

Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

CONTRACT NUMBER: R.106216.00
MECHANICAL SYSTEM UPGRADE - TUNNEL VENTILATION

KENT INSTITUTION, 4732 CEMETERY ROAD, AGASSIZ, BC



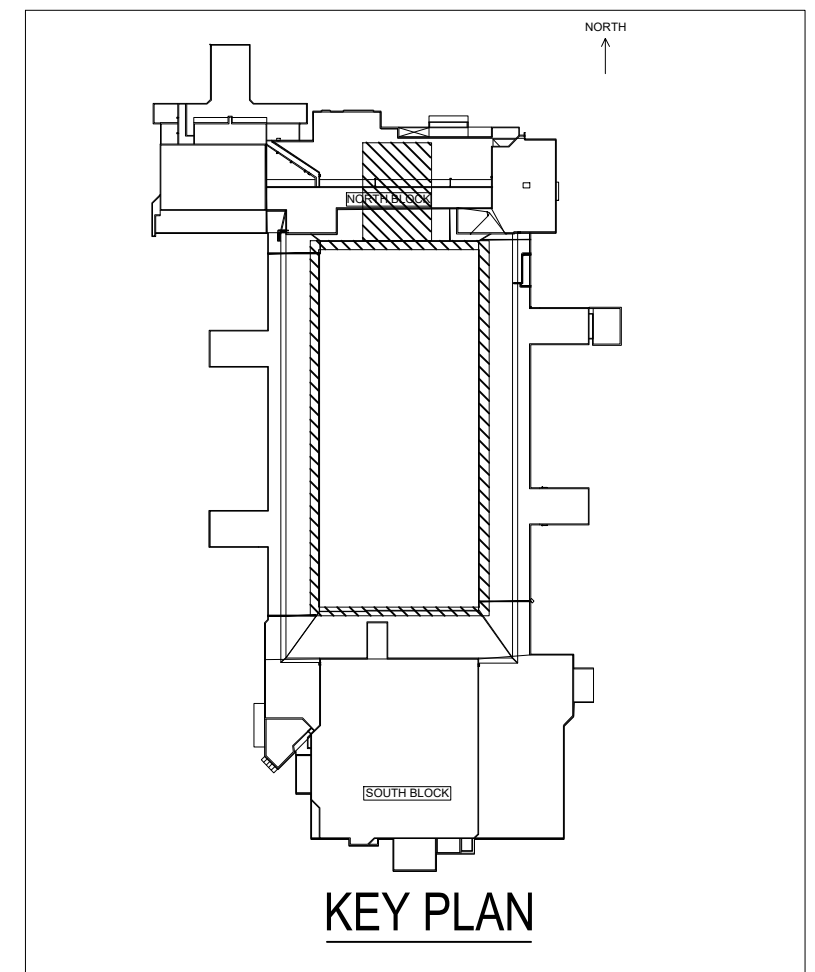
ARCHITECTURE | 49

REAL PROPERTY SERVICES
Pacific Region
SERVICES IMMOBILIERS
Région de Pacifique

CONSULTANTS:



PROJECT #181-06918-05



4	ISSUED FOR TENDER	2021.07.14
3	RE-ISSUED FOR 99% CD	2021.05.10
2	ISSUED FOR 99%	2021.03.15
1	ISSUED FOR 66%	2021.01.22
Revision / Révision	Description / Description	Date / Date

Client/client

**CORRECTIONAL
SERVICE
CANADA**

Project title/Titre du projet

**AGASSIZ, BC
KENT MAXIMUM SECURITY
INSTITUTION**

**MECHANICAL
SYSTEM UPGRADE -
TUNNEL EXHAUST AND
VENTILATION SYSTEM
UPGRADE**

Consultant Signature Box Only

Designed by/Concept par

NK/FH

Drawn by/Dessiné par

RP/LU

PWGSC Project Manager/Administrateur de Projets TPSCC

TONY TANG

PWGSC, Regional Manager, Architectural and Engineering Services/
Gestionnaire régional, services d'architecture et de génie, TPSCC

PREETIPAL PAUL

Drawing title/Titre du dessin

COVER SHEET, DRAWING LIST

Project No./No. du projet

R.106216.001

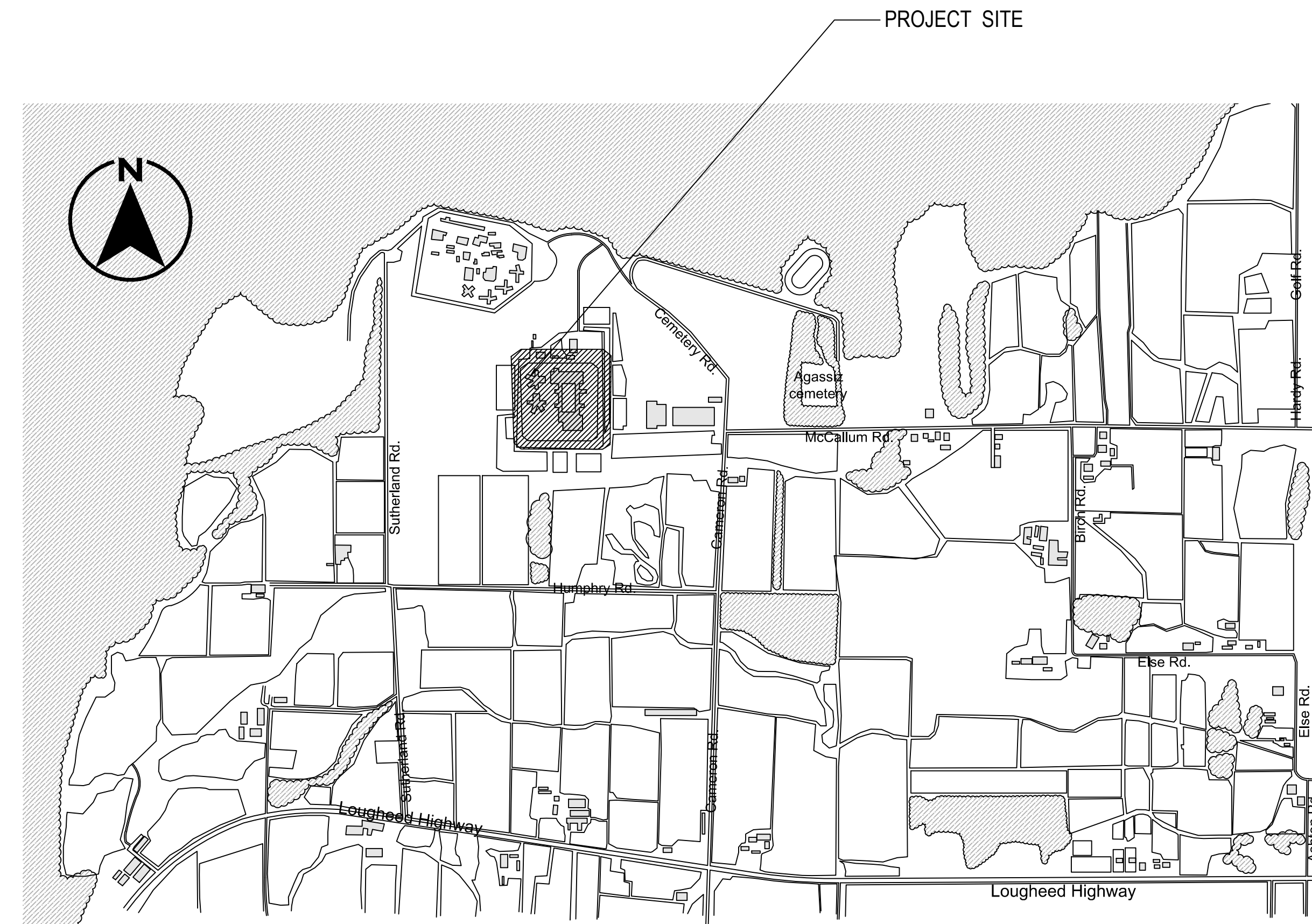
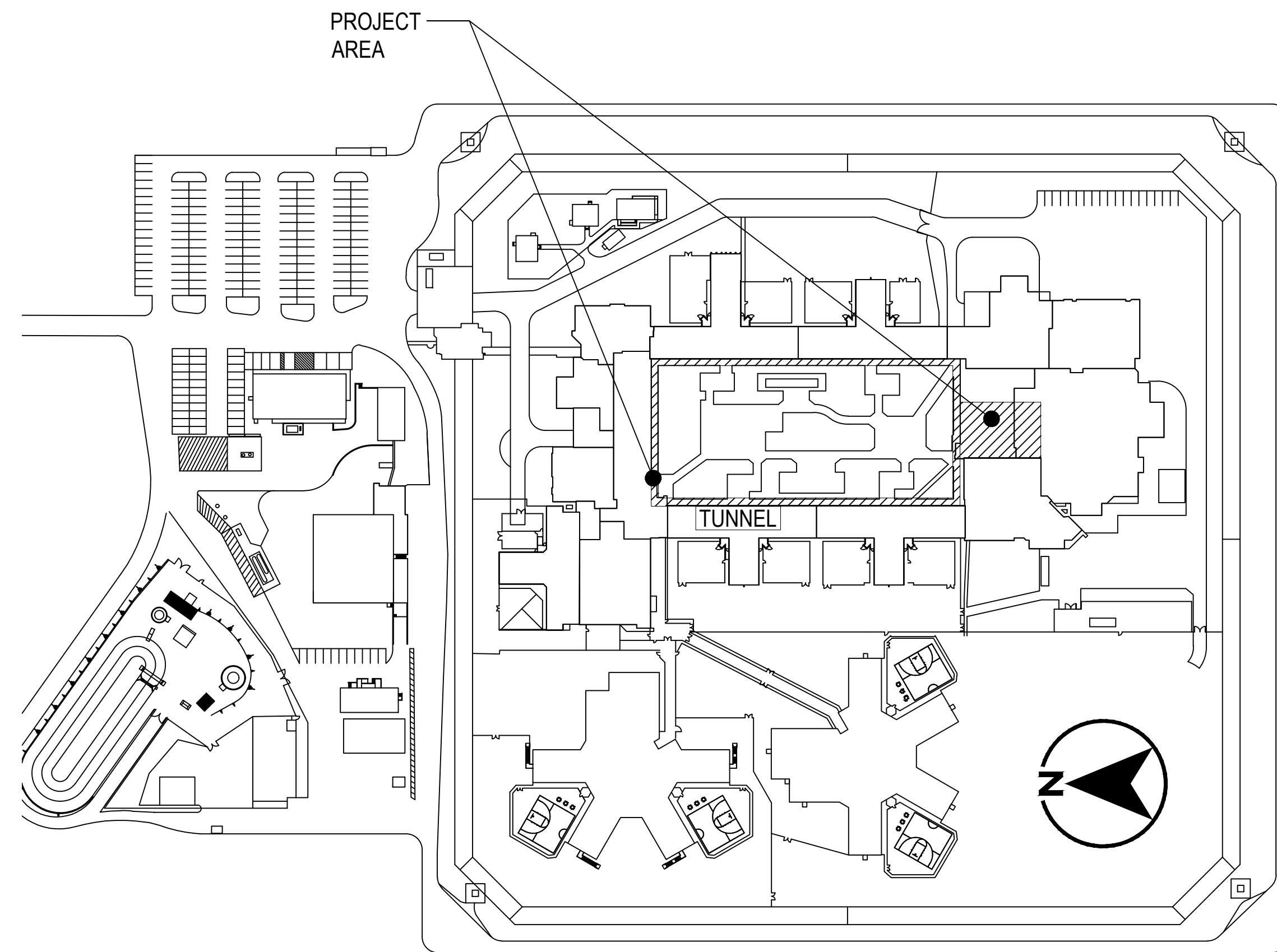
Sheet/Feuille

