

# NATIONAL RESEARCH COUNCIL CANADA

## Montreal road Campus, Institutes and Laboratories Ottawa, Ontario, Canada

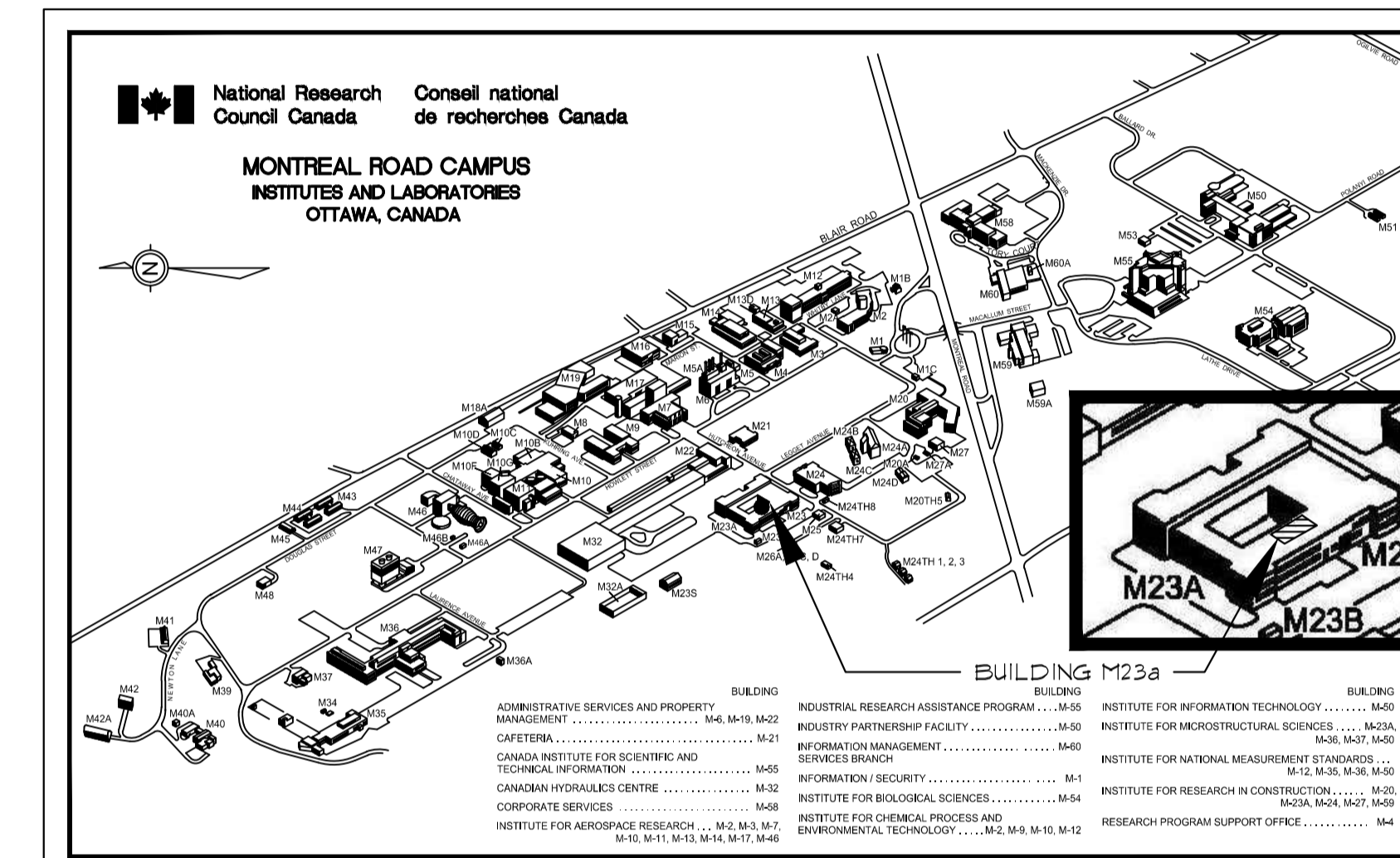


PREPARED BY: ADMINISTRATIVE SERVICES AND PROPERTY MANAGEMENT, ENGINEERING SERVICES  
1200 MONTREAL ROAD, M-19 (RM 340),  
OTTAWA, ONTARIO, CANADA K1A 0R6

PROJECT: PROJECT NO. = M23a-3966  
BUILDING M-23a  
RENOVATIONS - NANOLAB  
ROOMS 158, 160, 162, 164

### DRAWING SHEET LIST:

STRUCTURAL	3966-S01	- STRUCTURAL: ROOF PLAN AND DETAILS
ARCHITECTURAL	3966-A00	- COVER SHEET - GENERAL DRAWING LIST/PROJECT INFO
	3966-A01	- ARCHITECTURAL PLAN: NEW & DEMOLISHING WORK - MISCELLANEOUS DETAILS - ARCHITECTURAL PLAN LEGEND - ABBREVIATION LEGEND
	3966-A02	- ARCHT'L REFLECTED CEILING PLAN: NEW & DEMOLISHING WORK - MISCELLANEOUS DETAILS - REFLECTED CEILING PLAN LEGEND - SPECIFIC DRAWING NOTES
	3966-A03	- LAB MILLWORK: PLANS, SECTIONS & ELEVATIONS - DOOR & COLOR SCHEDULE
	3966-A04	- PARTIAL ROOF PLANS - NEW ROOF PLATFORM: PLANS & ELEVATIONS
MECHANICAL	3966-A05	- ROOF SECTION AND DETAILS - EXTENT OF NEW AND REMOVAL WORK
	3966-M01	- MECHANICAL DEMOLITION PLANS
	3966-M02	- MECHANICAL - NEW PLUMBING PLANS, PIPING DIAGRAM AND SCHEDULES
ELECTRICAL	3966-M03	- MECHANICAL - NEW VENTILATION PLANS AND SCHEDULES
	3966-E01	- ELECTRICAL DEMOLITION AND NEW WORK
	3966-E02	- ELECTRICAL ROOF WORK AND PANEL LOCATIONS
SPECIFICATIONS:	3966-E03	- ELECTRICAL PANEL SCHEDULES
		SEE SEPARATE BINDED MANUAL



National Research Council Canada  
Administrative Services and Property Management Branch

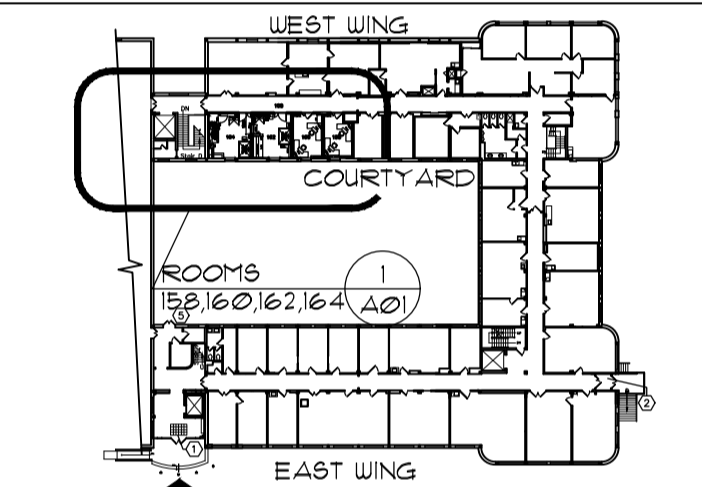
Conseil national de recherches Canada  
Division des services administratifs et gestion de l'immobilier



### GENERAL NOTES

- 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, CEILINGS AND FLOORS WHERE MECHANICAL, ELECTRICAL & ARCHITECTURAL ITEMS HAVE BEEN REMOVED.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- ARCHITECTURAL DRAWING 3966-A00 TO A05 TO BE READ IN CONJUNCTION WITH MECHANICAL DRAWINGS 3966-M01 TO M03 AND ELECTRICAL DRAWINGS 3966-E01 TO E03 AND STRUCTURAL DRAWINGS S-01 AND SPECS

### KEY PLAN

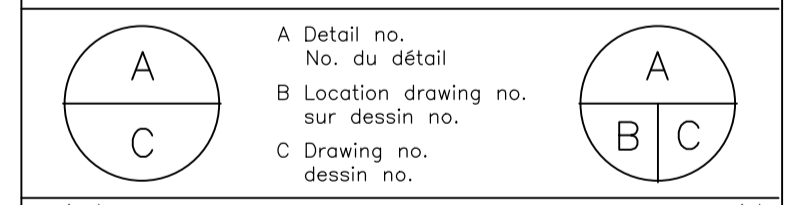


BUILDING M-23A KEY PLAN  
NOT TO SCALE

1	NOV 2014	ISSUED FOR TENDER	JCW
0	22/10/2014	DESIGN FINAL REVIEW	JCW
No.	Date	Revision	By: / For:

Date Printed: 28 NOV 2014 Date imprimée:

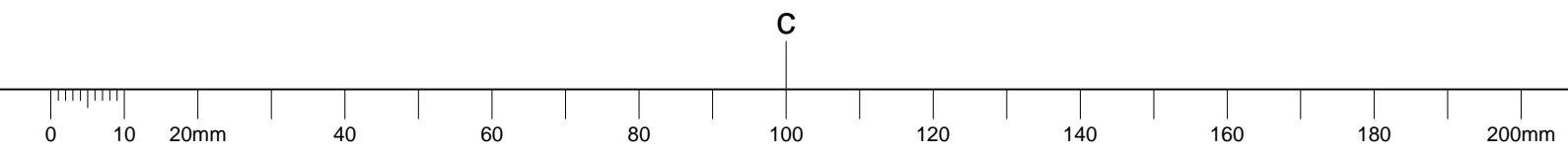
- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project  
BUILDING M-23a  
RENOVATIONS - NANOLAB  
ROOMS 158, 160, 162, 164  
MONTREAL ROAD CAMPUS

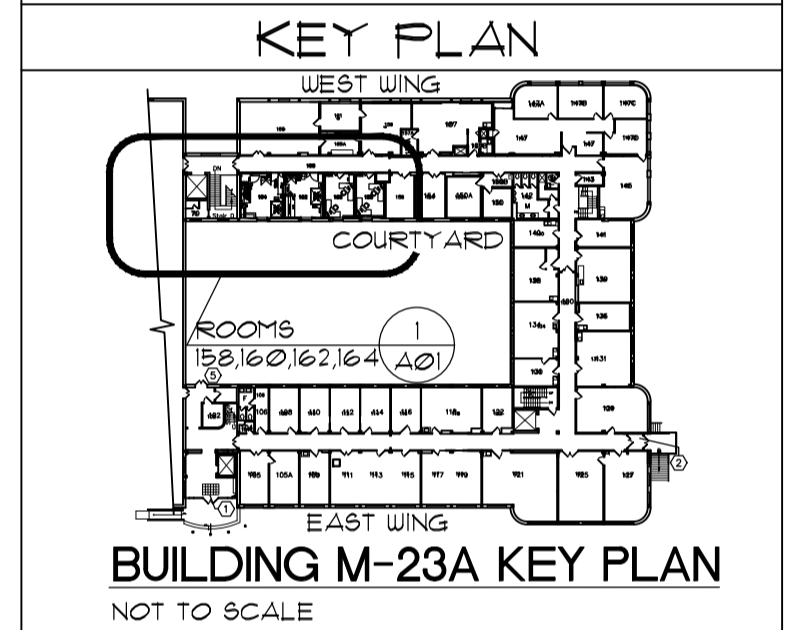
drawing  
- COVER SHEET  
- GENERAL DRAWING LIST/PROJECT INFO

designed S.Hebb / J.-C. Woods	conçu J.-C. Woods	date NOV 2014	date
drawn J.-C. Woods	dessiné S. Hebb	scale 1:5 and 1:50	échelle feuille
checked S. Hebb	vérifié B. Vallieres / R. Craig	sheet A01 of/de A05	feuille
approved B. Vallieres / R. Craig	approuvé W.O.no. A1-004452-02	D.T.no.	
dwg.no. 3966 - A00	dessin no. Acad File: 3966-A01_A05-NOV2014	chiffier	CDAO



**GENERAL NOTES**

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
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No.	Date	Revision	By:
1	NOV 2014	ISSUED FOR TENDER	JCU
2	22/10/2014	DESIGN FINAL REVIEW	JCU

Date Printed: 28 NOV 2014 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

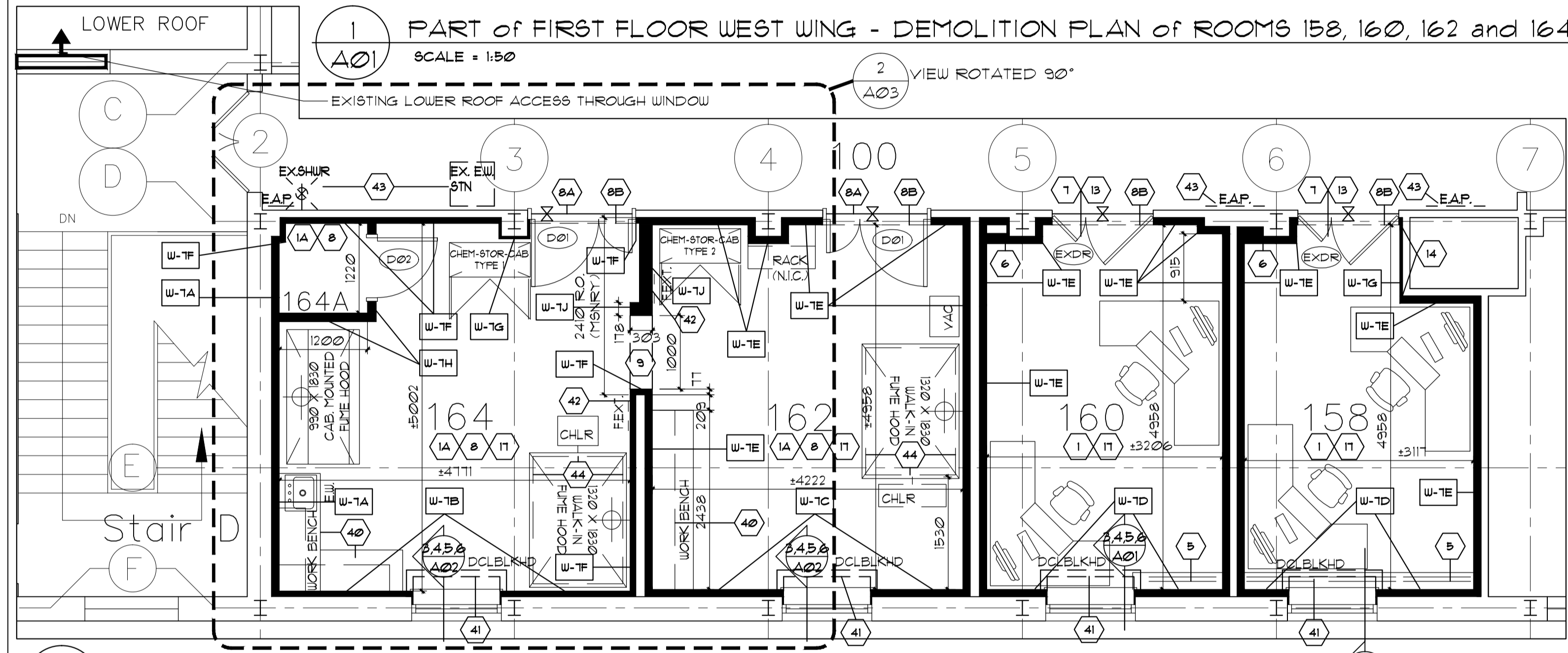
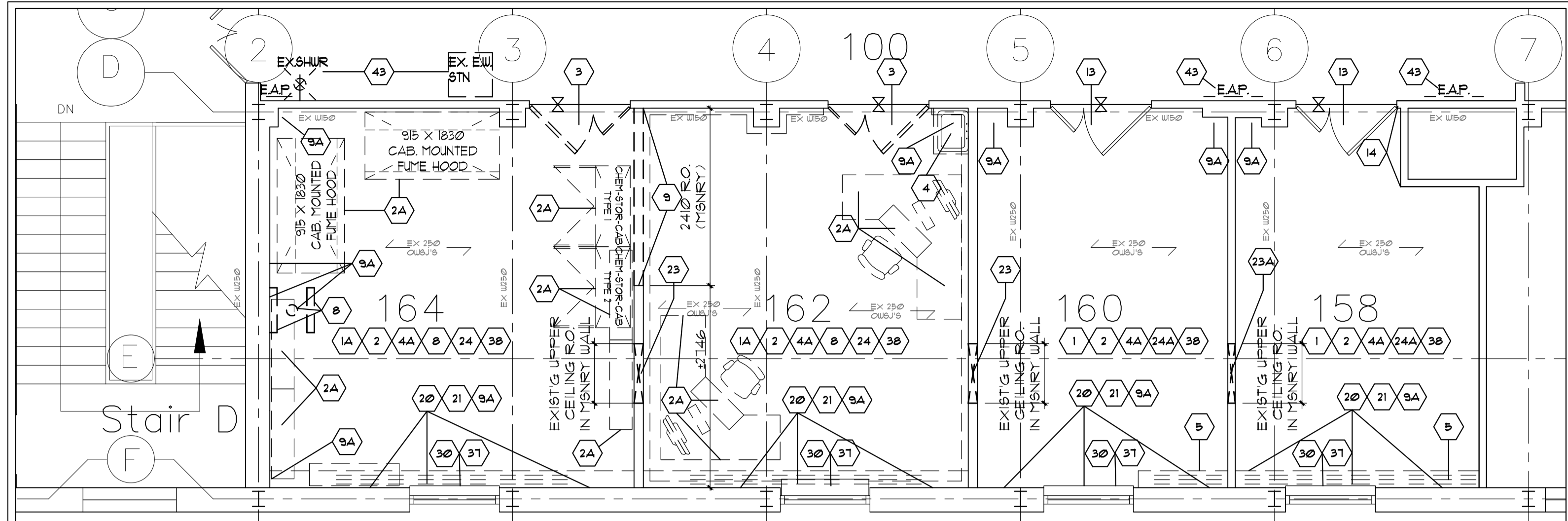
A Detail no.  
 B Location drawing no.  
 C Drawing no.

project: **BUILDING M-23a RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164** projet

**MONTREAL ROAD CAMPUS** dessin

— ARCHITECTURAL PLAN: NEW & DEMOLISHING WORK  
 — MISCELLANEOUS DETAILS  
 — ARCHITECTURAL PLAN LEGEND  
 — ABBREVIATION LEGEND

designed	conçu	date	date
S.Hebb / J.-C. Woods		NOV 2014	
drawn	dessiné	scale	échelle
J.-C. Woods		15 and 150	
checked	vérifié	sheet	feuille
S. Hebb		A01 of/ de A05	
approved	approuvé	W.O.no.	D.T.no.
B. Vallieres / R. Craig		A1-004452-02	
dwg.no.		dessein no.	
3966 - A01			
Acad File: 3966-A01_A05-NOV2014		dessin no.	
		3966 - A01	
		Acad File: 3966-A01_A05-NOV2014	



**ARCHITECTURAL PLAN LEGEND:**

DENOTES: EXISTING INTERIOR WALL c/w CERAMIC TILE FINISH AND TERRAZZO BASE TO REMAIN.

DENOTES: NEW METAL STUD SYSTEM (SEE SPEC. SECTION 09110) TO WALL TYPE AS PER DETAILS 1A ON SHEET A1

- 92mm x 400mm o.c. METAL STUD PARTITIONS (25 GAUGE), GALVANIZED, NON-LOAD BEARING FRAMED TO 150mm ABOVE NEW SUSPENDED CEILING.

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 100mm HIGH FLOORING BASE AS PER "STONEHARD STONEGLAD G5" FLOOR SYSTEM'S SPECS.

DENOTES: EXISTING EXTERIOR WALL c/w CERAMIC TILE FINISH TO REMAIN.

DENOTES: DENOTES: NEW METAL STUD SYSTEM (SEE SPEC. SECTION 09110) TO WALL TYPE AS PER DETAILS 1B TO 1D ON SHEET A1

- 64mm x 400mm o.c. METAL STUD PARTITIONS (25 GAUGE), GALVANIZED, NON-LOAD BEARING FRAMED TO U/S OF ROOF STEEL DECK, USE DOUBLE TRACK SLIP JOINT TO MAINTAIN CLEARANCE UNDER BEAMS AND STRUCTURAL SLABS.

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 100mm HIGH FLOORING BASE AS PER "STONEHARD STONEGLAD G5" FLOOR SYSTEM'S SPECS.

- FILL VOID WITH BATT INSULATION AND AIR/VAPOUR BARRIER (6mil POLYETHYLENE).

- AS PER WALL TYPE "W-TB" ABOVE.

- ADD 22mm HORIZONTAL "HAT" CHANNEL FURRING TO SUIT EXIST'G 150mm HIGH COVE TERRAZZO BASE OFFSET AT FLOOR.

- AS PER WALL TYPE "W-TC" ABOVE.

- ADD PROPER BACKING TO SUIT HEATING CONVECTORS IN RMS 162 & 164.

DENOTES: EXISTING DEMOUNTABLE PARTITION TO BE DEMOLISHED, EXISTING MASONRY WALL TO REMAIN TO EXTENT SHOWN ON I/A1 PLAN.

DENOTES: PARTIAL MASONRY WALL DEMOLISHED, SEE PLAN I/A01

DENOTES: EXISTING MASONRY or STUD WALLS TO REMAIN.

SEE SPECIFIC DRAWING NOTES ON DWG A2

DENOTES: EXISTING INTERIOR WALL c/w CERAMIC TILE FINISH TO REMAIN.

DENOTES: NEW METAL STUD SYSTEM (SEE SPEC. SECTION 09110) TO WALL TYPE AS PER DETAILS 1D ON SHEET A1

- 64mm x 400mm o.c. METAL STUD PARTITIONS (25 GAUGE), GALVANIZED, NON-LOAD BEARING FRAMED TO 150mm ABOVE NEW SUSPENDED CEILING.

- 22mm HORIZONTAL "HAT" CHANNEL FURRING TO SUIT EXIST'G TERRAZZO BASE OFFSET AT FLOOR.

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 150mm HIGH RUBBER BASEBOARDS ABOVE CARPET FINISH.

- 64mm x 400mm o.c. METAL STUD PARTITIONS (25 GAUGE), GALVANIZED, NON-LOAD BEARING FRAMED TO 150mm ABOVE NEW SUSPENDED CEILING.

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 150mm HIGH RUBBER BASEBOARDS ABOVE CARPET FINISH.

- 22mm HORIZONTAL "HAT" CHANNEL FURRING FRAMED TO 150mm ABOVE NEW SUSPENDED CEILING.

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 150mm HIGH RUBBER BASEBOARDS ABOVE CARPET FINISH.

DENOTES: NEW METAL STUD SYSTEM (SEE SPEC. SECTION 09110) TO WALL TYPE AS PER DETAILS 1A ON SHEET A1

- 92mm ("W-TA") OR 152mm ("W-TJ") x 400mm o.c. STEEL STUDS (25 GAUGE) FRAMED TO U/S OF STEEL ROOF DECK

- 12.1mm THICK GYPSUM BOARD, STANDARD, TAPED & FINISHED.

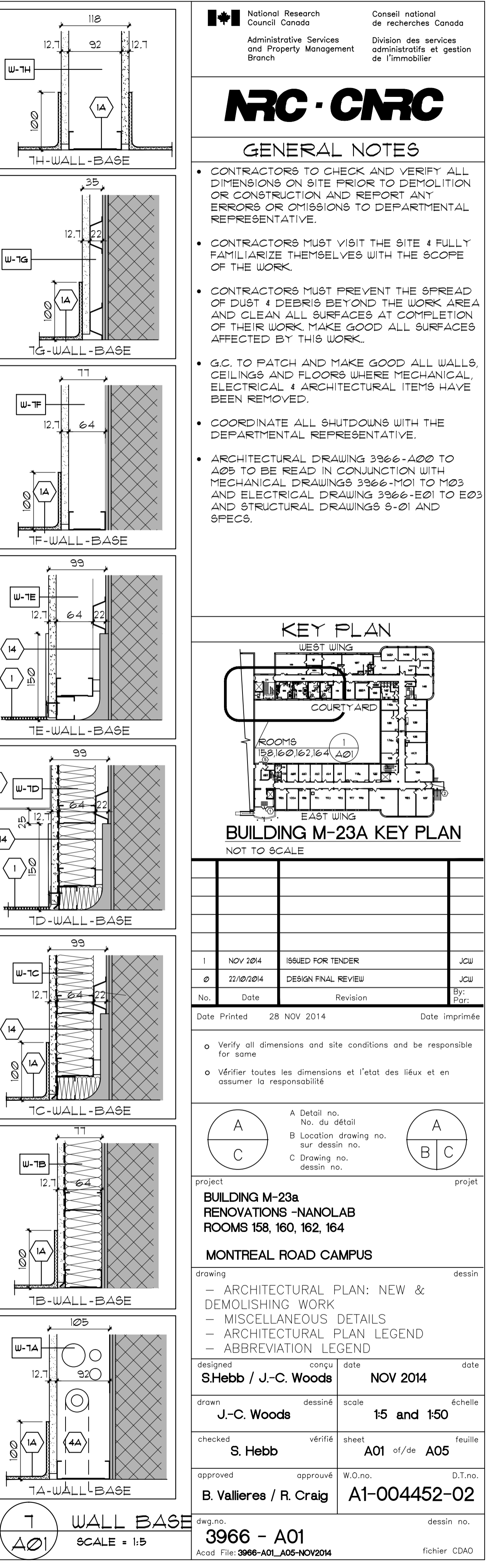
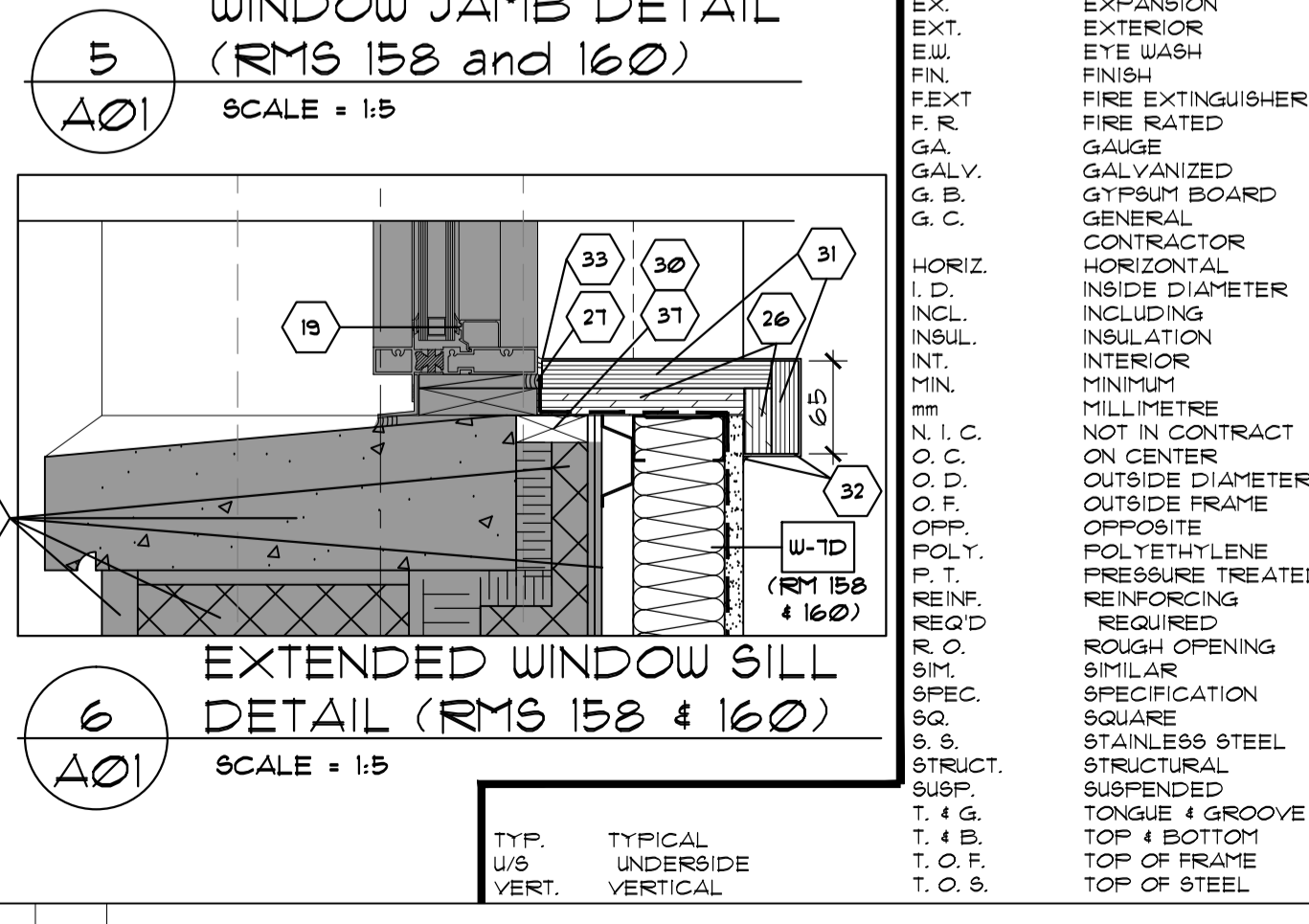
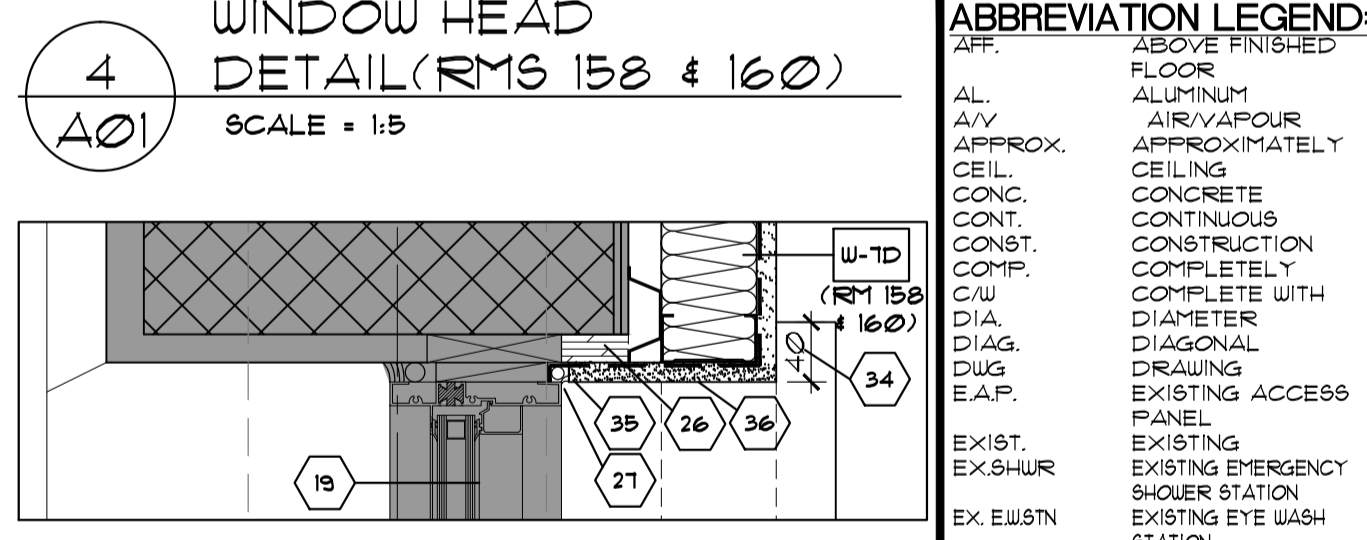
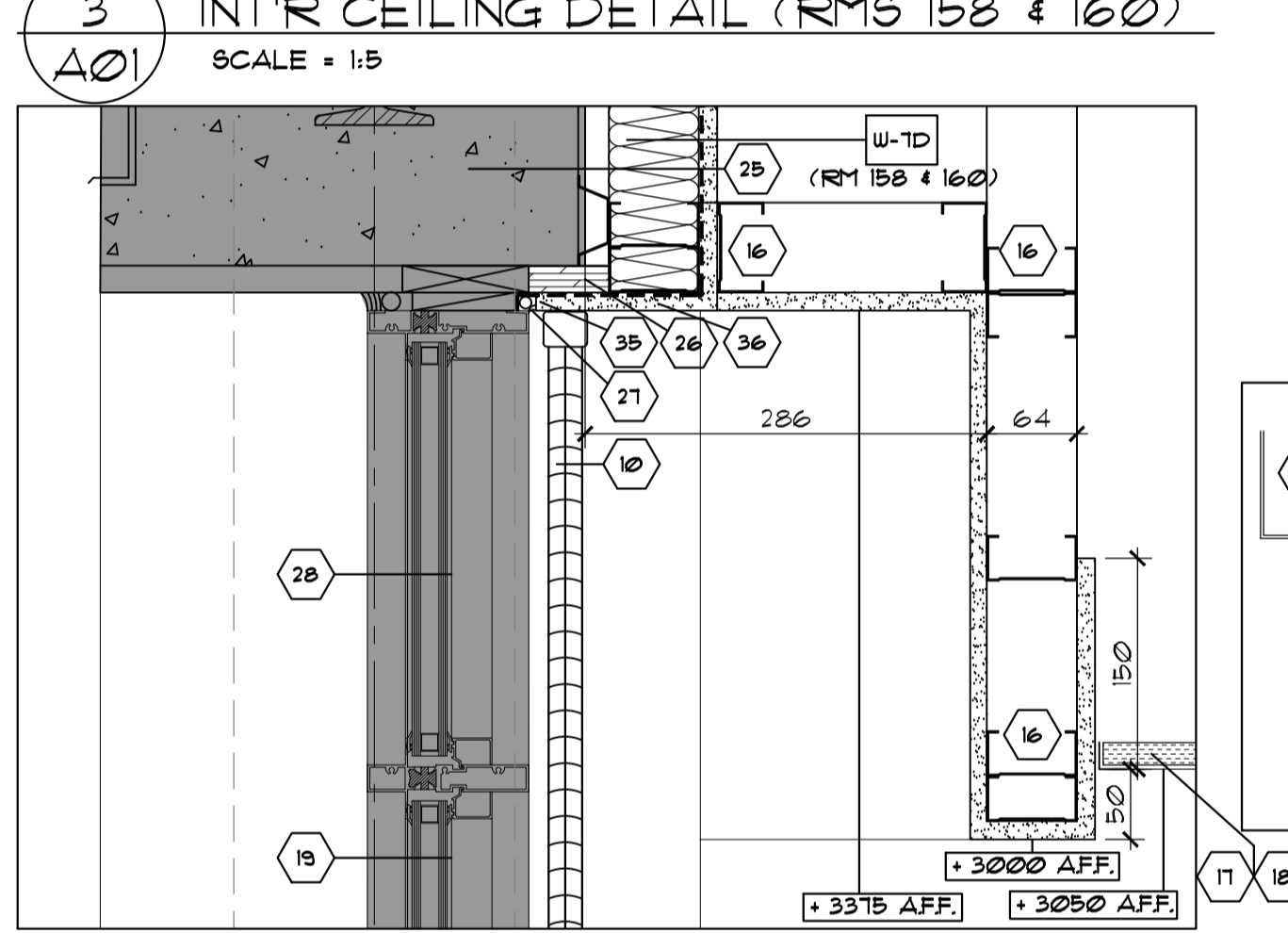
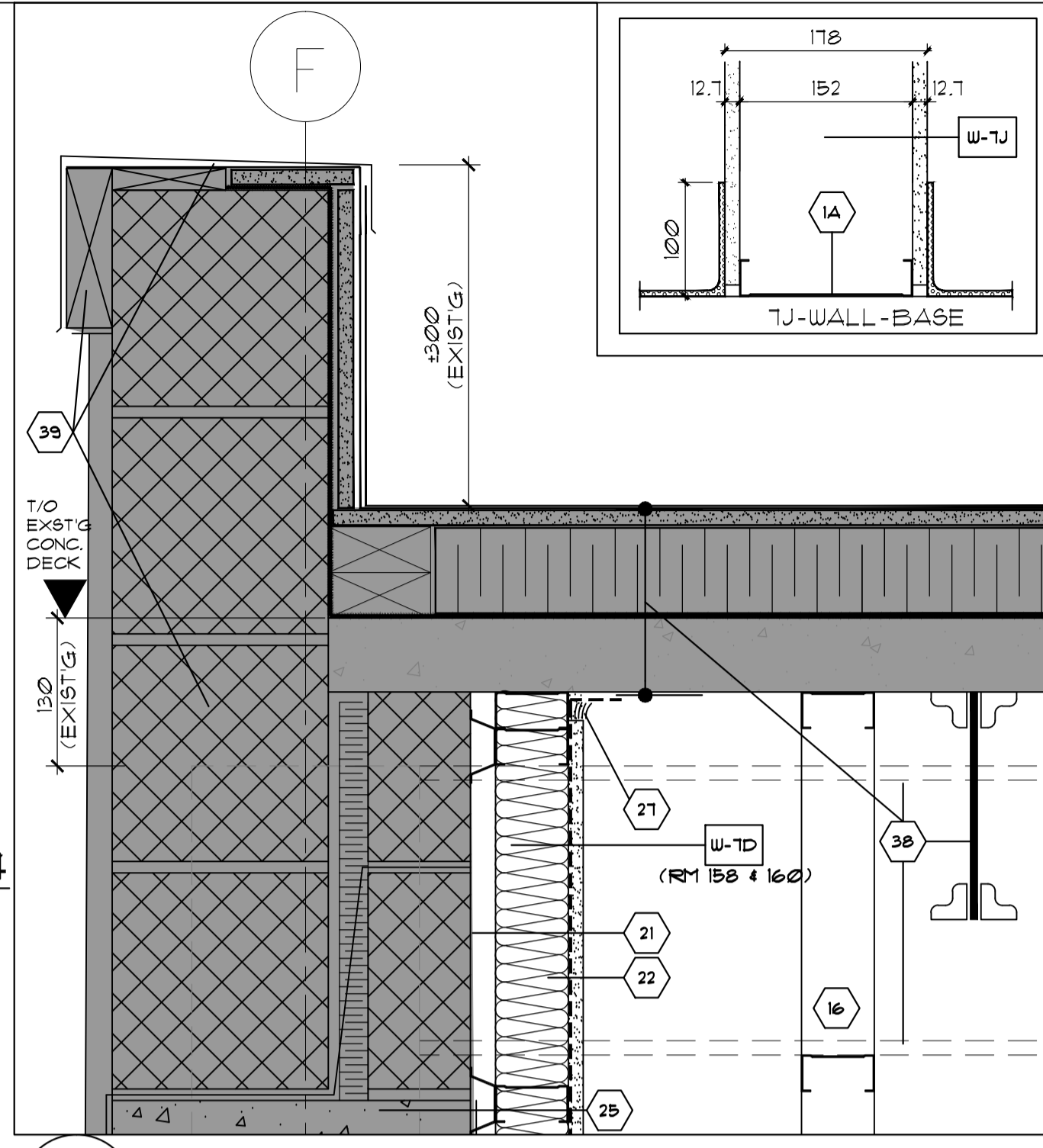
- SAND AND PAINT WITH LATEX PAINT TO 3 COATS, SMOOTH FINISH ROLLED.

