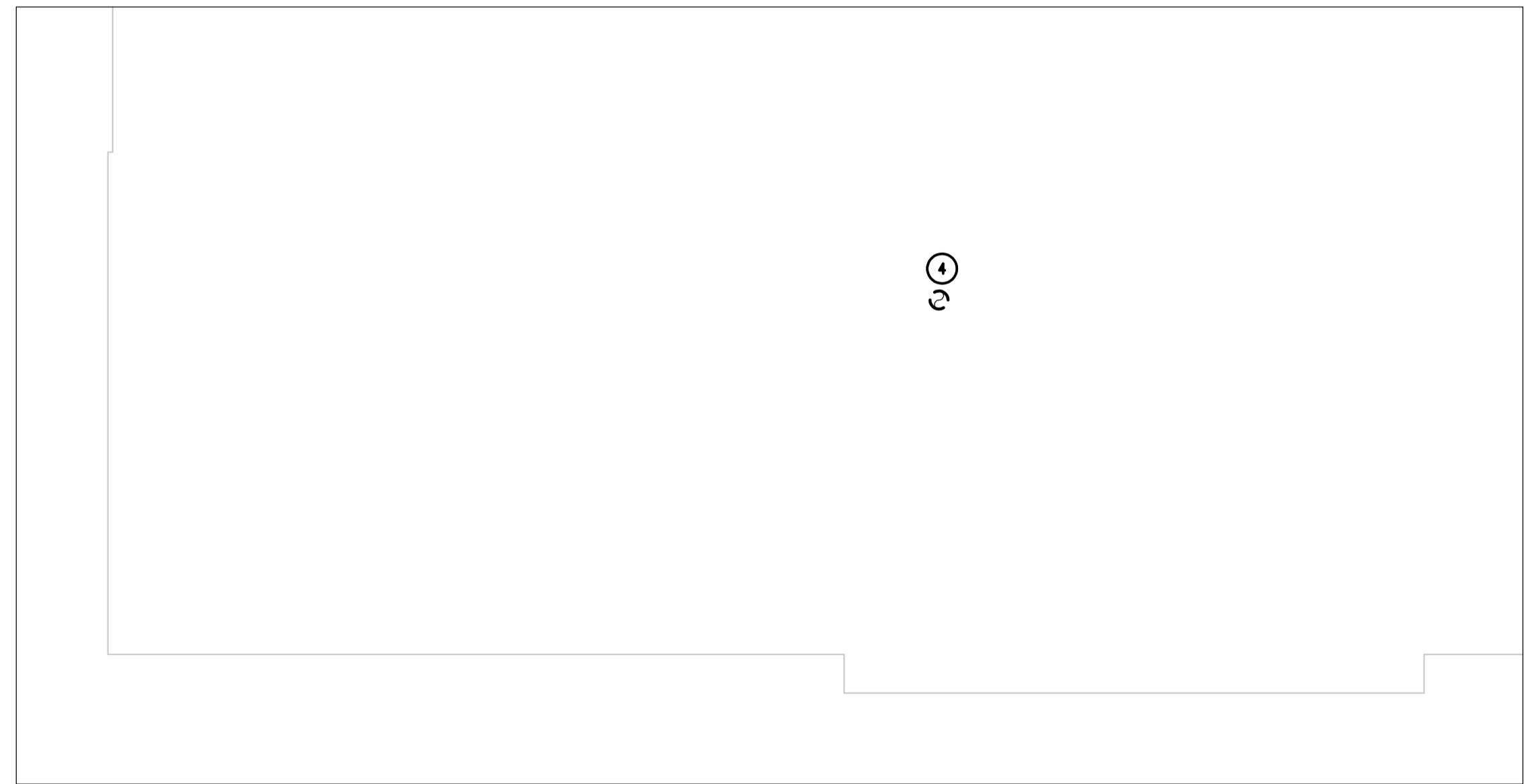
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DEMOLITION NOTES:

- REMOVE EXISTING PERIMETER WALL FIN UNIT AND ALL CONNECTED STEAM AND CONDENSATE PIPING, INCLUDING ASSOCIATED CONTROL AND ACCESSORIES. REMOVE EXISTING THERMOSTAT AND PNEUMATIC TUBING.
- REMOVE EXISTING FORCE FLOW UNIT AND ALL CONNECTED STEAM AND CONDENSATE PIPING INCLUDING ASSOCIATED CONTROL AND ACCESSORIES.
- REMOVE EXISTING UNIT HEATERS COMPLETE WITH ALL PIPES, ELECTRICAL CONNECTIONS, CONTROLS, SUPPORTS AND ACCESSORIES AS INDICATED.
- REMOVE EXISTING EXHAUST FLUE IN ITS ENTIRETY INCLUDING VENT CAP ON ROOF. TEMPORARY COVER OPENING ON THE ROOF UNTIL ROUTING NEW VENT.

1 FLO2-HVAC & HYDRONIC PIPING DEMOLITION
 MO3 SCALE = 1:100



1 ROOF-HVAC DEMOLITION
 MO3 SCALE = 1:100

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A	A Detail no. No. du détail	A
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C	C Drawing no. dessin no.	C

project U62 Boiler Replacement / projet

NRC, Building U62, 1920 Research Road, Ottawa, ON

drawing U62-M-FLO2 & ROOF-HVAC & HYDRONIC PIPING DEMOLITION / dessin

designed	conçu	date	date
AZ/BB			
drawn	dessiné	scale	échelle
AZ/BB		AS SHOWN	
checked	vérifié	sheet	feuille
PB		of/de	
approved	approuvé	W.O.no.	D.T.no.
PB			

dwg.no. 5749-M03 / dessin no.

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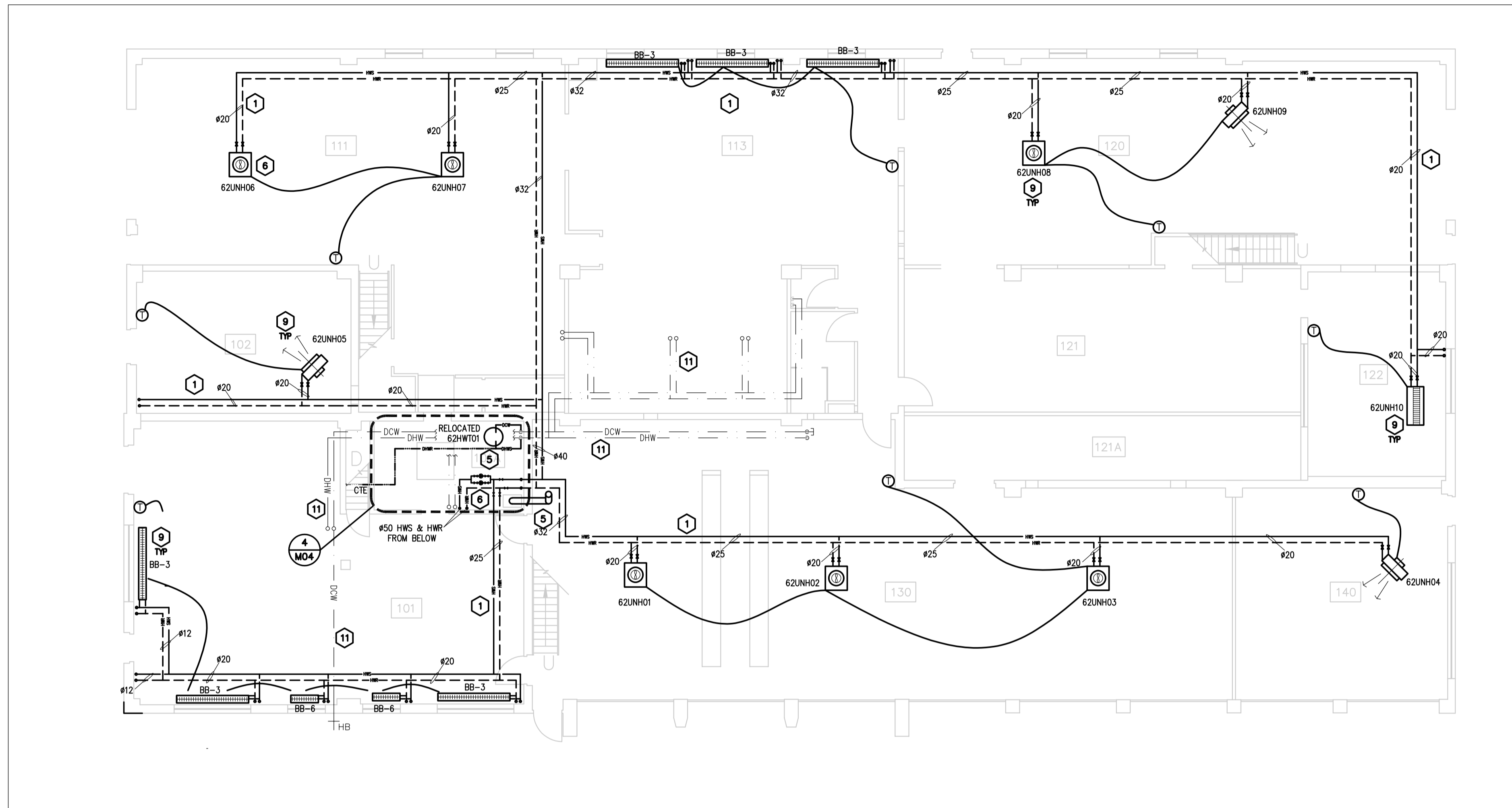


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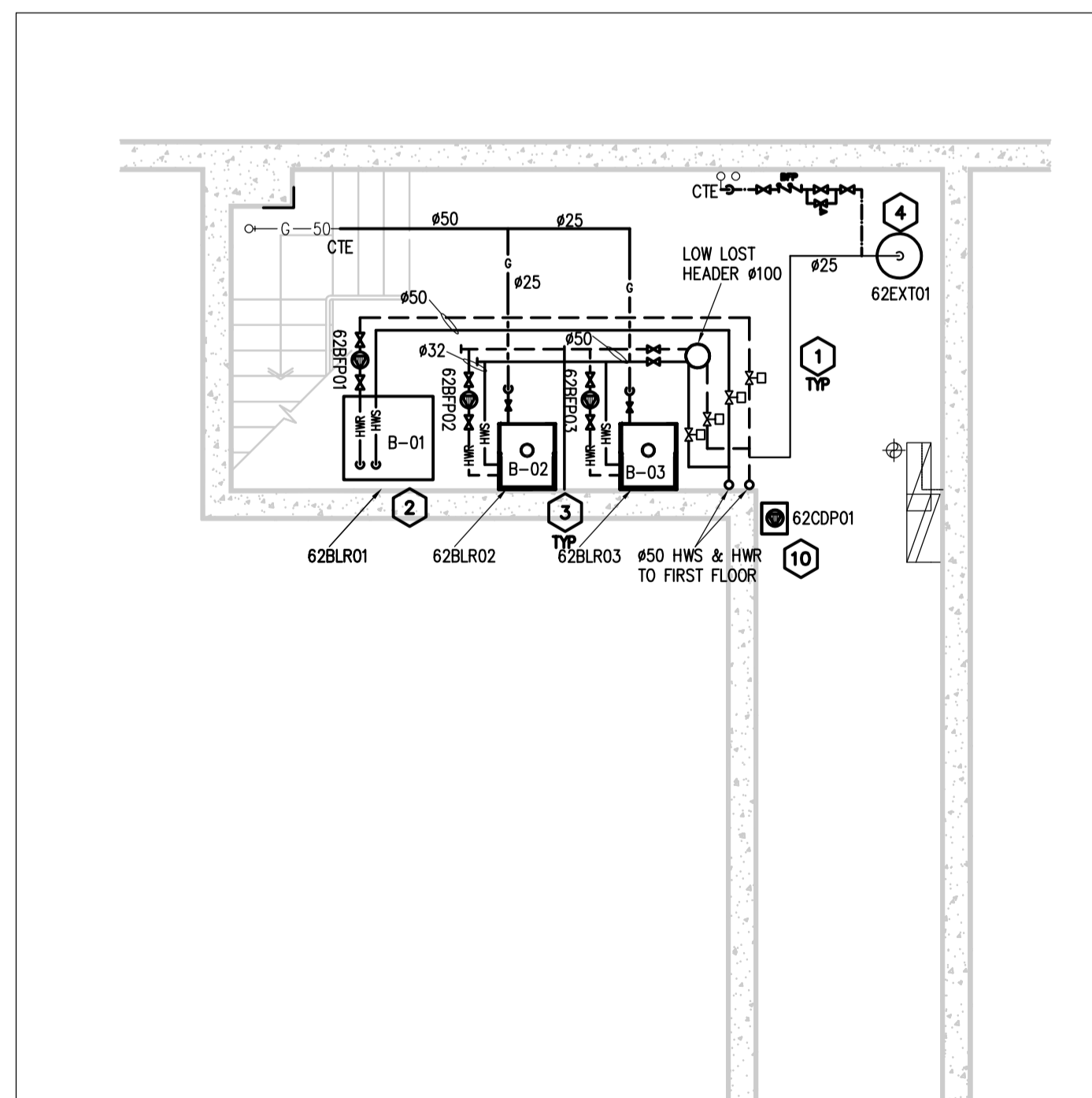
KEY PLAN PLAN CLÉ

NEW WORK NOTES:

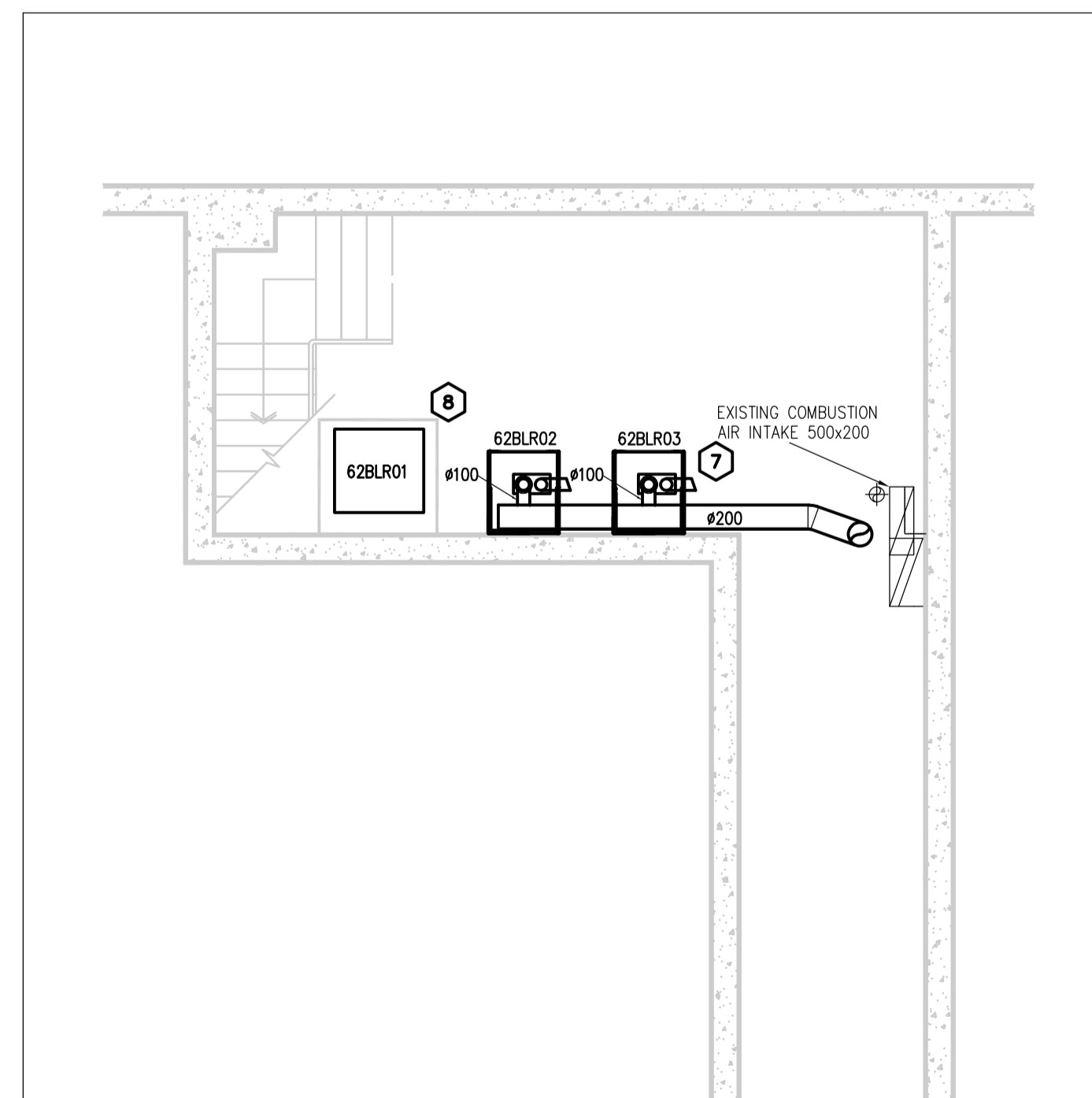
1. PROVIDE HWS, HWR, AND NATURAL GAS PIPING REFER TO M06 FOR LOCATION OF VALVES AND OTHER HYDRONIC ACCESSORIES IN MECHANICAL ROOMS.
2. PROVIDE NEW ELECTRIC BOILER COMPLETE WITH ALL CONTROLS, SUPPORTS, AND ACCESSORIES, REFER TO M06 AND SCHEDULES ON M07.
3. PROVIDE NEW GAS FIRED BOILERS COMPLETE WITH ALL CONTROLS, SUPPORTS, CIRCULATION PUMP AND ACCESSORIES, BOILERS SHALL BE SUPPLIED WITH A LOW LOSS HEADER. REFER TO M06 AND SCHEDULES ON M07.
4. PROVIDE EXPANSION TANK, REFER TO M06 AND SCHEDULES ON M07.
5. RE-INSTALL D.H.W.T COMPLETE WITH ALL CONNECTION CONTROL, SUPPORTS AND ACCESSORIES, REFER TO M06. PROVIDE NEW CONCRETE HOUSEKEEPING PAD UNDER RELOCATED D.H.W.T.
6. PROVIDE SECONDARY PUMPS COMPLETE WITH CONTROLS, SUPPORTS AND ACCESSORIES.
7. PROVIDE VENTS FOR GAS FIRED CONDENSING BOILERS. FOR CONDENSATE DRAINAGE PIPING SEE M06.
8. PROVIDE CONCRETE HOUSEKEEPING PAD UNDER ELECTRIC BOILER.
9. PROVIDE HYDRONIC BASEBOARDS, FORCE FLOW HEATERS AND UNIT HEATERS COMPLETE WITH ALL CONTROL AND ACCESSORIES (REFER TO SCHEDULES ON M07). CONNECT TO NEW PIPING.
10. PROVIDE CONDENSATE PUMP COMPLETE WITH ALL FITTINGS, CONTROLS, SUPPORTS AND ACCESSORIES, REFER TO M06 FOR MORE DETAILS.
11. PROVIDE THERMAL PIPE INSULATION TO ALL EXISTING DOMESTIC WATER PIPING.



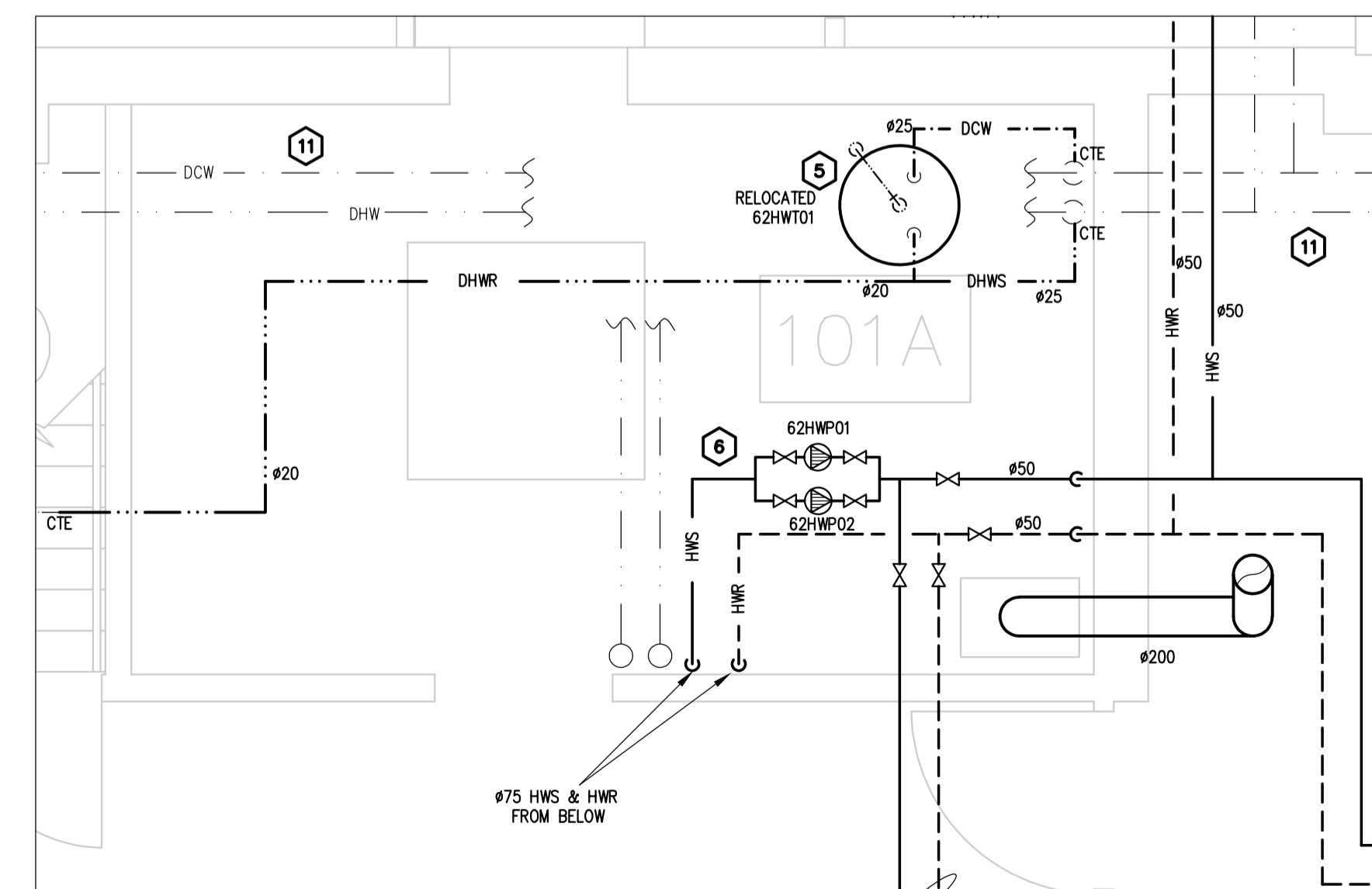
1 FL01-HVAC & HYDRONIC PIPING NEW-WORK
 M04 SCALE = 1:100



2 BSMT-HYDRONIC PIPING NEW-WORK
 M04 SCALE = 1:50



3 BSMT-HVAC NEW-WORK
 M04 SCALE = 1:50



4 ROOM 101A
 M04 SCALE = 1:30

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A	A Detail no. No. du détail	A
B	B Location drawing no. sur dessin no.	B
C	C Drawing no. dessin no.	C

project U62 Boiler Replacement / projet

NRC, Building U62, 1920 Research Road, Ottawa, ON

drawing U62-M-BSMT & FL01-HVAC & HYDRONIC PIPING NEW WORK / dessin

designed	conçu	date	date
AZ/BB			
drawn	dessiné	scale	échelle
AZ/BB		AS SHOWN	
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PB			

dwg.no. **5749-M04** / dessin no.



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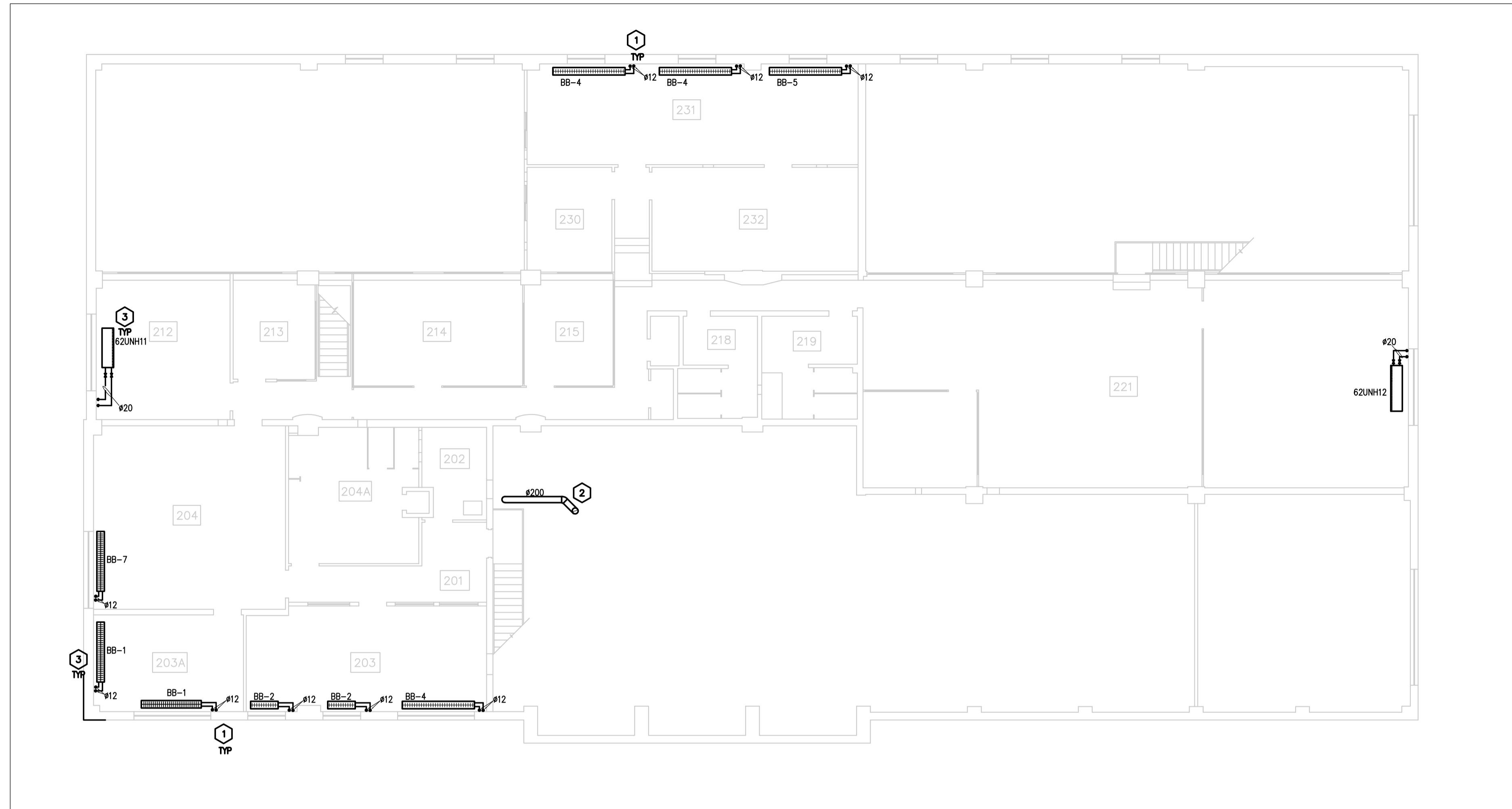


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NEW WORK NOTES:

- PROVIDE NEW HWS AND HWR PIPING AS INDICATED.
- PROVIDE NEW COMBINED VENT FOR CONDENSING BOILERS AS INDICATED. FOR CONDENSATE DRAINAGE PIPING SEE M06. PROVIDE NEW WEATHER CAP ON THE ROOF REFER TO DETAIL ON M07.
- PROVIDE NEW HYDRONIC BASEBOARDS AND FORCE FLOW HEATERS COMPLETE WITH ALL CONTROL AND ACCESSORIES AS INDICATED (REFER TO SCHEDULES ON M07). CONNECT TO NEW PIPING.



1 FLO2-HVAC & HYDRONIC PIPING NEW-WORK
 M05 SCALE = 1:100

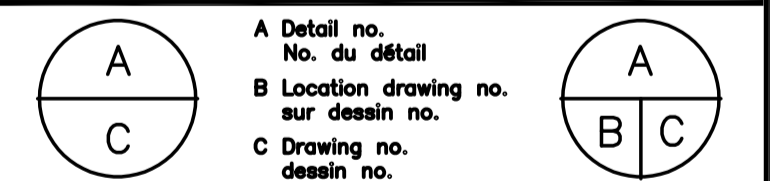


2 ROOF-HVAC NEW WORK
 M05 SCALE = 1:100

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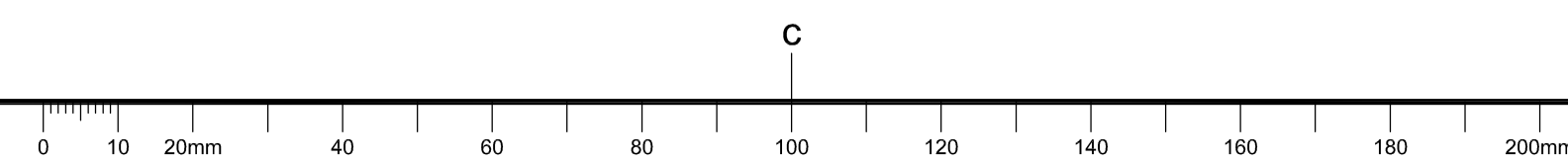
project U62 Boiler Replacement projet

NRC, Building U62, 1920 Research Road, Ottawa, ON

drawing U62-M-FLO2 & ROOF-HVAC & HYDRONIC PIPING NEW WORK dessin

designed	conçu	date	date
AZ/BB			
drawn	dessiné	scale	échelle
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PB			

dwg.no. 5749-M05 dessin no.



