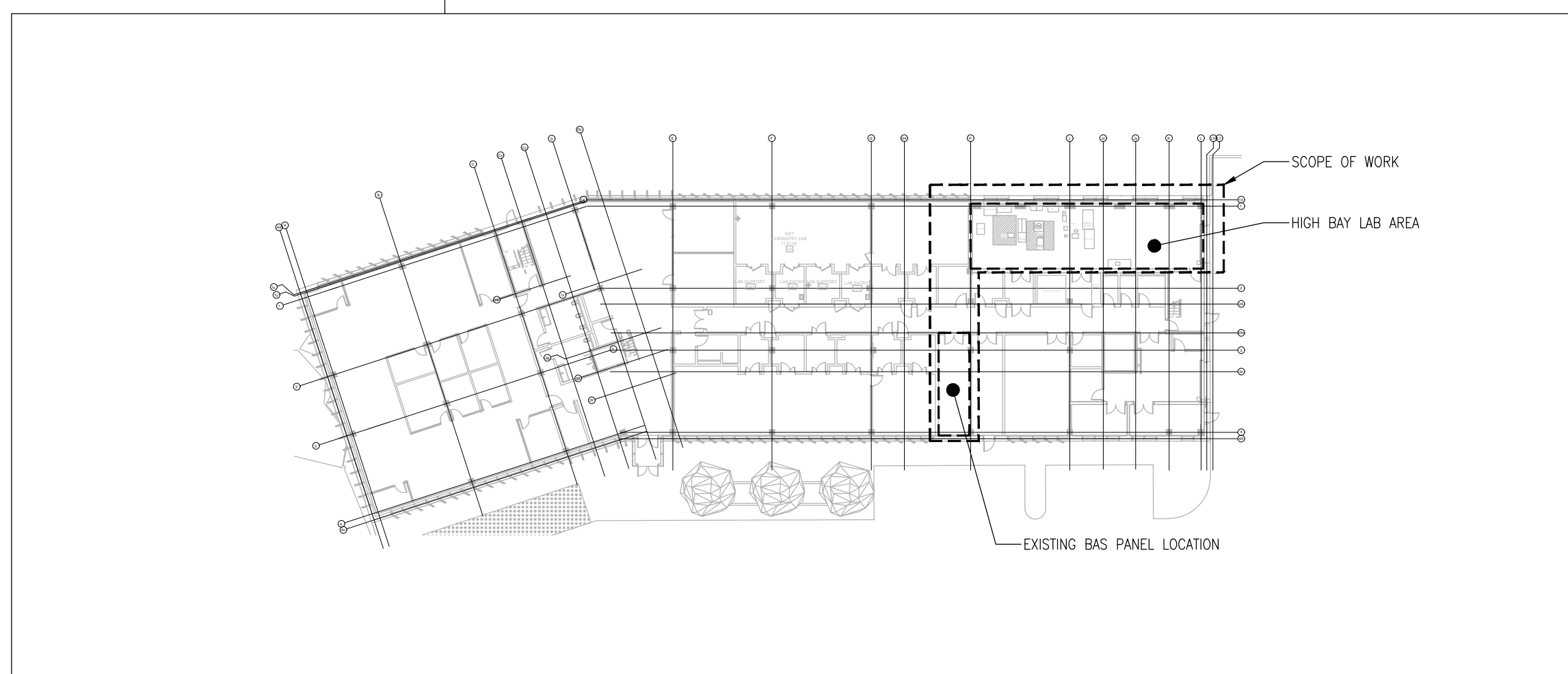
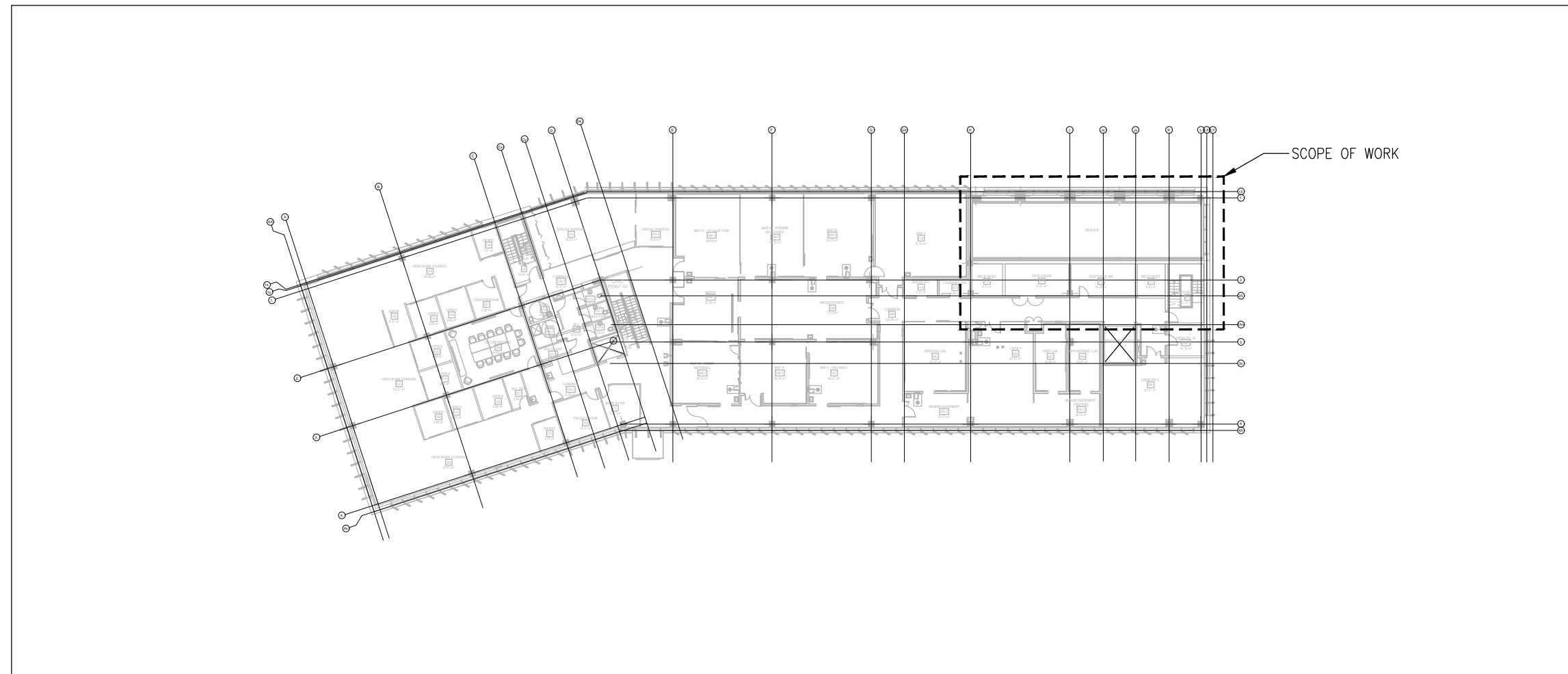


**GENERAL NOTES**

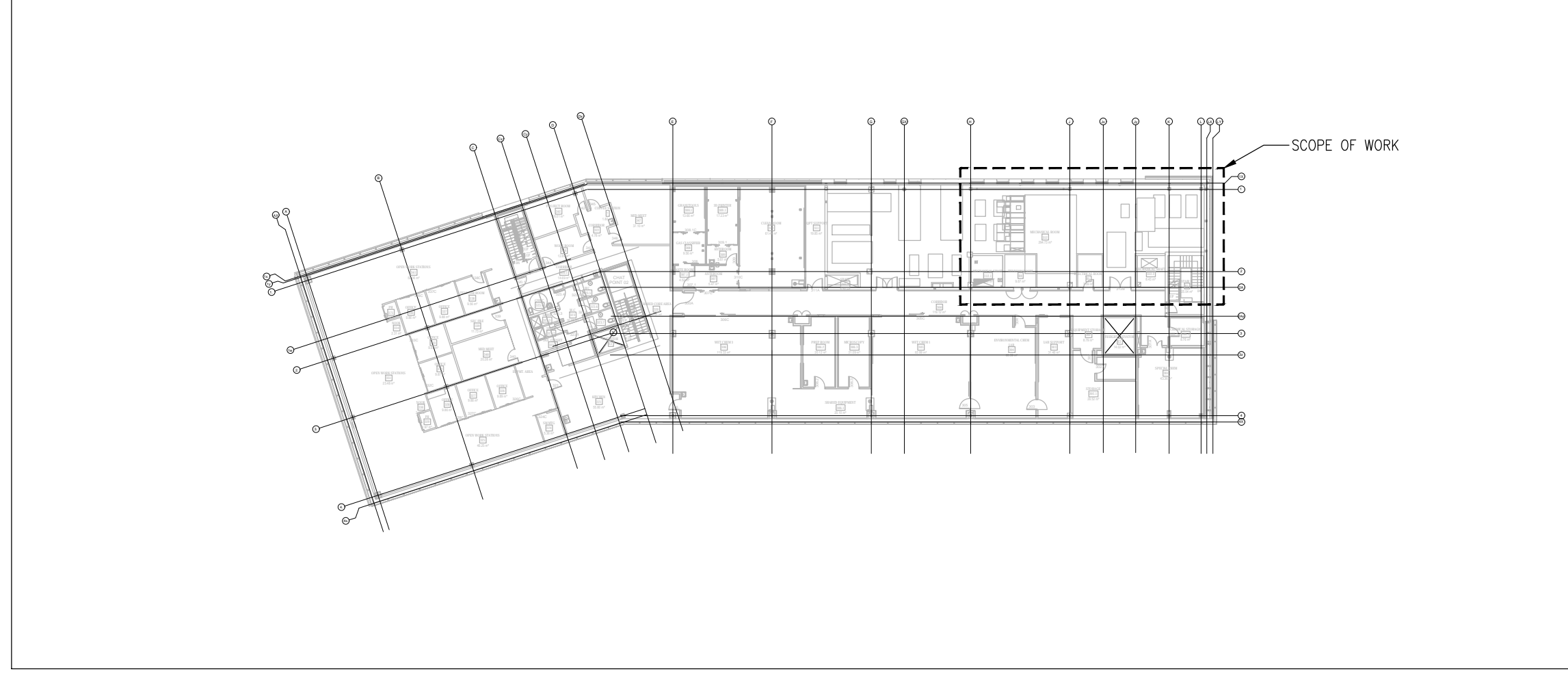
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- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.



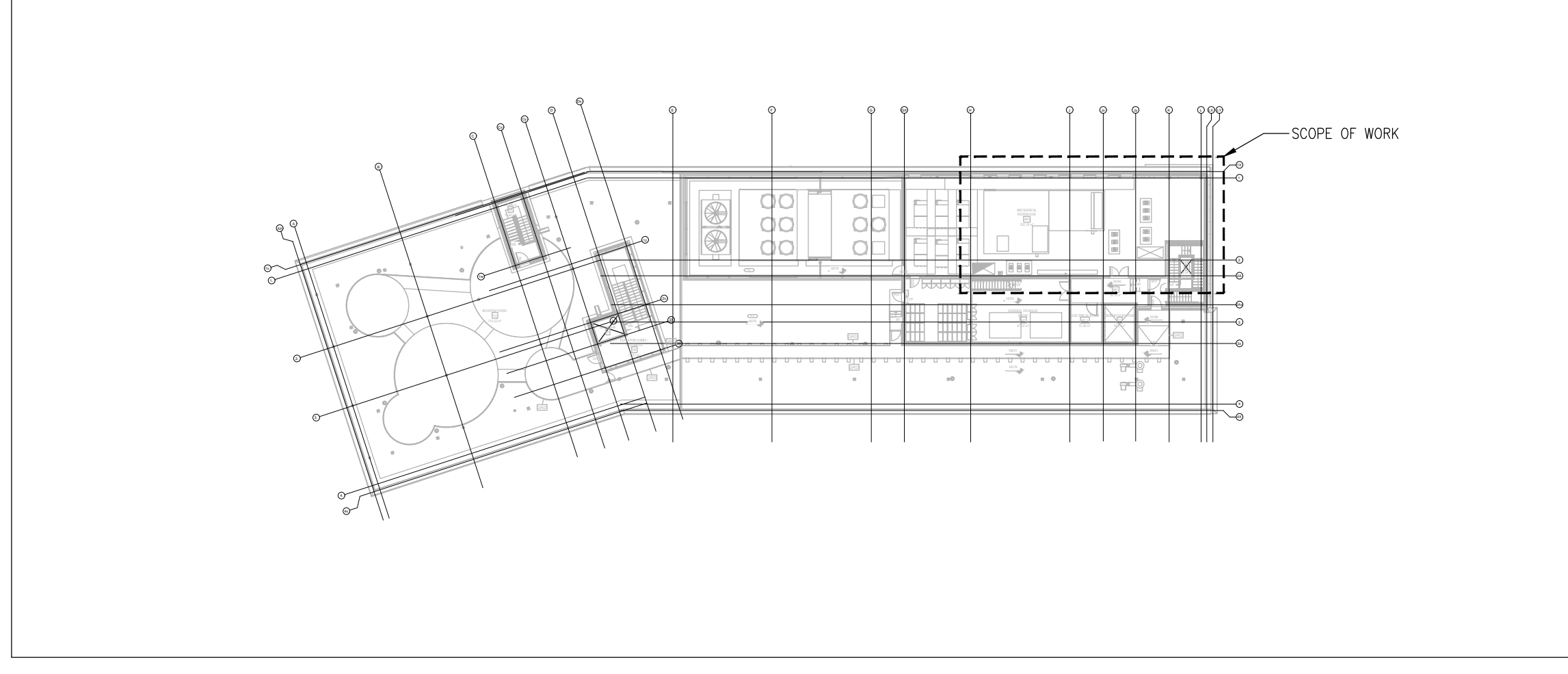
1 LEVEL 1 - KEY PLAN  
M01 SCALE = 1:500



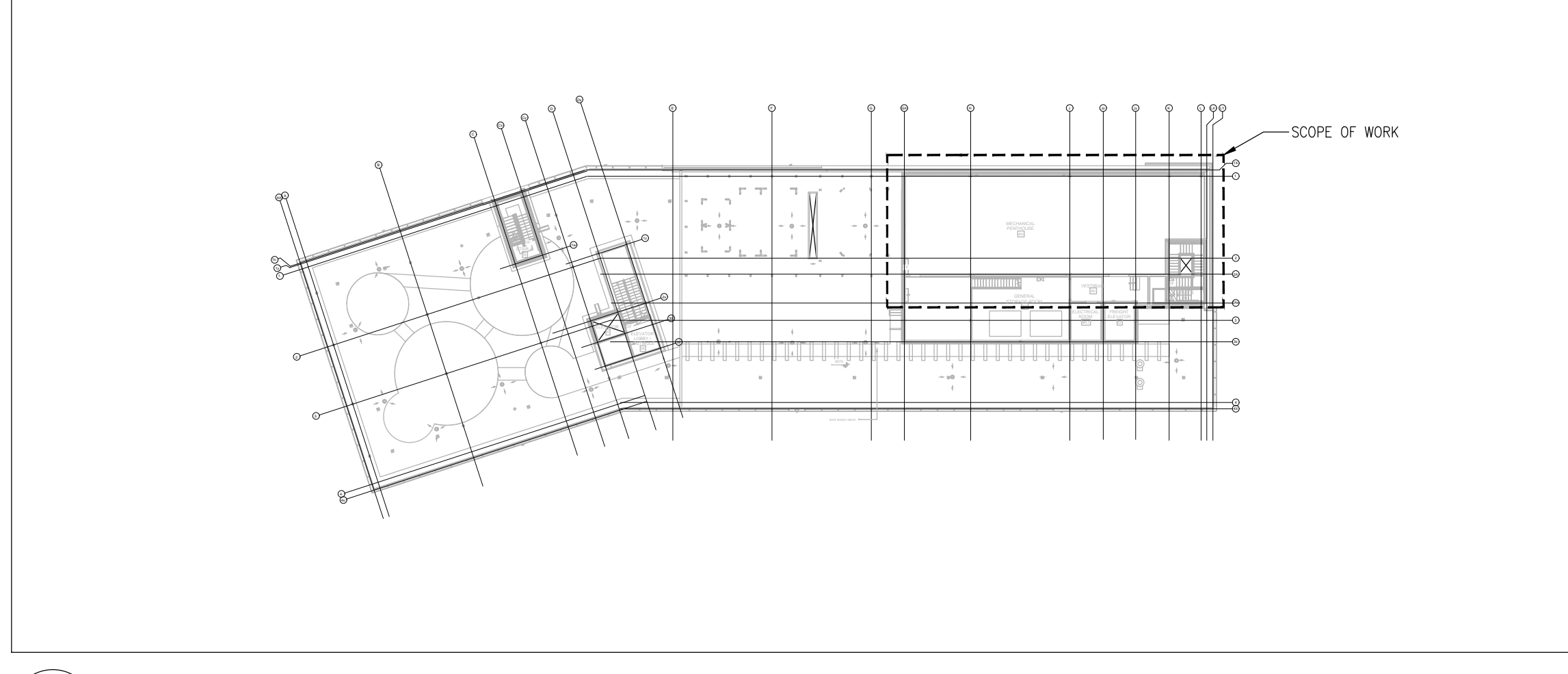
2 LEVEL 2 - KEY PLAN  
M01 SCALE = 1:500



3 LEVEL 3 - KEY PLAN  
M01 SCALE = 1:500



4 LEVEL 4 - KEY PLAN  
M01 SCALE = 1:500



5 ROOF - KEY PLAN  
M01 SCALE = 1:500

- GENERAL NOTES:**
- ALL EXISTING MECHANICAL SERVICES SHOWN ARE APPROXIMATE AND BASED ON VISUAL SITE INSPECTIONS WHERE POSSIBLE, AS WELL AS OBTAINED AS-BUILT DRAWINGS. CONTRACTOR SHALL VERIFY ALL CONNECTIONS, SIZING AND LOCATION OF EXISTING SERVICES AND REPORT ANY DISCREPANCIES FOR RESOLUTION. TRANSFORMATIONS FOR SERVICES AS REQUIRED.
  - CONFIRM EXACT SIZE & LOCATIONS OF EXISTING SERVICES AT POINTS OF CONNECTION PRIOR TO FABRICATION &/OR INSTALLATION OF NEW SERVICES. PROVIDE TRANSFORMATIONS FOR SERVICES AS REQUIRED.
  - EXISTING SERVICES INDICATED ON THE DRAWINGS TO BE REMOVED &/OR RELOCATED SHALL BE VERIFIED ON SITE.
  - THE ROUTING OF THE SERVICES INDICATED IN THE DRAWINGS ARE DIAGRAMATIC. THE CONTRACTOR IS TO INCLUDE FOR THE REVIEW OF THE ROUTING AND INCLUDE FOR ALL OFFSETS OF THE SERVICES REQUIRED TO ACHIEVE THE GENERAL INTENT OF THE ROUTING INDICATED ON THE DRAWINGS.
  - CONTRACTOR SHALL INCLUDE FOR ALL CUTTING & PATCHING FOR THE INSTALLATION OF THEIR WORK. EMPLOY THE SERVICES OF THE GENERAL TRADES CONTRACTOR IF NECESSARY.
  - CONTRACTOR SHALL PROVIDE INSULATION TO ALL NEW PIPING. REPAIR ANY DAMAGED INSULATION AT POINTS OF CONNECTION TO EXISTING SERVICES TO THE STANDARD OF THE EXISTING INSULATION.
  - PIPING INSULATION SHALL BE AS PER THE REQUIREMENTS OF THE MECHANICAL SPECIFICATIONS.
  - THE ABOVE GENERAL NOTES ARE TO BE READ IN CONJUNCTION WITH ALL DRAWINGS INCLUDED IN THIS PACKAGE.

- SCOPE OF WORK:**
- PROVIDE TEMPORARY HEATING AND COOLING IN ANY AREA AFFECTED BY THE CONSTRUCTION WORK. CARRY THE FULL COST TO RENT AND INSTALL EQUIPMENT FOR THE DURATION OF REQUIRED SHUTDOWNS. CONTRACTOR TO COORDINATE WITH BUILDING OPERATORS FOR SCHEDULING OF SHUTDOWNS AND AREAS THAT MAY BE AFFECTED.
  - PROVIDE NEW LAB GAS SERVICES AS INDICATED ON DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR REGISTRATION AND INSPECTION OF SYSTEM WITH TSSA. CONTRACTOR SHALL OBTAIN ALL CO2/02 ASSOCIATED WITH ANY REGULATIONS NECESSARY TO MEET THE REQUIREMENTS OF TSSA. ALL PIPING COMPONENTS MUST HAVE A VALID ORN RECOGNIZED BY TSSA. PRESSURE TESTING REQUIREMENTS TO MEET CSA B51, ALSO REFER TO SPECIFICATIONS.
  - PROVIDE RELIEF VENTING FOR ALL LAB GAS SYSTEMS AND ROUTE RELIEF AS INDICATED TO THE OUTDOORS.
  - PROVIDE CONNECTION TO GAS FOR ALL NEW EQUIPMENT AND EXISTING EQUIPMENT THAT IS MODIFIED DURING THIS PROJECT. EXISTING GAS PANEL LOCATION INDICATED ON KEY PLAN.
  - CLEAN SPACES IN THEIR ENTIRETY BEFORE HANDOVER TO CLIENT.
  - ALL OWNER SUPPLIED EQUIPMENT WILL BE INSTALLED BY OWNER. COORDINATE WITH EQUIPMENT SUPPLIER AND OWNER. REFER TO EQUIPMENT SCHEDULE ON DRAWING SET. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED BASE BUILDING SERVICES TO EACH EQUIPMENT TO ENSURE A FULLY FUNCTIONAL INSTALLATION ACCORDING TO THE MANUFACTURER'S GUIDELINES. ALSO REFER TO SPECIFICATIONS.

