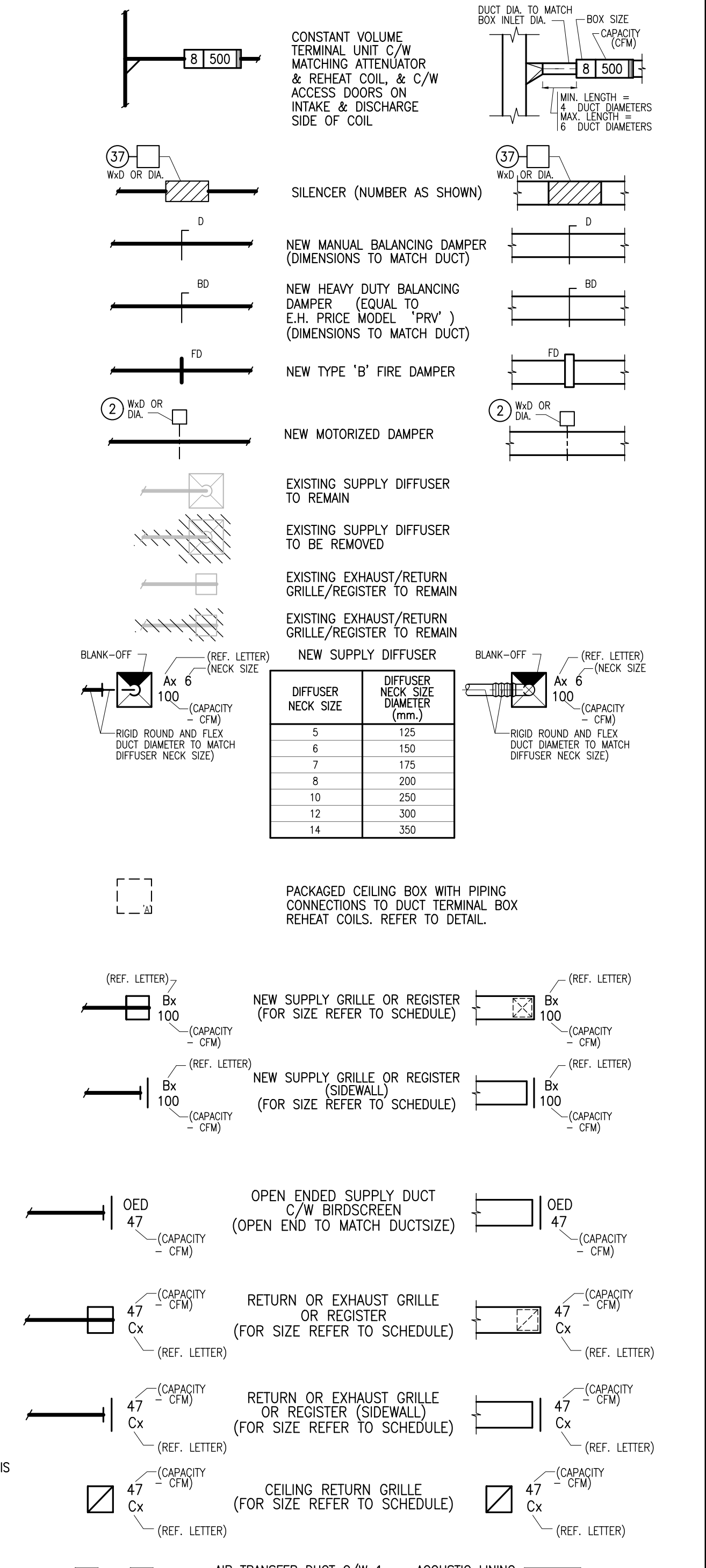
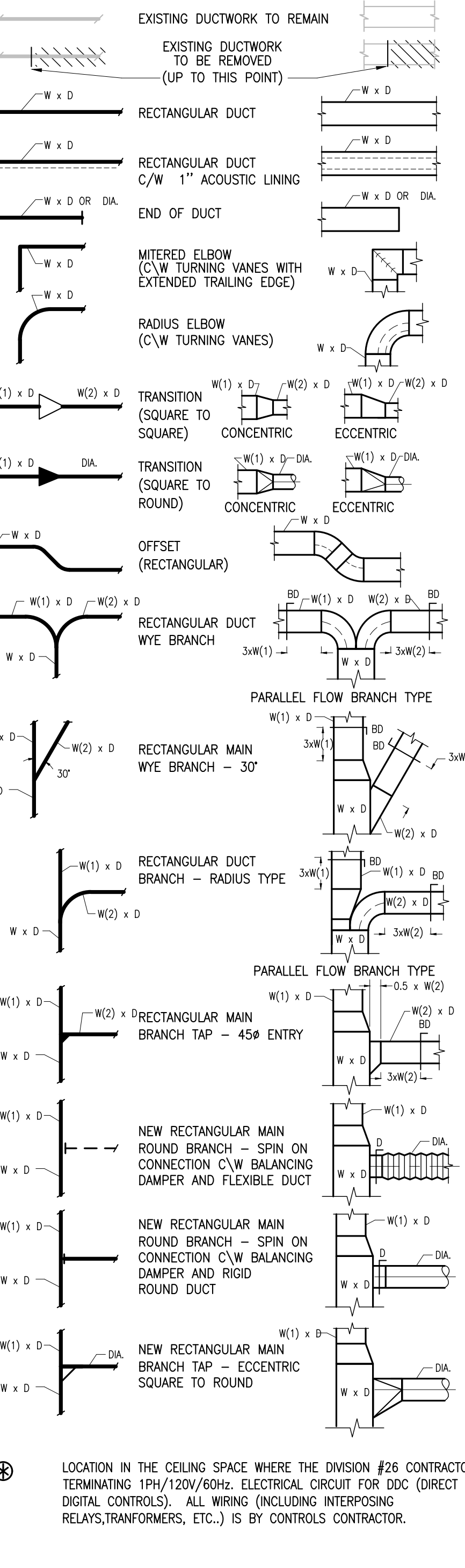
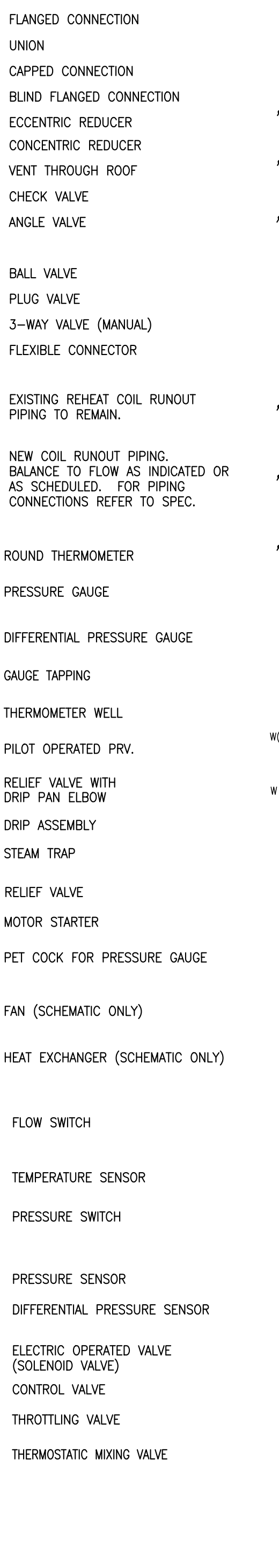
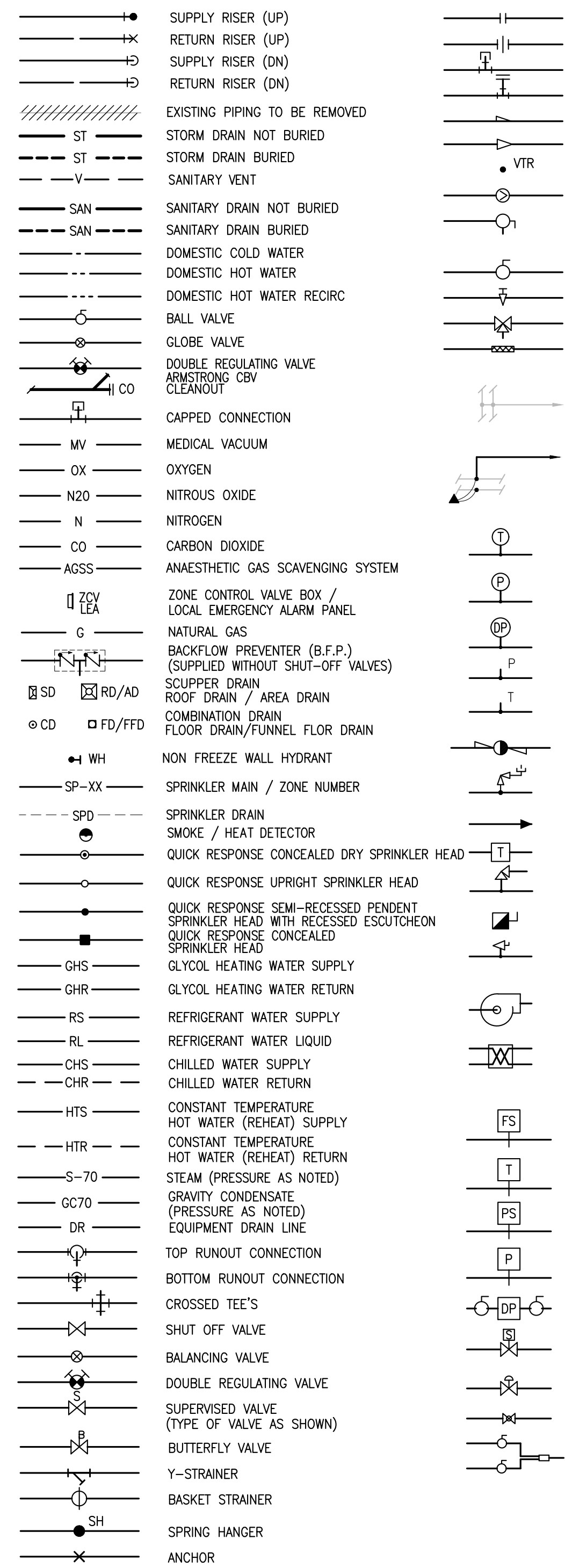


MECHANICAL LEGEND



GENERAL NOTES:

- 1.) PROVIDE FIRE DAMPERS AT ALL FLOOR AND ROOF PENETRATIONS EXCEPT WHERE DUCT IS IN A FIRE RATED SHAFT. PROVIDE FIRE DAMPER AT ALL FIRE RATED SHAFT WALLS AND SEPARATIONS.
2.) ALL DUCT AND PIPE PENETRATIONS THROUGH MECHANICAL ROOM FLOORS OR WET AREAS, TO BE CURBED AND SLEEVED. SLEEVES TO EXTEND 75mm ABOVE FINISHED FLOOR. CONCRETE CURBS TO BE 100mm WITH CHAMFERED EDGES.
3.) BALANCING DAMPERS ARE REQUIRED AT ALL DUCTWORK BRANCH CONNECTIONS. BALANCING DAMPERS SHOWN INDICATE PREFERRED LOCATIONS ONLY. INDICATE LOCATION OF THESE DAMPERS AND ALL BRANCH DUCT BALANCING DAMPERS NOT SHOWN ON THIS DRAWING, ON 1:50 SCALE DUCTWORK INSTALLATION DRAWINGS. INSTALLATION DRAWINGS TO BE SUBMITTED AND REVIEWED BY ENGINEER PRIOR TO COMMENCEMENT OF DUCTWORK FABRICATION.
4.) MAXIMUM LENGTH OF FLEXIBLE DUCTWORK IS 5'-0". SPIRAL ROUND DUCT SHALL BE USED FOR PRECEDING SECTIONS WHERE MAXIMUM LENGTH IS EXCEEDED.
5.) NEW SERVICES TO BE INSTALLED TO PERMIT MAXIMUM CEILING HEIGHTS. PROVIDE ALL OFFSETS TO LIFT SERVICES TO MAXIMUM HEIGHT.
6.) DIVISION 21 00 00 (FIRE PROTECTION AND SPRINKLERS) MUST BE CARRIED AND COORDINATED BY MECHANICAL CONTRACTOR.
7.) THIS PROJECT REQUIRES HEAVY PHASING. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. ALL SERVICES ARE TO REMAIN ACTIVE. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED.
8.) PROVIDE HEAT TRACING AND JACKETED INSULATION ON ANY DRAIN OR PIPE LINE THAT MAY BE EXPOSED TO COLD WEATHER.
9.) SUBMIT REFLECTED CEILING PLANS INDICATING ACCESS DOOR LOCATIONS. POSITION VALVES, DAMPERS, COILS ETC IN LOCATIONS WITH ACCESSIBLE CEILING WHERE POSSIBLE.
10.) ALL PIPE SIZES ARE NPS
11.) PROVIDE, AT EVERY MOTOR, A LOCAL UN-FUSED DISCONNECT SWITCH, COMPLETE WITH LOCK-OFF CAPABILITY.
12.) PROTECT EXISTING AND NEW AIR INTAKES, RETURN/ EXHAUST DUCTS AND GRILLES WITH TEMPORARY FILTER MEDIA FROM ALL CONSTRUCTION DUST.
13.) BALANCING CONTRACTOR SHALL CHECK THE AIR AND HYDRONIC PERFORMANCE OF EACH EXISTING AHU AND FAN BEFORE START OF ANY RENOVATION WORK, THIS INFORMATION SHALL BE PROVIDED TO THE ENGINEER FOR REFERENCE.
14.) ALL MECHANICAL SERVICES ARE TO BE COORDINATED WITH VENDOR EQUIPMENT AND UNISTRUT FRAMING. NO UNISTRUT FRAMING IS TO PROCEED UNTIL INTERFERENCE/ COORDINATION/ INSTALLATION DRAWINGS HAVE BEEN SUBMITTED TO CONSULTANT.
15.) ANY WORK OUTSIDE AREA OF RENOVATION TO BE COMPLETED AFTER-HOURS AND/OR ON WEEKENDS.
15.) ALL CEILING SERVICES ARE TO BE COORDINATED PRIOR TO FABRICATION/INSTALLATION OF NEW WORK. THIS INCLUDES MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL SUPPORTS FOR NEW BOOMS/COLUMNS.

PLUMBING LEGEND

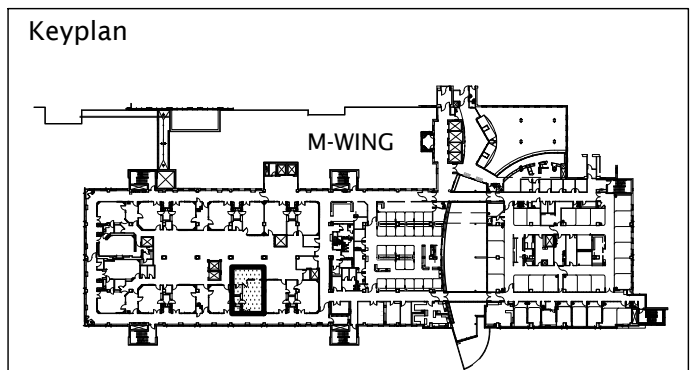
Table with columns: SYMBOL, DESCRIPTION, NOTES / REFERENCE. Includes plumbing fixtures like toilet, sink, shower, and various pipe risers.

MECHANICAL DRAWING LIST

Table with columns: DRAWING NO., DRAWING TITLE, DISCIPLINE. Lists drawings M100 through M800.

Revision table with columns: DATE, ISSUED FOR, REV. Shows revisions from 2020-03-02 to 2020-07-28.

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Canada
www.exp.com

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HHAngus & Associates Limited Consulting Engineers
1127 Leslie Street, Toronto, ON, M3C 2J6 Canada
www.hhangus.com | T 416 443 8200 | F 416 443 8290

Professional Engineer Seal for North Arrow, License No. 2191327, dated July 28/20.