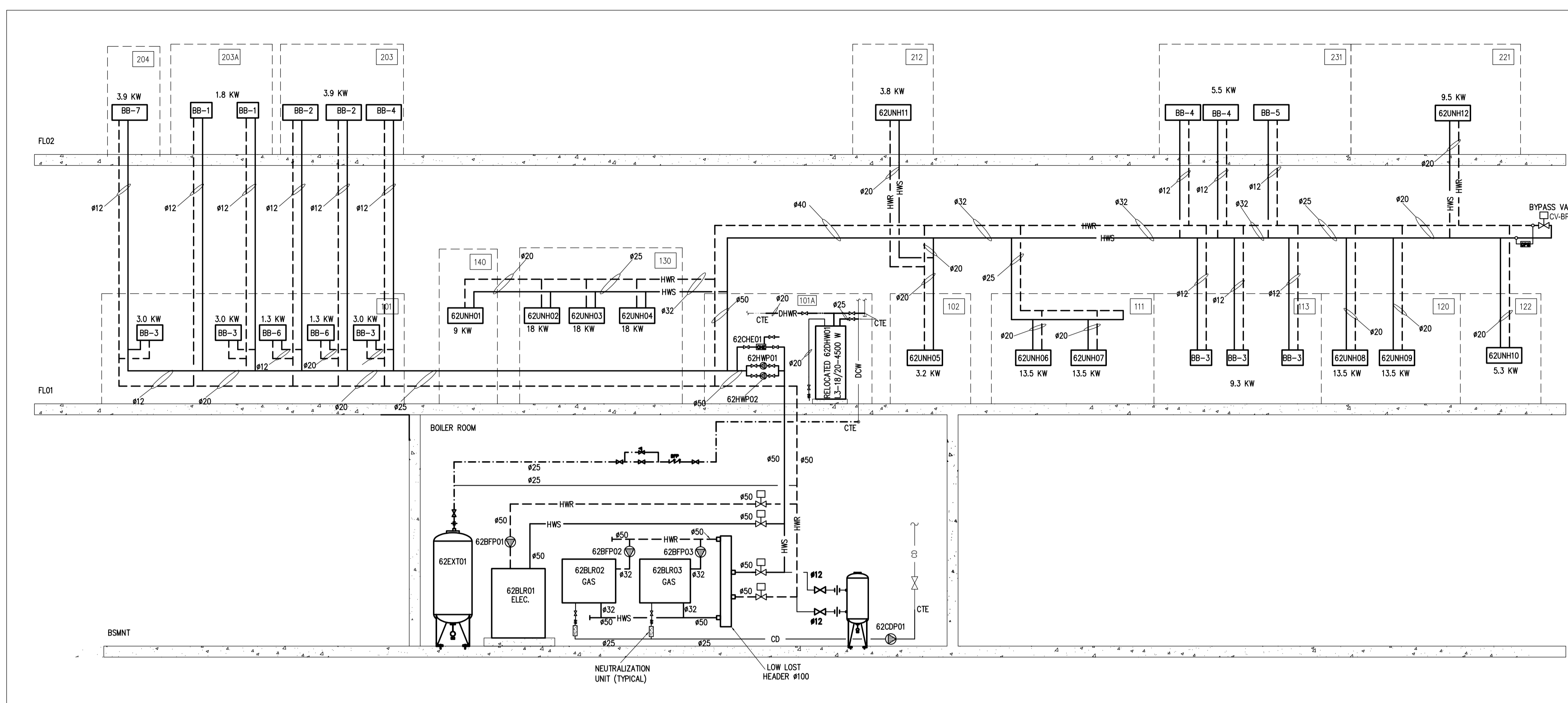
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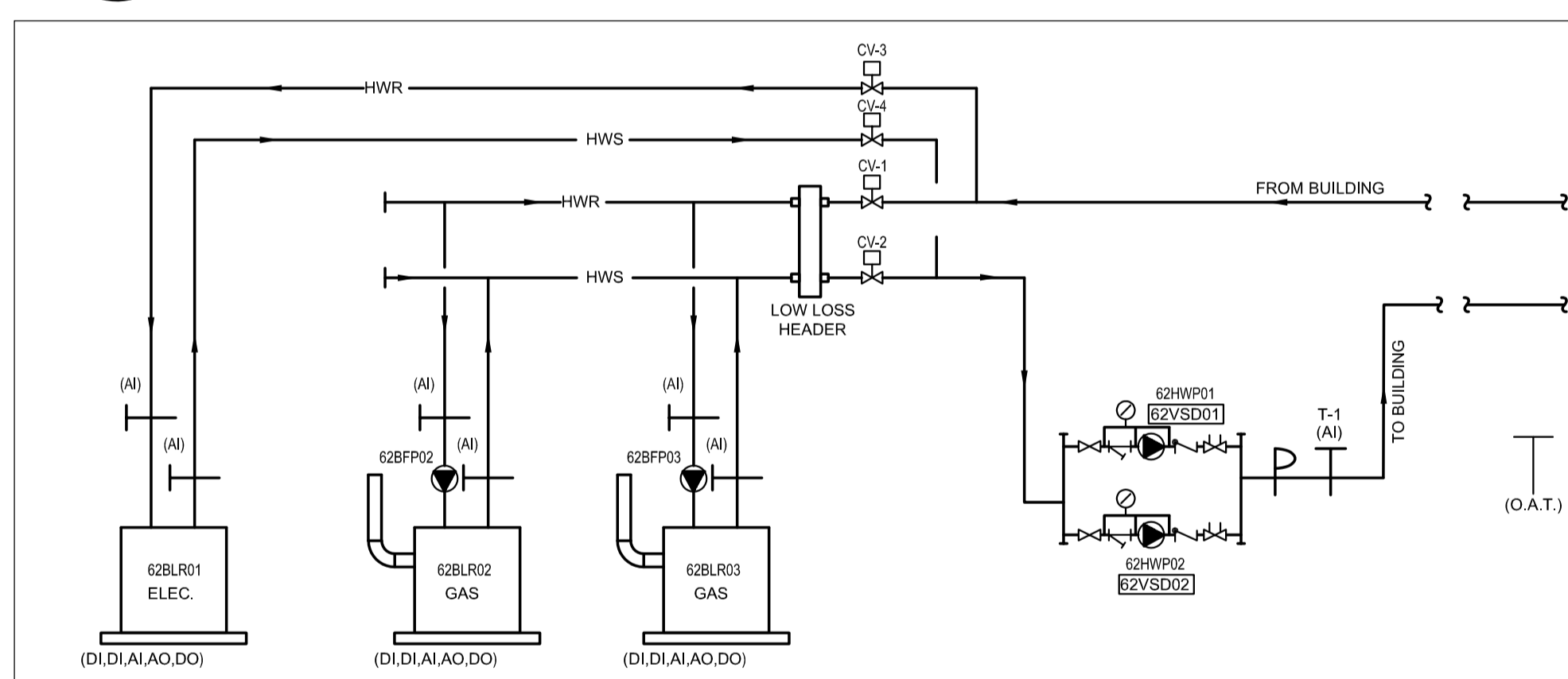


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KEY PLAN PLAN CLÉ



1 HYDRONIC DIAGRAM
 M06 SCALE = N.T.S.



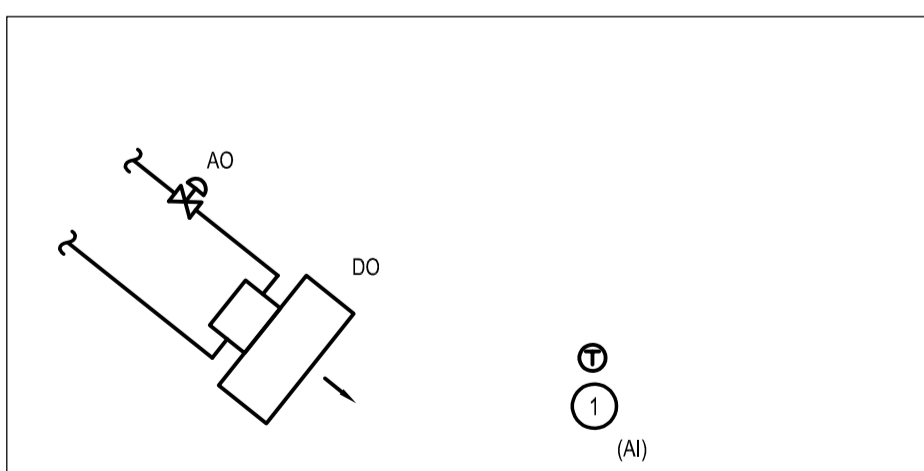
BAS POINTS LIST

POINT REF.	TYPE	DEVICE TYPE	NEW OR EXIST.?	POINT DESCRIPTION
BOILERS (TYPICAL TO ALL)				
BOILERS INTERNAL ALARMS AND SAFETIES	AI/AO/DV/DD	BOILERS INTERNAL ALARMS AND SAFETIES	N	BOILER 1, 2, 3 INTERNAL ALARMS AND SAFETIES
62_TSP01	AI	TEMPERATURE SENSOR	N	SUPPLY WATER TEMPERATURE
62_TRTURN	AI	TEMPERATURE SENSOR	N	SUPPLY WATER TEMPERATURE
62_SS	DO	CONTACT	N	PRIMARY PUMP (P2/P3) EQUIPMENT START/STOP
62_STATUS	DI	CURRENT SENSOR	N	PRIMARY PUMP (P2/P3) EQUIPMENT STATUS
SECONDARY PUMPS P-2, P-3 (TYPICAL TO ALL)				
62_SS	DO	CONTACT	N	SECONDARY PUMP (P2/P3) EQUIPMENT START/STOP
62_STATUS	DI	CURRENT SENSOR	N	CURRENT SENSOR
62_VFD	DV/DD	VFD SPEED	N	VFD SPEED
62_VFDALARM	DI	VFD ALARM	N	VFD ALARM
BASEBOARD UNITS (TYPICAL TO ALL)				
62B_HCV	AO	CONTROL VALVE ACTUATOR	N	BASEBOARD CONTROL VALVE POSITION
62B_T	AI	TEMPERATURE SENSOR	N	ROOM TEMPERATURE
UNIT HEATERS (TYPICAL TO ALL)				
62U_HCV	AO	CONTROL VALVE ACTUATOR	N	UNIT HEATER CONTROL VALVE POSITION
62U_T	AI	TEMPERATURE SENSOR	N	ROOM TEMPERATURE
FORCED FLOW HEATERS (TYPICAL TO ALL)				
62FH_HCV	AO	CONTROL VALVE ACTUATOR	N	FORCED FLOW HEATER CONTROL VALVE POSITION
62FH_SS	DO	CONTACT / START STOP	N	EQUIPMENT START / STOP
62FH_T	AI	TEMPERATURE SENSOR	N	ROOM TEMPERATURE
62FS-1	AI	DIFFERENTIAL PRESSURE SENSOR	N	DIFFERENTIAL PRESSURE SENSOR

THE POINTS LISTED BELOW ARE REQUIRED TO BE MAPPED BACK TO BAS

POINT DESCRIPTION	UNIT	REMARK
BURNER STARTS	X	FOR EACH ONE OF THE THREE (3) BOILERS
BOILER OUTPUT VALVE	X	FOR EACH ONE OF THE THREE (3) BOILERS
FUEL CONSUMPTION	L	FOR EACH ONE OF THE TWO (2) GAS BOILERS
RETURN WATER TEMPERATURE	°C	FOR EACH ONE OF THE THREE (3) BOILERS
FLUE GAS TEMPERATURE	°C	FOR EACH ONE OF THE TWO (2) GAS BOILERS
BOILER WATER TEMPERATURE	°C	FOR EACH ONE OF THE THREE (3) BOILERS
WATER TEMPERATURE SETPOINT	°C	WRITEABLE COMMON SUPPLY
BURNER HOUR RUN STAGE 1	HOUR	FOR EACH ONE OF THE TWO (2) BOILERS
BOILER PUMP ON	X	FOR EACH ONE OF THE TWO (2) BOILERS
BOILER PUMP OFF	X	FOR EACH ONE OF THE TWO (2) BOILERS
FLUE GAS HIGH LIMIT	X	FOR EACH ONE OF THE TWO (2) GAS BOILERS
BOILER OUTPUT STATUS	X	FOR EACH ONE OF THE THREE (3) BOILERS
LOI COMMUNICATION STATUS	X	FOR EACH ONE OF THE THREE (3) BOILERS
GENERAL ALARM	X	FOR EACH ONE OF THE THREE (3) BOILERS
BOILER SYSTEM ENABLE FROM BAS	X	FOR EACH ONE OF THE THREE (3) BOILERS

- BOILER SEQUENCE OF OPERATION:**
- NOTE: THE EXISTING CONTROLS VENDOR IS AINSWORTH. THE CONTRACTOR SHALL RETAIN THE SERVICES OF AINSWORTH FOR ALL CONTROLS WORK.
- THE HEATING SYSTEM CONSISTS OF ONE PRIMARY ELECTRIC BOILER AND TWO BACK-UP GAS FIRED BOILER. EACH BOILER OPERATES ON ITS OWN SYSTEM OF CONTROL AND SAFETIES. THE BOILER SYSTEM SHALL BE OFF DURING THE SUMMER.
 - FOR ALL BOILERS, PROVIDE TEMPERATURE SENSORS AND FLOW SENSORS TO RECORD TEMPERATURE AND WATER FLOW IN B.A.S.
 - PROVIDE CURRENT SENSING RELAYS FOR PUMP STATUS. CURRENT SENSORS SHALL BE PROVIDED AT THE MOTOR.
 - THE TWO CIRCULATION PUMPS (62HWP01 AND 62HWP02) SHALL OPERATE IN A DUTY / STANDBY ARRANGEMENT AND SHALL ROTATE WEEKLY TO ENSURE EQUAL RUN TIMES. WHEN THE BOILER SYSTEM IS ENABLED, THE DUTY PUMP VFD SHALL MODULATE THE PUMP SPEED TO MAINTAIN AN END OF LINE DIFFERENTIAL OF 5 PSI (ADJ.). THE BYPASS VALVE CV-BP SHALL MODULATE TO ENSURE TOTAL SYSTEM FLOW DOES NOT FALL BELOW 30% OF TOTAL FLOW.
- ELECTRIC BOILER**
- THE ELECTRIC BOILER SHALL BE THE PRIMARY HEATING BOILER AND SHALL BE ENERGIZED AUTOMATICALLY VIA THE BAS.
 - ISOLATION VALVES CV-1 TO CV-4 SHALL BE POSITIONED TO ISOLATE THE GAS BOILERS FROM THE ELECTRIC BOILER.
 - HOT WATER SUPPLY TEMPERATURE SETPOINT (ACCORDING TO THE RESET SCHEDULE BELOW, ADJUSTABLE) SHALL BE MAINTAINED THROUGH THE BOILER'S INTEGRAL CONTROL PANEL, AND SHALL BE RESET THROUGH THE LOCAL RADIATION BOILER SYSTEM CONTROLLER.
 - HEATING WATER SUPPLY TEMPERATURE SHALL BE RESET ACCORDING TO THE OUTDOOR AIR TEMPERATURE AS PER THE FOLLOWING SCHEDULE:
- | RESET SCHEDULE | |
|-------------------------------|---|
| OUTDOOR AIR TEMPERATURE (OAT) | HOT WATER SUPPLY TEMPERATURE (HWST, ADJUSTABLE) |
| 15°C OAT - 5°C | 43°C |
| 5°C OAT - 27°C | 43°C - 41.5°C |
| < -27°C | 34.4°C |
- THE CONTROLLER SHALL MONITOR STATUS, TROUBLE AND ALARMS OF THE BOILER AND CIRCULATION PUMPS.
 - THE CONTROLLER SHALL ENABLE OR DISABLE THE CIRCULATION PUMPS 62HWP01 AND 62HWP02 AND COMMUNICATE WITH THE PUMP VFD CONTROLLER. PROVIDE LOW VOLTAGE WIRING CONNECTION BETWEEN THE VFD CONTROLLER AND EACH OF THE VFDS.
 - DURING EMERGENCY, ONE OF THE TWO PUMPS (62HWP01 AND 62HWP02) SHALL BE SHUTDOWN AND THE OTHER PUMP SHALL BE ADJUSTED BY VFD AND RUNNING AT 0.745 KW (1 HP).
- NATURAL GAS BOILERS (BACKUP BOILERS)**
- THE NATURAL GAS BOILERS SHALL SERVE AS A BACKUP BOILER TO THE ELECTRIC BOILERS AND SHALL BE ENERGIZED VIA THE BAS
 - ISOLATION VALVES CV1-4 SHALL BE POSITIONED TO ISOLATE THE ELECTRIC BOILER FROM THE HYDRONIC BOILER.
 - THE NATURAL GAS BOILER SEQUENCING AND OPERATION SHALL BE PROGRAMMED BY THE MANUFACTURER BASED ON BEST OPERATING EFFICIENCY AND CONTROLLED BY A LOCAL BOILER SYSTEM CONTROLLER. LEAD /LAG BOILERS SHALL BE RELATED TO EQUALIZED RUN TIMES (ADJUSTABLE). THE BOILERS SHALL FIRE UNDER ITS OWN CONTROLS. IF THE DUTY BOILER STATUS DOES NOT CHANGE TO "ON" OR IF FLOW IS NOT PROVEN WITHIN 5 MINUTES (ADJUSTABLE), THE LAG BOILER SHALL BE ENABLED. HEATING WATER SUPPLY TEMPERATURE SETPOINT SHALL BE AS PER ABOVE.