- PROVIDE 100mm HIGH FLOORING BASE AS PER "STONEHARD STONEGLAD G5" FLOOR SYSTEM'S SPECS.

DENOTES: EXISTING DOOR - PANEL WOOD DOOR AND FRAMES TO REMAIN, RE-FINISH AND PAINT TO MATCH NEW "DR-01" TYPE.

DENOTES: EXISTING DOOR - PANEL DOOR AND FRAMES TO BE REMOVED, EXISTING WALL TO REMAIN.

DENOTES: NEW DOUBLE DOORS IN NEW METAL PRESSED STEEL FRAME AS PER DOOR SCHEDULE. SEE TYPE ELEVATIONS AND HARDWARE LIST ON T/A3. FOR FRAME TYPES, SEE 6/A03. PAINT, COLOUR AS PER SCHEDULE, EXISTING WALL TO REMAIN.



**ABBREVIATION LEGEND:**

ALL ABOVE FINISHED FLOOR

A/V APPROX. AIR/VAPOUR APPROXIMATELY

CELL. CONCR. CONT. CONTINUOUS CONSTRUCTION COMPLETE WITH DIAMETER

C/W DIA. DIAGONAL DRUG EXIST. EXISTING ACCESS PANEL

EXIST. EX-SHUR EXISTING EMERGENCY SHOWER STATION

EX. EX-STN EXISTING EYE WASH STATION

FIN. FINISH

FEXT FIRE EXTINGUISHER

F.R. FIRE RATED

G.A. GALV. GALVANIZED

G.B. GYPSUM BOARD

G.C. GENERAL CONTRACTOR

HORIZ. HORIZONTAL

I.D. INSUL. INSULATION

INT. INTERIOR

MIN. MINIMUM

M.M. MILLIMETRE

N.C. NOT IN CONTRACT

O.C. ON CENTER

O.D. OUTSIDE DIAMETER

O.F. OUTSIDE FRAME

O.P. OPPOSITE

P.L. POLY. POLYETHYLENE

P.T. PRESSURE TREATED

REIN. REINFORCING

REQ'D REQUIRED

R.O. ROUGH OPENING

R.O. SPEC. SPECIFICATION

S.O. SQUARE

S.S. STAINLESS STEEL

STRUCT. STRUCTURAL

SUSP. SUSPENDED

T. 4 G. TONGUE & GROOVE

T. 4 B. TOP & BOTTOM

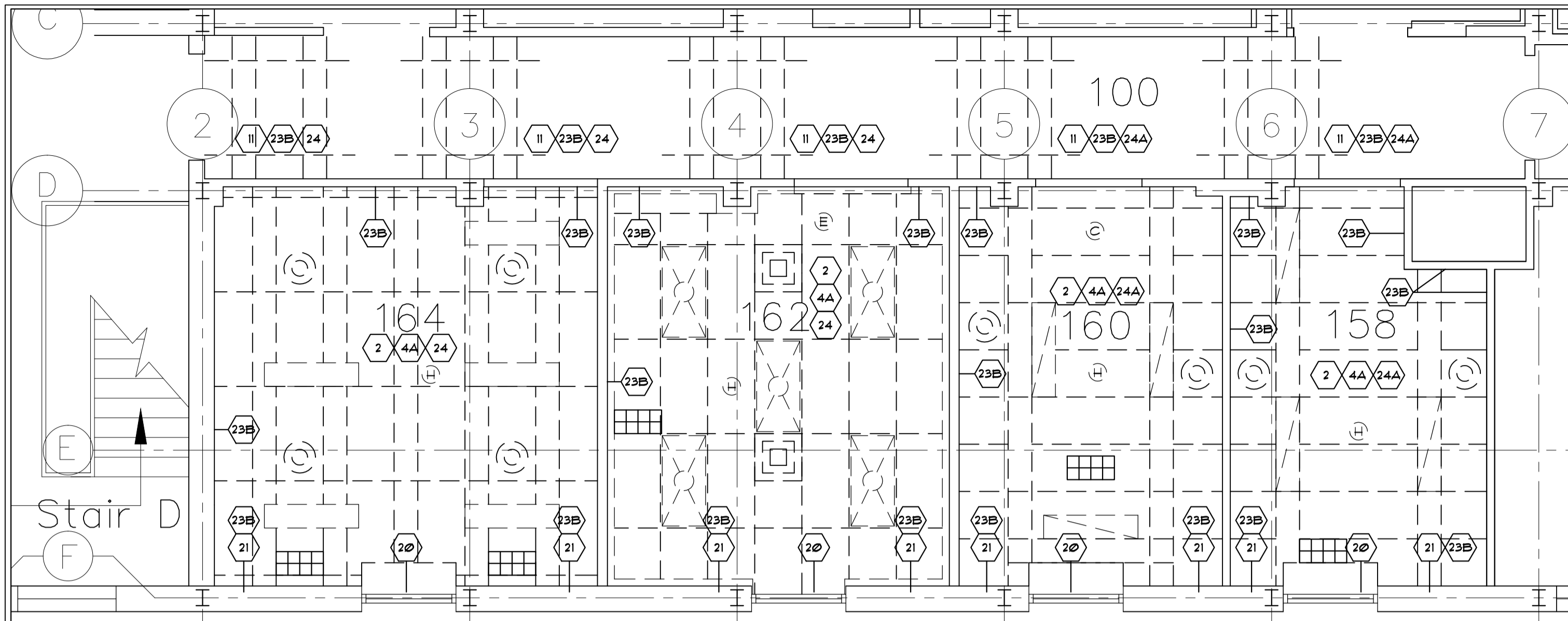
T. O. F. TOP OF FRAME

T. O. S. TOP OF STEEL

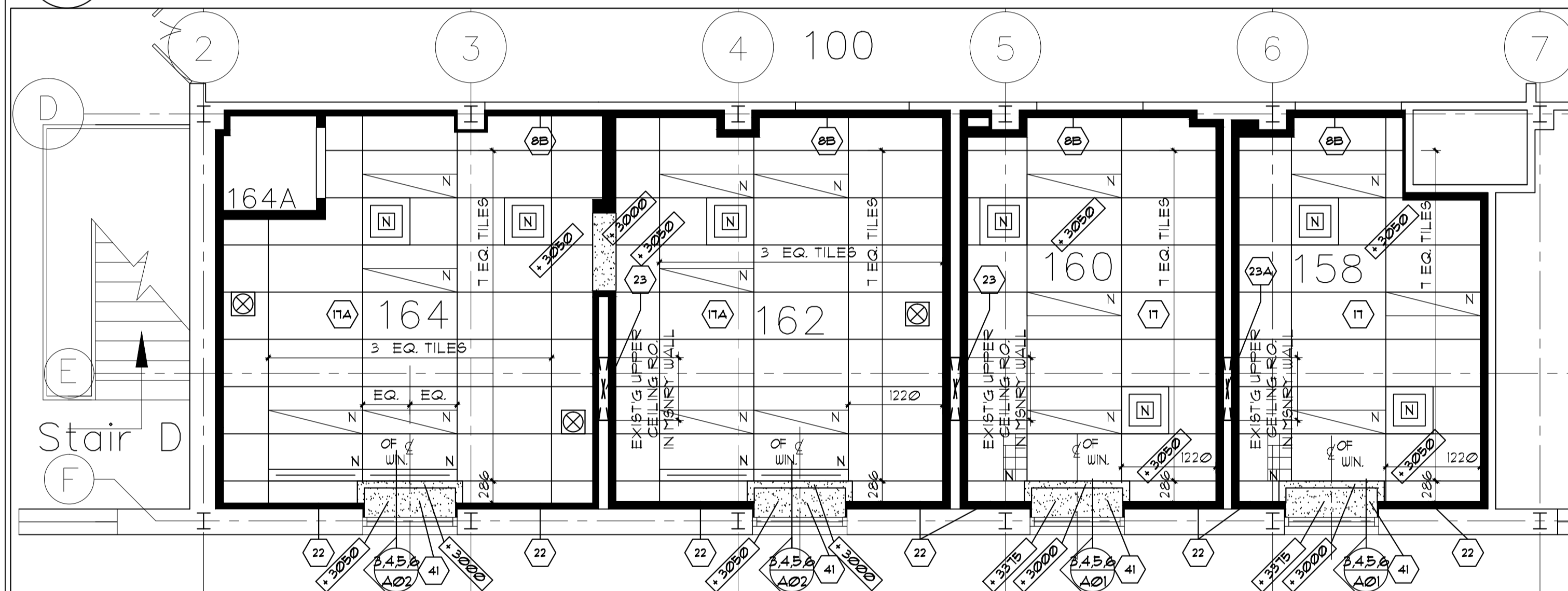
TYP. TYPICAL

U/S UNDERSIDE

VERT. VERTICAL



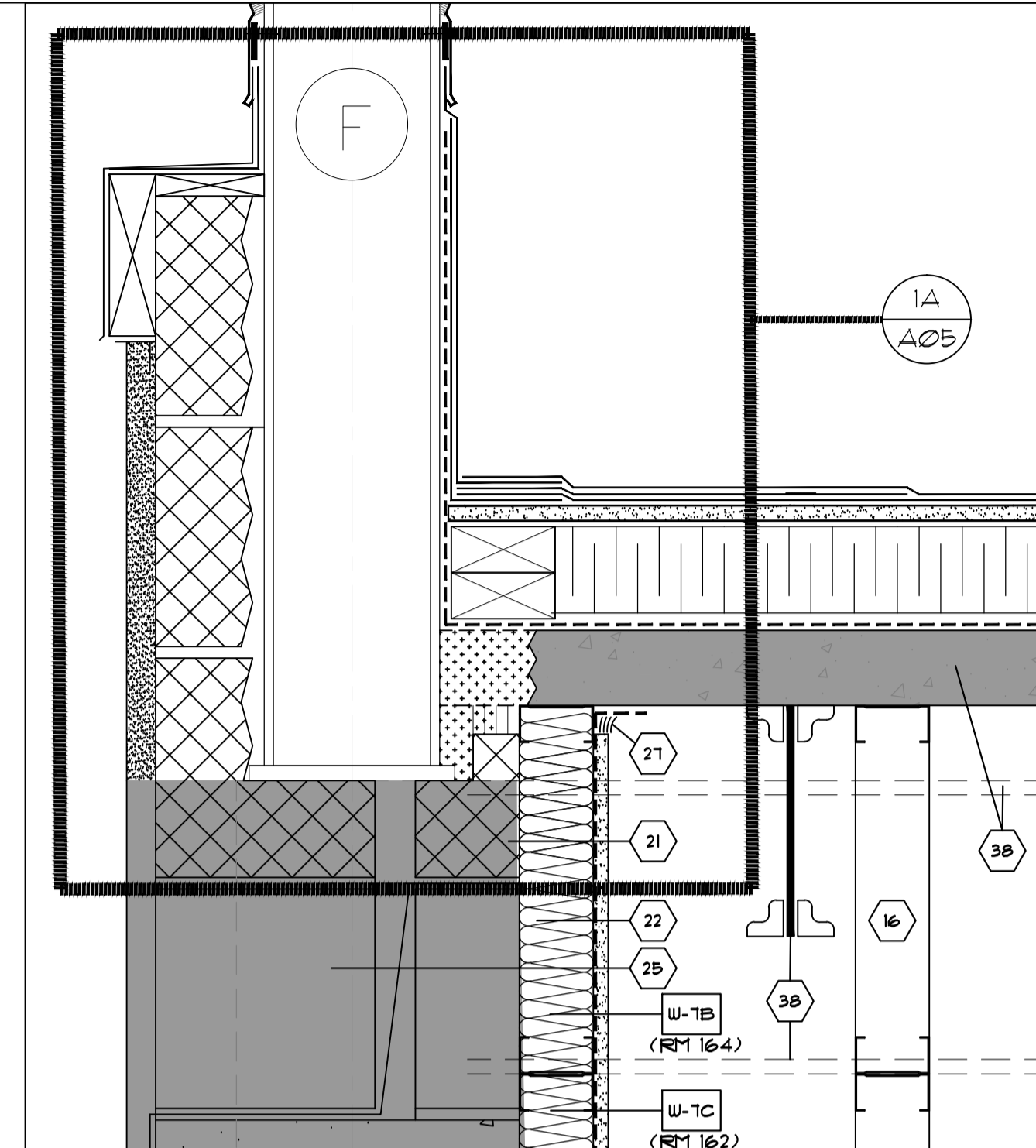
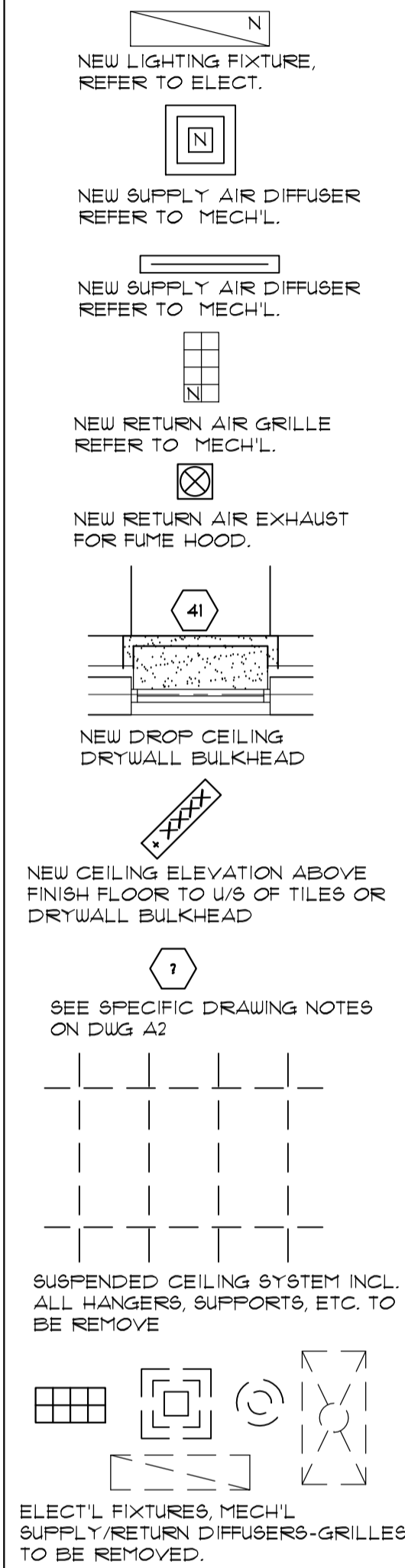
1 PART OF FIRST FLOOR WEST WING - DEMOLITION REF. CEIL. PLAN OF ROOMS 158, 160, 162 and 164  
A01 SCALE = 1:50



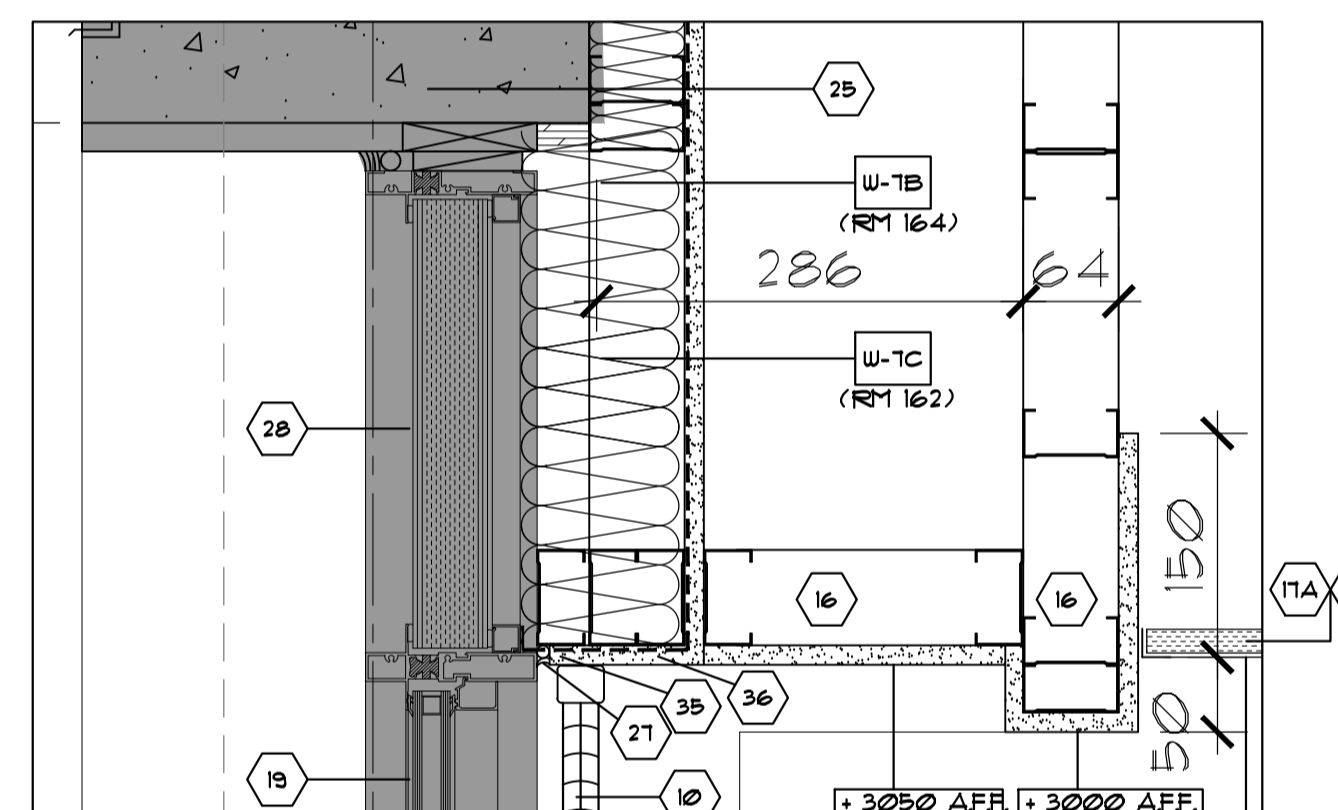
2 PART OF FIRST FLOOR WEST WING - NEW REF. CEIL. PLAN OF ROOMS 158, 160, 162 and 164  
A02 SCALE = 1:50

**REFLECTED CEILING PLAN LEGEND:**

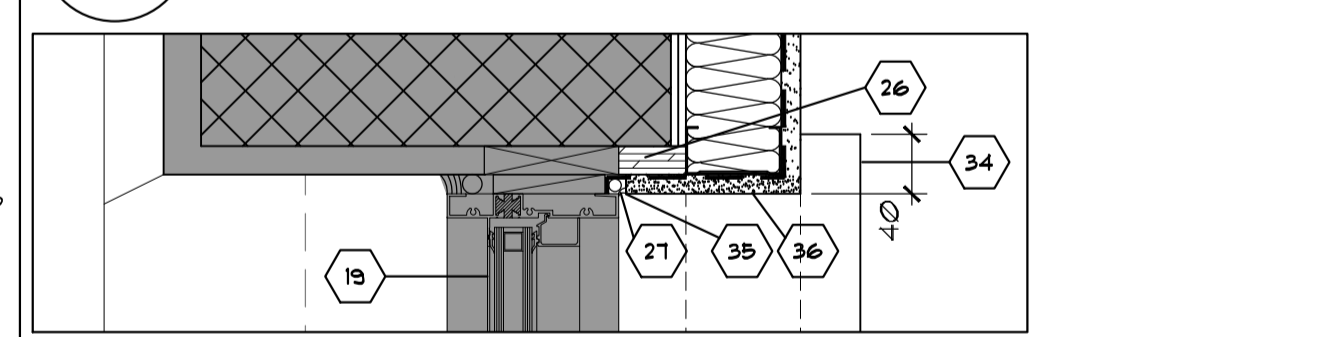
NEW LAY IN ACOUSTIC TILE CEILING, 24" X 48" X 5/8" WHITE ARMSTRONG CORTEGA 163A (OR APPROVED EQUAL) WITH 1" TEES. FLAT WHITE, CEILING HEIGHT: 10'-0". NOTE: INCLUDE ALL TEES, TRIM, TILES AND HANGERS FOR A COMPLETE INSTALLATION.



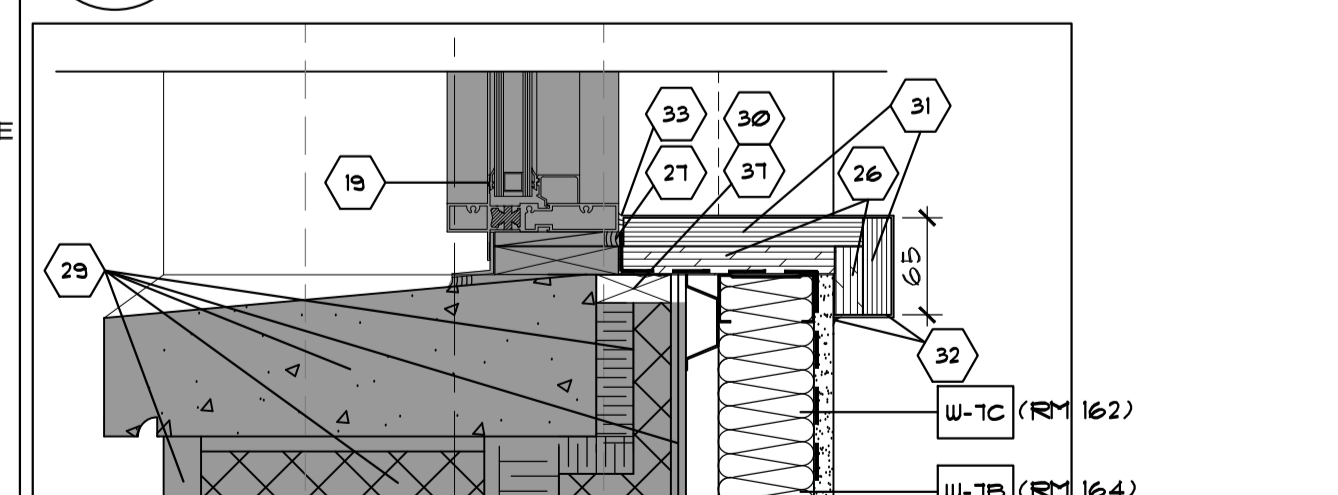
3 INT'R CEILING DETAIL RMS 162 and 164  
A02 SCALE = 1:5



4 HEAD WINDOW DETAIL RMS 162 and 164  
A02 SCALE = 1:5



5 JAMB WINDOW DETAIL RMS 162 and 164  
A02 SCALE = 1:5



6 SILL WINDOW DETAIL RMS 162 and 164  
A02 SCALE = 1:5

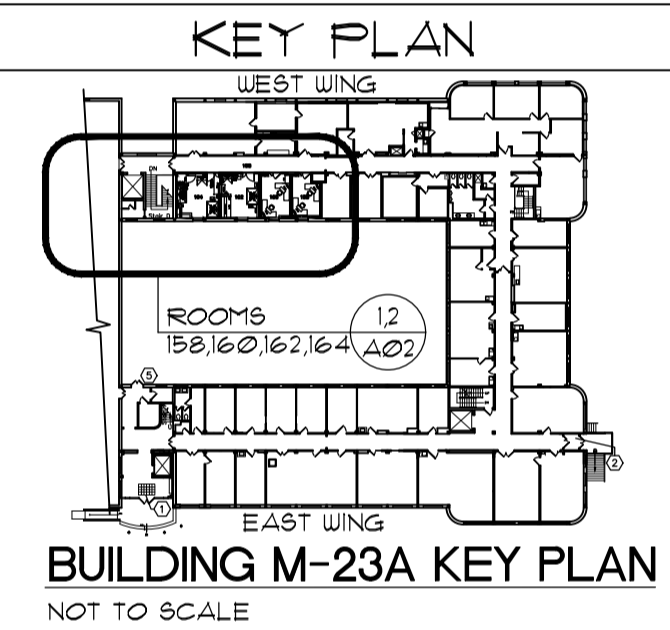
**SPECIFIC DRAWING NOTES:**

- 1 -EXIST. TERRAZZO FLOOR C/W 150mm high COVE WALL BASE TO REMAIN. PATCH FLOOR & PROVIDE NEW CARPET FINISH. PROVIDE 100mm Hg RUBBER BASE.
- 1A -EXIST. CERAMIC OR TERRAZZO TILE FLOOR C/W 150mm WALL BASE TO REMAIN. PATCH FLOOR & PROVIDE NEW "STONEHARD STONECLAD 68" FLOOR SYSTEM AND 100mm Hg BASE FINISH. SEE SUPPLIER'S SPEC.
- 2 -REMOVE COMPLETELY EXIST. SUSPENDED CEILING SYSTEM INCL. ALL HANGERS, SUPPORTS, ETC. REMOVE ALL ELECT'L FIXTURES, MECH'L SUPPLY/RETURN DIFFUSERS-GRILLES. REMOVE ALL SMOKE DETECTORS. SEE ELECT'L AND MECH'L DWGS FOR EXTENT OF WORK.
- 2A -REMOVE BASE CABINETS-FUMEHOODS (QTY 2) C/W EXHAUST DUCTS CONNECTIONS (HAND OVER TO NRC UNDAMAGED). REMOVE WALL MOUNTED SHELVES AND BRACKETS. REMOVE AND RELOCATE DESK AND OFFICE EQUIPMENT AS PER NRC'S INSTRUCTION.
- 3 -REMOVE EXISTING STEEL FRAME AND SOLID WOOD CORE DOOR AND SIDE PANEL FROM EXIST'G MASONRY CORRIDOR WALL.
- 4 -REMOVE EXIST. SINK & WOOD CABINET INCL. TOP COUNTER. SEE DIV. 15 FOR SERVICES REMOVAL.
- 4A - REMOVE AND/OR DISCONNECT ALL PIPING SERVICES TO EXTENT SHOWN ON MECH'L DWGS.
- 5 -EXIST'G METAL HEATING CABINET REMOVED AND RE-INSTALLED OVER NEW WALL FRAMINGS. PAINT COLOUR TO BE SELECTED BY ENGINEER. RE-CONNECT AS PER MECH'L.
- 6 -BUILD NEW WALL METAL PARTITION ENCLOSURE TO SUIT EXISTING PIPING TO REMAIN.
- 7 -PROVIDE NEW CARPET TO TILE VINYL REDUCER STRIP AT DOORWAY, SEE SPEC.
- 8 -REMOVE EXISTING CERAMIC TILE FLOORING, PATCH AND PREPARE FLOORING TO SUIT APPLICATION OF NEW RESINOUS FLOORING AS PER MANUFACTURER'S SPEC.
- 8A -PROVIDE SMOOTH TRANSITION BETWEEN EXIST'G CORRIDOR VINYL TILE AND NEW RESINOUS FLOORING FINISH.
- 8B -CONTINUE WALL TYPE FRAMING ABOVE DOOR HEAD FRAME AS PER DETAIL 6/2/A03.
- 9 -SAW-CUT & REMOVE EXIST'G MASONRY WALL FOR NEW OPENING TO EXTENT SHOWN AS PER DEMOLITION PLAN 1/A01. SAW-CUT NEAREST TO JOINT IN BLOCK COURSING. REMOVE FROM FLOOR TO U/S OF ROOF STEEL DECK. GRIND SMOOTH FLOOR FOR NEW FLOORING.
- 9A -AT FLOOR LEVEL, FILL ALL UN-USED HOLES WITH GROUT BEFORE NEW FLOORING APPLICATION/INSTALLATION.
- 10 -REMOVE EXIST'G BLINDS INCL. TRACKS. PROVIDE NEW HORIZONTAL ALUMINUM BLINDS C/W TRACK. SEE SPEC. SECURE TRACK TO WINDOW MULLION AS SHOWN.
- 11 -EXISTING SUSPENDED CEILING TO BE REMOVED AS REQUIRED FOR NEW WORK & REINSTATE TO MATCH AT COMPLETION.
- 12 -PROVIDE NEW PRESSED STEEL FRAME (50mm wide x THROAT OPENING TO EQUAL PARTITION THICKNESS). SEE SPEC. PAINT, FINISH TO MATCH.
- 13 -EXISTING STEEL FRAME, SOLID WOOD CORE DOOR AND SIDE PANEL TO REMAIN. RE-PAINT AS PER SCHEDULE.
- 14 -EXIST. 150mm high TERRAZZO COVE WALL BASE TO REMAIN.
- 14A -150mm high TERRAZZO COVE WALL BASE TO BE DEMOLISHED TO SUIT APPLICATION OF WALL TYPE IN LOCATION SHOWN ONLY.
- 15 -PROVIDE NEW DEMOUNTABLE METAL PARTITION IN FRONT OF MASONRY WALL AS PER "ARCHITECTURAL LEGEND" ON THIS DWG A1 & SPEC.
- 16 -PROVIDE CONT. 6.4mm STEEL STUD (25 gauge) TO SUPPORT PARTITION AS SHOWN. USE DOUBLE TRACK SLIP JOINT TO MAINTAIN CLEARANCE UNDER EXISTING BEAMS & STRUCTURAL SLAB DECKS TO AVOID TRANSMISSION OF STRUCTURAL LOADS TO STUDS.
- 17 -PROVIDE NEW SUSPENDED CEILING SYSTEM AS PER "REFLECTED CEILING PLAN" & "CEILING LEGEND" ON DWG. A02. SEE SPEC.
- 17A -SAME AS "17" ABOVE, ADD PLASTIC FILM FACE. (RMS 162 & 164)
- 18 -PROVIDE CONT. PERIMETER "L" METAL TRIM AS PART OF SUSPENDED CEILING SYSTEM, SEE SPEC.
- 19 -EXISTING ALUMINUM WINDOW TO REMAIN.
- 20 -MAINTAIN EXIST. SEALED GLASS UNIT OR PLYWOOD PANEL FROM TOP AND BOTTOM PORTION OF WINDOW. ANY DAMAGE, BREAKAGE OR ALTERED STATE, ASSEMBLY TO BE REPLACED BY G.I.C. AT HIS COST.
- 21 -REMOVE EXIST. WALL INSULATION FROM CEILING TO DECK IN ROOMS 158, 160, 162 & 164. REPAIR & PATCH WALL TILES FOR EASE OF FRAMING INSTALLATION.
- 22 -PROVIDE NEW WALL FRAMING TYPE AS INDICATED ON NEW FLOOR PLAN, TO BE EXTENDED TO U/S OF ROOF STEEL DECK. (ALONG EX'T'R WALL AT GRID "F").
- 23 -WHERE MECH'L DUCTS ARE REMOVED ABOVE CEILING GRID, PROVIDE MASONRY INFILL TO MATCH EXISTING CONCRETE BLOCK WALL TO U/S OF ROOF DECK. WHERE NOTE "23A", DO NOT INFILL.
- 23B -IN AREA OF CONTACT, ABOVE CEILING GRID, PROVIDE INFILL (Masonry AND/OR GROUT TO SUIT) TO MATCH FOR ALL HOLES & OPENINGS, (ANY SIZES) LEFT FROM PREVIOUS ALTERATIONS / RENOVATIONS.
- 24 -ASBESTOS REMOVAL: EXISTING PIPING & DUCT TO BE REMOVED THAT IS CONTAINED IN ASBESTOS. REMOVE IN ACCORDANCE WITH ASBESTOS ABATMENT TYPE-III, SEE SPEC. SECTION 02082.
- 24A -IF FOUND ELIMINATE 150% ABATMENT TYPE-II (SEE AREA NOTE "24A") FOR EXTENT OF MECH'L REMOVAL, REFER TO DIV. 15 DRAWINGS.
- 25 -EXISTING CONCRETE LINTEL AND EXTERIOR MASONRY WALL TO REMAIN. INTERIOR FINISH TO REMAIN. PREPARE INTERIOR WALL TO SUIT INSTALLATION OF NEW WALL TYPE FRAMING.
- 26 -PROVIDE NEW 19mm THICK FIR PLYWOOD BACKING BOARD FOR SUPPORT FOR ALL WINDOW SILLS AND BLIND TRACK. SECURE INTO MASONRY & METAL STUDS @ 400mm O.C. SHIM AS REQ'D.
- 27 -PROVIDE CONT. BEAD OF CAULKING C/W BACKROD AT PERIMETER JUNCTIONS WITH NEW DRYWALL FINISH, NEW SILL WHILE PROVIDING FULL AIR/VAPOUR BARRIER SEAL.
- 28 -EXISTING INSULATED COMPOSITE WINDOW PANEL TO REMAIN (RMS 162 & 164). EXISTING WINDOW TRANSOM GLAZING TO REMAIN (RMS 158 & 160).
- 29 -EXISTING STONE SILL AND EXTERIOR WALL CONSTRUCTION TO REMAIN INCLUDING INTERIOR WALL FINISH.
- 30 -REMOVE EXISTING PLYWOOD LAMINATE SILL, APRON AND TRIM AND BLOCKING. BREAK & REMOVE PARTIAL UPSTAND. LEVEL WITH PLYWOOD SHIMS TO SUIT INSTALLATION OF NEW SILL.
- 31 -PROVIDE NEW 19mm THICK FIR PLYWOOD SILL C/W PLASTIC LAMINANT (COLOUR BLACK 303-58 BY "FORMICA" OR EQUIVALENT) ON ALL EXPOSED SURFACES INCLUDING ENDS. SECURE TO NOTE "26" WITH ADHESIVE.
- 32 -RETURN PLASTIC LAMINATE UNDER NEW SILL EXTENSION. CAULK WITH SILICONE AT JUNCTION WITH DRYWALL.
- 33 -PROVIDE CONTINUOUS BEAD OF WHITE MILDEW RESISTANT SILICONE SEALANT.
- 34 -EXTEND WINDOW SILL NOTE "31" ON BOTH SIDES OF OPENING AS SHOWN.
- 35 -AT WINDOW JAMBS AND HEAD, USE METAL CORNER JOINTS.
- 36 -FINISH END AT WINDOW FRAME WITH ALUMINUM J TRIMS. CAULK JOINT BETWEEN J TRIM & WINDOW FRAME WITH WHITE MILDEW RESISTANT SILICONE SEALANT. SEE ALSO NOTE "27".
- 37 -REMOVE BLINDS AND HARDWARE AND HANDOVER TO NRC UNDAMAGED.
- 38 -EXISTING STEEL BAR JOISTS 200mm DEEP STEEL BEAM BEYOND AND METAL DECK INSULATION AND ROOFING TO REMAIN AS IS.
- 39 -EXISTING CONCRETE BLOCK UPSTAND, PARAPET FLASHING EXTERIOR STUCCO FINISH TO REMAIN.
- 40 -PROVIDE NEW BASE & UPPER CABINETS C/W PLASTIC LAMINATE COUNTER. ALL UPEERS TO BE GLAZED. SEE PLAN, ELEVATION AND DETAILS 1-5 ON SHEET A03. SEE MILLWORK SCHEDULE (8/A03).
- 41 -NEW DRYWALL CEILING BULKHEAD C/W 12.7mm GYPSUM BOARD ON 6.4mm METAL STUDS AT 400mm O.C. MATCH FINISH TO COLOR SCHEDULE. REFER TO PLANS FOR DEPTH CONFIGURATION DETAILS.
- 42 -PROVIDE 19mm X 400mm X 800mm PLYWOOD BACKING IN BETWEEN STUDS (1400mm AFF.) FOR FIRE EXTINGUISHER SURFACE MOUNTING.