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175 Bloor Street East
North Tower, 15th Floor
Toronto, ON, Canada M4W 3R8
norr.com

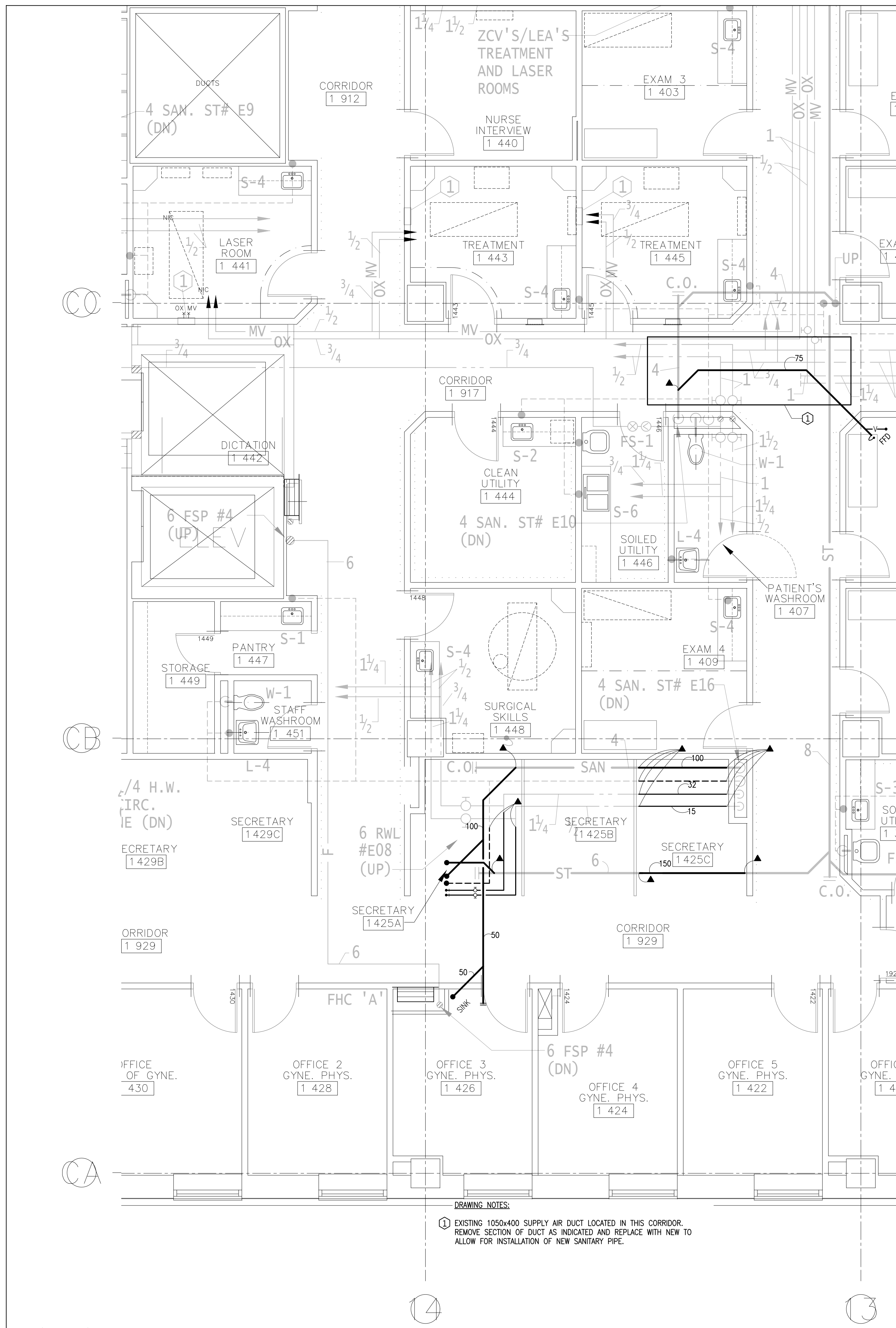
Project Manager: D.WITALEC
Project Leader: Checked

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HEALTH SCIENCES CENTRE
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M4N 3M5

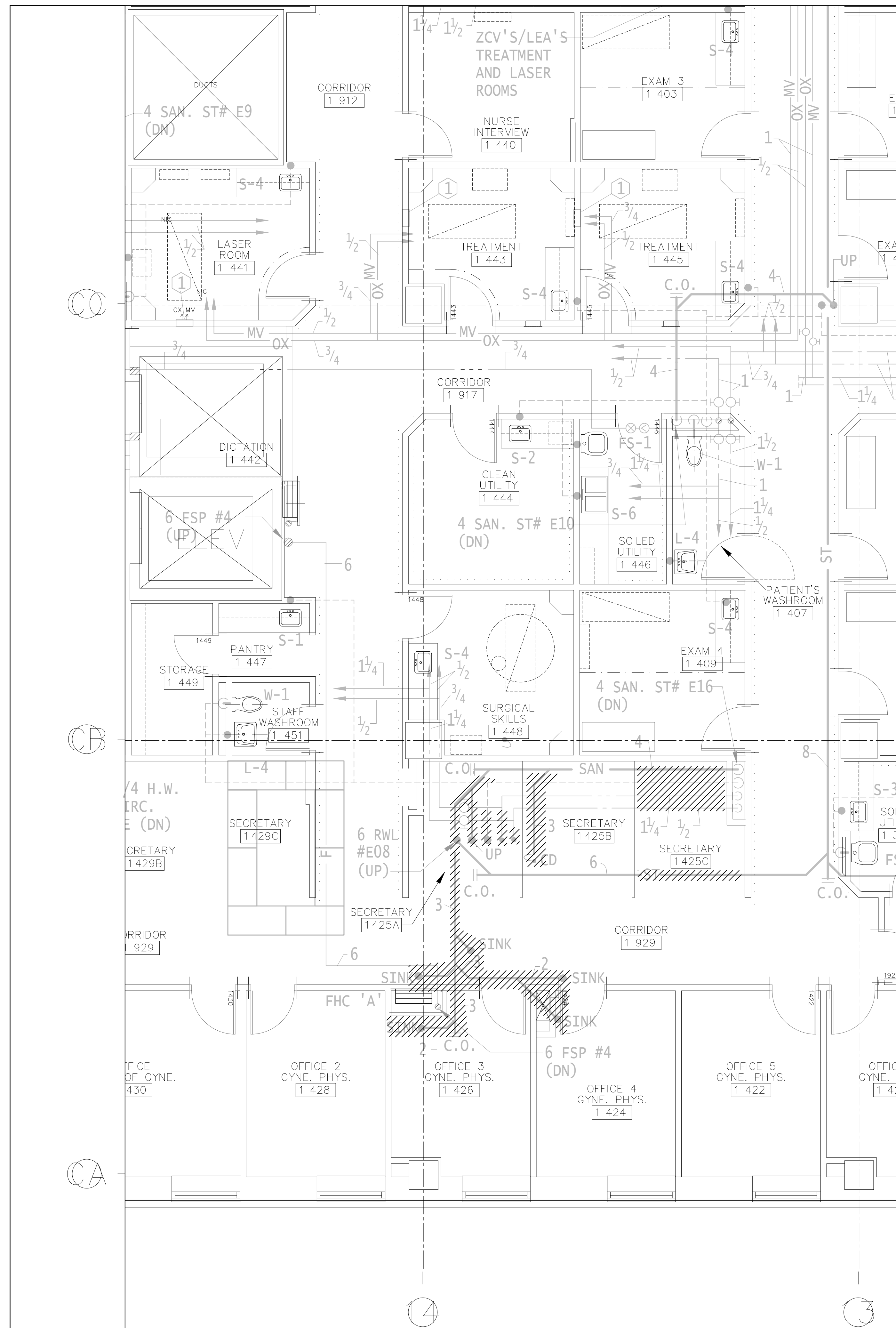
M-WING LEVEL 2
HYBRID OPERATING ROOM
MECHANICAL LEGEND AND DRAWING LIST

N.T.S.
Check Scale (may be photo reduced)
0 1inch 0 10mm

Project No. ONBL19-0186
Drawing No. M-100



2 PART PLAN LEVEL 1 - PLUMBING - NEW WORK  
M200 1:50

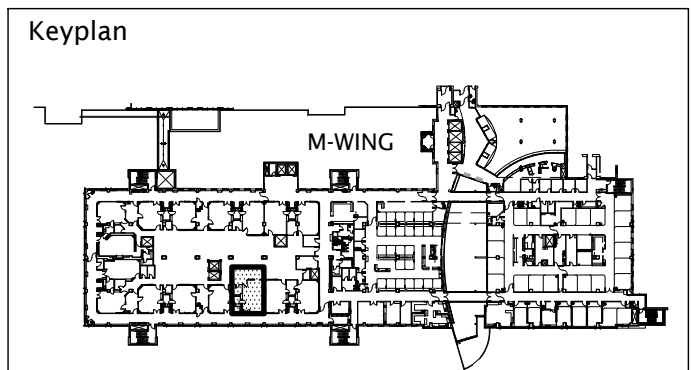


1 PART PLAN LEVEL 1 - PLUMBING - DEMOLITION  
M200 1:50

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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 Canada  
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**HHAngus**  
**HHAngus & Associates Limited Consulting Engineers**  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

Seal(s)  
 LICENSED PROFESSIONAL ENGINEER  
 JULY 28/20  
 2191327  
 PROVINCE OF ONTARIO

North Arrow

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**NORR Architects & Engineers Limited**  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client  
**Sunnybrook**  
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 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 1  
 PLUMBING - DEMOLITION &  
 NEW WORK**

1:50  
 Check Scale (may be photo reduced)  
 0 1/2 inch 0 10mm

Project No. **ONBL19-0186**

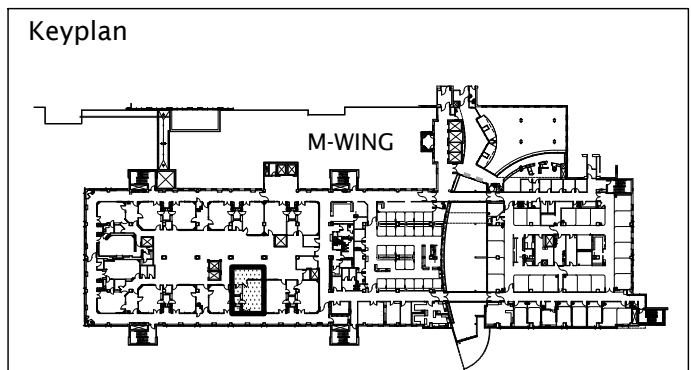
Drawing No.  
**M-200**

ARCH D - 24"x36" - 610mmx914mm (rounded)

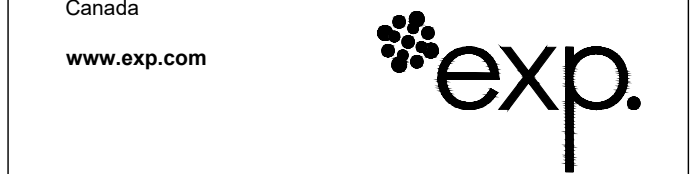
DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
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2020-07-28	TENDER	0

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 220 Commerce Valley Drive West, Suite 110  
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 Canada  
 www.exp.com



**HHAngus**

**HHAngus & Associates Limited Consulting Engineers**  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

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**NORR**

**NORR Architects & Engineers Limited**  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
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Project Manager	D. WITALEC	Drawn
Project Leader		Checked

Client

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Project

**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title

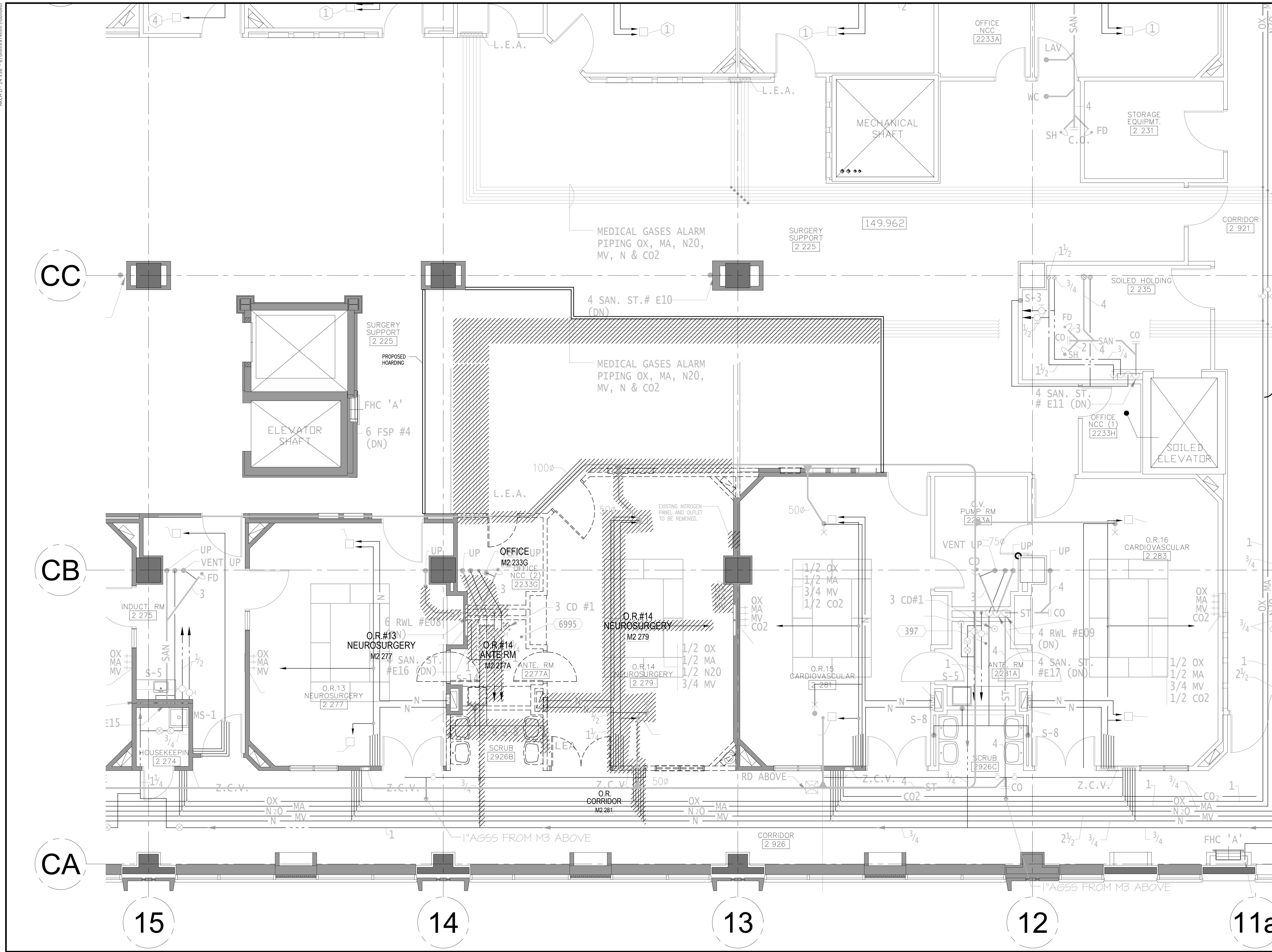
**PART PLAN LEVEL 2  
 PLUMBING & MEDICAL GAS -  
 DEMOLITION**

1:50

Check Scale (may be photo reduced)

Project No. ONBL19-0186

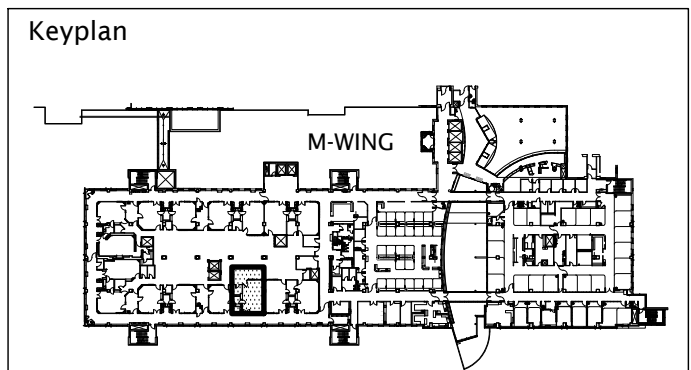
Drawing No. **M-201**



DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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 North Tower, 15th Floor  
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 norr.com

Project Manager	Drawn
D. WITALEC	
Project Leader	Checked

Client  
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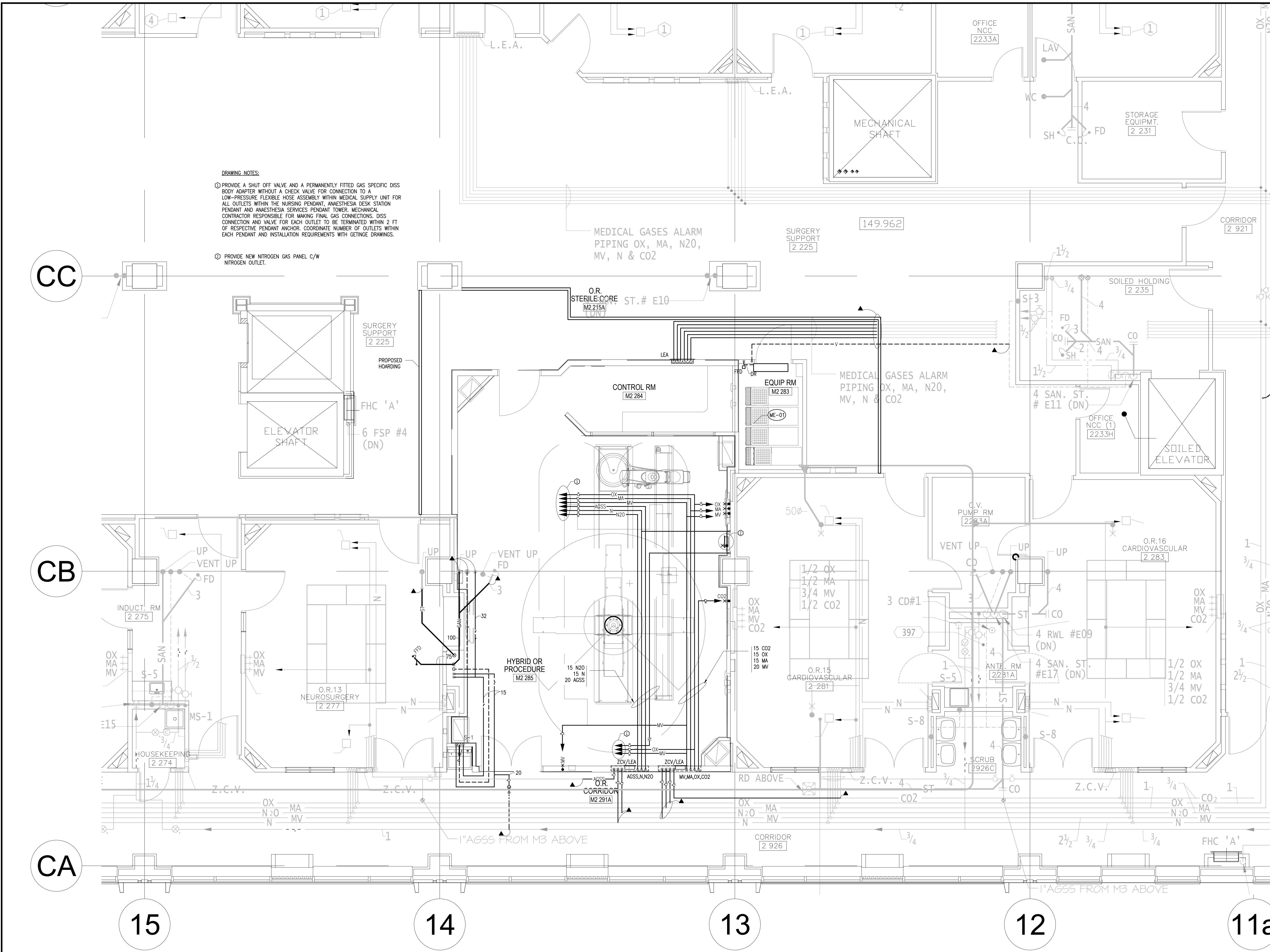
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 2  
 PLUMBING & MEDICAL GAS  
 NEW WORK**

1:50  
 Check Scale (may be photo reduced)