(REFER TO FLOOR PLANS AND SCHEDULES FOR QUANTITIES)

1 ROOM TEMPERATURE SENSOR TO OPEN CONTROL VALVE AND CYCLE UNIT HEATER TO MAINTAIN SET POINT.

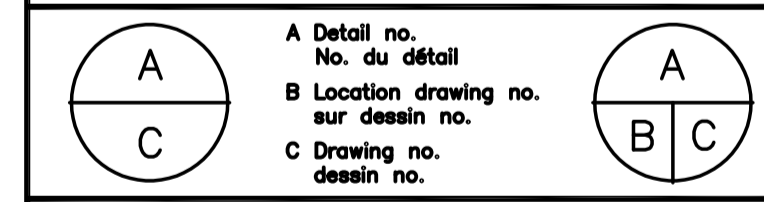
2 BOILER CONTROL DIAGRAM
 M06 SCALE = N.T.S.

3 UNIT HEATERS CONTROL DIAGRAM
 M06 SCALE = N.T.S.

No.	Date	Revision	By:
C	18 12 2020	ISSUED FOR TENDER	P.B
B	06 09 2019	ISSUED FOR 99%	P.B
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Date Printed: _____ Date Imprimée: _____

o Verify all dimensions and site conditions and be responsible for same
 o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: U62 Boiler Replacement

NRC, Building U62, 920 Research Road, Ottawa, ON

drawing: U62-M-HYDRONIC SINGLE LINE DIAGRAM AND CONTROL SCHEMATIC

designed	conçu	date	date
AZ/BB			
drawn	dessiné	scale	échelle
AZ/BB		AS SHOWN	
checked	vérifié	sheet	feuille
PB		of/da	
approved	approuvé	W.O.no.	D.T.no.
PB			
dwg.no.	dessin no.		

5749-M06



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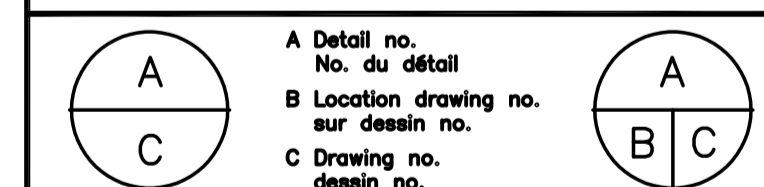
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project / projet
 U62 Boiler Replacement

NRC, Building U62, 1920 Research Road, Ottawa, ON

drawing / dessin
 U62-M-EQUIPMENT SCHEDULES

designed / conçu	AZ/BB	date	
drawn / dessiné	AZ/BB	scale / échelle	AS SHOWN
checked / vérifié	PB	sheet / feuille	of/de
approved / approuvé	PB	W.O.no.	D.T.no.

dwg.no. / dessin no.
 5749-M07

GAS BOILER SCHEDULE

TAG	BASIS OF DESIGN		CAPACITY		"BOILER EFFICIENCY %"	FLOW RATE	EWT	LWT	WATER CON.	VENT SIZE		ELECTRICAL	DIMENSION	WEIGHT	NOTE
	MAKE	MODEL	INPUT KW	OUTPUT KW		L/S	°C	°C	mm	FLUE (mm)	COMBUSTION (mm)	VAC/Hz/Amp	LxWxH (mm)	Kg	
62BLR02	VISSMANN	VITODENS 200 B2HA-88	91.5	88	96.2	0.72	26.7	54.4	32	100	100	120/60/4	525x475x1100	100	C/W MULTIPLE BOILER LOW LOSS DISTRIBUTION MANIFOLD AND BAS GATEWAY UTILIZING BACNET PROTOCOL.
62BLR03	VISSMANN	VITODENS 200 B2HA-88	91.5	88	96.2	0.72	26.7	54.4	32	100	100	120/60/4	525x475x1100	100	C/W MULTIPLE BOILER LOW LOSS DISTRIBUTION MANIFOLD AND BAS GATEWAY UTILIZING BACNET PROTOCOL.

ELECTRIC BOILER SCHEDULE

TAG	BASIS OF DESIGN		CAPACITY KW	FLOW RATE	EWT	LWT	WATER CON.	ELECTRICAL	DIMENSION
	MANUFACTURER	MODEL		L/S	°C	°C	mm	V/HZ/PH	HxWxD (mm)
62BLR01	PRECISION	PCW2-165	160	1.26	26.7	54.4	50	208/60/1	1300x500x950

FORCED FLOW & UNIT HEATER SCHEDULE

TAG	SERVICE	MAKE	MODEL	MAX CAP (KW)	EWT (°C)	LWT (°C)	FLOW (L/S)	AIR FLOW (L/S)	VOLTAGE	NOTE
62UNH01	ROOM 140	JAGA	UNIT.131/EC	9	54.4	26.7	0.07	553	208 VAC	VERTICAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH02	ROOM 130	JAGA	UNIT.321/EC	18	54.4	26.7	0.15	1675	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH03	ROOM 130	JAGA	UNIT.321/EC	18	54.4	26.7	0.15	1675	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH04	ROOM 130	JAGA	UNIT.321/EC	18	54.4	26.7	0.15	1675	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH05	ROOM 102	JAGA	UNIT.021/EC	3.2	54.4	26.7	0.03	408	208 VAC	VERTICAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH06	ROOM 111	JAGA	UNIT.221/EC	13.5	54.4	26.7	0.11	351	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH07	ROOM 111	JAGA	UNIT.221/EC	13.5	54.4	26.7	0.11	351	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH08	ROOM 120	JAGA	UNIT.221/EC	13.5	54.4	26.7	0.11	1289	208 VAC	HORIZONTAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH09	ROOM 120	JAGA	UNIT.221/EC	13.5	54.4	26.7	0.11	1289	208 VAC	VERTICAL UNIT HEATER, COMPLETE WITH MOUNTING HARDWARE
62UNH10	ROOM 122	JAGA	BABRIZA 22 BABC.05509522/2/BT	5.3	54.4	26.7	0.04	212	208 VAC	CEILING MOUNTED FORCE FLOW HEATER
62UNH11	ROOM 212	JAGA	BABRIZA 22 BABC.05507522/2/BT	3.8	54.4	26.7	0.03	165	208 VAC	WALL MOUNTED FORCED FLOW HEATER
62UNH12	ROOM 221	JAGA	BABRIZA 22 BABC.05507522/2/BT	9.4	54.4	26.7	0.08	351	208 VAC	WALL MOUNTED FORCED FLOW HEATER

PUMP SCHEDULES

UNIT TAG	SERVICE	LOCATION	BASIS OF DESIGN		FLOW	HEAD	MOTOR RPM	HORSE POWER	VOLTAGE/PH/Hz
			MANUFACTURER	MODEL NO.	L/S	Kpa			
62BFP02	HEATING PRIMARY	BASEMENT	GRUNDFOS	UPS 26-99 FC	2.08	86.7	VARIOUS	0.20	115/1/60
62BFP03	HEATING PRIMARY	BASEMENT	GRUNDFOS	UPS 26-99 FC	2.08	86.7	VARIOUS	0.20	115/1/60
62HWP01	HEATING SECONDARY	FIRST FLOOR	ARMSTRONG	4380-1205-001	1.58	96	2557	1.00	575/3/60
62HWP02	HEATING SECONDARY	FIRST FLOOR	ARMSTRONG	4380-1205-001	1.58	96	2557	1.00	575/3/60
62CPP01	CONDENSATE	BASEMENT	LITTLE GIANT	VCMA-20 SERIES	3	30	VARIOUS	0.035	115/1/60

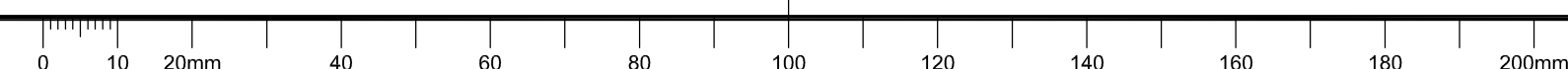
HYDRONIC BASEBOARD SCHEDULE

TAG	MAKE	MODEL	MAX CAP (KW)	EWT (°C)	LWT (°C)	FLOW (L/S)	POWER (WATTS)	VOLTAGE	NOTE
BB-1	JAGA	STRW.06518015	0.9	54.4	26.7	0.01	-	-	-
BB-2	JAGA	STRW.06509016/DBE	1.12	54.4	26.7	0.01	4.4	12 VDC	-
BB-3	JAGA	STRW.06524016/DBE	1.12	54.4	26.7	0.03	13.2	12 VDC	-
BB-4	JAGA	STRW.06524020	1.7	54.4	26.7	0.01	-	-	-
BB-5	JAGA	STRW.06528020	2.0	54.4	26.7	0.02	-	-	-
BB-6	JAGA	STRW.06511016/DBE	1.3	54.4	26.7	0.01	4.4	12 VDC	-
BB-7	JAGA	STRW.06524021/DBE	3.9	54.4	26.7	0.03	13.2	12 VDC	-

SCHEDULE OF EXPANSION TANK

TAG	SERVICE	MAKE	MODEL	TYPE	TANK CAPACITY (L)	TANK DIMENSIONS DxH(mm)	DISCHARGE CONNECTION (mm)	WEIGHT (Kg)
62EXT01	HYDRONIC	AMTROL	AX-80V	DIAPHRAGM	168	600x725	25	90

C



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KEY PLAN / PLAN CLÉ

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A	A Detail no. No. du détail	A
C	B Location drawing no. sur dessin no.	B/C
	C Drawing no. dessin no.	

