

GENERAL NOTES

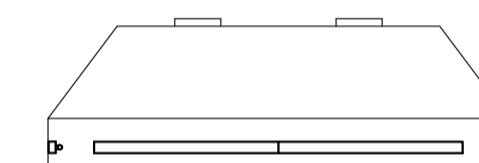
- A READ THIS DRAWING IN CONJUNCTION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS.
- B CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO NRC DEPARTMENTAL REPRESENTATIVE.
- C CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- D PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- E MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- F COORDINATE ALL SHUTDOWNS WITH THE NRC DEPARTMENTAL REPRESENTATIVE.
- 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.

DRAWING NOTES

1. EXISTING ELECTRICAL DEVICE TO REMAIN AS-IS.
2. EXISTING ELECTRICAL DEVICE TO BE RELOCATED.
3. EXISTING ELECTRICAL DEVICE TO BE REMOVED.
4. NEW ELECTRICAL DEVICE.
5. EXISTING ELECTRICAL WIRING TO REMAIN.
6. REMOVE EXISTING 75kVA TRANSFORMER T-1007 AND TURN OVER TO NRC. REPLACE WITH NEW 150kVA TRANSFORMER.
7. EXISTING PANEL L07 TO BE CONNECTED TO NEW TRANSFORMER T1007.
8. EXISTING PANEL PD1 TO REMAIN AS-IS. SHOWN FOR REFERENCE ONLY.
9. FEEDER FOR 225A SPLITTER TO BE SPLICED AND EXTENDED TO NEW LOCATION.
10. EXISTING DISCONNECTS FOR T1006, T1007, 20AHU22 AND VFD FOR 20AHU22 TO BE RELOCATED TO NEW WALL.
11. NEW LOCATION FOR EQUIPMENT REFERRED TO IN NOTE 10.
12. EXISTING WEATHEROMETER FUSED DISCONNECT TO REMAIN IN PLACE.
13. NEW ENVIRO CHAMBER (2 UNITS). FEED FROM PANEL L07 USING 2P60A BREAKER AND 3 #6 + GROUND IN 27MM EMT. CONNECT TO DISCONNECT INCLUDED WITH UNIT. CONFIRM BREAKER AND WIRE SIZE WITH EQUIPMENT DOCUMENTATION AND ADVISE NRC DEPARTMENTAL REPRESENTATIVE OF ANY DISCREPANCIES.
14. MOUNT TRANSFORMER T1006 ON RACK ABOVE T1007. RACK TO BE DESIGNED BY STRUCTURAL ENGINEER TO SUPPORT WEIGHT OF TRANSFORMER. SUBMIT STAMPED DESIGN DRAWINGS OF RACK PRIOR TO INSTALLATION.
15. CONFIRM EXISTING START-STOP STATION IS SUITABLE FOR NEW EXHAUST FAN 20XAF07 AND REPLACE OVERLOAD PROTECTION IF NECESSARY.
16. REPLACE EXISTING 225A, 600V, 1524mm WIDE SPLITTER WITH 225A, 600V, 915mm SPLITTER.
17. PROVIDE 4 NEW LIGHT FIXTURES, TYPE A. CONNECT TO EXISTING ROOM LIGHT SWITCH & CIRCUIT USING #12 WIRE IN EMT AND SUSPEND FROM CEILING AT 2745mm A.F.F.
18. PROVIDE 4 NEW LIGHT FIXTURES, TYPE B, MOUNTED TO INSIDE OF NEW CANOPY. REFER TO DETAIL 5/E01. PROVIDE NEW SWITCH AS SHOWN AND CIRCUIT FROM L07-9.
19. REMOVE EXISTING 3 LIGHT FIXTURES. REMOVE WIRE AND CONDUIT BACK TO SOURCE.