Project No. ONBL19-0186

Drawing No. **M-202**

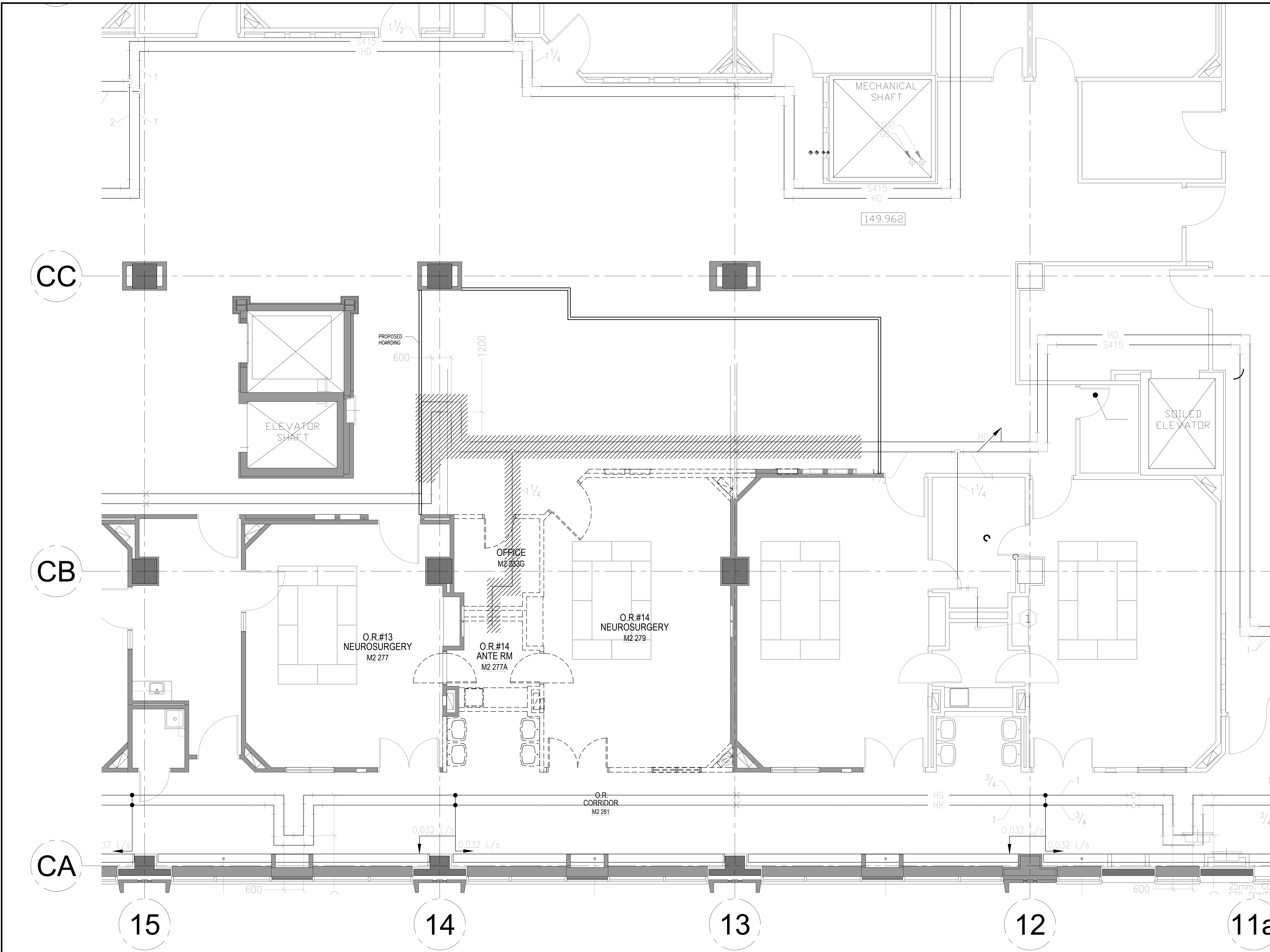


**DRAWING NOTES:**

① PROVIDE A SHUT OFF VALVE AND A PERMANENTLY FITTED GAS SPECIFIC DISS BODY ADAPTER WITHOUT A CHECK VALVE FOR CONNECTION TO A LOW-PRESSURE FLEXIBLE HOSE ASSEMBLY WITHIN MEDICAL SUPPLY UNIT FOR ALL OUTLETS WITHIN THE NURSING PENDANT, ANAESTHESIA DESK STATION PENDANT AND ANAESTHESIA SERVICES PENDANT TOWER. MECHANICAL CONTRACTOR RESPONSIBLE FOR MAKING FINAL GAS CONNECTIONS. DISS CONNECTION AND VALVE FOR EACH OUTLET TO BE TERMINATED WITHIN 2 FT OF RESPECTIVE PENDANT ANCHOR. COORDINATE NUMBER OF OUTLETS WITHIN EACH PENDANT AND INSTALLATION REQUIREMENTS WITH GETINGE DRAWINGS.

② PROVIDE NEW NITROGEN GAS PANEL C/W NITROGEN OUTLET.

ARCH D - 24"x36" - 61.0mmx91.4mm (rounded)



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Keyplan

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 T: +1.905.895.3217 | F: +1.905.895.0167  
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 Markham, ON L3T 0A8  
 Canada  
 www.exp.com

**HHAngus**  
 HHAngus & Associates Limited Consulting Engineers  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

Seal(s)

North Arrow

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 NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client

HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

Project

**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title

**PART PLAN LEVEL 2  
 HVAC PIPING - DEMOLITION**

1:50  
 Check Scale (may be photo reduced)  
 0 1inch 0 10mm

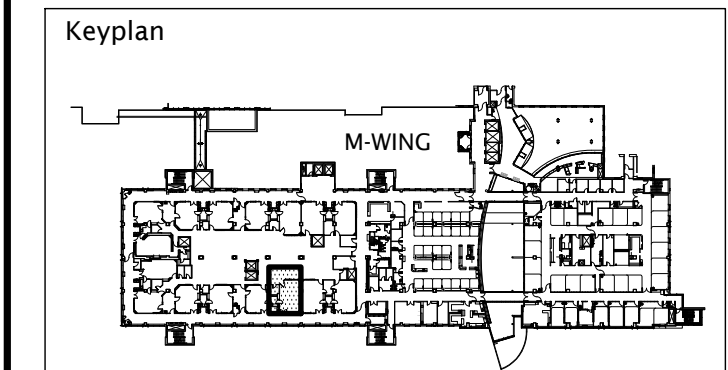
Project No. ONBL19-0186

Drawing No. **M-300**

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
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2020-07-28	TENDER	0

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 Canada  
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 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

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**NORR**  
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 Toronto, ON, Canada M4W 3R8  
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Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client

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Project

**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title

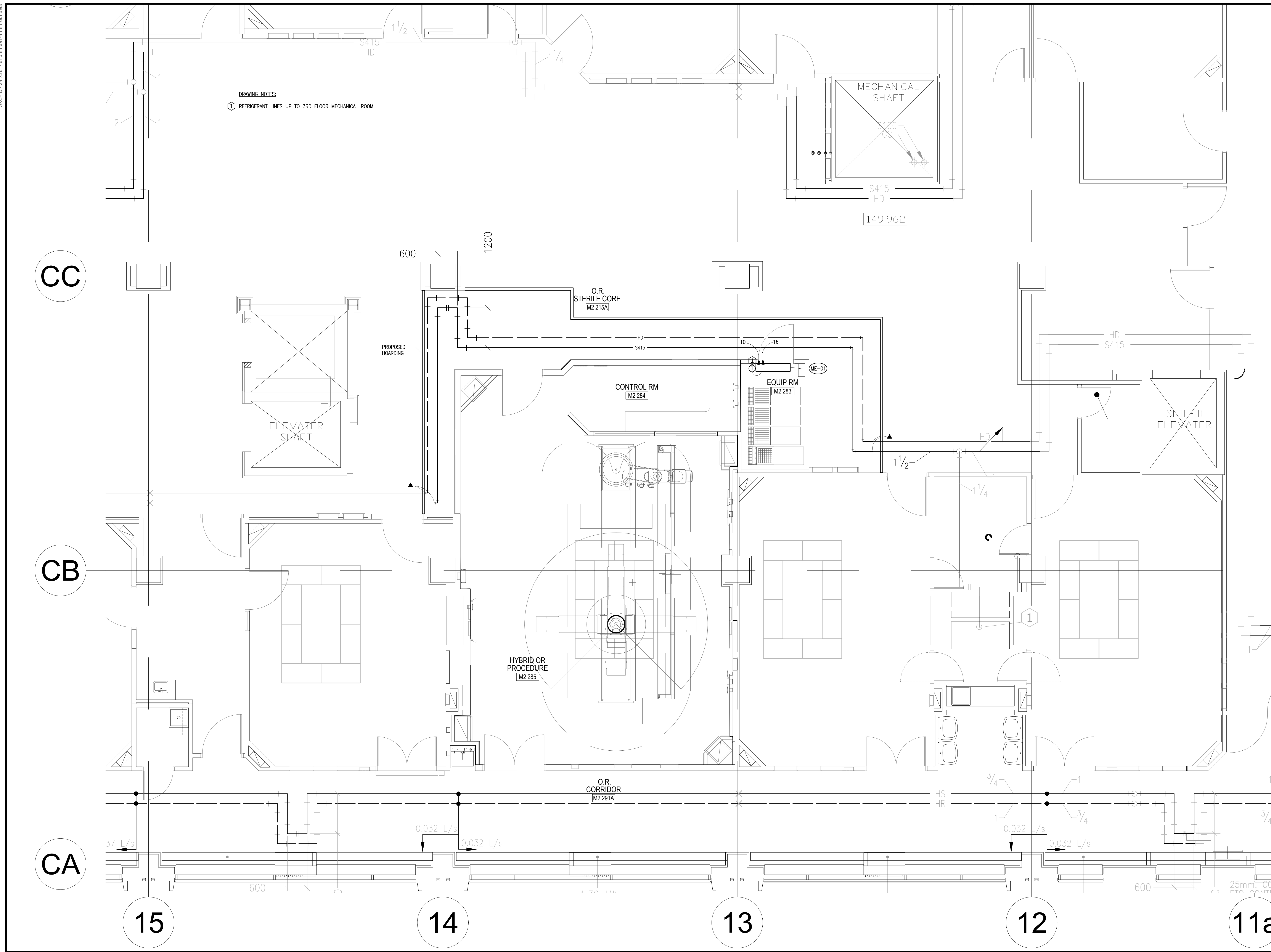
**PART PLAN LEVEL 2  
 HVAC PIPING - NEW WORK**

Scale

**1:50**  
 Check Scale (may be photo reduced)  
 0 1inch 0 10mm

Project No. **ONBL19-0186**

Drawing No. **M-301**

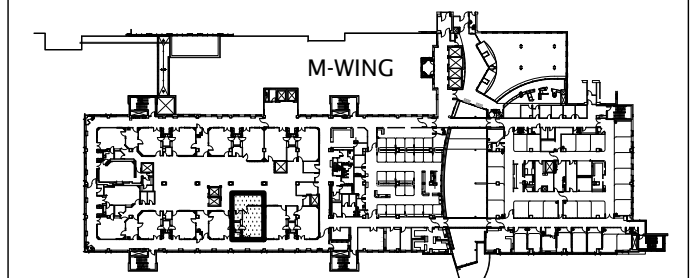


DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
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2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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 Canada  
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Seal(s) 	North Arrow 
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 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client  
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 M4N 3M5

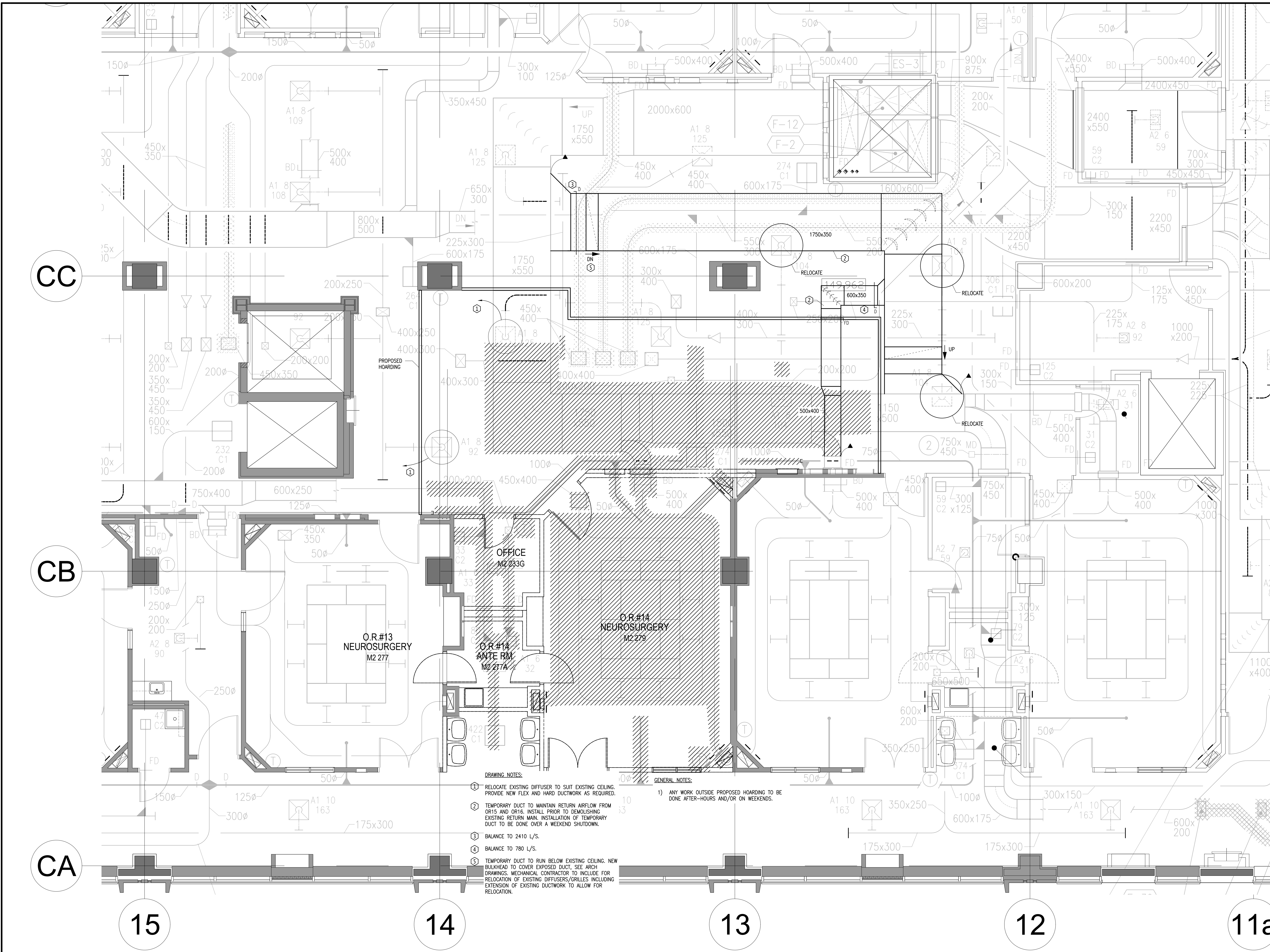
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 2  
 VENTILATION - DEMOLITION**

1:50  
 Check Scale (may be photo reduced)

Project No. ONBL19-0186

Drawing No. **M-400**



- DRAWING NOTES:**
- RELOCATE EXISTING DIFFUSER TO SUIT EXISTING CEILING. PROVIDE NEW FLEX AND HARD DUCTWORK AS REQUIRED.
  - TEMPORARY DUCT TO MAINTAIN RETURN AIRFLOW FROM OR15 AND OR16. INSTALL PRIOR TO DEMOLISHING EXISTING RETURN MAIN. INSTALLATION OF TEMPORARY DUCT TO BE DONE OVER A WEEKEND SHUTDOWN.
  - BALANCE TO 2410 L/S.
  - BALANCE TO 780 L/S.
  - TEMPORARY DUCT TO RUN BELOW EXISTING CEILING. NEW BULKHEAD TO COVER EXPOSED DUCT. SEE ARCH DRAWINGS. MECHANICAL CONTRACTOR TO INCLUDE FOR RELOCATION OF EXISTING DIFFUSERS/GRILLES INCLUDING EXTENSION OF EXISTING DUCTWORK TO ALLOW FOR RELOCATION.

**GENERAL NOTES:**

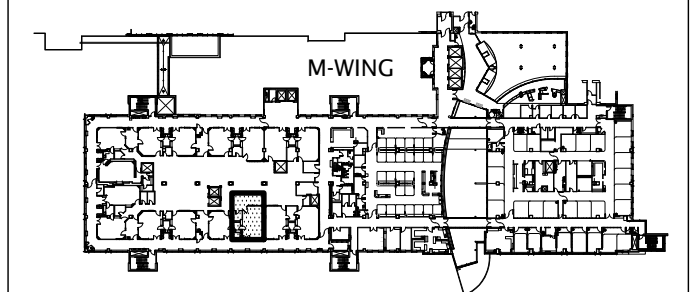
- ANY WORK OUTSIDE PROPOSED HOARDING TO BE DONE AFTER-HOURS AND/OR ON WEEKENDS.