project / projet
 U62 Boiler Replacement

NRC, Building U62, 1920 Research Road, Ottawa, ON

drawing / dessin
 U62-M-DETAILS

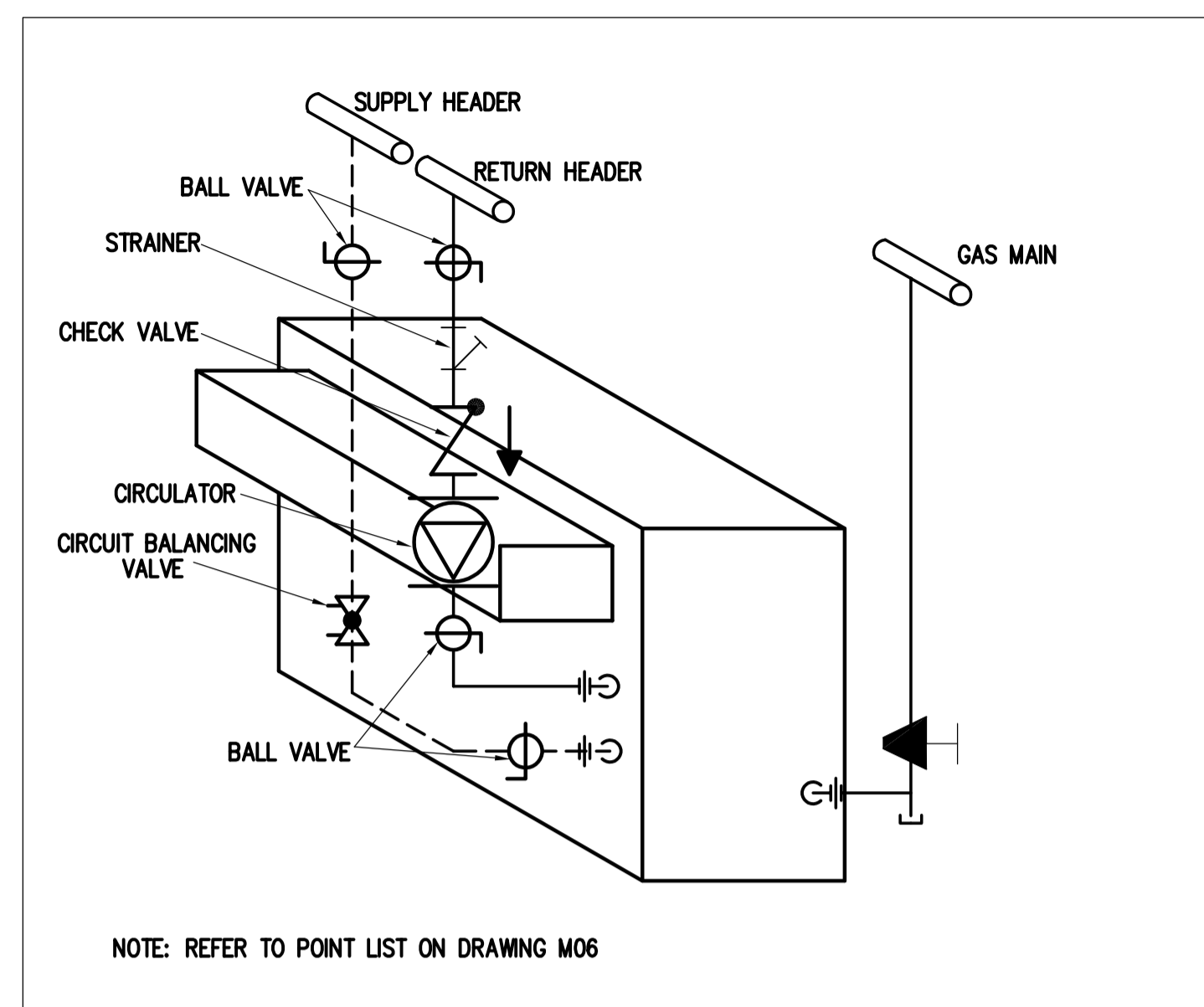
designed / conçu
 AZ/BB

drawn / dessiné
 AZ/BB

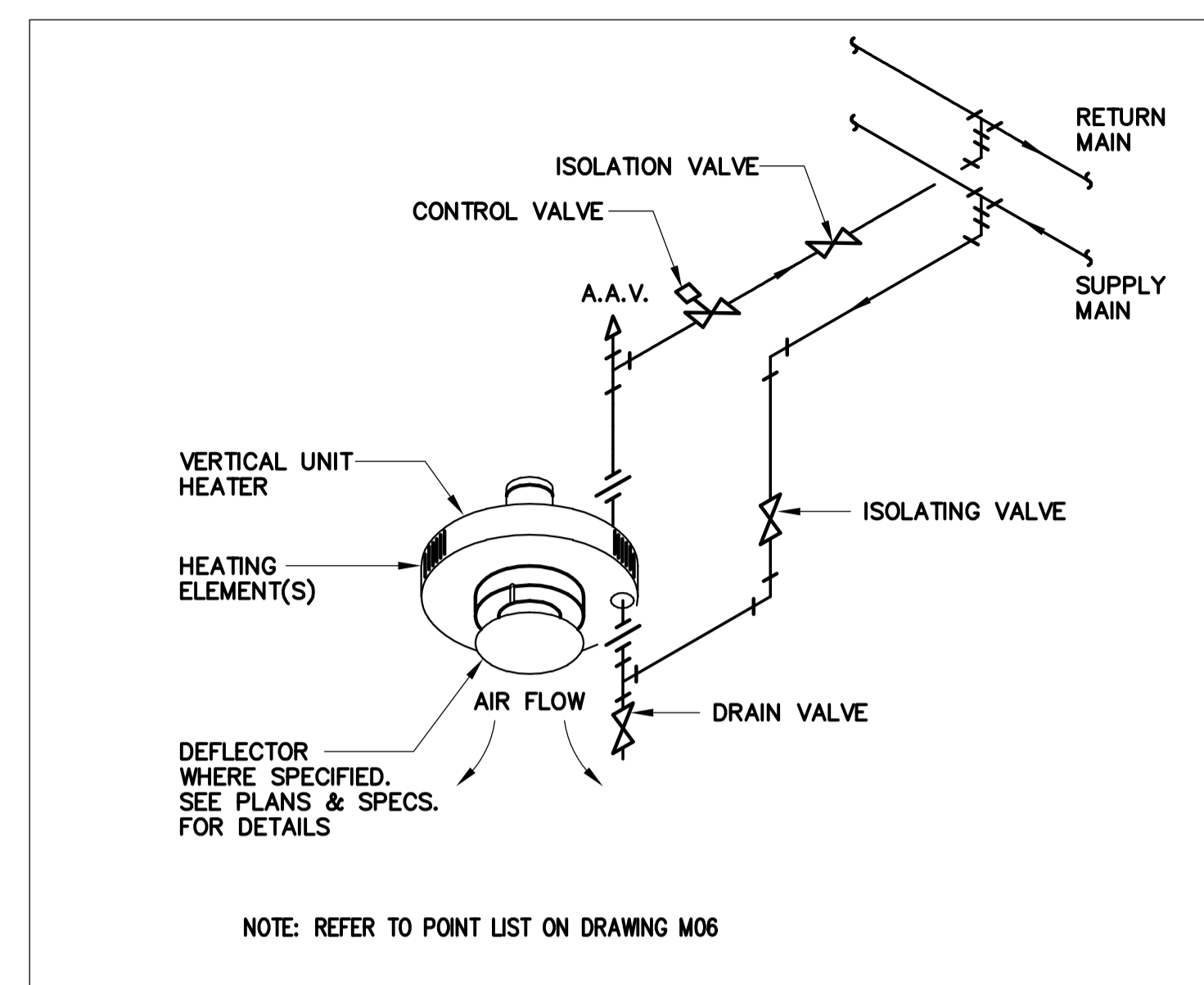
checked / vérifié
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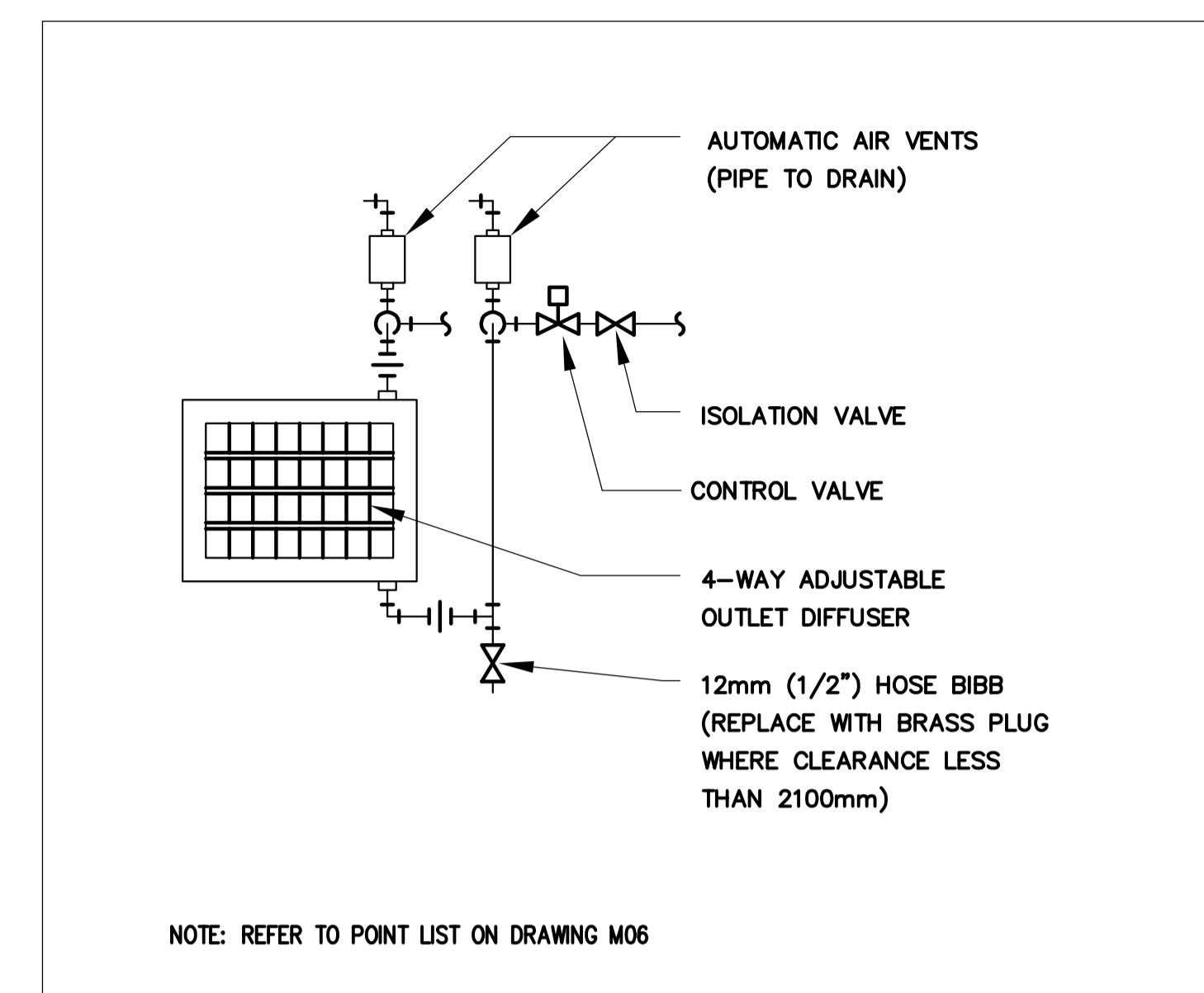
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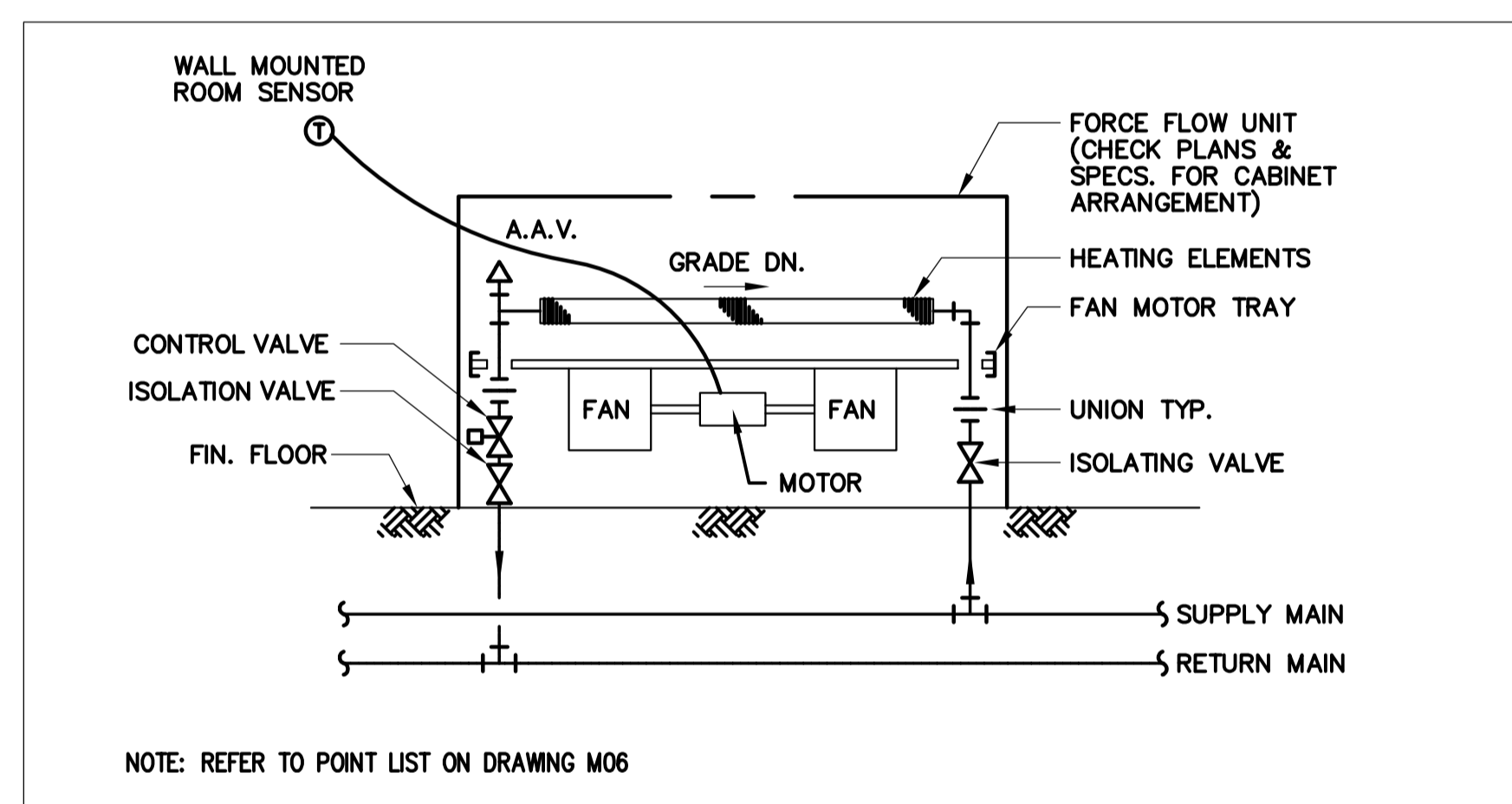
1 TYPICAL BOILER PIPING
 M07 SCALE = N.T.S