**NRC-CMRC**

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No.	Date	Revision	By:
1	NOV 2014	ISSUED FOR TENDER	JCU
2	22/10/2014	DESIGN FINAL REVIEW	JCU

Date Printed: 28 NOV 2014 Date imprimée: \_\_\_\_\_

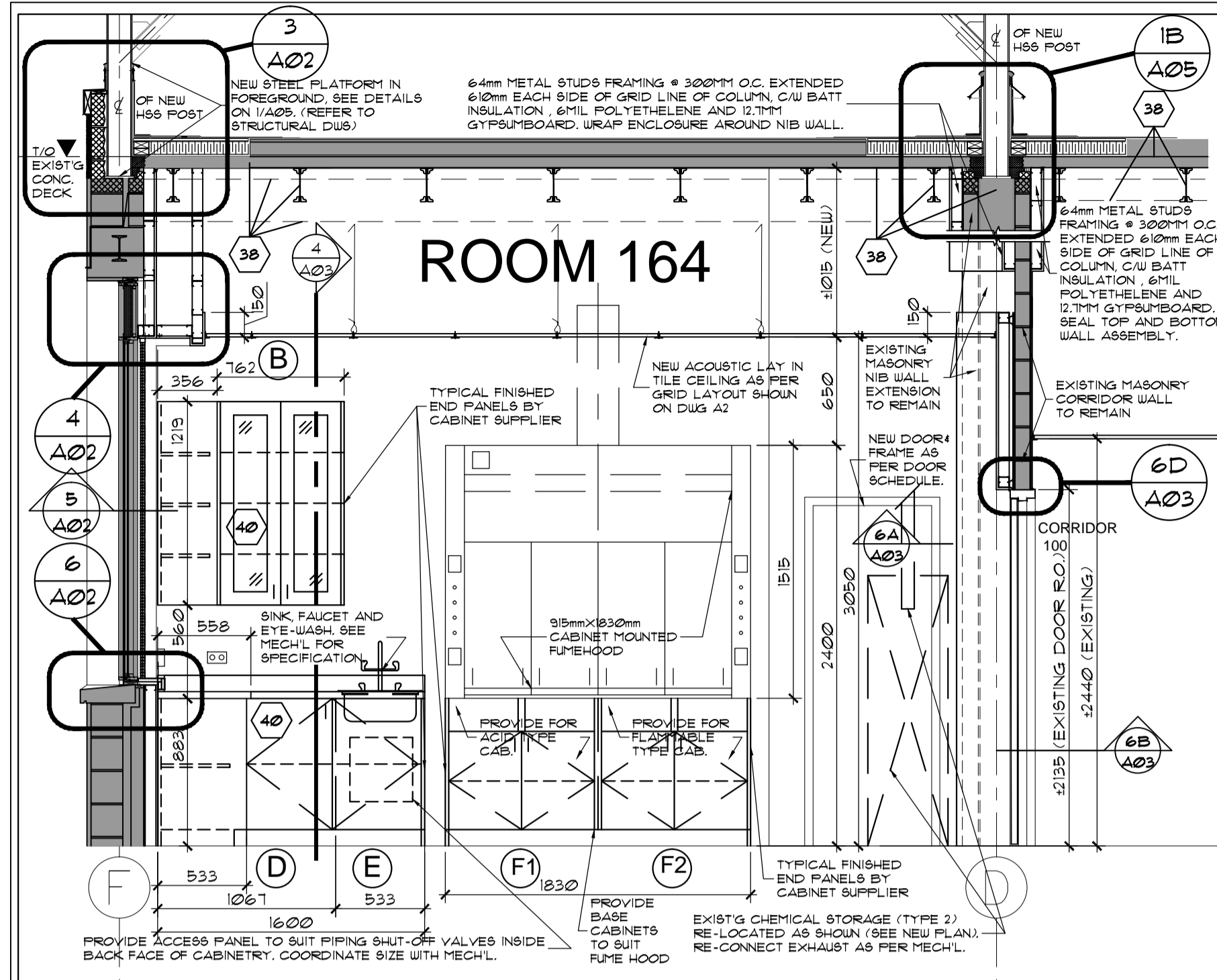
- o Verify all dimensions and site conditions and be responsible for same.
- o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.

project		project	
<b>BUILDING M-23a RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164</b>			
MONTREAL ROAD CAMPUS			
designed	conçu	date	date
S.Hebb / J.-C. Woods		NOV 2014	
drawn	dessiné	scale	échelle
J.-C. Woods		15 and 150	
checked	vérifié	sheet	feuille
S. Hebb		A02 of/de	A05
approved	approuvé	W.O.no.	D.T.no.
B. Vallieres / R. Craig		A1-004452-02	
dwg.no.		dessin no.	
3966 - A02			
Acad File: 3966-A01_A05-NOV2014		fichier CDAO	

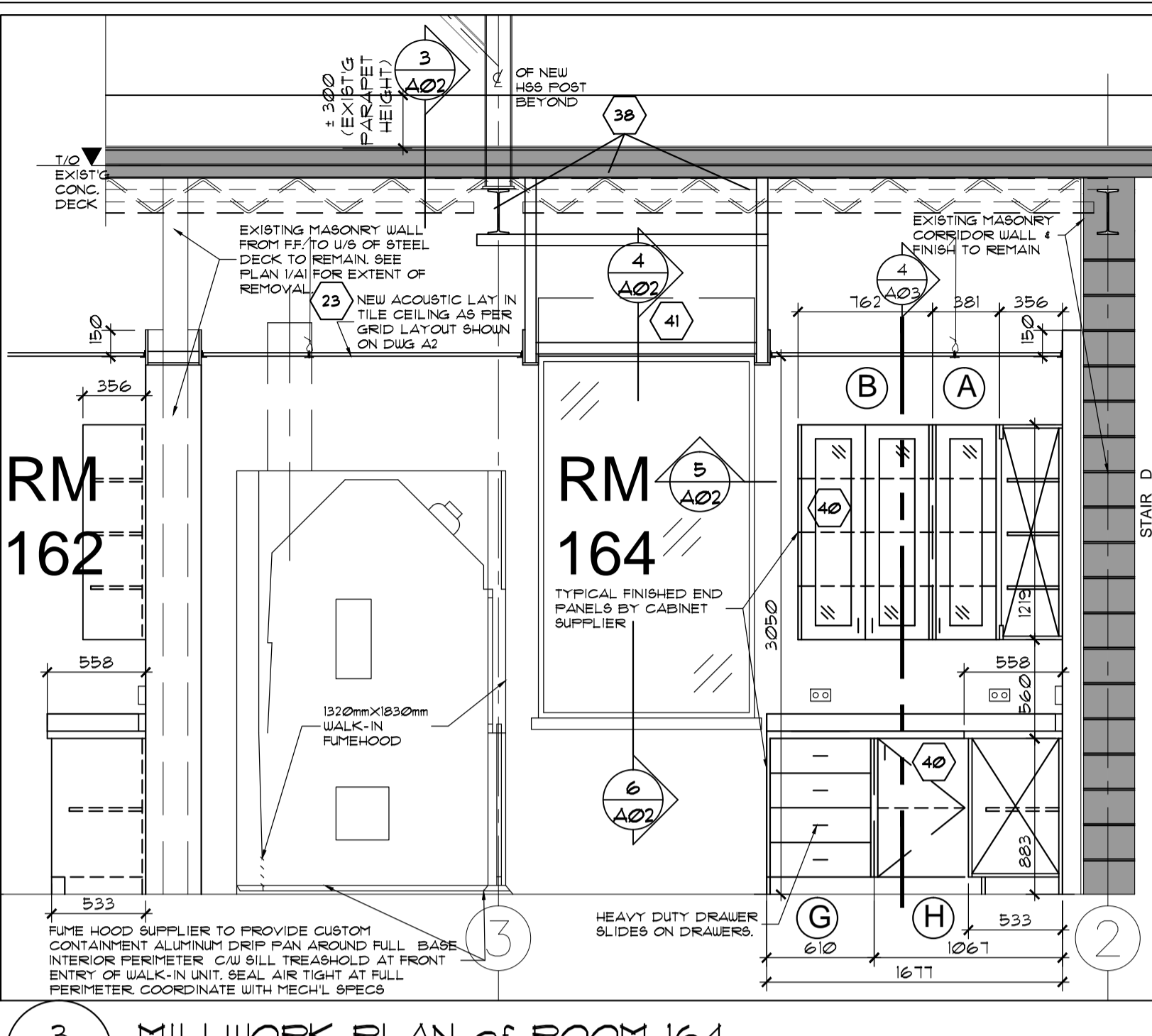


**GENERAL NOTES**

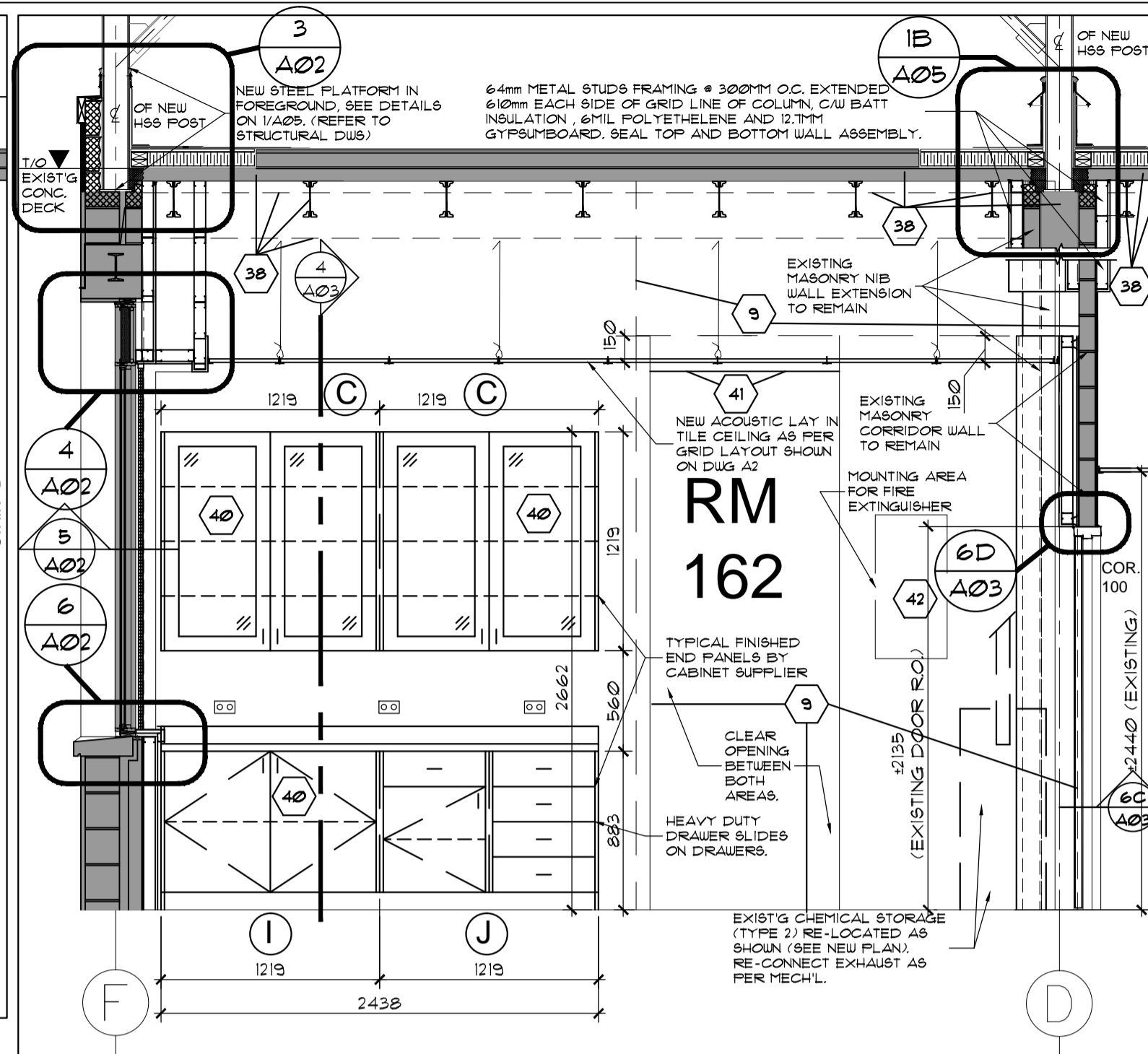
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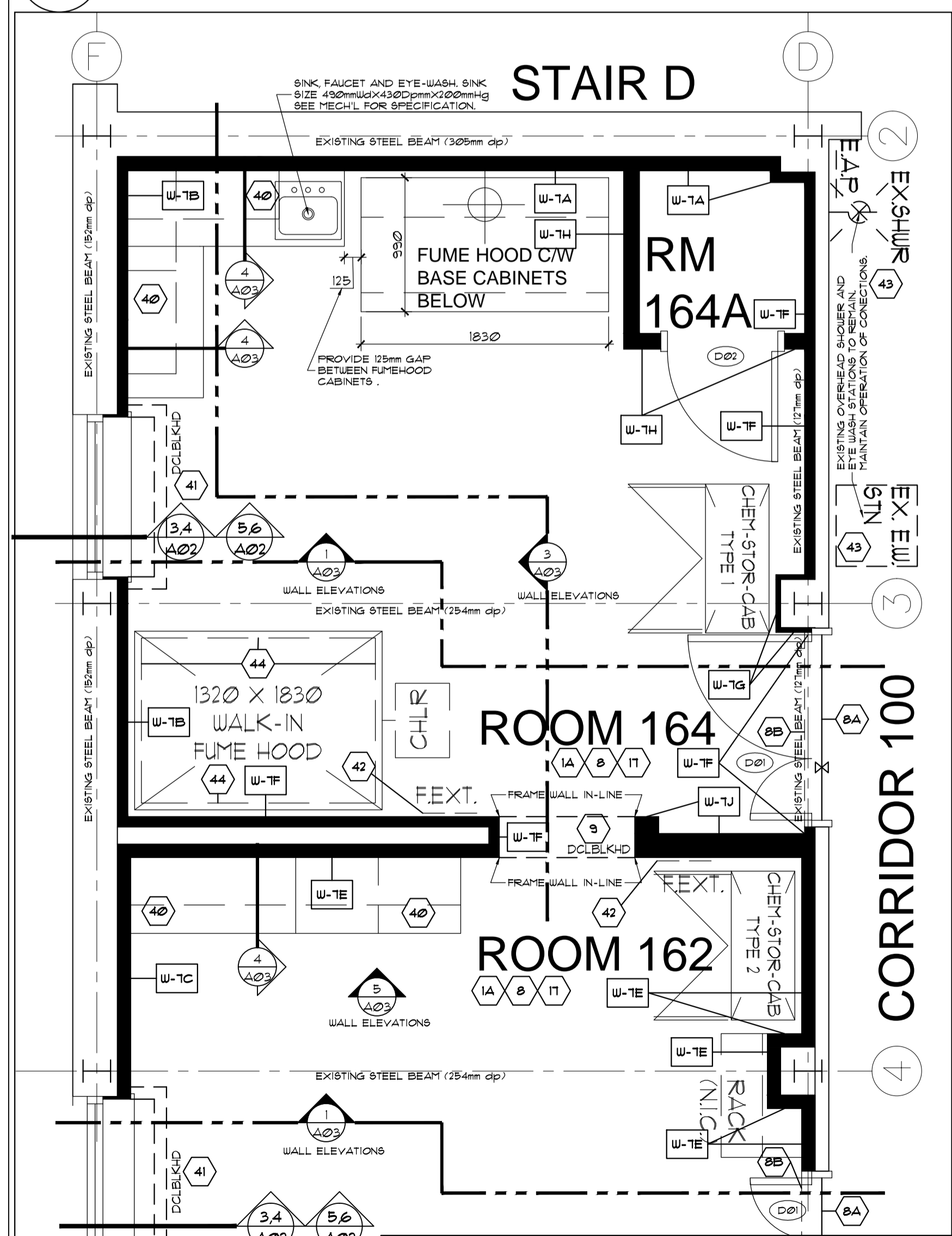
**1 MILLWORK - WALL ELEVATION of ROOM 164**  
 A03 SCALE = 1:30



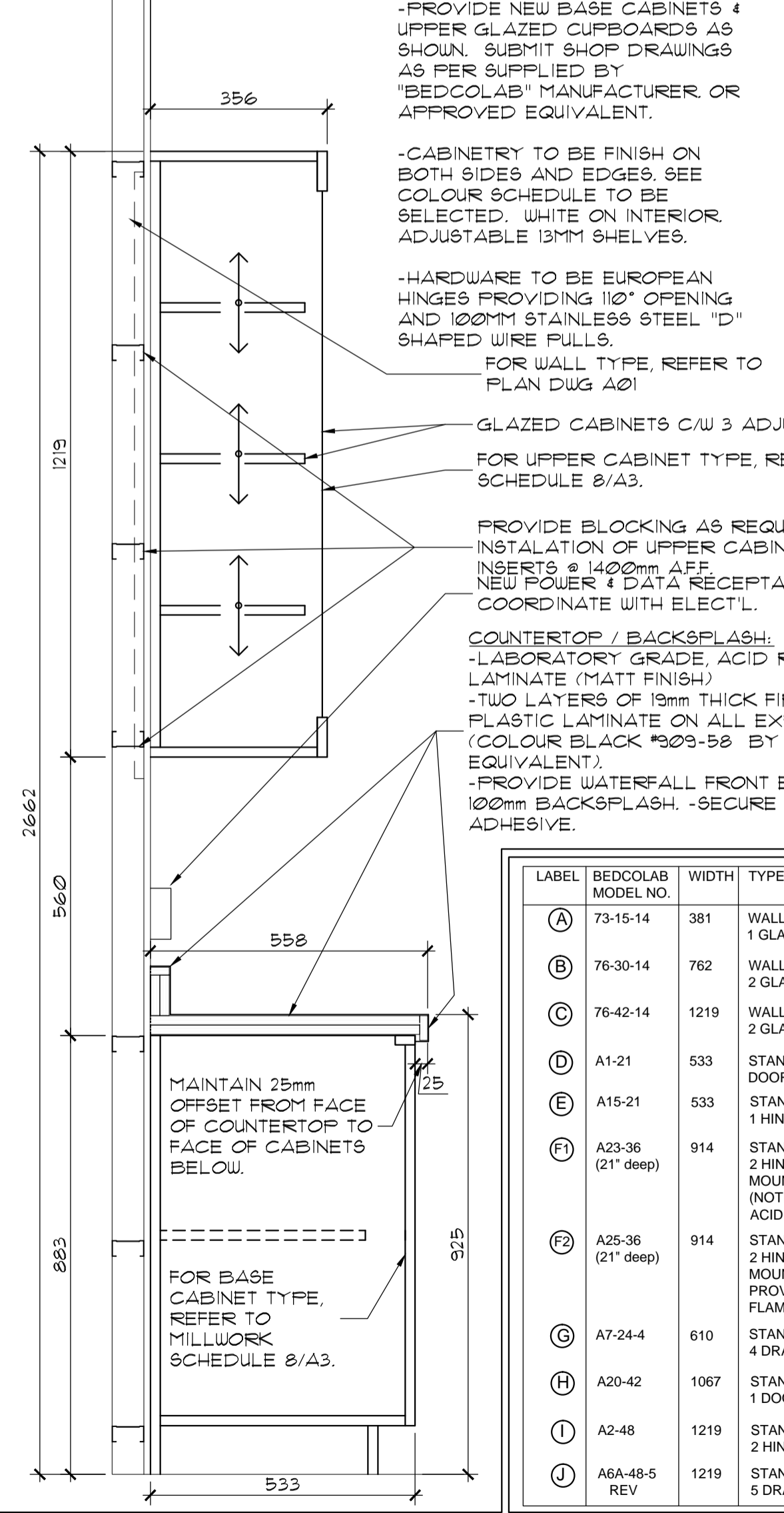
**3 MILLWORK PLAN of ROOM 164**  
 A03 SCALE = 1:30



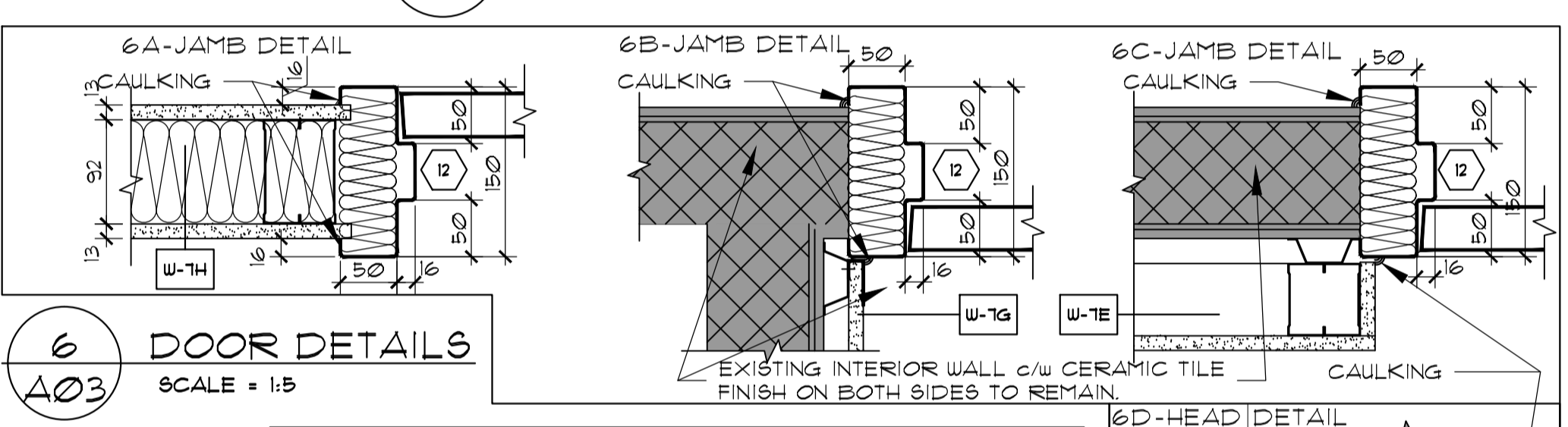
**5 MILLWORK PLAN of ROOM 162**  
 A03 SCALE = 1:30



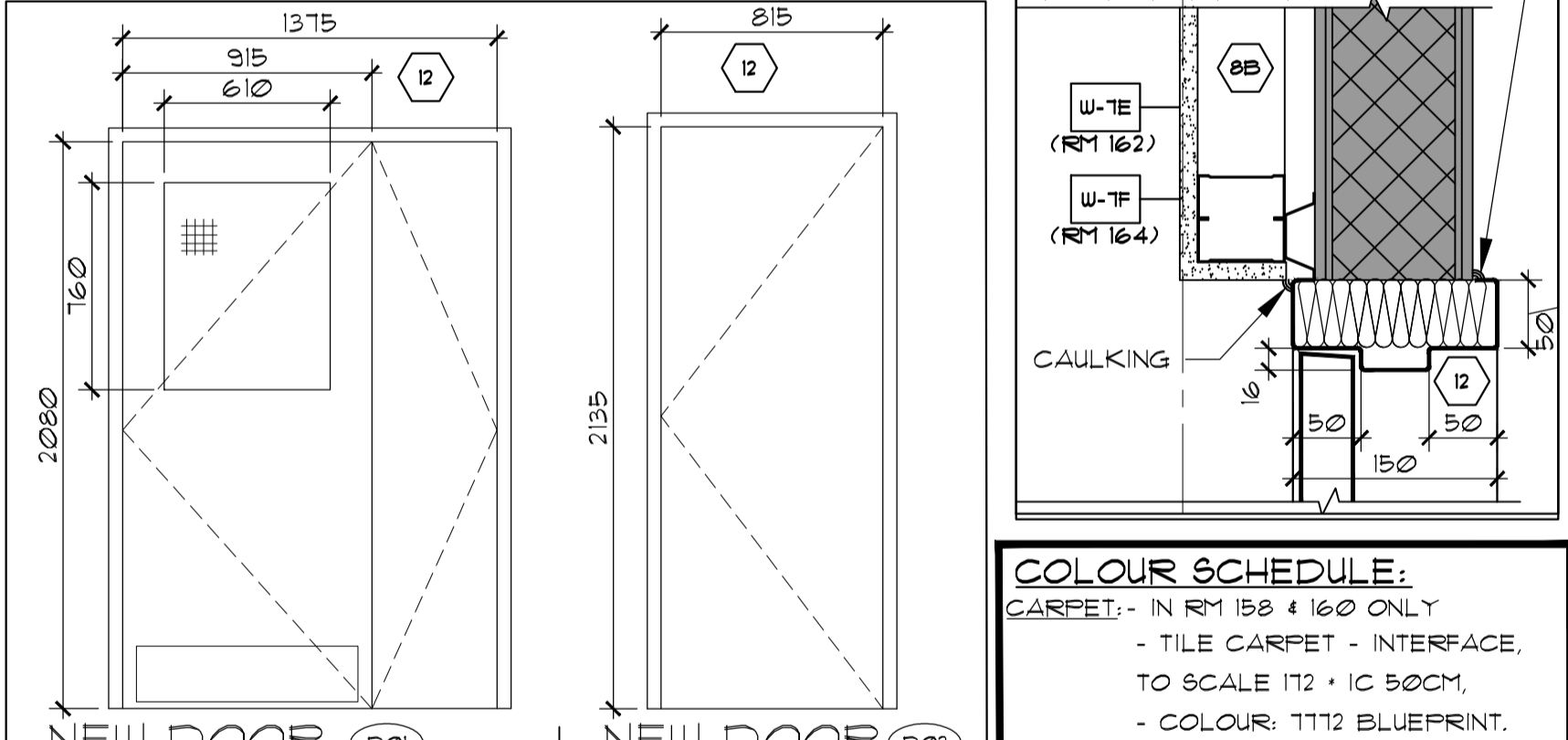
**2 MILLWORK PLAN of ROOM 164 (VIEW ROTATED 90°)**  
 A03 SCALE = 1:30



**4 TYP'L CABINET SECTION**  
 A03 SCALE = 1:10



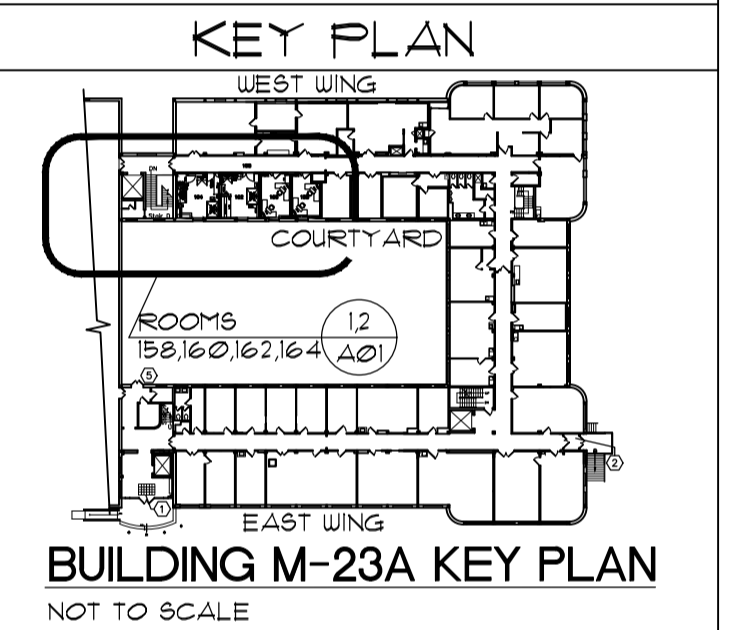
**6 DOOR DETAILS**  
 A03 SCALE = 1:5



**7 DOOR SCHEDULE**  
 A03 SCALE = 1:50

LABEL	BEDCOLAB MODEL NO.	WIDTH	TYPE
A	73-15-14	381	WALL CASES- 1 GLAZED HINGED DOOR (CORNER)
B	76-30-14	762	WALL CASES- 2 GLAZED HINGED DOORS
C	76-42-14	1219	WALL CASES- 2 GLAZED HINGED DOORS
D	A1-21	533	STANDING HEIGHT BASE CABINETS- 1 DOOR HINGED UNIT
E	A15-21	533	STANDING HEIGHT BASE CABINETS- 1 HINGED DOOR SINK UNIT
F	A23-36 (21' deep)	914	STANDING HEIGHT BASE CABINETS- 2 HINGED DOOR UNIT FOR DECK MOUNTED FUME HOOD UNIT (NOTE: PROVIDE UNDER COUNTER ACID STORAGE)
G	A25-36 (21' deep)	914	STANDING HEIGHT BASE CABINETS- 2 HINGED DOOR UNIT FOR DECK MOUNTED FUME HOOD UNIT (NOTE: PROVIDE UNDER COUNTER FLAMMABLE SOLVENT STORAGE)
H	A7-24-4	610	STANDING HEIGHT BASE CABINETS- 4 DRAWER UNIT
I	A20-42	1067	STANDING HEIGHT BASE CABINETS- 1 DOOR HINGED CORNER UNIT
J	A2-48	1219	STANDING HEIGHT BASE CABINETS- 2 HINGED DOOR UNIT
K	A6A-48-5 REV	1219	STANDING HEIGHT BASE CABINETS- 5 DRAWER/ 1 DOOR HINGED UNIT

**8 MILLWORK SCHEDULE**  
 A03 SCALE = N/A

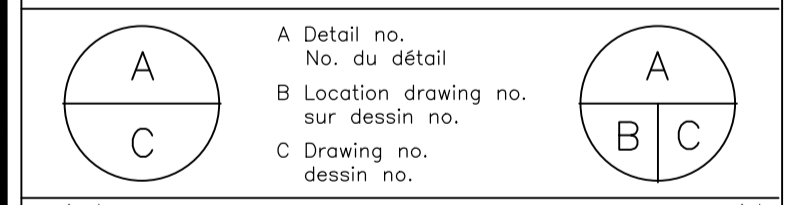


**BUILDING M-23A KEY PLAN**  
 NOT TO SCALE

No.	Date	Revision	By:
1	NOV 2014	ISSUED FOR TENDER	JCU
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Date Printed: 28 NOV 2014 Date Imprimee:

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**BUILDING M-23a RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164**

**MONTREAL ROAD CAMPUS**

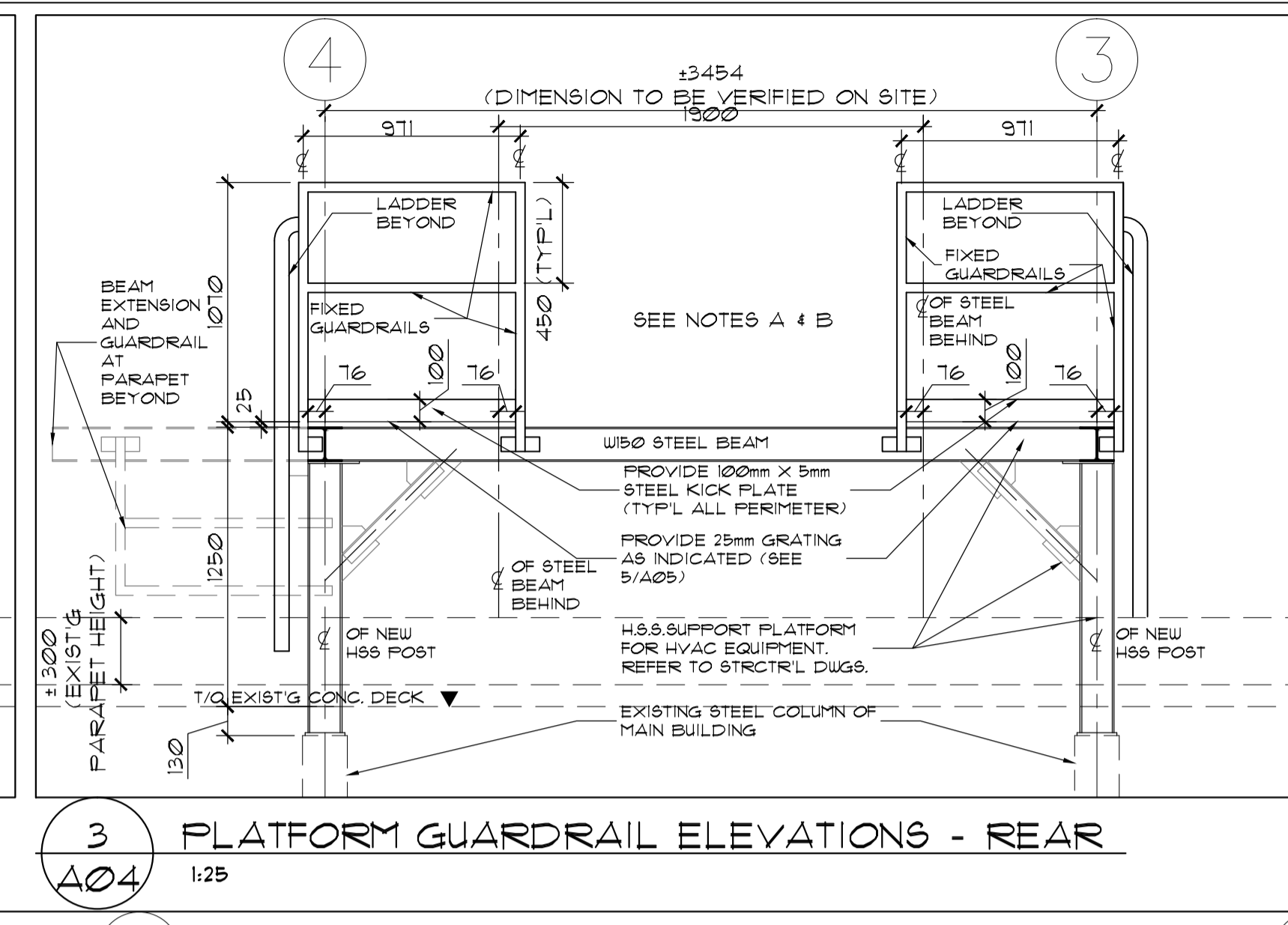
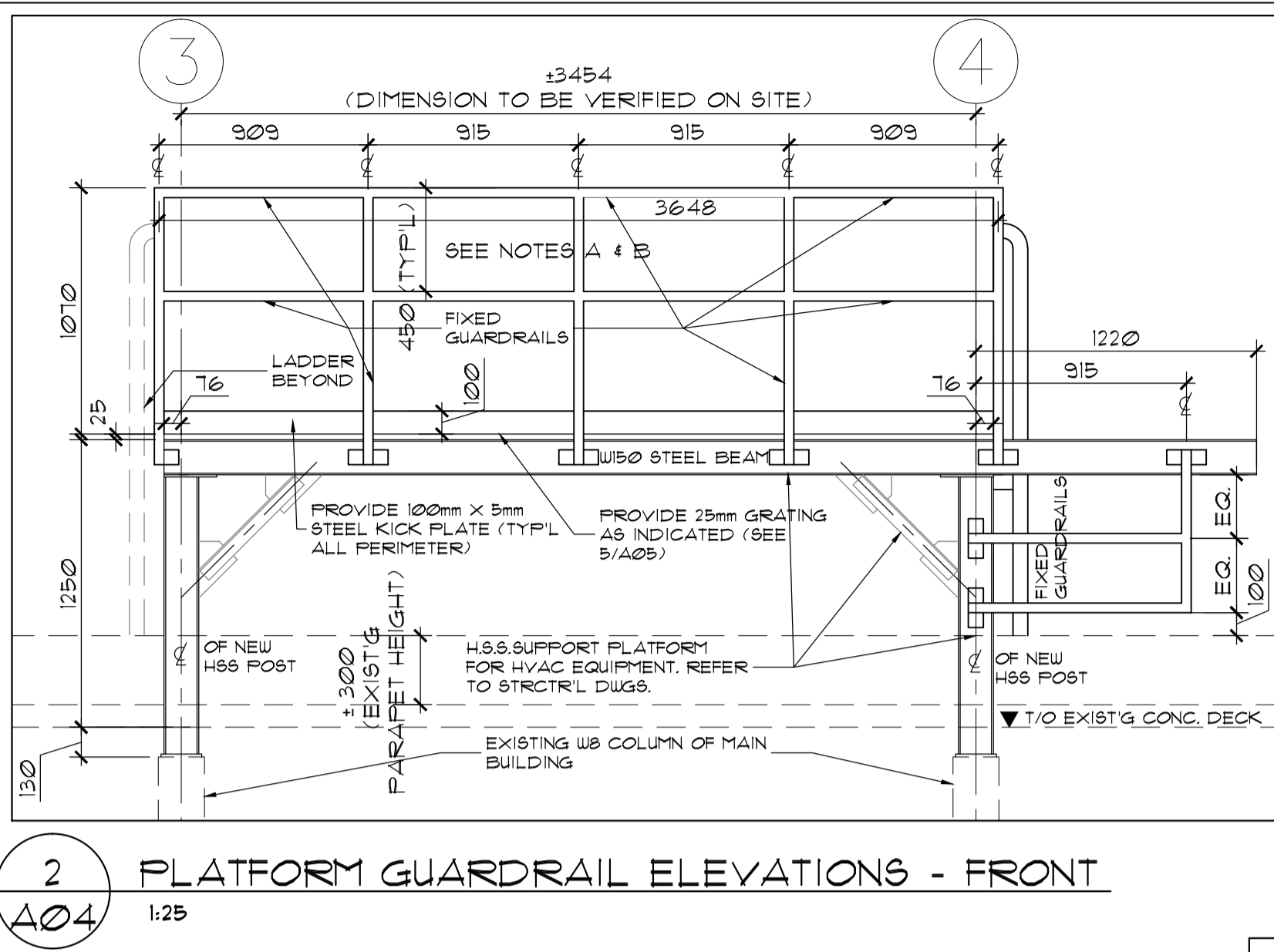
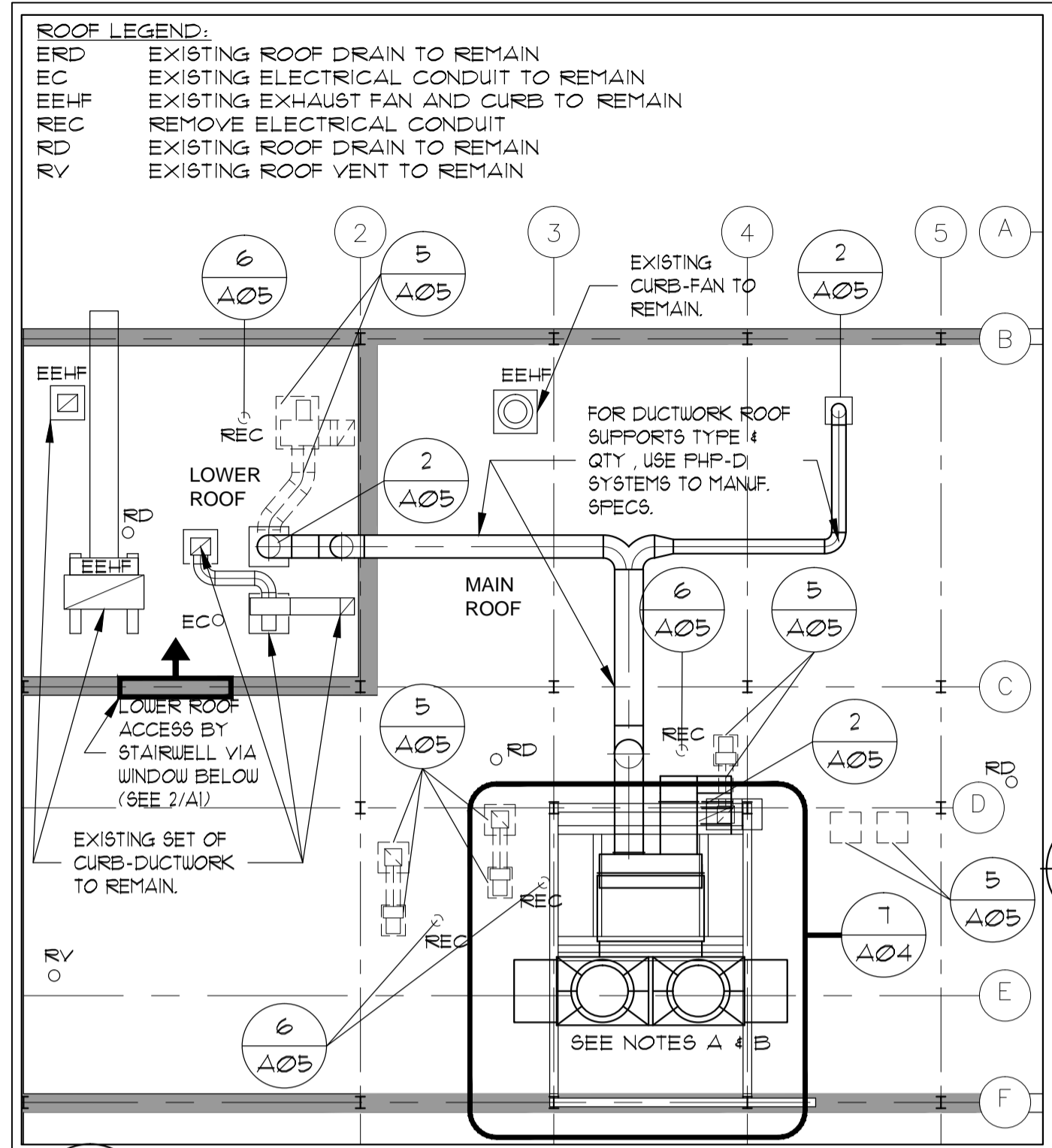
drawing: - LAB MILLWORK: PLANS, SECTIONS & ELEVATIONS  
 - DOOR & COLOR SCHEDULE

designed	conçu	date	date
S.Hebb / J.-C. Woods		NOV 2014	
drawn	dessiné	scale	échelle
J.-C. Woods		1:5 (and as noted)	
checked	vérifié	sheet	feuille
S. Hebb		A03 of/de A05	
approved	approuvé	W.O.no.	D.T.no.
B. Vallieres / R. Craig		A1-004452-02	
dwg.no.	dessin no.		
3966 - A03			