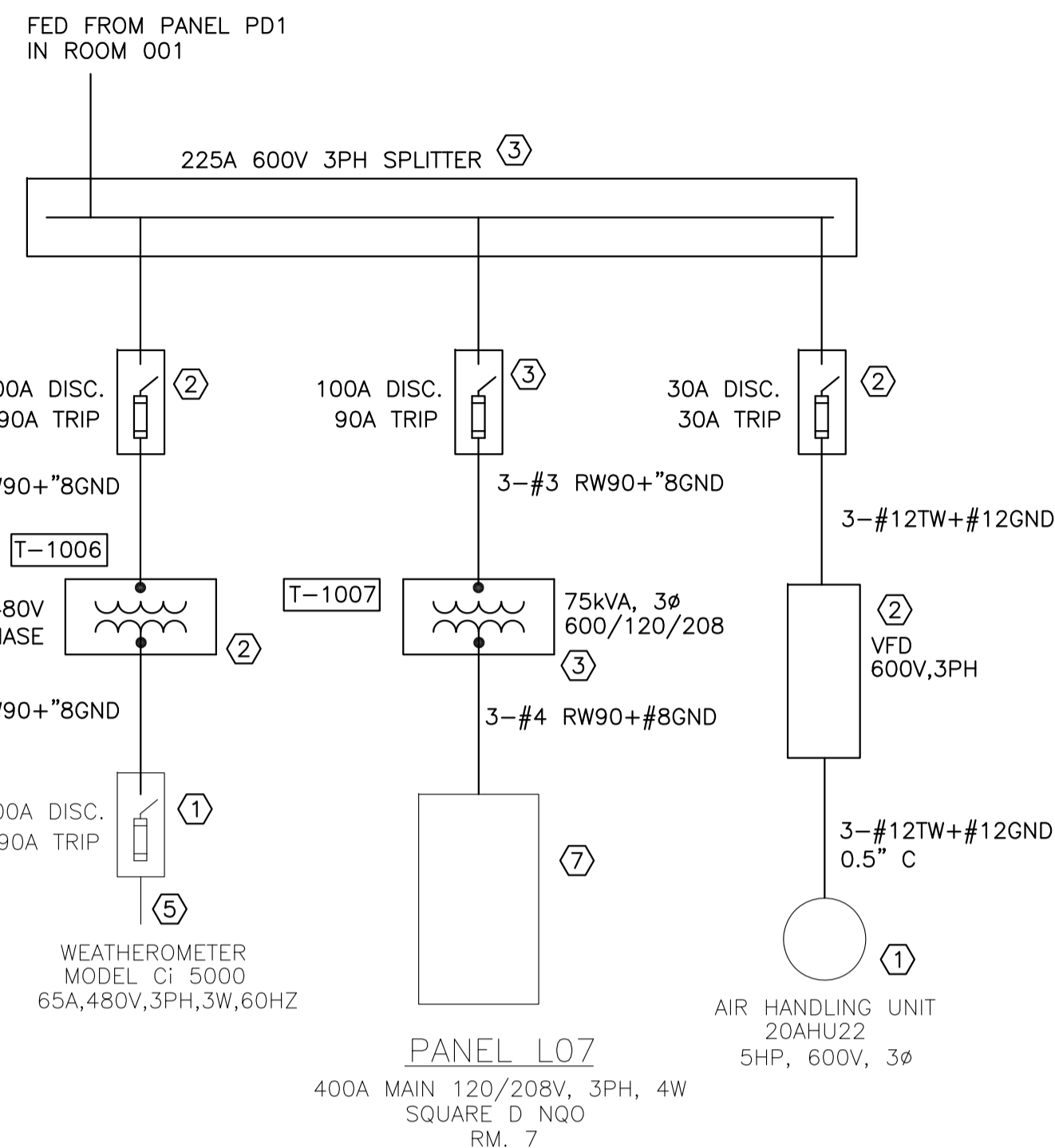
SINGLELINE WIRING SCHEDULE

- A. 3-#3 + GND IN 35mm EMT.
- B. 3-#4 + GND IN 35mm EMT.
- C. 3-#2/0 + GRD IN 53mm EMT.
- D. DOUBLE RUN OF 4-250MCM + GRD, EACH IN 63mm EMT.
- E. 3-#12 + GRD IN 16mm EMT.
- F. 3-#4/0 + GND IN 63mm EMT. SPLICE EXISTING 4/0 CABLE TO EXTEND TO NEW LOCATION. EXTEND EXISTING CONDUIT TO NEW LOCATION.