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
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Keyplan



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 Markham, ON L3T 0A8  
 Canada  
 www.exp.com



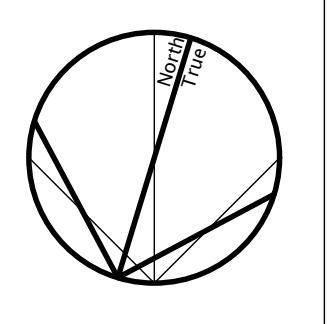
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HHAngus & Associates Limited Consulting Engineers  
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Seal(s)



North Arrow



**NORR**

NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager	Drawn
D. WITALEC	
Project Leader	Checked

Client  
**Sunnybrook**  
 HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

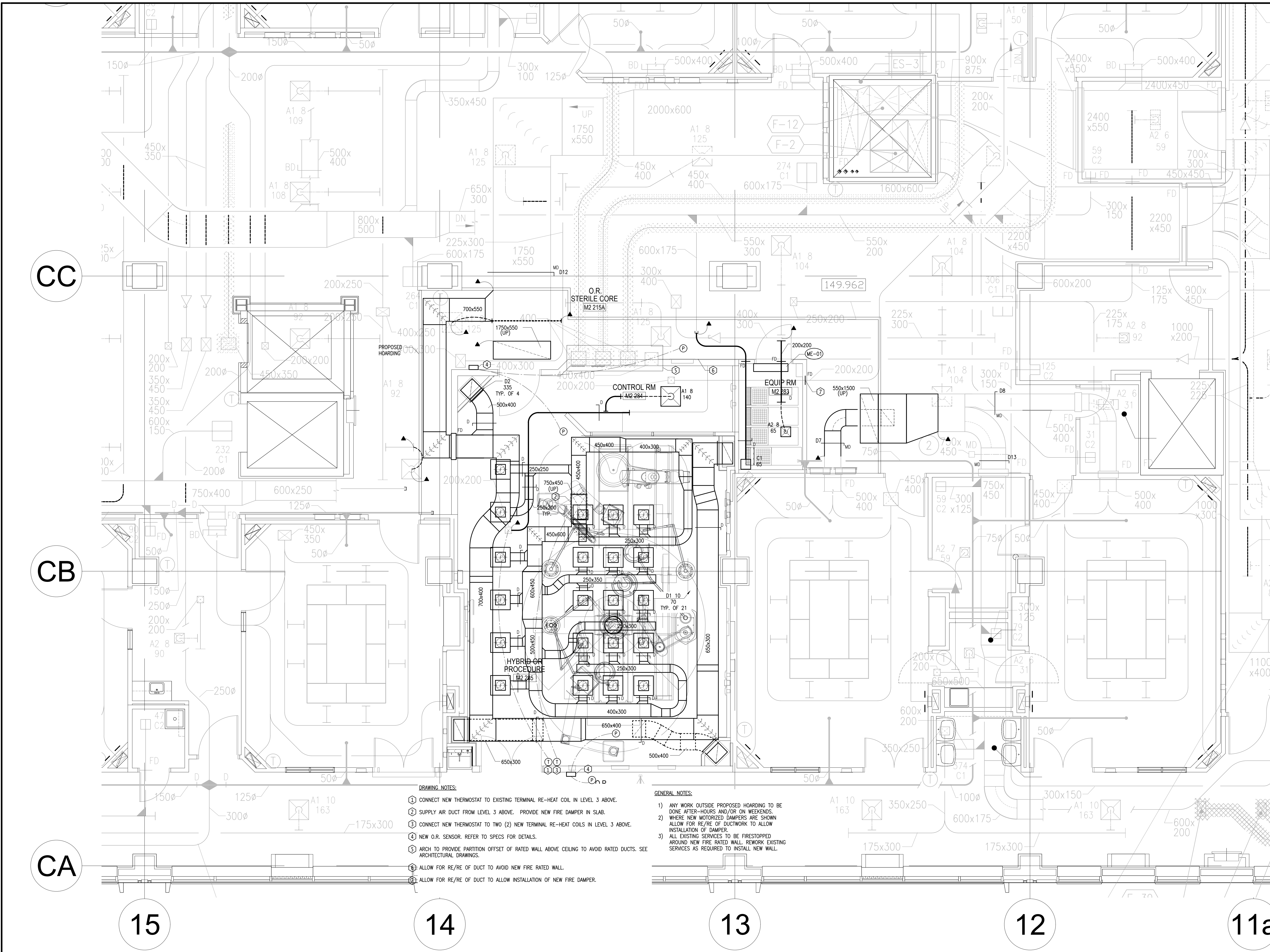
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 2  
 VENTILATION - NEW WORK**

1:50  
 Check Scale (may be photo reduced)

Project No. ONBL19-0186

Drawing No. **M-401**



- DRAWING NOTES:**
- CONNECT NEW THERMOSTAT TO EXISTING TERMINAL RE-HEAT COIL IN LEVEL 3 ABOVE.
  - SUPPLY AIR DUCT FROM LEVEL 3 ABOVE. PROVIDE NEW FIRE DAMPER IN SLAB.
  - CONNECT NEW THERMOSTAT TO TWO (2) NEW TERMINAL RE-HEAT COILS IN LEVEL 3 ABOVE.
  - NEW O.R. SENSOR. REFER TO SPECS FOR DETAILS.
  - ARCH TO PROVIDE PARTITION OFFSET OF RATED WALL ABOVE CEILING TO AVOID RATED DUCTS. SEE ARCHITECTURAL DRAWINGS.
  - ALLOW FOR RE/RE OF DUCT TO AVOID NEW FIRE RATED WALL.
  - ALLOW FOR RE/RE OF DUCT TO ALLOW INSTALLATION OF NEW FIRE DAMPER.

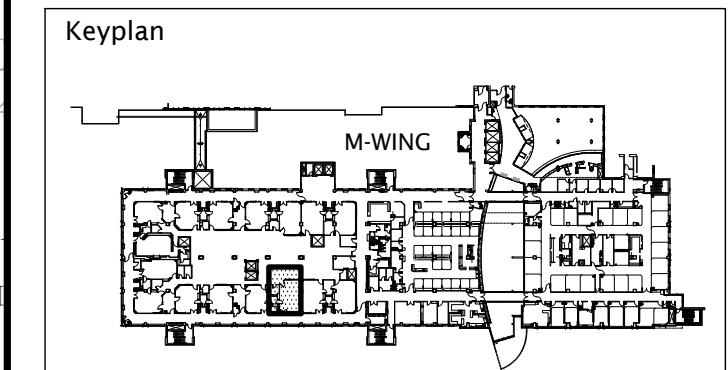
- GENERAL NOTES:**
- ANY WORK OUTSIDE PROPOSED HOARDING TO BE DONE AFTER-HOURS AND/OR ON WEEKENDS.
  - WHERE NEW MOTORIZED DAMPERS ARE SHOWN ALLOW FOR RE/RE OF DUCTWORK TO ALLOW INSTALLATION OF DAMPER.
  - ALL EXISTING SERVICES TO BE FIRESTOPPED AROUND NEW FIRE RATED WALL. REWORK EXISTING SERVICES AS REQUIRED TO INSTALL NEW WALL.



DATE	ISSUED FOR	REV
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 www.hhangus.com | T 416 443 8200 | F 416 443 8290

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 NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager	Drawn
D. WITALEC	
Project Leader	Checked

Client

**Sunnybrook**  
 HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

Project

**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title

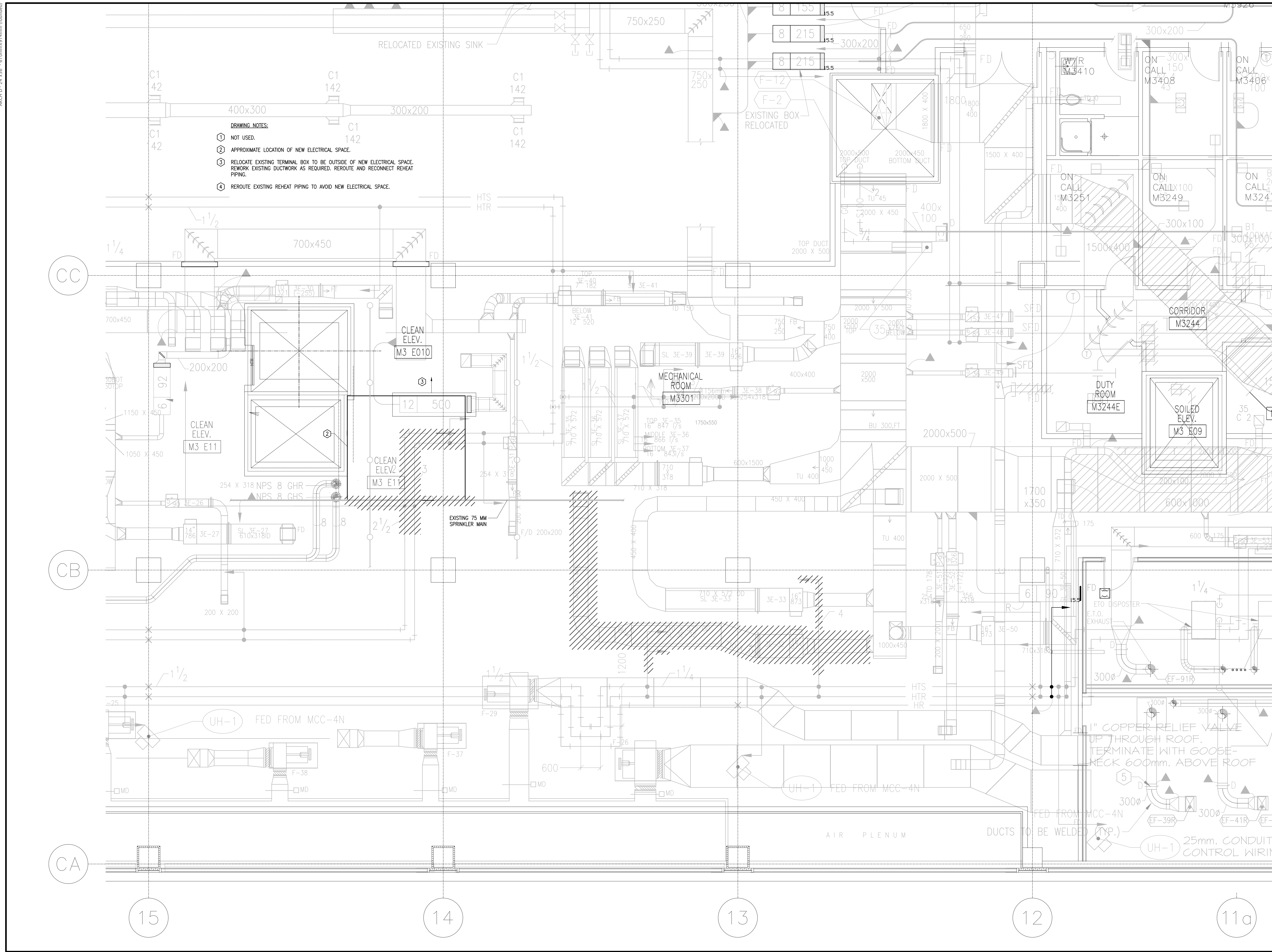
**PART PLAN LEVEL 3  
 MECHANICAL ROOM -  
 DEMOLITION**

1:50

Check Scale (may be photo reduced)

Project No. ONBL19-0186

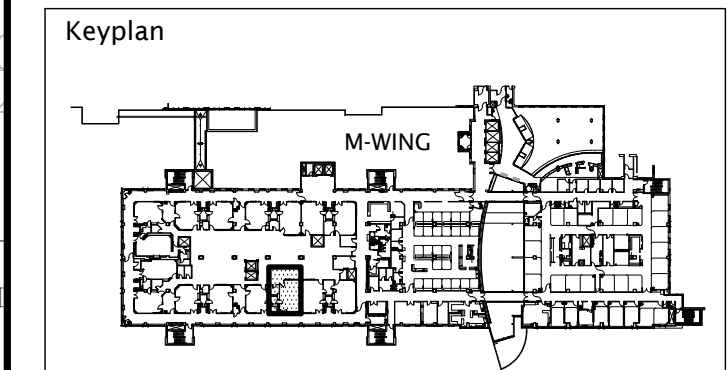
Drawing No. **M-500**



DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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 Canada  
 www.exp.com

**HHAngus**

HHAngus & Associates Limited Consulting Engineers  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

Seal(s) North Arrow

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 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager	Drawn
D.WITALEC	
Project Leader	Checked

Client

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 M4N 3M5

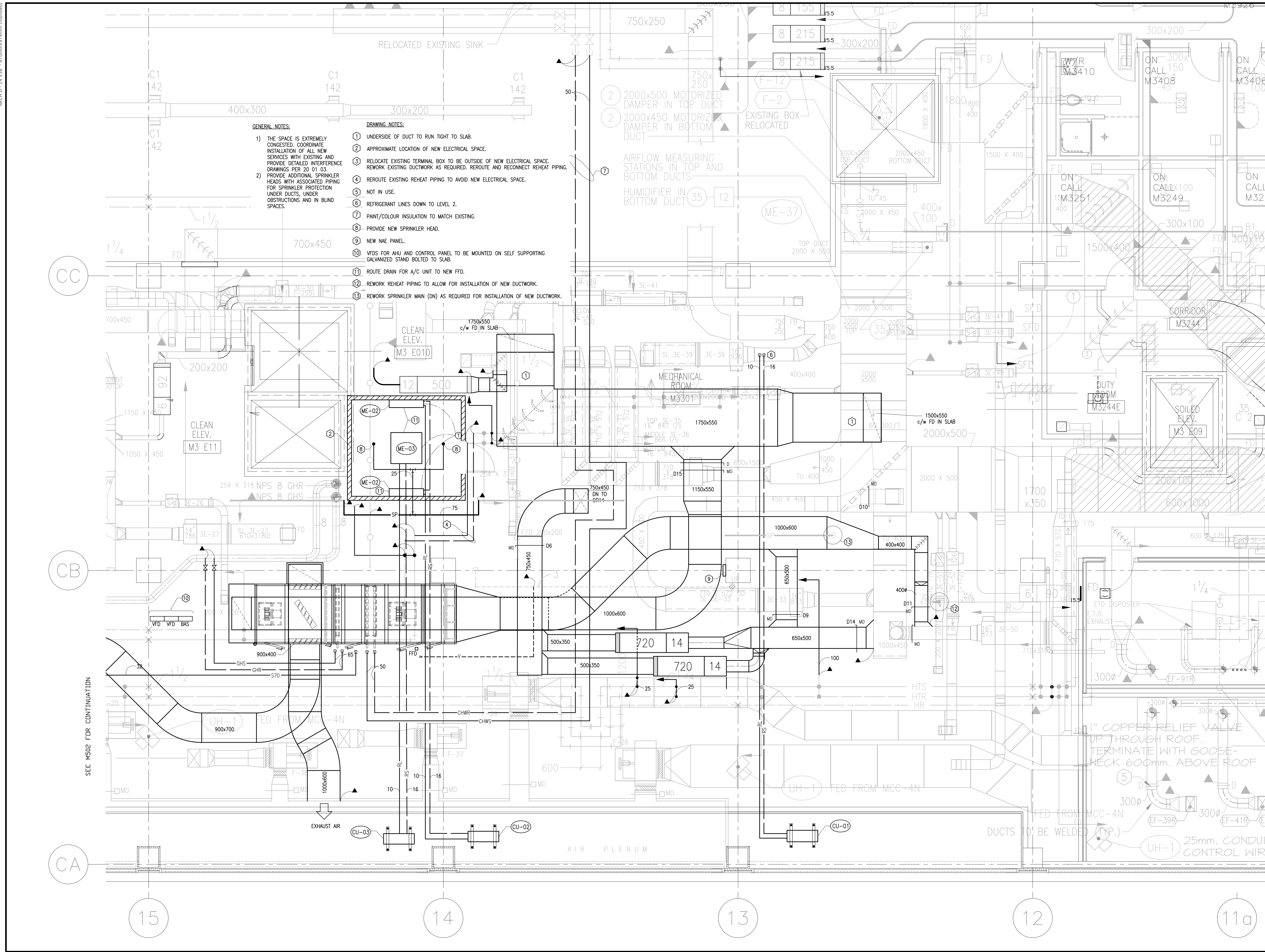
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 3  
 MECHANICAL ROOM -  
 NEW WORK**

1:50  
 Check Scale (may be photo reduced)

Project No. ONBL19-0186

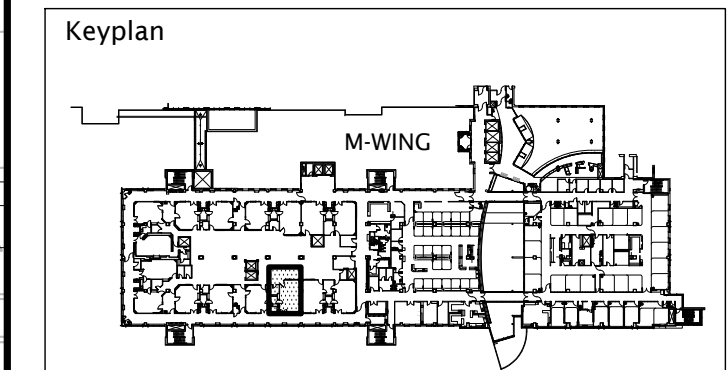
Drawing No. **M-501**



DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

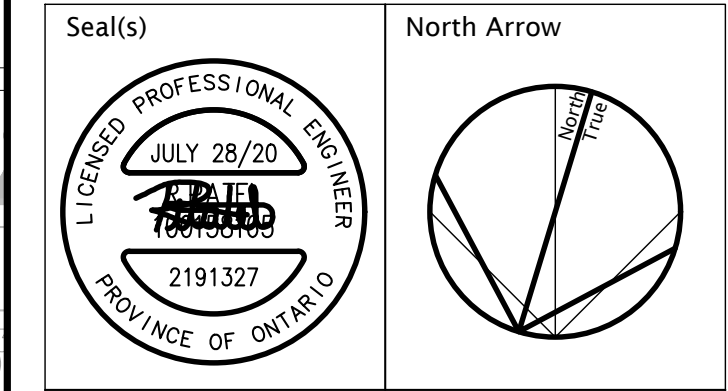
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 220 Commerce Valley Drive West, Suite 110  
 Markham, ON L3T 0A8  
 Canada  
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**HHAngus & Associates Limited Consulting Engineers**  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
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**NORR Architects & Engineers Limited**  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
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Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client  
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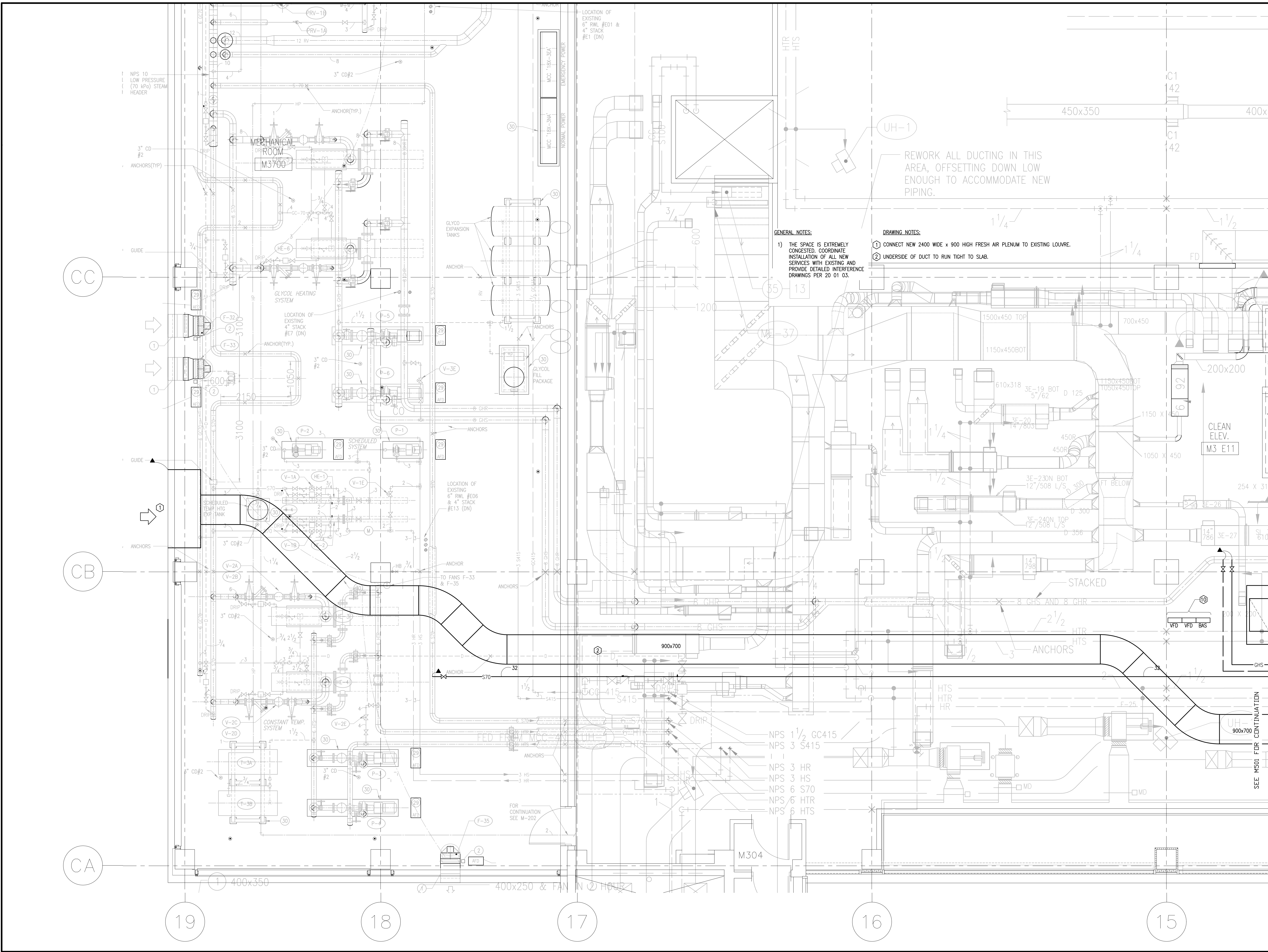
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