M0-00

Revision no./
La Révision
no.

4

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DRAWING LIST

MECHANICAL

- M0-00 COVER SHEET, DRAWING LIST
- M0-01 MECHANICAL LEGENDS AND NOTES
- M0-02 TUNNEL PLAN
- M0-03 HVAC ENLARGED PLANS - PART 1
- M0-04 HVAC ENLARGED PLANS - PART 2
- M0-05 MECHANICAL SCHEDULES AND DETAILS

ARCHITECTURAL

- A0-01 PARTIAL FLOOR PLANS, KEY NOTES AND DETAILS

STRUCTURAL

- S1-01 GENERAL NOTES, PLANS, SECTIONS & DETAILS

ELECTRICAL

- E0-01 ELECTRICAL FLOOR AND ROOF PLAN, DRAWING LIST, LEGEND, PARTIAL SLD, ELEVATION AND SCHEDULE

PROJECT SCOPE

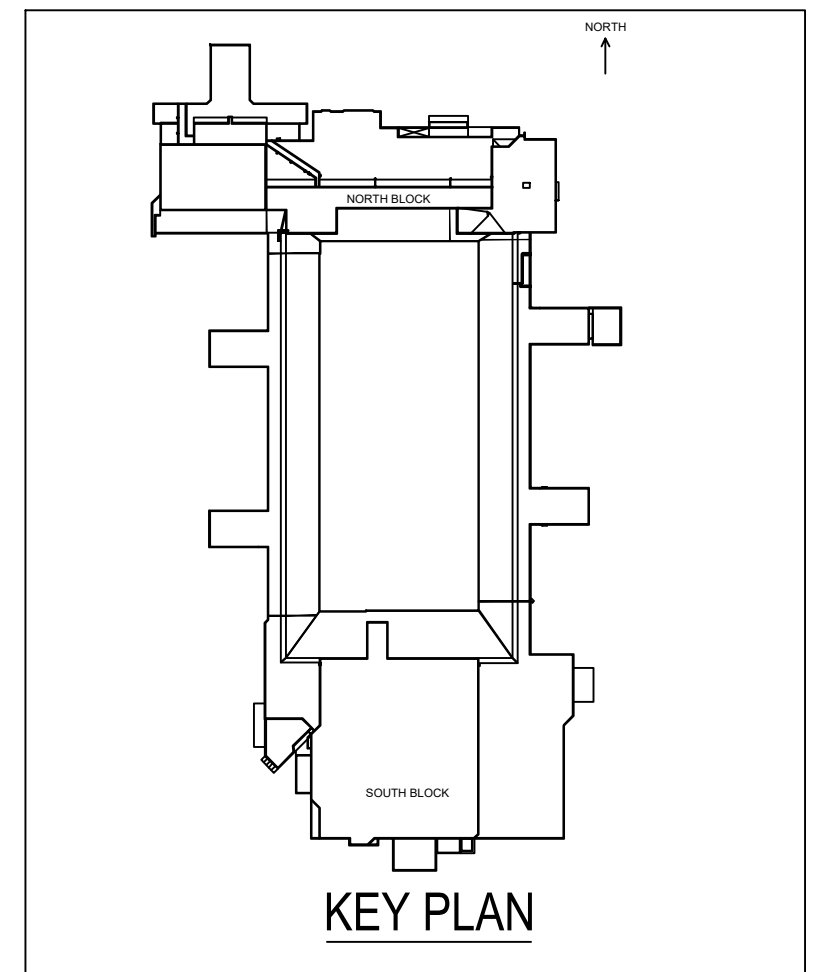
1. SUMP ROOM AND TUNNEL VENTILATION.



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MECHANICAL LEGENDS AND NOTES

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GENERAL NOTES:

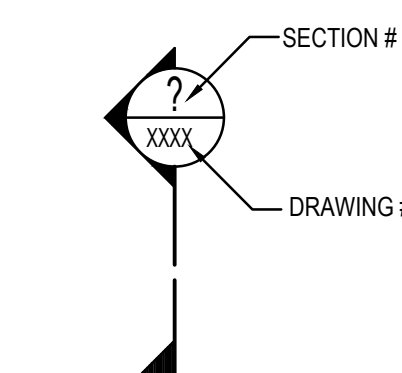
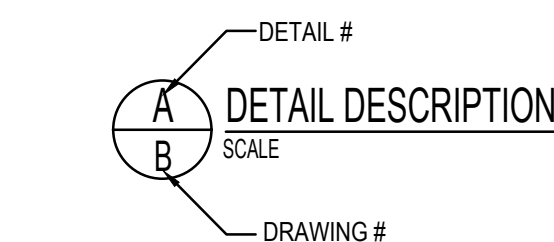
- THE SITE CONDITION WILL NOT ALLEVIATE THE CONTRACTORS FROM THEIR RESPONSIBILITY TO EXECUTE THE CONTRACT DOCUMENTS TO THEIR FULL INTENT.
- CONTRACTOR TO CONFIRM AND VERIFY EXISTING CONDITION, LOCATIONS, SIZES OF ALL MECHANICAL, ELECTRICAL, AND GENERAL CONTRACT WORK PRIOR TO START OF WORK.
- REMOVE AND RECONNECT ANY EXISTING PIPING, EQUIPMENT, ELECTRICAL, CONTROLS, ETC. TO COMPLETE NEW WORK.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURE'S INSTALLATION INSTRUCTIONS. INSTALL UNITS PLUMB AND LEVEL, FIRMLY ANCHORED IN LOCATIONS INDICATED AND MAINTAIN MANUFACTURE'S RECOMMENDED CLEARANCES.
- CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
- PROVIDE CORING, SCANNING, CUTTING AND PATCHING TO PERFORM WORK. PATCH AND MAKE GOOD ALL WORK. PRIOR TO CUTTING AND CORING, REQUIRES APPROVAL FROM STRUCTURAL ENGINEER.
- THE DRAWINGS INDICATE THE GENERAL ROUTING OF THE SYSTEMS AND ARE DIAGRAMMATIC IN NATURE. THEY ESTABLISH SCOPE, MATERIAL AND INSTALLATION QUALITY AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS. THE EXACT ROUTING OF ALL PIPING AND DUCTING SYSTEMS IS TO BE COORDINATED ON SITE TO AVOID CONFLICTS WITH THE WORK OF OTHER DISCIPLINES.
- DEMOLITION DRAWINGS ARE BASED ON THE RECORD DRAWINGS. ACTUAL DIMENSIONS AND LOCATIONS MAY BE DIFFERENT FROM WHAT IS SHOWN ON THESE DRAWINGS. CONTRACTOR TO ALLOW FOR SUCH VARIANCES IN THE TENDER PRICE.
- LEGALLY DISPOSE OF ALL DEMOLISHED AND UNUSED MATERIALS SUCH AS DUCTWORK, PIPING, EQUIPMENT, ETC. TURN OVER ANY RE-USEABLE MATERIALS AT OWNER'S DISCRETION AND DECISION.