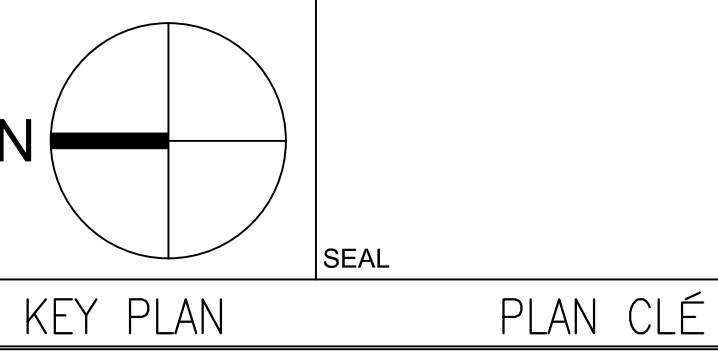
DWG NO.	DRAWING TITLE
M01	KEY PLANS, DRAWING LIST, SCOPE OF WORK AND MECHANICAL SYMBOLS
M02	LEVELS 1 AND 2 - PLUMBING - NEW WORK
M03	LEVELS 1 AND 2 - HVAC - NEW WORK
M04	LEVELS 1 AND 2 - LAB GAS - NEW WORK
M05	LEVEL 3 AND ROOF - LAB GAS - NEW WORK
M06	LEVELS 1 AND 2 - FIRE PROTECTION - NEW WORK
M07	MECHANICAL SCHEDULES
M08	MECHANICAL SCHEMATICS AND DETAILS - 1 OF 3
M09	MECHANICAL SCHEMATICS AND DETAILS - 2 OF 3
M10	MECHANICAL SCHEMATICS AND DETAILS - 3 OF 3

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
	VALVE
	VALVE - VERTICAL
	CHECK VALVE
	SAFETY RELIEF VALVE
	STRAINER
	CLEANOUT
	THERMOMETER
	PRESSURE GAUGE
	PIPE UP
	PIPE DOWN
	SANITARY TRAP
	UNION
	CAP
	FLOOR DRAIN
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
	FIRE EXTINGUISHER
	RECTANGULAR DUCTWORK
	ROUND DUCTWORK
	90° ELBOW
	45° ELBOW
	FLEXIBLE CONNECTION
	ACOUSTICALLY LINED DUCT
	THERMALLY INSULATED DUCT
	ROUND DUCT UP
	SUPPLY DIFFUSER TAG
	RETURN/EXHAUST GRILLE TAG

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR RETURN/EXH DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN/EXH DUCT DOWN
	FLEX DUCT
	RECTANGULAR TAKE OFF
	RECTANGULAR TAKE OFF C/W BALANCING DAMPER
	ROUND TAKE OFF C/W BALANCING DAMPER
	BALANCING DAMPER
	BACK DRAFT DAMPER
	FIRE DAMPER
	ACCESS DOOR
	T-STAT (DOO)
	MOTORIZED DAMPER MOTOR
	FLOW SWITCH
	SMOKE SENSOR
	HUMIDITY SENSOR
	OXYGEN SENSOR (DOO)
	PRESSURE SENSOR (DOO)
	CO2 SENSOR
	ELECTRIC THERMOSTAT

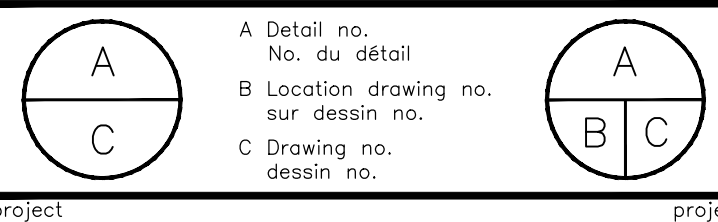
MECHANICAL LINE TYPE LEGEND	
LINE	DESCRIPTION
	INDICATES NEW
	INDICATES EXISTING (TO REMAIN)
	INDICATES DEMOLISHED/ REMOVED
	NON-POTABLE DOMESTIC COLD WATER
	ACID SANITARY DRAIN PIPING
	ACID VENT PIPING
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	NITROGEN PIPING
	ARGON PIPING
	COMPRESSED AIR
	HYDROGEN PIPING
	CONTROL LINE
	SPRINKLER PIPING

**wsp**  
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1	13 08 2021	ISSUED FOR TENDER	N.H.V.
No.	Date	Revision	By
Date Printed: 10 02 2021		Date imprimée	

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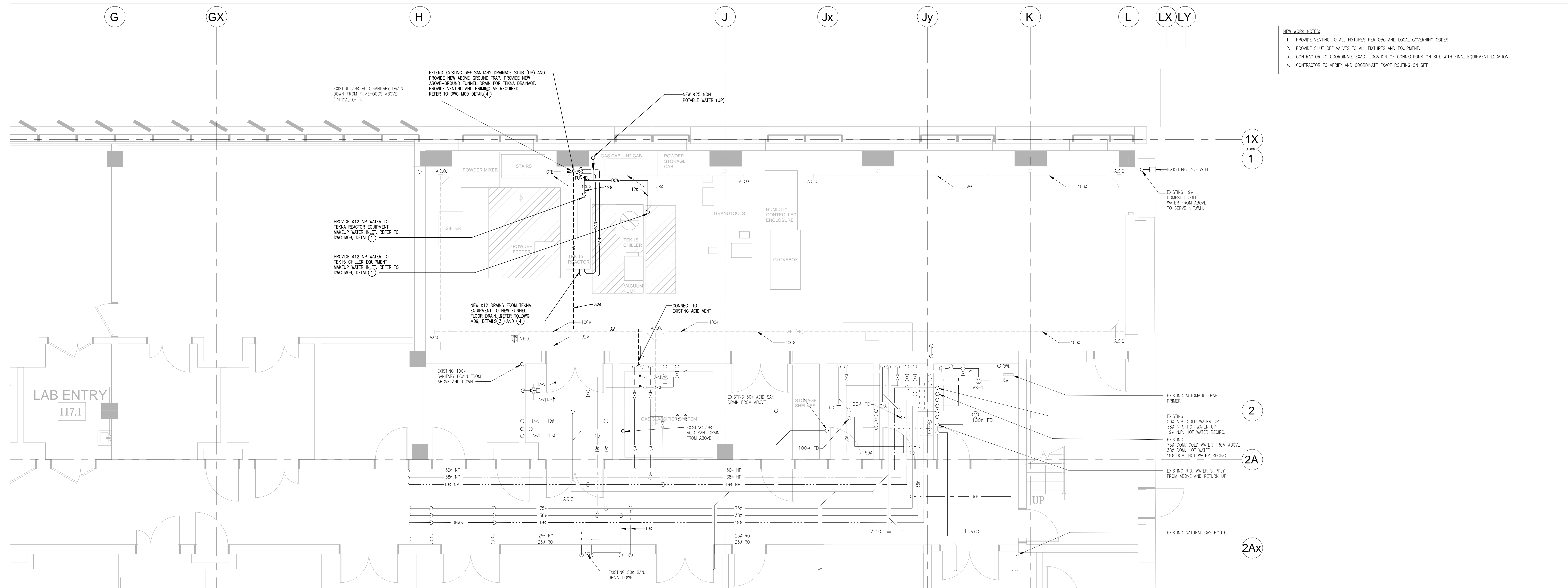
Project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT**

Drawing: **KEY PLANS, DRAWING LIST, SCOPE OF WORK AND MECHANICAL SYMBOLS**

designed	conçu	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			
dwg.no.	dessin no.		
<b>6035-0260-M01</b>			

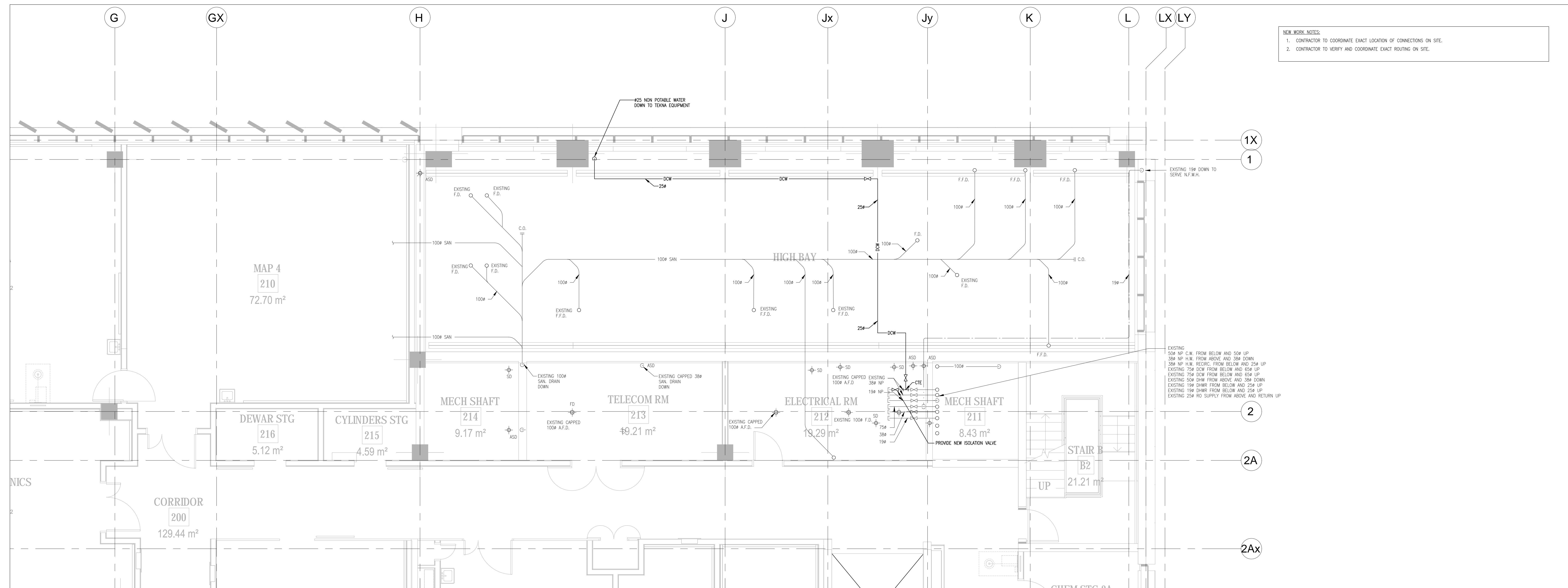
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1 LEVEL 1 - PLUMBING AND DRAINAGE - NEW WORK  
 M02 SCALE = 1:50

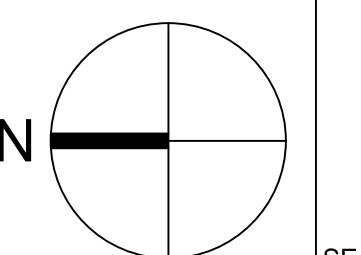
NEW WORK NOTES:  
 1. PROVIDE VENTING TO ALL FIXTURES PER CBC AND LOCAL GOVERNING CODES.  
 2. PROVIDE SHUT OFF VALVES TO ALL FIXTURES AND EQUIPMENT.  
 3. CONTRACTOR TO COORDINATE EXACT LOCATION OF CONNECTIONS ON SITE WITH FINAL EQUIPMENT LOCATION.  
 4. CONTRACTOR TO VERIFY AND COORDINATE EXACT ROUTING ON SITE.



2 LEVEL 2 - PLUMBING - NEW WORK  
 M02 SCALE = 1:50

NEW WORK NOTES:  
 1. CONTRACTOR TO COORDINATE EXACT LOCATION OF CONNECTIONS ON SITE.  
 2. CONTRACTOR TO VERIFY AND COORDINATE EXACT ROUTING ON SITE.

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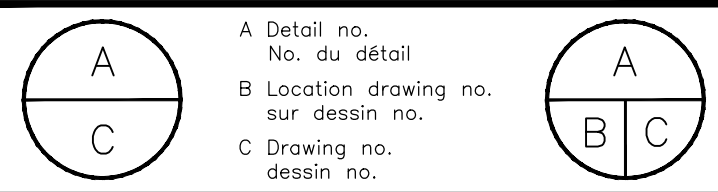


KEY PLAN PLAN CLÉ

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PROJECT  
**NRC MISSISSAUGA HIGH BAY LAB FITOUT**

DRAWING  
**LEVELS 1 AND 2 - PLUMBING - NEW WORK**

designed	comp	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.	AS NOTED		
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			

DWG NO. **6035\_0260-M02** DESIGN NO.

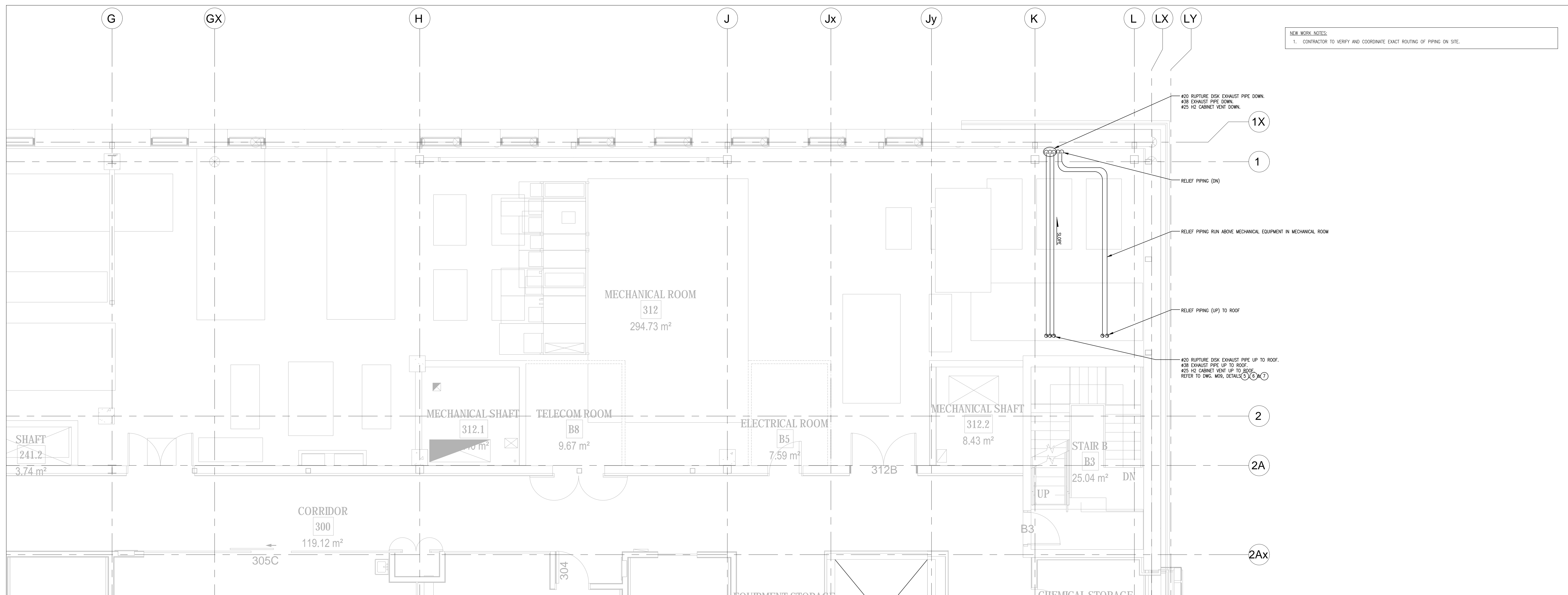




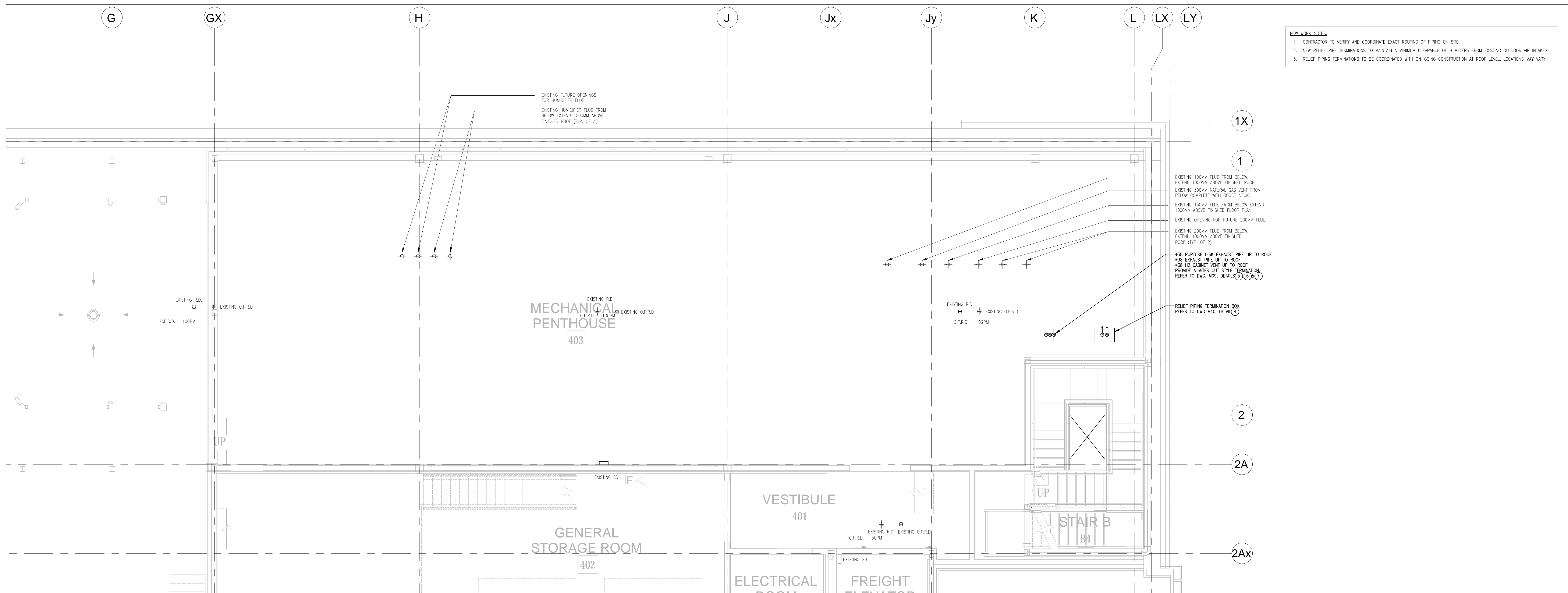


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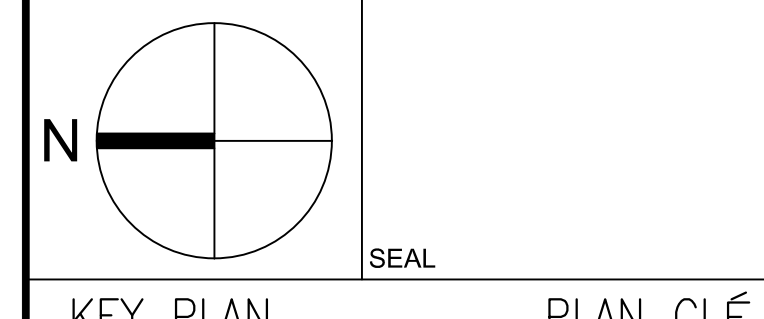
1 LEVEL 3 - LAB GAS - NEW WORK  
 M05 SCALE = 1:50



2 ROOF - LAB GAS - NEW WORK  
 M05 SCALE = 1:50

- NEW WORK NOTES:
- CONTRACTOR TO VERIFY AND COORDINATE EXACT ROUTING OF PIPING ON SITE.
  - NEW RELIEF PIPE TERMINATIONS TO MAINTAIN A MINIMUM CLEARANCE OF 9 METERS FROM EXISTING OUTDOOR AIR INTAKES.
  - RELIEF PIPING TERMINATIONS TO BE COORDINATED WITH ON-GOING CONSTRUCTION AT ROOF LEVEL, LOCATIONS MAY VARY.

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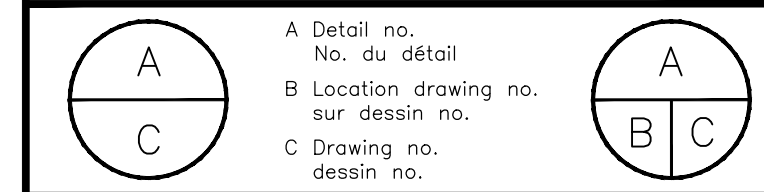


KEY PLAN PLAN CLÉ

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Date Printed: 10 02 2021 Date imprimée:

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Project: NRC MISSISSAUGA HIGH BAY LAB FITOUT

Drawing: LEVEL 3 AND ROOF - LAB GAS - NEW WORK

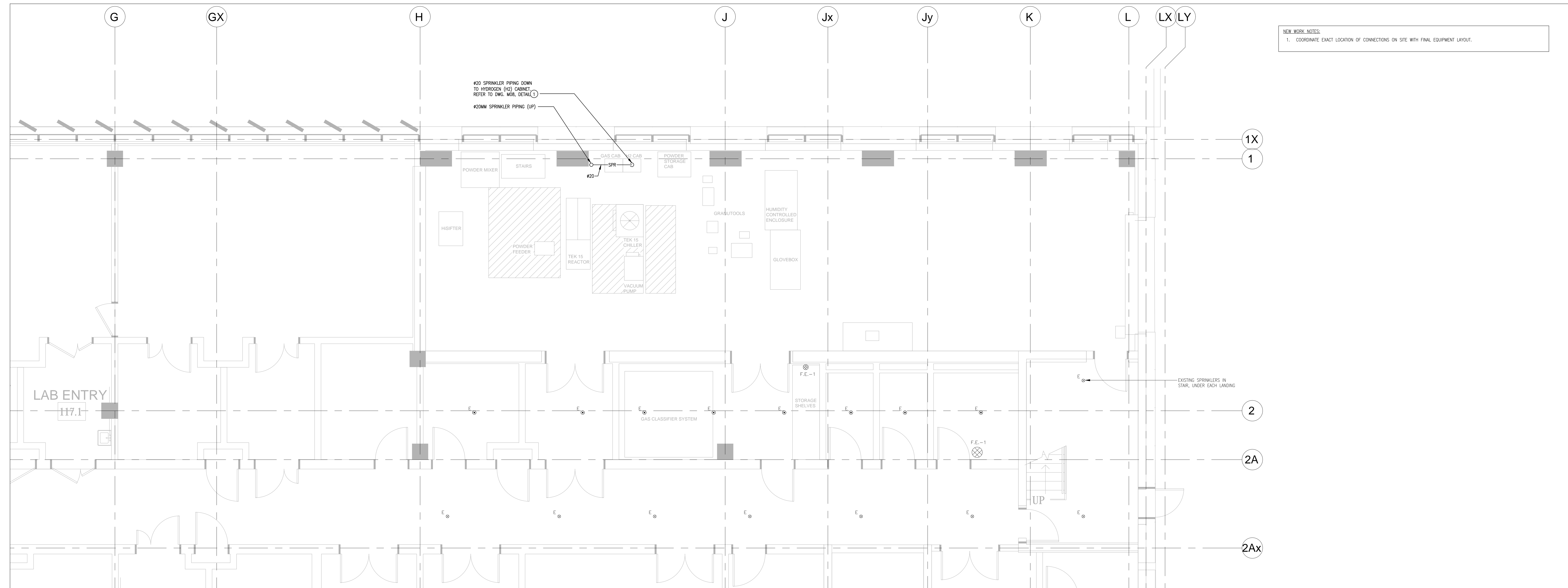
designed	compu	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.