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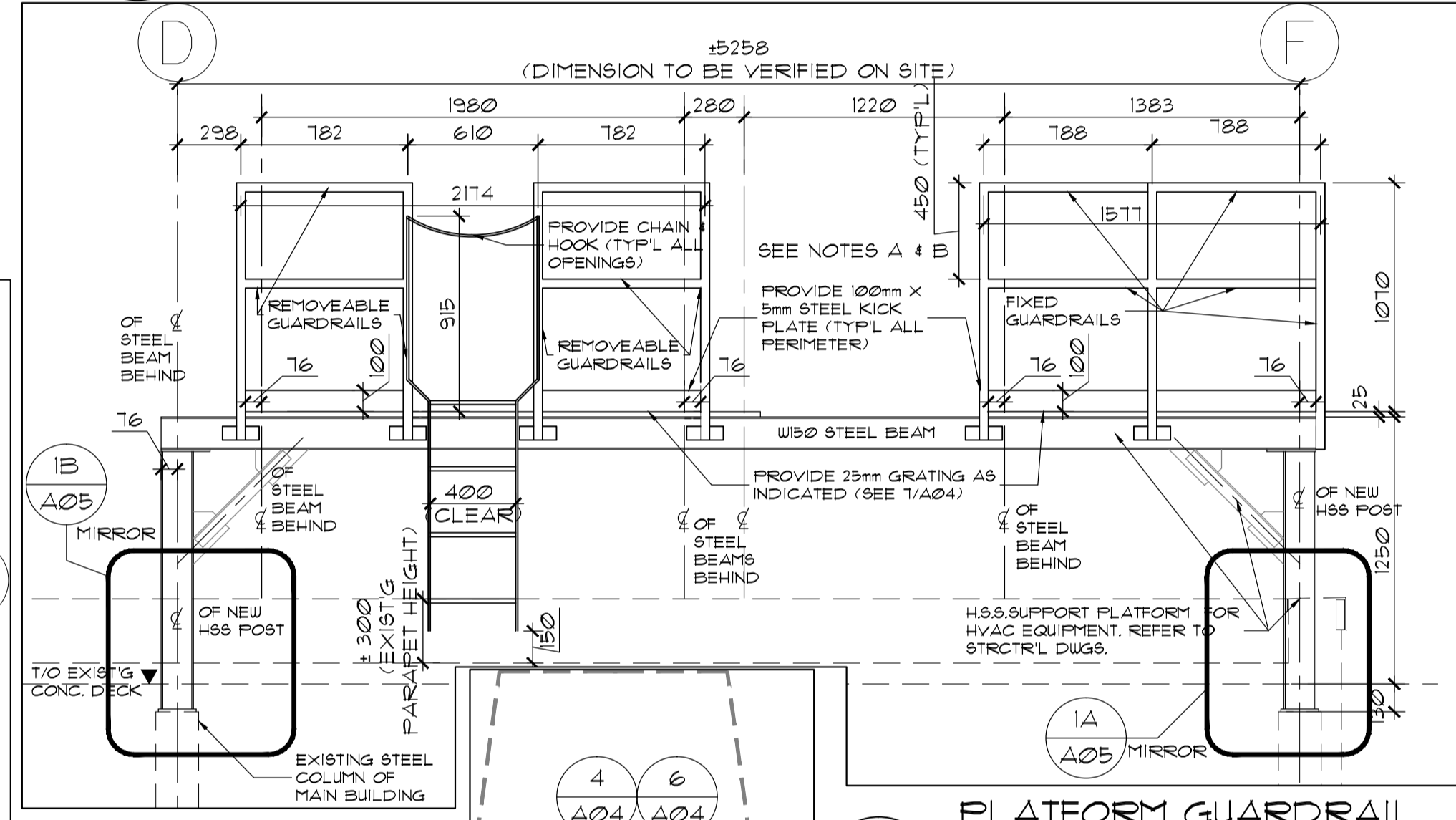


1 PARTIAL PLAN AT WEST ROOFTOP  
 A04 1:50

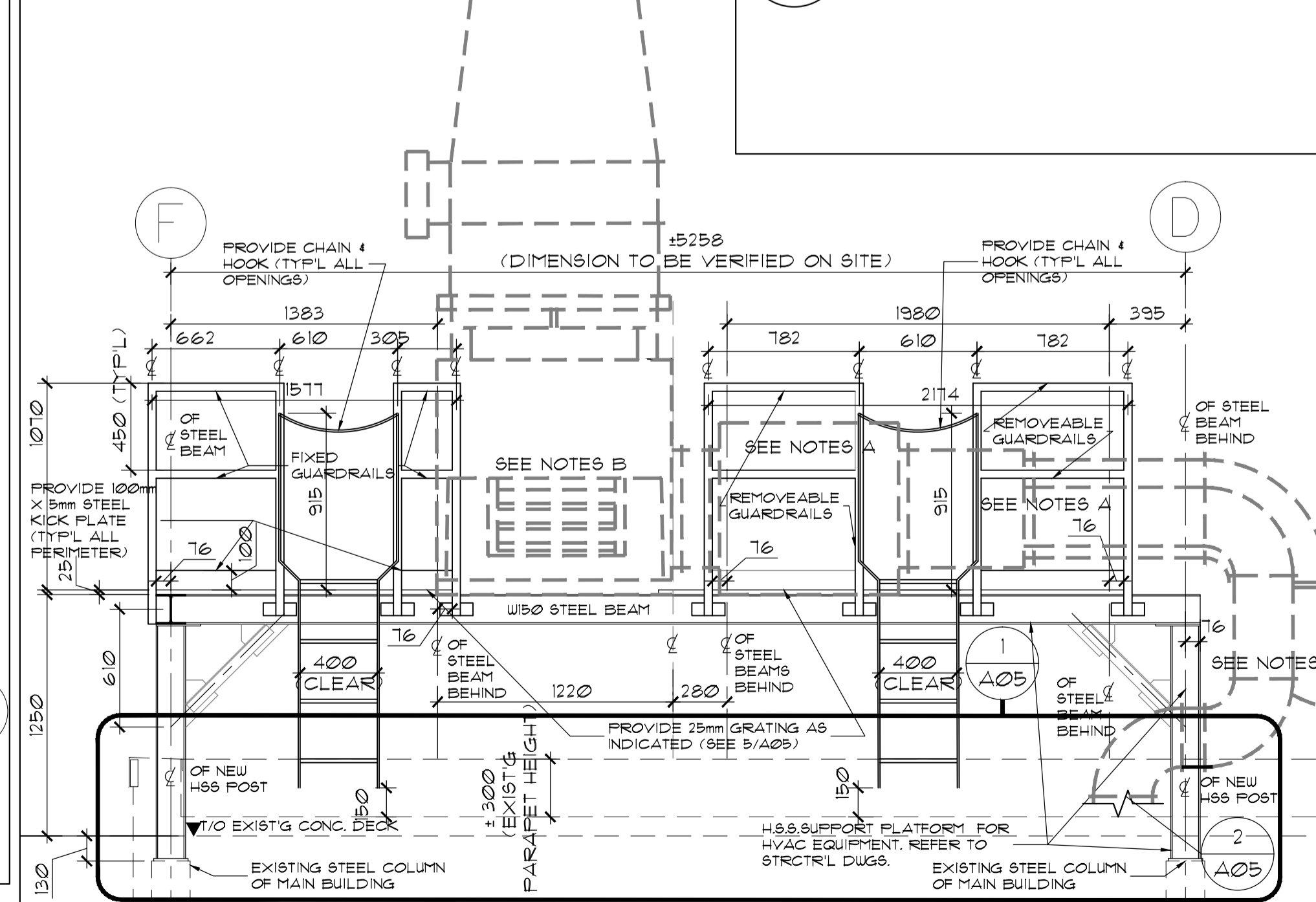
2 PLATFORM GUARDRAIL ELEVATIONS - FRONT  
 A04 1:25

3 PLATFORM GUARDRAIL ELEVATIONS - REAR  
 A04 1:25

- NOTES A:
- REFER TO MECH'L/ELECT'L CONTRACT ON EXACT QUANTITY AND LOCATION OF NEW AND/OR REMOVALS OF HVAC EQUIPMENT AND ACCESSORIES
  - REFER TO STRUCTURAL CONTRACT ON EQUIPMENT SUPPORT PLATFORM AND ALL RELATED DETAILS.

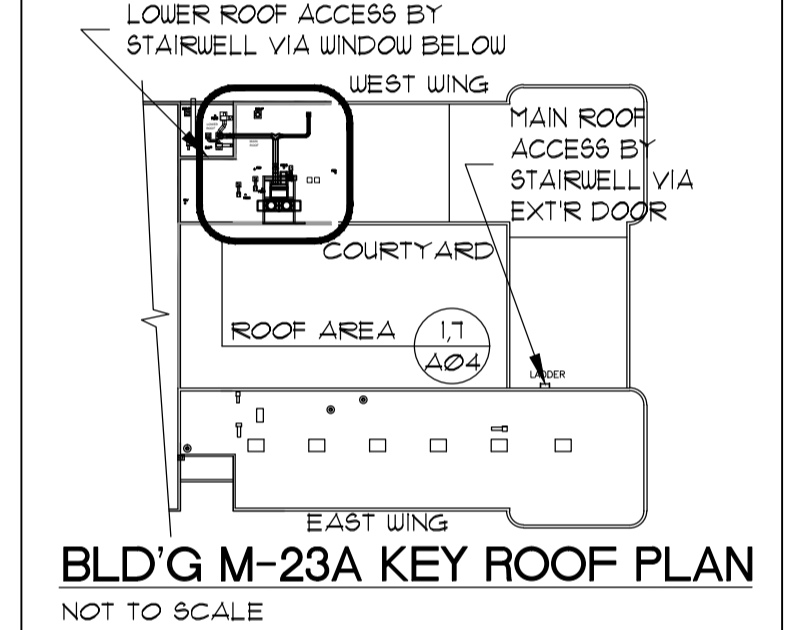


4 PLATFORM GUARDRAIL ELEVATIONS - LEFT SIDE  
 A04 1:25



5 PLATFORM GUARDRAIL ELEVATIONS - RIGHT SIDE  
 A04 1:25

**KEY PLAN**

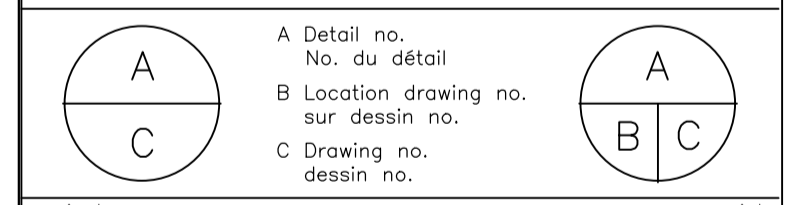


BLD'G M-23A KEY ROOF PLAN  
 NOT TO SCALE

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1	NOV 2014	ISSUED FOR TENDER	JCU
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Date Printed: 28 NOV 2014 Date imprimée:

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project: BUILDING M-23a RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164

project: MONTREAL ROAD CAMPUS

drawing: - PARTIAL ROOF PLANS - NEW ROOF PLATFORM: PLANS & ELEVATIONS

designed: S.Hebb / J.-C. Woods date: NOV 2014

drawn: J.-C. Woods scale: 1:25 and 1:50

checked: S. Hebb verified: A04 of/de A05

approved: B. Vallieres / R. Craig sheet: A1-004452-02

dwg.no.: 3966 - A04  
 Acad File: 3966-A01\_A05-NOV2014

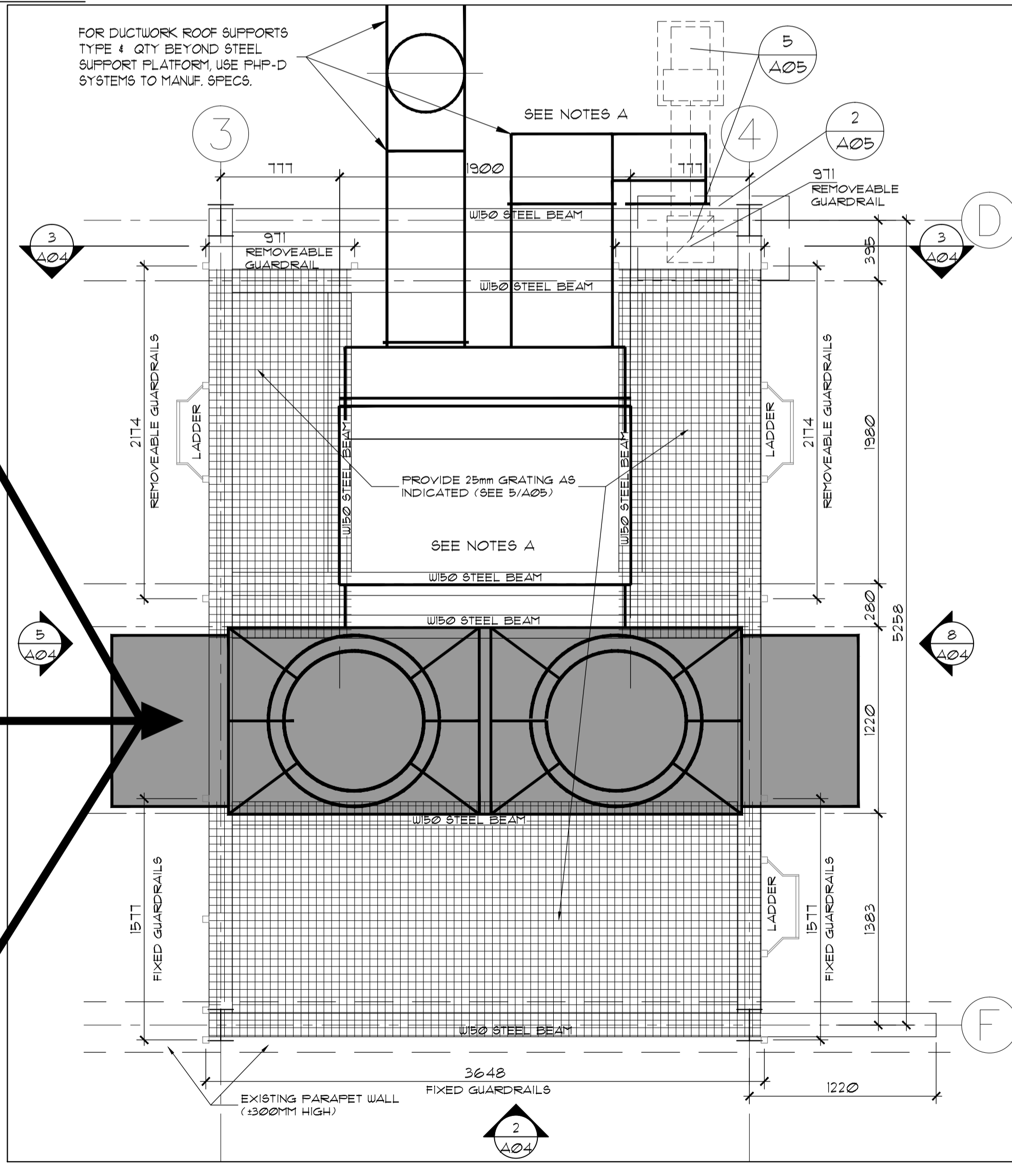


4 PICTURE - HVAC UNIT AT SUSSEX CAMPUS  
 SCALE = N/A

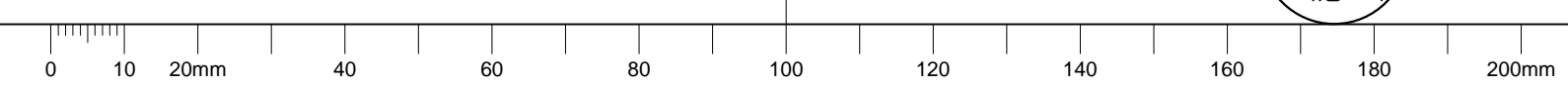
- NOTES B:
- EXISTING UNIT TO BE REMOVED, DISMANTLED AND TRANSPORTED BY OTHERS FROM SUSSEX CAMPUS - N.I.C.
  - REFER TO ADMINISTRATION OF CONTRACT ON COORDINATION OF DELIVERY AND INSTALLATION OF RE-LOCATED UNIT ONTO M23a ROOFTOP AT MONTREAL ROAD CAMPUS.
  - GENERAL CONTRACTOR TO COORDINATE ACTUAL SIZE WITH STRUCTURAL STEEL PLATFORM SUPPORTS. CENTERLINE OF W150 BEAMS TO BE ALIGNED WITH REQUIRED SUPPORTS.



6 PICTURE - HVAC UNIT AT SUSSEX CAMPUS  
 SCALE = N/A



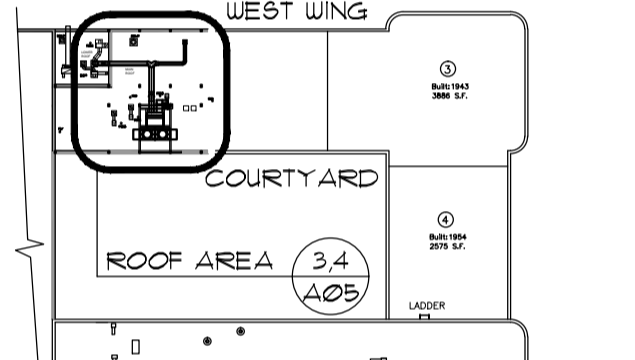
7 ROOFTOP NEW PLATFORM - PLAN VIEW  
 A04 1:25



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**KEY PLAN**

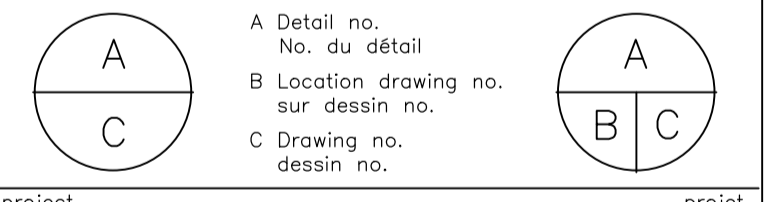


**BLD'G M-23A KEY ROOF PLAN**  
NOT TO SCALE

No.	Date	Revision	By:
1	NOV 2014	ISSUED FOR TENDER	JCW
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Date Printed: 28 NOV 2014 Date imprimée: for same

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project: **BUILDING M-23a RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164**  
 MONTREAL ROAD CAMPUS

drawing: **- ROOF SECTION AND DETAILS - EXTENT OF NEW AND REMOVAL WORK**

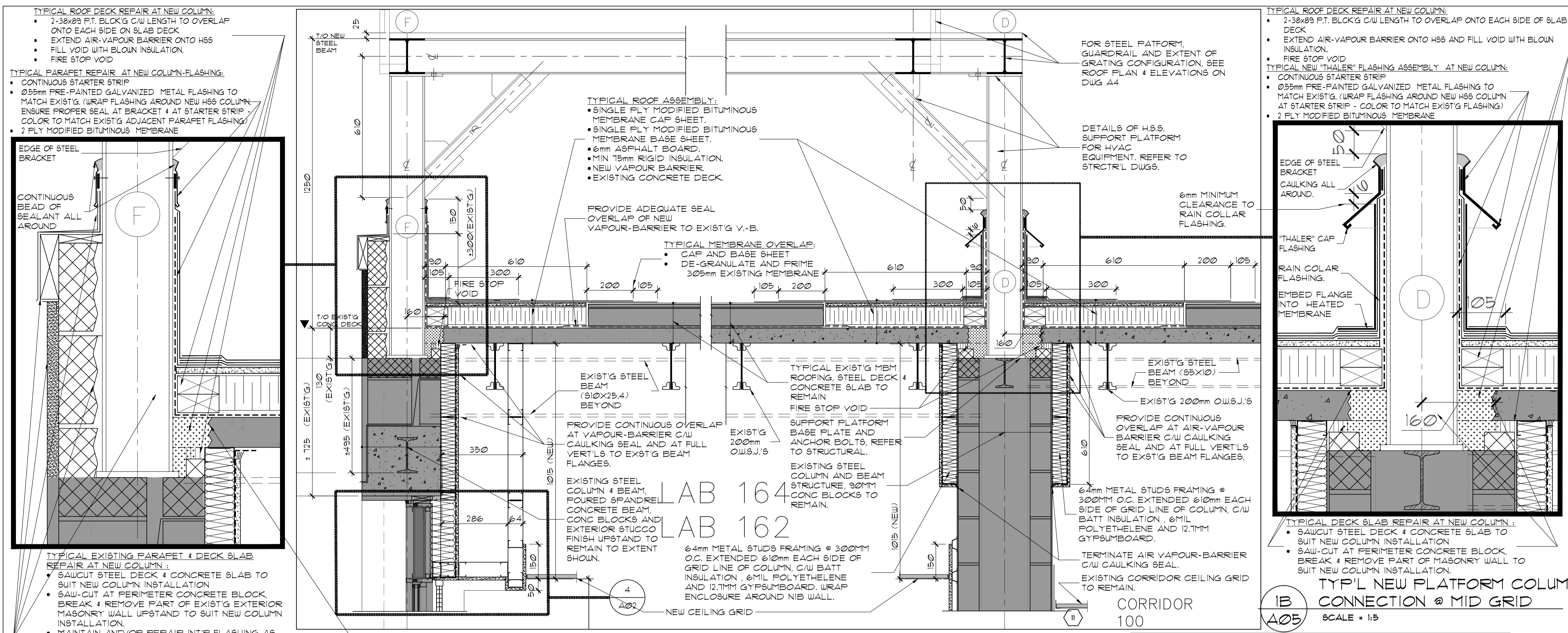
designed: **S.Hebb / J.-C. Woods** conço: **NOV 2014** date

drawn: **J.-C. Woods** dessin: **1:10 (and as NOTED)** scale: échelle

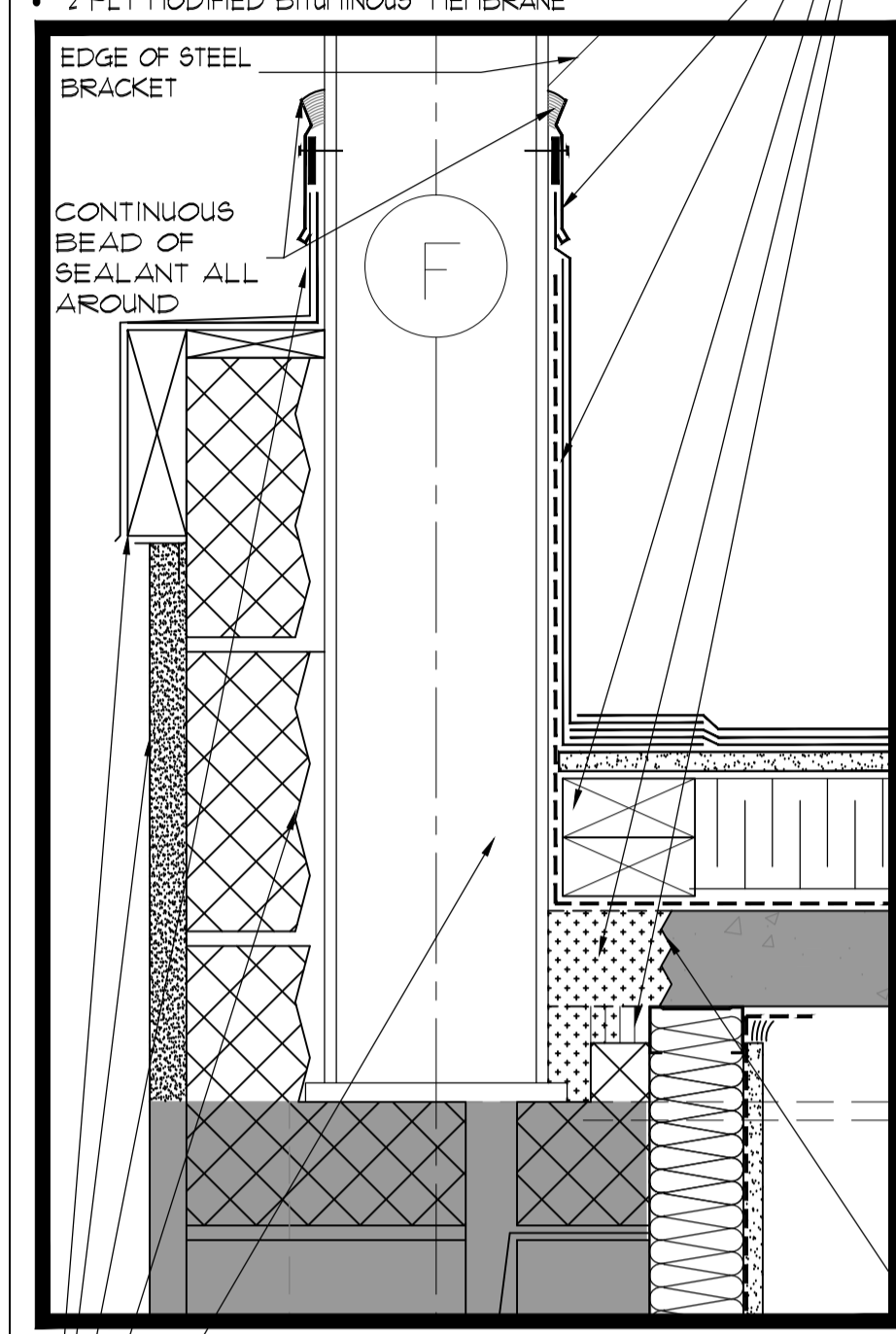
checked: **S. Hebb** vérifié: **A05 of/de A05** sheet: feuille

approved: **B. Vallieres / R. Craig** approuvé: **A1-004452-02** W.O.no. D.T.no.

dwg.no.: **3966 - A05** dessin no. Acad File: **3966-A01\_A05-NOV2014** fichier CDAO

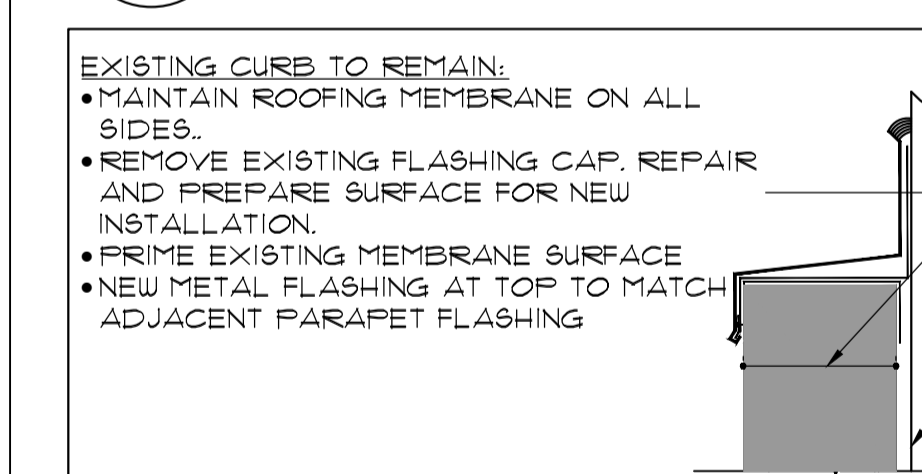


- TYPICAL ROOF DECK REPAIR AT NEW COLUMN:**
- 2-38x89 P.T. BLOCK'G C/W LENGTH TO OVERLAP ONTO EACH SIDE ON SLAB DECK
  - EXTEND AIR-VAPOUR BARRIER ONTO H86
  - FILL VOID WITH BLOWN INSULATION.
  - FIRE STOP VOID
- TYPICAL PARAPET REPAIR AT NEW COLUMN-FLASHING:**
- CONTINUOUS STARTER STRIP
  - Ø55mm PRE-PAINTED GALVANIZED METAL FLASHING TO MATCH EXIST'G (WRAP FLASHING AROUND NEW H86 COLUMN)
  - ENSURE PROPER SEAL AT BRACKET & AT STARTER STRIP
  - COLOR TO MATCH EXIST'G ADJACENT PARAPET FLASHING
  - 2 PLY MODIFIED BITUMINOUS MEMBRANE

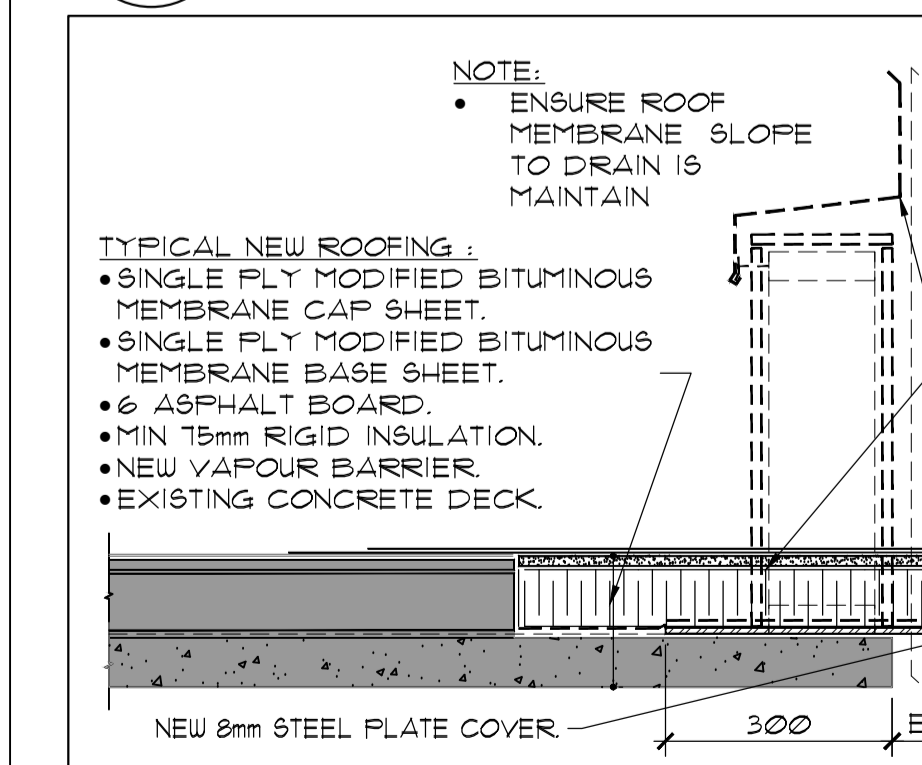


- TYPICAL EXISTING PARAPET & DECK SLAB REPAIR AT NEW COLUMN:**
- SAWCUT STEEL DECK & CONCRETE SLAB TO SUIT NEW COLUMN INSTALLATION
  - SAW-CUT AT PERIMETER CONCRETE BLOCK, BREAK & REMOVE PART OF EXIST'G EXTERIOR MASONRY WALL UPSTAND TO SUIT NEW COLUMN INSTALLATION
  - MAINTAIN AND/OR REPAIR INT'R FLASHING AS NEEDED
  - PROVIDE NEW OR REPAIR EXISTING FLASHING DETAIL, MAINTAIN EXISTING CONTINUITY INTO ADJACENT OVERLAP, AND PROVIDE CAULKING SEAL TO MATCH.
  - PROVIDE ADEQUATE SEAL AT COLUMN FACE WITH STARTER STRIP AND FLASHING JUNCTION.
  - REPAIR EXPOSED STUCCO TO MATCH EXISTING.