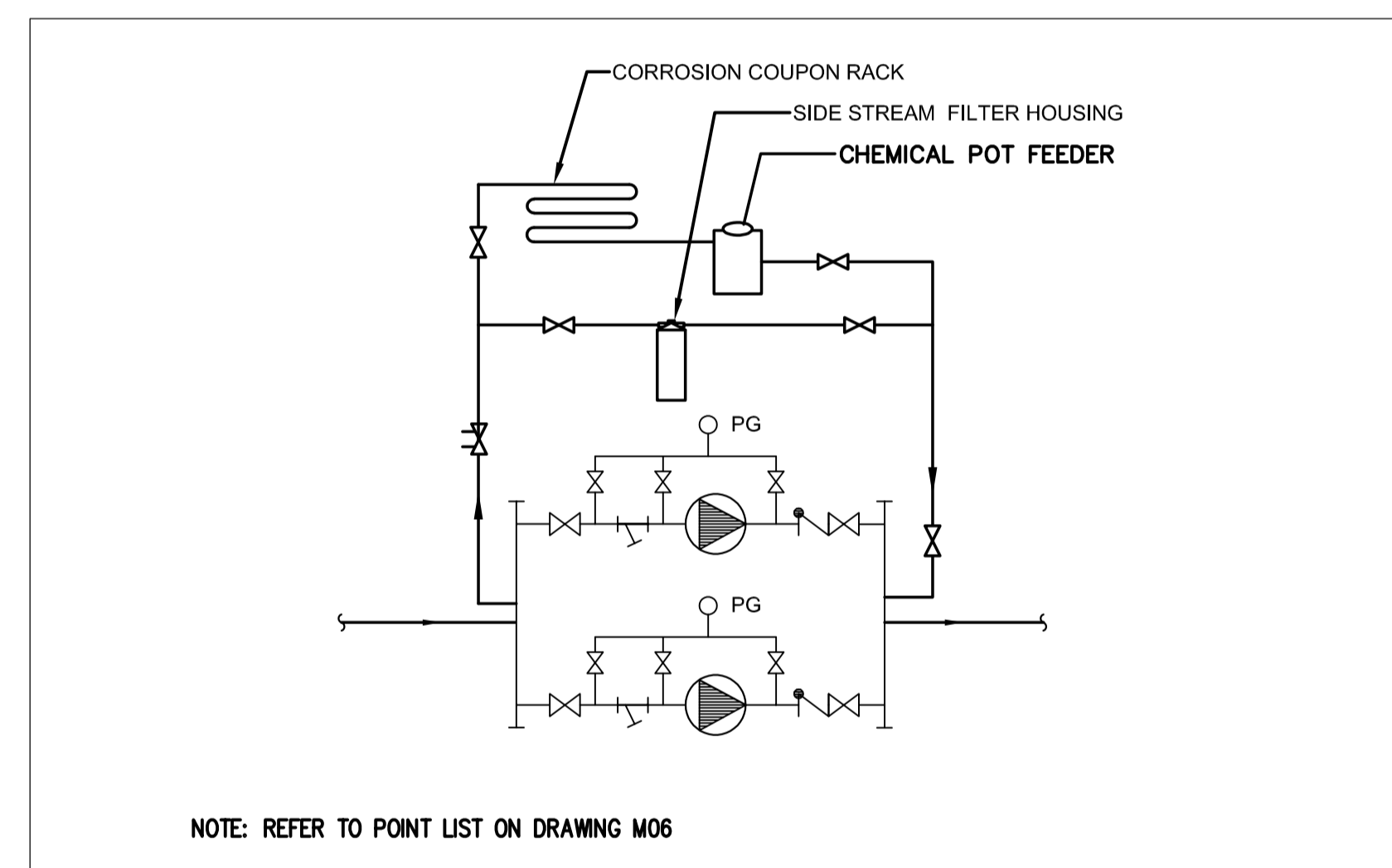
2 TYPICAL VERTICAL UNIT HEATER CONNECTION
 M07 SCALE = N.T.S



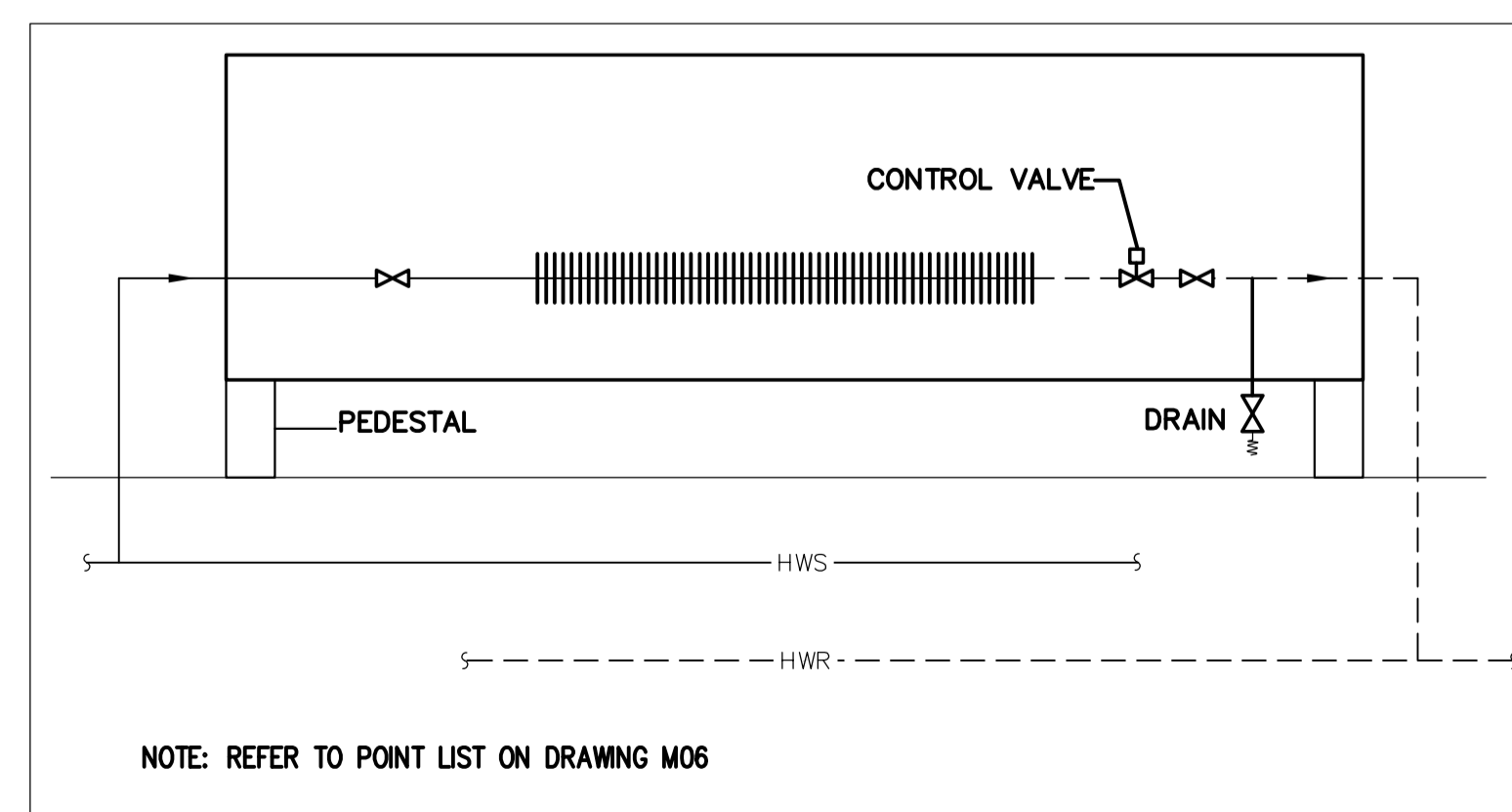
3 TYPICAL HORIZONTAL UNIT HEATER CONNECTION
 M07 SCALE = N.T.S



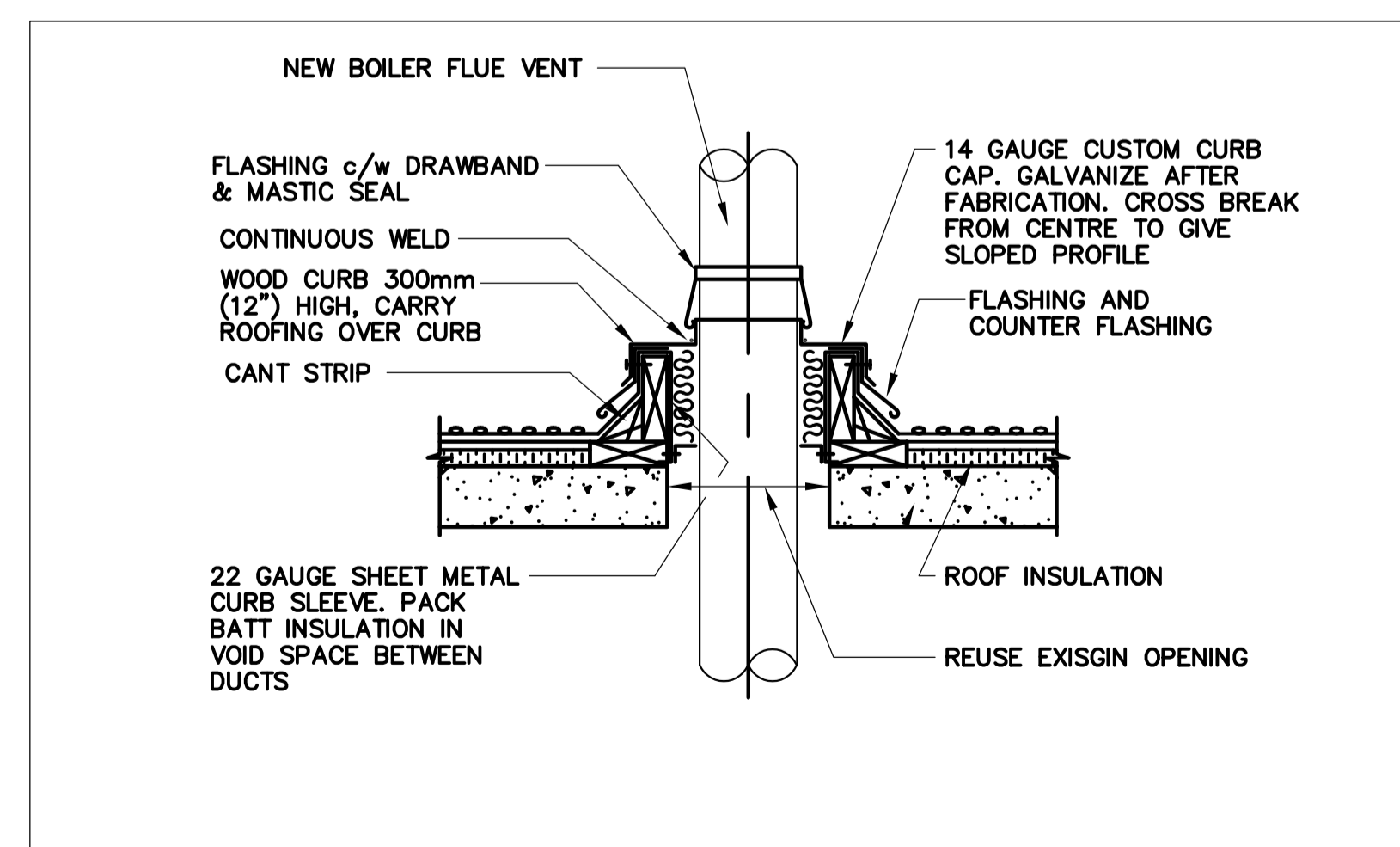
4 TYPICAL FLOOR MOUNTED FORCED FLOW HEATER PIPING
 M07 SCALE = N.T.S



5 TYPICAL CHEMICAL POT FEEDER AND PUMP CONNECTION
 M07 SCALE = N.T.S



6 TYPICAL HYDRONIC BASEBOARD CONNECTION
 M07 SCALE = N.T.S



7 EXHAUST STACK INSTALLATION THROUGH ROOF DETAIL
 M07 SCALE = N.T.S



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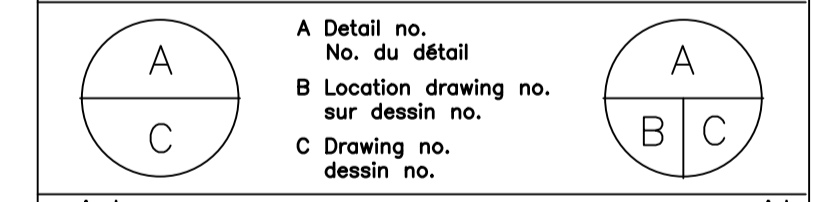
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KEYPLAN:

2	18/12/2020	ISSUED FOR TENDER	JA
1	06/09/2019	ISSUED FOR 99% REVIEW	JA
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No.	DD/MM/YY	Revision	By: Par:

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project: **NRC BOILER REPLACEMENT** projet
RESEARCH ROAD, OTTAWA, ON
 drawing: _____ dessin

U62_E_DRAWING LIST AND SYMBOLS

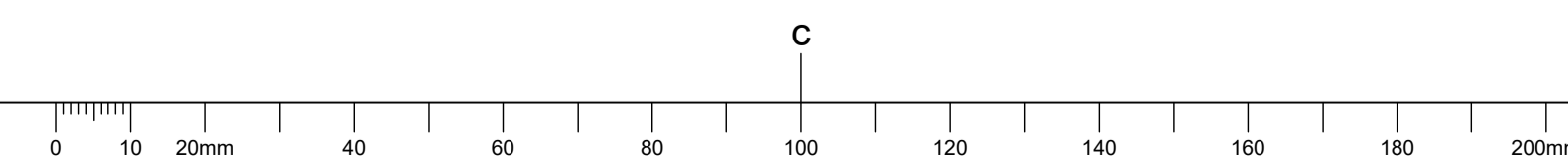
designed	J.A.	conçu	date	MAY 2019	date
drawn	J.A.	dessiné	scale	AS NOTED	échelle
checked	A.B.	vérifié	sheet	of/de	feuille
approved	A.B.	approuvé	W.O.no.		D.T.no. A1-
dwg.no.					dessin no. 5749-E001

POWER SYMBOLS	
SYMBOL	DESCRIPTION
	MOTOR CONNECTION
	DUPLEX RECEPTACLE 120V 15A
	MOTOR MANUAL STARTER
	DISCONNECT SWITCH
	MOTOR RATED SWITCH
	COMBINATION MAGNETIC STARTER
	MAGNETIC STARTER
	HARDWIRE CONNECTION
	VARIABLE FREQUENCY DRIVE
	CONTROL PANEL (SUPPLY AND INSTALL BY MECHANICAL CONTRACTOR), LINE VOLTAGE WIRING BY ELECTRICAL CONTRACTOR
	ELECTRICAL PANELBOARD, SURFACE MOUNTED
	ELECTRICAL PANELBOARD, RECESS MOUNTED
	TRANSFORMER
	ELECTRIC BASEBOARD HEATER
	UNIT HEATER, SUPPLIED AND INSTALLED BY MECH CONTRACTOR
	FORCE FLOW HEATER, SUPPLIED AND INSTALLED BY MECH CONTRACTOR
	JUNCTION BOX
	WEATHERPROOF
	EQUIPMENT TAG
	HOT WATER TANK ELECTRICAL CONNECTION

DRAWING LIST	
DRAWING NO.	DRAWING TITLE
5749-E001	U62_E_DRAWING LIST AND SYMBOLS
5749-E100	U62_E_FL01 & BSMT ELECTRICAL LAYOUTS
5749-E101	U62_E_FL01 ELECTRICAL LAYOUTS
5749-E200	U62_E_SCHEDULES AND DETAILS
5749-E201	U62_E_PANEL SCHEDULES AND PARTIAL EMERGENCY SINGLE LINE DIAGRAM

LINEWORK LEGEND:	
SYMBOL	DESCRIPTION
--- N ---	SYMBOLS WITH SUFFIX 'N' INDICATES EXISTING EQUIPMENT OR OUTLETS REMOVED & RE-INSTALLED IN NEW LOCATIONS
--- RR ---	SYMBOLS WITH SUFFIX 'RR' INDICATES EXISTING EQUIPMENT OR OUTLETS TO BE REMOVED & RE-INSTALLED IN SAME LOCATIONS
--- R ---	SYMBOLS WITH SUFFIX 'R' INDICATES EXISTING EQUIPMENT OR OUTLETS TO BE REMOVED & RELOCATED IN NEW LOCATIONS
_____	EXCEPT AS NOTED OTHERWISE, ALL EXISTING EQUIPMENT TO REMAIN IS SHOWN IN THIN SOLID LINES.
-----	EXCEPT AS NOTED OTHERWISE, ALL EXISTING EQUIPMENT TO BE DEMOLISHED OR RELOCATED IS SHOWN IN THICK DASHED LINES. RELOCATED ITEMS ARE WITH SUFFIX 'R', 'RR' OR 'N'
_____	EXCEPT AS NOTED OTHERWISE, ALL NEW EQUIPMENT IS SHOWN IN THICK SOLID LINES.
_____ R _____	EXCEPT AS NOTED OTHERWISE, ALL NEW EQUIPMENT SHOWN IN THICK SOLID LINES WITH 'R' INDICATES RELOCATED.

- GENERAL NOTES:
- CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES FULLY WITH ALL EXISTING CONDITIONS BEARING UPON SCOPE OF WORK IDENTIFIED IN THE PROJECT DRAWINGS AND SPECIFICATIONS AND FOR INCLUSION OF ALL REQUIRED COSTS FOR THIS SCOPE OF WORK IN THE TENDER BID PRICE. CONTRACTOR SHALL BE RESPONSIBLE FOR:
 - UNDERSTANDING OF EXISTING SYSTEMS' CONNECTIVITY REQUIREMENTS, REARRANGEMENT OF EXISTING, PROVISION OF NEW SERVICES AND PROVISIONS TO MAINTAIN EXISTING SYSTEM CONNECTIVITY REQUIREMENTS.
 - INCLUDE ALL COSTS ASSOCIATED WITH DEMOLITION WORK AND ANY REQUIRED RE-FEEDING OF EXISTING SERVICES TO BE MAINTAINED AFTER COMPLETION OF DEMOLITION AND NEW WORK.
 - DISCONNECT ALL EXISTING BRANCH CIRCUITS AND REMOVE ALL WIRING, CONDUITS, JUNCTION BOXES, PULL BOXES, AND ASSOCIATED SUPPORT PROVISIONS ASSOCIATED WITH OBSOLETE DEVICES AND EQUIPMENT IN THE AREAS AFFECTED BY THE SCOPE OF WORK OF THIS PROJECT. CUTTING BACK AND ABANDONING OF CONDUITS AND/OR WIRING IN EXISTING WALL AND/OR CEILING SPACE SHALL NOT BE PERMITTED. ENSURE THAT FIRE ALARM, WIRELESS, NETWORK/INTERNET/INTRANET DEVICES, AND OTHER VITAL SERVICES ARE NOT AFFECTED, OR RE-FEED THESE DEVICES AS REQUIRED TO MAINTAIN PROPER OPERATION, WHERE EXISTING SOURCES ARE TO BE RETAINED, LABEL THE CORRESPONDING EXISTING BREAKERS AS SPARE.
 - SHUTDOWN REQUEST IS TO BE SUBMITTED TO THE OWNER AS IDENTIFIED IN SPECIFICATIONS IN ADVANCE. CLEARLY IDENTIFY ALL OF THE AFFECTED AREAS AND LOADS. SHUTDOWN TO BE AFTER HOURS, SUBJECT TO THE OWNER'S APPROVAL. PROVIDE TEMPORARY POWER SUPPLY FOR ANY LOAD AS REQUESTED OR IDENTIFIED BY THE OWNER. SHUTDOWN AFFECTING BUILDING OCCUPANCY TO BE PERFORMED AFTER WORKING HOURS OR ON WEEKENDS.
 - PULL ALL DEMOLISHED CIRCUITS BACK TO SOURCE PANEL. PROVIDE NEW CIRCUITS TO NEW DEVICES WITH SIZES PER PANEL SCHEDULE. UPDATE PANEL DIRECTORY AND MARK ALL UNUSED CIRCUITS "SPARE".
 - PROVIDE TEMPORARY HEAT DETECTOR IN CONSTRUCTION AREA. REMOVE DETECTOR ONCE PERMANENT DETECTORS ARE INSTALLED AND VERIFIED.