MECHANICAL LEGEND

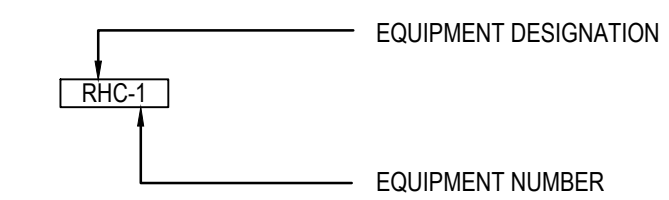
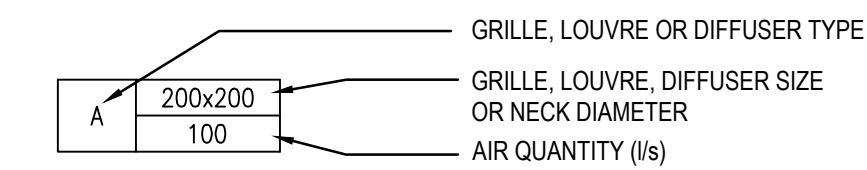
- AC AIR CONDITIONING UNIT
- AHU AIR HANDLING UNIT
- AP ACCESS PANEL
- BDD BACKDRAFT DAMPER
- CU CONDENSING UNIT
- DEMO DEMOLITION
- EF EXHAUST FAN
- E/A EXHAUST AIR
- (E) EXISITNG
- FCU FAN COIL UNIT
- FFL FINISH FLOOR
- HC COOLING/HEAT COIL
- LU LIVING UNIT
- M MOTORIZED DAMPER
- O/A OUTSIDE AIR
- PICV PRESSURE INDEPENDENT CONTROL VALVE
- RENO RENOVATION
- RHC REHEAT COIL
- UH UNIT HEATER
- WF WALL FIN

- GLOBE VALVE
- AUTO AIR VENT
- BALANCING VALVE WITH MEMORY STOP
- CHECK VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- GATE VALVE
- PIPE DROP
- PIPE TRAP
- PIPE RISER
- PIPE BREAK
- PLUG VALVE
- PRESSURE GAUGE
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- UNION
- VALVE NORMALLY CLOSED
- THERMOMETER
- PUMP
- UNIT HEATER
- PRESSURE - TEMPERATURE PORT
- AIRFLOW
- ARROW
- STRAINER
- CAP

- 25mm ACOUSTIC DUCT INSULATION (INTERNAL)
- WORK TO BE REMOVED
- CONNECT TO EXISTING
- BALANCING DAMPER
- BACKDRAFT DAMPER
- FIRE DAMPER (WALL)
- FIRE DAMPER (FLOOR)
- INTERNAL CLEAR DUCT DIMENSIONS (WIDTH X DEPTH)



- EXISTING HOT WATER SUPPLY PIPE
- EXISTING HOT WATER RETURN PIPE
- EXISTING CHILLED WATER SUPPLY PIPE
- EXISTING CHILLED WATER RETURN PIPE
- EXISTING DUCTWORK
- EXISTING FIRE DAMPER (THROUGH FLOOR)
- EXISTING FIRE DAMPER (THROUGH WALL)
- EXISTING SPRINKLER HEAD
- EXISTING SPRINKLER HEAD TO BE RELOCATED
- RELOCATED EXISTING SPRINKLER HEAD
- NEW SPRINKLER HEAD
- PIPE UP
- PIPE DOWN
- THERMOSTAT
- PRESSURE INDICATOR
- DUCT SMOKE SENSOR
- METHANE (CH4) SENSOR
- BEACON

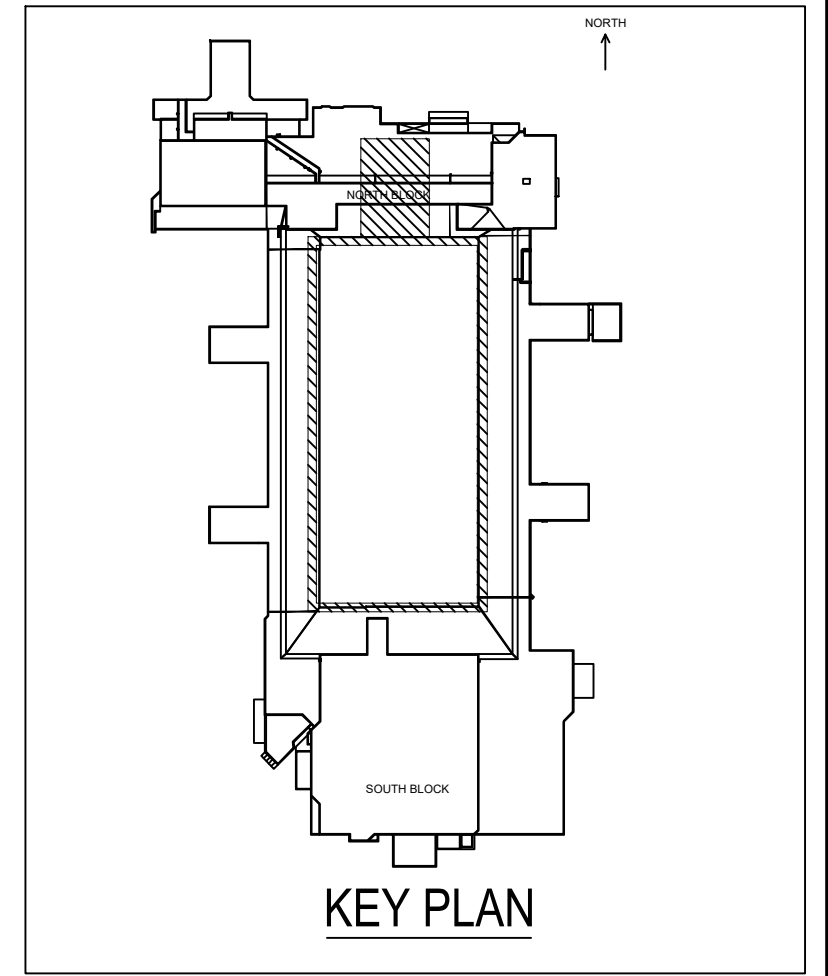


- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- SUPPLY DUCT DROP
- SUPPLY DUCT UP
- RETURN DUCT DROP
- RETURN DUCT UP
- EXHAUST DUCT DROP
- EXHAUST DUCT UP
- SUPPLY DUCT RISER
- RETURN DUCT RISER
- EXHAUST DUCT RISER
- TURNING VANE