**1A TYP'L NEW PLATFORM COLUMN CONNECTION AT PERIMETER END GRID**  
SCALE = 1:5

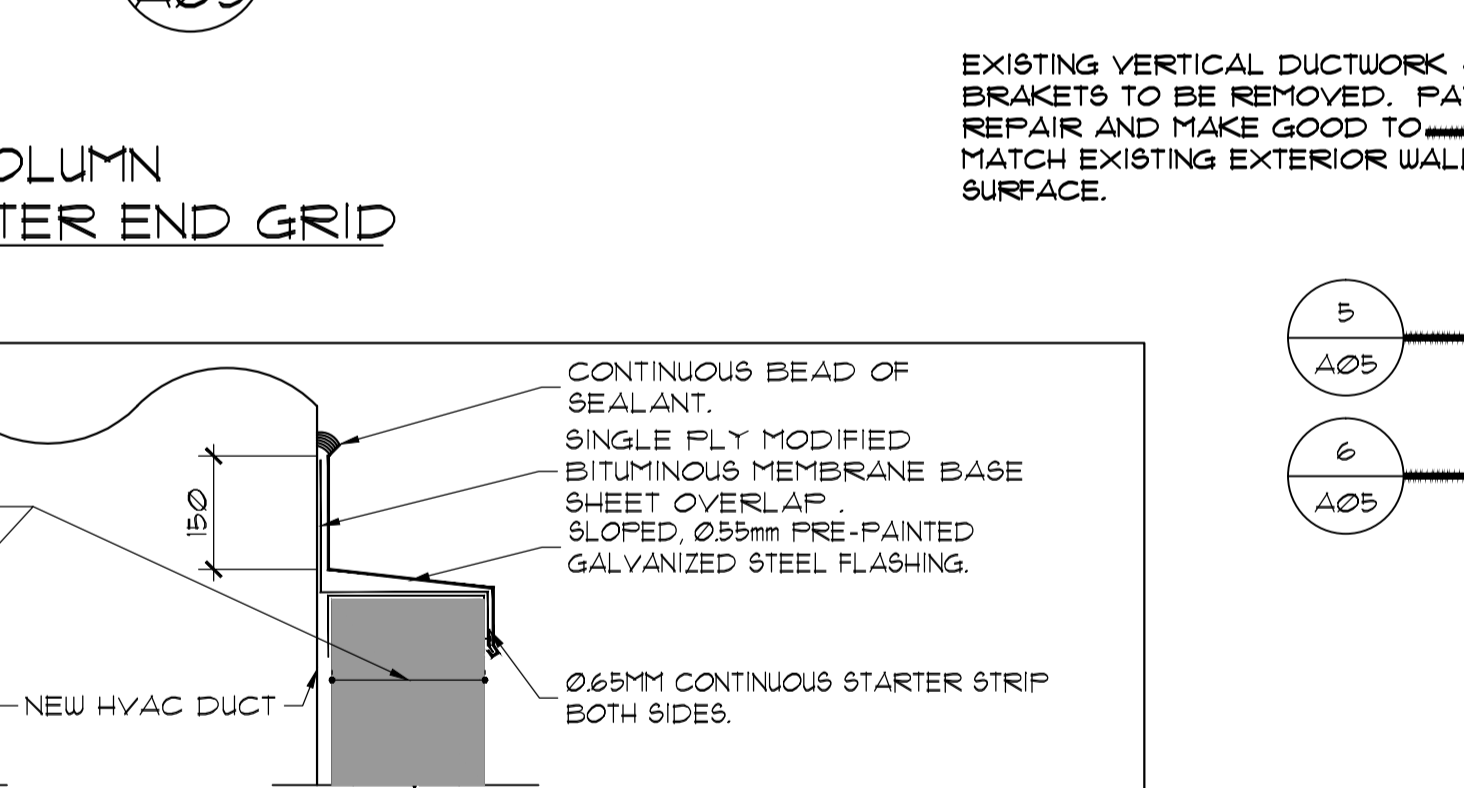


**2 NEW FLASHING DETAIL AT EXIST'G CURB (NEW DUCTWORK)**  
SCALE = 1:10

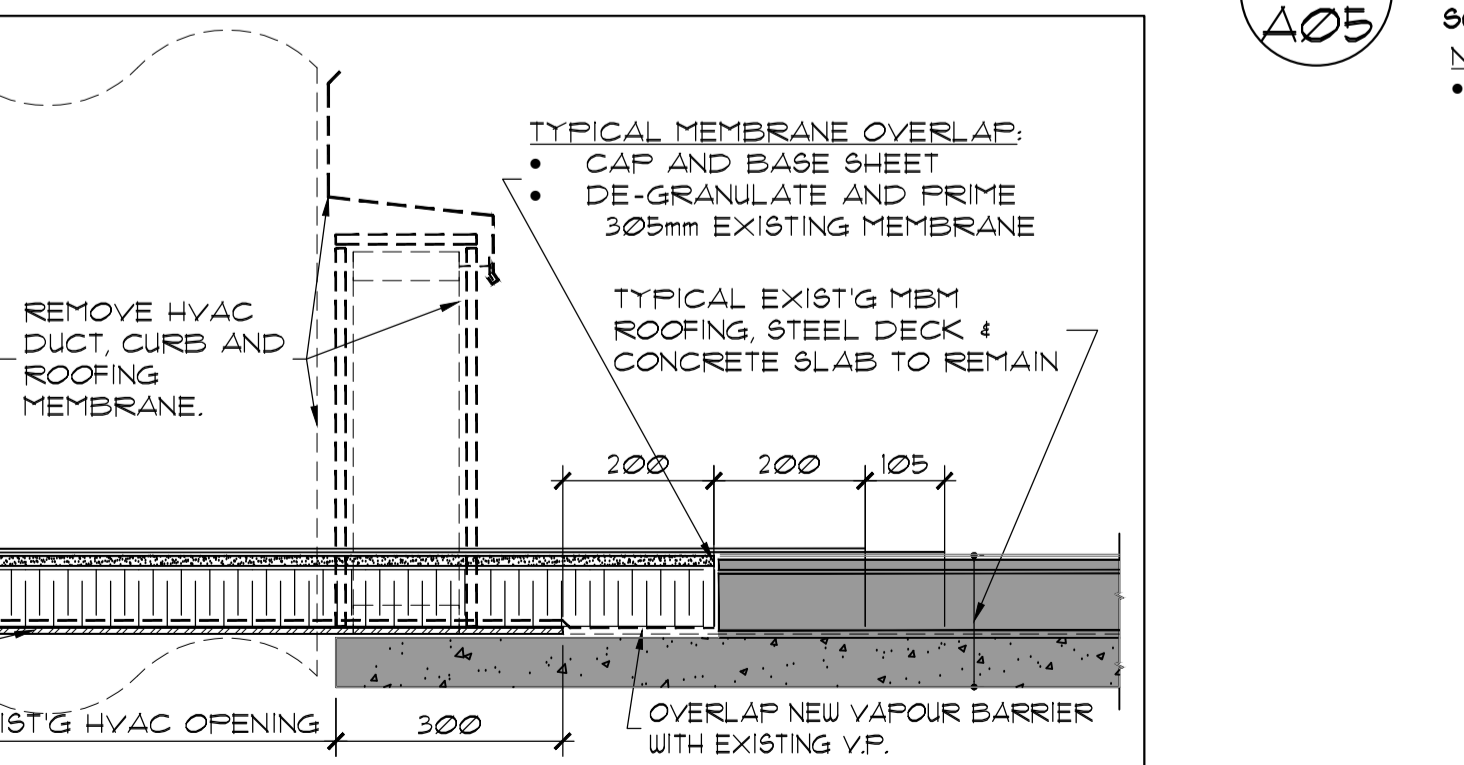


**5 UN-USED DUCT PENETRATION REPAIR SEAL**  
SCALE = 1:10

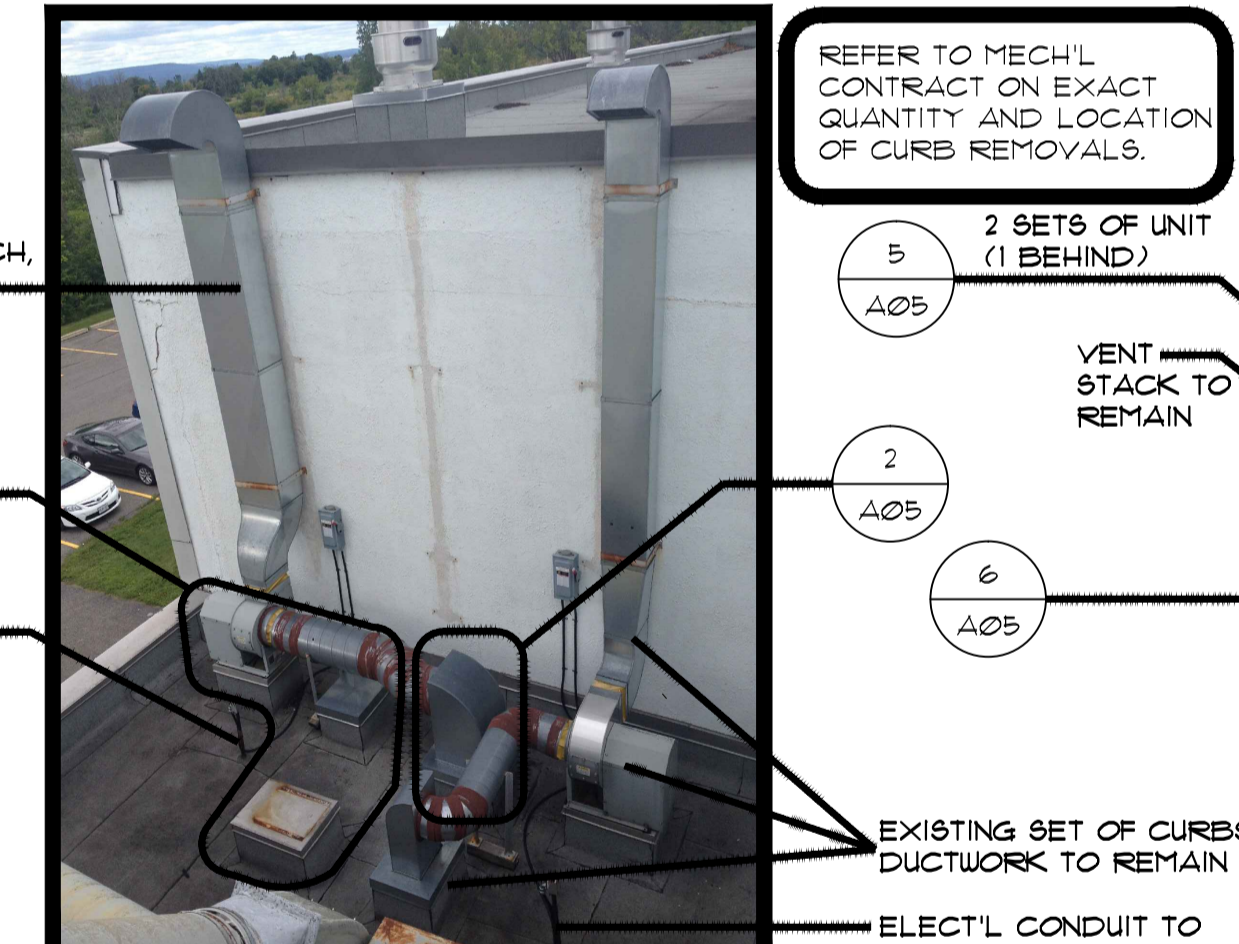
**1 NEW COLUMN CONNECTIONS FOR NEW PLATFORM OVER EXISTING ROOF DECK**  
SCALE = 1:10



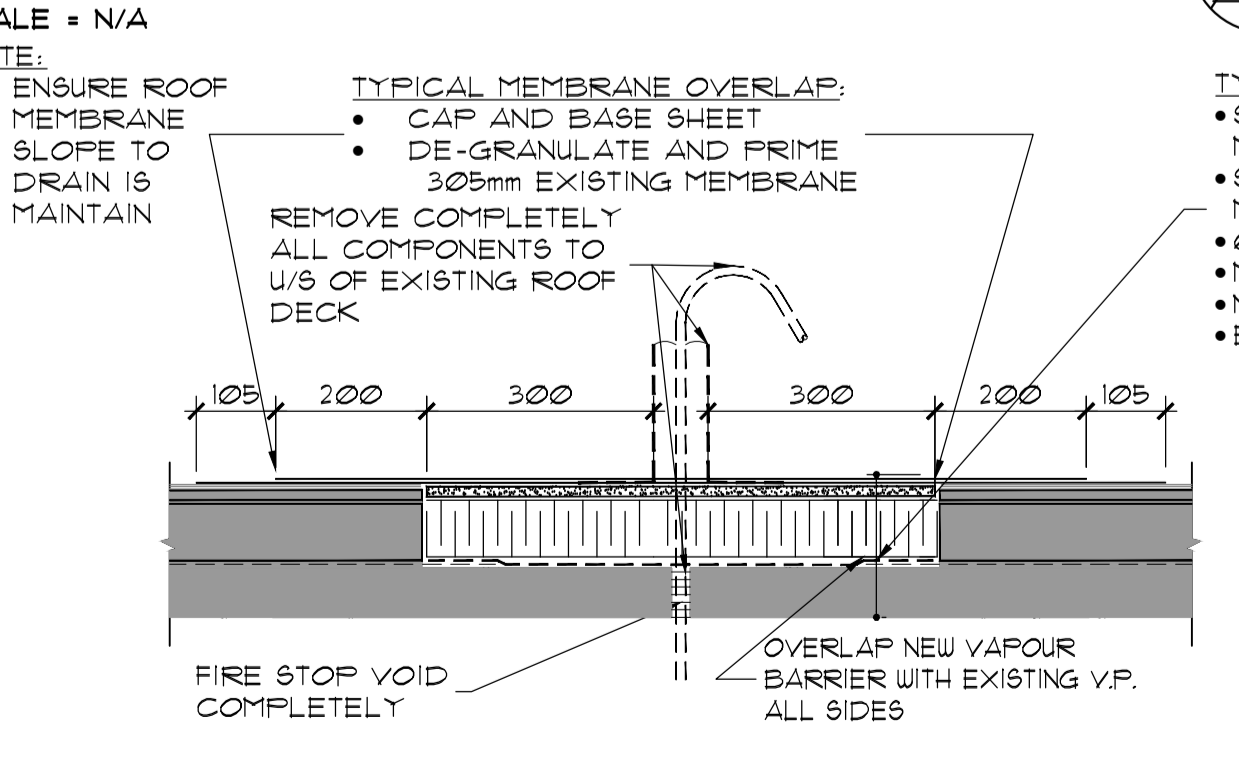
**3 PICTURE (LOWER WEST ROOF AREA): EXTENT OF HVAC REMOVAL**  
SCALE = N/A



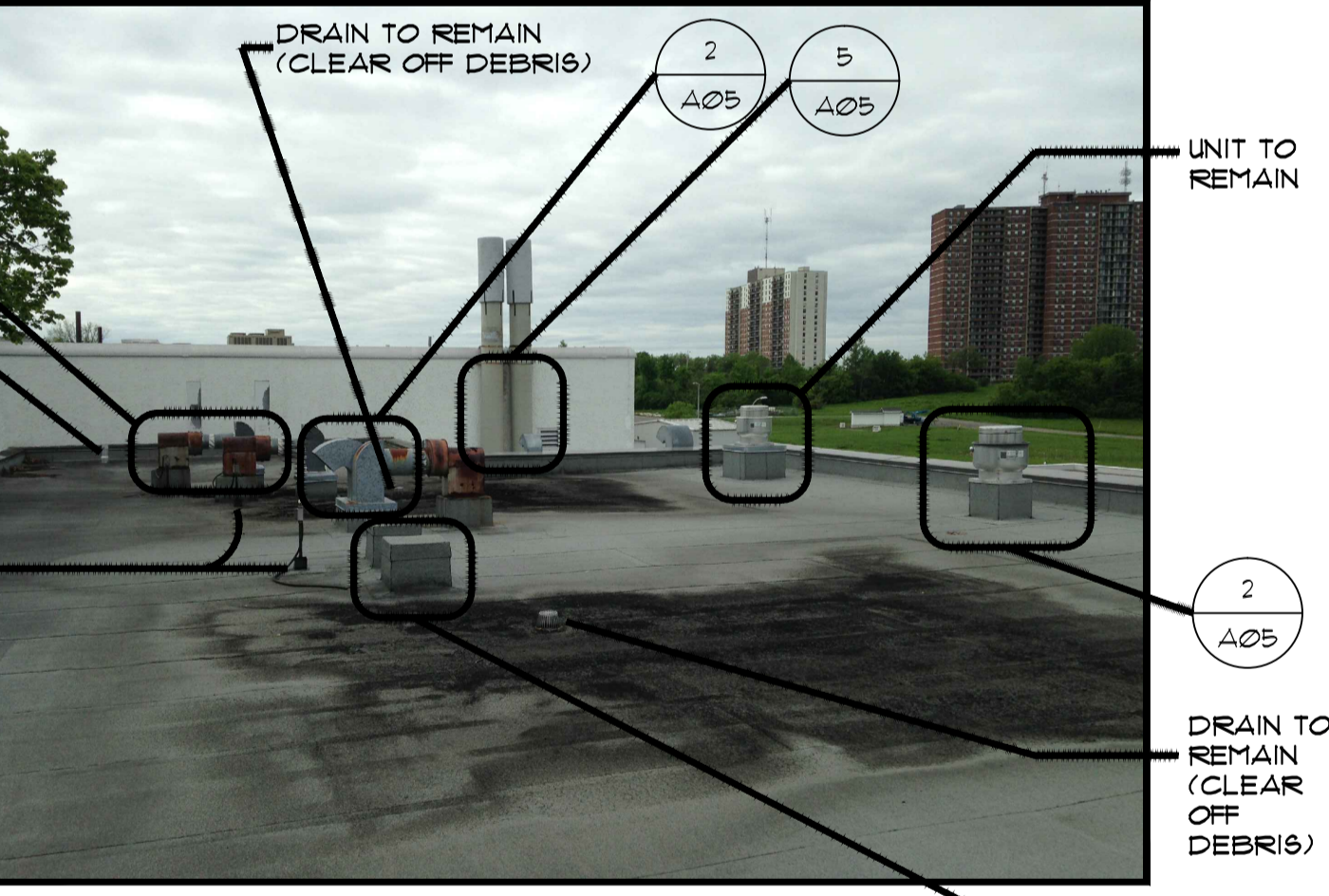
**6 ELECT'L CONDUIT REMOVAL**  
SCALE = 1:10



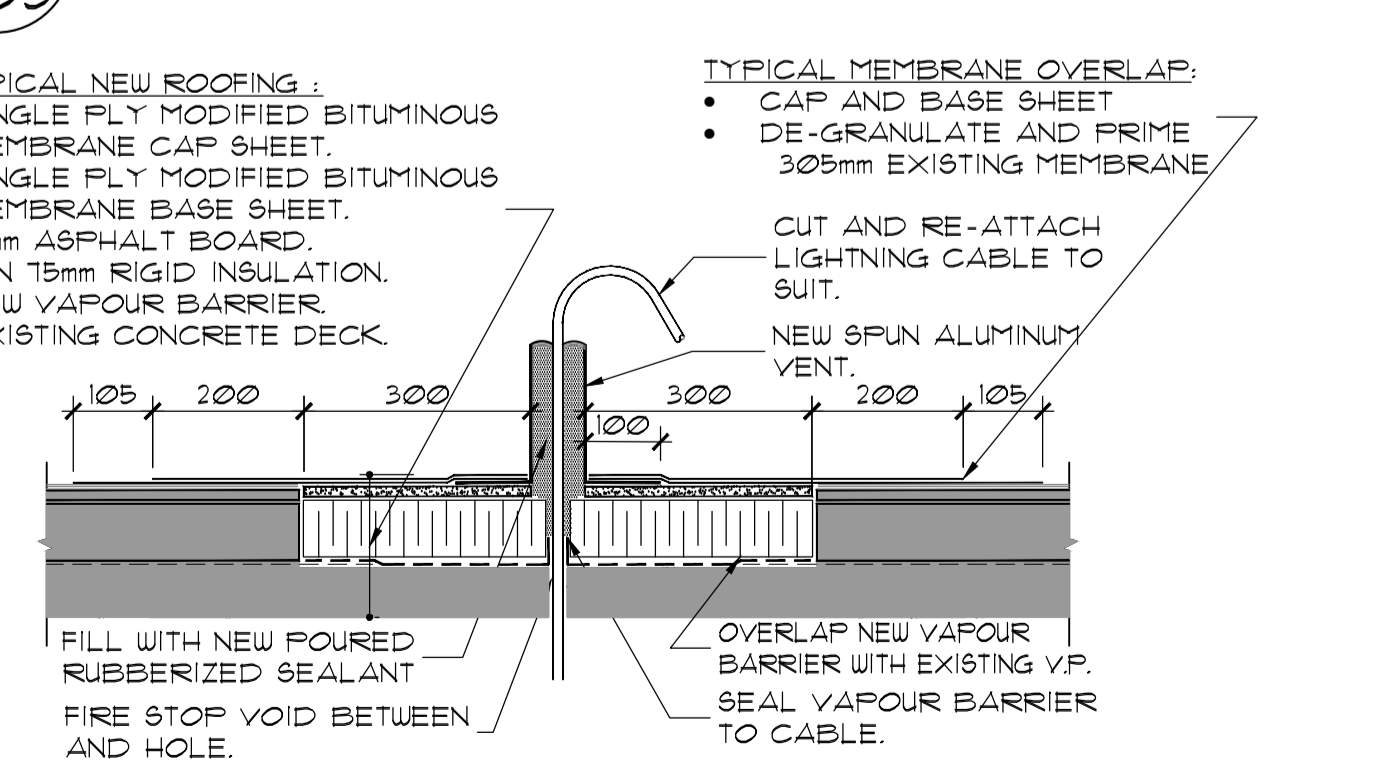
**4 PICTURE (MAIN WEST ROOF): EXTENT OF HVAC REMOVAL**  
SCALE = N/A



**7 NEW ELECT'L CONDUIT**  
SCALE = 1:10



**2 TYP'L NEW PLATFORM COLUMN CONNECTION @ MID GRID**  
SCALE = 1:5

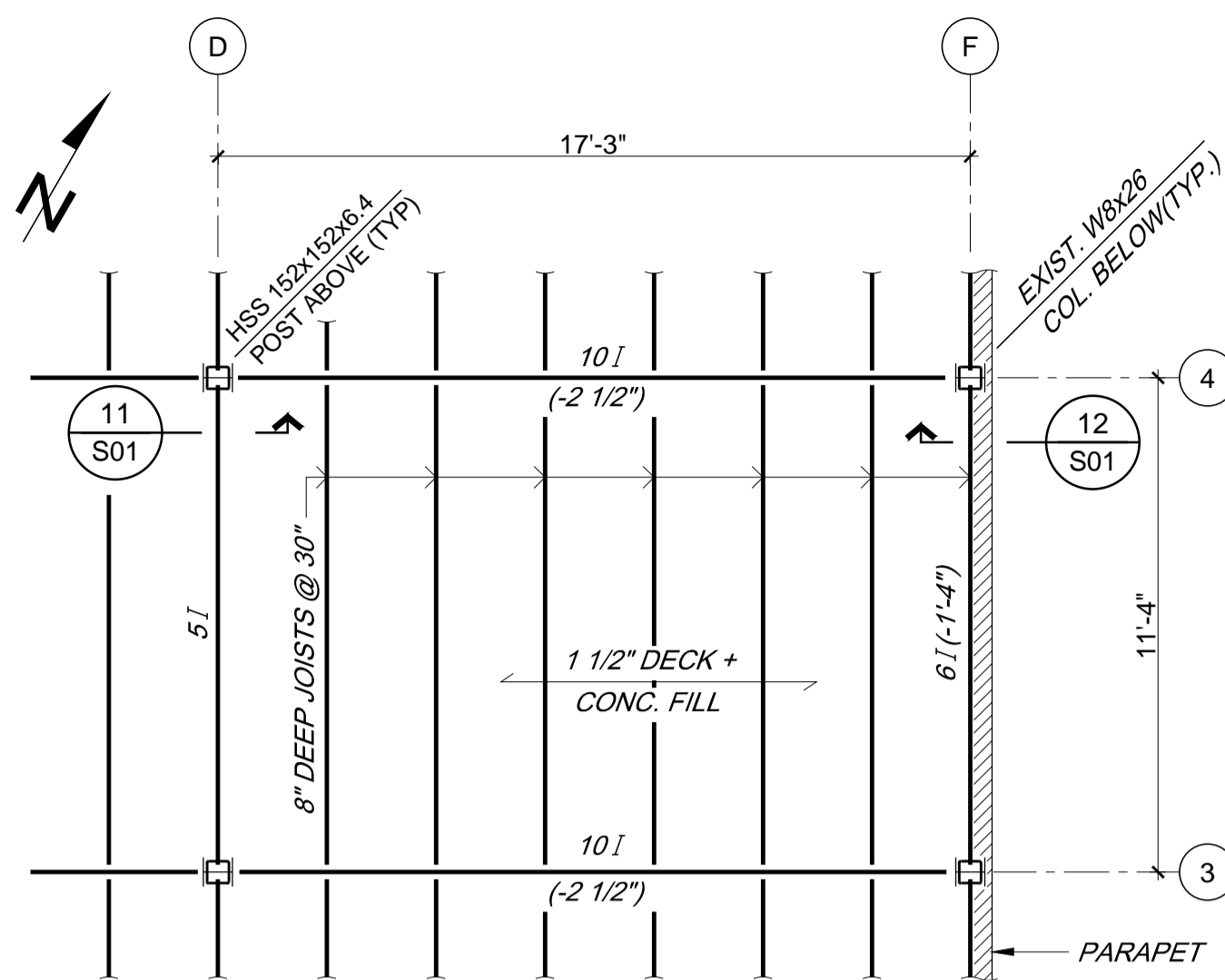


**4 TYPICAL ROOF DECK REPAIR AT NEW COLUMN:**

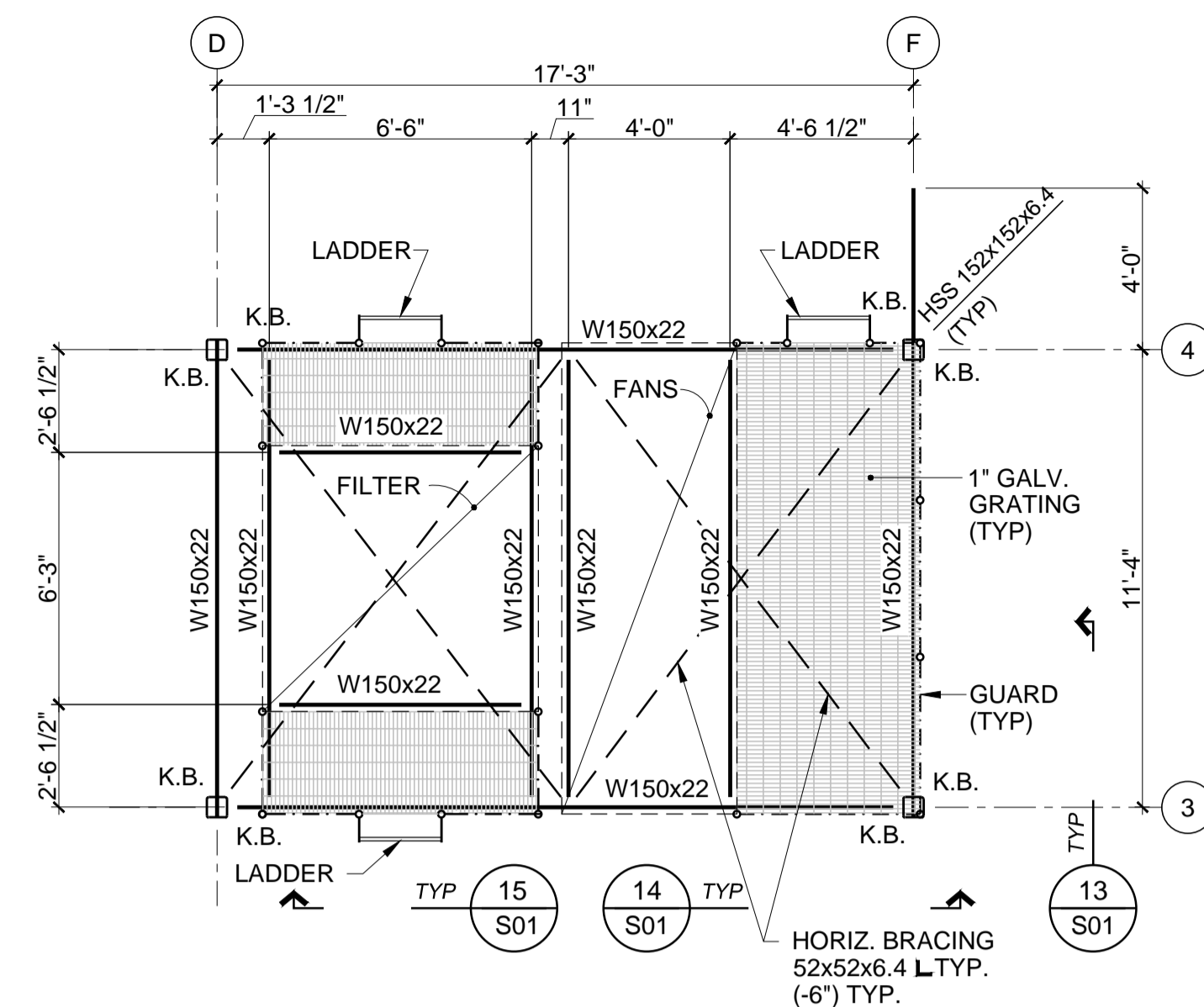
- 2-38x89 P.T. BLOCK'G C/W LENGTH TO OVERLAP ONTO EACH SIDE OF SLAB DECK
- EXTEND AIR-VAPOUR BARRIER ONTO H86 AND FILL VOID WITH BLOWN INSULATION.
- FIRE STOP VOID

**TYPICAL NEW 'THALER' FLASHING ASSEMBLY AT NEW COLUMN:**

- CONTINUOUS STARTER STRIP
- Ø55mm PRE-PAINTED GALVANIZED METAL FLASHING TO MATCH EXIST'G (WRAP FLASHING AROUND NEW H86 COLUMN AT STARTER STRIP - COLOR TO MATCH EXIST'G FLASHING)
- 2 PLY MODIFIED BITUMINOUS MEMBRANE



**PART ROOF PLAN** -ELEV. TOP OF CONC. - 338'-9 1/2"  
SCALE: 1/4" = 1'-0"  
-T.O.S. (U/N) - 338'-5 1/2"



**EQUIPMENT SUPPORT PLATFORM PLAN** -TOP OF GRATING - 343'-4 1/2"  
SCALE: 1/4" = 1'-0"  
-T.O.S. - 343'-3 1/2"

- FANS WEIGHT = 7500 LBS.
  - FILTER WEIGHT = 600 LBS.
  - DESIGN LIVE LOAD = 2.40 kPa (50 LBS./SQ. FT.)
- NOTE: THE CONTRACTOR SHALL COORDINATE THE EQUIPMENT DIMENSIONS WITH THE SUPPORT BEAMS SHOWN.

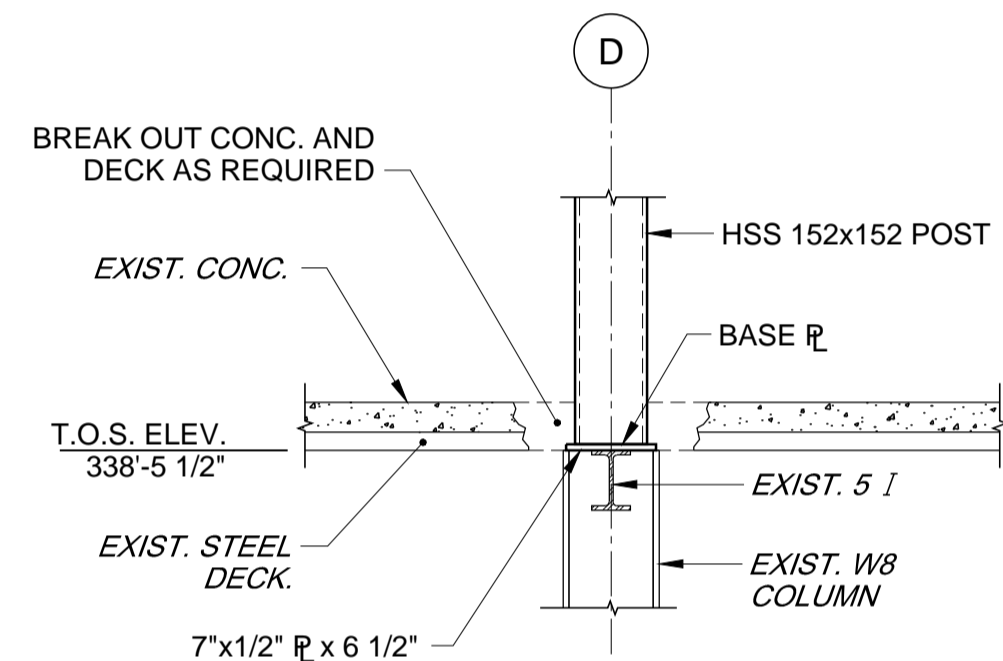
**GENERAL NOTES:**

**STRUCTURAL STEEL:**

- ALL STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20-04 AND CSA G40.21-04, GRADE 350. HSS MEMBERS SHALL BE CLASS 'H'.
- ALL WELDING MATERIALS SHALL CONFORM TO CSA W48.06.
- WELDING SHALL CONFORM TO CSA W59-03 (R2008) AND SHALL BE CARRIED OUT BY WELDERS QUALIFIED BY THE CANADIAN WELDING BUREAU.
- BOLTS SHALL BE 3/4" DIA. GALVANIZED HIGH TENSILE BOLTS CONFORMING TO ASTM A325.
- ALL STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED TO CAN/CSA - G164, MINIMUM ZINC COATING OF 600 grams/m<sup>2</sup>.
- THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHOP DRAWINGS OF THE STRUCTURAL STEEL, INCLUDING ERECTION AND SHOP DETAIL DRAWINGS BEFORE STARTING THE WORK.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE BEFORE STARTING FABRICATION.
- ALL STRUCTURAL STEEL WORK SHALL CONFORM TO CSA S16-09.

**GRATING:**

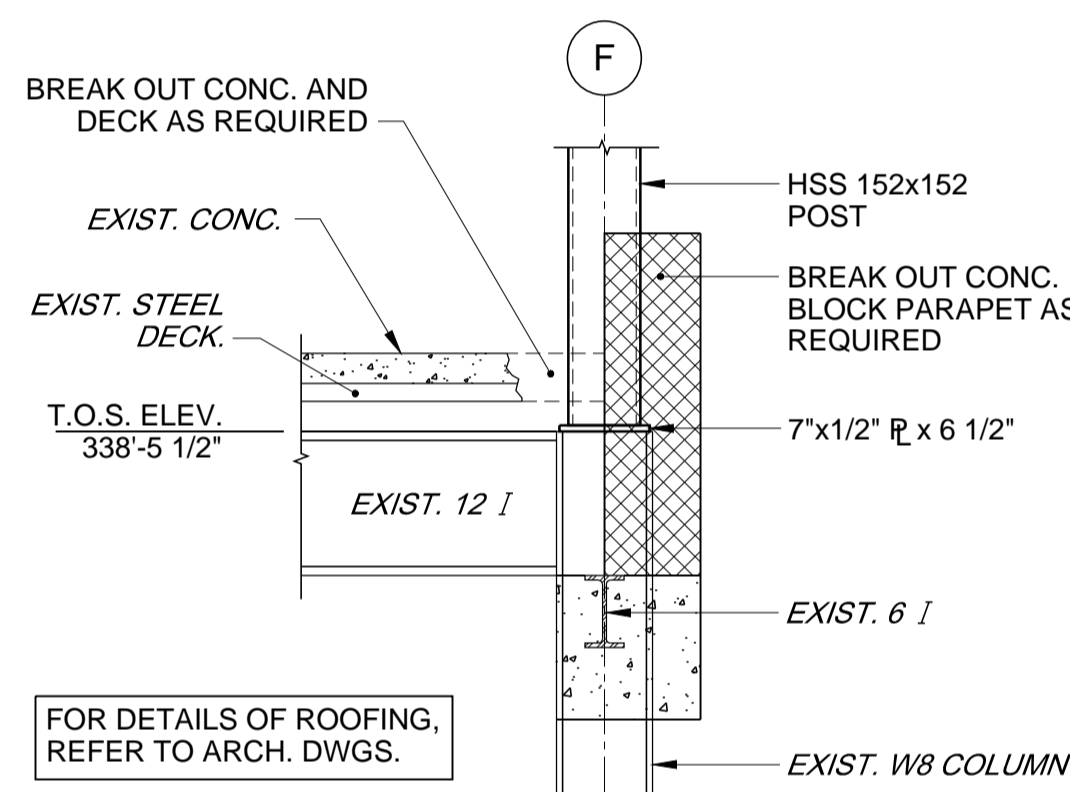
- ALL GRATING SHALL BE HOT DIPPED GALVANIZED.
- GRATING SHALL BE 1" DEEP, AND DESIGNED FOR THE LIVE LOAD NOTED ON PLAN.
- GRATING SHALL BE BANDED.
- GRATING SHALL BE REMOVABLE.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE GRATING.



FOR DETAILS OF ROOFING, REFER TO ARCH. DWGS.

**11 SECTION**  
S01 SCALE: 3/4" = 1'-0"

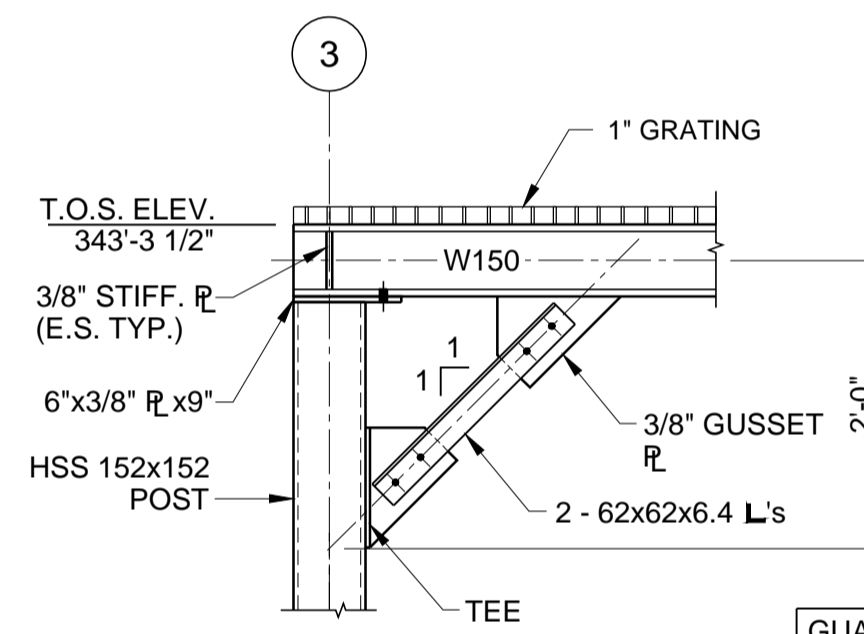
(TYPICAL DETAIL AT BASE OF NEW POSTS ON GRID LINE D)



FOR DETAILS OF ROOFING, REFER TO ARCH. DWGS.