Drawn by: 6035\_0260-M05

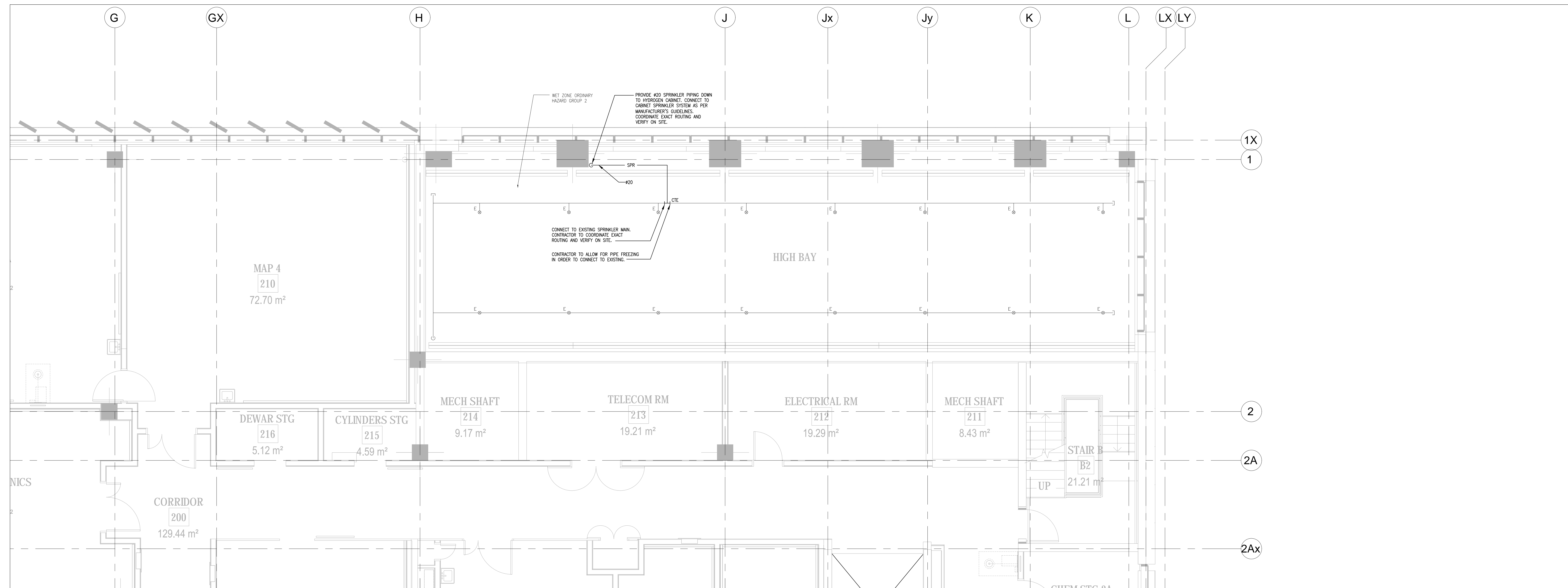
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NEW WORK NOTES:  
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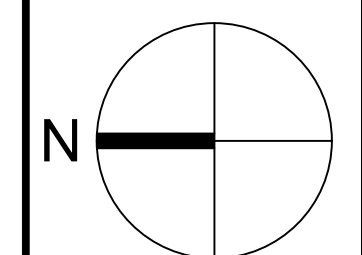


1 LEVEL 1 - FIRE PROTECTION - NEW WORK  
 M06 SCALE = 1:50



2 LEVEL 2 - FIRE PROTECTION - NEW WORK  
 M06 SCALE = 1:50

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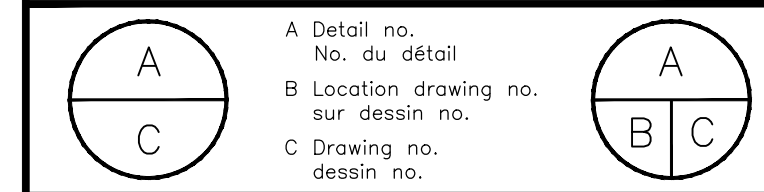


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1	13 08 2021	ISSUED FOR TENDER	

Date Imprimée: 10 02 2021

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Project: NRC MISSISSAUGA HIGH BAY LAB FITOUT

Drawing: LEVELS 1 AND 2 - FIRE PROTECTION - NEW WORK

designed	compu	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			

Dwg. no. 6035\_0260-M06

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EQUIPMENT SCHEDULE (FOR REFERENCE ONLY)	
EQUIPMENT PROVIDED BY OWNER AND DETAILS OF SAME. CONTRACTOR TO PROVIDE ALL REQUIRED SHOP DRAWING SERVICES TO EACH PIECE OF EQUIPMENT	TYPE
TEKNA PLASMA SYSTEM	POWDER FEEDER
	TEK 15 REACTOR
	TEK 15 CHILLER
	TEK 15 VACUUM PUMP
ANCILLARY EQUIPMENT	GAS CABINET
	H2 CABINET
	POWDER STORAGE CABINET
	GRANULARS CRANK/PACK AND GRANULATORS
	HUMIDITY CONTROLLED ENCLOSURE, DEHUMIDIFIER
	GLOVEBOX
	GAS CLASSIFIER
HSIFTER	
POWDER MIXER	

PRESSURE REGULATOR SCHEDULE									
PRESSURE REGULATOR	SERVICE	MODEL #	MATERIALS	FLOW RANGE (SLPM)	INLET PRESSURE (PSIG)	OUTLET PRESSURE (PSIG)	MAX INLET PRESSURE (PSIG)	NOTES	
PR-1	ARGON CYLINDER - TEKNA	MATHESON 3120A SERIES	BRASS BODY, 316 STAINLESS STEEL DAPPRAM	0-530	2200	80	3000	DUAL STAGE, CROSS PURGE ASSEMBLY MATHESON 4774, PIPE AWAY RELIEF VENT	
PR-2	NITROGEN - TEKNA	AMCO, R-WR10-V-NIT	BRASS BODY	0-480	120	80	300	SINGLE STAGE, IN-LINE SELF RELIEVING	
PR-3	COMPRESSED AIR - TEKNA	AMCO, R-WR10-V-AIR	BRASS BODY	0-20	120	40	300	SINGLE STAGE, IN-LINE SELF RELIEVING	
-	-	-	-	-	-	-	-	-	
PR-7	ARGON CYLINDER - GLOVEBOX	MATHESON 3120A SERIES	BRASS BODY, 316 STAINLESS STEEL DAPPRAM	0-100	2200	90	3000	DUAL STAGE, CROSS PURGE ASSEMBLY MATHESON 4774, PIPE AWAY RELIEF VENT	
PR-8	NITROGEN - H2 CABINET	AMCO, R-WR10-V-NIT	BRASS BODY	0-50	120	80-90	300	SINGLE STAGE, IN-LINE SELF RELIEVING	
PR-9	NITROGEN CYLINDER - GAS CLASSIFIER	MATHESON 3120A SERIES	BRASS BODY, 316 STAINLESS STEEL DAPPRAM	0-80	2200	72	3000	DUAL STAGE, CROSS PURGE ASSEMBLY MATHESON 4774, PIPE AWAY RELIEF VENT	

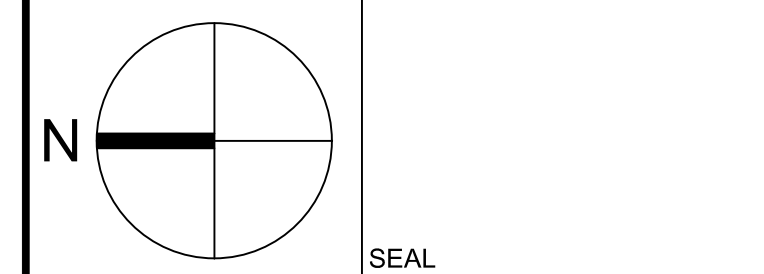
SCHEDULES OF EXHAUST FAN																						
TAG	QTY	AREA SERVED	LOCATION	TYPE OF FAN	MANUFACTURER	MODEL	FAN CHARACTERISTICS				ELECTRICAL			SOUNDS POWER RE 10*12 W								
							AIRFLOW (L/S)	FAN (RPM)	E.S.P. (Pa)	OPERATING POWER (W)	MOTOR POWER (W)	V/PH/Hz	VFD	EMERGENCY POWER	1	2	3	4	5	6	7	8
EF-1	1	HIGH BAY HYDROGEN CABINET	HIGH BAY LAB	DIRECT DRIVE CENTRIFUGAL IN-LINE	LOREN COOK	8050120	165	1200	0.375	130	170	115/1/60	NO	YES	74	70	74	68	65	58	55	51

NOTES:  
1. EQUIPPED WITH NEMA 4 CONTROL PANEL.  
2. PROVIDE SOUND ATTENUATION BOX FOR EXHAUST FAN, BOX TO PROVIDE NO GREATER THAN NC 34 RATING WITHIN LAB SPACE. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF SOUND ATTENUATION BOX DESIGNED AND STAMPED BY A PROFESSIONAL ACOUSTICAL ENGINEER WITH A LICENSE TO PERFORM IN ONTARIO, SHOP DRAWINGS TO PROVIDE MIN. NC 34 RATING.

LOOSE STARTER SCHEDULE															120/18/60/2
ITEM	AMP	VOLTAGE	PHASE	WIRE SIZE	TYPE	COMBINATION STARTER & DISCONNECT	MODIFICATIONS	BRANCH FEEDERS	FUSED DISC.	STARTER	ALIC. CONT.	CONDUIT	CABLE TRAY	REMARKS	DATE
EF-1 (HYDROGEN CABINET EXHAUST FAN)	0.17	-	-	00	FVAR	✓	✓	✓	✓	✓	✓	✓	✓	NOTE 1	

NOTES:  
1. NEMA 4 CONTROL PANEL.

**wsp**  
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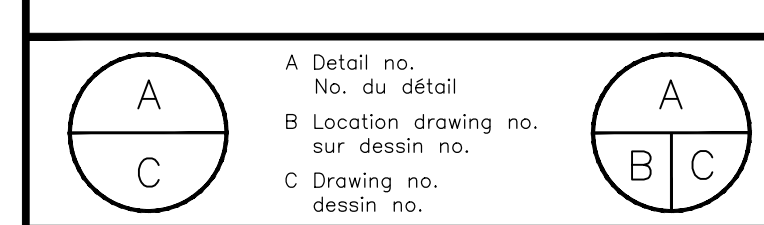


KEY PLAN PLAN CLÉ

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Project: NRC MISSISSAUGA HIGH BAY LAB FITOUT

**MECHANICAL SCHEDULES**

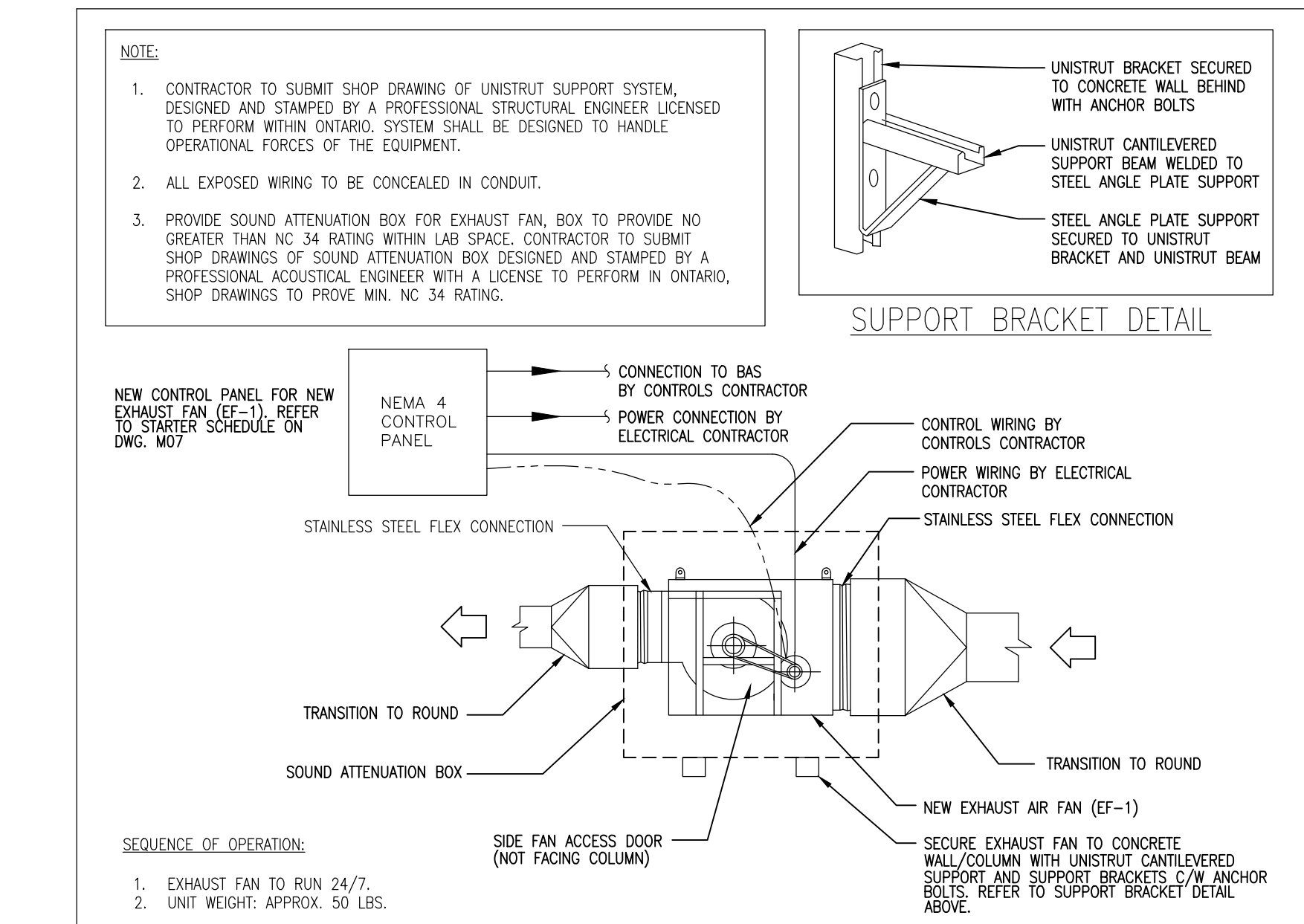
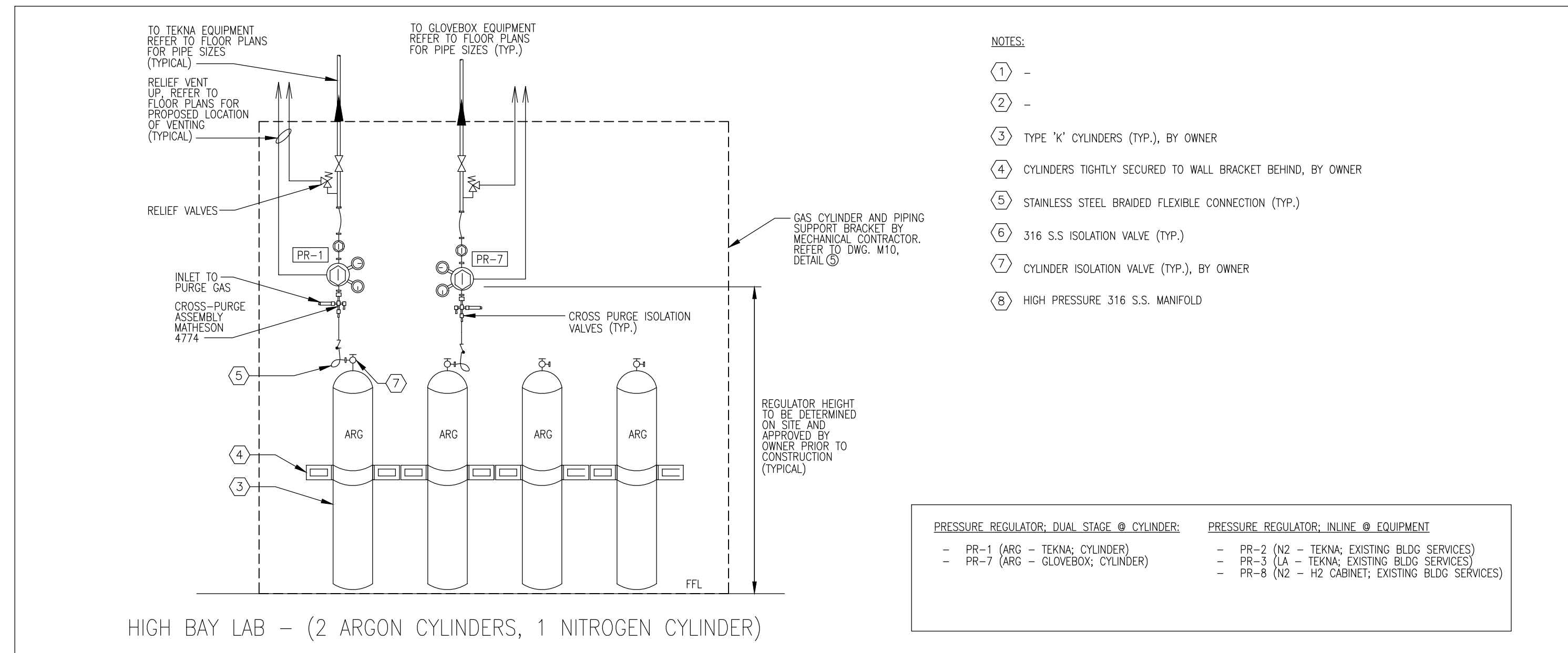
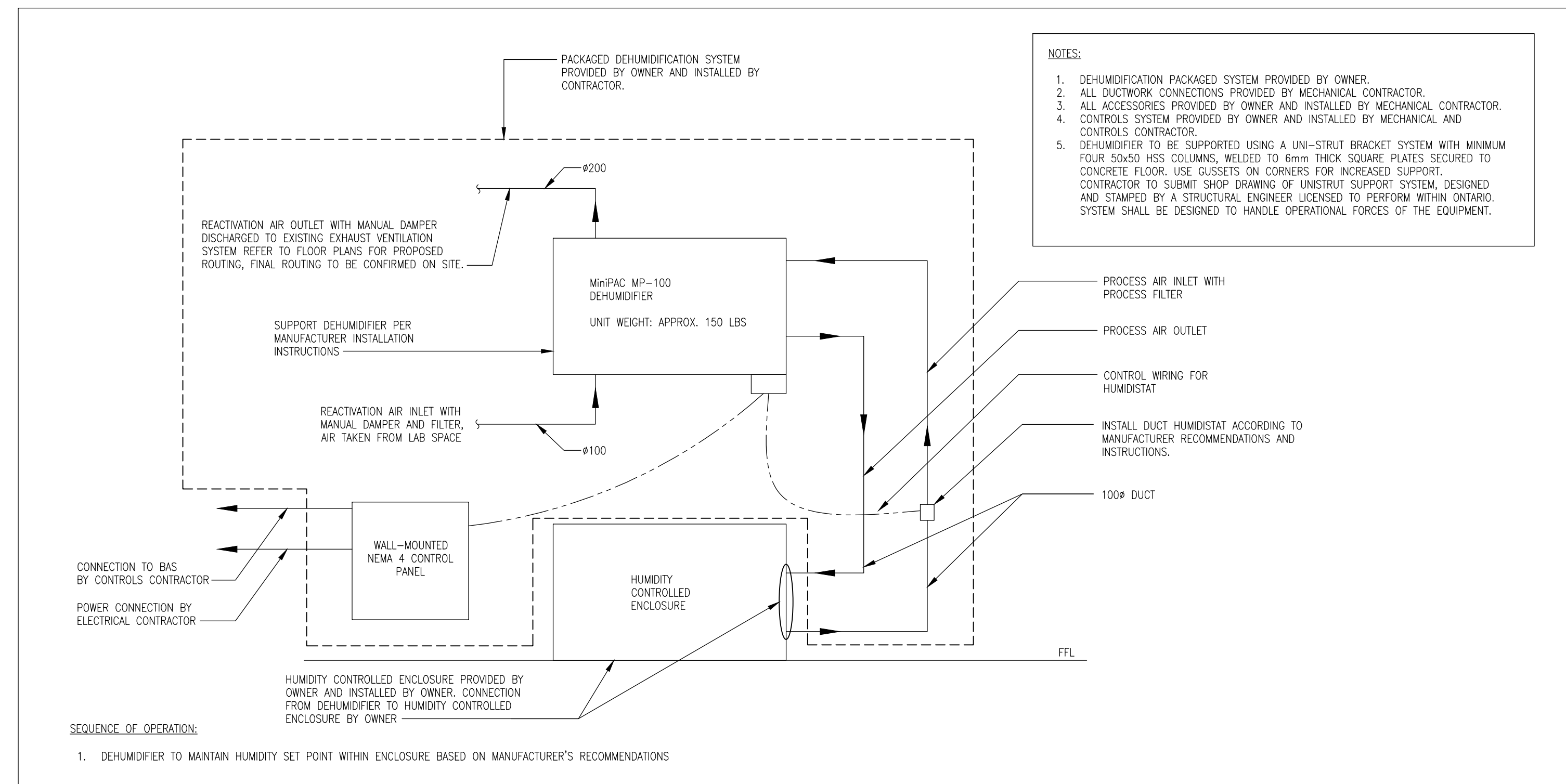
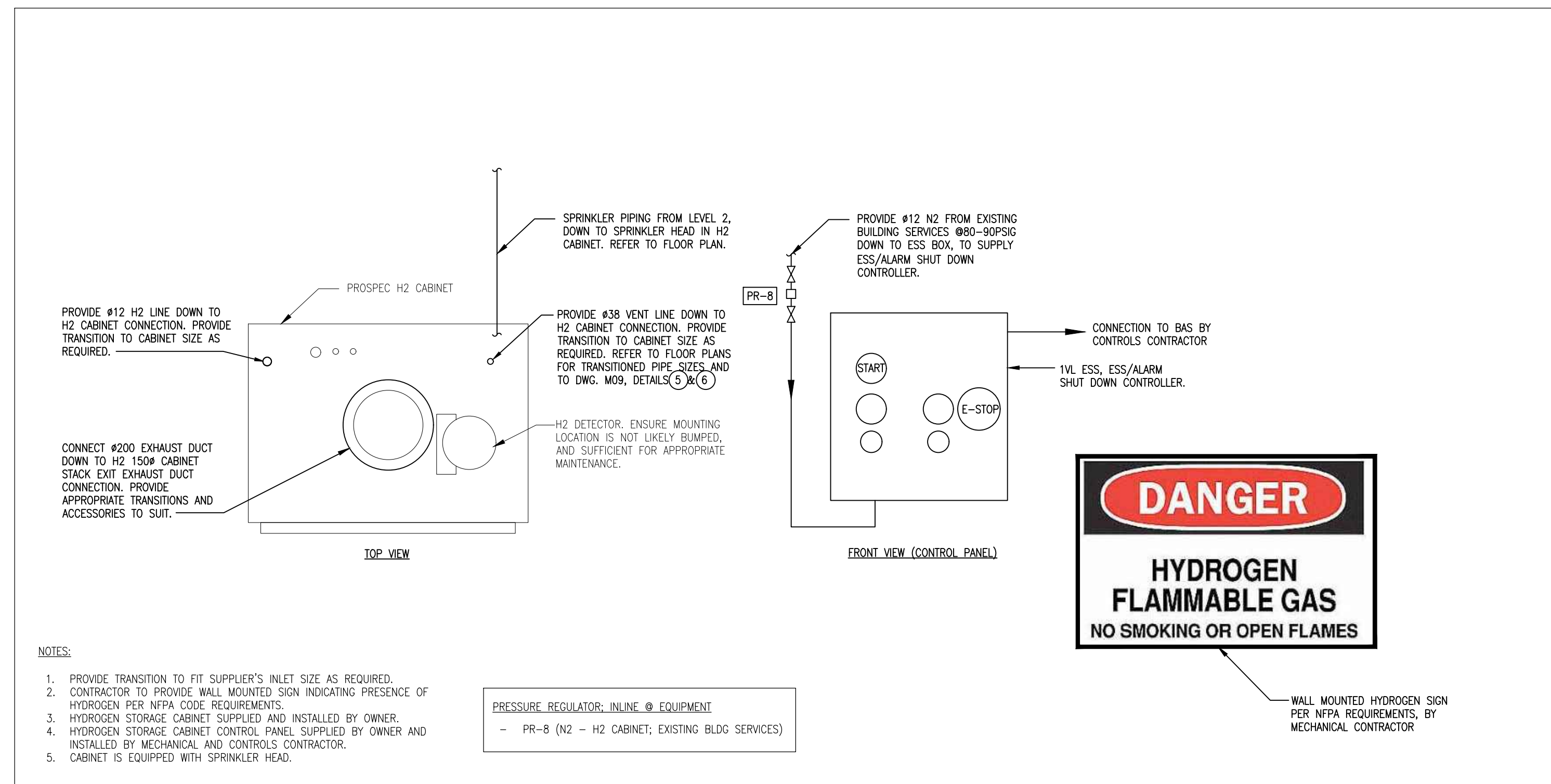
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N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			