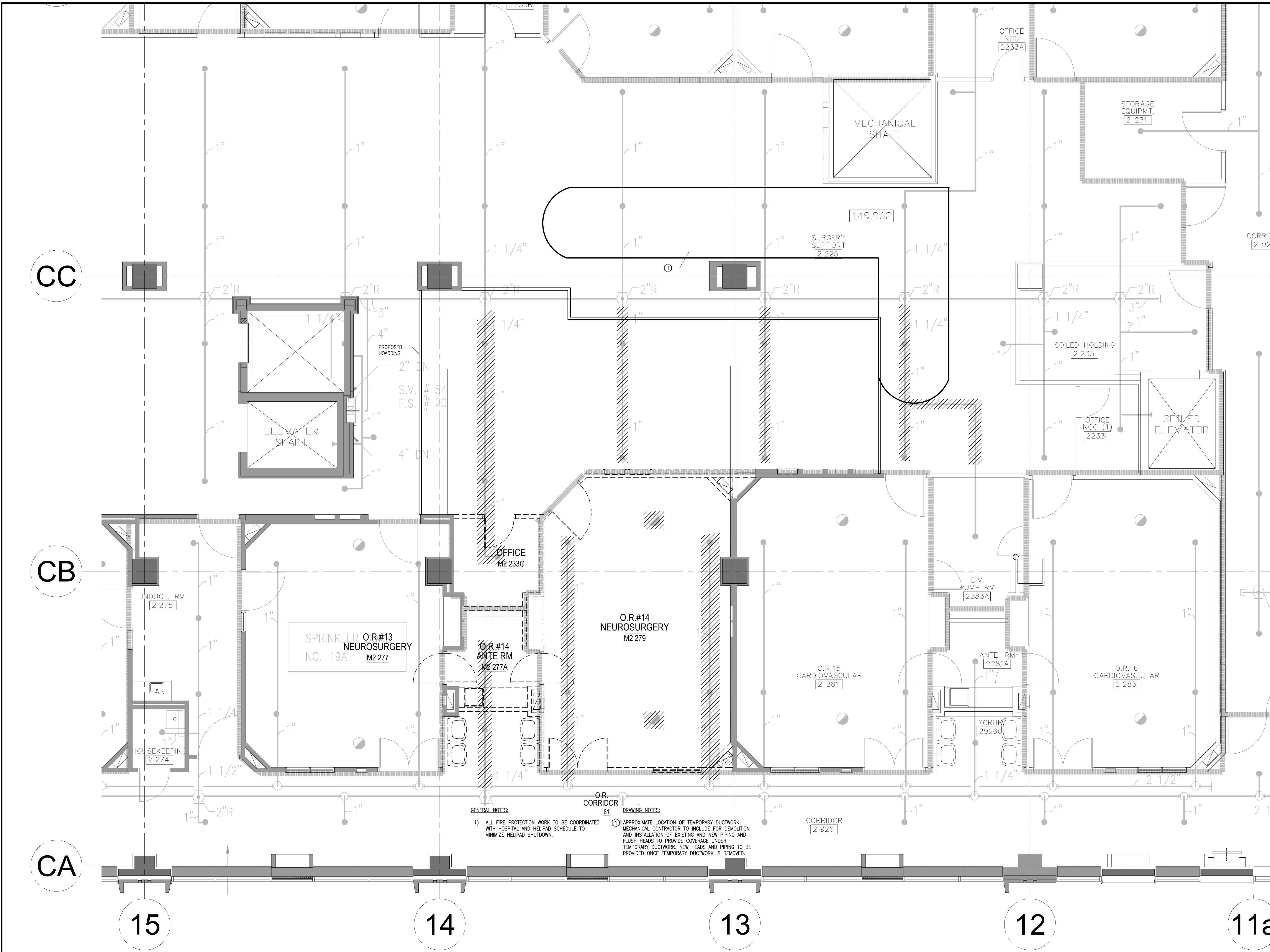
Drawing Title  
**PART PLAN LEVEL 3  
 MECHANICAL ROOM -  
 NEW WORK CONTINUED**

Scale  
**1:50**  
 Check Scale (may be photo reduced)  
 0 1inch 0 10mm

Project No. **ONBL19-0186**

Drawing No. **M-502**





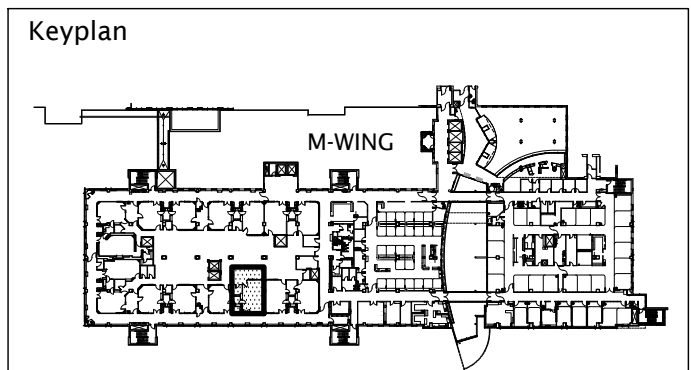
**GENERAL NOTES:**  
 1) ALL FIRE PROTECTION WORK TO BE COORDINATED WITH HOSPITAL AND HELIPAD SCHEDULE TO MINIMIZE HELIPAD SHUTDOWN.

**DRAWING NOTES:**  
 1) APPROXIMATE LOCATION OF TEMPORARY DUCTWORK. MECHANICAL CONTRACTOR TO INCLUDE FOR DEMOLITION AND INSTALLATION OF EXISTING AND NEW PIPING AND FLUSH HEADS TO PROVIDE COVERAGE UNDER TEMPORARY DUCTWORK. NEW HEADS AND PIPING TO BE PROVIDED ONCE TEMPORARY DUCTWORK IS REMOVED.

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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 Canada  
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**HHAngus**  
 HHAngus & Associates Limited Consulting Engineers  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

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North Arrow

**NORR**  
 NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D. WITALEC	Drawn
Project Leader	Checked

Client  
  
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 2075 BAYVIEW AVENUE, TORONTO, ON.  
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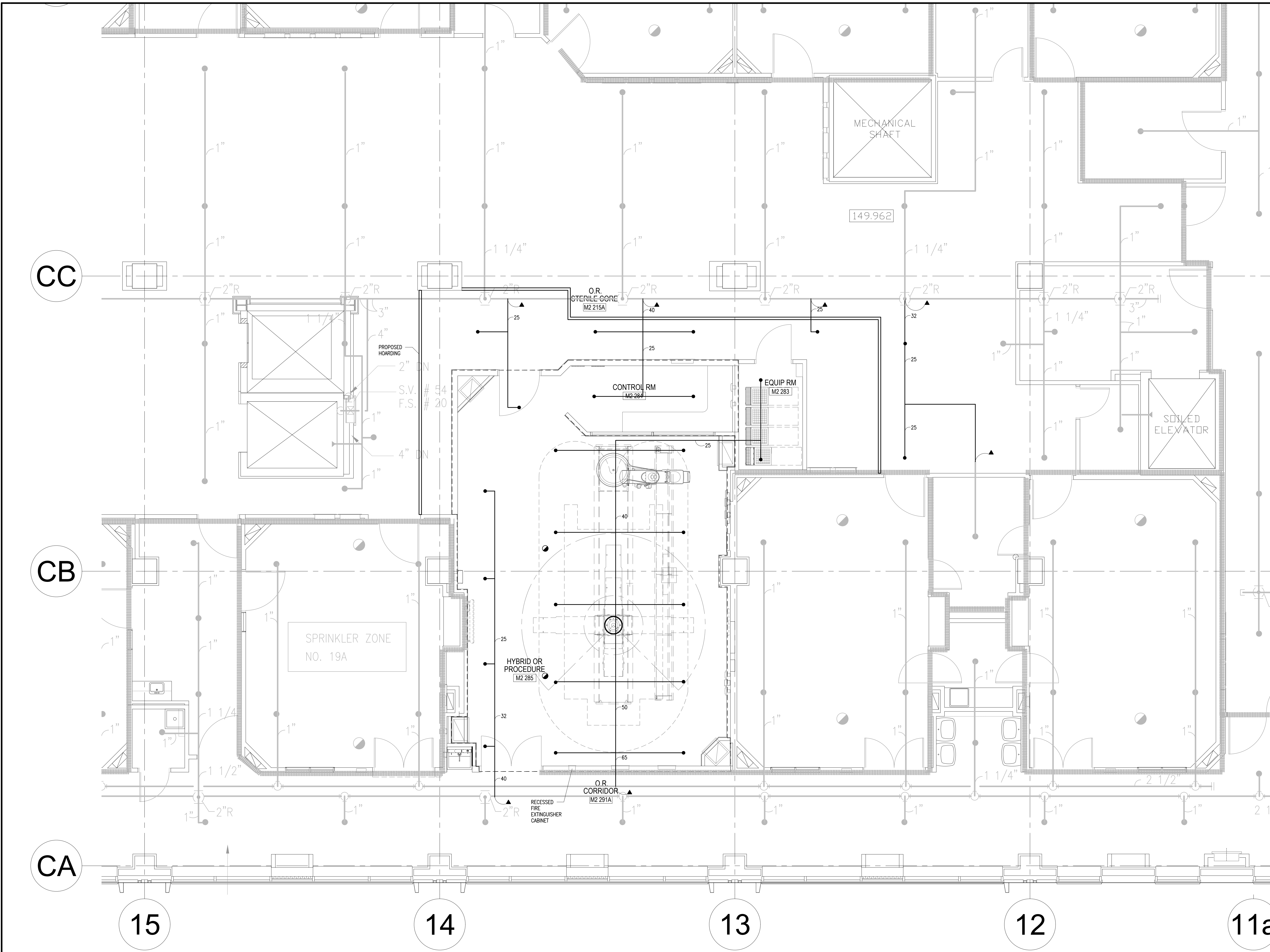
Project  
**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title  
**PART PLAN LEVEL 2  
 FIRE PROTECTION -  
 DEMOLITION**

1:50  
 Check Scale (may be photo reduced)

Project No. ONBL19-0186  
 Drawing No. **M-600**

ARCH D - 24"x36" - 610mmx914mm (rounded)



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Keyplan

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 T: +1 905.895.3217 | F: +1 905.895.0167  
 220 Commerce Valley Drive West, Suite 110  
 Markham, ON L3T 0A8  
 Canada  
 www.exp.com

**HHAngus**  
 HHAngus & Associates Limited Consulting Engineers  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
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**NORR**  
 NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client

HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
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Project

**M-WING LEVEL 2  
 HYBRID OPERATING ROOM**

Drawing Title

**PART PLAN LEVEL 2  
 FIRE PROTECTION -  
 NEW WORK**

1:50  
 Check Scale (may be photo reduced)  
 0 1inch 0 10mm

Project No. ONBL19-0186

Drawing No. **M-601**

CONTROL POINT IDENTIFICATION LEGEND		
POINT ABBREVIATION		
1ST LETTER	2ND LETTER	3RD LETTER
A ANALYSIS	A ALARM	A ALARM
CM COMPRESSOR	B POSITION	C CLOSE
D DAMPER	D DIFFERENTIAL	D DIFFERENTIAL
DP DIFFERENTIAL PRESSURE	C DIFFERENTIAL	H HIGH
E EQUIPMENT	H HIGH	HA HIGH ALARM
EH ELECTRIC HEAT	L LOW	L LOW
F FLOW	M MONITOR (LOCAL DIGITAL DISPLAY & AT BAS)	LA LOW ALARM
H HUMIDITY	O OPEN	O OPEN
I POWER (I, V, KW)	R RESET	
L MISCELLANEOUS	SS START/STOP(ENABLE/DISABLE)	
L LEVEL	ST STATUS	
P PRESSURE	TX TEMPERATURE TRANSMITTER	
T TEMPERATURE	V VELOCITY/RATE	
V VALVE	X TRANSMITTER	

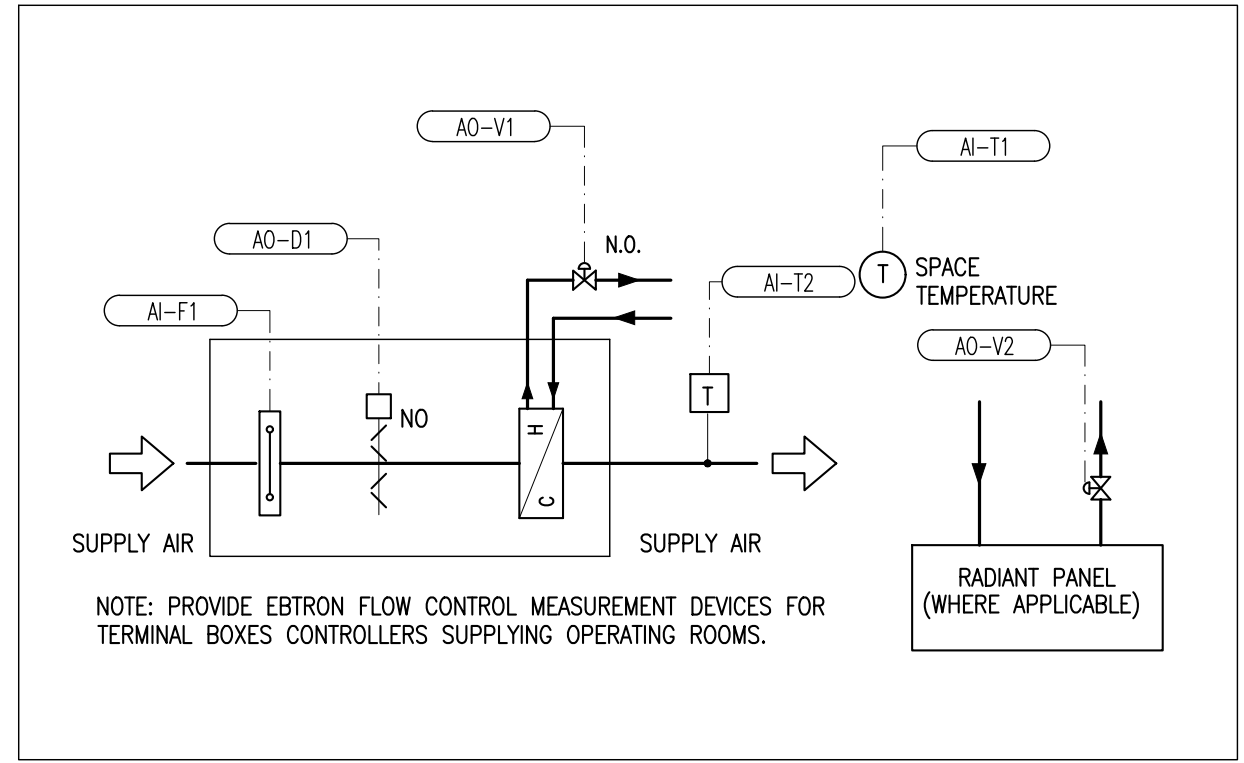
  

POINT LEGEND	
POINT NUMBER	POINT TYPE
3RD LETTER	POINT TYPE
2ND LETTER	
1ST LETTER	

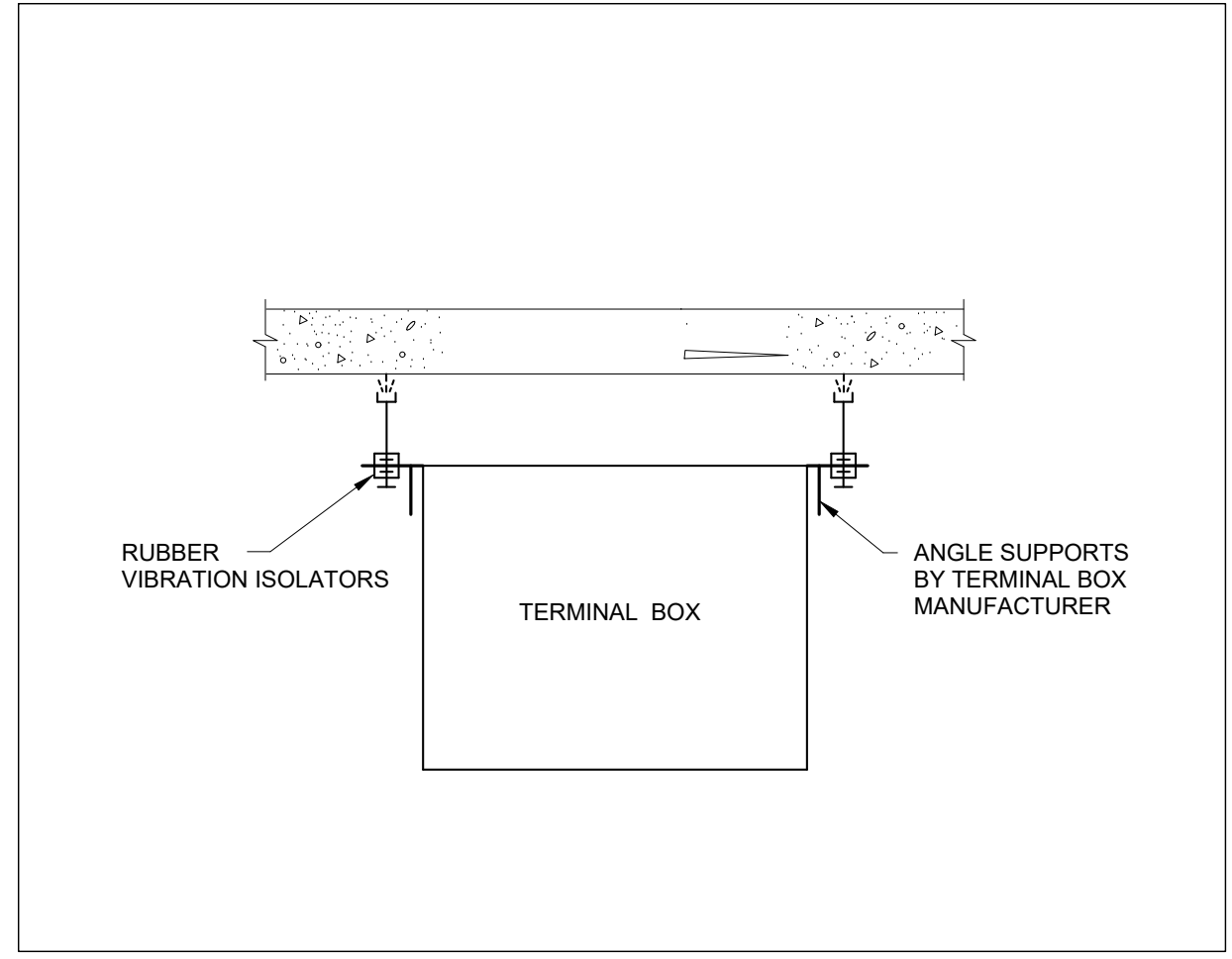
NOTE: A SEQUENTIAL POINT NUMBER IS ADDED TO THE END OF AN ABBREVIATION IF THERE IS MORE THAN ONE OF THE SAME TYPE OF INSTRUMENT OR DEVICE ON THE SAME SCHEMATIC. (EG. AI-11, AI-12.)