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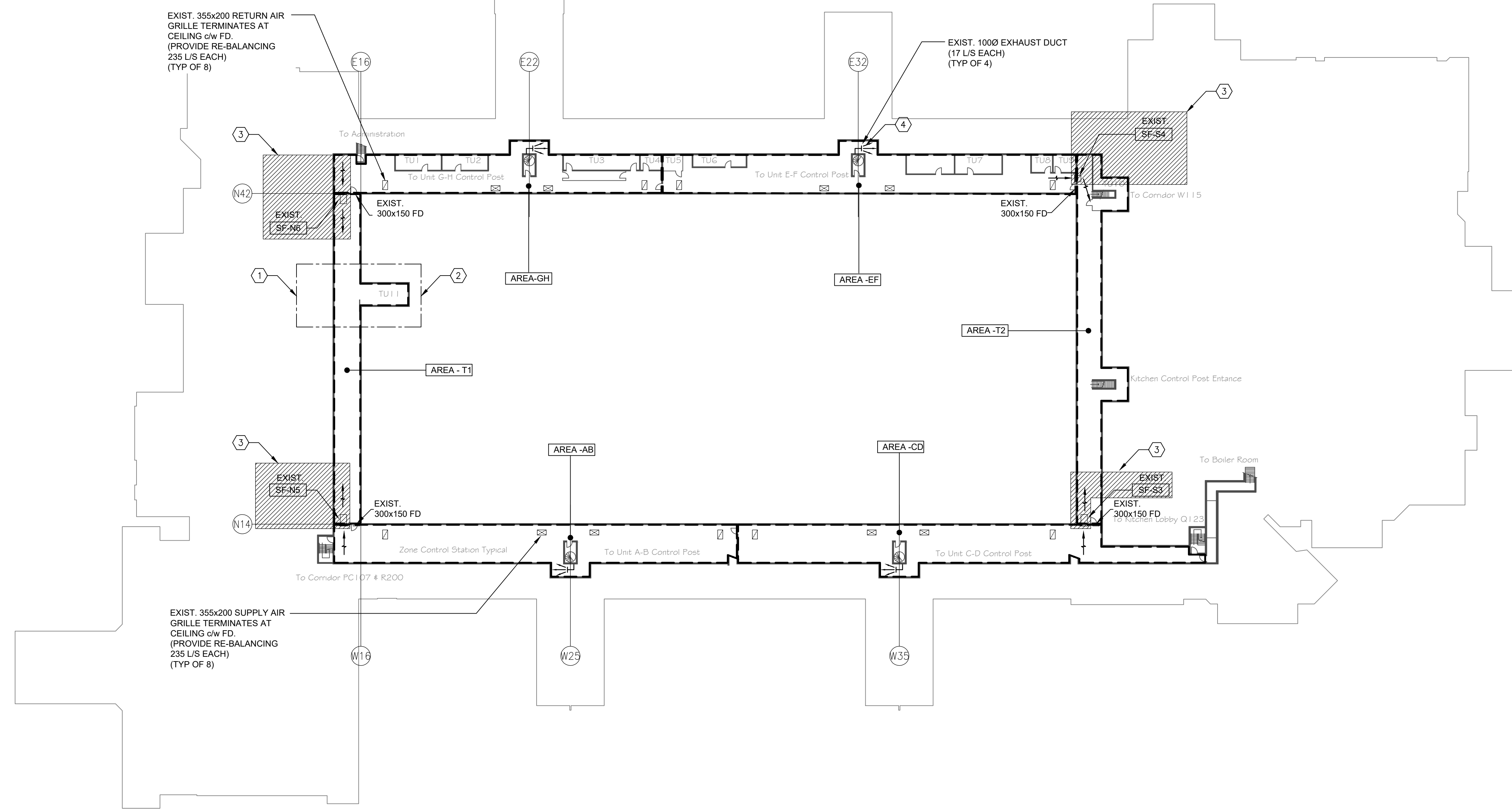
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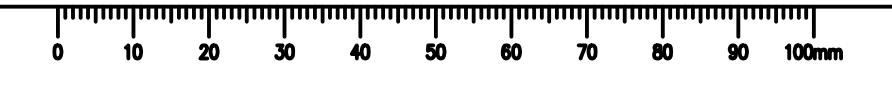
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PREETIPAL PAUL

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TUNNEL PLAN

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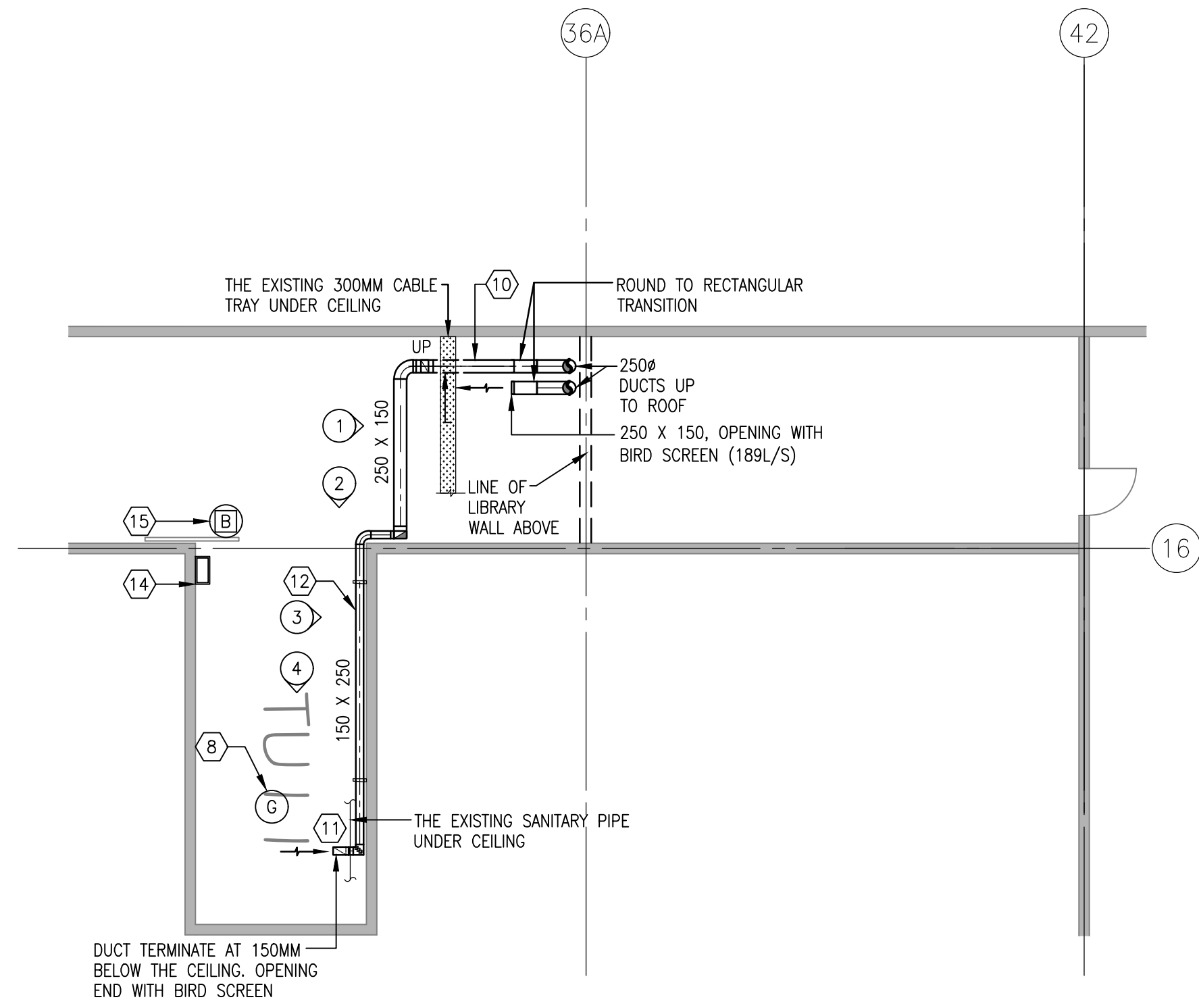
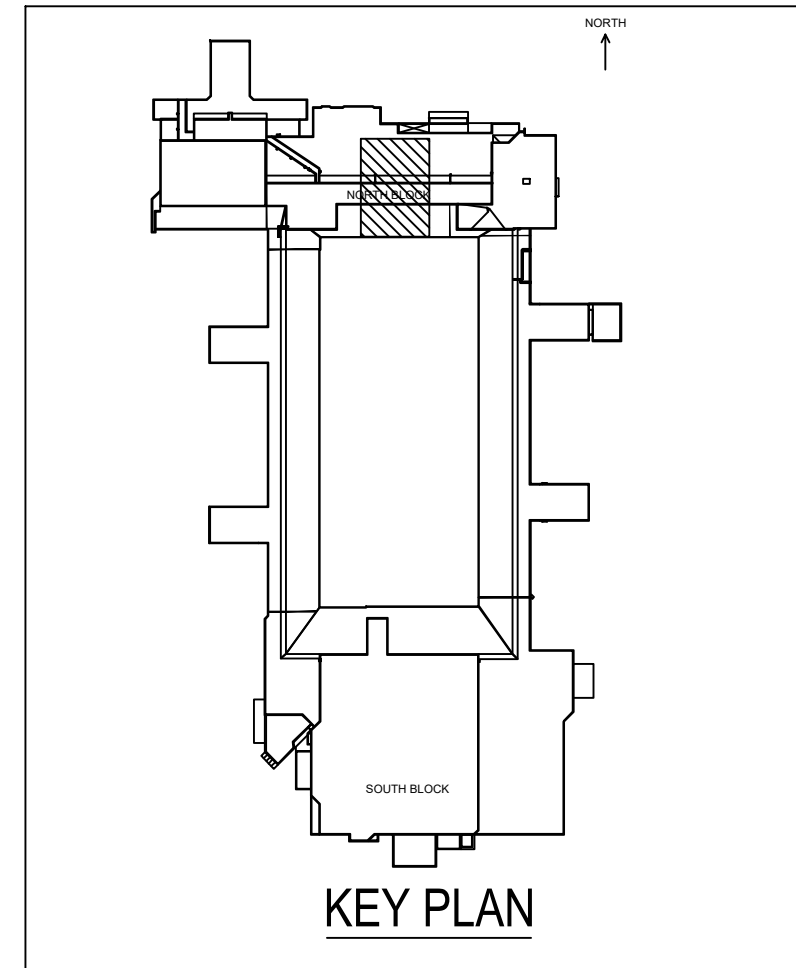
- KEYNOTES:**
- REFER TO DRAWING M0-03 FOR DETAILS.
 - THE EXISTING SUMP STATION
 - EXISTING TRANSFER FAN TO BE DEMOLISHED AND REINSTALL WITH NEW FAN. REFER TO DRAWING M0-05 FOR NEW FAN SCHEDULE.
 - REFER TO DRAWING M0-04 FOR NEW WORK. (TYP. 04)