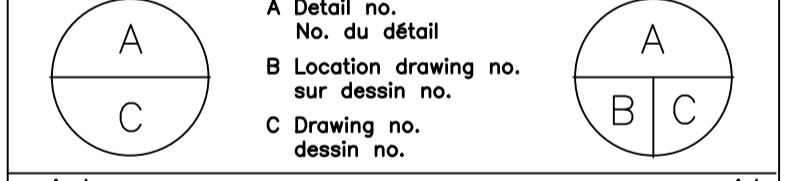
- GENERAL NOTES**
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES AND/OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
 - CONTRACTORS MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
 - ALL TRADES TO COORDINATE WORK ON SITE, WITH APPROVAL OF DEPARTMENTAL REPRESENTATIVE TO AVOID ANY CONFLICTS AND/OR INTERFERENCE.
 - ANY AND ALL REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
 - INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
 - CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
 - CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

SEAL:

KEYPLAN:

2	18/12/2020	ISSUED FOR TENDER	JA
1	06/09/2019	ISSUED FOR 99% REVIEW	JA
0	28/06/2019	ISSUED FOR 66% REVIEW	JA
No.	DD/MM/YY	Revision	By: Par:

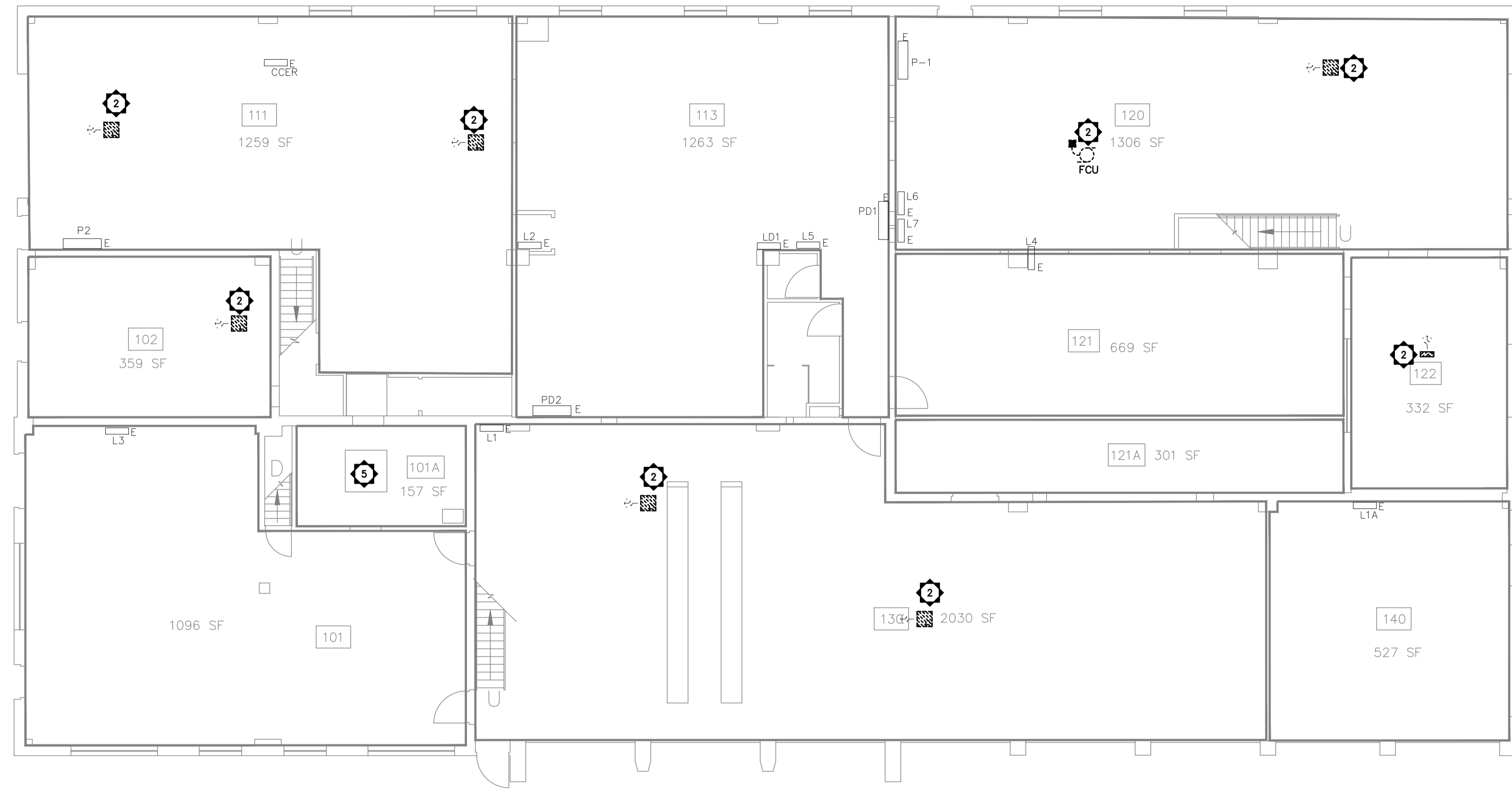
- Date Printed: _____ Date imprimée: _____
- Verify all dimensions and site conditions and be responsible for same
 - Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



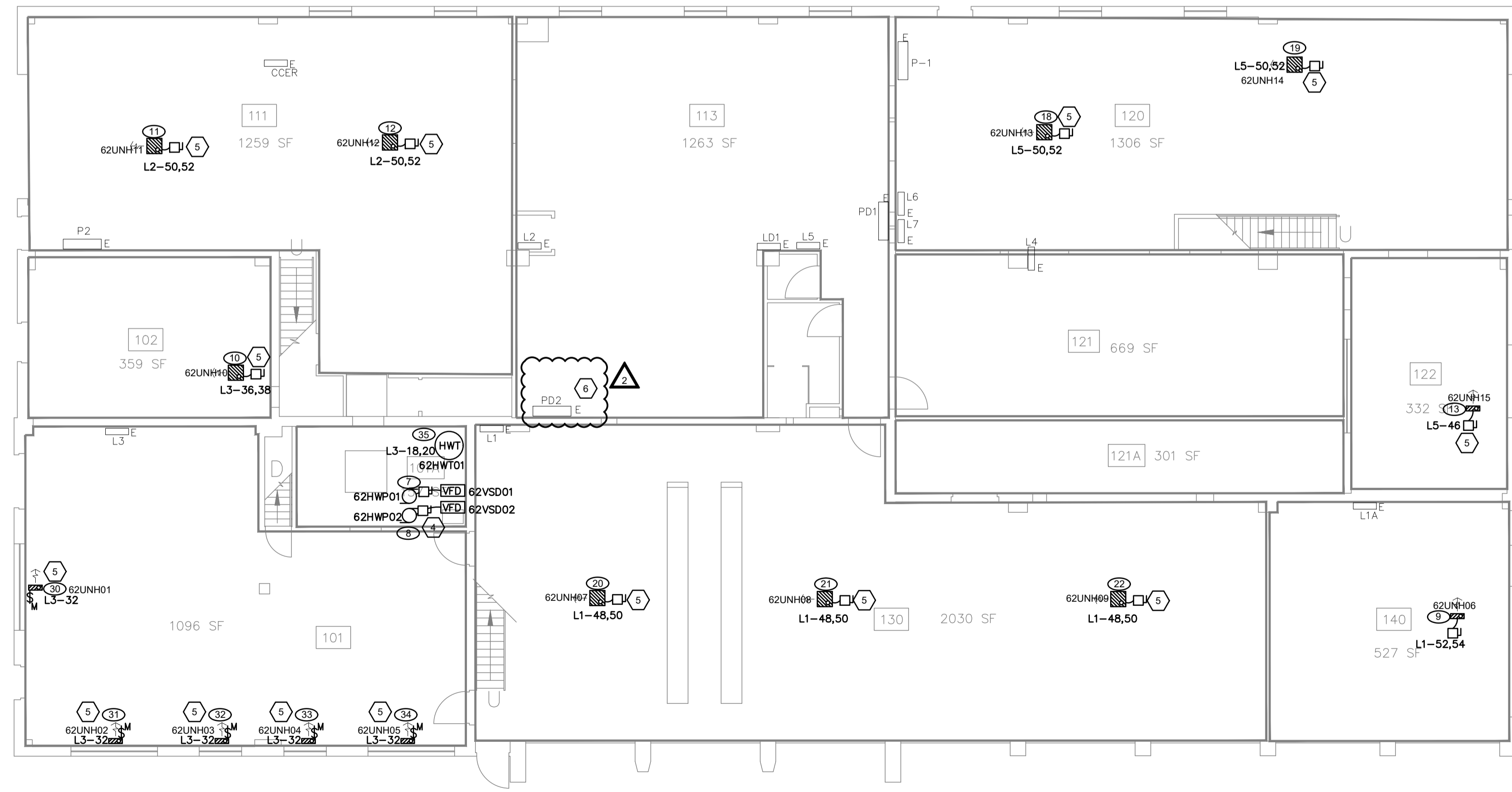
project: **NRC BOILER REPLACEMENT**
 RESEARCH ROAD, OTTAWA, ON
 drawing: _____ dessin: _____

U62_E_FL01 AND BSMT ELECTRICAL LAYOUTS

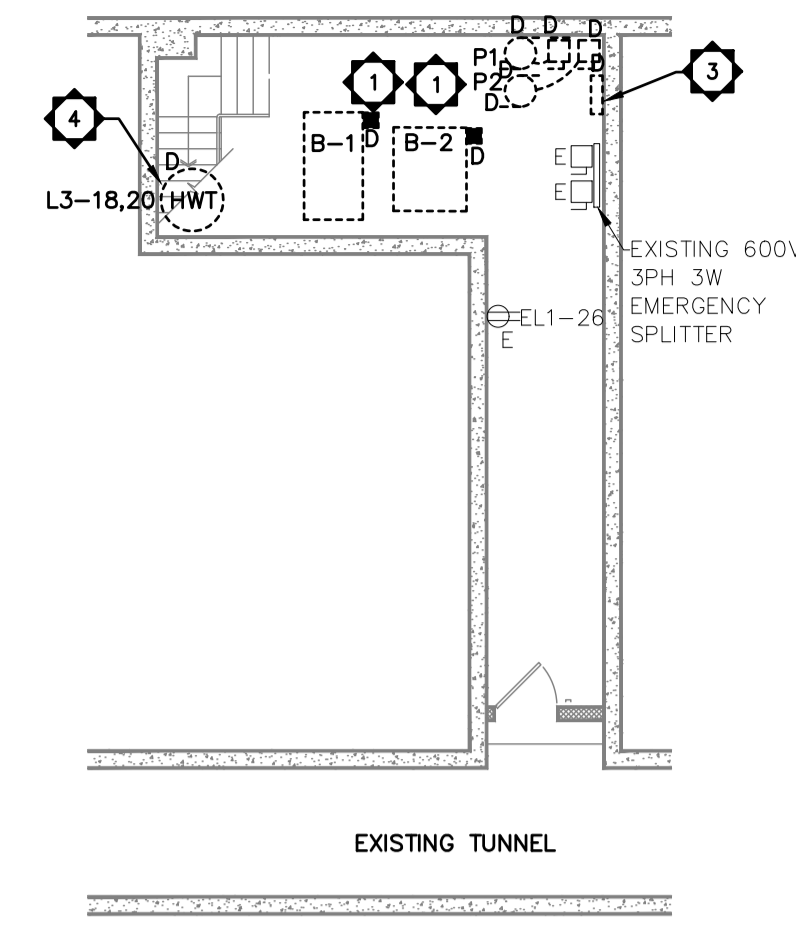
designed	J.A.	conçu	date	MAY 2019	date
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checked	A.B.	vérifié	sheet	of/de	feuille
approved	A.B.	approuvé	W.O.no.		D.T.no.
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1 FLO1-ELECTRICAL-DEMOLITION
 E100 SCALE: 1:100

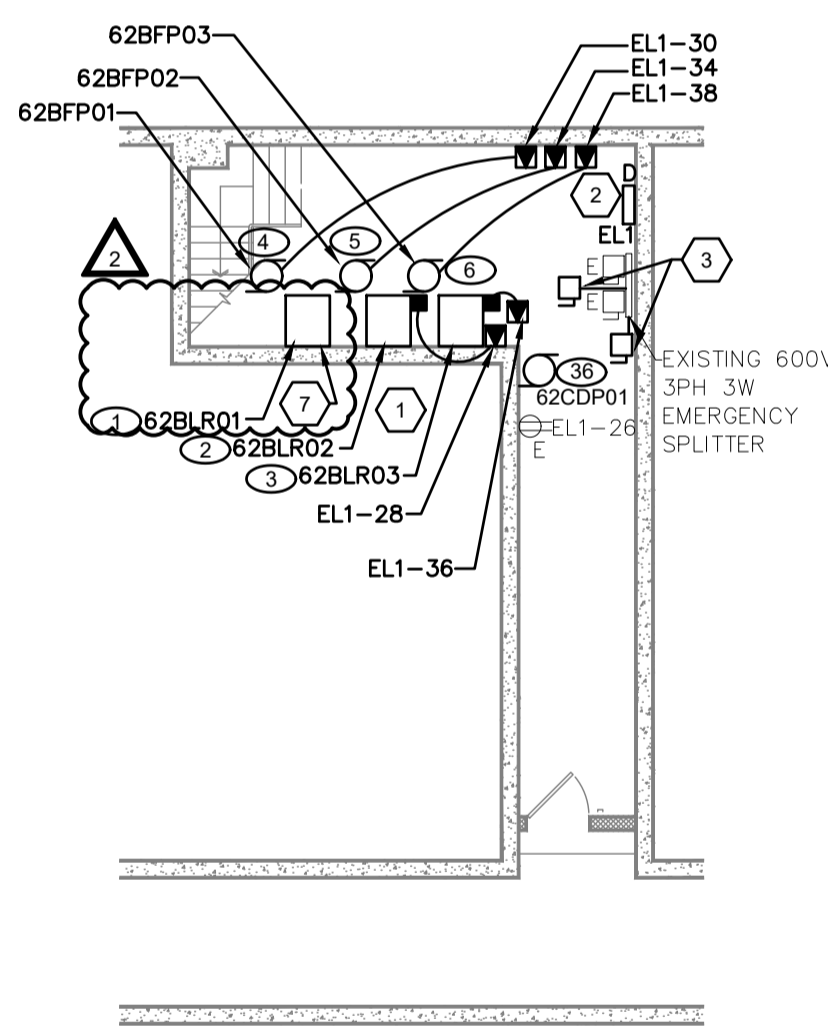


2 FLO1-ELECTRICAL-NEW WORK
 E100 SCALE: 1:100



3 BSMT-ELECTRICAL-DEMOLITION
 E100 SCALE: 1:100

- DEMOLITION SPECIFIC NOTES:**
- DISCONNECT EXISTING HARDWIRE CONNECTION FROM EXISTING BOILER DUE TO REPLACEMENT. REMOVE ALL EXISTING CONDUITS AND WIRING BACK TO SOURCE PANEL EL1.
 - DISCONNECT EXISTING POWER CONNECTION TO EXISTING UNIT. REMOVE EXISTING CONDUITS AND ASSOCIATED CIRCUITS CIRCUIT BACK TO SOURCE PANEL.
 - DEMOLISH EXISTING 30CIRCUIT 100A 240V/1 EMERGENCY PANEL EL1 AND REPLACE WITH NEW 42CIRCUIT 100A 240V/1 PANEL COMPLETE WITH CIRCUIT BREAKERS SHOWN ON NEW PANEL SCHEDULE. RECONNECT ALL EXISTING BRANCH CIRCUITS AND MAIN FEEDER TO SUIT.
 - DISCONNECT EXISTING POWER CONNECTION FOR EXISTING HOTWATER TANK DUE TO ITS RELOCATION TO ROOM 101A. INTERCEPT AND REUSE EXISTING FEEDER AND EXTEND TO NEW LOCATION. PROVIDE ALL POWER CONNECTION TO SUIT.
 - BOILER ROOM IS LOCATED DIRECTLY BELOW THIS ROOM.