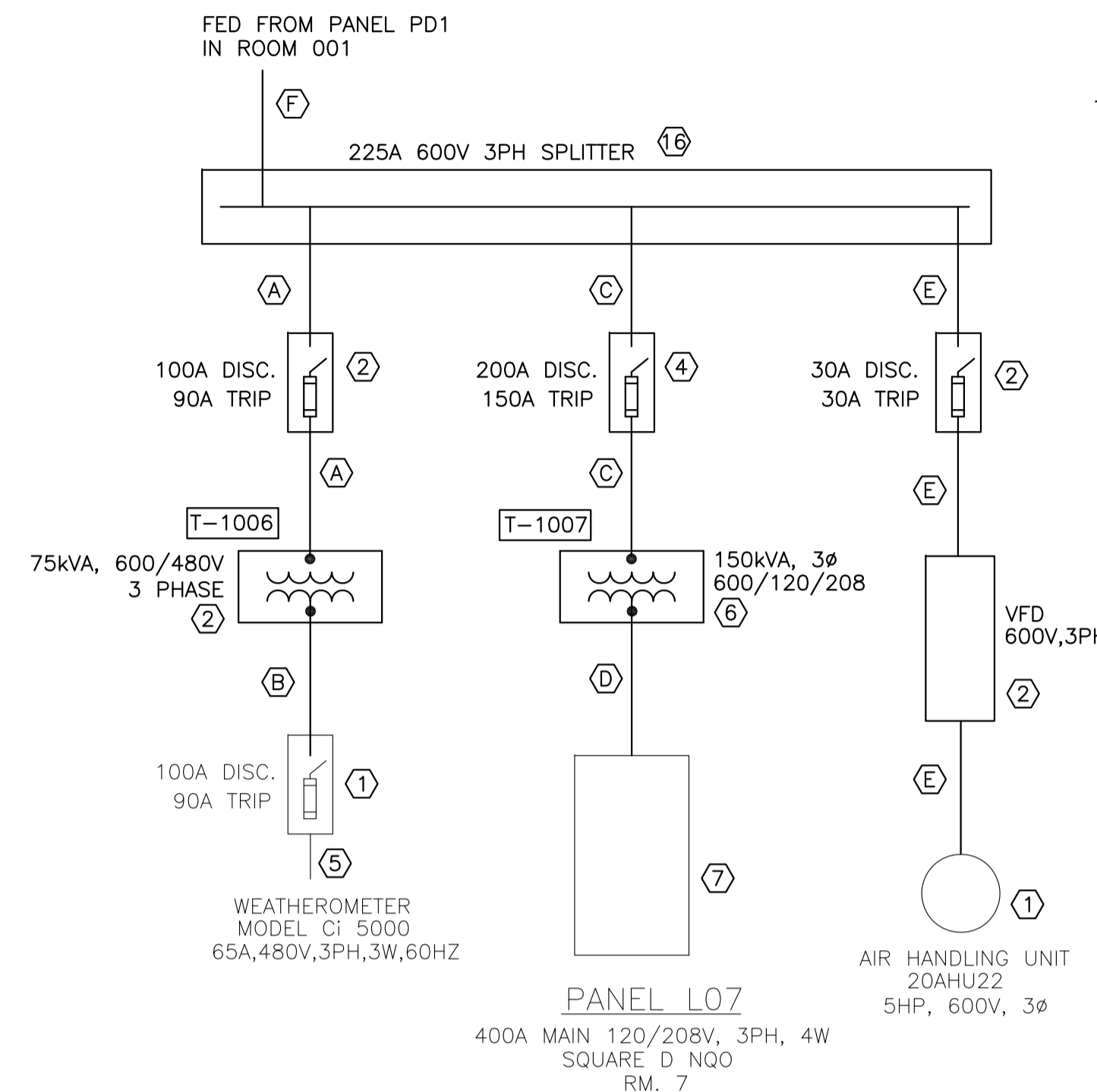
CANOPY LIGHT MOUNTING DETAIL

5
E01
N.T.S.



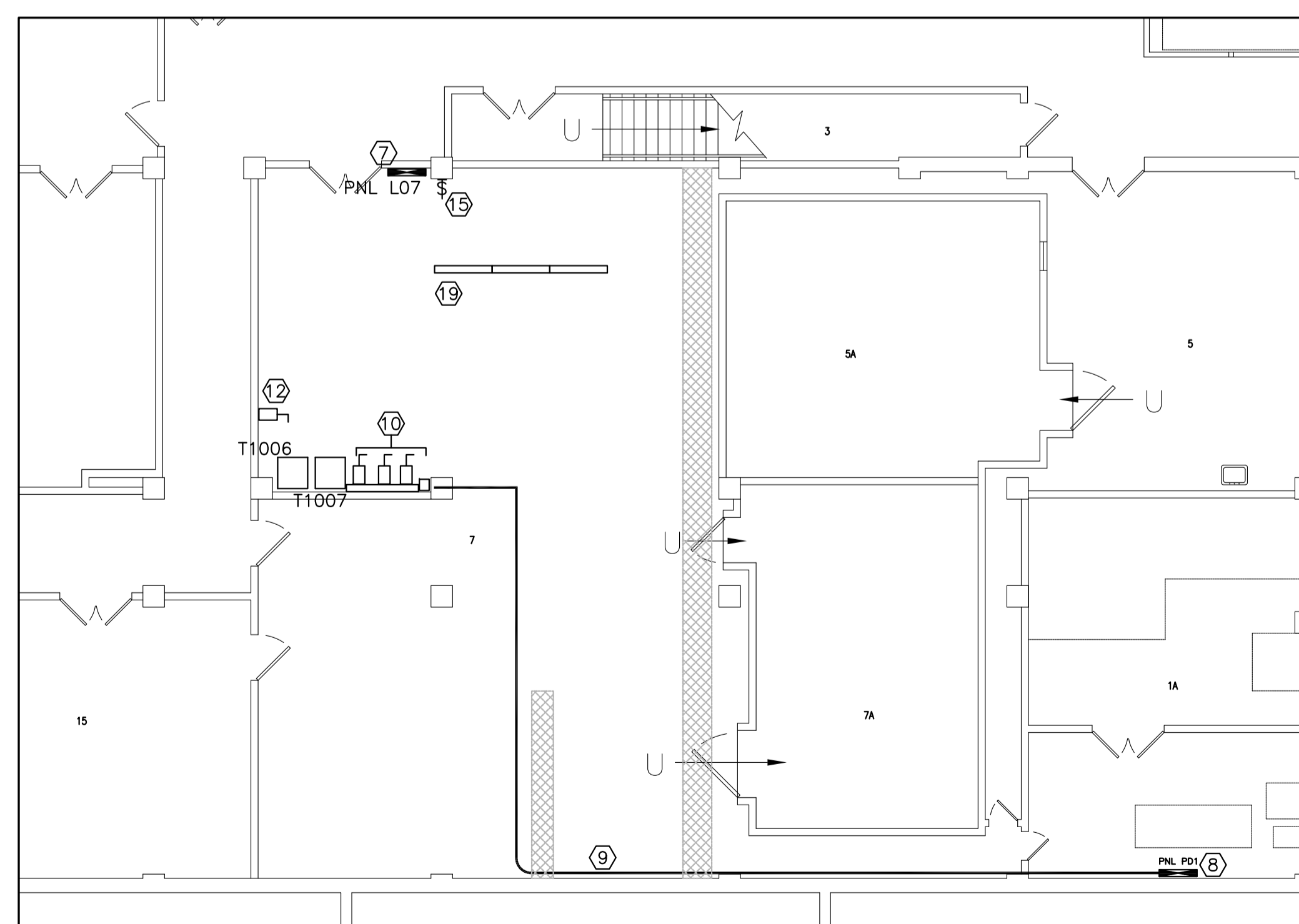
EXISTING PARTIAL SINGLELINE (FOR REFERENCE)