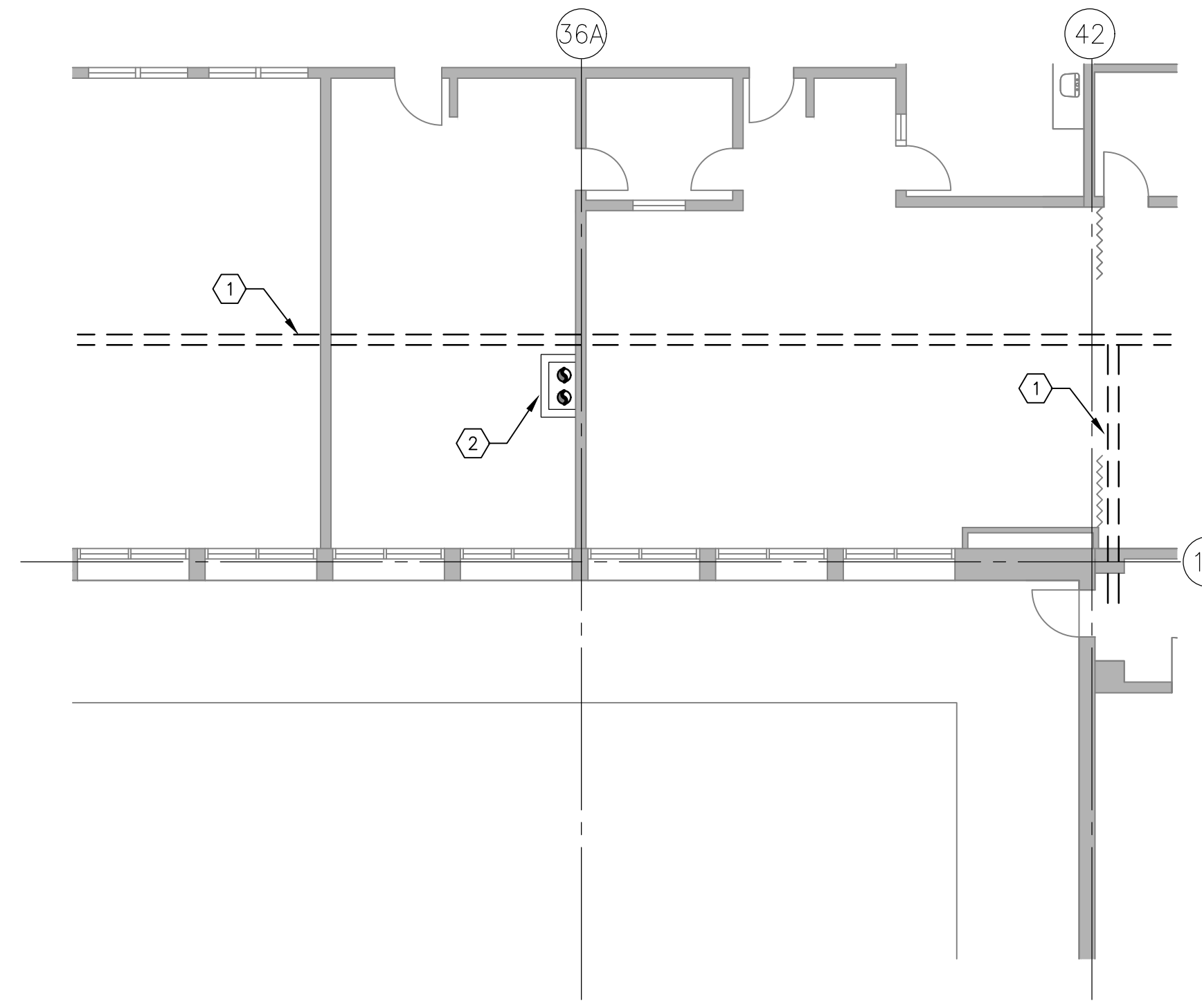
CONSULTANTS:



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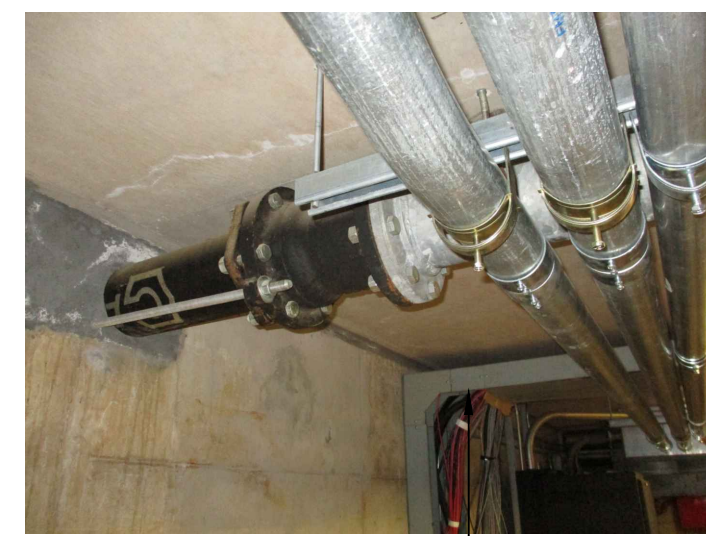
NEW EXHAUST & VENTILATION DUCT - TUNNEL LEVEL
SCALE: 1:100



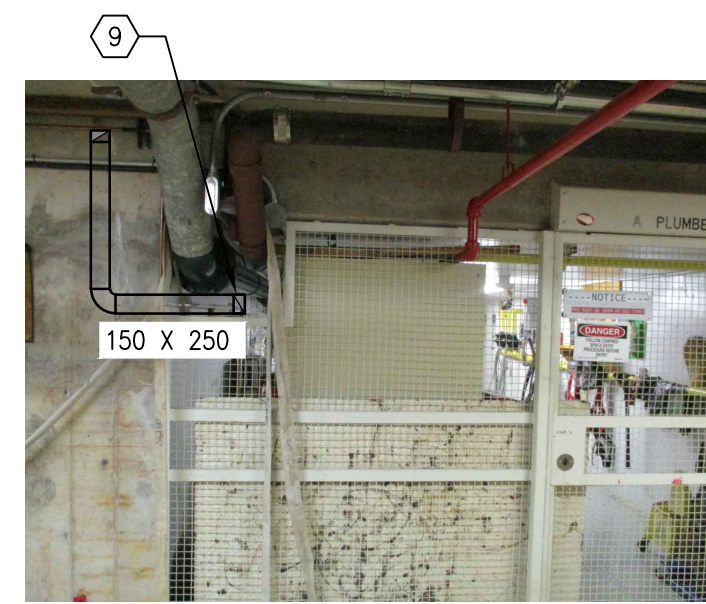
NEW EXHAUST & VENTILATION DUCT RISER IN THE CHAPEL - GROUND LEVEL
SCALE: 1:100

KEYNOTES:

1. LINE OF TUNNEL BELOW.
2. EXHAUST AND VENTILATION DUCT FROM TUNNEL TO THE UPPER LEVEL c/w FURRING WALL.
3. DUCTS UP TO COMMUNICATION ROOM ROOF, OFFSET AFTER PENETRATING ROOF.
4. NEW HEAT RECOVERY UNIT c/w ELECTRIC COIL AND AIR FILTER FOR THE TUNNEL VENTILATION.
5. UNIT CURB 1250(W)x2700(L)x350(H).
6. SUPPLY ROUND AIR DUCT: 260L/S
7. EXHAUST ROUND AIR DUCT: 280L/S
8. METHANE GAS SENSOR AT U/S OF CEILING.
9. CONTRACTOR TO RUN THE 250mm DUCT TO THE INSIDE OF THE SUMP PUMP ROOM. NEW DUCT SHOULD BE INSTALLED ON THE WALL BELOW WATER LINE. CONTRACTOR REMOVE AND REINSTALL OBSTACLES TO RUN THE DUCT ON THE WALL.
10. RUN RECTANGULAR DUCT BELOW THE EXISTING ELECTRICAL TRAY AND ABOVE SPRINKLER PIPES.
11. RECTANGULAR DUCT UP TO THE CEILING EXHAUST 250 X 150. OPENING WITH BIRD SCREEN SHALL BE INSTALLED IN THE MAXIMUM HEIGHT FROM SUMP ROOM FLOOR.
12. RUN DUCT ON THE WALL BELOW THE DCWDHW LINES. ALLOW FOR FULL RELOCATION OF THE DCW & DHW IN THE LENGTH OF SUMP ROOM (SEE THE PHOTOS) WITH NEW MATERIAL.
13. DUCT SUPPORT SYSTEM WITH HOT DEEP GALVANIZED STRUCTURAL MEMBERS IN ONE SIDE AND POLYCARBONATE BASE ON OTHER SIDE SITTING ON THE ROOF. PROVIDE SUPPORT PADS UNDER THE BASE FOR ALL POLYCARBONATE BASES ON THE ROOF.
14. METHANE GAS DETECTION PANEL WITH LOCAL AUDIBLE VISUAL ALARM.
15. METHANE DETECTION SYSTEM RED BEACON.