Draw No: 6035\_0260-M07

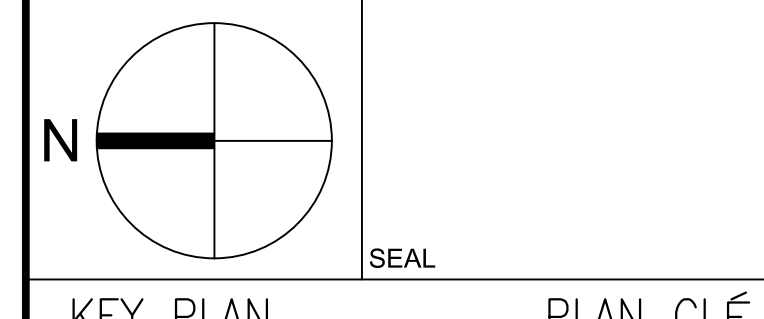


GENERAL NOTES

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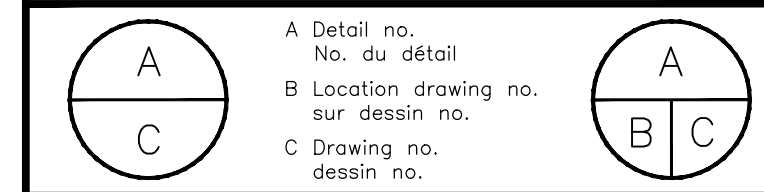


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1	13 08 2021	ISSUED FOR TENDER	N.H.V.
No.	Date	Revision	By
Date Printed: 10 02 2021		Date imprimée:	

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Project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT**

Drawing: **MECHANICAL SCHEMATICS AND DETAILS - 1 OF 3**

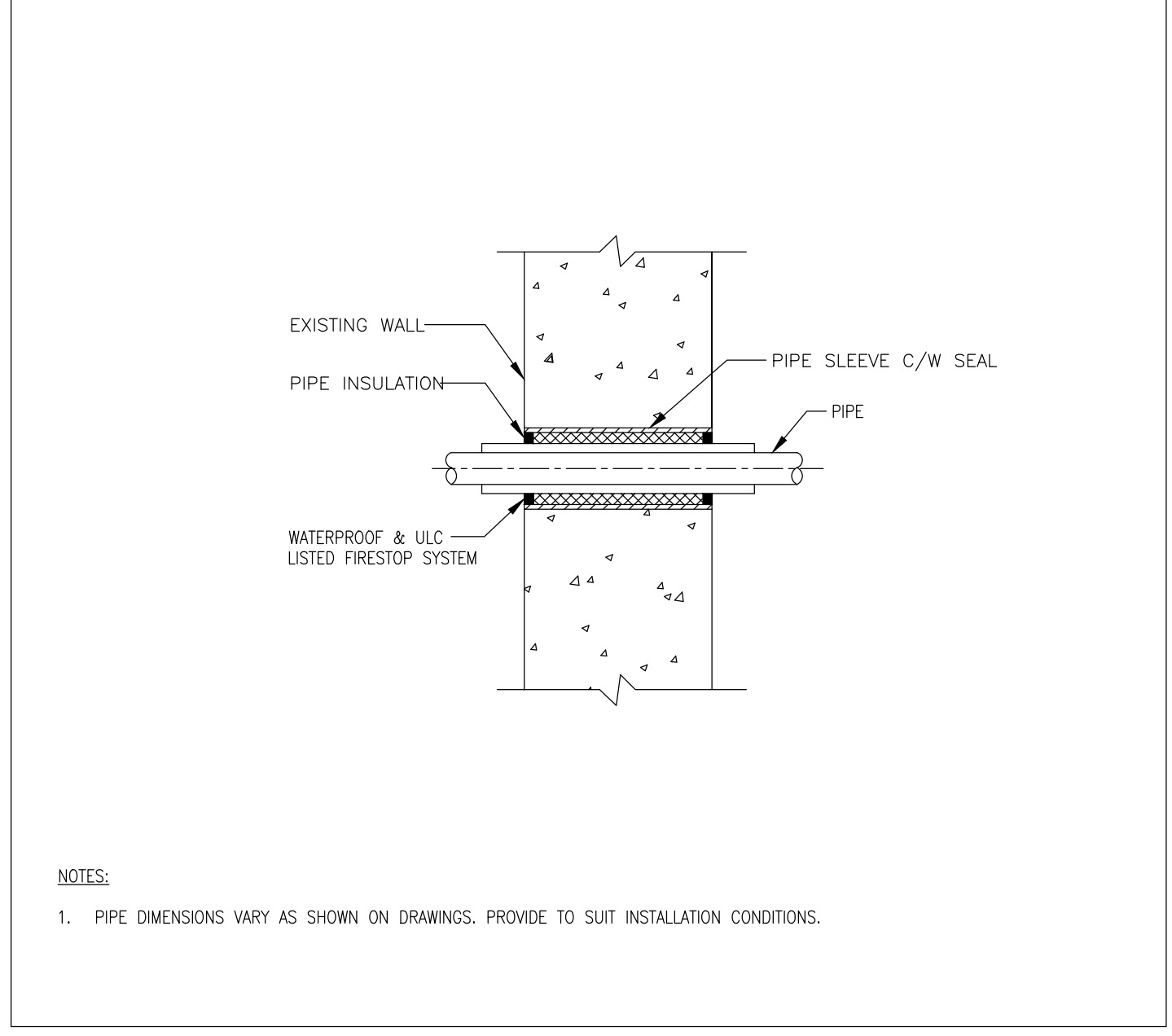
designed	conçu	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			

Dwg. No.: **6035\_0260-M08** dessin no.

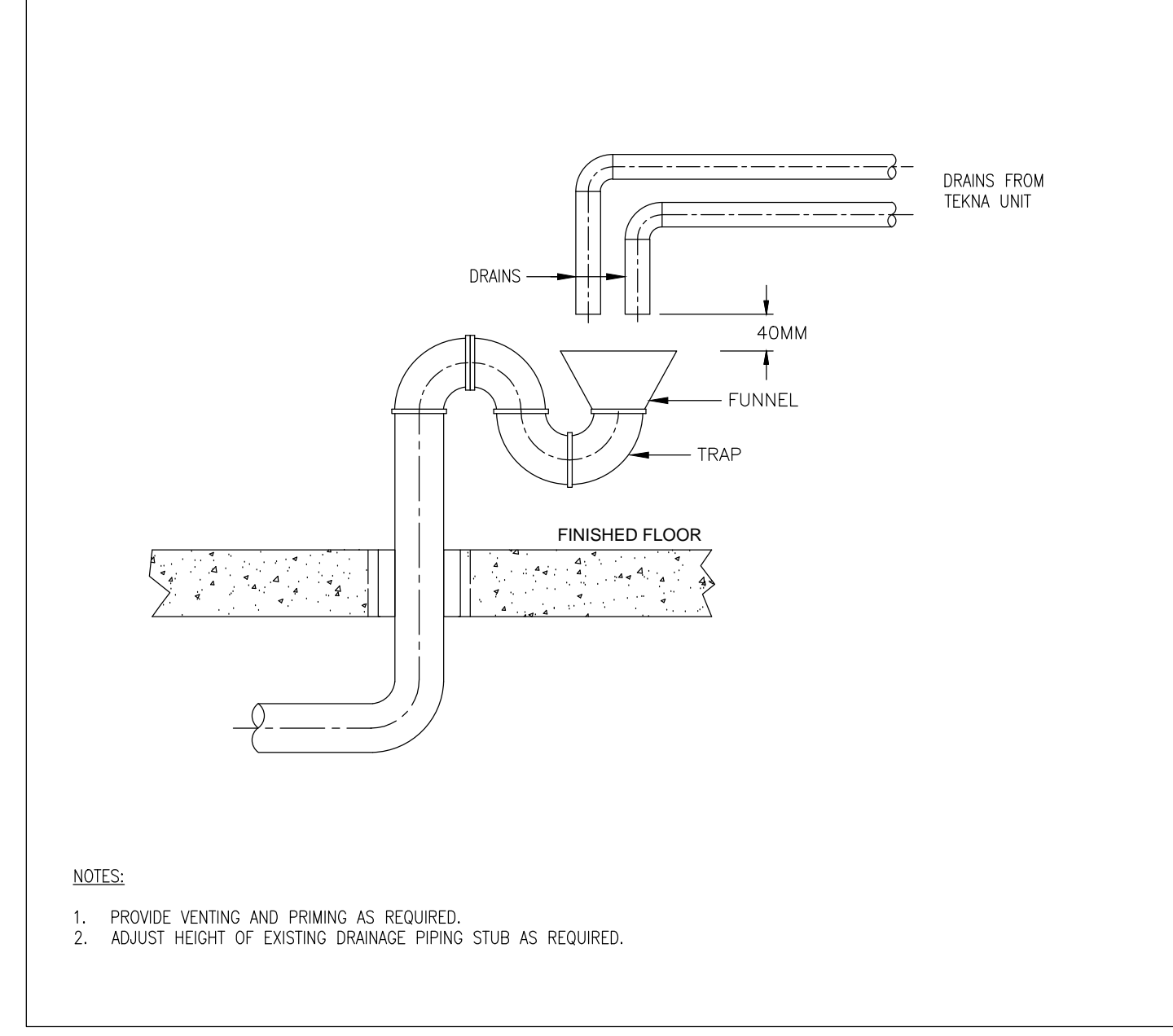


**GENERAL NOTES**

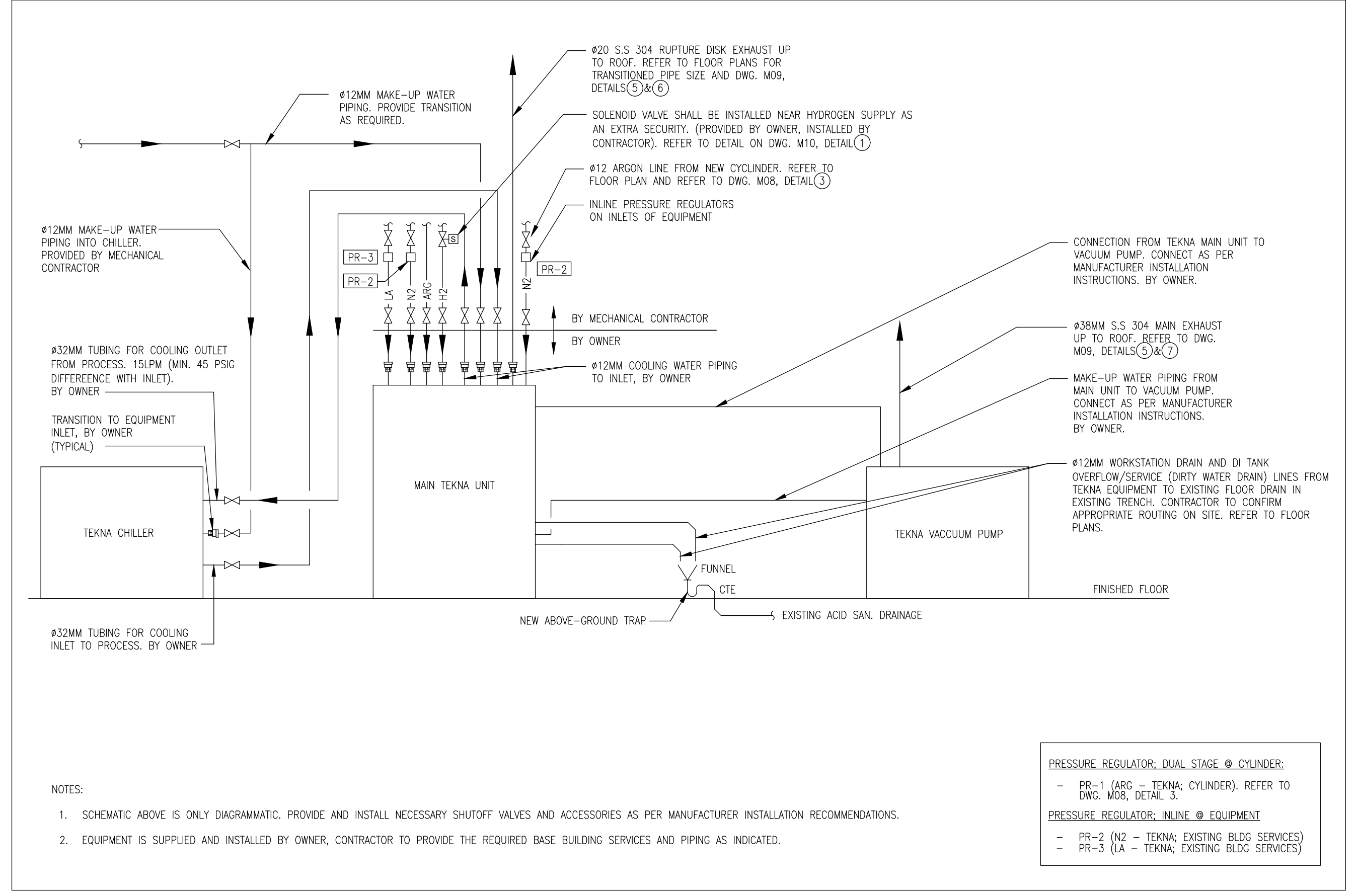
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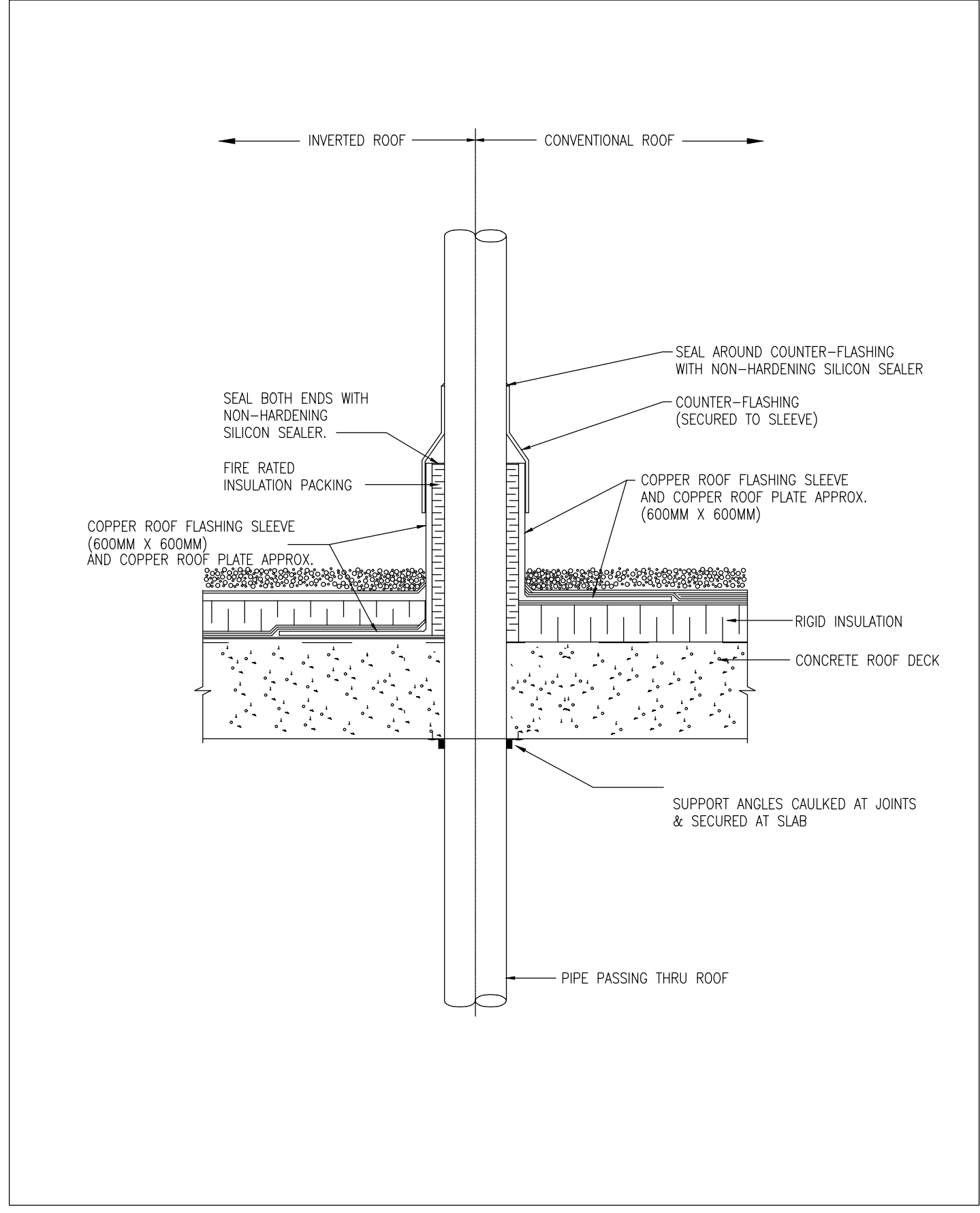
**2 PENETRATION THROUGH FIRE-RATED AND EXTERIOR WALL**  
 M09 SCALE = N.T.S.