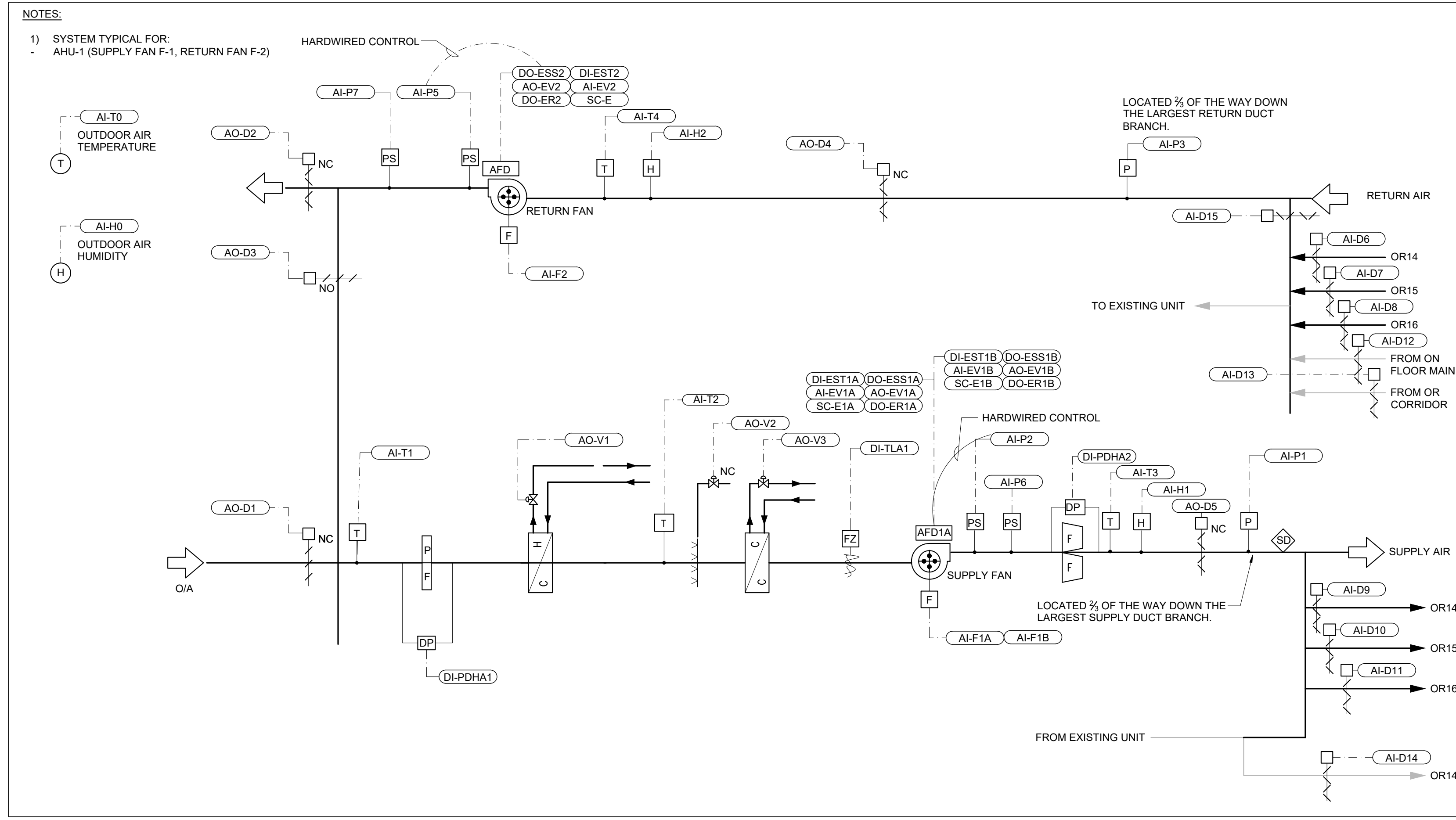
POINT TYPE	
AI ANALOGUE INPUT	HARDWARE INTERLOCK C/W END SWITCH
AO ANALOGUE OUTPUT	HARDWARE INTERLOCK
DI DIGITAL INPUT	(DAMPER MOTOR NUMBER)
DO DIGITAL OUTPUT	
SC SERIAL COMMUNICATION	(NORMALLY CLOSED - OR 'NO' - NORMALLY OPEN)
MD MODEM CONNECTION	



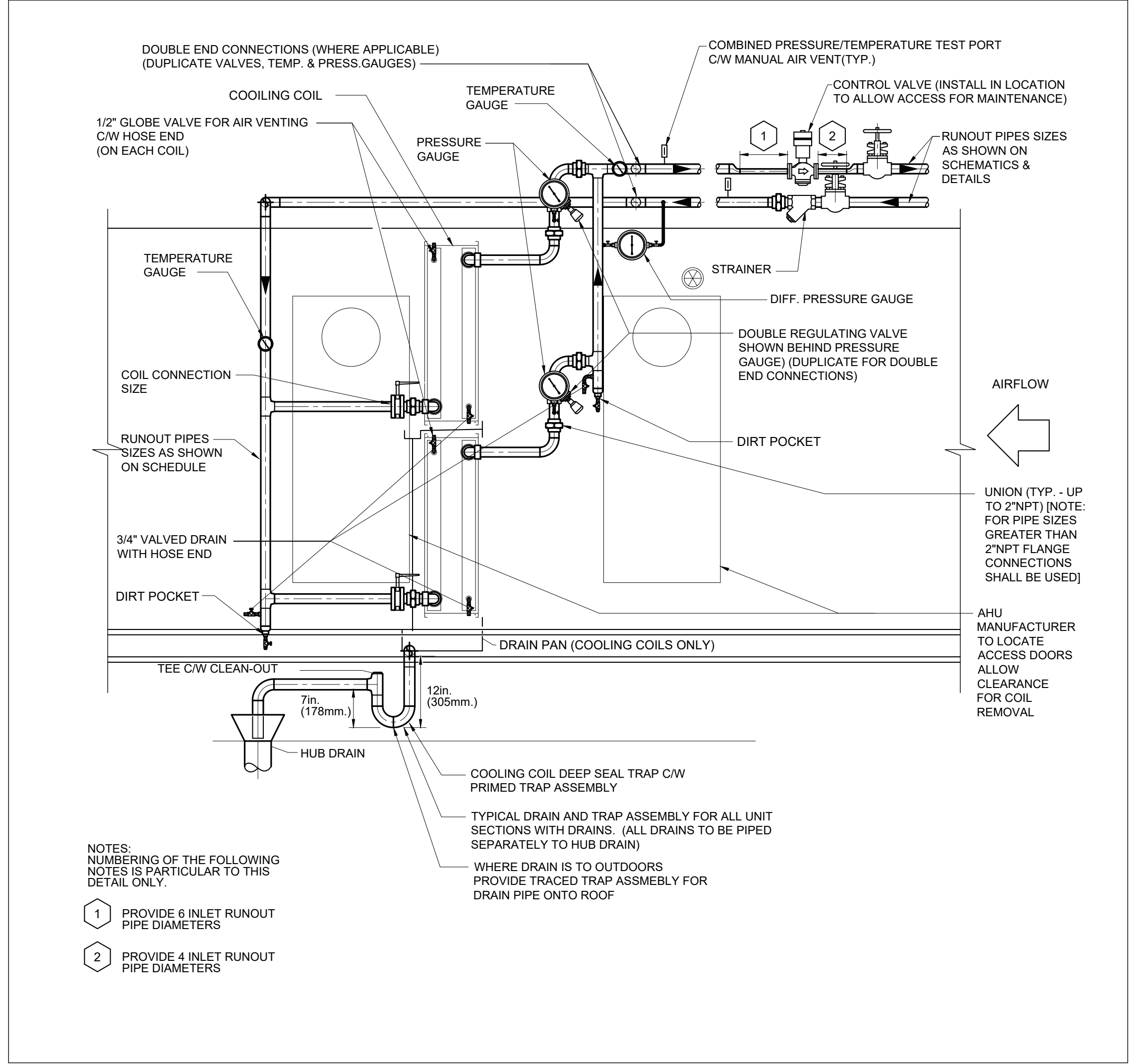
2 TERMINAL BOX (CAV) WITH REHEAT  
M700 N.T.S.



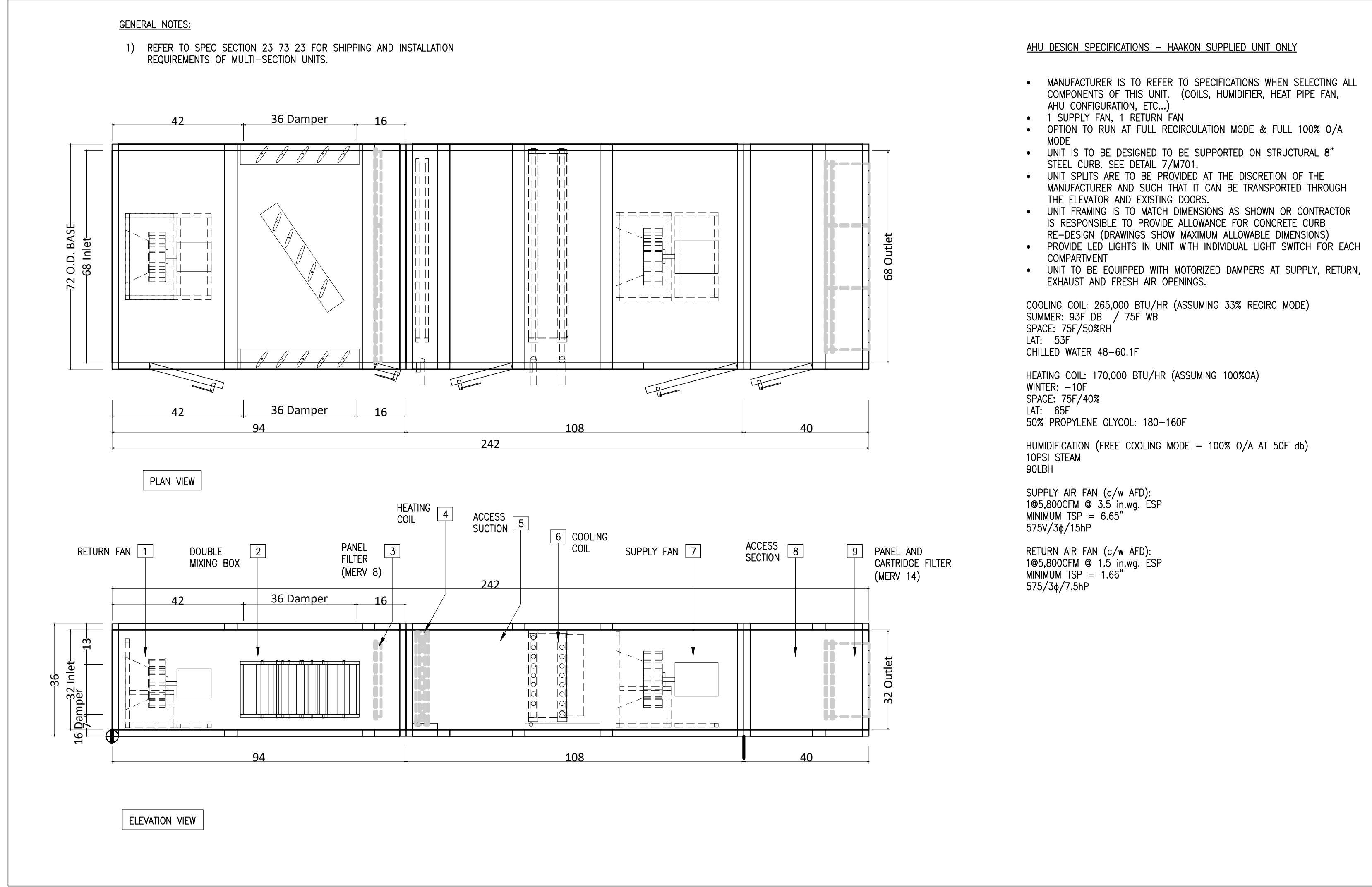
3 TERMINAL BOX SUPPORT  
M700 N.T.S.



1 RECIRCULATION AIR SYSTEM  
M700 N.T.S.



5 TYPICAL PIPING CONNECTIONS TO INDOOR AHU COILS  
M700 N.T.S.

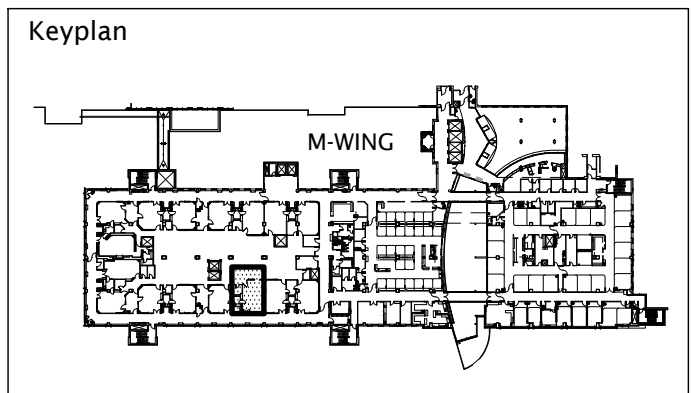


4 AHU-1 CONSTRUCTION DETAIL  
M700 N.T.S.

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
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2020-07-28	TENDER	0

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Seal(s) North Arrow

**NORR**  
 NORR Architects & Engineers Limited  
 175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager Drawn  
 D.WITALEC

Project Leader Checked

Client  
**Sunnybrook**  
 HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

Project  
**M-WING LEVEL 2 HYBRID OPERATING ROOM**

Drawing Title  
**DETAILS & SCHEMATICS I**

**N.T.S.**  
 Check Scale (may be photo reduced)  
 0 1inch 0 10mm

Project No. **ONBL19-0186**

Drawing No.  
**M-700**

**NOTES:**

- THE EQUIPMENT SHALL BE ARRANGED TO SUIT AVAILABLE SPACE. FINAL ARRANGEMENT TO BE REVIEWED BY ENGINEER.
- THE INTENT OF THIS WIRING ARRANGEMENT IS IN THE EVENT OF A AFD FAILURE. THE HOSPITAL'S SPARE AFD (WHICH HAS BEEN MOUNTED ON AN A/V CART C/W INPUT AND OUTPUT PIGTAILS) CAN BE EASILY WIRED TO THE SPLITTERS AT THE AFD INPUT AND OUTPUT.

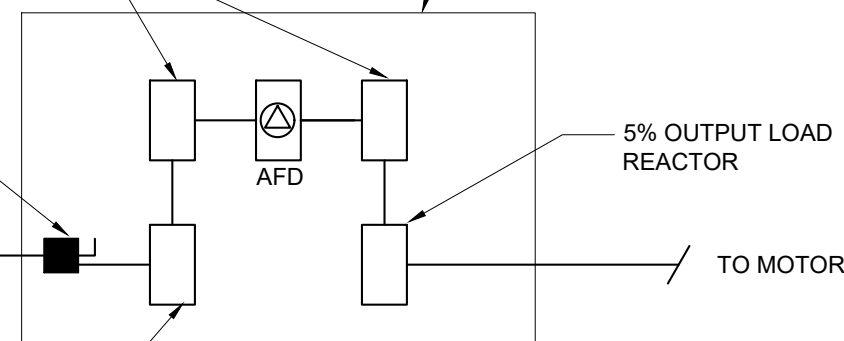
600V SPLITTER BOX C/W HINGED COVER SECURED WITH SCREWS.  
BOX TO BE C/W FOUR SINGLE POLE TERMINAL BLOCKS, THREE OPENINGS PER POLE SUITABLE FOR #12 THRU #6 COPPER CONDUCTORS, THREE BLOCKS FOR PHASE CONDUCTORS, ONE BLOCK FOR BONDING CONDUCTOR. BOND THE BONDING POLE TO THE BOX WITH #8 COPPER. STANDARD OF ACCEPTANCE - HAMMOND OR APPROVED ALTERNATE.