1
E01
N.T.S.



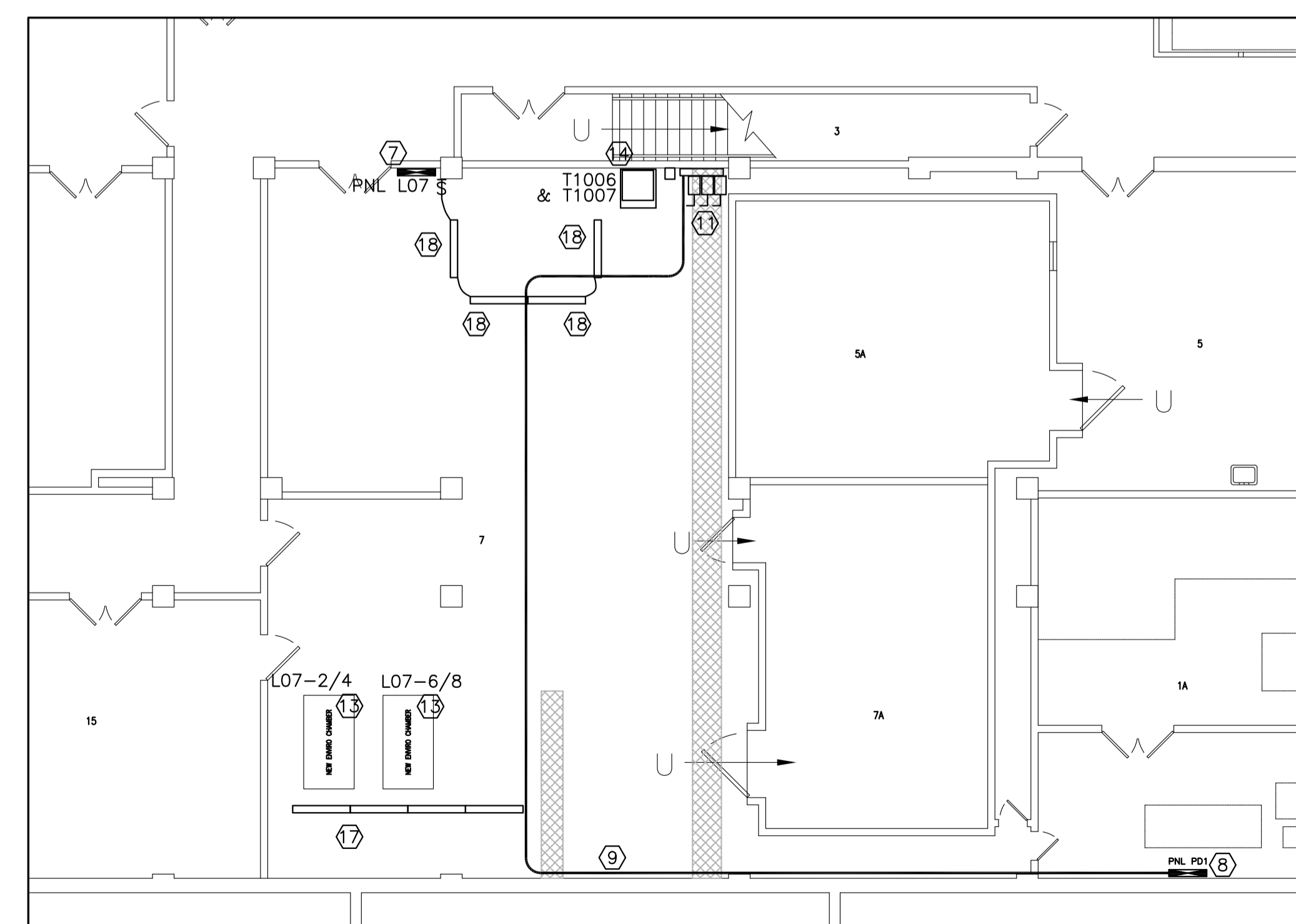
MODIFICATIONS TO SINGLELINE

2
E01
N.T.S.



EXISTING ELECTRICAL

3
E01
1:100



NEW ELECTRICAL WORK

4
E01
1:100

0	OCT. 2013	ISSUED FOR TENDER	DIF
No.	Date	Revision	By: Par:

Date Printed DD MM YYYY 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. No. du détail	A
B	Location drawing no. sur dessin no.	B
C	Drawing no. dessin no.	C

project **BUILDING M-20- ROOM B007- BIOCOMPOSITE LAB RENOVATION** projet

MONTREAL ROAD CAMPUS
 drawing **ELECTRICAL WORK** dessin

designed **DIF** conçu **AUG. 2013** date

drawn **DIF** dessiné **AS NOTED** échelle

checked **K.X.L.** vérifié **E01** of/de **1** feuille

approved **B.V.** approuvé **A1-002934-01** W.O.no. D.T.no.

dwg.no. **3714-E01** dessin no.

GENERAL NOTES

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- E MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- F COORDINATE ALL SHUTDOWNS WITH THE NRC REPRESENTATIVE.
- G REMOVE MEANS REMOVE AND DISPOSE OF OFF SITE UNLESS OTHERWISE NOTED.
- H ALL FAN COIL UNITS, ALL EXISTING DIFFUSERS AND FUME HOOD TO BE THOROUGHLY CLEANED AFTER CONSTRUCTION TO REMOVE ALL DEBRIS AND DUST DUE TO CONSTRUCTION WORK.

0	AUG. 2013	ISSUED FOR TENDER	JWG/DF
No.	Date	Revision	By/Par.
Date Printed	DD MM YYYY	Date Imprimée	

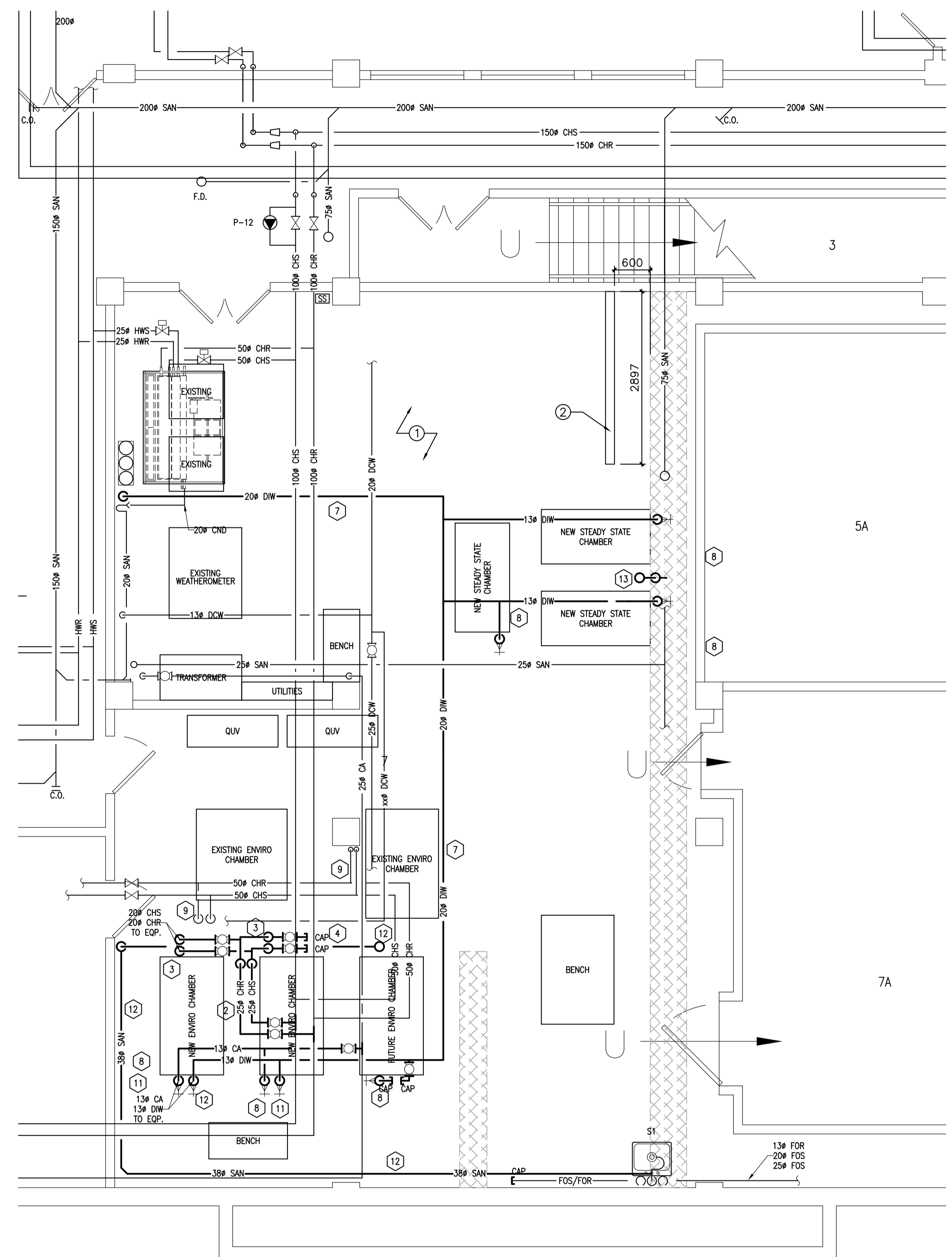
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A	A Detail no. No. du détail	A
B	B Location drawing no. sur dessin no.	B
C	C Drawing no. dessin no.	C