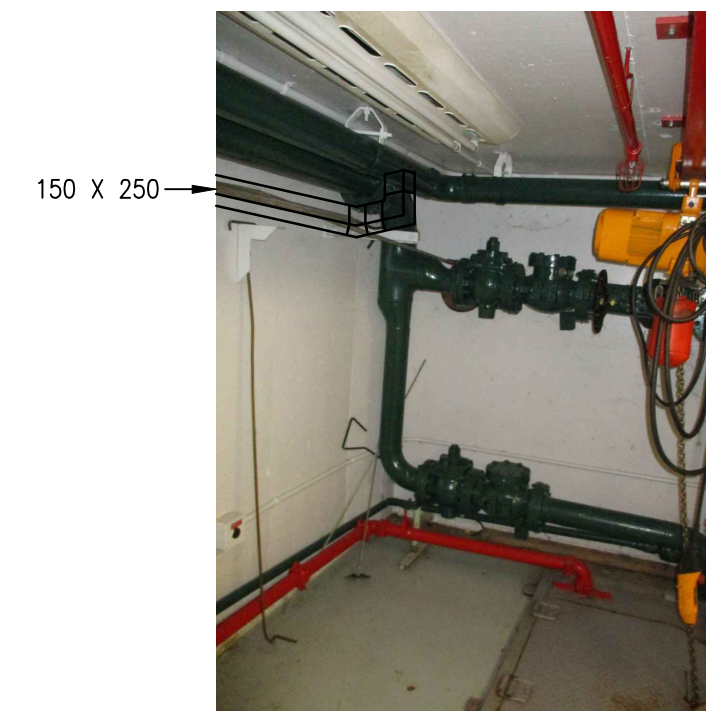
VIEW - 01
N.T.S.



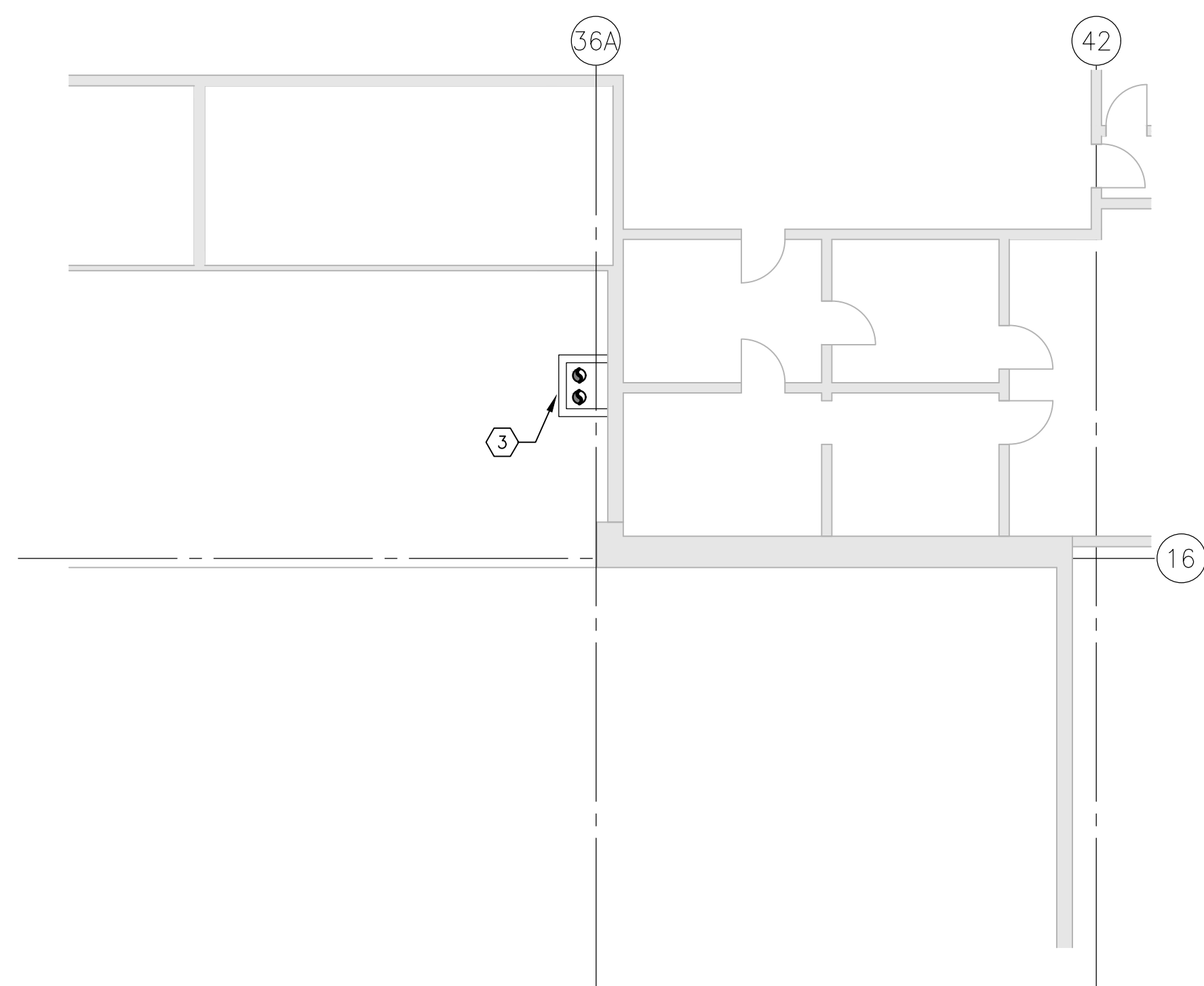
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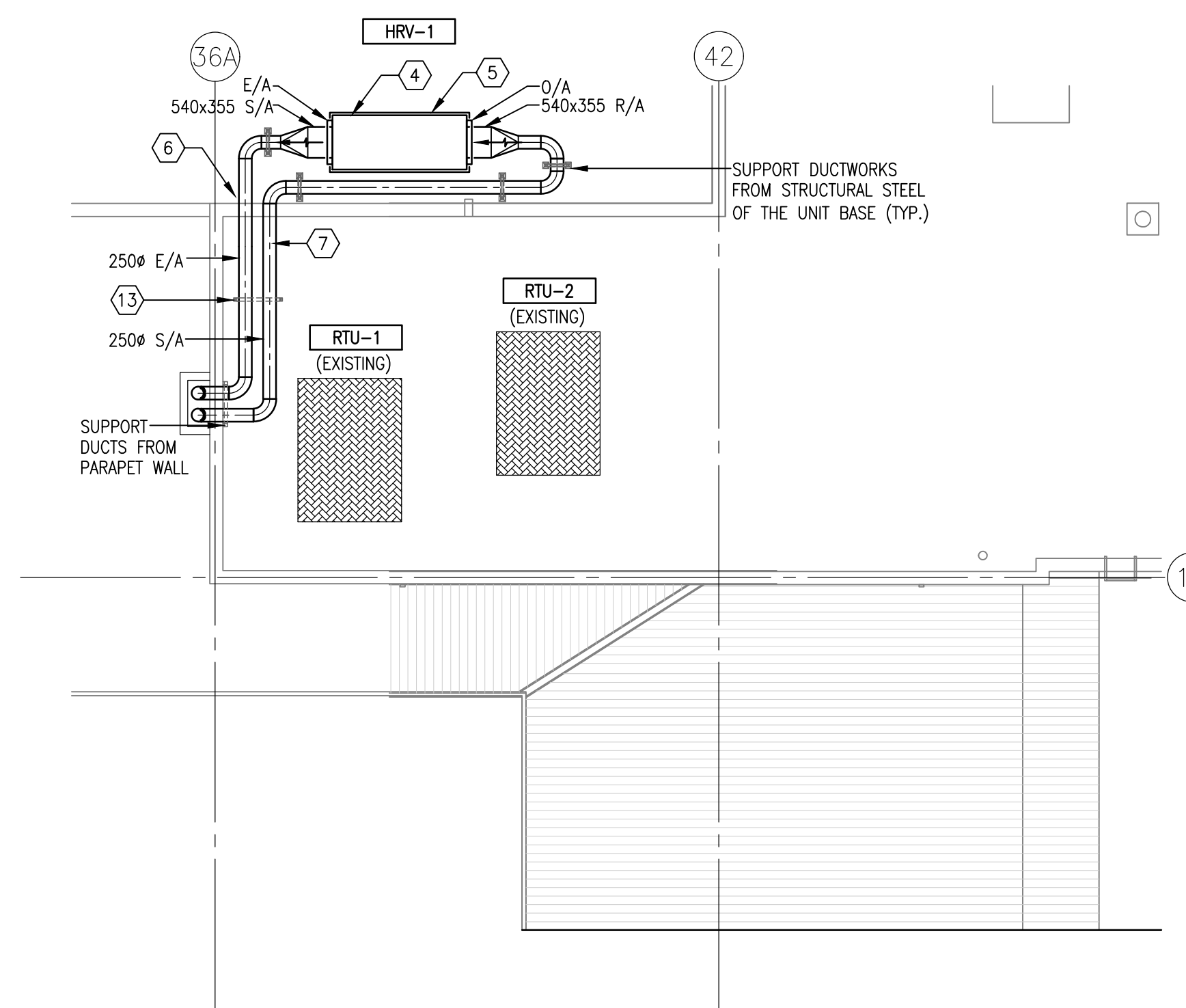
VIEW - 03
N.T.S.