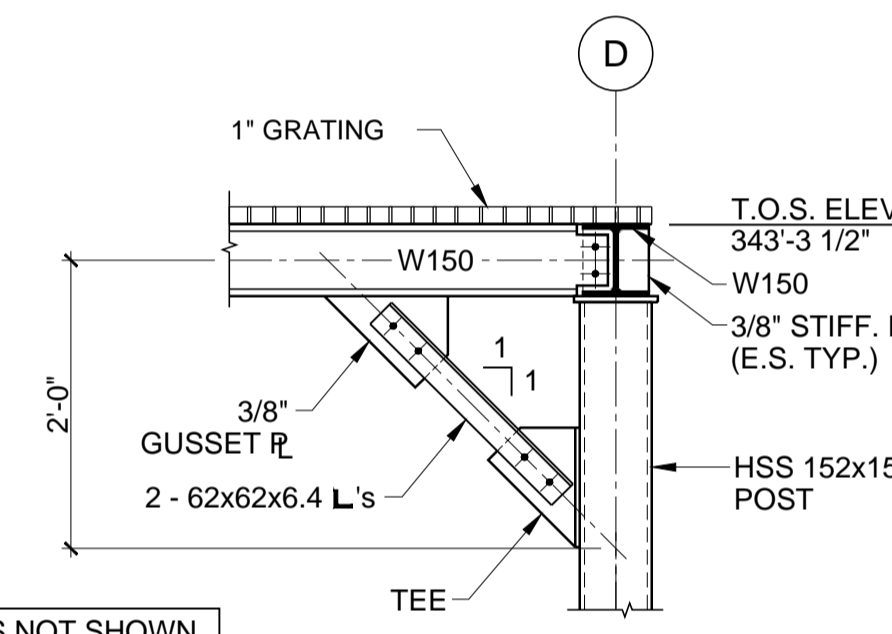
**12 SECTION**  
S01 SCALE: 3/4" = 1'-0"

(TYPICAL DETAIL AT BASE OF NEW POSTS ON GRID LINE F)

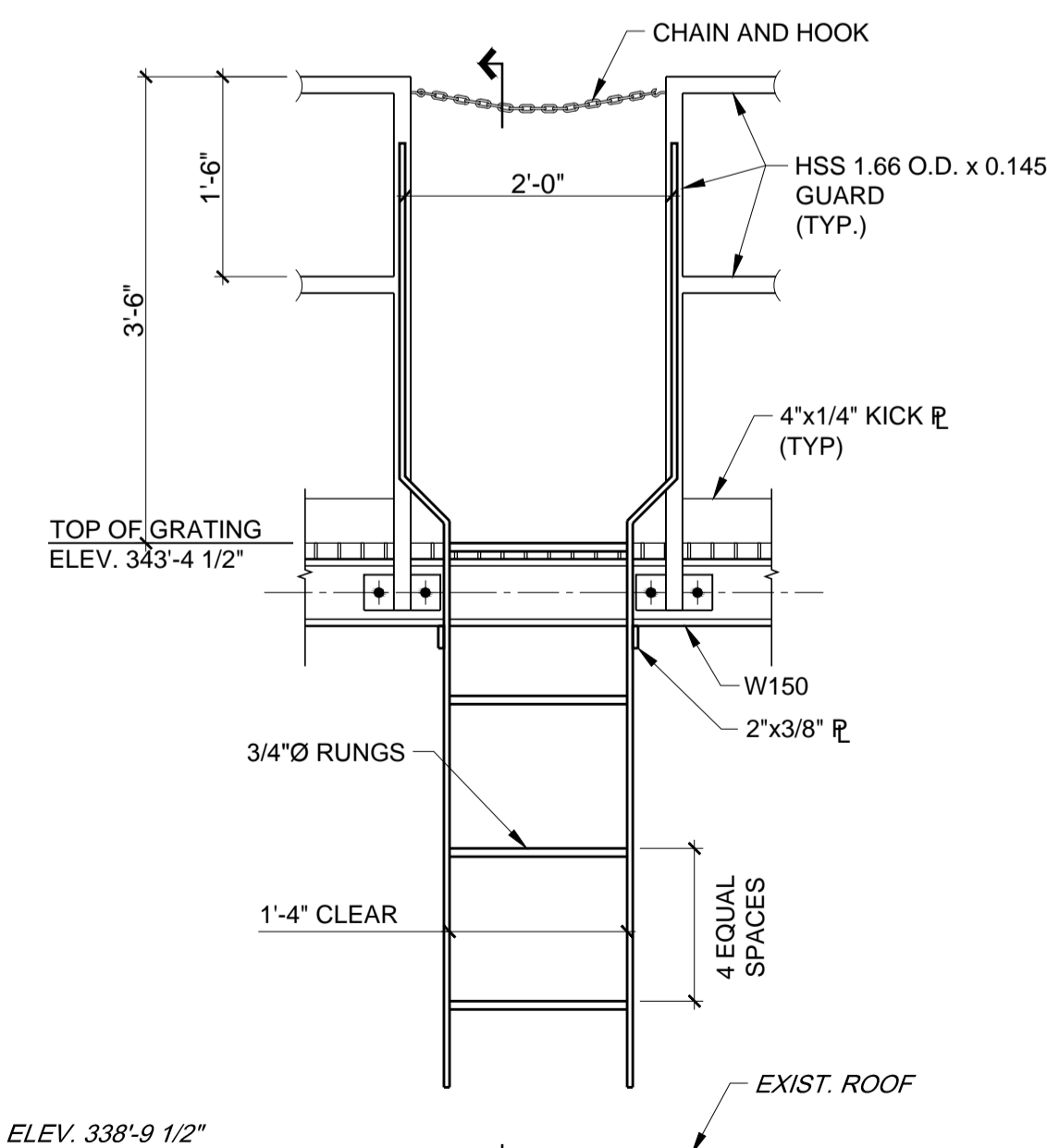


GUARDS NOT SHOWN

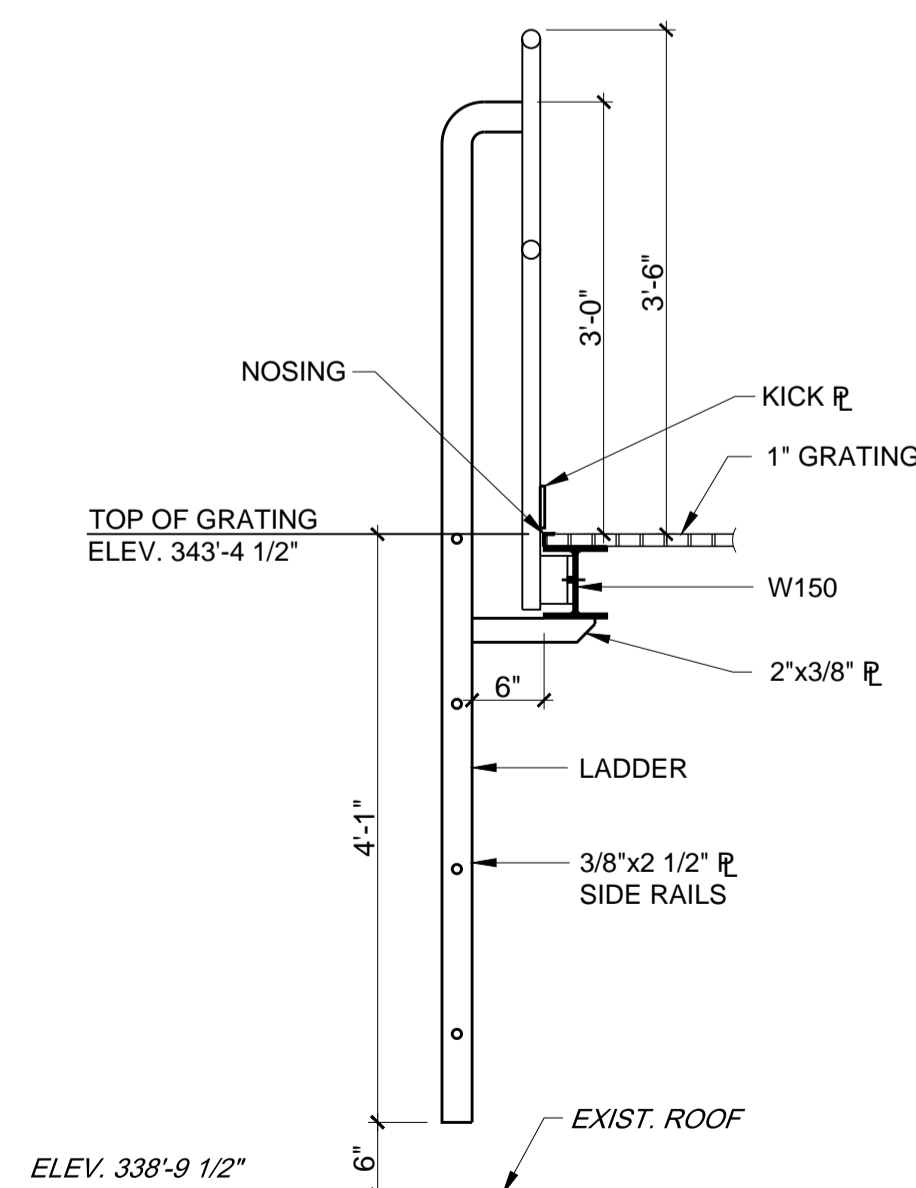
**13 SECTION**  
S01 SCALE: 3/4" = 1'-0"



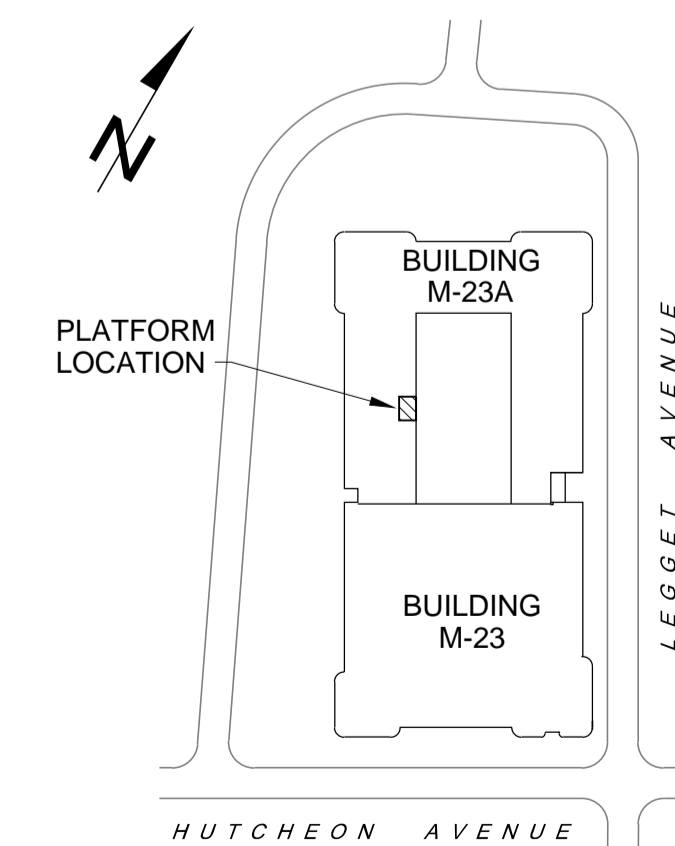
**14 SECTION**  
S01 SCALE: 3/4" = 1'-0"



**15 SECTION**  
S01 SCALE: 3/4" = 1'-0"



**16 SECTION**  
S01 SCALE: 3/4" = 1'-0"



**KEY PLAN**



No.	Date	Revision	By:	Pac:
1	OCT. 31/14	ISSUED FOR TENDER	R.L.	
0	JULY 21/14	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.

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 / projet  
**BUILDING M-23A RENOVATIONS - NANOLAB ROOMS 158, 160, 162 AND 164**  
MONTREAL ROAD CAMPUS

drawing / dessin  
**STRUCTURAL: ROOF PLANS AND DETAILS**

designed / conçu	date	date
R.L.	JULY, 2014	
drawn / dessiné	scale / échelle	échelle
C.B.	AS SHOWN	
checked / vérifié	sheet / feuille	feuille
R.L.	S01 of/ de S01	
approved / approuvé	W.O.no.	D.T.no.

dwg. no. / dessin no.  
**3966 - S01**

**GENERAL NOTES**

- 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.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE, FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

**LEGENDS**

- EXISTING
- DEMOLITION
- NEW
- PNEUMATIC THERMOSTAT
- DIFFUSER (ROUND/SQUARE)
- DCW - DOMESTIC COLD WATER
- DHW - DOMESTIC HOT WATER
- CA - COMPRESSED AIR
- SAN - SANITARY DRAIN
- HWS - HOT WATER SUPPLY
- HWR - HOT WATER RETURN
- PG - PROPANE GAS
- O2 - OXYGEN
- STEAM TRAP
- PNEUMATIC CONTROL VALVE

No.	Date	Revision	By: Par:
1	NOV. 2014	ISSUED FOR TENDER	Z.M.
2	NOV. 2014	ISSUED FOR REVIEW	Z.M.

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

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

project: **BUILDING M-23A  
ROOM 164 NANO-LAB  
RENOVATIONS**

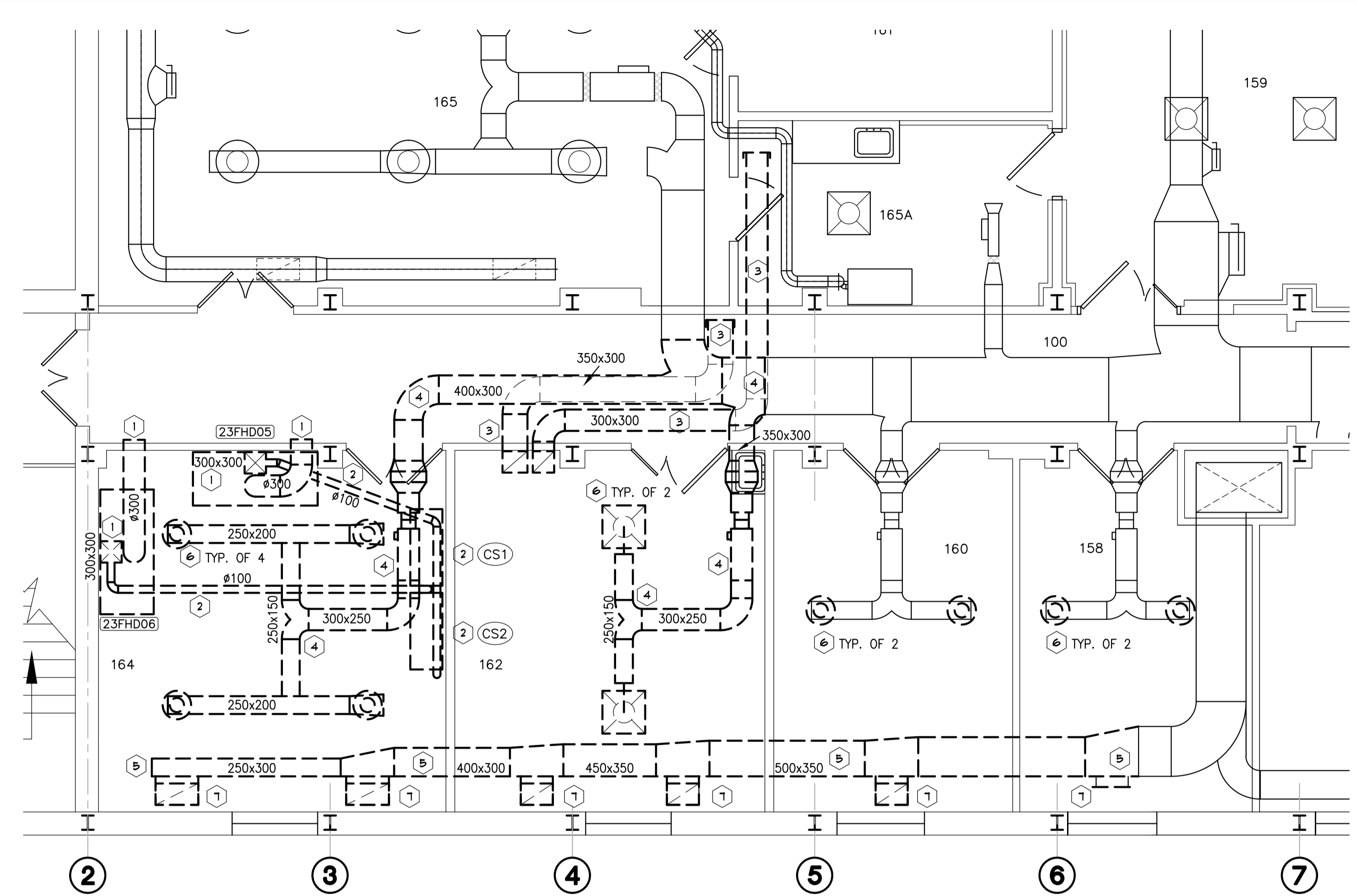
project: \_\_\_\_\_

drawing: **MECHANICAL  
DEMOLITION PLANS**

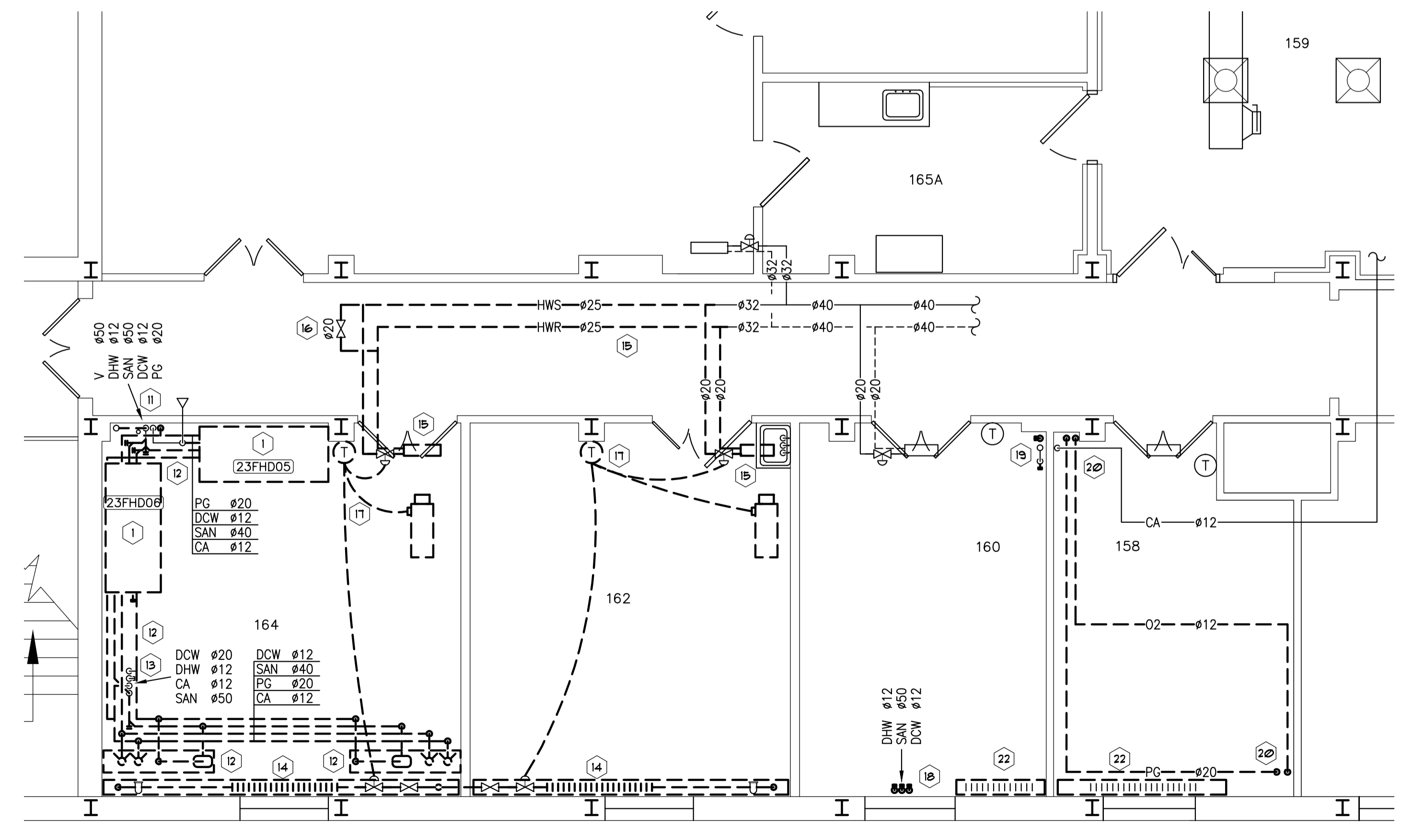
dessin: \_\_\_\_\_

designed	conçu	date	date
Z. M.		JUL. 2014	
drawn	dessiné	scale	échelle
Z. M.		AS NOTED	
checked	vérifié	sheet	feuille
R. C.		M01 of/da M03	
approved	approuvé	W.O.no.	D.T.no.
B. V.		A1-004452-15-03	

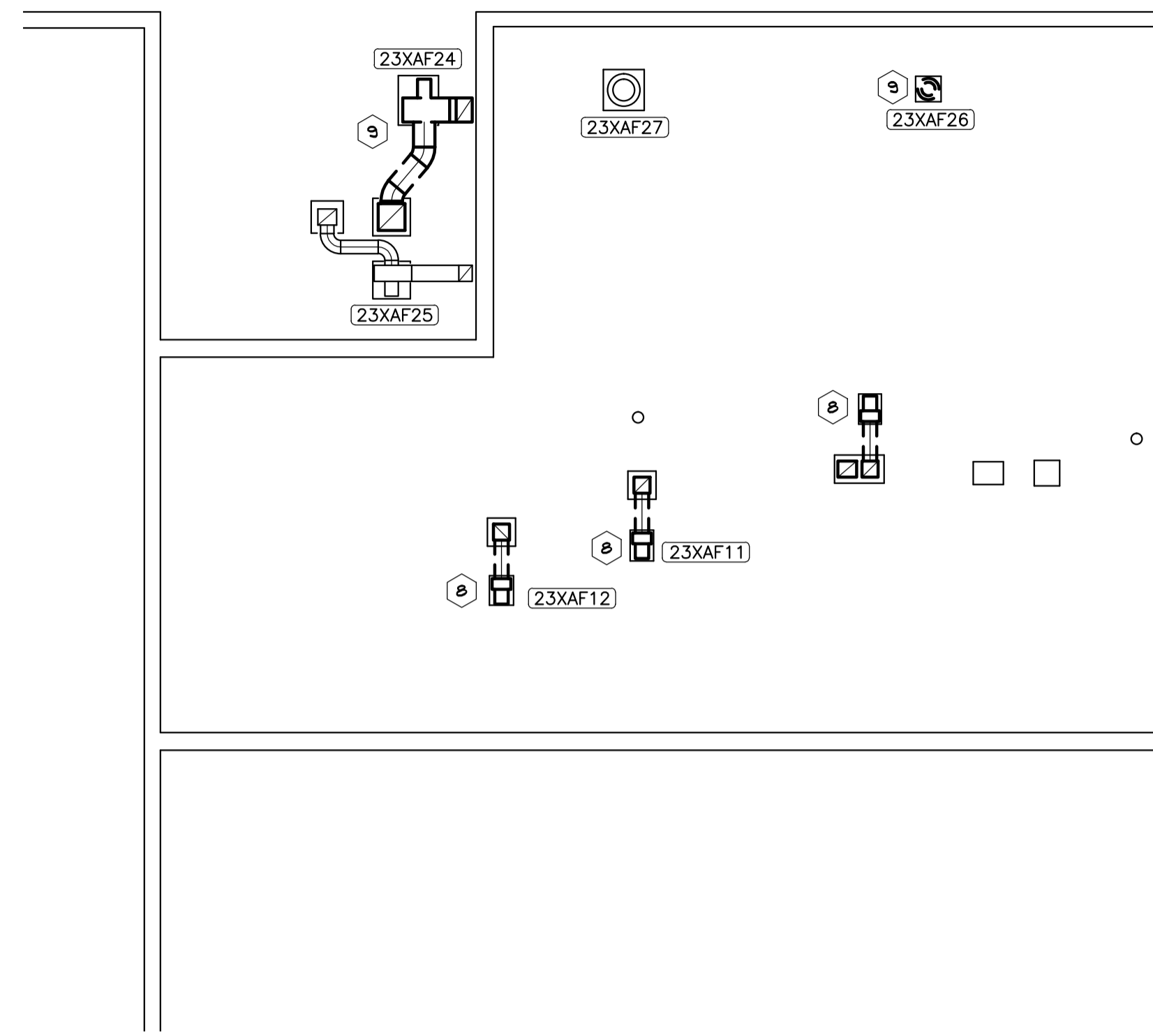
dwg.no. **3966-M01** dessin no. \_\_\_\_\_



**1 DEMOLITION PLAN - DUCTWORK**  
M-01 SCALE 1:50



**3 DEMOLITION PLAN - PIPING**  
M-01 SCALE 1:50

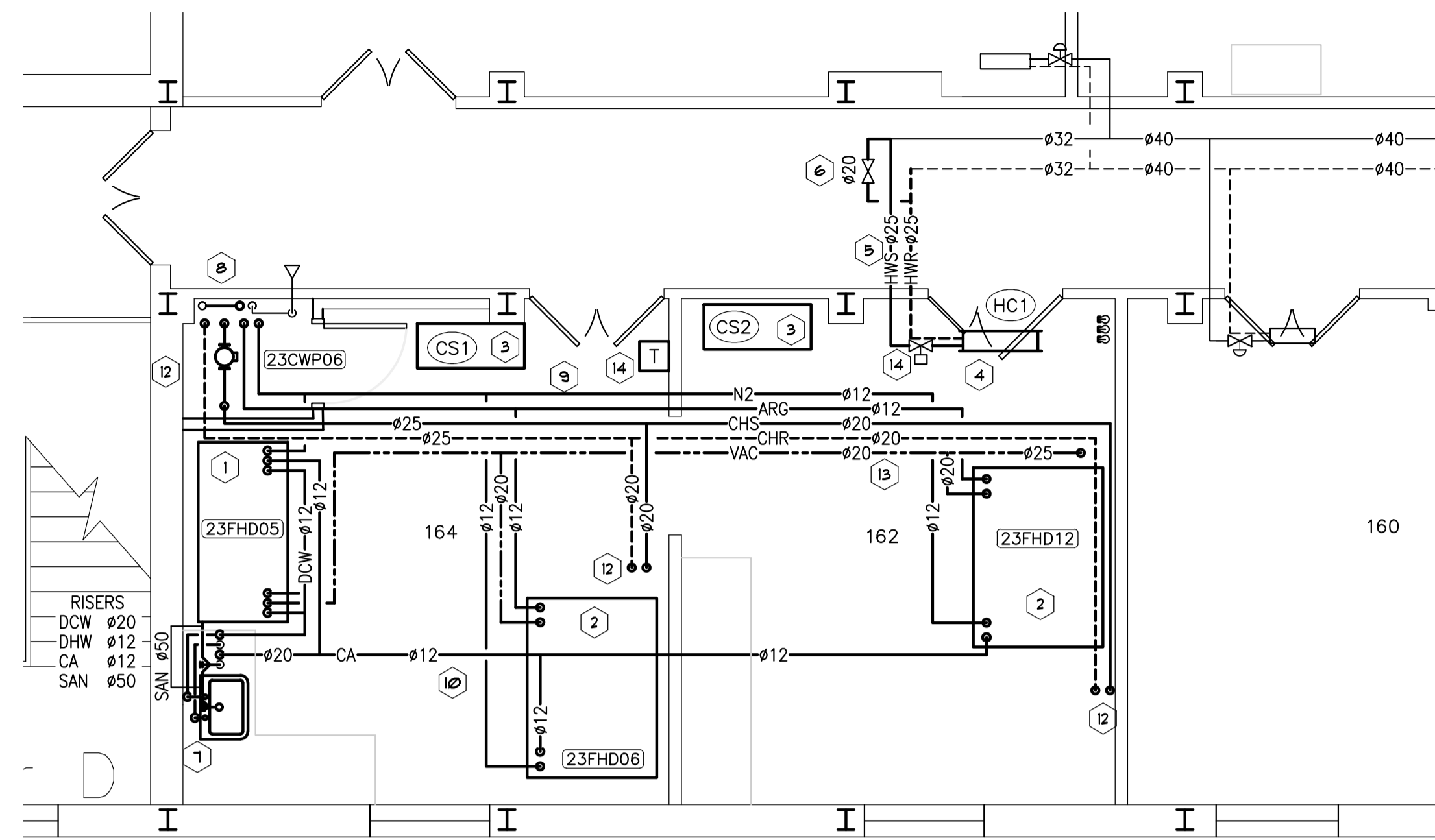


**2 DEMOLITION PLAN - ROOF**  
M-01 SCALE 1:100

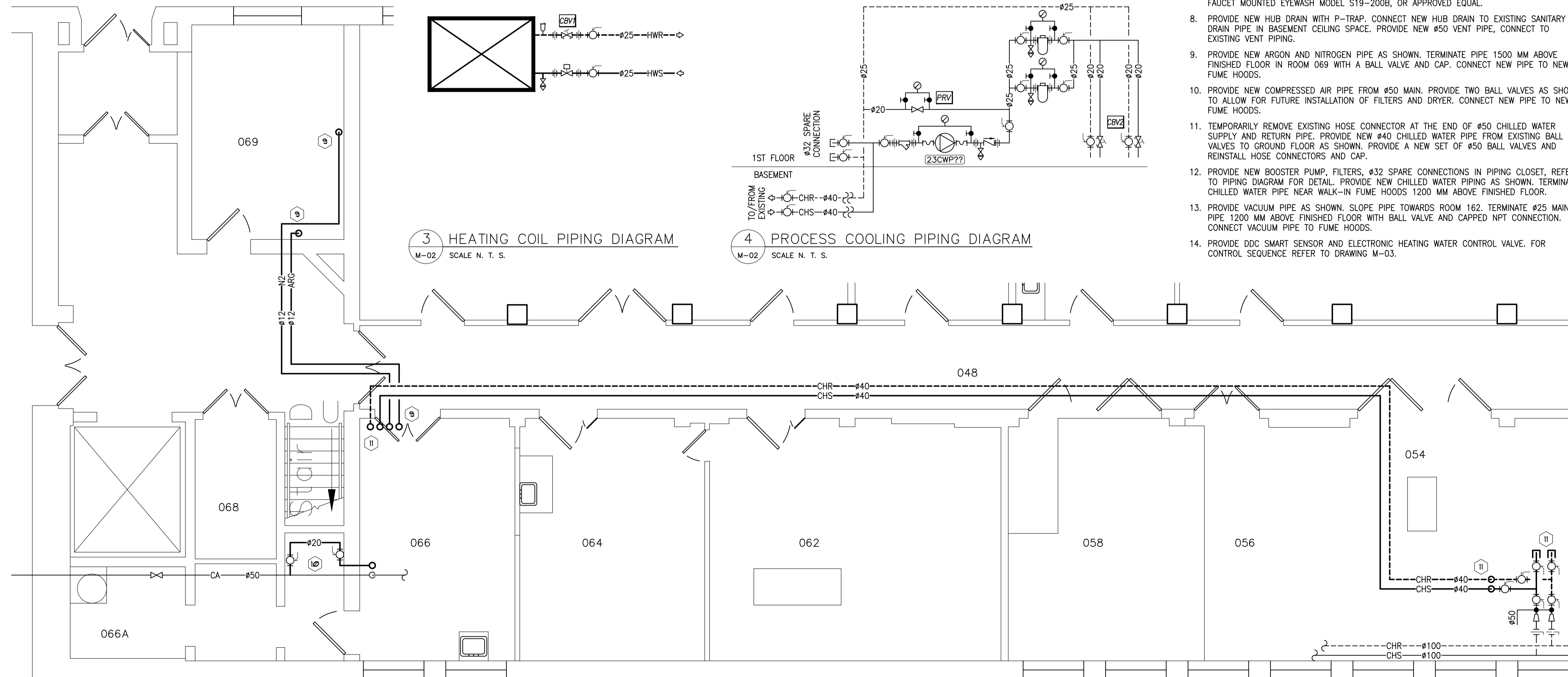
**MECHANICAL NOTES:**

- DISCONNECT AND REMOVE TWO EXISTING FUME HOODS C/W RELATED DUCTWORK AND PIPING AS SHOWN.
- DISCONNECT AND REMOVE TWO EXISTING FLAMMABLE STORAGE CABINETS C/W RELATED DUCTWORK. KEEP THE CABINETS FOR FUTURE USE.
- REMOVE ABANDONED EXHAUST DUCT AS SHOWN. ROOF PENETRATION AND CURB TO REMAIN FOR REUSE.
- REMOVE EXISTING SUPPLY AIR DUCT C/W BOOSTER HEATING COILS AND VAV BOXES AS SHOWN. CAP FOR FUTURE CONNECTION.
- REMOVE EXISTING RETURN AIR DUCT AND CAP FOR FUTURE CONNECTION AS SHOWN.
- REMOVE EXISTING SUPPLY DIFFUSERS.
- REMOVE EXISTING RETURN GRILLES.
- DISCONNECT AND REMOVE EXISTING EXHAUST FANS AND RELATED DUCT.
- DISCONNECT AND REMOVE EXISTING EXHAUST FANS AND PART OF EXHAUST DUCT BACK TO ROUND DUCTWORK INSIDE THE BUILDING. CAP FOR FUTURE CONNECTION.
- NOT USED.
- REMOVE GLASS SANITARY DRAIN PIPE TO CEILING SPACE BELOW AND CAP. EXISTING #50 VENT LINE TO REMAIN AND CAP FOR NEW CONNECTION. CAP EXISTING DOMESTIC HOT WATER PIPE.
- REMOVE SERVICE STRIP INCLUDING ALL FAUCETS, PRESSURE GAUGES, PRESSURE REGULATORS, CUP DRAINS, AND VALVES ETC. AS SHOWN. REMOVE DOMESTIC WATER, SANITARY DRAIN, AND PLUMBING VENT PIPING BACK TO VERTICAL MAIN AND CAP FOR FUTURE CONNECTION. REMOVE PROPANE GAS PIPING BACK TO VERTICAL MAIN SHUT OFF VALVE AND CAP. REMOVE EXISTING COMPRESSED AIR PIPE BACK TO MAIN IN BASEMENT AND CAP.
- REMOVE EXISTING SHUT OFF VALVES ON DOMESTIC COLD AND HOT WATER PIPING. REPLACE WITH BALL VALVES. PROVIDE NEW BALL VALVE ON VERTICAL COMPRESSED AIR PIPE.
- REMOVE EXISTING STEAM CONNECTORS C/W ALL RELATED VALVES AND STEAM TRAP. REMOVE LOW PRESSURE STEAM AND CONDENSATE DRAIN PIPING BACK TO MAIN IN BASEMENT CEILING AND CAP.
- REMOVE EXISTING HOT WATER RE-HEAT COILS AS SHOWN. REMOVE HOT WATER PIPING BACK AS SHOWN. PROVIDE NEW VALVES AND CAP FOR FUTURE CONNECTION.
- REMOVE EXISTING HOT WATER BY-PASS VALVE. KEEP FOR REUSE IN NEW INSTALLATION.
- REMOVE EXISTING THERMOSTATS AND RELATED CONTROL AIR TUBING.
- REMOVE EXISTING DOMESTIC WATER AND DRAINAGE PIPING BACK TO THE CEILING SPACE BELOW AND CAP.
- REMOVE EXISTING DOMESTIC COLD WATER PIPE BACK TO THE CEILING SPACE BELOW AND CAP. VENT PIPE TO REMAIN.
- REMOVE EXISTING ABANDONED PROPANE GAS AND OXYGEN PIPE BACK TO THE CEILING SPACE BELOW AND CAP. COMPRESSED AIR PIPE TO REMAIN.
- REMOVE ALL MECHANICAL INSULATION ON DUCTWORK AND PIPING IN ROOM 162, 164, AND CORRIDOR BETWEEN GRID 2 AND 5. EXISTING INSULATION MATERIAL ASBESTOS. REFER TO SPECS FOR ASBESTOS ABATEMENT PROCEDURE.
- DISCONNECT AND TEMPORARILY REMOVE EXISTING RADIATORS C/W ALL VALVES AND TRAPS. RE-INSTALL IN FRONT OF THE NEW DRYWALL. EXTEND STEAM AND CONDENSATE PIPE TO NEW LOCATION. (100 mm AWAY FROM EXISTING WALL).