project **BUILDING M-20- ROOM 007- BICOOMPOSITE LAB RENOVATION** project

MONTREAL ROAD CAMPUS
 drawing **MECHANICAL- HVAC, PLUMBING AND UTILITIES- NEW WORK** dessin

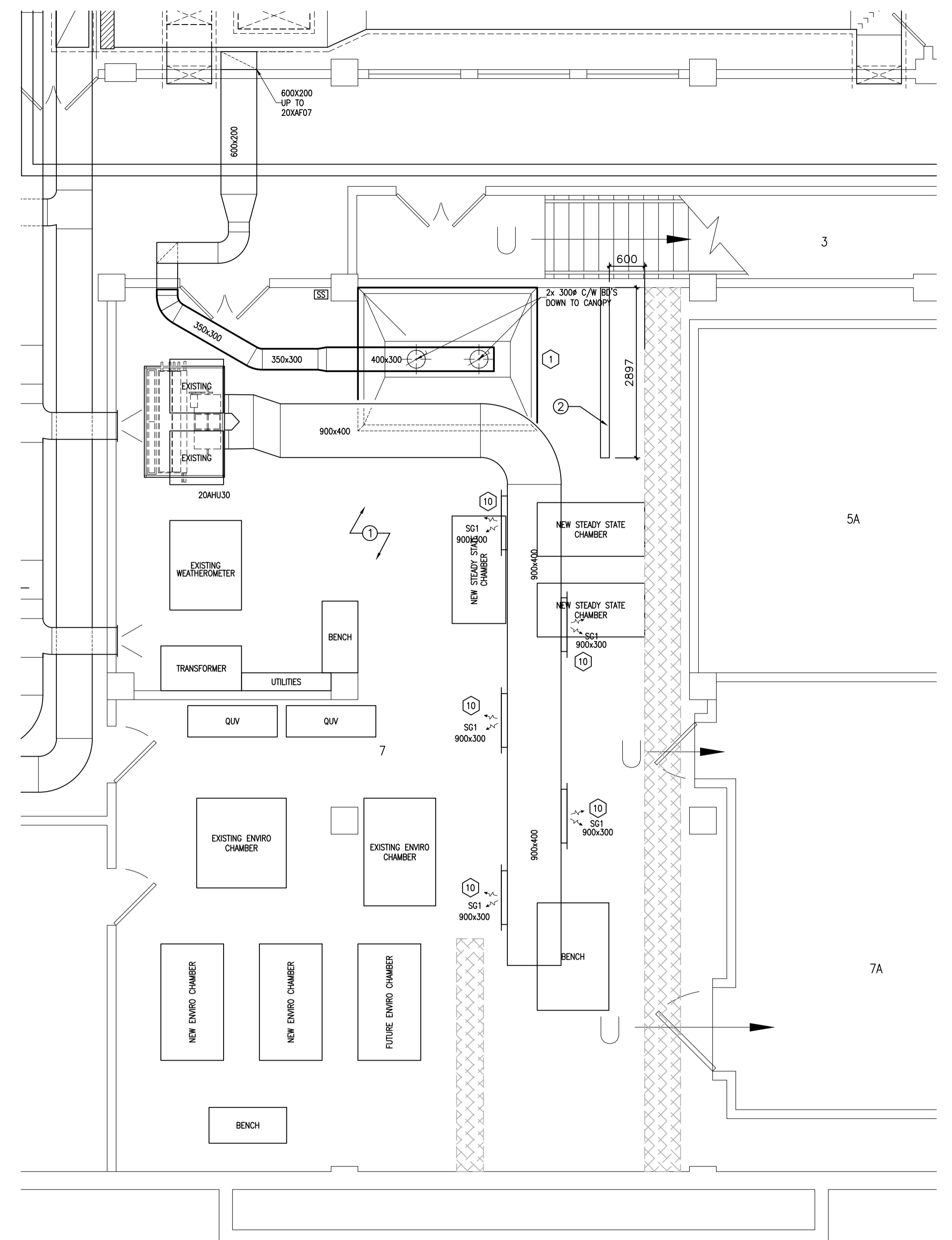
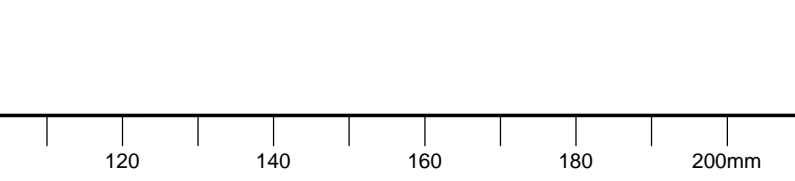
designed	conçu	date	date
JWG/BL		AUG. 2013	
drawn	dessiné	scale	échelle
JWG/BL		AS INDICATED	
checked	vérifié	sheet	feuille
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approved	approuvé	W.O.no.	D.T.no.
BY		A1-002934-01	
dwg.no.			dessin no.
3714-G01			