VIEW - 04
N.T.S.



NEW EXHAUST & VENTILATION DUCT RISER - CHAPEL ROOF
SCALE: 1:100



NEW EXHAUST & VENTILATION DUCT AND FANS - ROOF LEVEL
SCALE: 1:100

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PREETIPAL PAUL

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**HVAC ENLARGED PLANS -
PART 1**



Project No./No. du projet

R.106216.001

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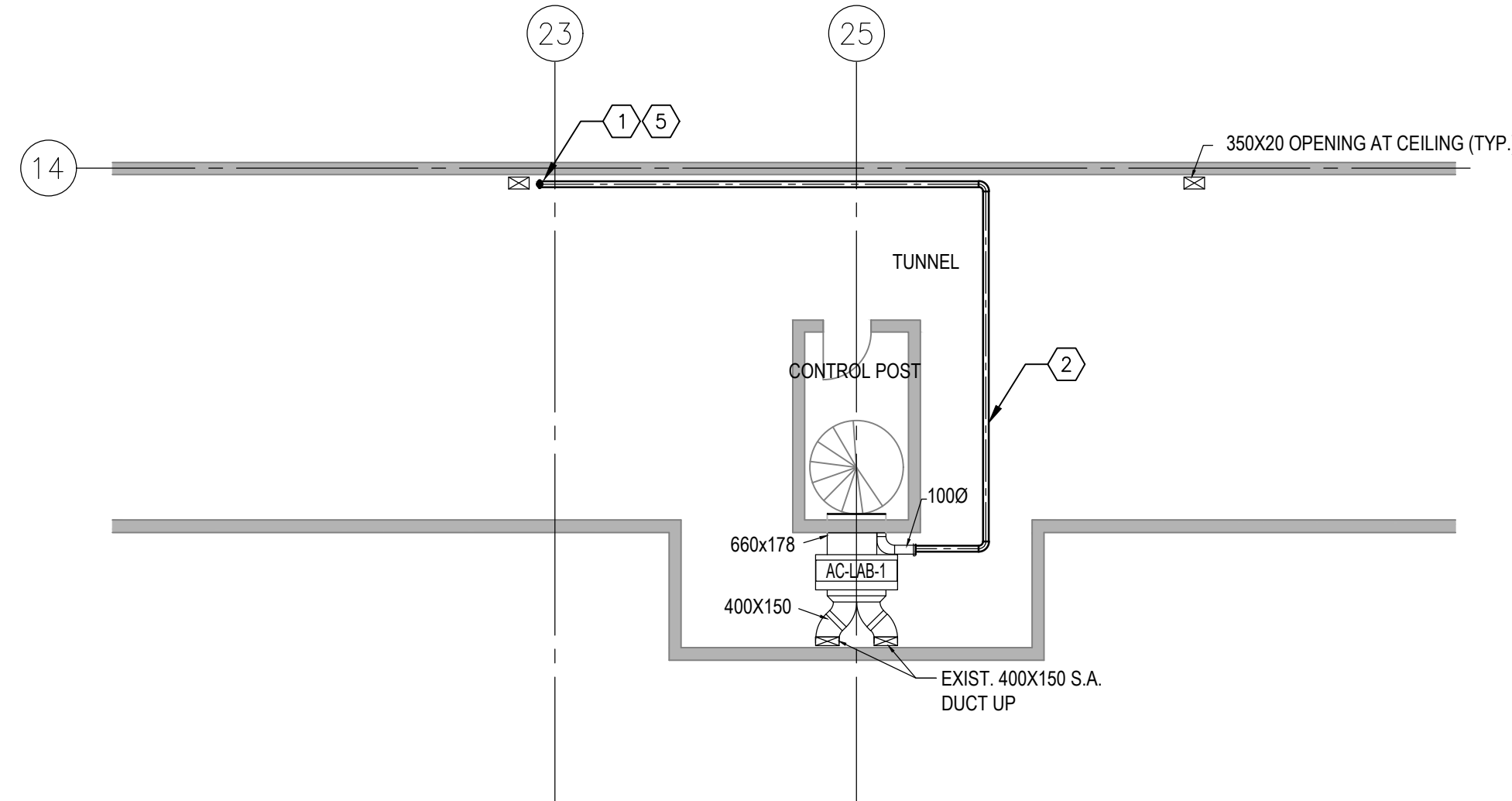
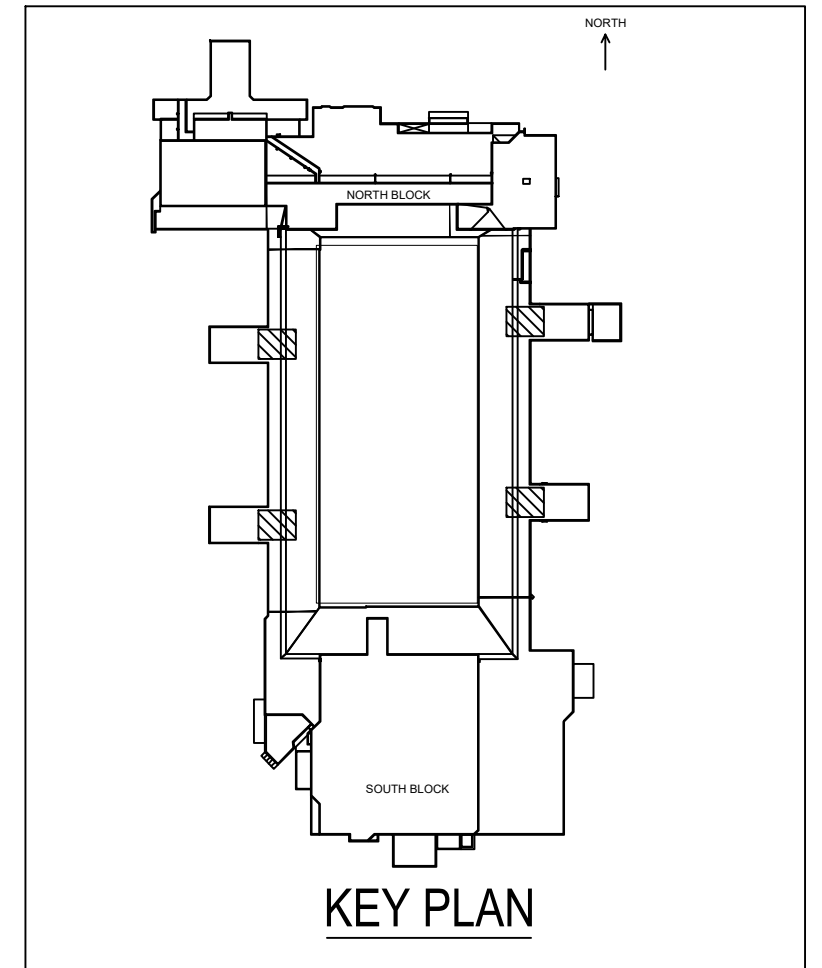
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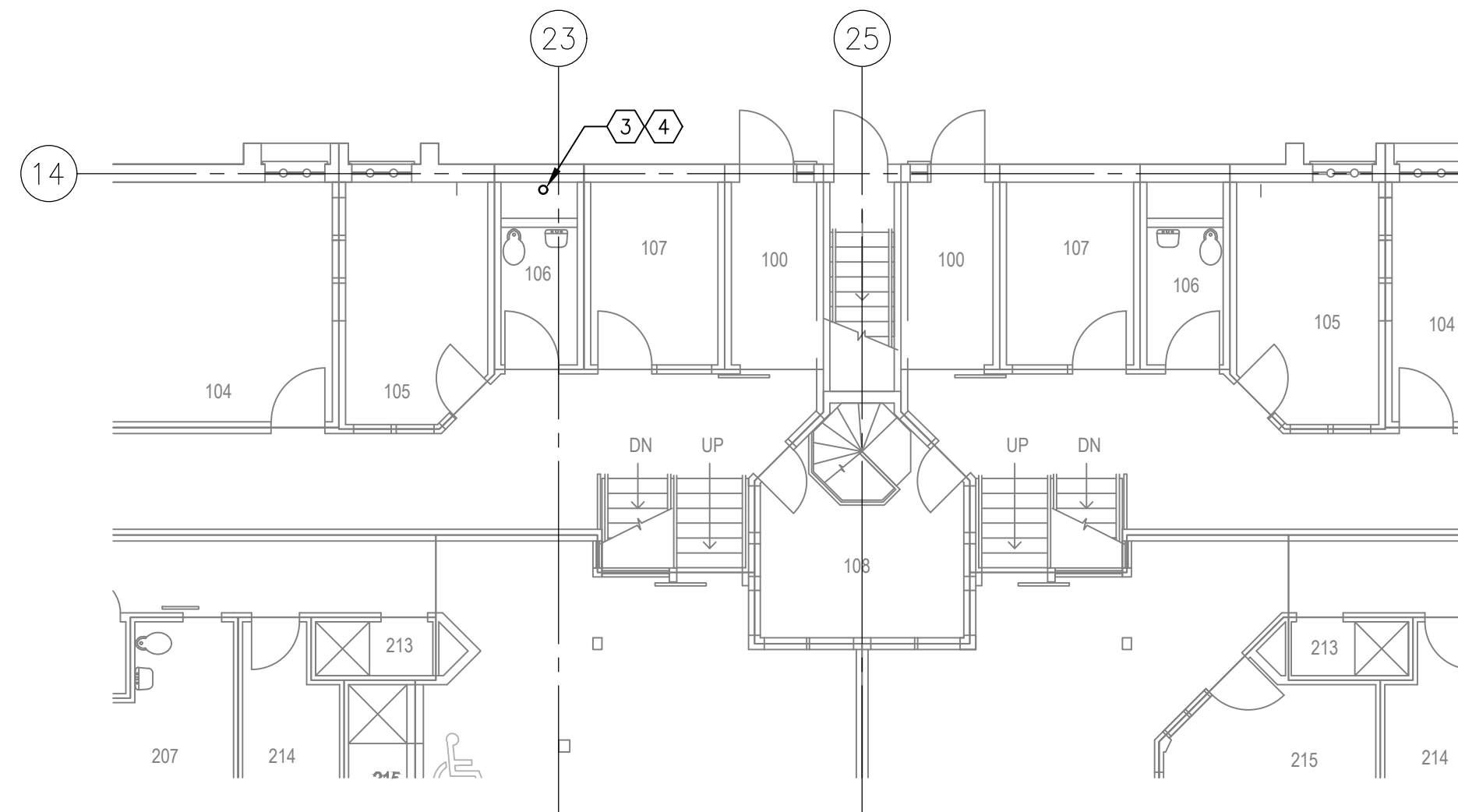