4 BSMT-ELECTRICAL-NEW WORK
 E100 SCALE: 1:100

- NEW WORK SPECIFIC NOTES:**
- PROVIDE 15A 120V HARDWIRED CONNECTION WITH 30A SAFETY DISCONNECT FOR THE NEW GAS FIRED BOILER. FEED BOILER FROM EXISTING PANEL EL1 LOCATED IN BOILER ROOM. REFER TO PANEL SCHEDULES FOR CIRCUITING.
 - PROVIDE MANUAL STARTER FOR NEW BOILER PUMPS. FEED PUMPS FROM EXISTING PANEL EL1 LOCATED IN BOILER ROOM. REFER TO PANEL SCHEDULES FOR CIRCUITING.
 - PROVIDE 600V RATED 15A DISCONNECT SWITCHES (FUSED AT 15A) TO FEED PUMPS 62HWP01 AND 62HWP02 INDICATED BY DRAWING NOTE 4.
 - PROVIDE 15A 600V 3PH 3W POWER CONNECTION AND VFD FOR THE NEW PUMPS P1 AND P2. PROVIDE ALL LINE VOLTAGE WIRING FROM PUMP MOTOR TO VFD AND FROM VFD TO EXISTING EMERGENCY 600V 3P SPLITTER LOCATED IN BOILER ROOM.
 - PROVIDE MOTOR RATED SWITCH AND POWER CIRCUIT TO NEW HEATER. INSTALL MOTOR RATED SWITCH INSIDE THE HEATER ENCLOSURE. REFER TO EQUIPMENT SCHEDULE FOR ALL PROVISIONS.
 - IN ELECTRICAL PANEL "PD-2" USE EXISTING SPARE 200A, 600V, 3 POLE CIRCUIT BREAKER FOR NEW ELECTRICAL BOILER B-01. UPDATE PANEL DIRECTORY.
 - PROVIDE NEW 63mmC AND 3X3/0 AWG & GND CONDUCTORS FROM PANEL "PD-2" TO NEW ELECTRICAL BOILER. COORDINATE EXACT LOCATION WITH MECHANICAL TRADE.

GENERAL NOTES

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES AND/OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
- ALL TRADES TO COORDINATE WORK ON SITE, WITH APPROVAL OF DEPARTMENTAL REPRESENTATIVE TO AVOID ANY CONFLICTS AND/OR INTERFERENCE.
- ANY AND ALL REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

CONSULTANT:

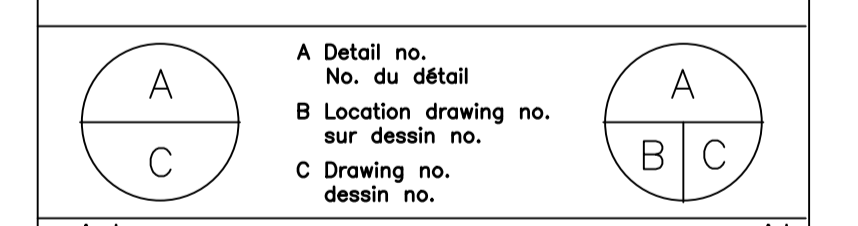
 300-2611 QUEENSVIEW DRIVE
 OTTAWA ONTARIO CANADA K2B 8K2
 TEL: 1-613-829-2800 | FAX: 1-613-829-8299 | WWW.WSPGROUP.COM

SEAL:
 KEYPLAN:

2	18/12/2020	ISSUED FOR TENDER	JA
1	06/09/2019	ISSUED FOR 90% REVIEW	JA
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- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: **NRC BOILER REPLACEMENT**

RESEARCH ROAD, OTTAWA, ON

drawing: **U62_E_FL02 ELECTRICAL LAYOUTS**

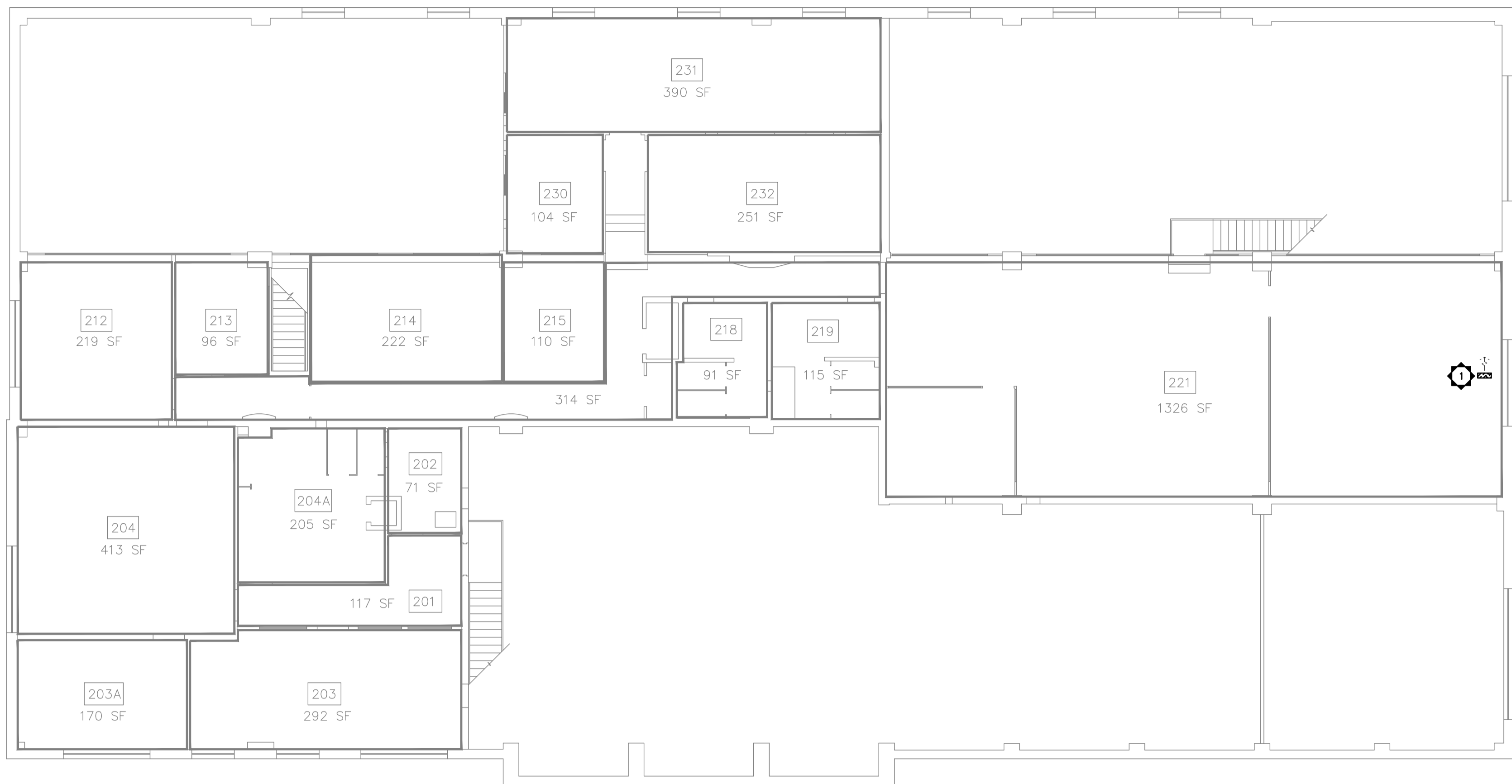
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drawn: **J.A.** dessiné: **J.A.** scale: **AS NOTED**

checked: **A.B.** vérifié: **A.B.** sheet: _____ of/de: _____ feuille: _____

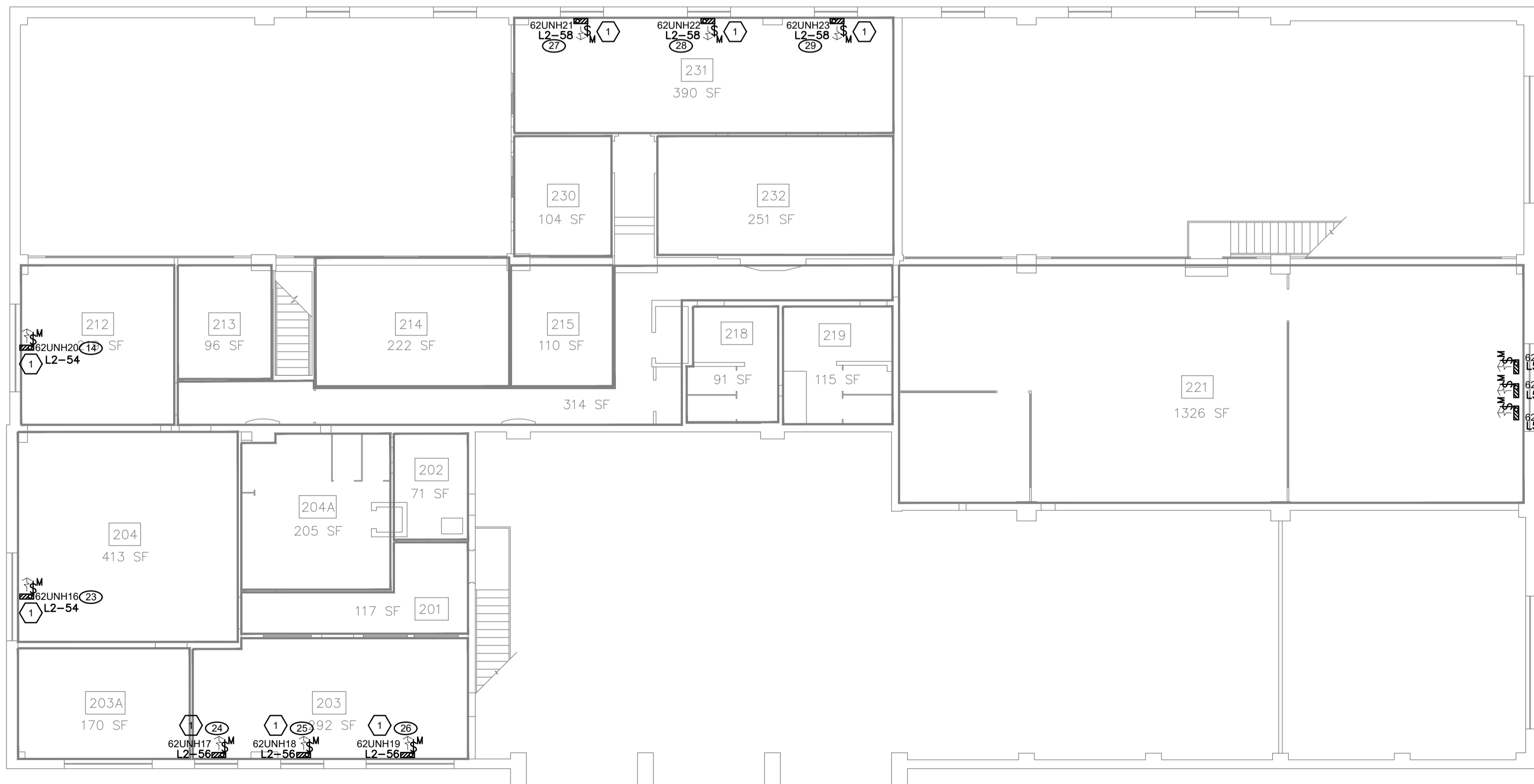
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dwg.no.: **5749-E101** dessin no.: _____



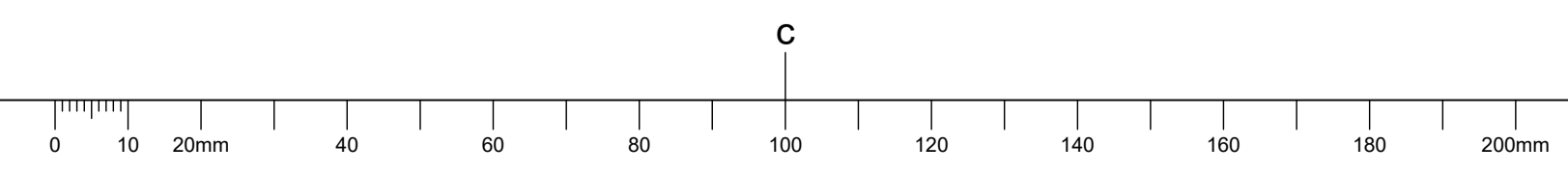
1 FLO2-ELECTRICAL-DEMOLITION
 E101 SCALE: 1:100

DEMOLITION SPECIFIC NOTES:
 1. DISCONNECT EXISTING POWER CONNECTION TO EXISTING UNIT. RE-INSTATE CONNECTION ONCE REPLACED WITH NEW.



2 FLO2- ELECTRICAL-NEW WORK
 E101 SCALE: 1:100

NEW WORK SPECIFIC NOTES:
 1. PROVIDE MOTOR RATED SWITCH SWITCH AND POWER CIRCUIT TO NEW HEATER. INSTALL MOTOR RATED SWITCH INSIDE THE HEATER ENCLOSURE. REFER TO EQUIPMENT SCHEDULE FOR ALL PROVISIONS.



C