2
G01
 BUILDING M-20- PART BASEMENT PLAN
 PLUMBING AND UTILITIES- NEW WORK
 SCALE: 1:50

ARCHITECTURAL NOTES: #

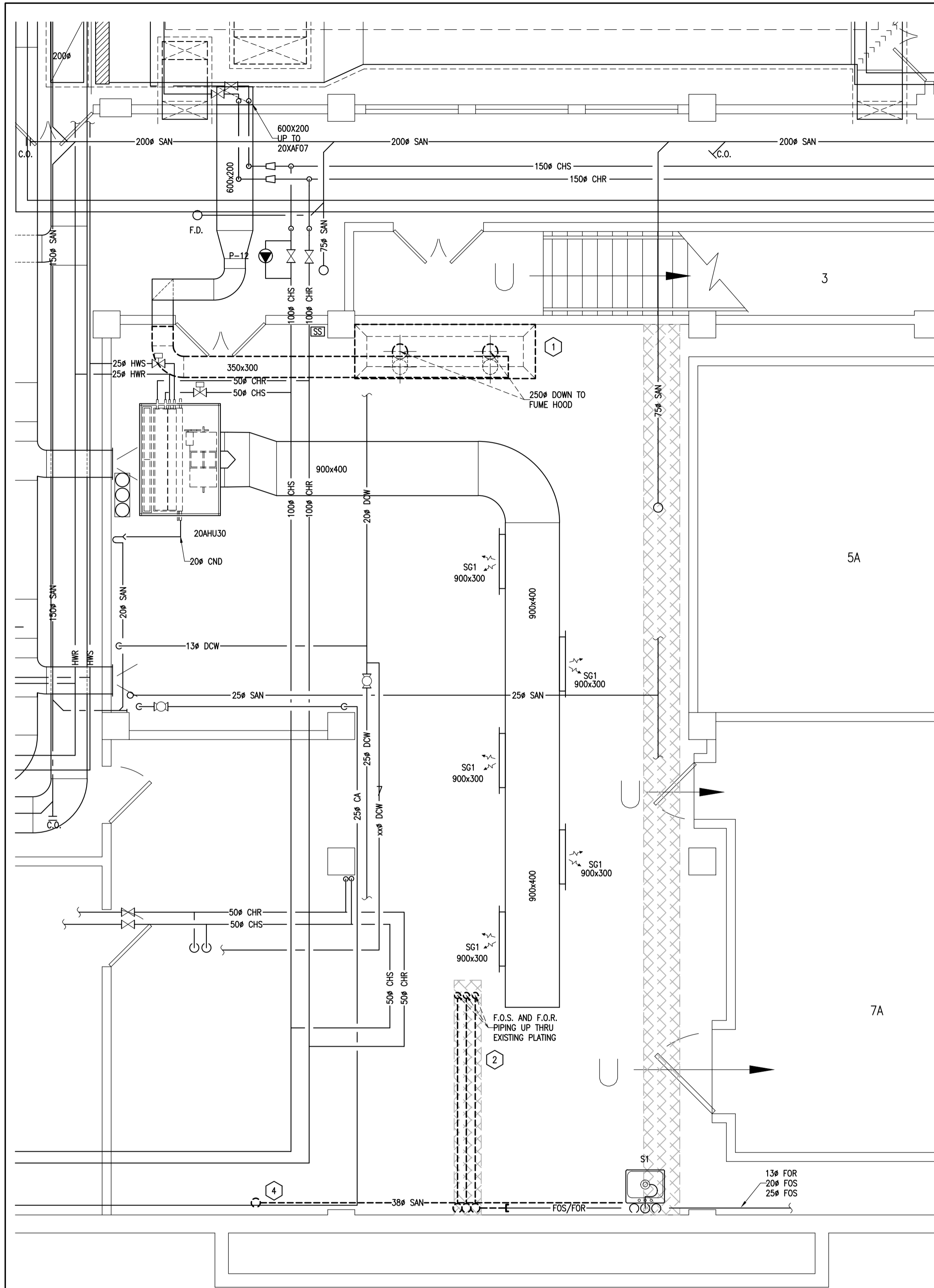
1. APPLY NEW EPOXY FLOORING THROUGHOUT ROOM 007: SHOT BLAST EXISTING CONCRETE FLOOR. REPAIR ALL CRACKS USING EPOXY TO CREATE A FLUSH, SMOOTH SURFACE. APPLY NEW 2-PART EPOXY FLOORING. STANDARD OF ACCEPTANCE: 2 COATS OF STONHARD "GS-4". COLOUR: "PEWTER", WITH LIGHT TEXTURED FINISH. APPLY AS PER MANUFACTURER'S INSTRUCTIONS.
2. NEW PARTITION WALL:
 - WALL IS TO BE 2440mm LONG, AND 2440mm HIGH.
 - WALL IS TO BE FRAMED USING 18 ga, 152mm STEEL STUDS @ 300mm O/C.
 - BOTTOM PLATE IS TO BE ANCHORED TO CONCRETE FLOOR USING EXPANDING CONCRETE ANCHORS AT 600mm O/C ALONG ENTIRE LENGTH OF WALL.
 - EACH END OF WALL IS TO BE COMPRISED OF 75mm X 150mm, 19mm THICK, STEEL "U" CHANNELS, ANCHORED TO THE FLOOR SLAB BELOW, AND CEILING SLAB ABOVE (HEIGHT APPROX. 4600mm), USING EXPANDING CONCRETE ANCHORS.
 - WALL IS TO BE SHEATHED ON BOTH SIDES AND BOTH ENDS USING 19mm FINISH GRADE PLYWOOD (SHEATHING TO STOP AT TOP OF WALL).
 - ALL SIDES ARE TO BE PRIMED AND PAINTED (2 COATS). COLOUR: WHITE.