AFDs AND FILTERS ARE SUPPLIED BY THE AHU MANUFACTURER AND INSTALLED BY THE MECHANICAL CONTRACTOR.

DISCONNECT

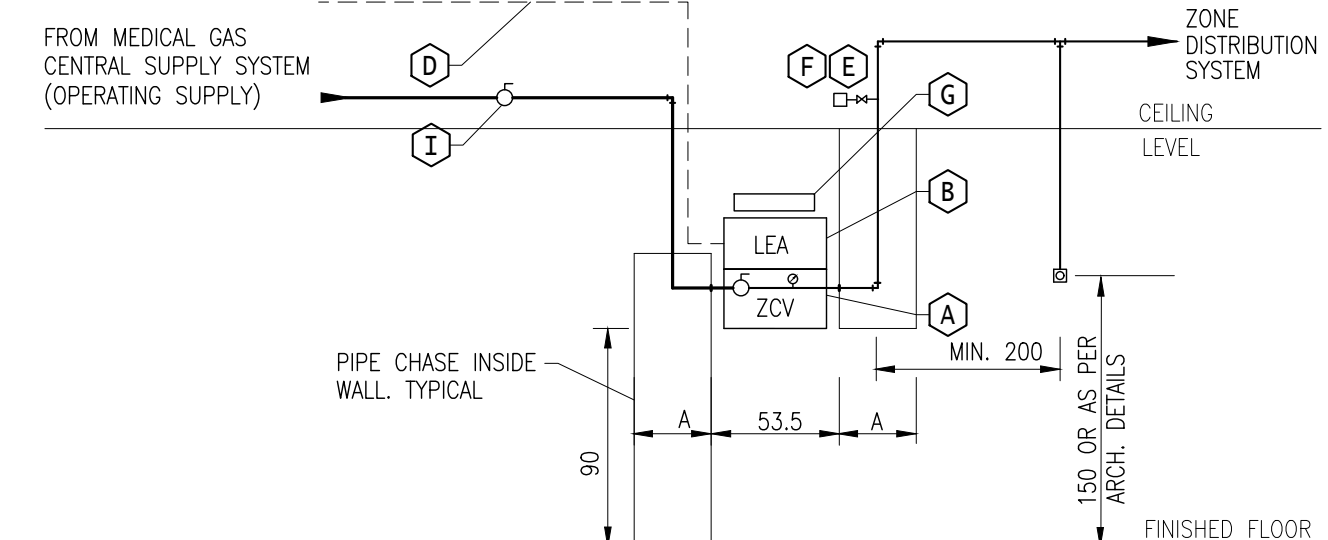
3 PHASE 575V POWER (FED FROM DISCONNECT SWITCH)

INPUT HARMONIC FILTER (FOR MOTORS 11kW (15Hp) AND LARGER) TO LIMIT TOTAL INPUT HARMONIC CURRENT TO NO MORE THAN 15% OF THE FULL LOAD RATING OF THE DRIVE. (NOT APPLICABLE FOR MOTORS LESS THAN 11kW (15Hp))



**2** ELECTRICAL INSTALLATION CONFIGURATION FOR AFDs  
M701 N.T.S.

ITEM	DESCRIPTION
(A)	ZONE VALVE BOX (ZV).
(B)	ZONE ALARM PANEL (ZA).
(C)	TERMINAL UNIT DISS TYPE, TYPICAL.
(D)	DEDICATED EL. POWER SERVICE / EMERGENCY SERVICE 120V. BY DIV.16.
(E)	PRESSURE TRANSDUCER WITH 1/4" NPT DISS TYPE ADAPTER.
(F)	NAMEPLATE
(H)	SERVICE ISOLATION VALVE (SIV)
(I)	RISER SERVICE ISOLATION VALVE (SIV)
(J)	ACCESS PANEL

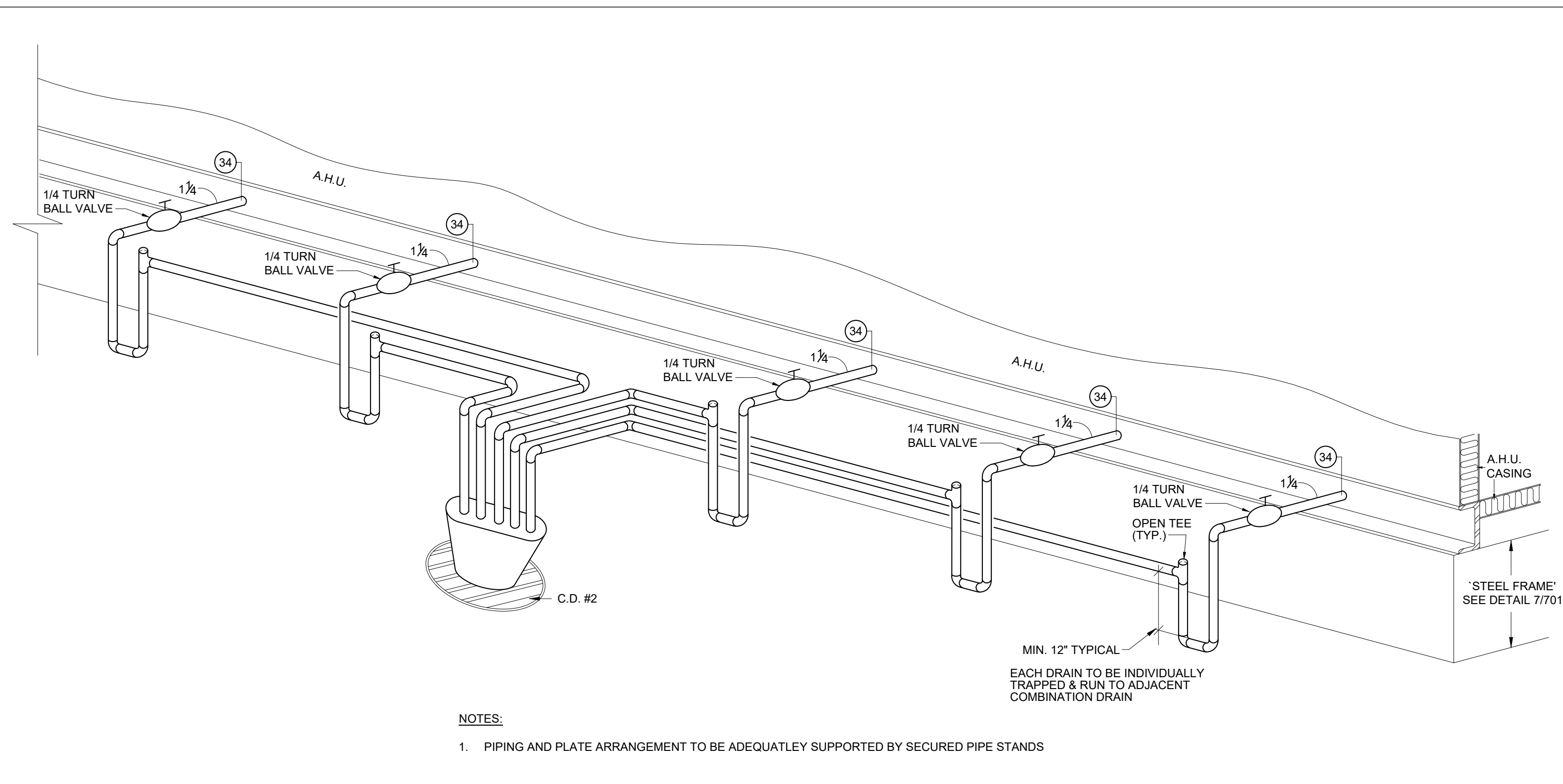


FOR PIPE SIZING REFER TO MEDICAL GAS DRAWINGS

DIMENSION	NO. OF GAS SERVICES					
	ONE	TWO	THREE	FOUR	FIVE	SIX
A	15	23	30.5	38	46	53.5

- NOTE:**
- DEPTH OF ZV BOX & ZA PANEL IS 10.8 CM.
  - FOR ACTUAL TYPE OF MEDICAL GAS SERVICES REFER TO FLOOR PLANS.
  - DETAIL TYPICAL FOR MEDICAL VACUUM (MV), OXYGEN (OX), MEDICAL AIR (MA), NITROUS OXIDE (NO), INSTRUMENT AIR (IA) & ANAESTHETIC GAS SCAVENGING SYSTEM (AGSS) LOCAL MEDICAL GAS DISTRIBUTION.
  - ALL DIMENSIONS IN CM, PIPE SIZE IN NPS.
  - FOR ADDITIONAL INFORMATION REFER TO SPECIFICATION SECTION 22 63 13 - MEDICAL GAS SYSTEMS

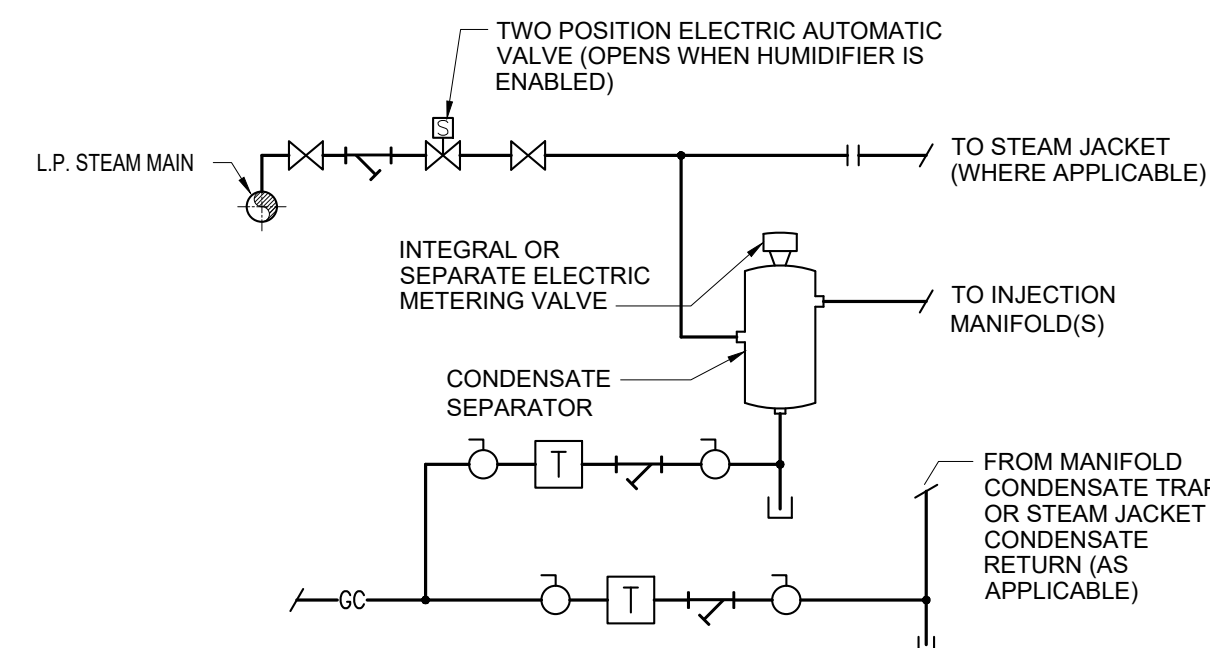
**5** LOCAL MEDICAL GAS DISTRIBUTION WITH ZV & ZA  
M701 N.T.S.



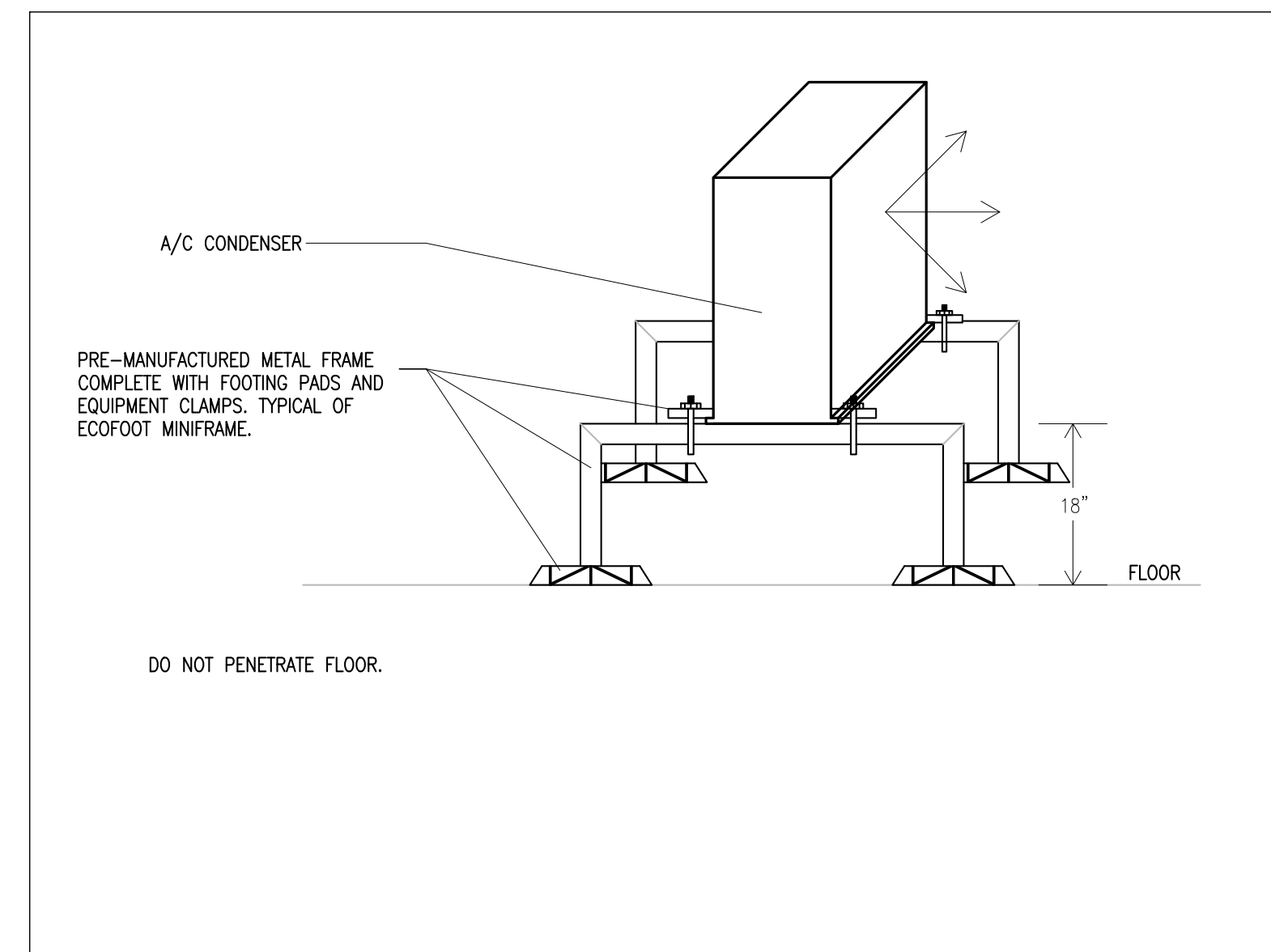
**NOTES:**

- PIPING AND PLATE ARRANGEMENT TO BE ADEQUATELY SUPPORTED BY SECURED PIPE STANDS

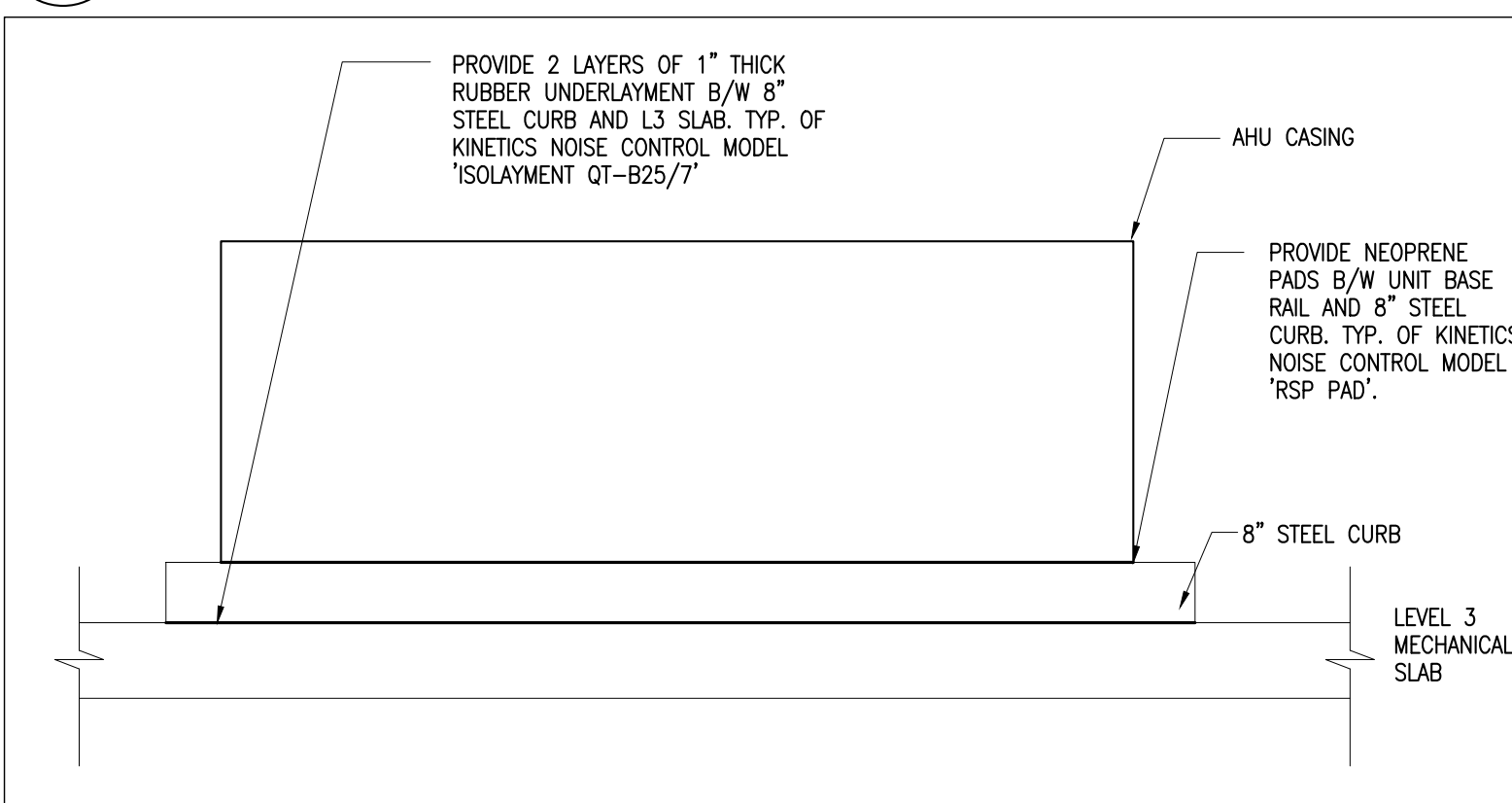
**1** AHU SUPPORT PAD AND DRAIN DETAIL  
M701 N.T.S.