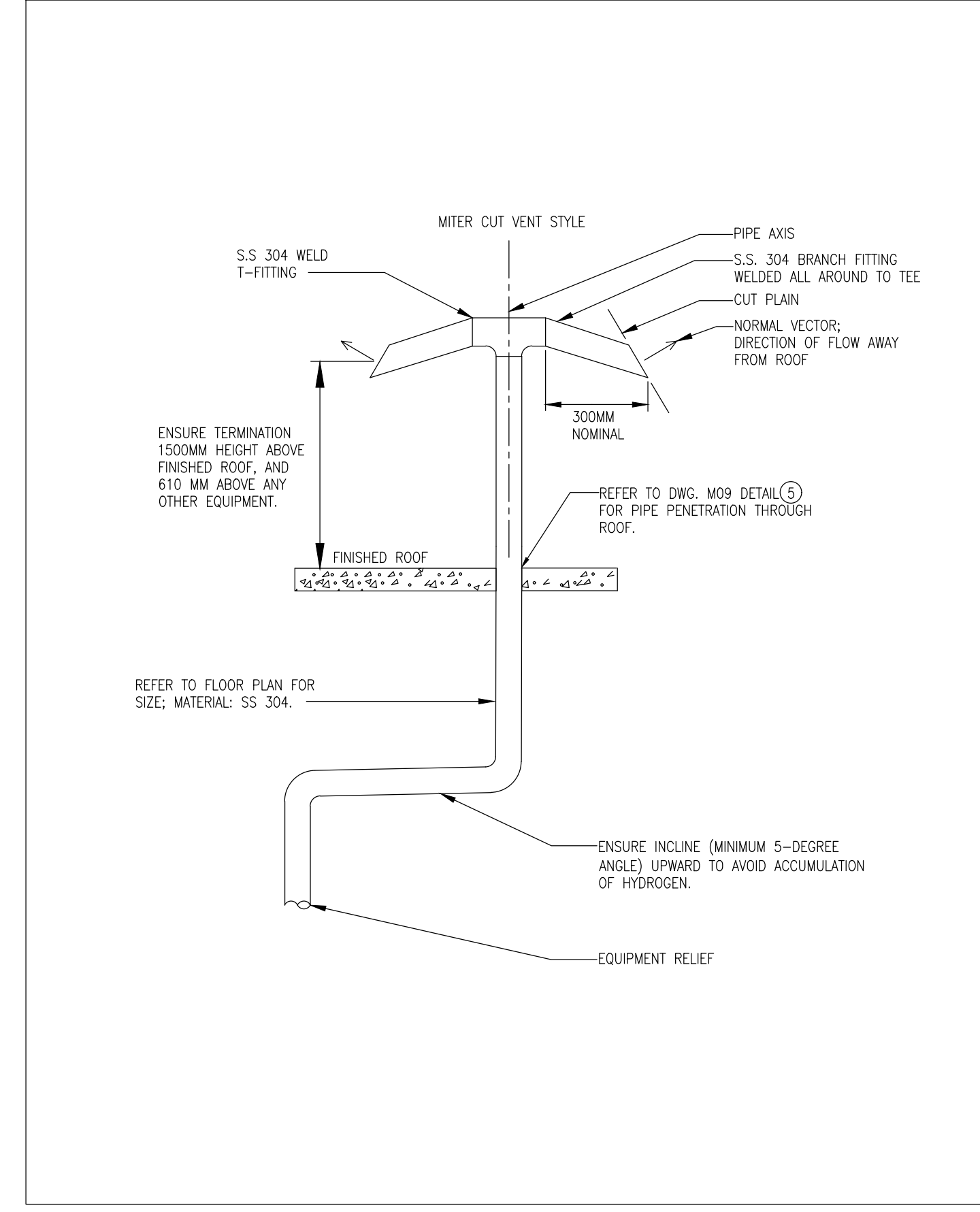
**3 DRAINS FROM TEKNA UNIT**  
 M09 SCALE = N.T.S.



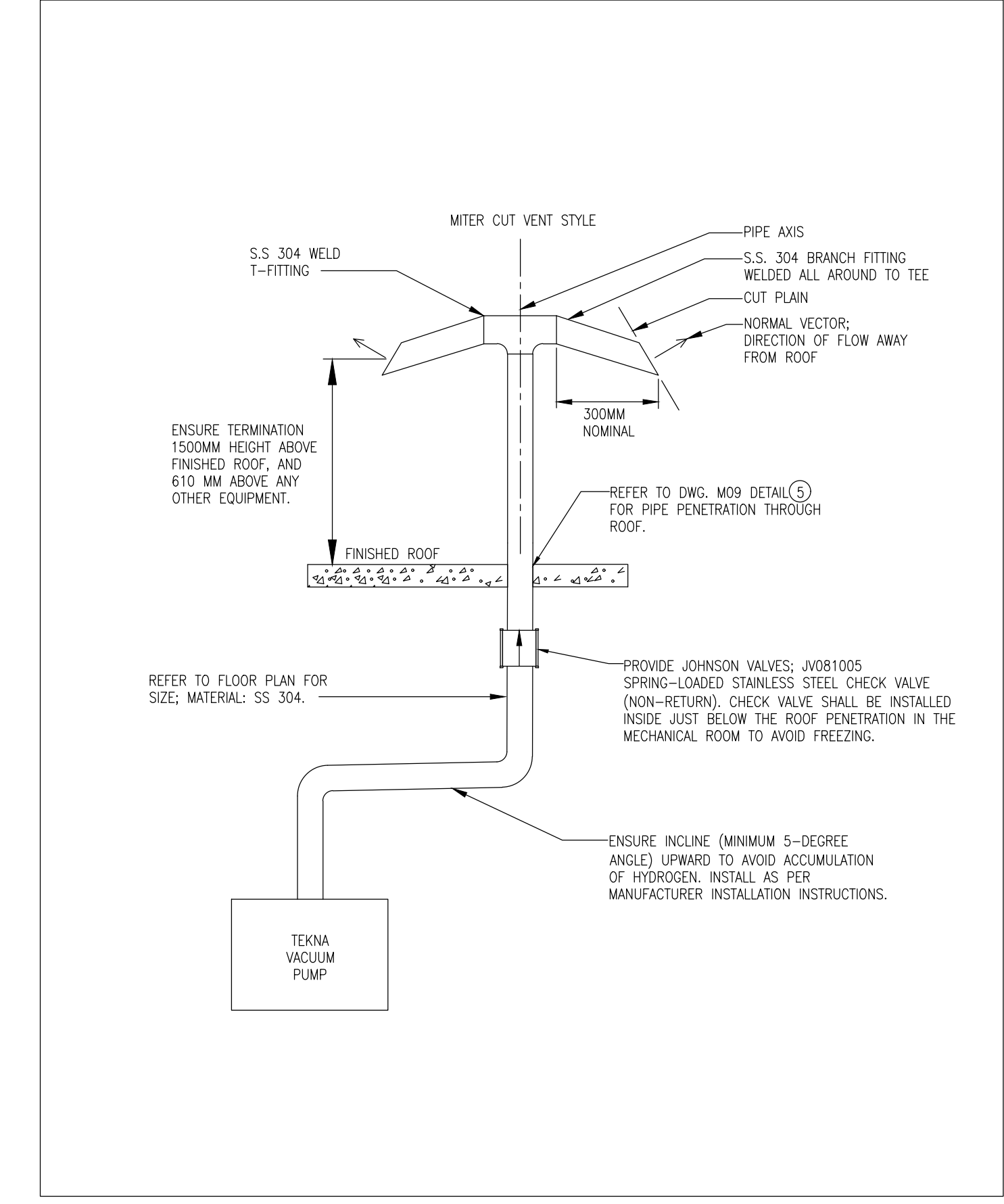
**4 TEKNA SYSTEM SCHEMATIC**  
 M09 SCALE = N.T.S.



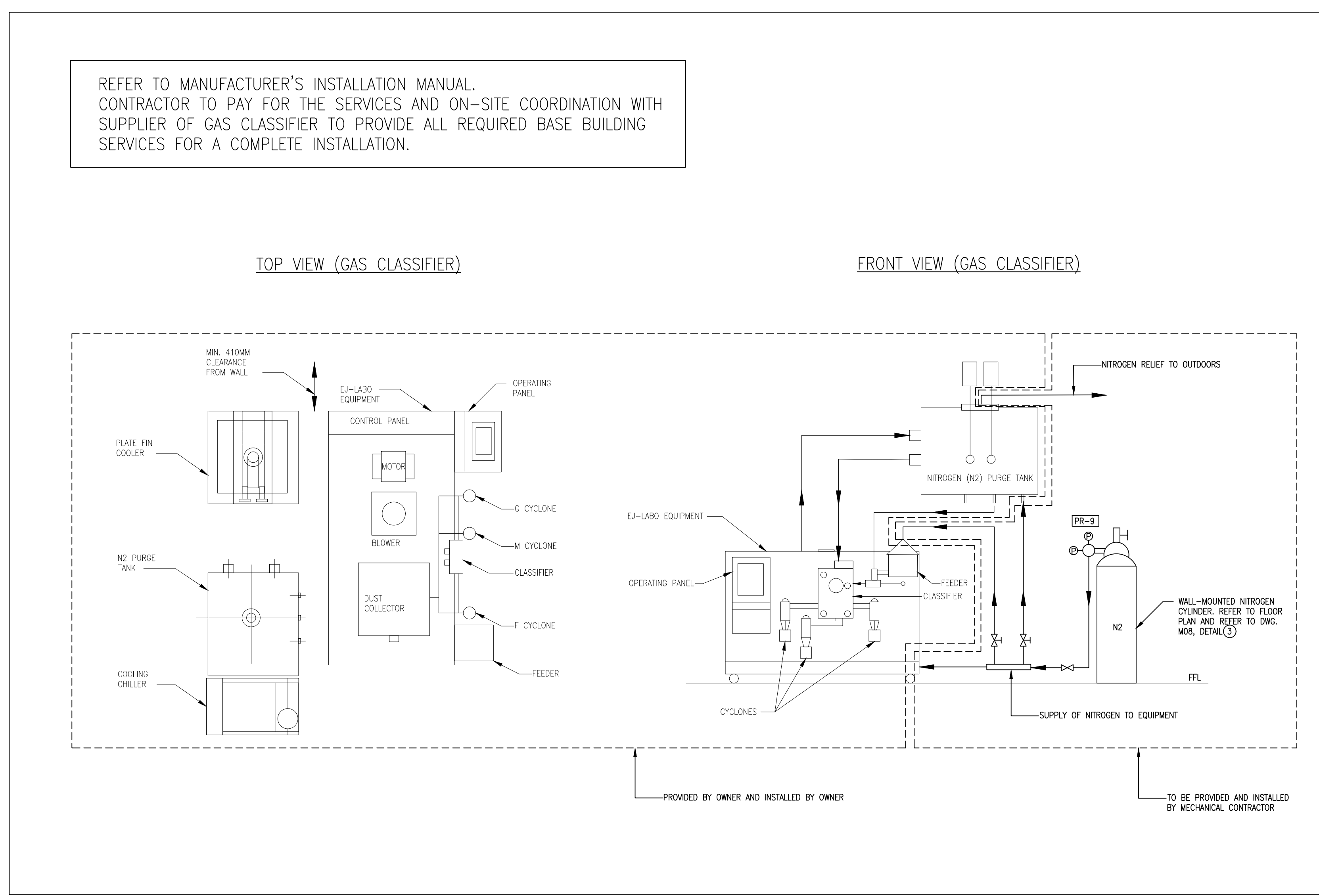
**5 TYPICAL DETAIL OF PIPE PASSING THROUGH ROOF**  
 M09 SCALE = N.T.S.



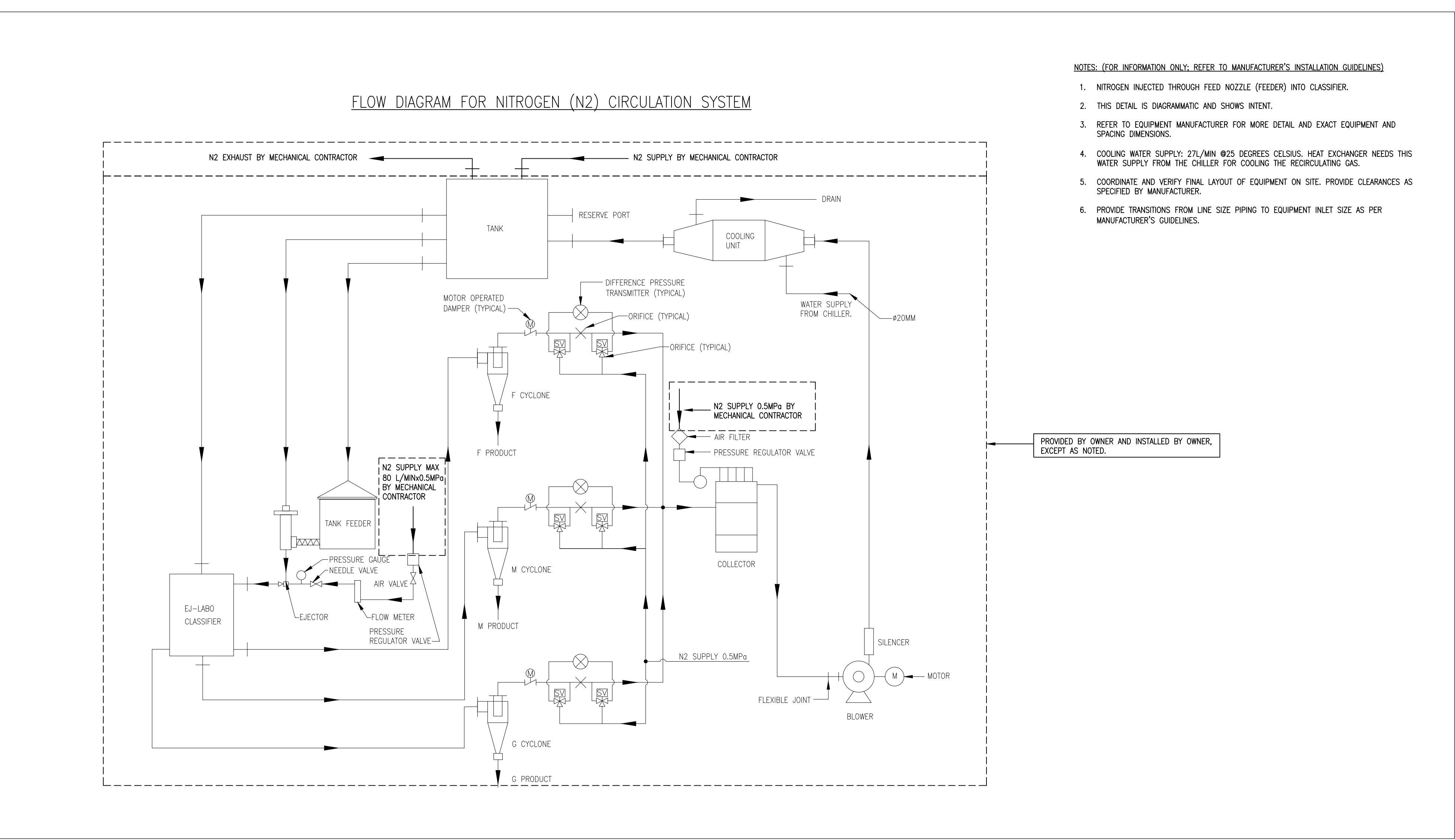
**6 RELIEF PIPING TERMINATION DETAIL (TEKNA MAIN UNIT)**  
 M09 SCALE = N.T.S.



**7 RELIEF PIPING TERMINATION DETAIL (VACUUM PUMP)**  
 M09 SCALE = N.T.S.

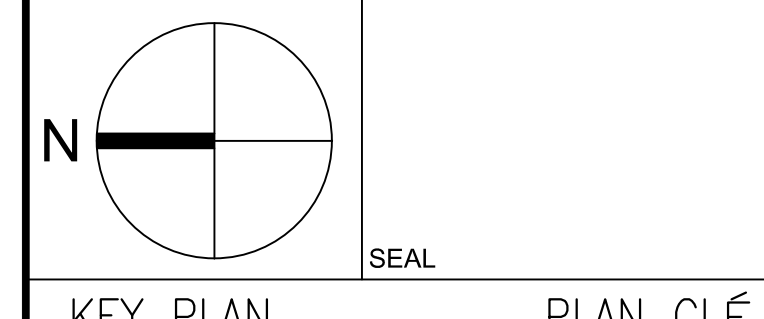


**8 GAS CLASSIFIER DETAILS**  
 M09 SCALE = N.T.S.



**9 FLOW DIAGRAM FOR NITROGEN (N2) CIRCULATION SYSTEM**

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KEY PLAN PLAN CLÉ

- NOTES: (FOR INFORMATION ONLY, REFER TO MANUFACTURER'S INSTALLATION GUIDELINES)**
- NITROGEN INJECTED THROUGH FEED NOZZLE (FEEDER) INTO CLASSIFIER.
  - THIS DETAIL IS DIAGNOSTIC AND SHOWS INTENT.
  - REFER TO EQUIPMENT MANUFACTURER FOR MORE DETAIL AND EXACT EQUIPMENT AND SPACING DIMENSIONS.
  - COOLING WATER SUPPLY: 57L/MIN @25 DEGREES CELSIUS. HEAT EXCHANGER NEEDS THIS WATER SUPPLY FROM THE CHILLER FOR COOLING THE REDUCULATING GAS.
  - COORDINATE AND VERIFY FINAL LAYOUT OF EQUIPMENT ON SITE. PROVIDE CLEARANCES AS SPECIFIED BY MANUFACTURER.
  - PROVIDE TRANSITIONS FROM LINE SIZE PIPING TO EQUIPMENT INLET SIZE AS PER MANUFACTURER'S GUIDELINES.

1	13.08.2021	ISSUED FOR TENDER	N.H.V.
No.	Date	Revision	By
Date Printed: 10.02.2021 Date imprimée:			

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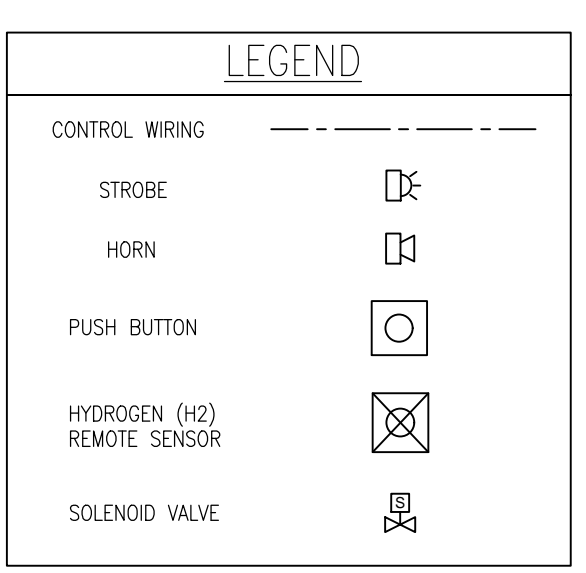
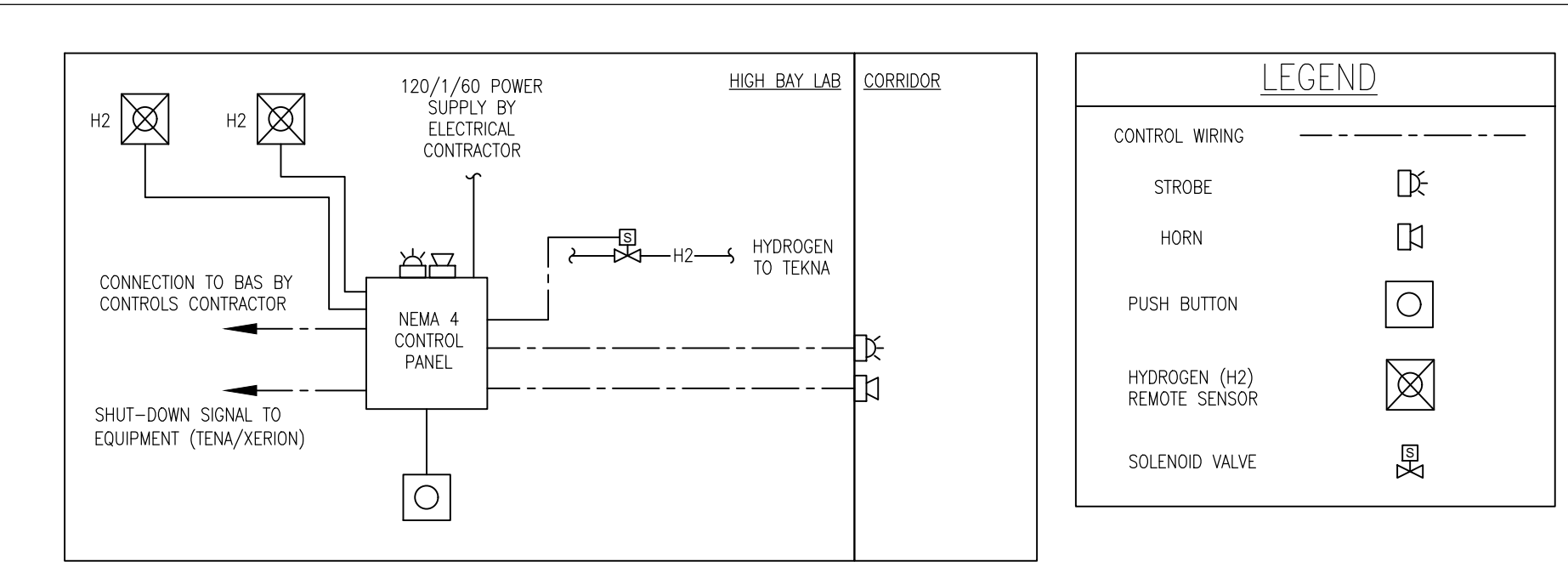


Project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT**

designed	conçu	date	date
N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			
Drawing No: <b>6035_0260-M09</b> dessin no.			