1
G01
 BUILDING M-20- PART BASEMENT PLAN
 HVAC- NEW WORK
 SCALE: 1:50

MECHANICAL NOTES: X

1. PROVIDE NEW CANOPY (3048MM X 2438MM- (10FT X 8FT)). ALL REQUIRED HANGERS AND SUPPORTS, EXHAUST DUCTWORK, BALANCING DAMPERS AND REQUIRED ACCESSORIES AS INDICATED. MOUNTING HEIGHT OF CANOPY TO BE A MINIMUM OF 2440MM (8FT) ABOVE FLOOR LEVEL. CANOPY IS TO BE SUPPORTED FROM WALL AND FROM HANGERS FROM CEILING.
2. PROVIDE NEW 32# CHILLED WATER SUPPLY (CHS) AND 32# CHILLED WATER RETURN (CHR) PIPING FROM SUPPLY MAINS AS INDICATED. PROVIDE ISOLATION VALVES AND SUPPORT STRUCTURE AS INDICATED.
3. PROVIDE NEW 20# CHILLED WATER SUPPLY (CHS) AND 20# CHILLED WATER RETURN (CHR) PIPING AND REQUIRED BALL VALVES LOCATED AS INDICATED FOR CLIENT EQUIPMENT. ALL CHILLED WATER PIPING TO BE INSULATED AS PER SPECIFICATIONS. EXACT LOCATION OF CHS AND CHR PIPING DROPS TO BE DETERMINED ON SITE. PROVIDE ANY REQUIRED REDUCERS TO ALLOW FOR CONNECTIONS TO EQUIPMENT. PROVIDE REQUIRED UNI-STRUT SUPPORTS FOR CHILLED WATER PIPING, SUPPORT STRUCTURE TO CONNECT TO FLOOR AND TO CEILING STRUCTURE.
4. PROVIDE NEW 20# CHILLED WATER SUPPLY (CHS) AND CHILLED WATER RETURN (CHR) STUB-OUTS AND BALL VALVES LOCATED AS INDICATED FOR FUTURE USE. PROVIDE TEMPORARY CAP ON OUTLETS.
5. PROVIDE NEW DOMESTIC COLD WATER PIPING (DCW) AND BALL VALVES SIZED AND LOCATED AS INDICATED. ALL DOMESTIC COLD WATER PIPING TO BE INSULATED AS PER SPECIFICATIONS. EXACT LOCATION OF DCW PIPING DROPS TO BE DETERMINED ON SITE.
6. PROVIDE DRAIN PIPING, CLEAN OUTS AND OFF-SETS, SIZED AND LOCATED AS INDICATED. PROVIDE ALL REQUIRED SUPPORTS FOR PIPING.
7. PROVIDE NEW D.I. (DIW) PIPING AND ISOLATION VALVES AND ALL REQUIRED FITTINGS SIZED AND LOCATED AS INDICATED FROM EXISTING D.I.W. SYSTEM. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION. FOR CLARIFICATION CONNECTION SHOWN AT FRONT. ACTUAL CONNECTION LOCATION T.B.D. ON SITE.
8. PROVIDE NEW D.I. WATER (DIW) PIPING AND ISOLATION VALVES SIZED AND LOCATED AS INDICATED FOR FUTURE USE. DO NOT CONNECT TO NEW D.I. WATER SYSTEM. PROVIDE TEMPORARY CAPS ON BOTH INLET AND OUTLET OF PIPING AS INDICATED. PROVIDE REQUIRED SUPPORT STRUCTURE FOR D.I.W. WATER PIPING.
9. PROVIDE NEW UNI-STRUT SUPPORTS FOR EXISTING CHILLED WATER AND D.C.W. SERVICES FOR EXISTING CLIENT EQUIPMENT. UNI-STRUT TO BE ANCHORED TO FLOOR AND CEILING.
10. TEST, ADJUST AND BALANCE SUPPLY AIR GRILLES (SG1'S- EXISTING) AND HOOD EXHAUST TO AIR QUANTITIES INDICATED.
11. PROVIDE NEW COMPRESSED AIR (CA) PIPING AND ISOLATION VALVES SIZED AND LOCATED AS INDICATED. PROVIDE REQUIRED SUPPORTS TO BRING CA PIPING TO CLIENT EQUIPMENT. FOR CLARITY, CONNECTIONS SHOWN AT FRON, ACTUAL CONNECTION LOCATION T.B.D. ON SITE.
12. PROVIDE NEW 38# CONDENSATE PIPING FROM CLIENT EQUIPMENT DRAINS AS INDICATED. CONNECT TO EXISTING BUILDING SANITARY SERVICES. PIPING TO BE RUN ALONG FLOOR AGAINST WALL. EXACT CONNECT LOCATIONS TO BE DETERMINED ON SITE. 75# CONDENSATE HUB TO BE MOUNTED MINIMUM OF 150MM ABOVE FLOOR LEVEL.
13. PROVIDE NEW 38# SANITARY PIPING FROM CLIENT EQUIPMENT TO DRAINAGE LOCATED IN TRENCH AS INDICATED. PROVIDE PROTECTIVE COVER FOR SANITARY PIPING RUN ALONG FLOOR WHERE THERE IS A TRIPPING HAZARD.