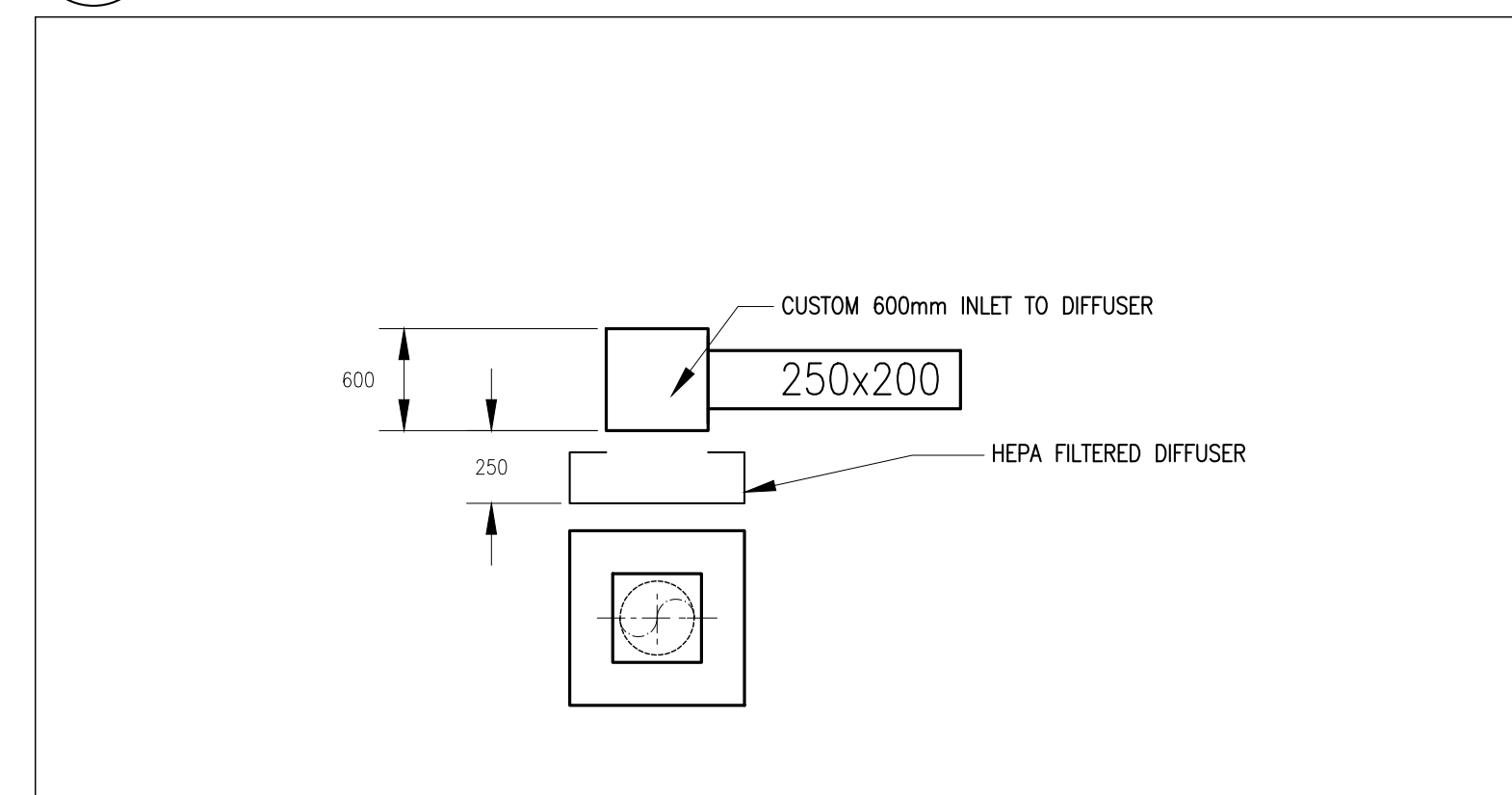
**4** DETAIL OF PIPING TO HUMIDIFIER  
N701 N.T.S.



**3** CONDENSER EQUIPMENT STAND  
M701 N.T.S.



**7** ISOLATED STEEL CURB DETAIL  
M701 N.T.S.



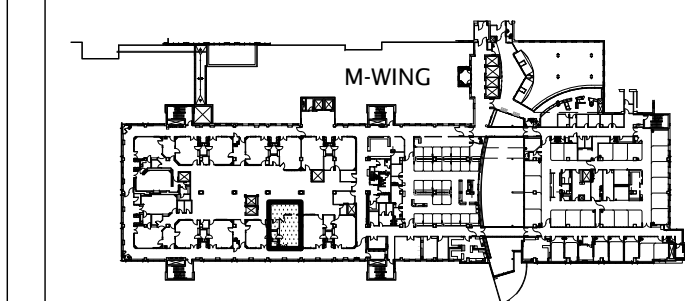
**6** LAMINAR FLOW DIFFUSER INSTALLATION DETAIL  
M701 N.T.S.

DATE	ISSUED FOR	REV
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2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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**Keyplan**



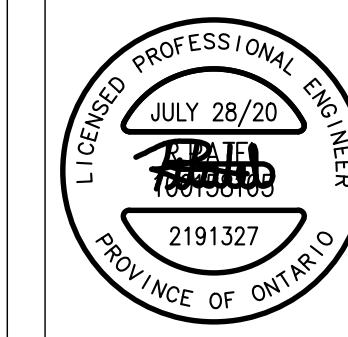
**exp Services Inc.**  
 T: +1.905.895.3217 F: +1.905.895.0167  
 220 Commerce Valley Drive West, Suite 110  
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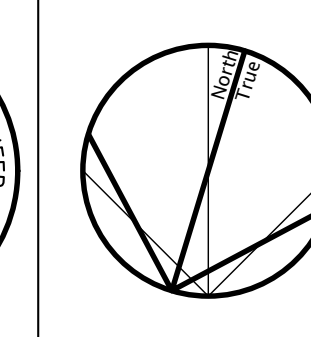
**HHAngus**

**HHAngus & Associates Limited Consulting Engineers**  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
 www.hhangus.com | T 416 443 8200 | F 416 443 8290

**Seal(s)**



**North Arrow**



**NORR**

**NORR Architects & Engineers Limited**

175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
 norr.com

Project Manager D.WITALEC	Drawn
Project Leader	Checked

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 M4N 3M5

**Project**  
**M-WING LEVEL 2**  
**HYBRID OPERATING ROOM**

**Drawing Title**  
**DETAILS & SCHEMATICS II**

**N.T.S.**

Check Scale (may be photo reduced)



Project No. **ONBL19-0186**

Drawing No.

**M-701**

## GRILLES & DIFFUSERS

REF. LETTER	APPLICATION	MANUFACTURERS DATA		FINISH	REMARKS
		SELECTION MFG.	MODEL DESCRIPTION AND SIZE (mm x mm)		
A1	CEILING SUPPLY DIFFUSER	PRICE	SPD - 600 x 600	B-12 PREMIUM WHITE FINISH.	FRAMES TO SUIT CLG. 4-WAY AIR-THROW PATTERN.
A2	CEILING SUPPLY DIFFUSER	PRICE	SPD - 300 x 300		FRAMES TO SUIT CLG. 4-WAY AIR-THROW PATTERN.
C1	CEILING RETURN GRILLE	PRICE	80 EGGCRATE - 300 x 300 UNLESS NOTED OTHERWISE	B-12 PREMIUM WHITE FINISH.	FRAMES TO SUIT CLG.
D1	LAMINAR FLOW SUPPLY DIFFUSER		LFDC 600 x 600 C/W 250 INLET	B-12 PREMIUM WHITE FINISH.	C/W 350x350x350(12"x12"x12") PLENUM [CONTINUOUSLY WELDED OVER INLET] WITH 250(10")ø SIDE OR END INLET COLLAR WHERE SHOWN ON DWGS., 1/4 TURN QUICK RELEASE FASTENERS, AND S.S. VINYL COATED SAFETY CHAINS.
D2	LOW LEVEL EXHAUST GRILLE		730H, 45° DEFLECTION - 600 x 400.		C/W FILTER FRAME WITH 1/4 TURN SOUTHC0 QUICK RELEASE FASTENERS AND 1/4" NARROW BORDER. FRAME AND BORDER TO SUIT WALL.

## HOT WATER RE-HEAT TERMINAL UNIT SCHEDULE

UNIT SIZE	INLET DIA (mm)	RECTANGULAR BRANCH TAP OR INLET DUCT SIZE (mm x mm)	SELECTION MFG.	MODEL No.	MAX. AIR FLOW (L/s)	REHEAT COIL DATA						DISCHARGE DUCT SIZE (UNLESS NOTED OTHERWISE) (mm x mm)	REMARKS	
						AIR			WATER					
						ENT. TEMP. (°C)	LEAV. TEMP. (°C)	FRICITION (S.P. DROP) (Pa)	ENT. TEMP. (°C)	MAX. FLOW (L/s)	MAX. P.D. (KPa)			RUNOUT PIPE SIZE (NPS)
6	150	250 x 150	E.H. PRICE	SDV-5000	118	12.8	25.6	12.5	82.2	0.0189	1	3/4	300 x 250	1) ALL TERMINAL BOXES TO BE CONSTANT VOLUME PRESSURE INDEPENDANT ONE PIECE. 2) BOXES SIZE 6 TO 10 TO BE C/W 900mm LONG INTEGRAL SOUND ATTENUATOR. BOXES SIZE 12 & UP TO BE C/W 1500mm LONG INTEGRAL SOUND ATTENUATOR. BOXES AND ATTENUATORS TO BE C/W 25mm. 'FOIL FACE LINING, WITH ACCESS PANEL IN ATTENUATOR FOR REHEAT COIL. 3) REHEAT COILS SHALL BE LOCATED DOWNSTREAM OF ATTENUATORS. 4) REHEAT COIL CONTROL VALVES TO BE 'BELIMO' P209 SERIES CHARACTERIZED CONTROL VALVE C/W 'LF 24' ACTUATOR C/W SPRING RETURN VALVES AND ACTUATORS TO BE C/W 5 YEAR UNCONDITIONAL WARRANTY. PROVIDE SHOP DRAWINGS WITH SIZE AND CV CALCULATIONS FOR VALVES. PRESSURE DROP TO MATCH COIL. (ACCEPTABLE ALTERNATE TO BE 'DELTA CONTROL PRODUCTS' ELECTRONIC BALL VALVE.)
7	175	300 x 200	E.H. PRICE	SDV-5000	189	12.8	25.6	17.5	82.2	0.041	1	3/4	300 x 300	
8	200	350 x 200	E.H. PRICE	SDV-5000	260	12.8	25.6	32.3	82.2	0.102	5.01	3/4	300 x 300	
9	225	400 x 225	E.H. PRICE	SDV-5000	342	12.8	25.6	32.3	82.2	0.125	1.5	3/4	350 x 300	
10	250	500 x 225	E.H. PRICE	SDV-5000	450	12.8	24.6	42.3	82.2	0.158	1.8	3/4	350 x 300	
12	300	500 x 300	E.H. PRICE	SDV-5000	660	12.8	24.6	47.2	82.2	0.189	3.6	1	450 x 375	
14	350	500 x 350	E.H. PRICE	SDV-5000	850	12.8	24.6	47.2	82.2	0.284	4.8	1	600 x 450	
16	400	500 x 400	E.H. PRICE	SDV-5000	1085	12.8	24.6	47.2	82.2	0.315	6.6	1	600 x 450	

## EQUIPMENT SCHEDULE

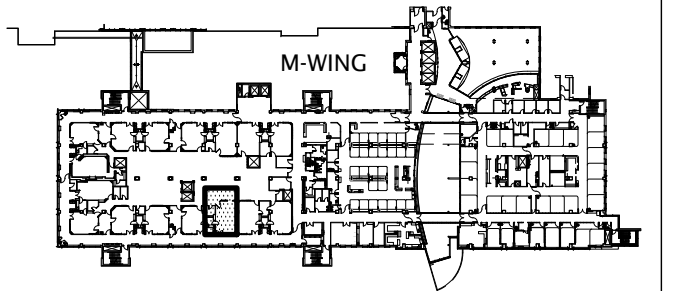
<p>ME-01</p> <p>1.5 TON WALL MOUNTED, INDOOR EVAPORATOR UNIT.</p> <p>COOLING CAPACITY 18,000 BTU/HR. SENSIBLE CAPACITY 13,700 BTU/HR. AIRFLOW RATE 500/400 CFM (H/L). SOUND PRESSURE 43/37 dBA. DIMENSIONS (H*W*D): 11-3/8 x 41-3/8 x 9-1/4. NET WEIGHT 31 IBS. R-410A. MAX. PIPE LENGTH 164 FT.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 0.5 A. MAX. OVERCURRENT PROTECTION 15 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S. INTEGRAL CONDENSATE PUMP.</p> <p>TYPICAL OF DAIKIN FHQ18AVJU.</p> <p>PROVIDE HIGH TEMPERATURE ALARM AT BAS.</p>	<p>ME-03</p> <p>3 TON ROUNDED FLOW SENSING CASSETTE, INDOOR EVAPORATOR UNIT.</p> <p>COOLING CAPACITY 36,000 BTU/HR (COOLING ONLY). SENSIBLE CAPACITY 28,200 BTU/HR. AIRFLOW RATE 1,165/981/671 CFM (H/M/L). SOUND PRESSURE 38/32 dBA (H/L). DIMENSIONS (H*W*D): 11-5/16 x 33-1/16 x 33-1/16. NET WEIGHT 58 IBS. R-410A.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 1.5 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S.</p> <p>TYPICAL OF DAIKIN FXQ36TVJU</p> <p>PROVIDE HIGH TEMPERATURE ALARM AT BAS.</p>
<p>CU-01</p> <p>1.5 TON, OUTDOOR CONDENSER UNIT.</p> <p>AIRFLOW 2,682 CFM. SOUND PRESSURE 58 dBA. 172 LBS. DIMENSIONS (H*W*D): 39 x 37 x 12-5/8. R-410A.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 16.5 A. MAX. OVERCURRENT PROTECTION 25 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S.</p> <p>TYPICAL OF DAIKIN RZQ18TAVJU.</p> <p>EXTEND ON/OFF STATUS AND ALARMS TO BAS.</p>	<p>CU-03</p> <p>3.0 TON VRV-VS HEAT PUMP</p> <p>RATED COOLING CAPACITY: 34,200 BTU/HR. AIRFLOW 2, 682 CFM. SOUND PRESSURE 58 dBA. 172 LBS. DIMENSIONS (H*W*D): 39 x 37 x 12-5/8. R-410A.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 16.5 A. MAX. OVERCURRENT PROTECTION 25 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S.</p> <p>TYPICAL OF DAIKIN RXTQ36TAVJ9.</p> <p>EXTEND ON/OFF STATUS AND ALARMS TO BAS.</p>
<p>ME-02 (TYPICAL OF 2)</p> <p>2 TON WALL MOUNTED INDOOR EVAPORATOR UNIT</p> <p>COOLING CAPACITY 18,000 BTU/HR (COOLING ONLY). SENSIBLE CAPACITY 18,000 BTU/HR. AIRFLOW RATE 635/470 CFM (H/L). SOUND PRESSURE 47/41 dBA (H/L) DIMENSIONS (H*W*D): 11-3/8 x 41-3/8 x 9-1/4. NET WEIGHT 31 IBS. R-410A.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 0.6 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S. 1</p> <p>TYPICAL OF DAIKIN FXA024PVJU</p> <p>PROVIDE HIGH TEMPERATURE ALARM AT BAS</p>	
<p>CU-02</p> <p>4 TON VRV-V S HEAT PUMP UNIT</p> <p>RATED COOLING CAPACITY: 45, 5000 BTU/HR. AIRFLOW 2, 682 CFM. SOUND PRESSURE 58 dBA. 176 LBS. DIMENSIONS (H*W*D): 39 x 37 x 12-5/8. R-410A.</p> <p>10 YEAR WARRANTY.</p> <p>ELECTRICAL: POWER SUPPLY (V/Hz/Ph) 208-230/60/1. MIN. CIRCUIT AMPS 29.10 A. MAX. OVERCURRENT PROTECTION 35 A.</p> <p>COMPLETE WITH OPTIONS: CAPABILITY TO CONNECT TO B.A.S.</p> <p>TYPICAL OF DAIKIN RXTQ48TAVJU</p> <p>PROVIDE ON/OFF STATUS AND ALARM AT BAS</p>	

DATE	ISSUED FOR	REV
2020-03-02	CD PHASE-STAKEHOLDER SIGN-OFF	A
2020-03-02	COSTING SUBMISSION	B
2020-03-23	PERMIT	C
2020-07-28	TENDER	0

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### Keyplan



**exp Services Inc.**  
 T: +1 905.695.3217 | F: +1 905.695.0167  
 220 Commerce Valley Drive West, Suite 110  
 Markham, ON L3T 0A8  
 Canada  
[www.exp.com](http://www.exp.com)



**HHAngus & Associates Limited Consulting Engineers**  
 1127 Leslie Street, Toronto, ON, M3C 2J6 Canada  
[www.hhangus.com](http://www.hhangus.com) | T 416 443 8200 | F 416 443 8290

<p>Seal(s)</p>	<p>North Arrow</p>
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NORR

NORR Architects & Engineers Limited

175 Bloor Street East  
 North Tower, 15th Floor  
 Toronto, ON, Canada M4W 3R8  
[norr.com](http://norr.com)

Project Manager D.WITALEC	Drawn
Project Leader	Checked

Client

HEALTH SCIENCES CENTRE  
 2075 BAYVIEW AVENUE, TORONTO, ON.  
 M4N 3M5

Project

M-WING LEVEL 2  
 HYBRID OPERATING ROOM

Drawing Title

SCHEDULES

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**M-800**