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- SEQUENCE OF OPERATIONS:
- HYDROGEN ALARM CONTROL PANEL TO MONITOR HYDROGEN LEVELS IN SPACE.
  - FIRST ALARM DETECTION OF HYDROGEN TO ACTIVATE HORN, STROBE AND AUTOMATIC SHUTDOWN OF GAS SOLENOID VALVES AND EQUIPMENT. MANUAL RESET IS REQUIRED.
  - IF PUSH BUTTON ENGAGED, ACTIVATE HORN, STROBE AND AUTOMATIC SHUTDOWN OF GAS SOLENOID VALVES AND EQUIPMENT. MANUAL RESET IS REQUIRED.

- NOTES:
- CONTROL PANEL TO BE WALL MOUNTED IN HIGH LAB. CONTRACTOR TO CONFIRM FINAL LOCATION ON SITE.
  - ALL CONTROL WIRING TO BE CONCEALED IN CONDUIT.
  - INSTALL ALL SYSTEM COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
  - REFER TO SPECIFICATIONS FOR MORE INFORMATION. SYSTEM TO BE SUPPLIED BY KEYWELL.
  - COORDINATE WITH EQUIPMENT SUPPLIER FOR SHUTDOWN INPUTS AND SEQUENCE OF OPERATIONS.

EMERGENCY HYDROGEN ALARM CONTROL PANEL SPECIFICATION:

Section 1 - Scope of Work  
Provide all labor, materials, products, equipment and service to supply and install a hydrogen detection and control system as indicated on the drawings and specified in this section.

The system shall include, but not be limited to, the following:  
1. Future expandability  
2. Display of gas concentration and alarm status  
3. Ability to modify alarm set points

Section 2 - Devices  
Control Panel with integrated strobe/horn  
Hydrogen sensors  
Junction boxes  
Push-button for manual shutdown  
Horn/Stroke  
100W 24Vdc Transformer

Section 3 - Specifications  
Main Control Panel: 3011M-BFSA-053

3.1 The control panel shall be capable of communicating digitally with the networked sensors through RS-485 Modbus communication for up to twenty sensors.  
3.2 The system shall operate on 24Vdc 2A max; one power supply (bringing either 17-27 Vac or 24-38 Vdc) will be sufficient to power the entire gas detection network (expansion module and sensors).  
3.3 The control panel shall have 4 EPOT relays programmable to alarm levels.  
3.4 The control panel shall have a blue strobe on top of the unit as an outside and visual alarm.  
3.5 The control panel shall have a blue strobe on top of the unit as an outside and visual alarm.  
3.6 Controller to visually indicate the exact concentration of gas detected and continuously display the specified gas concentration of each sensor via a scrolling LCD screen.

The LED indicators shall also provide visual feedback in the following manner:  
Normal Operation: Green LED  
Alarm Level A: Red LED  
Alarm Level B: Red LED  
Alarm Level C: Red LED  
Future: Yellow LED  
TK: Yellow LED

- The control panel should be able to provide an individual 4-20mA output for up to four gas sensors.
- Certified to UL and CSA standards.
- Manufactured within an ISO 9001 production environment.

Hydrogen Sensors: S30102020MB  
Sensors to have Class 1, Div 1 enclosure.  
The sensors are to be electrochemical with replaceable sensor cartridge.  
Mounting to be done vertically in C101 electrical junction box with 20 mm threaded entry with sensor pointing downward.

Strobe/Horn: P2M-P-A-Lens-R2  
3.5.1 Strobe light with horn wired into output #3 on control panel.  
Manual start switch: BP-120V-NO-NC

3.4.1 Mainframe style push-button, non-momentary, wired into Contact Input #1 on control panel to shut-down gas solenoid and equipment and outside alarms.

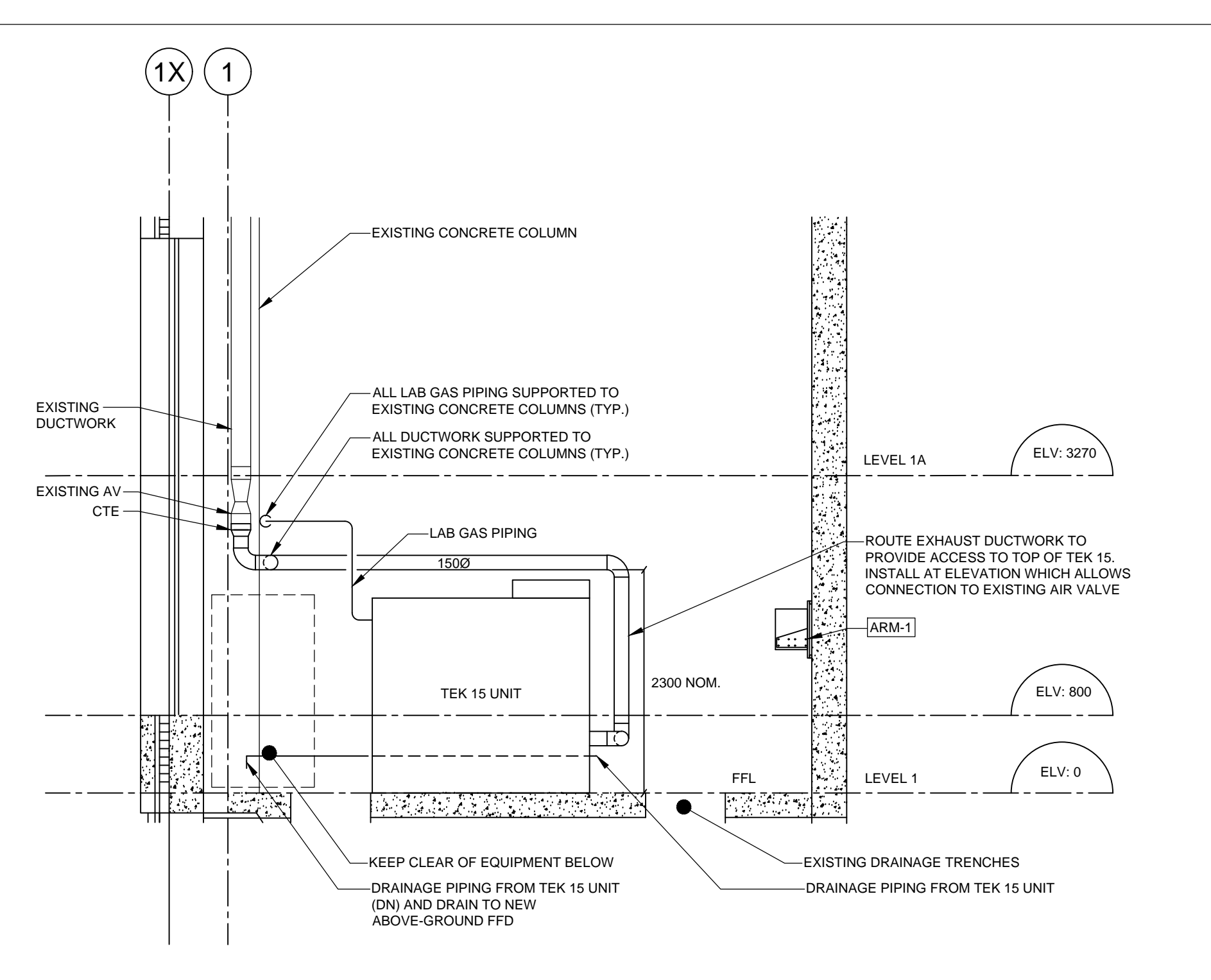
Section 4 - Sequence of operation

GASES	FIRST ALARM SET POINT	SECOND ALARM SET POINT	TRANSMITTER LOCATION
H2	1% v/v (20% LEL)	2% v/v (50% LEL)	1M BELOW THE CEILING

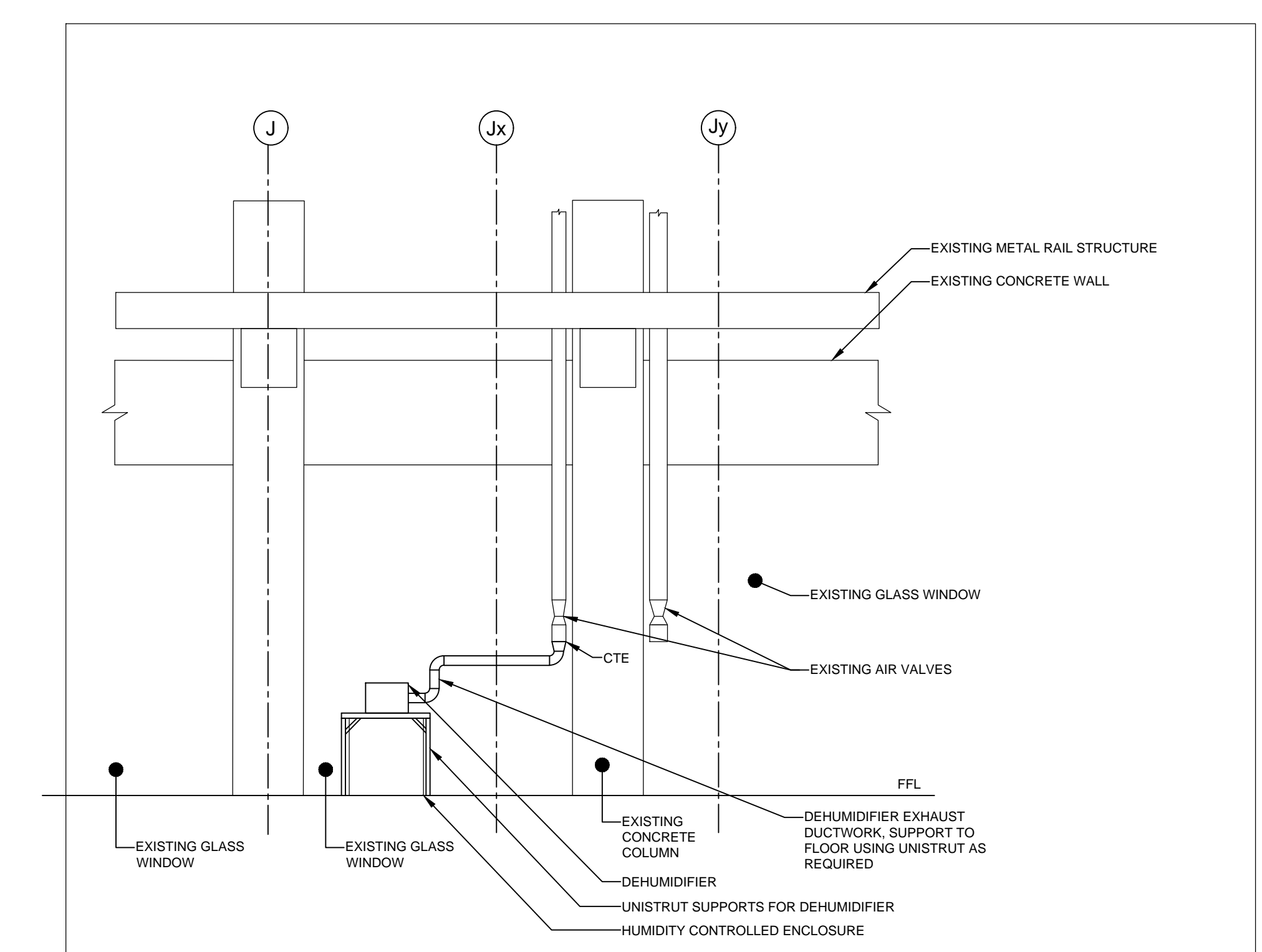
4.1 Upon detection for first alarm setpoint alarm to sound with automatic shut-down of gas solenoid and equipment.

Section 5 - Execution  
5.1 Provide complete commissioning service by the manufacturer's authorized representative. Provide a factory generated certification document certifying the operation of the unit and the alarm system.

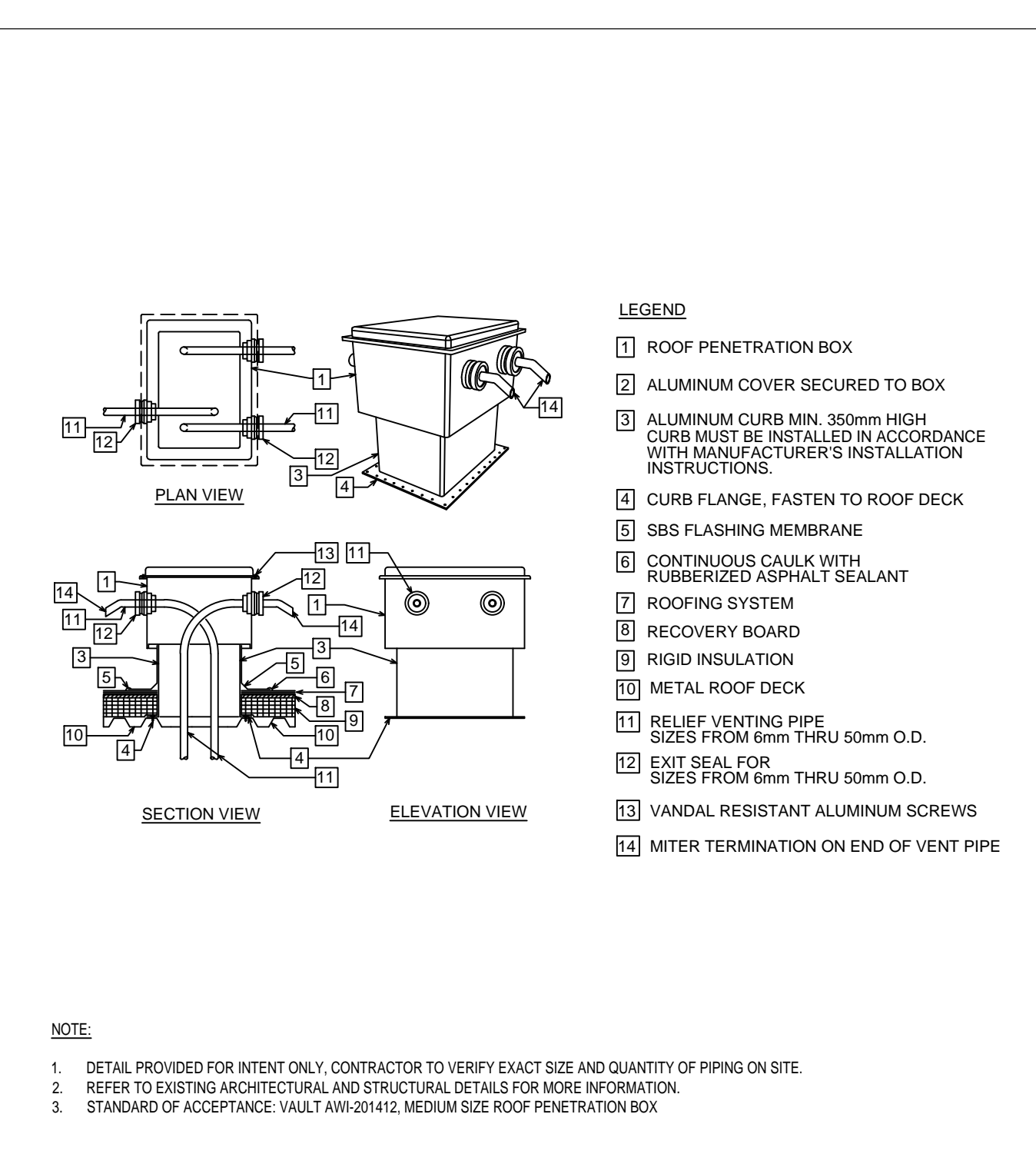
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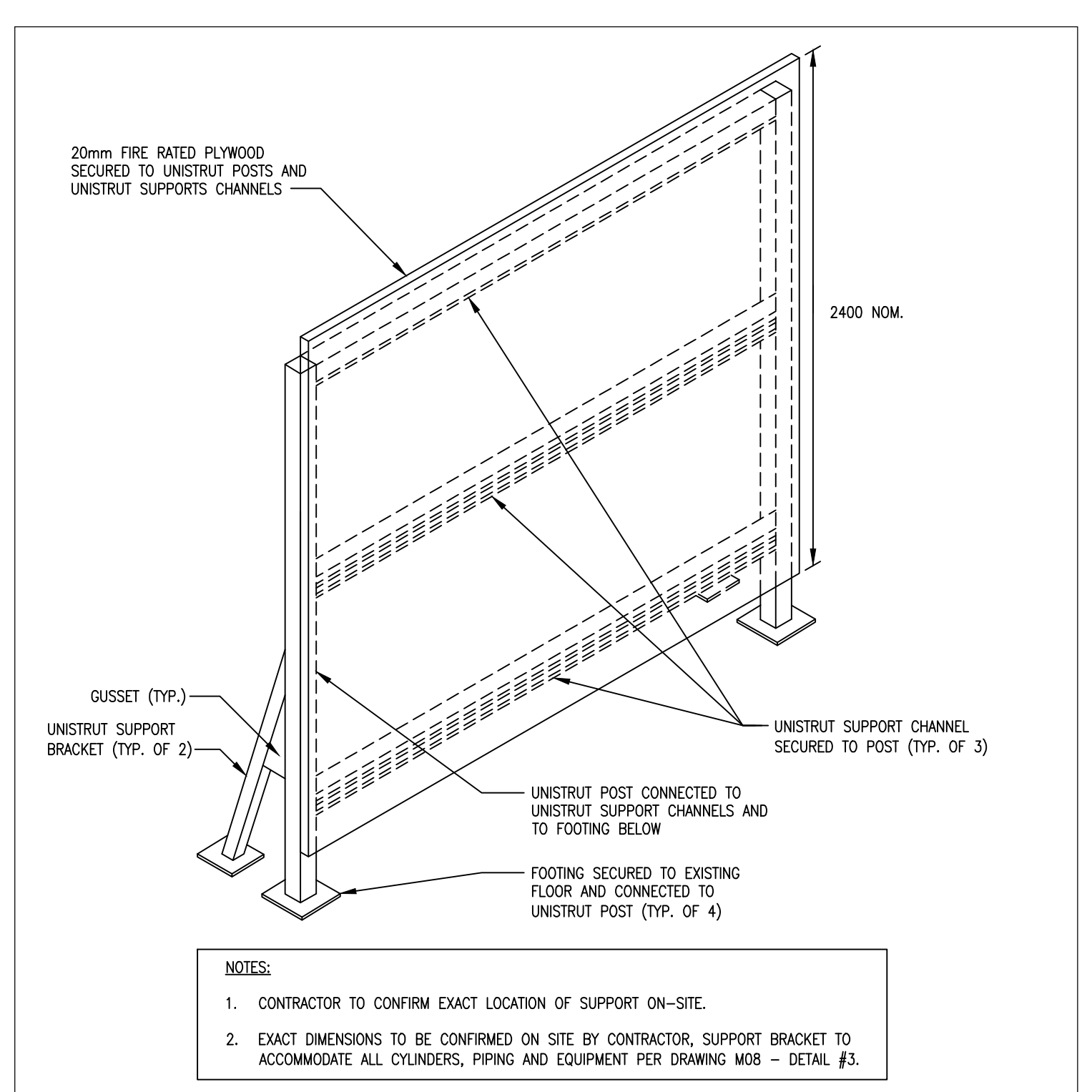
2 TEKNA EXHAUST DUCT ROUTING RELATIVE TO TEKNA GAS PIPING  
SCALE = 1/50



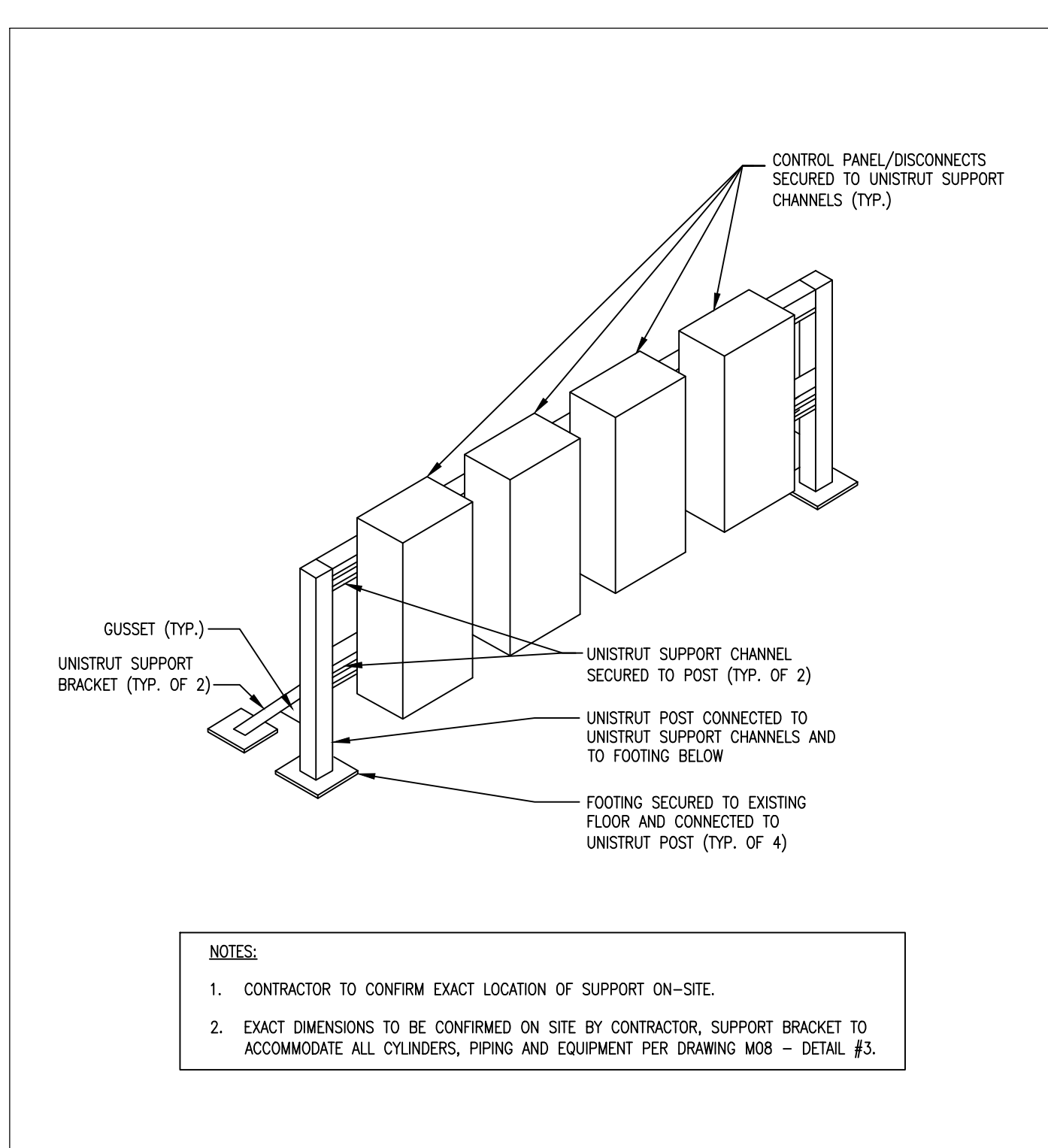
3 DEHUMIDIFIER EXHAUST DUCTWORK TIE-IN TO EXISTING SYSTEM  
SCALE = N.T.S.