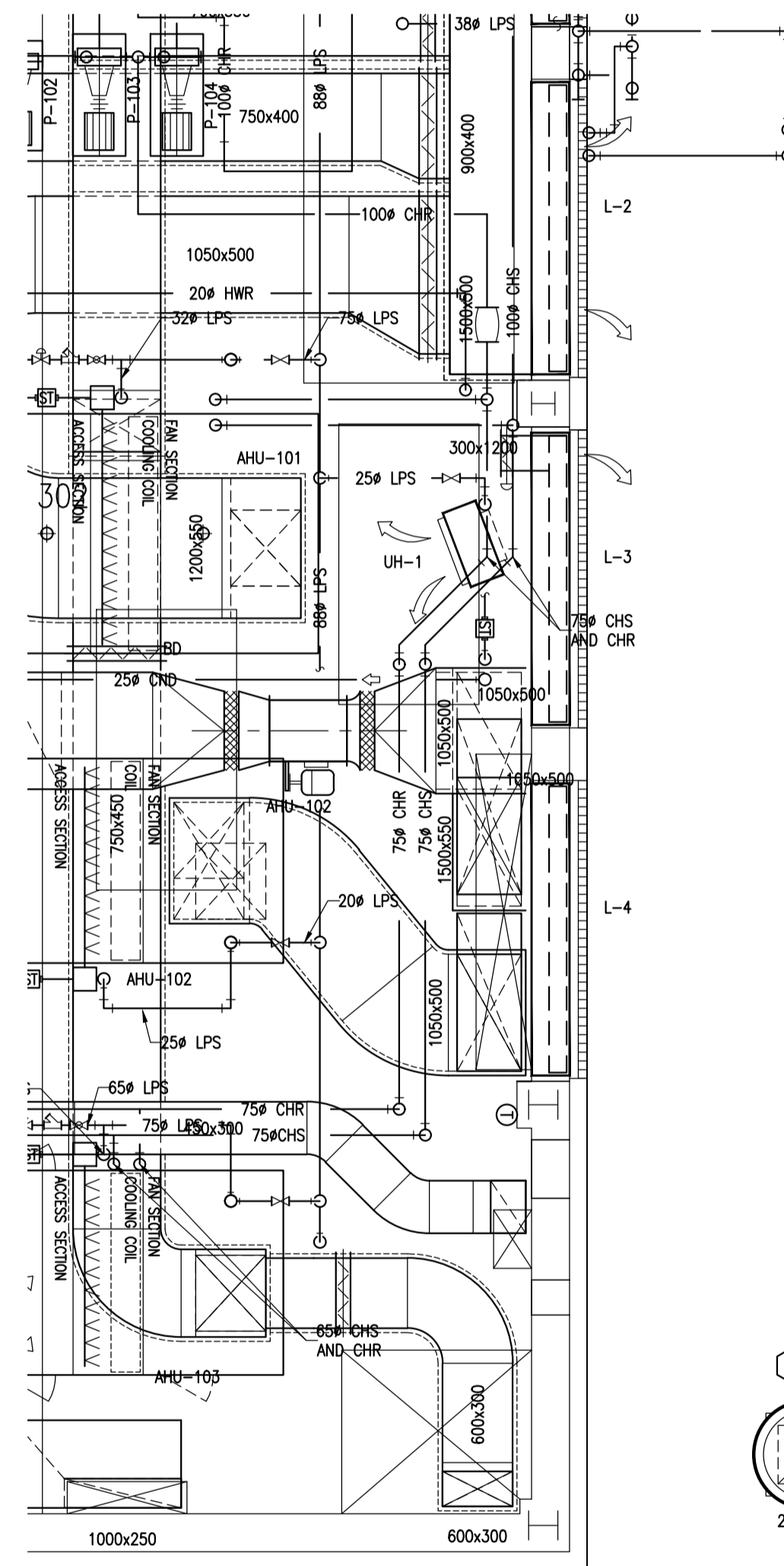


1
G02
BUILDING M-20- PART BASEMENT PLAN
MECHANICAL DEMOLITION
SCALE: 1:50

EXHAUST FAN SCHEDULE											
No.	LOCATION	DRIVE TYPE	FAN TYPE	L/S	S.P. (Pa.)	FAN RPM	SONES	VOLTAGE	AMPS	HORSE POWER	REMARKS
20XAF07	ROOF	BELT	IN-LINE	1504	311.4	1850	22	600/3/60	---	2.0	EXISTING FAN- NEW MOTOR
---	---	---	---	---	---	---	---	---	---	---	---

MECHANICAL NOTES: (X)

- DISCONNECT AND REMOVE EXISTING FUME HOOD AND ASSOCIATED DUCTWORK AS INDICATED.
- DRAIN, DISCONNECT AND REMOVE EXISTING HYDRAULIC PIPING, VALVES AND SUPPORTS FROM TRENCH AS INDICATED. PROVIDE NEW ISOLATION VALVE AND CAP AND SEAL ALL PIPING AS INDICATED ON NEW WORK PLAN.
- REMOVE EXISTING EXHAUST FAN MOTOR FROM EXHAUST FAN 20XAF07 AND PROVIDE NEW EXHAUST FAN MOTOR FOR FAN 20XAF07 AS INDICATED. REFER TO SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. FAN IS CONTROLLED BY ON/OFF BUTTON LOCATED IN ROOM 007.
- DISCONNECT AND REMOVE EXISTING HUB DRAIN AND SANITARY PIPING AS INDICATED. CAP AND SEAL PIPING AT EXISTING SINK.



2
G02
BUILDING M-20- PART ROOF PLAN- OUTSIDE
ROOM 302- 20XAF07 MOTOR REPLACEMENT
SCALE: 1:50

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
	GATE VALVE
	BALL VALVE
	CHECK VALVE
	CIRCUIT BALANCING VALVE
	2-WAY CONTROL VALVE (DOC)
	PIPE UP
	PIPE DOWN
	CLEAN-OUT
	UNION
	CAP
	FLOOR CLEAN OUT
	FLOOR DRAIN
	RECTANGULAR DUCTWORK
	ACOUSTICALLY LINED RECTANGULAR DUCTWORK
	ROUND SPIRAL DUCTWORK
	SUPPLY DIFFUSER- SD1 24"x24"
	ROUND TAKE-OFF C/W BALANCING DAMPER
	ROUND TAKE-OFF
	90° ELBOW
	45° ELBOW
	RECTANGULAR TAKE-OFF C/W DAMPER
	RECTANGULAR TAKE-OFF
	DIFFUSER TAG
	EXHAUST FAN- UP-BLAST TYPE
	ROUND DUCT UP
	RECTANGULAR DUCT UP (RETURN AND SUPPLY)
	CONTROL LINE
	FAN START/ STOP SWITCH

MECHANICAL LINE TYPE LEGEND	
LINE	DESCRIPTION
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
SAN	SANITARY DRAIN
V	VENT
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
N	NITROGEN
CA	COMPRESSED AIR
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
	INDICATES NEW
	INDICATES EXISTING (TO REMAIN)
	INDICATES DEMOLISHED/ REMOVED



3
G02
BUILDING M-20- BASEMENT- ROOM 007
PHOTO- PIPING TO BE REMOVED FROM TRENCH
SCALE: N/A



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- ALL FAN COIL UNITS, ALL EXISTING DIFFUSERS AND FUME HOOD TO BE THOROUGHLY CLEANED AFTER CONSTRUCTION TO REMOVE ALL DEBRIS AND DUST DUE TO CONSTRUCTION WORK.

No.	Date	Revision	By:
0	AUG. 2013	ISSUED FOR TENDER	JWG/DF
			Par:

Date Printed DD MM YYYY Date imprimée

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	C Drawing no. dessin no.	

project **BUILDING M-20- ROOM B007- BIOCOMPOSITE LAB RENOVATION** projet

MONTREAL ROAD CAMPUS
drawing **BASEMENT- HVAC, PLUMBING AND UTILITES DEMOLITION ROOF- HVAC REWORK, LEGENDS AND SCHEDULES** dessin

designed	conçu	date	date
JWG/BL		AUG. 2013	
drawn	dessiné	scale	échelle
JWG/BL		AS INDICATED	
checked	vérifié	sheet	feuille
		2 of/de 2	
approved	approuvé	W.O.no.	D.T.no.
BY		A1-002934-01	
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