1 PARTIAL GROUND FLOOR PLAN - PLUMBING  
M-02 SCALE 1:50



2 PARTIAL BASEMENT PLAN - PLUMBING  
M-02 SCALE 1:50

**HEATING COIL**

MANUFACTURER	HEATCRAFT
REF	HC1
EQUIPMENT I. D.	
MODEL	5BS0701A
SIZE	inch 15x30
CAPACITY	kW 9.6
AIR FLOW	L/S 1180.0
AIR TEMP.	°C 18.3/25.1 (ENTER/LEAVE)
AIR P. D.	Pa 27.4
WATER FLOW	L/min 12.3
WATER TEMP.	°C 65.6/53.4 (ENTER/LEAVE)
WATER P. D.	kPa 10.0
REMARK	N/A

**BOOSTER PUMP**

MANUFACTURER	ARMSTRONG PUMPS
REF	
EQUIPMENT I. D.	23CWP06
MODEL	4700-VMS-03:03
FLOW	L/min 37.8
HEAD	kPa 275.0
MOTOR POWER	HP 0.75
	V/Ph/Hz 575/3/60
REMARK	N/A

**CIRCUIT BALANCE VALVE**

MANUFACTURER	TA HYDRONICS
REF	CBV1 CBV2
EQUIPMENT I. D.	
MODEL	STAD 25 STAD 20
REMARK	N/A

**PRESSURE RELIEF VALVE**

MANUFACTURER	DANFOSS
REF	PRV
EQUIPMENT I. D.	
MODEL	003H6620
SIZE	DN15
PRESSURE SETTING	BAR 3~11
REMARK	N/A

**FILTER**

MANUFACTURER	RAINFRESH
REF	
EQUIPMENT I. D.	
HOUSING	BH010
CATRIDGE	BP3 (25 MICRON)
REMARK	C/W MOUNTING BRACKETS AND SCREWS; SUPPLY 6 FILTER CARTRIDGES

**MECHANICAL NOTES:**

- PROVIDE (1) NEW COUNTERTOP FUME HOOD AS SHOWN. REFER TO SPECS FOR DETAILS. PROVIDE ALL RELATED PIPE AND DUCTWORK CONNECTION AS SHOWN. PROVIDE BALANCING DAMPER ON DUCTWORK CONNECTION. PROVIDE SHUT-OFF VALVE AND PIPE UNION ON ALL PIPE CONNECTIONS.
- PROVIDE (2) NEW WALK-IN FUME HOODS AS SHOWN. REFER TO SPECS FOR DETAILS. PROVIDE ALL RELATED PIPE AND DUCTWORK CONNECTION AS SHOWN. PROVIDE BALANCING DAMPER ON DUCTWORK CONNECTION. PROVIDE SHUT-OFF VALVE AND PIPE UNION ON ALL PIPE CONNECTIONS.
- INSTALL (2) EXISTING CHEMICAL STORAGE CABINETS AS SHOWN. INSTALL THE YELLOW (CS1) CABINET IN ROOM 164, INSTALL THE GRAY (CS2) CABINET IN ROOM 162.
- PROVIDE NEW HEATING COIL IN THE NEW SUPPLY DUCTWORK AS SHOWN.
- PROVIDE NEW HOT WATER SUPPLY AND RETURN PIPING AS SHOWN. CONNECT TO EXISTING PIPE AND NEW HEATING COIL. REFER TO SCHEDULE AND PIPING DIAGRAM FOR DETAILS.
- INSTALL EXISTING BY-PASS VALVE AT NEW LOCATION AS SHOWN.
- PROVIDE NEW DOMESTIC HOT WATER, DOMESTIC COLD WATER, AND SANITARY DRAIN PIPING FOR NEW SINK. PROVIDE SANITARY DRAIN PIPING FOR CUP SINK IN COUNTERTOP MOUNT FUME HOOD. PROVIDE NEW TRAP FOR SINK. PROVIDE NEW Ø50 VENT PIPE UP TO CEILING SPACE AND CONNECT TO EXISTING VENT PIPING ABOVE THE PIPING CLOSET. SINK SHALL BE KINDRED MODEL QSL1719/8, C/W CHICAGO FAUCET MODEL 786-GN8FCBCP AND BRADLEY FAUCET MOUNTED EYEWASH MODEL S19-200B, OR APPROVED EQUAL.
- PROVIDE NEW HUB DRAIN WITH P-TRAP. CONNECT NEW HUB DRAIN TO EXISTING SANITARY DRAIN PIPE IN BASEMENT CEILING SPACE. PROVIDE NEW Ø50 VENT PIPE, CONNECT TO EXISTING VENT PIPING.
- PROVIDE NEW ARGON AND NITROGEN PIPE AS SHOWN. TERMINATE PIPE 1500 MM ABOVE FINISHED FLOOR IN ROOM 069 WITH A BALL VALVE AND CAP. CONNECT NEW PIPE TO NEW FUME HOODS.
- PROVIDE NEW COMPRESSED AIR PIPE FROM Ø50 MAIN. PROVIDE TWO BALL VALVES AS SHOWN TO ALLOW FOR FUTURE INSTALLATION OF FILTERS AND DRYER. CONNECT NEW PIPE TO NEW FUME HOODS.
- TEMPORARILY REMOVE EXISTING HOSE CONNECTOR AT THE END OF Ø50 CHILLED WATER SUPPLY AND RETURN PIPE. PROVIDE NEW Ø40 CHILLED WATER PIPE FROM EXISTING BALL VALVES TO GROUND FLOOR AS SHOWN. PROVIDE A NEW SET OF Ø50 BALL VALVES AND REINSTALL HOSE CONNECTORS AND CAP.
- PROVIDE NEW BOOSTER PUMP, FILTERS, Ø32 SPARE CONNECTIONS IN PIPING CLOSET, REFER TO PIPING DIAGRAM FOR DETAIL. PROVIDE NEW CHILLED WATER PIPING AS SHOWN. TERMINATE CHILLED WATER PIPE NEAR WALK-IN FUME HOODS 1200 MM ABOVE FINISHED FLOOR.
- PROVIDE VACUUM PIPE AS SHOWN. SLOPE PIPE TOWARDS ROOM 162. TERMINATE Ø25 MAIN PIPE 1200 MM ABOVE FINISHED FLOOR WITH BALL VALVE AND CAPPED NPT CONNECTION. CONNECT VACUUM PIPE TO FUME HOODS.
- PROVIDE DDC SMART SENSOR AND ELECTRONIC HEATING WATER CONTROL VALVE. FOR CONTROL SEQUENCE REFER TO DRAWING M-03.

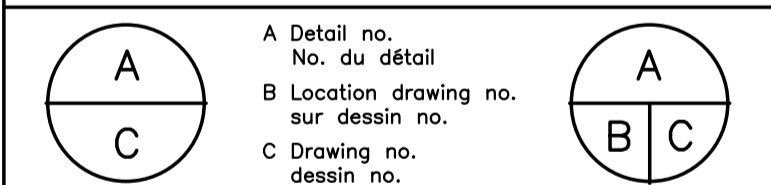
**LEGENDS**

- EXISTING
- NEW
- SMART SENSOR
- DCW DOMESTIC COLD WATER
- DHW DOMESTIC HOT WATER
- CA COMPRESSED AIR
- SAN SANITARY DRAIN
- HWS HOT WATER SUPPLY
- HWR HOT WATER RETURN
- CHS CHILLED WATER SUPPLY
- CHR CHILLED WATER RETURN
- N2 NITROGEN
- ARG ARGON
- VAC VACUUM LINE
- BALL VALVE
- PRESSURE RELIEF VALVE
- CIRCUIT BALANCING VALVE
- PIPE LINE STRAINER
- CHECK VALVE
- BUTTERFLY VALVE
- ELECTRONIC CONTROL VALVE
- DRAIN VALVE
- UNION
- FLEXIBLE CONNECTION
- PRESSURE GAUGE
- AUTOMATIC AIR VENT
- CARTRIDGE FILTER

NOV. 2014	ISSUED FOR TENDER	Z. M.	
NOV. 2014	ISSUED FOR REVIEW	Z. M.	
No.	Date	Revision	By: Parr

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 / projet  
**BUILDING M-23A ROOM 164 NANO-LAB RENOVATIONS**  
MONTREAL ROAD CAMPUS

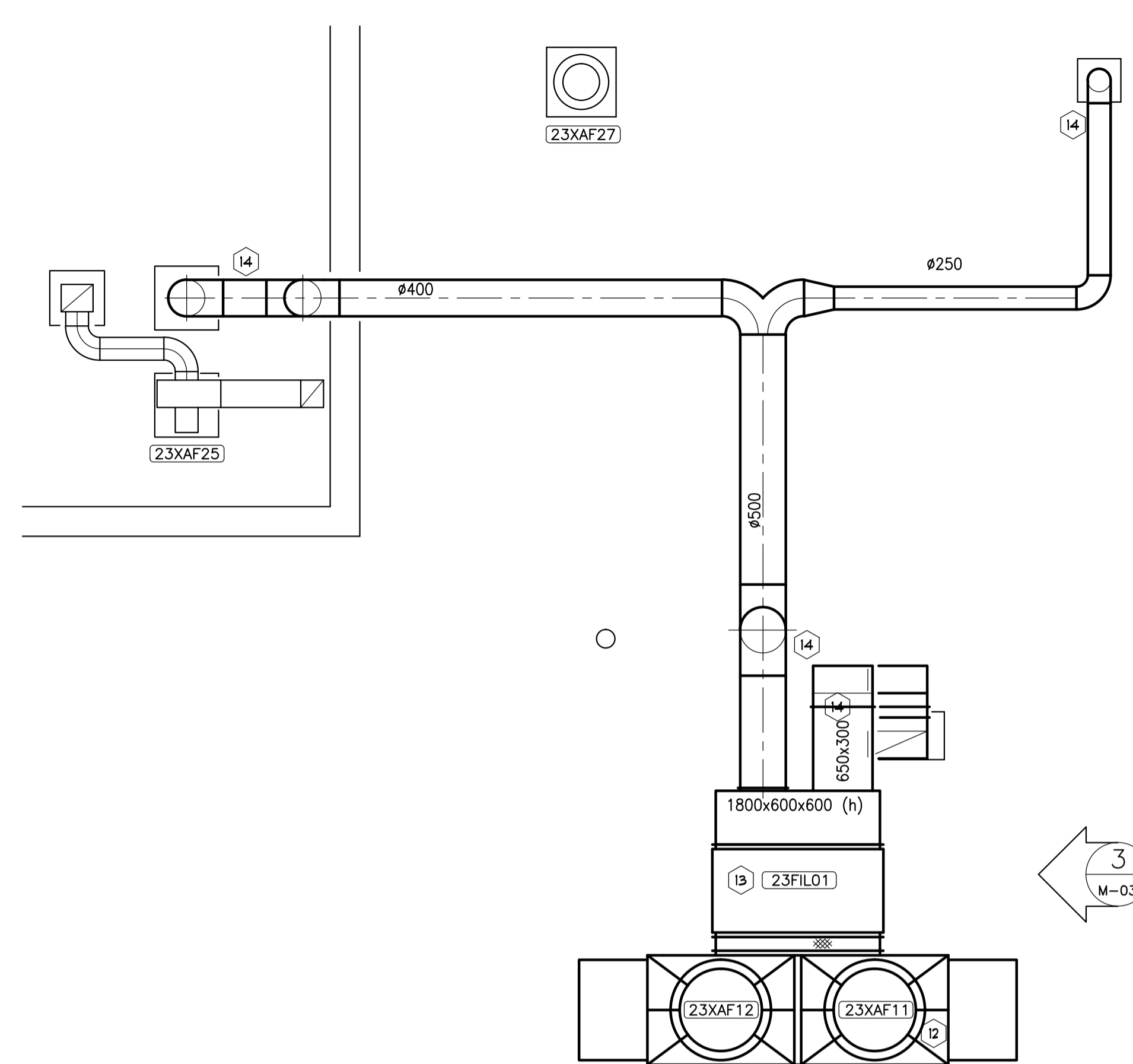
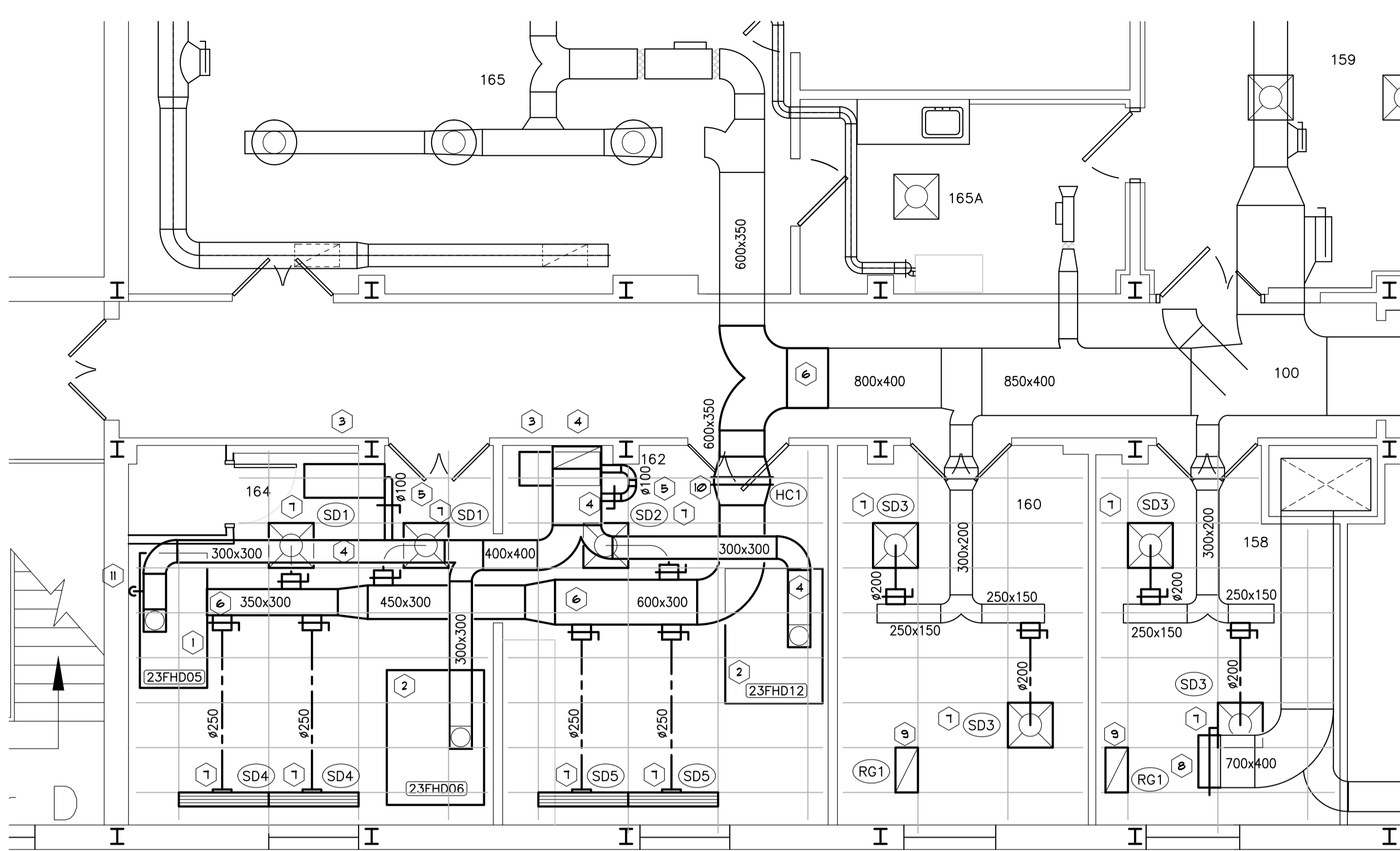
drawing / dessin  
**MECHANICAL NEW PLUMBING PLANS, PIPING DIAGRAM AND SCHEDULES**

designed / conçu	date	designed / conçu	date
Z. M.	JUL. 2014	drawn / dessiné	scale / échelle
Z. M.	AS NOTED	checked / vérifié	sheet / feuille
R. C.	M02 of/de M03	approved / approuvé	W.O.no. / D.T.no.
B. V.	A1-004452-15-03	dwg.no. / dessin no.	

**3966-M02**

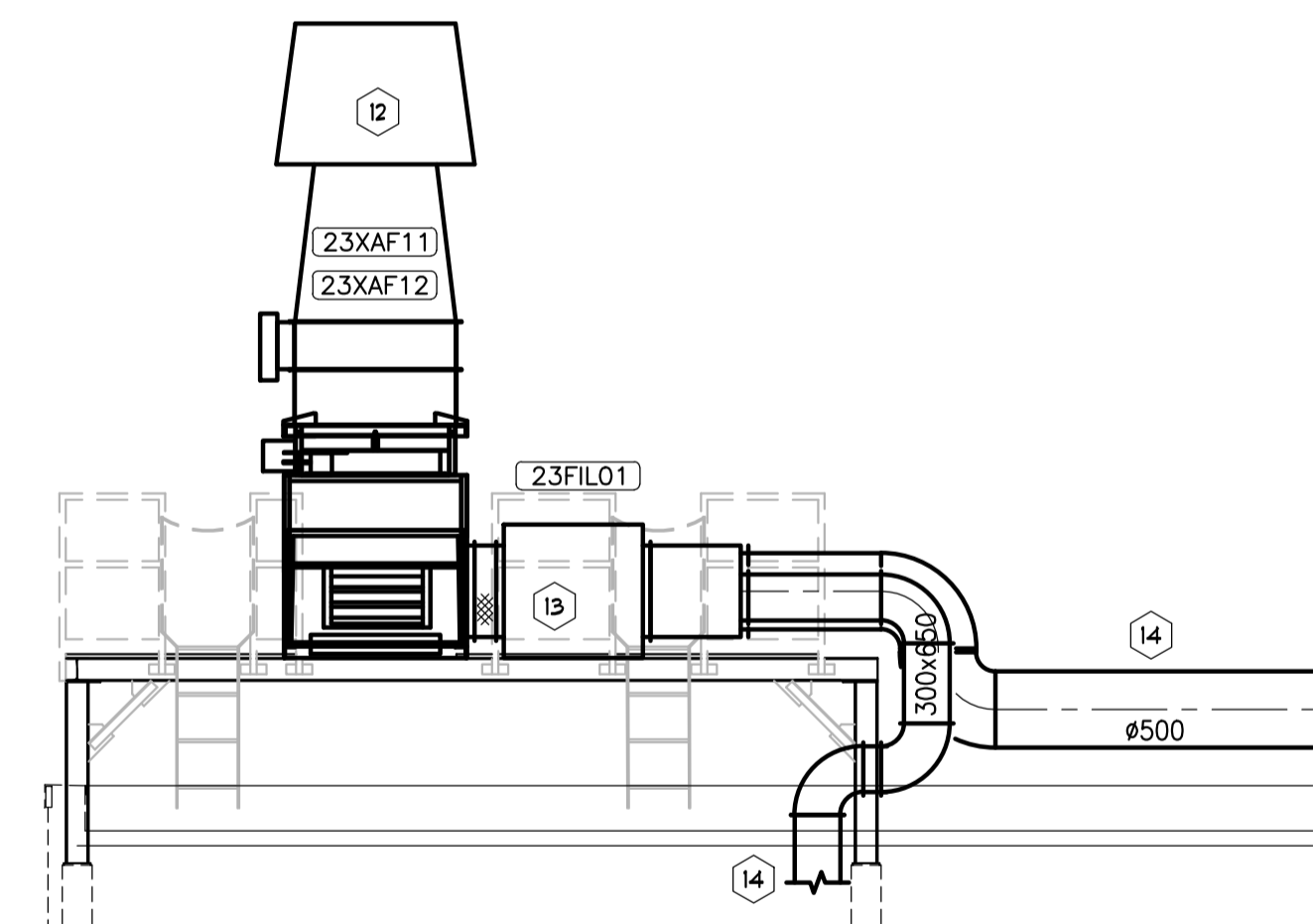
**LEGENDS**

- EXISTING
- NEW
- □ DIFFUSER (ROUND/SQUARE)
- ▬ DIFFUSER (LINEAR)
- ▭ RETURN GRILLE
- ▬ RECTANGLE DUCTWORK
- ▬ ROUND DUCTWORK
- - - FLEXIBLE DUCTWORK
- └ BALANCE DAMPER



1 PARTIAL GROUND FLOOR PLAN – DUCTWORK  
 M-03 SCALE 1:50

2 PARTIAL ROOF PLAN – DUCTWORK  
 M-03 SCALE 1:50



**EXHAUST FAN**

MANUFACTURER		STROBIC AIR
REF		-
EQUIPMENT I. D.		23XAF11, 23XAF12
MODEL		TS-2
SYSTEM AIR FLOW	L/s	2360
FAN AIR FLOW	L/s	4483
E. S. P.	Pa	1000
ELECTRICAL		
POWER	V/PH/Hz	3/575
MOTOR	HP	10
REMARK	FOR REFERENCE ONLY, FAN C/W PLENUM SUPPLIED BY NRC.	

**BIBO FILTER UNIT**

MANUFACTURER		AAF
REF		-
EQUIPMENT I. D.		23FILO1
MODEL		GB3-212P-10H30W-304 SIZE 1x3
AIR FLOW	L/s	2360
P.D. (INITIAL/FINAL)	Pa	400/835
WEIGHT	kg	330
REMARK	C/W A COMPLETE SET OF PRE-FILTERS AND HEPA FILTERS	

3 EXHAUST FAN SECTION  
 M-03 SCALE 1:50

**MECHANICAL NOTES:**

- PROVIDE (1) NEW COUNTERTOP FUME HOOD AS SHOWN. REFER TO SPECS FOR DETAILS. PROVIDE ALL RELATED PIPE AND DUCTWORK CONNECTION AS SHOWN.
- PROVIDE (2) NEW WALK-IN FUME HOODS C/W CONTAINMENT PAN AS SHOWN. REFER TO SPECS FOR DETAILS. PROVIDE ALL RELATED PIPE AND DUCTWORK CONNECTION AS SHOWN.
- INSTALL (2) EXISTING CHEMICAL STORAGE CABINETS AS SHOWN. INSTALL THE YELLOW (CS1) CABINET IN ROOM 164, INSTALL THE GRAY (CS2) CABINET IN ROOM 162.
- PROVIDE EXHAUST DUCTWORK FOR NEW FUME HOODS AS SHOWN. PROVIDE BALANCING DAMPER ON EACH CONNECTION TO THE FUME HOOD. BALANCE AIR FLOW AS SPECIFIED. THE MAIN EXHAUST DUCTWORK RUNS UP TO THE ROOF THROUGH EXISTING ROOF OPENING AND CONNECT TO NEW BIBO HEPA FILTER UNIT. INSULATE PART OF THE EXHAUST DUCTWORK AS PER SPECS.
- PROVIDE EXHAUST DUCTWORK FOR CHEMICAL STORAGE CABINETS AS SHOWN. BALANCE AIR FLOW TO 23.5 L/S EACH.
- PROVIDE SUPPLY DUCTWORK AS SHOWN. CONNECT TO EXISTING SUPPLY DUCTWORK. INSULATE NEW SUPPLY DUCTWORK AS PER SPEC.
- PROVIDE NEW SUPPLY DIFFUSERS C/W ROUND TAKE-OFF, BALANCING DAMPER AND INSULATED FLEXIBLE DUCTWORK. REFER TO SCHEDULE FOR DETAILS. BALANCE AIR FLOW TO EACH DIFFUSER AS PER SCHEDULE.
- PROVIDE BALANCING DAMPER ON EXISTING RETURN DUCTWORK. BALANCE AIR FLOW TO 400.0 L/S.
- PROVIDE RETURN GRILLES AS SHOWN. REFER TO SCHEDULE FOR DETAILS.
- PROVIDE NEW HEATING COIL IN THE NEW SUPPLY DUCTWORK AS SHOWN. REFER TO SCHEDULE FOR DETAILS. CONNECT TO EXISTING HOT WATER SUPPLY AND RETURN PIPE.
- PROVIDE 50# COPPER PIPE FROM EXHAUST DUCTWORK IN CEILING SPACE, C/W BALL VALVE IN CEILING SPACE, CONNECT TO NEW CHEMICAL AND FLAMMABLE STORAGE CABINET UNDER THE NEW FUME HOOD 23FHD05. PIPE TO BE TYPE "L" COPPER PIPE WITH SOLDERING JOINT.
- INSTALL EXHAUST FANS ON SUPPORT PLATFORM PROVIDED BY STRUCTURAL. EXHAUST FAN PROVIDED BY NRC. REFER TO SCHEDULE FOR DETAILS. TWO EXHAUST FANS AND PLENUM WILL BE SUPPLIED UNASSEMBLED AT GROUND LEVEL BY NRC.
- PROVIDE BIBO (BAG-IN-BAG-OUT) HEPA FILTER UNIT ON SUPPORT PLATFORM PROVIDED BY STRUCTURAL. REFER TO SCHEDULE FOR DETAILS.
- PROVIDE NEW EXHAUST DUCTWORK AS SHOWN. CONNECT TO NEW EXHAUST DUCTWORK FROM ROOM 164 AND 162, AS WELL AS EXISTING EXHAUST DUCTWORK FROM ROOM 069 AND 165.

**DDC SEQUENCE OF OPERATION:**

- ACCEPTABLE DDC CONTROL SUB-CONTRACTOR IS AIRTRON CANADA, (613)247-7938.
- MODULATE CONTROL VALVE ON HEATING COIL HC1 TO MAINTAIN ROOM TEMPERATURE SETPOINT SET BY SMART SENSOR LOCATED IN ROOM 164.
- EXHAUST FAN 23XAF11 AND 23XAF12 SHOULD OPERATE CONSTANTLY IN A LEAD/LAG FASHION. WHEN LEAD FAN FAILS, ACTIVATE THE LAG FAN AND SEND A LEVEL 2 ALARM. WHEN BOTH FANS FAIL, SEND A LEVEL 1 ALARM. ALTERNATE LEAD AND LAG FAN ON A BI-WEEKLY BASIS.

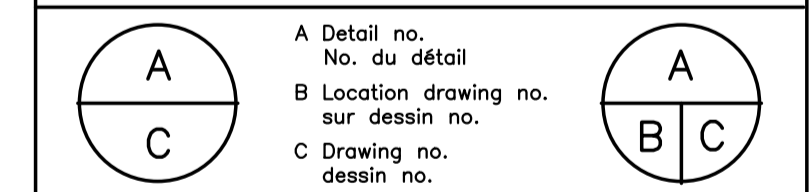
**GRILLES AND DIFFUSERS**

MANUFACTURER		E. H. PRICE	
REF	SD1	SD2	SD3
MODEL	254/600x600/ASDA/3/B12	203/600x600/ASDA/3/B12	203/600x600/ASDA/3/B12
AIR FLOW	L/s 165.1	118.0	106.2
REMARK	N/A	N/A	N/A
REF	SD4	SD5	RG1
MODEL	1219/SDA100/4/14/254	1219/SDA100/4/14/254	600x300/80/B12
AIR FLOW	L/s 165.1	141.6	N/A
REMARK	N/A	N/A	CORE ONLY

No.	Date	Revision	By
1	NOV. 2014	ISSUED FOR TENDER	Z.M.
2	NOV. 2014	ISSUED FOR REVIEW	Z.M.

Date Printed: \_\_\_\_\_ Date imprimée: \_\_\_\_\_

- Verify all dimensions and site conditions and be responsible for same
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project: \_\_\_\_\_ projet: \_\_\_\_\_

**BUILDING M-23A  
 ROOM 164 NANO-LAB  
 RENOVATIONS**  
 MONTREAL ROAD CAMPUS

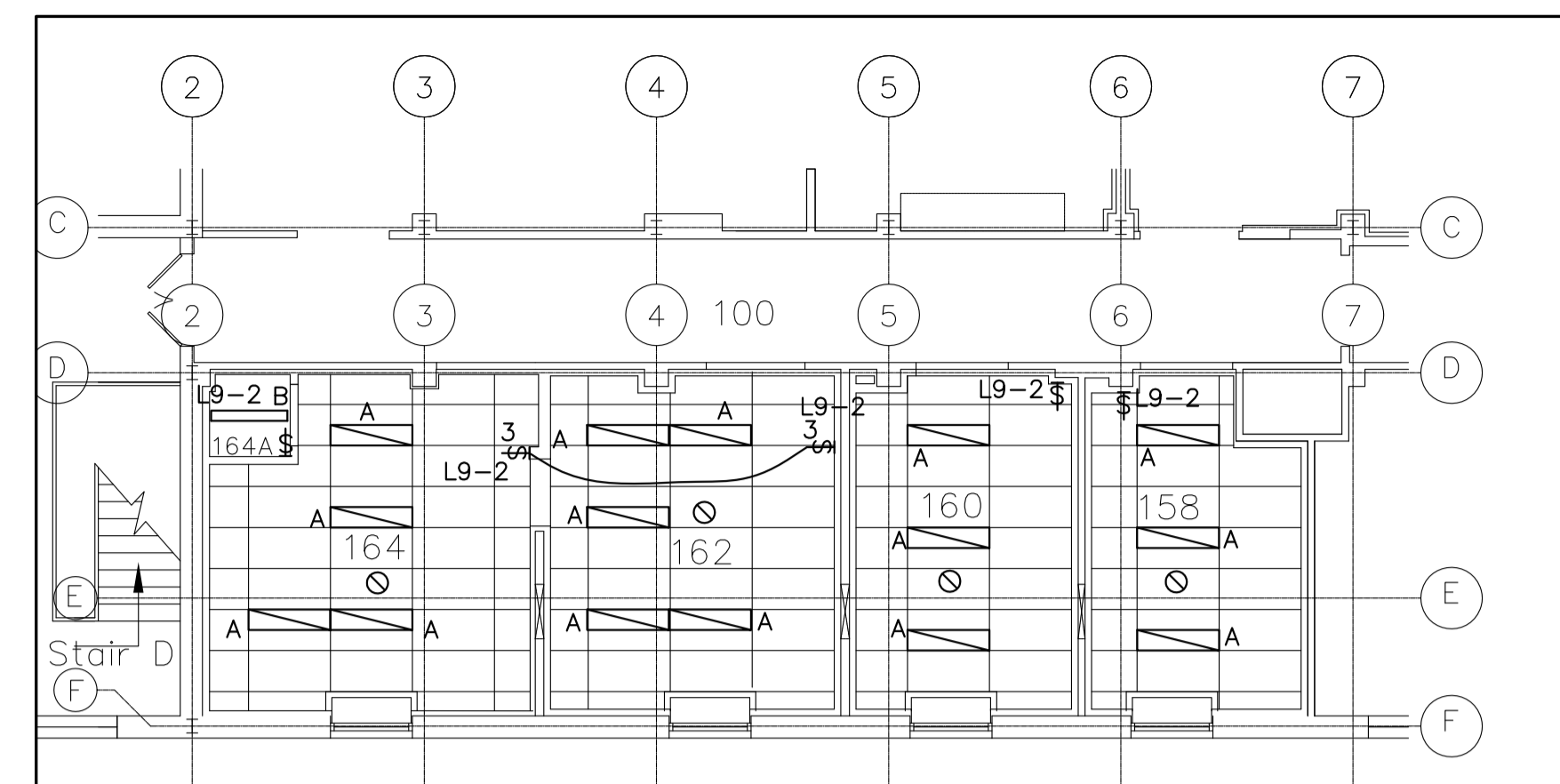
drawing: \_\_\_\_\_ dessin: \_\_\_\_\_  
**MECHANICAL  
 NEW VENTILATION PLANS  
 AND SCHEDULES**

designed	conçu	date	date
Z. M.		JUL. 2014	
drawn	dessiné	scale	échelle
Z. M.		AS NOTED	
checked	vérifié	sheet	feuille
R. C.		M03 of/da M03	
approved	approuvé	W.O.no.	D.T.no.
B. V.		A1-004452-15-03	

dwg.no. \_\_\_\_\_ dessin no. \_\_\_\_\_  
**3966-M03**

**GENERAL NOTES**

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- D PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
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- G FILL ALL HOLES, PATCH & PAINT ALL SURFACES IN CONTRACT AREA. COLOUR SCHEME TO MATCH EXISTING.
- H REMOVE MEANS REMOVE AND DISPOSE OF OFF SITE UNLESS OTHERWISE NOTED.
- I PROVIDE LABELS TO NEW DEVICES TO INDICATE POWER-SOURCE. UPDATE PANEL SCHEDULES AFTER JOB COMPLETION.
- J REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR FINAL PLACEMENT OF LIGHT FIXTURES.
- K ALL WIRE TO BE IN EMT UNLESS OTHERWISE NOTED.



**3 ELECTRICAL – NEW LIGHTING AND FIRE ALARM**

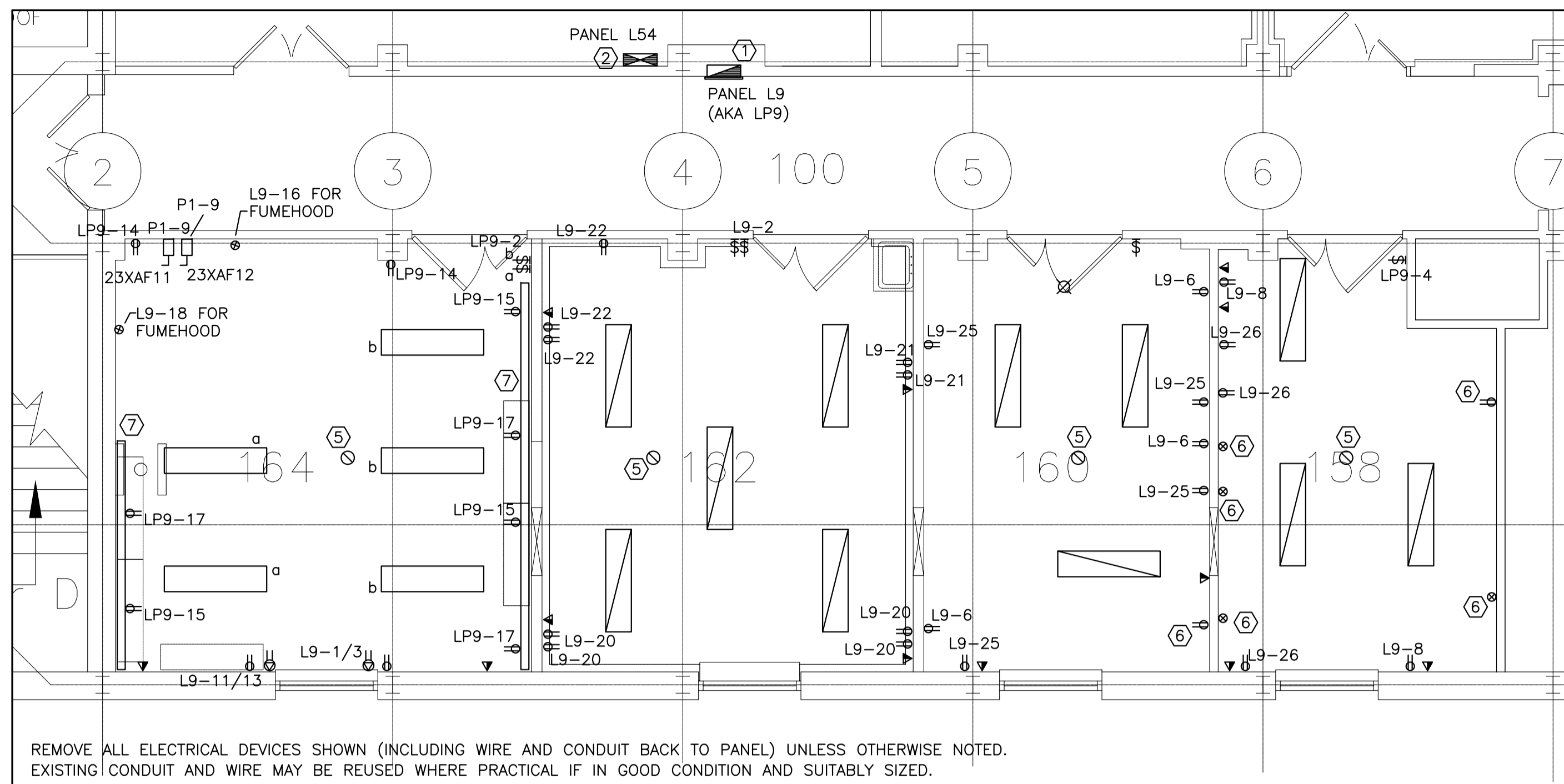
SCALE: 1:100

**LEGEND**

	EXISTING SURFACE MOUNTED FLUORESCENT LIGHT FIXTURE
	EXISTING RECESSED FLUORESCENT LIGHT FIXTURE
	NEW RECESSED LED LIGHT FIXTURE
	NEW SUSPENDED LED STRIP LIGHT
	SINGLE-GANG LIGHT SWITCH
	START-STOP STATION FOR BOOSTER PUMP C/W PILOT LIGHT
	5-15R DUPLEX RECEPTACLE
	RECEPTACLE OTHER THAN 5-15R
	JUNCTION BOX
	OUTLET FOR DATA WIRING (WIRING NIC)
	HEAT DETECTOR
	EXISTING SURFACE MOUNTED ELECTRICAL PANEL
	EXISTING RECESSED ELECTRICAL PANEL