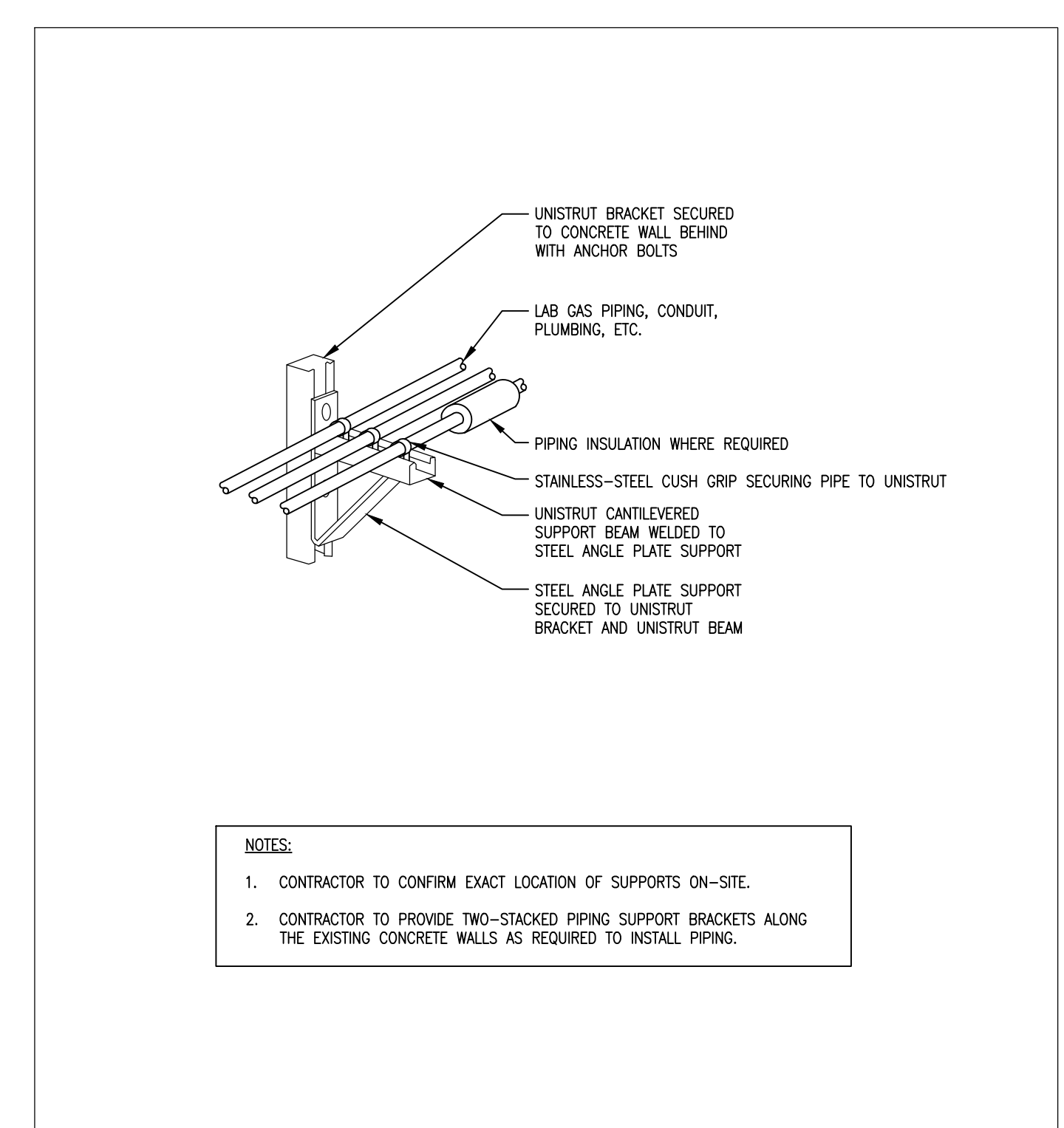
4 RELIEF VENT PENETRATION BOX DETAIL  
SCALE = N.T.S.



5 GAS CYLINDER AND PIPING SUPPORT BRACKET  
SCALE = N.T.S.

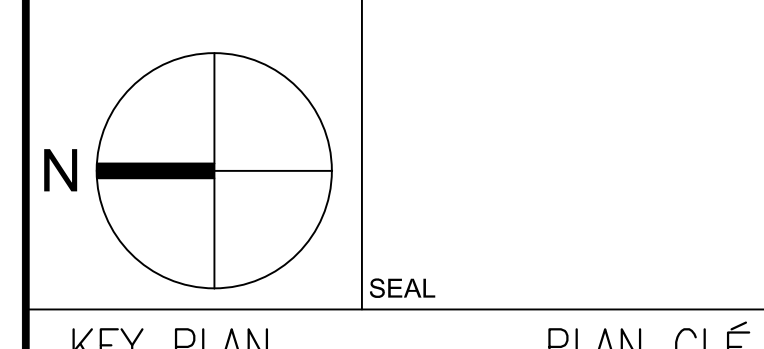


6 CONTROL PANEL SUPPORT BRACKET  
SCALE = N.T.S.



7 PIPING SUPPORT BRACKET  
SCALE = N.T.S.

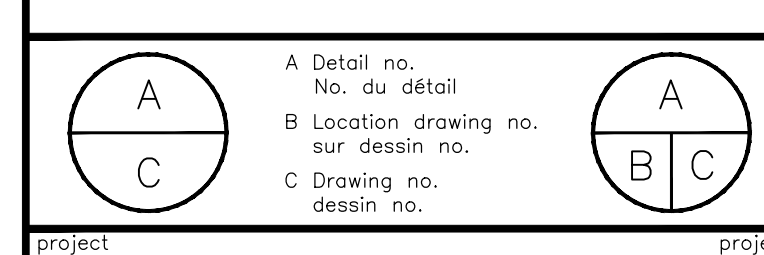
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No.	Date	Revision	By	Appr.
1	13 08 2021	ISSUED FOR TENDER		N.H.V.

Date Printed: 10 02 2021 Date Imprimée: \_\_\_\_\_  
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Project: NRC MISSISSAUGA HIGH BAY LAB FITOUT

drawing: MECHANICAL SCHEMATICS AND DETAILS - 3 OF 3

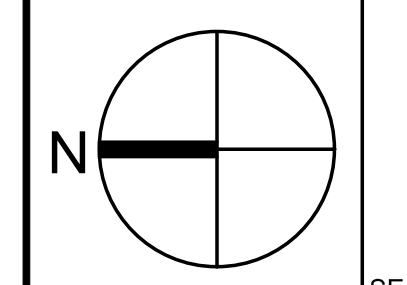
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N.H.V.		16.02.2021	
drawn	dessiné	scale	échelle
O.B.		AS NOTED	
checked	vérifié	sheet	feuille
N.H.V.			
approved	approuvé	W.D.no.	D.T.no.
T.Z.			
Proj.no.		dessin no.	
6035_0260-M10			

**GENERAL NOTES**

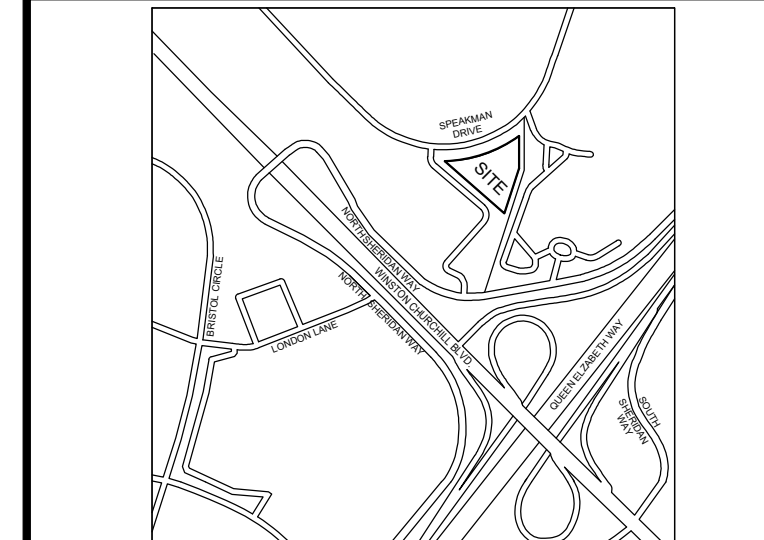
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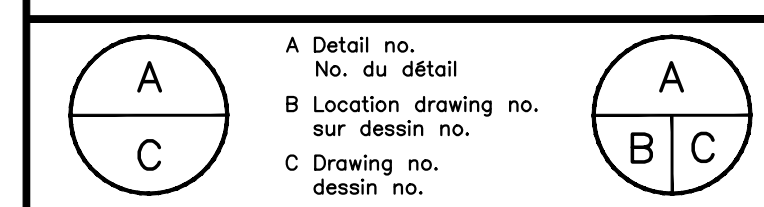


**KEY PLAN PLAN CLÉ**



No.	Date	Revision	By:
1	13 08 2021	ISSUED FOR TENDER	J.Y.

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Project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT**

**ELECTRICAL: DRAWING LIST, LEGENDS AND GENERAL ELECTRICAL NOTES**

designed	compu	date	date
J.Y.		05.02.2021	
drawn	dessiné	scale	échelle
J.Y.		1:100	
checked	vérifié	sheet	feuille
J.Y.			
approved	approuvé	W.D.no.	D.T.no.
J.Y.			
dwg.no.	dessin no.		
6035-0260-E1			

DRAWING LIST	
DRAWING	DESCRIPTION
E1	ELECTRICAL DRAWING LIST, LEGENDS AND GENERAL ELECTRICAL NOTES
E2	ELECTRICAL POWER AND SYSTEMS NEW LAYOUT
E3	ELECTRICAL DETAILS AND PANELBOARD SCHEDULES

ABBREVIATION LEGEND	
ABBREVIATION	DESCRIPTION
C	CEILING MOUNTED
W.G.	W/FE GUARD
GFI	GROUND FAULT INTERRUPTING, SMA
WP	WEATHERPROOF
AFF	ABOVE FINISHING FLOOR
FR	FRIDGE
MW	MICROWAVE
OC	OVER COUNTER
DED	DEDICATED

LINE TYPE LEGEND	
SYMBOL	DESCRIPTION
—	DARK SOLID LINE DENOTES NEW OR RELOCATED
---	LIGHT SOLID LINE DENOTES EXISTING TO REMAIN
- - -	DARK DASHED LINE DENOTES DEMOLITION

**GENERAL ELECTRICAL NOTES**

- GENERAL NOTES:
- READ THIS DRAWING IN CONJUNCTION WITH SPECIFICATIONS, ARCHITECTURAL AND MECHANICAL DRAWINGS.
  - CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO NRC 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.
  - FILL ALL HOLES, PATCH & PAINT ALL SURFACES IN CONTRACT AREA. PAINT ALL SURFACE CONDUITS. COLOR SCHEME TO MATCH EXISTING.
  - COORDINATE WORK WITH OTHER DIVISIONS FOR INSTALLATION AND TO AVOID INTERFERENCE.
  - COORDINATE ALL SHUTDOWNS WITH THE NRC DEPARTMENTAL REPRESENTATIVE.
  - REMOVE MEANS REMOVE AND DISPOSE OF OFF SITE UNLESS OTHERWISE NOTED.
  - REMOVE REDUNDANT CONDUIT AND WIRING BACK TO SOURCE UNLESS OTHERWISE NOTED, AND MAKE SAFE.
  - PROVIDE LABELS TO NEW DEVICES TO INDICATE POWER SOURCE. UPDATE PANEL SCHEDULES AFTER JOB COMPLETION AND PROVIDE NEW TYPED SCHEDULES.
  - ALL INTERIOR WIRING SHALL BE #12 AWG CONDUCTOR MINIMUM. TYPE R90 XLPE CROSS-LINK POLYETHYLENE STRANDED FOR SIZE NO.8 AND LARGER. TYPE T90 STRANDED FOR SIZE NO.10 AND SMALLER. ALL NEW RACEWAYS SHALL BE THIN WALL ELECTRICAL METALLIC TUBING (EMT) 1/2" MINIMUM UNLESS OTHERWISE INDICATED. CONDUITS TO BE COMPLETE WITH INSULATED TYPE CONNECTORS AND BUSHING.
  - SURFACE CONDUIT TO RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES. ALL CONDUITS AND JUNCTION BOXES TO BE ANCHORED TO THE BUILDING STRUCTURE.
  - ALL RACEWAYS SHALL BE CONCEALED IN FINISHED AREAS.
  - THE WORD "PROVIDE" MEANS SUPPLY, INSTALL, CONNECT AND TEST.
  - MOTOR STARTERS:
    - P.A. MANUAL MOTOR STARTERS C/W ONE OVERLOAD PER PHASE. PILOT LIGHT, QUICK MAKE, QUICK BREAK TOGGLE SWITCH, LOCKING TABS IN "ON" OR "OFF" POSITION. CSA CERTIFIED AS A DISCONNECTING MEANS, SHALL COMPLY WITH ESA BULLETIN REQUIREMENTS.
    - P.B. COMBINATION MAGNETIC MOTOR STARTERS C/W PILOT LIGHTS, CONTROL TRANSFORMER AND FUSE, H.O.A. SWITCH, OVERLOADS, CIRCUIT BREAKER, 2-N.O. AND 2-N.C. AUXILIARY CONTACTS, OVERLOAD TRIP RESET, PHASE LOSS PROTECTION RELAY.

ONLINE DIAGRAM LEGEND	
SYMBOL	DESCRIPTION
	AIR CIRCUIT BREAKER
	AUTOMATIC TRANSFER SWITCH
	CIRCUIT BREAKER - 100A
	CURRENT TRANSFORMER
	DISCONNECT SWITCH
	DISCONNECT SWITCH - 100A
	DRY DRY TRANSFORMER
	GROUND
	METER

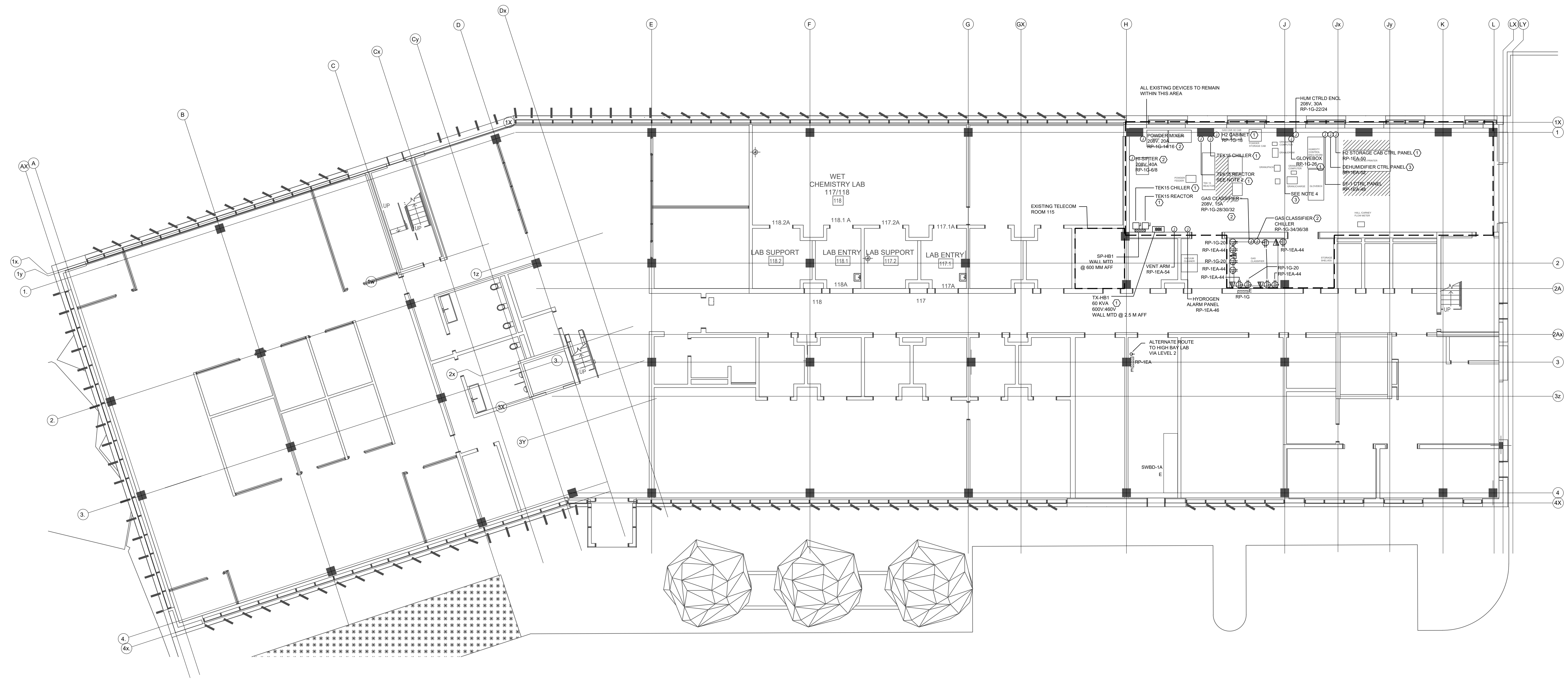
LIGHTING AND FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
	FLUORESCENT LIGHT FIXTURE
	FLUORESCENT STRIP LIGHT FIXTURE
	FLUORESCENT LIGHT FIXTURE
	DOWNLIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	LIGHT FIXTURES ON EMERGENCY POWER
	WALL MOUNTED SWITCH
	WALL MOUNTED 3-WAY SWITCH
	DIMMER SWITCH
	OCCUPANCY WALL MOUNTED SWITCH
	LOW VOLTAGE WALL MOUNTED SWITCH
	CEILING MOUNTED OCCUPANCY SENSOR
	CEILING MOUNTED EXIT LIGHT, SINGLE OR DOUBLE FACE
	WALL MOUNTED EXIT LIGHT, SINGLE OR DOUBLE FACE
	FIRE ALARM HEAT DETECTOR, RSTC
	FIRE ALARM SMOKE DETECTOR
	FIRE ALARM PULL STATION
	FIRE ALARM SPEAKER
	FIRE ALARM HORN
	FIRE ALARM COMBINATION HORN/STROBE
	FIRE ALARM SUPERVISED VALVE
	FIRE ALARM FLOW SWITCH
	DUCT MOUNTED SMOKE DETECTOR C/W LED INDICATOR
	EMERGENCY BATTERY UNIT C/W RECEPTACLE AND LIGHTING HEADS
	REMOTE EMERGENCY LIGHTING DUAL HEAD

POWER AND SYSTEMS LEGEND	
SYMBOL	DESCRIPTION
	15A, 120V WALL MOUNTED DUPLEX RECEPTACLE
	DEDICATED DUPLEX RECEPTACLE
	RECEPTACLE INSTALLED OVER COUNTER
	SINGLE RECEPTACLE
	SPECIAL RECEPTACLE
	5-20R RECEPTACLE
	SPLIT RECEPTACLE
	QUADPLEX RECEPTACLE
	POWER FLOOR MOUNTMENT
	FURNITURE POLE C/W JUNCTION BOX AT TOP OF POLE BY OTHERS. MAKE FINAL FURNITURE CONNECTION AT THIS BOX & CONNECT TO CEILING JUNCTION BOX
	DISCONNECT SWITCH
	COMBINATION MAGNETIC MOTOR STARTER
	MAGNETIC MOTOR STARTER
	MANUAL MOTOR STARTER - CSA CERTIFIED AS A DISCONNECTING MEANS AND LOCKABLE IN THE "OFF" POSITION
	TRANSFORMER
	PUSH BUTTON
	THERMOSTAT PROVIDED BY ELECTRICAL
	THERMOSTAT SUPPLIED BY MECH, INSTALLED AND WIRED BY ELEC
	SPEED SWITCH SUPPLIED BY MECH, INSTALLED AND WIRED BY ELEC
	SINGLE PHASE ELECTRICAL MOTOR
	THREE-PHASE ELECTRICAL MOTOR - HORSEPOWER AS SHOWN
	HOT WATER TANK
	TIMER SWITCH
	SURFACE MOUNTED PANEL
	RECESSED PANEL
	BARRIER-FREE DOOR OPERATOR C/W PUSHBUTTON
	FLEXIBLE CONDUIT
	CONDUIT DOWN
	CONDUIT UP
	HARD WIRE CONNECTION
	CONDUIT SUB C/W BUSHING
	TELECOM OUTLET BOX
	TELEPHONE OUTLET
	PUBLIC ADDRESS (P/A) SPEAKER, CEILING MOUNTED
	CARD READER
	ELECTRICAL STRIKE
	DOOR CONTACT
	SECURITY ALARM KEY PAD
	CCTV CAMERA
	CATV OUTLET BOX
	120V JUNCTION BOX, 100x100x50mm UNLESS NOTED OTHERWISE
	PULL BOX
	SERVICE POLE
	HYDRAVIC FORCE FLOW HEATER

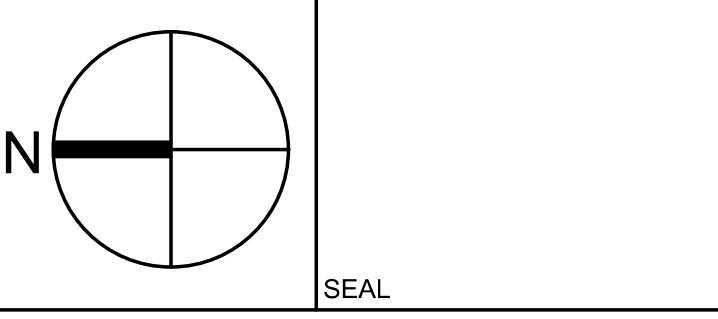


**GENERAL NOTES**

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



**wsp**  
 600 Cochrane Drive West, Markham, ON, L3R 5K3  
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**KEY PLAN PLAN CLÉ**



No.	Date	Revision	By	Appr.
1	23 07 2021	ISSUED FOR TENDER	J.Y.	