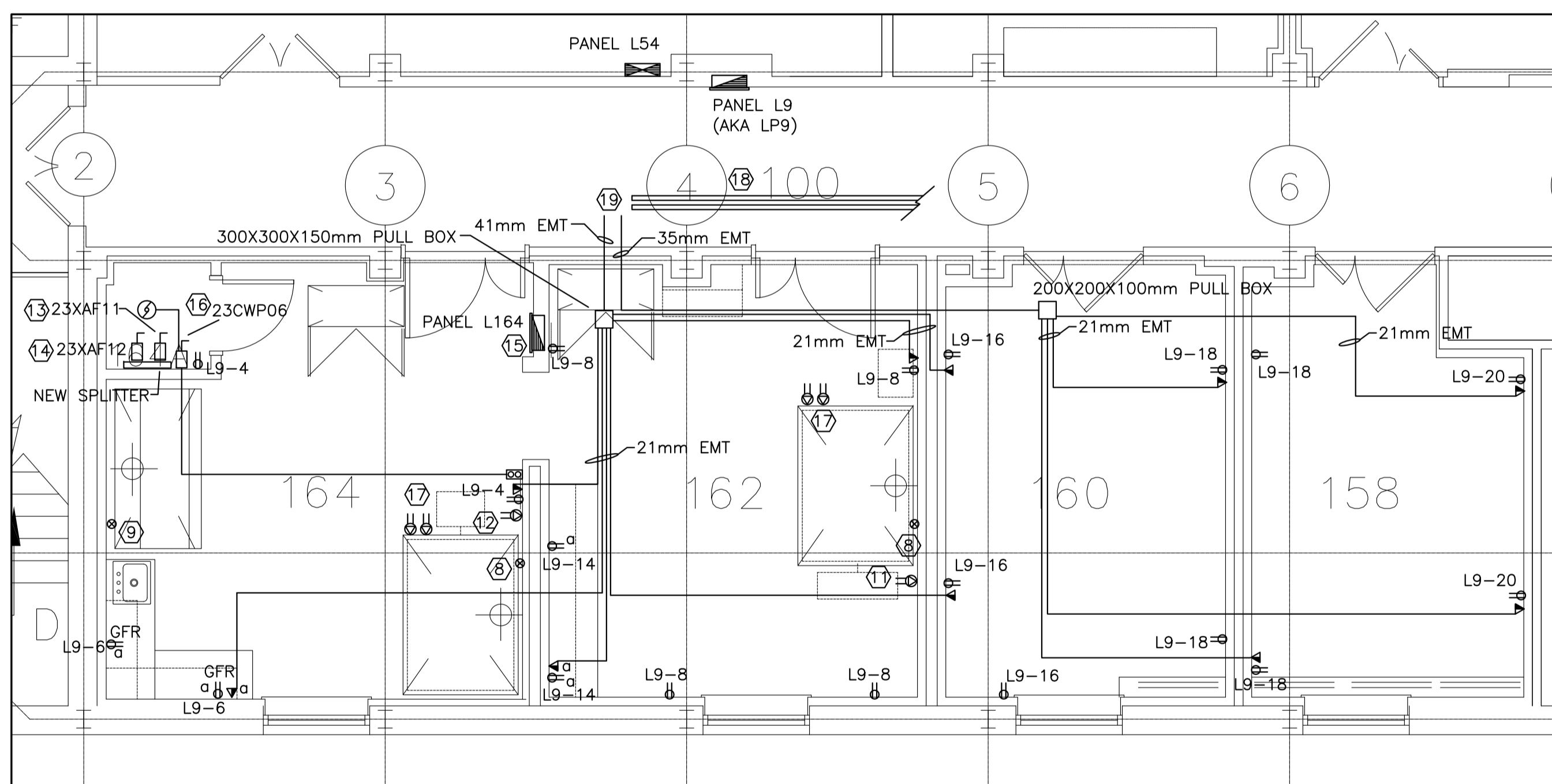
**DRAWING NOTES**

1. EXISTING PANEL L9 TO REMAIN. FED FROM LD-9. PANEL ALSO KNOWN AS LP9.
2. EXISTING PANEL L54 TO REMAIN. SHARES FEED FROM LD-9 WITH PANEL L9.
3. EXISTING PANEL LD. SQUARE D I-LINE.
4. EXISTING PANEL PD. SQUARE D I-LINE.
5. REMOVE EXISTING HEAT DETECTOR. RETAIN WIRING FOR NEW HEAT DETECTORS.
6. RECEPTACLE OR JUNCTION BOX WITH UNKNOWN CIRCUIT, TO BE REMOVED. FOR BIDDING PURPOSES ASSUME CIRCUIT IS FROM PANEL L9.
7. EXISTING SURFACE RACEWAY TO BE REMOVED.
8. WALK-IN FUMEHOOD. REQUIRES 1X 120V, 15A CIRCUIT FOR DUPLEX RECEPTACLES AND LIGHTS. ALSO REQUIRES THE FOLLOWING: LEFT SIDE: L6-20R GFI, L21-30R GFI, EACH WITH WEATHERPROOF COVERS. RIGHT SIDE: L6-30R GFI, L21-30R GFI, EACH WITH WEATHERPROOF COVERS. SURFACE MOUNTED ON SIDE: L6-20R, L6-30R. FUMEHOOD INCLUDES KNOCKOUTS FOR THESE RECEPTACLES. REFER TO ELEVATION FOR MORE DETAILS. REFER TO PANEL SCHEDULE FOR CIRCUITS TO BE USED.
9. CABINET MOUNTED FUMEHOOD REQUIRES 1X 120V, 15A CIRCUIT, 1X 208V, 20A. INSTALL 2x 5-15R DUPLEX RECEPTACLES ON ONE SIDE OF FUMEHOOD. INSTALL 1x 5-15R DUPLEX RECEPTACLE AND 1x 6-20R RECEPTACLE ON OTHER SIDE OF FUMEHOOD. FUMEHOOD INCLUDES KNOCKOUTS FOR THESE RECEPTACLES. REFER TO PANEL SCHEDULE FOR CIRCUITS TO BE USED.
10. EXISTING PANEL P1. SQUARE D NF TYPE.
11. L15-50R TWIST-LOCK RECEPTACLE FOR NEW CHILLER. SOURCE FROM NEW PANEL L164 AND PROVIDE 3P50A BREAKER. FEED WITH 3 #6 + GROUND IN 21mm EMT.
12. L15-50R TWIST-LOCK RECEPTACLE FOR NEW CHILLER. SOURCE FROM NEW PANEL L164 AND PROVIDE 3P40A BREAKER. FEED WITH 3 #6 + GROUND IN 21MM EMT.
13. 10HP VFD FOR 23XAF11. FEED FROM NEW SPLITTER WITH 3 #12 IN 16mm EMT. CONTINUE FEED TO EXISTING DISCONNECT ON ROOF UNITS. REFER TO DRAWING E02, NOTE 6 AND PARTIAL SINGLELINE DETAIL.
14. 10HP VFD FOR 23XAF12. FEED FROM FROM NEW SPLITTER WITH 3 #12 IN 16MM EMT. CONTINUE FEED TO EXISTING DISCONNECT ON ROOF UNITS. REFER TO DRAWING E02, NOTE 6 AND PARTIAL SINGLELINE DETAIL.
15. NEW PANEL L164.
16. BOOSTER PUMP 23CWP06. 0.75HP, 600V, 3ø. FEED FROM PANEL P1 USING 3P15A BREAKER. PROVIDE COMBINATION MAGNETIC STARTER, HOA SWITCH AND REMOTE START/STOP STATION C/W PILOT LIGHT IN LAB 164.
17. L6-20R & L6-30R RECEPTACLES SURFACE MOUNTED ON SIDE OF FUMEHOOD. CIRCUIT AS SHOWN ON PANEL SCHEDULE.
18. EXISTING 2x 53mm TELECOM. CONDUITS.
19. NEW 41mm AND 27mm TELECOM. CONDUITS ARE TO END IN CEILING SPACE NEAR EXISTING 53mm TELECOM CONDUITS. PROVIDE COLLARS AND GROUND BUSHINGS AND GROUND CONNECTION TO EXISTING CONDUITS.



**1 ELECTRICAL – DEMOLITION**

SCALE: 1:50



**2 ELECTRICAL – NEW WORK**

SCALE: 1:50

0	DEC. 2014	ISSUED FOR TENDER	DIF
No.	Date	Revision	By: Par:

Date Printed Date imprimée

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

project projet

**BUILDING M-23A  
 RENOVATIONS - NANOLAB  
 ROOMS 158, 160, 162, 164**

**MONTREAL ROAD CAMPUS**

drawing dessin  
**ELECTRICAL DEMOLITION AND  
 NEW WORK**

designed	conçu	date	date
<b>DIF</b>		<b>JULY 2014</b>	

drawn	dessiné	scale	échelle
<b>DIF</b>		<b>AS NOTED</b>	

checked	vérifié	sheet	of/de	feuille
<b>K.X.L.</b>		<b>E01</b>	<b>3</b>	

approved	approuvé	W.O.no.	D.T.no.
<b>RC.</b>		<b>A1-004452-02</b>	

dwg.no. dessin no.

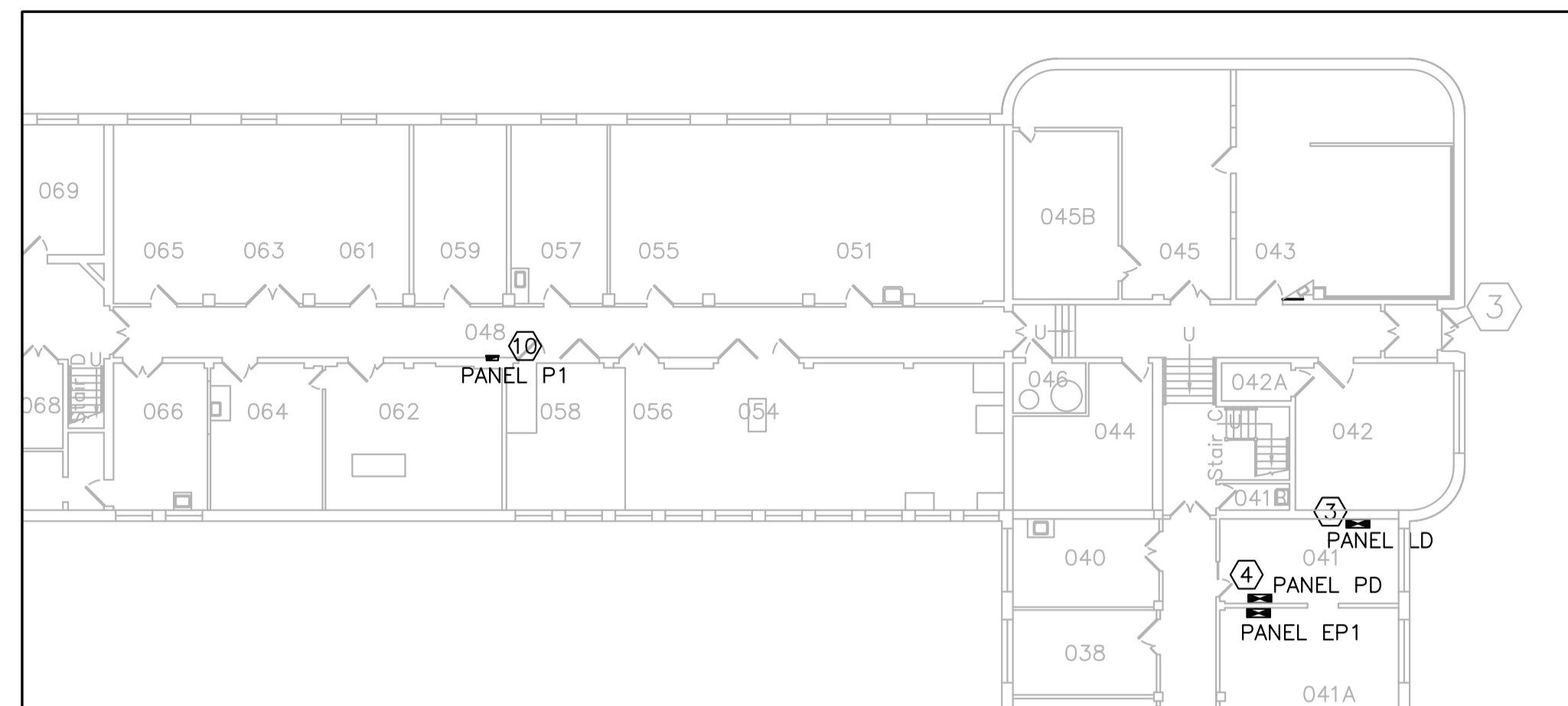
**3966-E01**

**GENERAL NOTES**

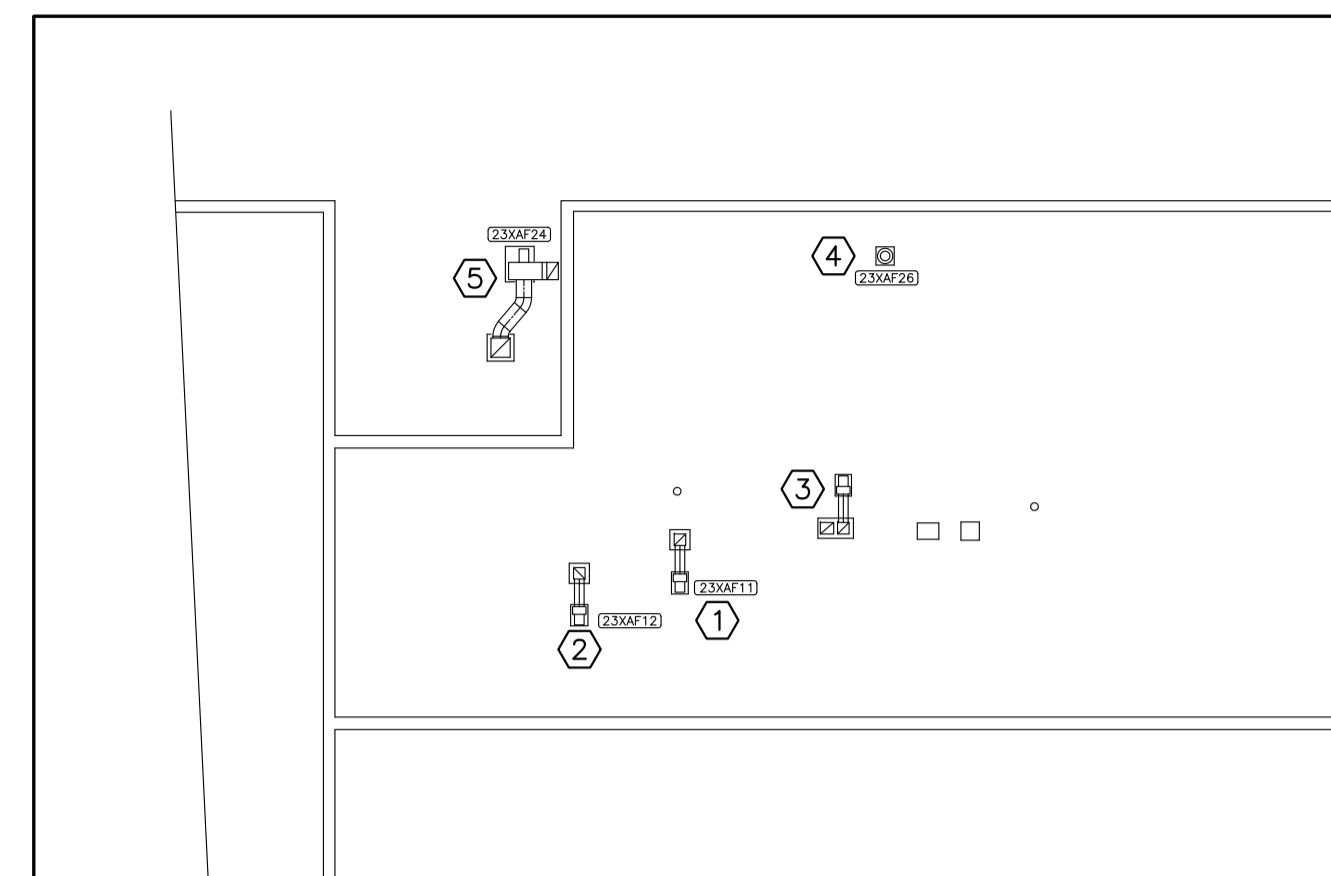
- A READ THIS DRAWING IN CONJUNCTION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS.
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**DRAWING NOTES**

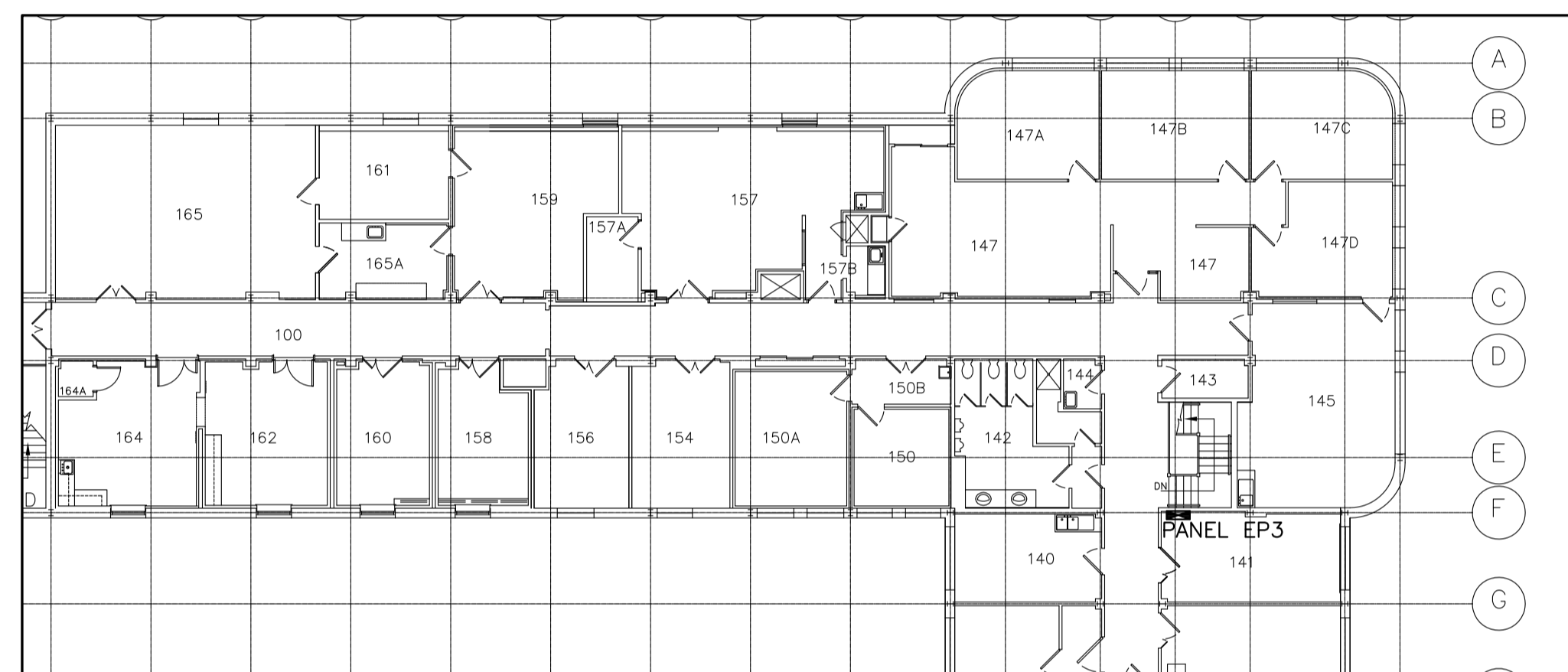
1. REMOVE ELECTRICAL FOR EXHAUST FAN 23XAF11 INCLUDING DISCONNECT IN ROOM 164 AND ALL WIRE AND CONDUIT BACK TO SOURCE.
2. REMOVE ELECTRICAL FOR EXHAUST FAN 23XAF12 INCLUDING DISCONNECT IN ROOM 164 AND ALL WIRE AND CONDUIT BACK TO SOURCE.
3. REMOVE WIRING AND DISCONNECT BACK TO SOURCE. FOR BIDDING PURPOSES ASSUME FAN IS FED FROM PANEL L9 OR L54.
4. REMOVE ELECTRICAL FOR EXHAUST FAN 23XAF26 INCLUDING DISCONNECT IN ROOM 165 AND ALL WIRE AND CONDUIT BACK TO SOURCE. FAN IS CIRCUITED FROM L54-20/22/24.
5. REMOVE ELECTRICAL FOR EXHAUST FAN 23XAF24 INCLUDING DISCONNECT IN ROOM 165 AND ALL WIRE AND CONDUIT BACK TO SOURCE. FAN IS CIRCUITED FROM L54-19/21/23.
6. EXHAUST UNIT IS EXISTING, BEING RELOCATED FROM ANOTHER BUILDING BY NRC. EXISTING DISCONNECTS WILL ALREADY BE MOUNTED TO UNIT AND CONNECTED TO FANS. CONTRACTOR IS RESPONSIBLE FOR CONNECTING NEW POWER FEED FROM NEW STARTERS TO THESE EXISTING DISCONNECTS. CONFIRM EXACT LOCATION OF EXISTING DISCONNECTS WITH NRC PROJECT MANAGER. DOUBLE CHECK CONNECTIONS FROM DISCONNECTS TO FAN TO ENSURE THEY WERE NOT DAMAGED OR LOOSE IN TRANSIT.
7. 5-20R GFR RECEPTACLE WITH WEATHERPROOF COVER TO MEET THE REQUIREMENTS OF OEC 26-704. MOUNT A MIN. OF 750MM ABOVE FINISHED ROOF. CIRCUIT FROM L9-15 USING #12 WIRE IN CONDUIT.



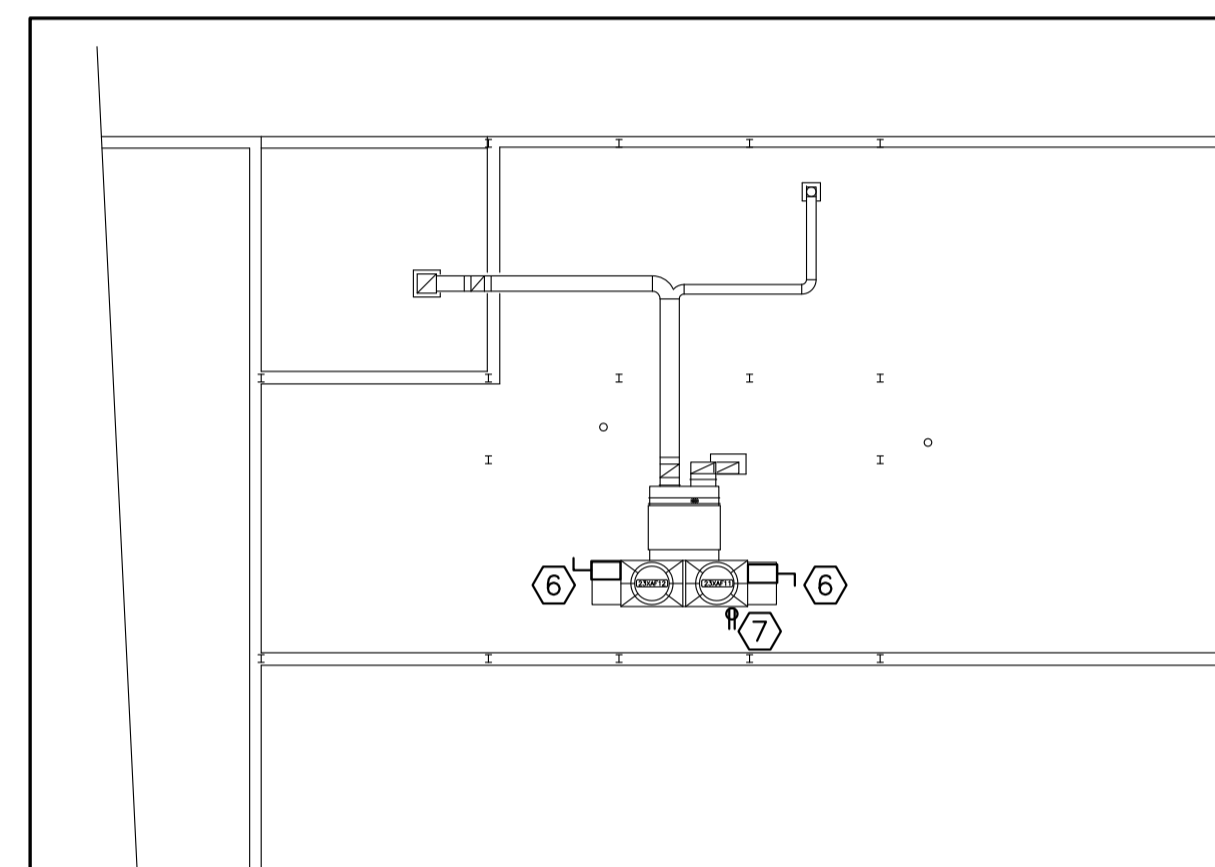
**1** PANELS P1, PD & LD LOCATIONS  
 E02 N.T.S.



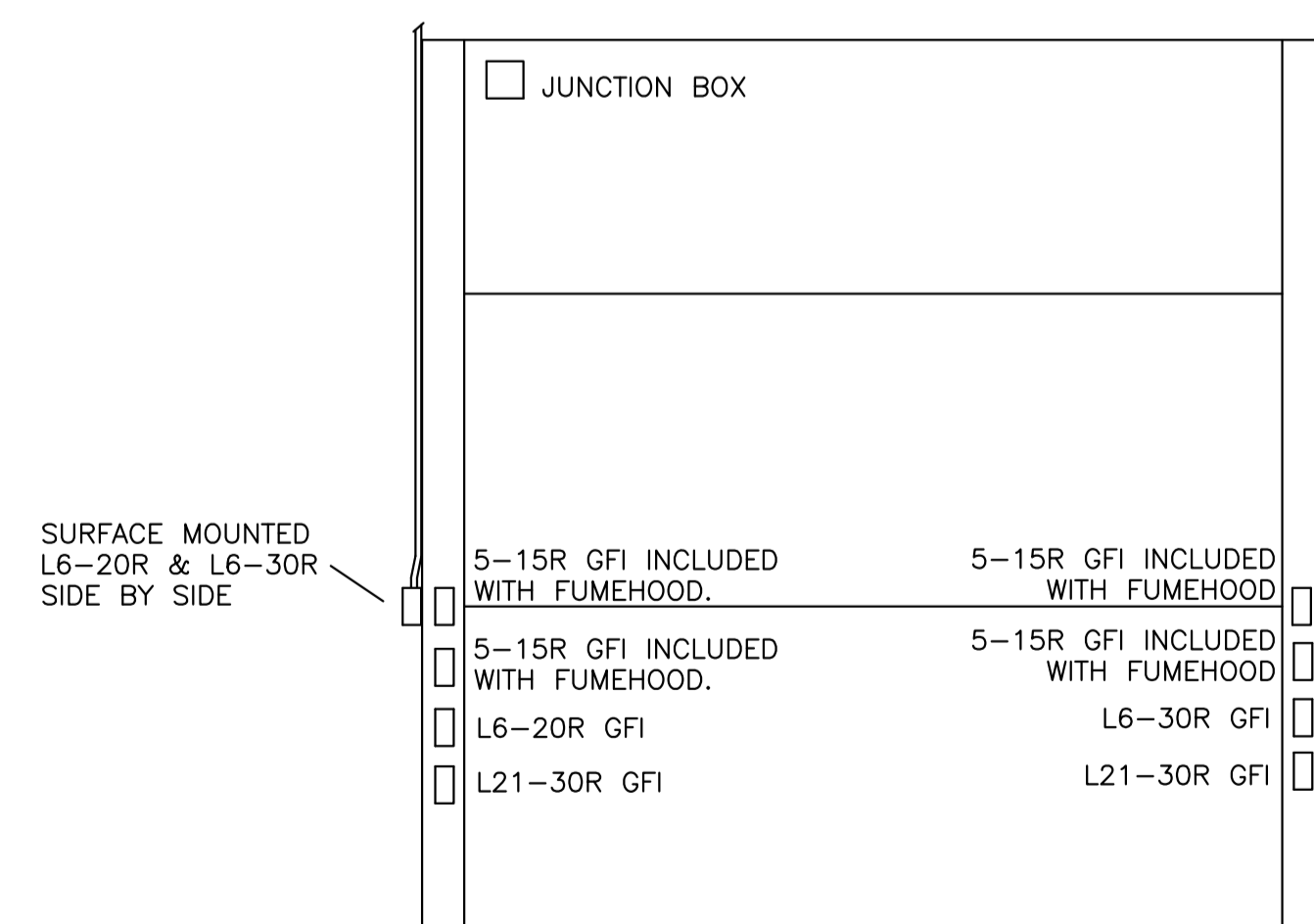
**3** ELECTRICAL - ROOF DEMOLITION  
 E02 N.T.S.



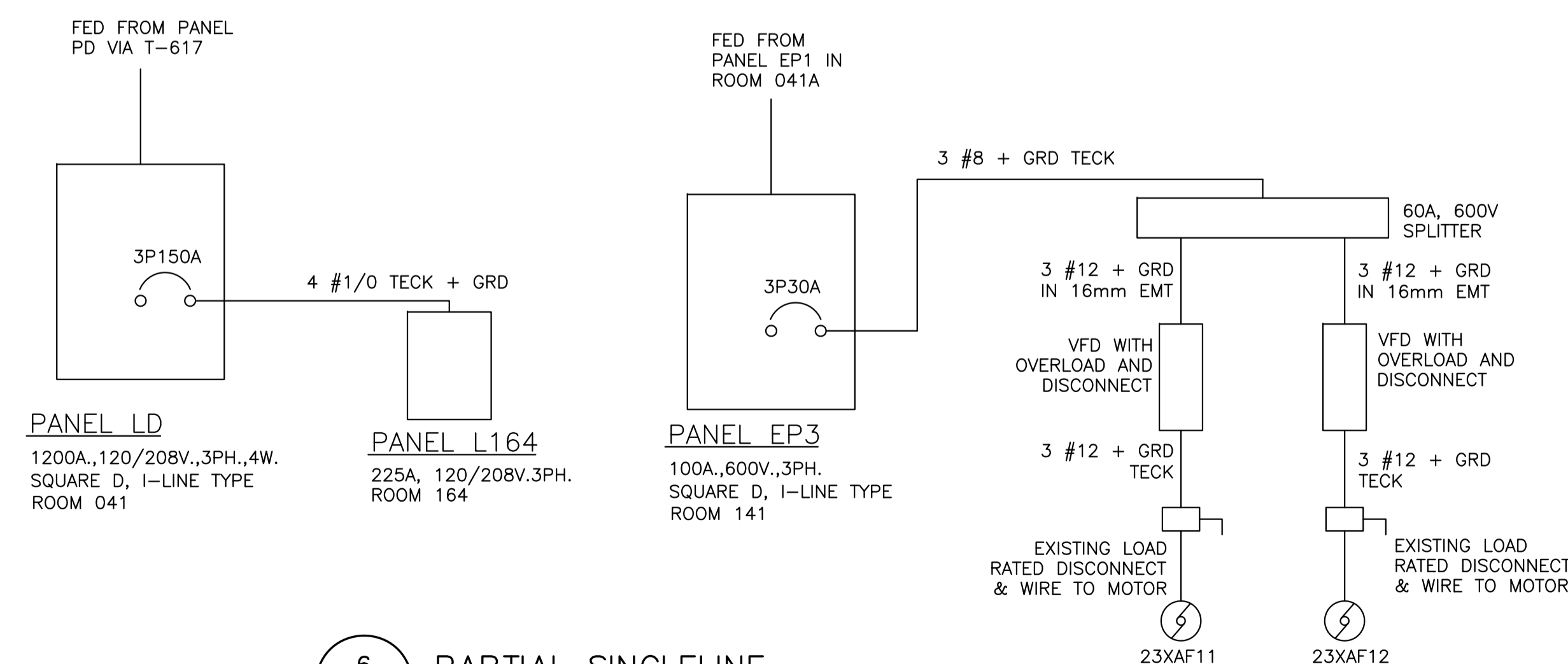
**2** PANEL EP3 LOCATION  
 E02 N.T.S.



**4** ELECTRICAL - ROOF NEW WORK  
 E02 N.T.S.



**5** TYPICAL WALK-IN FUMEHOOD ELECTRICAL ELEVATION  
 E02 N.T.S.

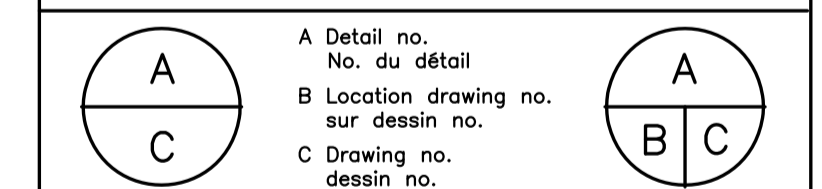


**6** PARTIAL SINGLELINE  
 E02 N.T.S.

0	DEC. 2014	ISSUED FOR TENDER	DIF
No.	Date	Revision	By: / Par:

Date Printed Date imprimée

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project projet

**BUILDING M-23A RENOVATIONS - NANOLAB ROOMS 158, 160, 162, 164**

**MONTREAL ROAD CAMPUS**

drawing dessin  
**ELECTRICAL ROOF WORK AND PANEL LOCATIONS**

designed conçu date date

**DIF** **JULY 2014**

drawn dessiné scale échelle

**DIF** **AS NOTED**

checked vérifié sheet feuille

**K.X.L.** **E02 of/de 3**

approved approuvé W.O.no. D.T.no.

**RC.** **A1-004452-02**

dwg.no. dessin no.

**3966-E02**

EXISTING PANEL L9 (AKA LP9)					
120/208 VOLTS					
3	PHASE	LOCATION	CORRIDOR OUTSIDE ROOM 162	100A	A.BUSSING
4	WIRE	FEEDER	100A FROM PANEL LD	FLUSH	MTG.
		TYPE	SQUARE D NQO		
CIRC.	BKR.	DESCRIPTION	DESCRIPTION	BKR.	CIRC.
1	2P30*	ROOM 164, 30A, 208V RECEPTACLE	LIGHTS ROOMS 162 & 164	1P15*	2
3			LIGHTS ROOM 158 & 160	1P15*	4
5	3P20	SPARE	ROOM 160 RECEPTACLE	1P15*	6
7			ROOM 158 RECEPTACLE	1P15*	8
9			ROOM 165A RECEPTACLE	1P20	10
11	2P20*	ROOM 164, 20A, 208V RECEPTACLE	HALL 165A RECEPTACLE	1P15	12
13			ROOM 164 FUMEHOOD	1P15*	14
15	1P15*	ROOM 164 RECEPTACLE	ROOM 164 FUMEHOOD	1P15*	16
17	1P15*	ROOM 164 RECEPTACLE	ROOM 164 FUMEHOOD	1P15*	18
19	1P15	SPARE	ROOM 162 RECEPTACLE	1P15*	20
21	1P15*	ROOM 162 RECEPTACLE	ROOM 162 RECEPTACLE	1P15*	22
23	1P15	SPARE	SPARE	1P15	24
25	1P15*	ROOM 160 RECEPTACLE	ROOM 158 RECEPTACLE	1P15*	26
27	1P15	ROOM 165A FUMEHOOD	SPARE	1P15	28
29	1P15	HALL RECEPTACLE	UNKNOWN	1P15	30
NOTES					
*DENOTES CIRCUIT AFFECTED BY THIS PROJECT					

1  
E03  
EXISTING PANEL SCHEDULE FOR  
EXISTING PANEL L9  
N.T.S.

NEW PANEL L164					
120/208 VOLTS					
3	PHASE	LOCATION	ROOM 164	225A	A.BUSSING
4	WIRE	FEEDER	4 #1/0 TECK FROM PANEL LD	FLUSH	MTG.
		TYPE	SQUARE D NQO		
CIRC.	BKR.	DESCRIPTION	DESCRIPTION	BKR.	CIRC.
1	2P20	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	2P20	2
3		L6-20R GFI TL RECEPTACLE	L6-20R GFI TL RECEPTACLE		4
5	3P30	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	3P30	6
7		L21-30R GFI TL RECEPTACLE	L21-30R GFI TL RECEPTACLE		8
9					10
11	2P30	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	2P30	12
13		L6-30R GFI TL RECEPTACLE	L6-30R GFI TL RECEPTACLE		14
15	3P30	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	3P30	16
17		L21-30R GFI TL RECEPTACLE	L21-30R GFI TL RECEPTACLE		18
19					20
21	2P20	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	2P20	22
23		L6-20R GFI TL RECEPTACLE	L6-20R GFI TL RECEPTACLE		24
25	2P30	164 WALK-IN FUMEHOOD	162 WALK-IN FUMEHOOD	2P30	26
27		L6-30R GFI TL RECEPTACLE	L6-30R GFI TL RECEPTACLE		28
29	3P40	164 CHILLER	162 CHILLER	3P50	30
31					32
33					34
35	1P15	164 CABINET MOUNT FUMEHOOD 5-15R RECEPT. & LIGHT	162 WALK-IN FUMEHOOD 15A DUPLEX AND LIGHT	1P15	36
37	2P20	164 CABINET MOUNT FUMEHOOD 20A RECEPTACLE	164 WALK-IN FUMEHOOD 15A DUPLEX AND LIGHT	1P15	38
39					40
41					42
NOTES					

3  
E03  
PANEL SCHEDULE FOR  
NEW PANEL L164  
N.T.S.

EXISTING PANEL L9 (AKA LP9)					
120/208 VOLTS					
3	PHASE	LOCATION	CORRIDOR OUTSIDE ROOM 162	100A	A.BUSSING
4	WIRE	FEEDER	100A FROM PANEL LD	FLUSH	MTG.
		TYPE	SQUARE D NQO		
CIRC.	BKR.	DESCRIPTION	DESCRIPTION	BKR.	CIRC.
1	2P30**	SPARE	LIGHTS ROOMS 158/160/162/164	1P15**	2
3			RECEPTACLES ROOM 164	1P15**	4
5	3P20	SPARE	RECEPTACLES ROOM 164	1P15**	6
7			RECEPTACLES ROOM 162	1P15**	8
9			ROOM 165A RECEPTACLE	1P20	10
11	2P20**	SPARE	HALL 165A RECEPTACLE	1P15	12
13			RECEPTACLES ROOM 162	1P15**	14
15	1P20***	HVAC RECEPTACLE ON ROOF	RECEPTACLES ROOM 160	1P15**	16
17	1P15**	SPARE	RECEPTACLES ROOM 158/60	1P15**	18
19	1P15	SPARE	RECEPTACLES ROOM 158	1P15**	20
21	1P15**	SPARE	SPARE	1P15**	22
23	1P15	SPARE	SPARE	1P15	24
25	1P15**	SPARE	SPARE	1P15**	26
27	1P15	ROOM 165A FUMEHOOD	SPARE	1P15	28
29	1P15	HALL RECEPTACLE	UNKNOWN	1P15	30
NOTES					
**REUSE EXISTING BREAKER					
***NEW BREAKER					

2  
E03  
NEW PANEL SCHEDULE FOR  
EXISTING PANEL L9  
N.T.S.



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No.	Date	Revision	By: Par:

Date Printed Date imprimée

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

project projet

**BUILDING M-23A  
RENOVATIONS -NANOLAB  
ROOMS 158, 160, 162, 164**

**MONTREAL ROAD CAMPUS**

drawing dessin  
**ELECTRICAL PANEL SCHEDULES**

designed conçu date **JULY 2014**

drawn DIF dessiné scale **AS NOTED** échelle

checked K.X.L. vérifié sheet **E03** of/de **3** feuille

approved RC. approuvé W.O.no. **A1-004452-02** D.T.no.

dwg.no. dessin no.

**3966-E03**