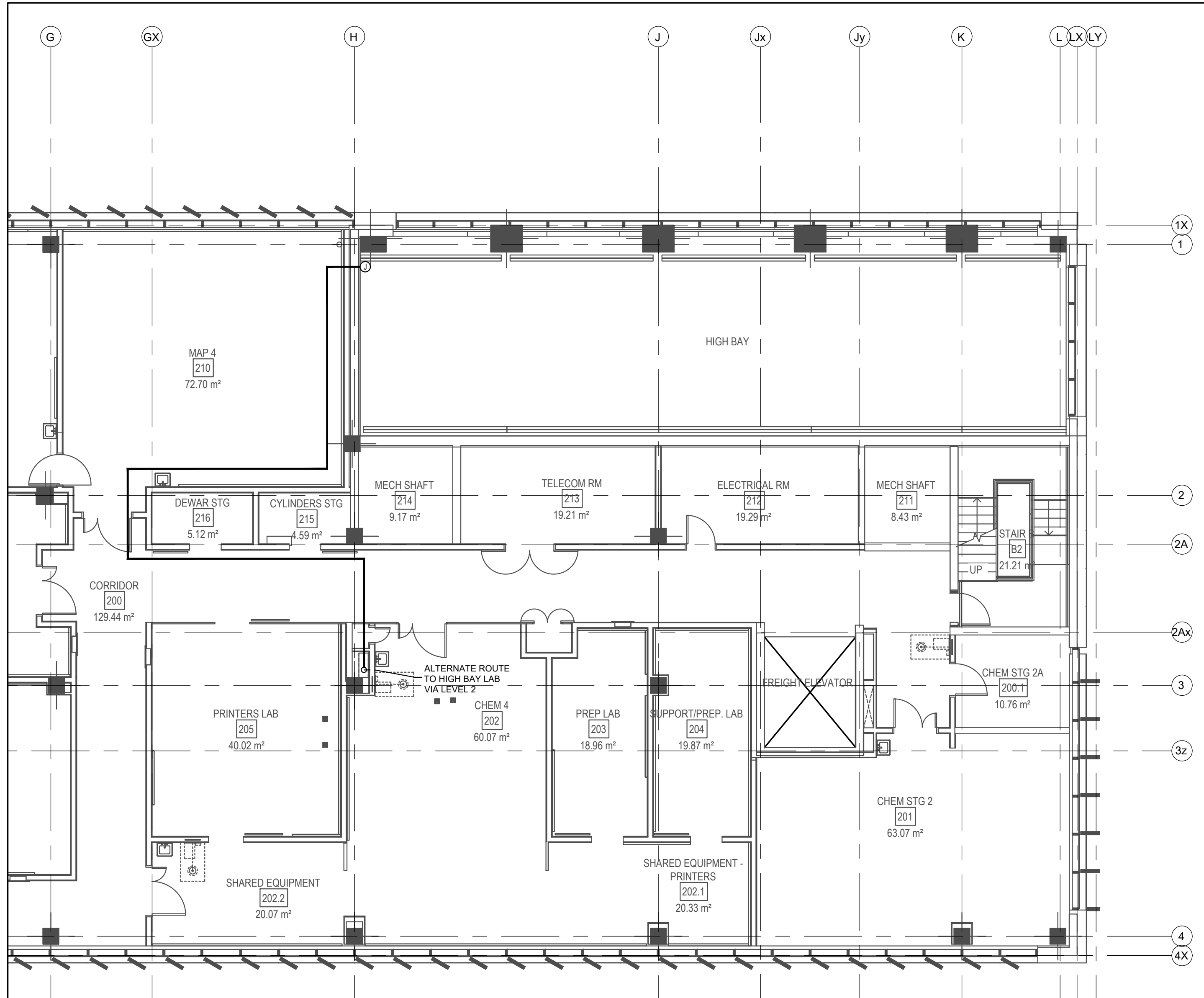
Date Printed: 05 02 2021 Date Imprimée:

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

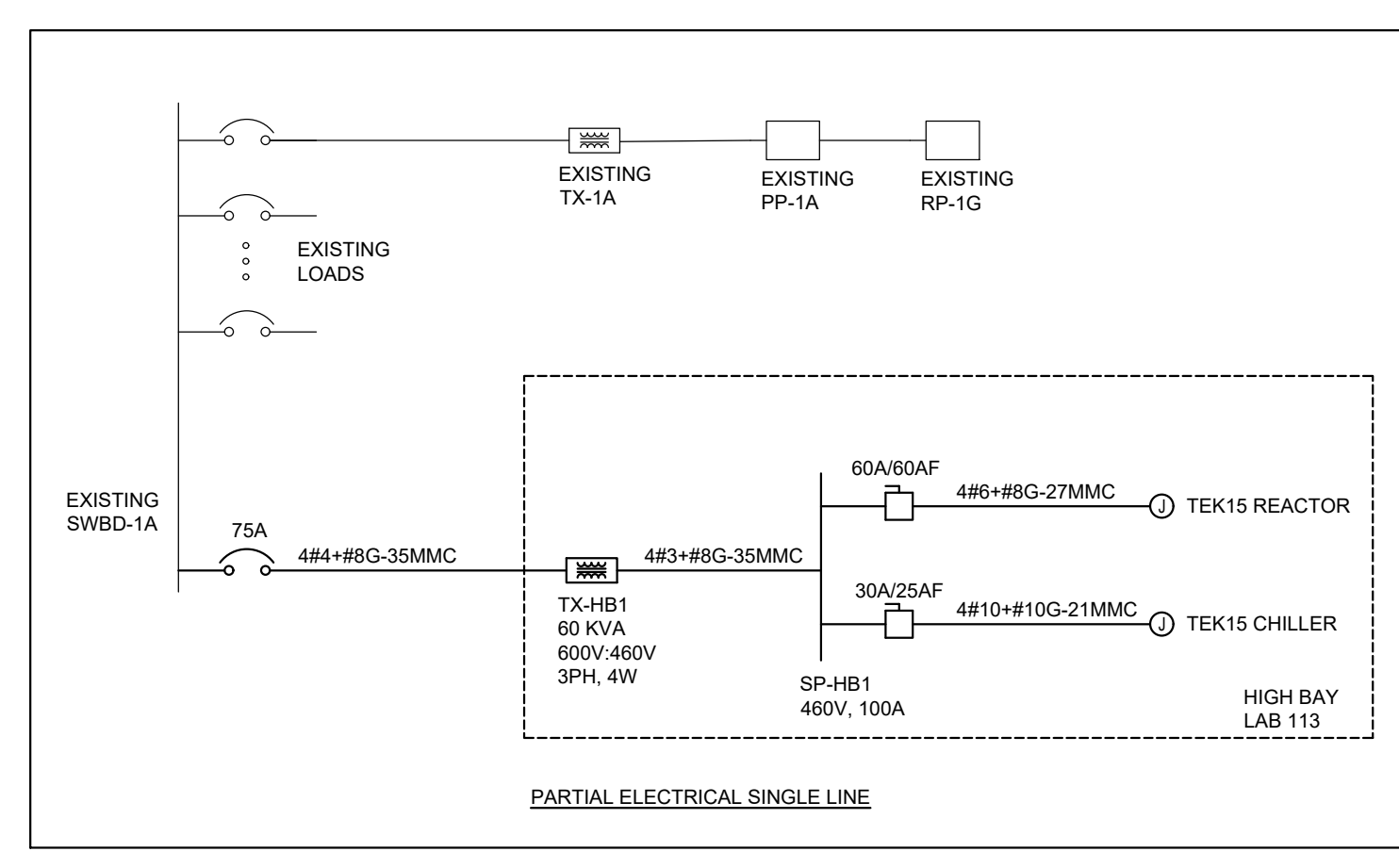
project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT** project

drawing: **ELECTRICAL: POWER AND SYSTEMS NEW LAYOUT** dessin

designed	compu	date	date
J.Y.		05.02.2021	
drawn	dessiné	scale	échelle
J.Y.		1:100	
checked	vérifié	sheet	feuille
J.Y.			
approved	approuvé	W.O.no.	D.T.no.
J.Y.			
dwg.no.	dessin no.		
6035-0260-E2			



**1 LEVEL 2 - PARTIAL PLAN**  
 E1



- PHASING SCHEDULE**
- ① PHASE 1
  - ② PHASE 2 (WORK ASSOCIATED WITH GAS CLASSIFIER)
  - ③ PHASE 3 (WORK ASSOCIATED WITH GRANUTOOLS AND DEHUMIDIFIER)

- DRAWING NOTES:**
- HIGH BAY LAB IS DESIGNATED AS A CLASS 1, DIV. 2 HAZARDOUS LOCATION. ALL DEVICES WITHIN THIS ROOM MUST BE EXPLOSION PROOF AND INTRINSICALLY SAFE. ALL DEVICES, CONDUITS, AND CONNECTIONS MUST BE EXPLOSION PROOF AND SUITABLE FOR INSTALLATION IN THE ENVIRONMENT. TRANSFORMER TX-HB1 IS PERMITTED TO BE NON-EXPLOSION PROOF.
  - PROVIDE #10 GROUNDING CONNECTION FOR TEK15 REACTOR. PROVIDE DEDICATED, INSULATED GROUND CONDUCTOR BACK TO MAIN ELECTRICAL ROOM AND CONNECT TO EXISTING GROUND BUS IN MAIN ELECTRICAL ROOM.
  - ALL DEVICES AND CONDUITS MUST BE SURFACE MOUNTED.
  - OWNER SUPPLIED WORKBENCH FOR GRANUTOOLS (GRANUPACK, GRANULURM, GRANUCHARGE) AND GRANITOOL COMPUTERS TO BE PLUGGED INTO EXISTING DUPLEX OUTLET ON COLUMN.
  - ALL NEW BREAKERS MUST HAVE IDENTICAL INTERRUPTING CAPACITY AS THE DISTRIBUTION EQUIPMENT IT IS INSTALLED IN. MINIMUM RATING: 18KAIC.
  - PROVIDE MINIMUM OF 2 CAT5 CABLE DROPS TERMINATED AT EACH OUTLET BOX. HANGERS BACK TO EXISTING TELECOM ROOM 115. USE OF EXISTING CABLE TRAY IN CORRIDOR IS PERMITTED. FREE WIRING IS NOT PERMITTED. PROVIDE CONDUIT FOR CABLES FROM OUTLET BOX TO TELECOM ROOM WHERE NOT IN CABLE TRAY.
  - NOT ALL EXISTING DEVICES AND EQUIPMENT ARE INDICATED ON THIS DRAWING.



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Panel Board Schedule						
Description	Breaker Size (A)	Circuit #	Load (KW)	Phase	Load (KW)	Breaker Size (A)
EX LOAD	20	1	A		2	20
EX LOAD	20	3	B		4	20
EX LOAD	20	5	C		6	20
EX LOAD (OFF)	20	7	A		8	20
EX LOAD (OFF)	20	9	B		10	20
EX LOAD (OFF)	20	11	C		12	20
EX LOAD (OFF)	20	13	A		14	20
EX LOAD (OFF)	20	15	B		16	20
EX LOAD (OFF)	20	17	C		18	20
EX LOAD (OFF)	20	19	A		20	20
EX LOAD (OFF)	20	21	B		22	20
EX LOAD (OFF)	20	23	C		24	20
EX LOAD	20	25	A		26	20
EX LOAD	20	27	B		28	20
EX LOAD	20	29	C		30	20
EX LOAD	20	31	A		32	20
EX LOAD	20	33	B		34	20
EX LOAD	20	35	C		36	20
EX LOAD (OFF)	20	37	A		38	20
EX LOAD (OFF)	20	39	B		40	20
EX LOAD (OFF)	20	41	C		42	20
SPARE	20	43	A	1000	44	20
SPARE	20	45	B	200	46	15
SPARE	20	47	C	200	48	15
SPARE	20	49	A	200	50	15
SPARE	20	51	B	200	52	15
SPARE	20	53	C	500	54	20
SPARE	20	55	A	56	20	SPARE
SPARE	20	57	B	58	20	SPARE
SPARE	20	59	C	60	20	SPARE
SPARE	20	61	A	62	20	SPARE
SPARE	20	63	B	64	20	SPARE
SPARE	20	65	C	66	20	SPARE
SPARE	20	67	A	68	20	SPARE
EX BAS SERVER REC	20	69	B		70	20
SPARE	20	71	C		72	20
EX BREAKER (OFF)	20	73	A		74	20
EX BREAKER (OFF)	20	75	B		76	20
EX BREAKER (OFF)	20	77	C		78	20
EX ELEC RM REC	20	79	A		80	20
EX BAS REC	20	81	B		82	20
EX ELEVATOR LIGHTS	20	83	C		84	20

Watts		Amperes	
P <sub>1</sub>	1200	I <sub>1</sub>	5
P <sub>2</sub>	400	I <sub>2</sub>	1
P <sub>3</sub>	700	I <sub>3</sub>	2
P <sub>4</sub>	2300	I <sub>4</sub>	6

Watts		Amperes	
P <sub>1</sub>	1800 (80%)	I <sub>1</sub>	22
P <sub>2</sub>	5240 (51%)	I <sub>2</sub>	15
P <sub>3</sub>	6607 (28%)	I <sub>3</sub>	18
P <sub>4</sub>	19647 (100%)	I <sub>4</sub>	52

Type	Voltage	308 Max	<input type="checkbox"/> Main bus only	<input type="checkbox"/> Trip Test	<input type="checkbox"/> TYS
<input type="checkbox"/> New	<input type="checkbox"/> 14000V, 3k, 4w	<input type="checkbox"/> 100A	<input type="checkbox"/> Main bus	<input type="checkbox"/> Trip Test	<input type="checkbox"/> TYS
<input type="checkbox"/> Existing	<input type="checkbox"/> 600V, 3k, 3w	<input type="checkbox"/> 250A	<input type="checkbox"/> Feed Through Lug	<input type="checkbox"/> Surface Mounted	<input type="checkbox"/> Surface Rating
	<input type="checkbox"/> 14000V, 3k, 4w	<input type="checkbox"/> 100A	<input type="checkbox"/> Feed Through	<input type="checkbox"/> Lockable Cover	<input type="checkbox"/> IC Rating (NAC)
	<input type="checkbox"/> Inside Mount	<input type="checkbox"/> 100A	<input type="checkbox"/> Sub-feed	<input type="checkbox"/> Breaker proof	<input type="checkbox"/> 10
	<input type="checkbox"/> 15, Bus	<input type="checkbox"/> 100A	<input type="checkbox"/> 15, Bus	<input type="checkbox"/> 15	<input type="checkbox"/> 10

WSP Canada Inc. Project Name: MRCC High Bay Lab Fitout  
600 Cochrane Drive Project Number: 211-05572-00 Date: Feb 5, 2021  
Markham, ON Canada L3R 9K3 Designation: RP-16A  
Tel: (905) 475-7270 Location: Main Elect Room Page 1 of 1

Panel Board Schedule						
Description	Breaker Size (A)	Circuit #	Load (KW)	Phase	Load (KW)	Breaker Size (A)
EX HB REC	20	1	A		2	20
EX HB REC	20	3	B		4	20
EX HB REC	20	5	C	1866.75	6	40
EX HB REC	20	7	A	1866.75	8	40
EX HB REC	20	9	B		10	20
EX HB REC	20	11	C		12	20
EX HB REC	20	13	A	1500	14	20
EX HB REC	20	15	B	1500	16	20
EX HB REC	20	17	C	1000	18	15
EX HB REC	20	19	A	1500	20	20
EX HB REC	20	21	B	2007.2	22	30
EX HB REC	20	23	C	2007.2	24	30
EX HB REC	20	25	A	1500	26	20
SPARE	20	27	B	1066.67	28	
SPARE	20	29	C	1066.67	30	15
SPARE	20	31	A	1066.67	32	
SPARE	20	33	B	666.667	34	
SPARE	20	35	C	666.667	36	15
EX WIREMOLD	20	37	A	666.667	38	
EX WIREMOLD	20	39	B		40	20
EX HB REC	20	41	C		42	20
SPARE	20	43	A		44	SPARE
SPARE	20	45	B		46	SPARE
SPARE	20	47	C		48	SPARE
SPARE	20	49	A		50	SPARE
SPARE	20	51	B		52	SPARE
SPARE	20	53	C		54	SPARE
SPARE	20	55	A		56	SPARE
SPARE	20	57	B		58	SPARE
SPARE	20	59	C		60	SPARE
SPARE	20	61	A		62	SPARE
SPARE	20	63	B		64	SPARE
SPARE	20	65	C		66	SPARE
SPARE	20	67	A		68	SPARE
EX BREAKER (OFF)	60	69	B		70	SPARE
EX BREAKER (OFF)	60	71	C		72	SPARE
EX CAR CHARGE	40	73	A		74	SPARE
EX CAR CHARGE	40	75	B		76	SPARE
EX CAR CHARGE	40	77	C		78	SPARE
EX BREAKER (OFF)	40	79	A		80	
EX BREAKER (OFF)	40	81	B		82	20
EX BREAKER (OFF)	40	83	C		84	

Watts		Amperes	
P <sub>1</sub>	1800 (80%)	I <sub>1</sub>	22
P <sub>2</sub>	5240 (51%)	I <sub>2</sub>	15
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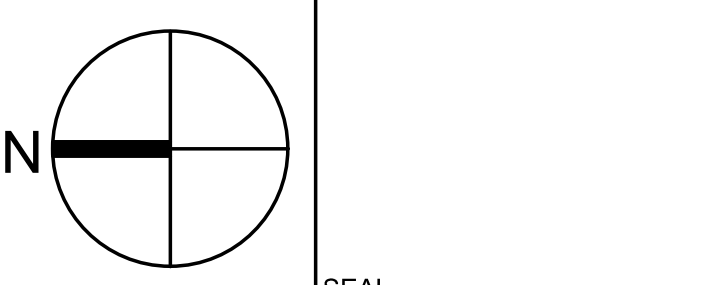
Type	Voltage	208 Max	<input type="checkbox"/> Main bus only	<input type="checkbox"/> Trip Test	<input type="checkbox"/> TYS
<input type="checkbox"/> New	<input type="checkbox"/> 14000V, 3k, 4w	<input type="checkbox"/> 100A	<input type="checkbox"/> Main bus	<input type="checkbox"/> Trip Test	<input type="checkbox"/> TYS
<input type="checkbox"/> Existing	<input type="checkbox"/> 600V, 3k, 3w	<input type="checkbox"/> 250A	<input type="checkbox"/> Feed Through Lug	<input type="checkbox"/> Surface Mounted	<input type="checkbox"/> Surface Rating
	<input type="checkbox"/> 14000V, 3k, 4w	<input type="checkbox"/> 100A	<input type="checkbox"/> Feed Through	<input type="checkbox"/> Lockable Cover	<input type="checkbox"/> IC Rating (NAC)
	<input type="checkbox"/> Inside Mount	<input type="checkbox"/> 100A	<input type="checkbox"/> Sub-feed	<input type="checkbox"/> Breaker proof	<input type="checkbox"/> 10
	<input type="checkbox"/> 15, Bus	<input type="checkbox"/> 100A	<input type="checkbox"/> 15, Bus	<input type="checkbox"/> 15	<input type="checkbox"/> 10

WSP Canada Inc. Project Name: MRCC High Bay Lab Fitout  
600 Cochrane Drive Project Number: 211-05572-00 Date: Feb 5, 2021  
Markham, ON Canada L3R 9K3 Designation: RP-16  
Tel: (905) 475-7270 Location: Outside Hi Bay Lab Page 1 of 1

**DRAWING NOTES:**

1. NEW AND CHANGED LOADS ARE INDICATED IN BOLD. EXISTING BREAKERS AND LOADS ARE TO REMAIN UNCHANGED, UNLESS OTHERWISE INDICATED.

**wsp**  
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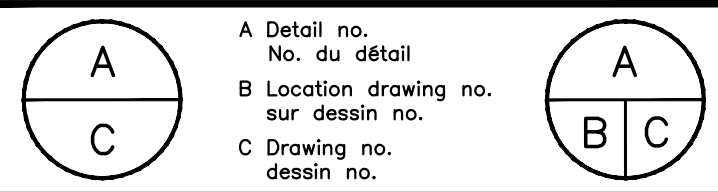
**KEY PLAN PLAN CLÉ**




1	13 08 2021	ISSUED FOR TENDER	J.Y.
No.	Date	Revision	By

Date Printed: 05 02 2021 Date imprimée:  

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- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



Project: **NRC MISSISSAUGA HIGH BAY LAB FITOUT**

**ELECTRICAL: DETAILS AND PANELBOARD SCHEDULES**

designed	compu	date	date
J.Y.		05.02.2021	
drawn	dessiné	scale	échelle
J.Y.		1:100	
checked	vérifié	sheet	feuille
J.Y.			
approved	approuvé	W.D.no.	D.T.no.
J.Y.			

Proj.no. 6035-0260-E3 Dessin no.