PROJECT #181-06918-05



NEW EXHAUST DUCT FROM CONTROL POST- TUNNEL LEVEL
SCALE: 1:100 TYPICAL FOR LIVING UNITS A&B; C&D; E&F; G&H

- KEYNOTES:**
1. NEW 100MM ROUND EXHAUST DUCT TO ABOVE. TIE IN TO THE EXISTING 178MM WASHROOM EXHAUST ABOVE. PROVIDE BALANCING DAMPER AND BALANCE TO 17 U.S.
 2. 100MM ROUND DUCT UNDER THE TUNNEL CEILING.
 3. EXISTING 178MM EXHAUST DUCT UP TOP ABOVE MECHANICAL ROOM.
 4. CONTRACTOR TO RE-BALANCE ASSOCIATE EXHAUST FANS IN THE PENTHOUSE MECHANICAL ROOM AS FOLLOW:
-EF-LA-1 RE-BALANCE TO 85L/S
-EF-LC-1 RE-BALANCE TO 85L/S
-EF-LE-1 RE-BALANCE TO 85L/S
-EF-LG-1 RE-BALANCE TO 85L/S
 5. CONTRACTOR SHALL PROVIDE CONCRETE SLAB X-RAY OR Xradar™ CONCRETE SCANNING BEFORE CONCRETE CORING.



NEW EXHAUST DUCT CONNECTION TO EXISTING IN SHAFT- GROUND LEVEL
SCALE: 1:100 TYPICAL FOR LIVING UNITS A&B; C&D; E&F; G&H

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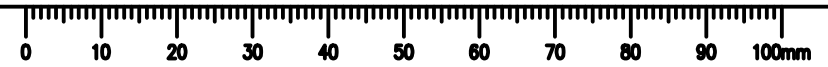
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HVAC ENLARGED PLANS - PART 2



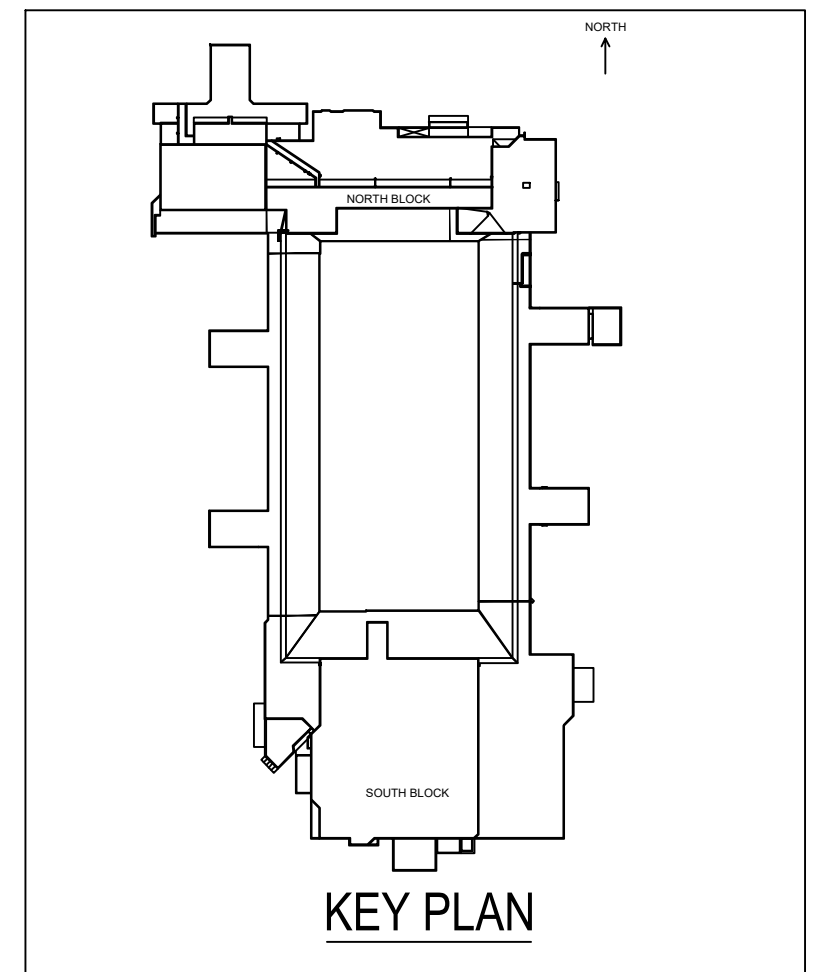
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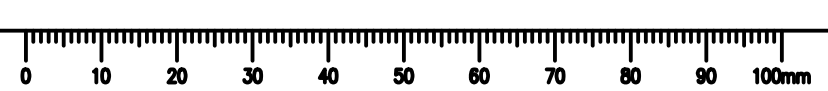
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ENERGY RECOVERY VENTILATION SCHEDULE																	
EQUIPMENT TAG	LOCATION	MANUFACTURER /MODEL	SUPPLY FAN			EXHAUST FAN			WINTER - HEAT RECOVERY SECTION			SUMMER			FLA	ELECTRICAL VOLTAGE	COMMENTS
			AIR FLOW RATE (L/S)	E.S.P. (Pa)	MOTOR POWER (HP) WITH ECM	AIR FLOW RATE (L/S)	E.S.P. (Pa)	MOTOR POWER (HP) WITH ECM	ENTERING AIR SUPPLY TEMPERATURE °C (°F)	LEAVING AIR SUPPLY TEMPERATURE °C (°F)	TEMPERATURE EFFECTIVENESS (%)	ENTERING AIR SUPPLY TEMPERATURE °C (°F)	LEAVING AIR SUPPLY TEMPERATURE °C (°F)	TEMPERATURE EFFECTIVENESS (%)			
HRV-1	ROOF	-	283	312	2.5	283	312	2.5	-11 (12.2°F)	8 (46.6°F)	50.5	87.8 (31°F)	81 (27.2°F)	49.2	2x5.9 (FANS ONLY)	208/3/60 - FANS 208/3/60 - ELECTRIC COIL	1. COMPLETE WITH ELECTRICAL COIL (7.5KW, 208/3/60), AND ROOF CURB WITH 350mm HEIGHT - UNIT WEIGHT ON CURB = 500KG. TOTAL UNIT MCA=50AMPS. 2. SUPPLY/RETURN FANS WITH ECM OR VFD. 3. COMPLETE WITH DISCONNECT SWITCH.

TRANSFER FAN									
EQUIPMENT TAG	LOCATION	SERVING	MANUFACTURER	MODEL	FLOW L/s (CFM)	SP (INCH)	HP	ELECT	ACCESSORIES
SF-N5	TUNNEL	TUNNEL	-	EF-12	377 (800)	0.08	1/25	120/1/60	INLET SAFETY SCREEN AND DISCONNECT SWITCH
SF-N6	TUNNEL	TUNNEL	-	EF-12	377 (800)	0.08	1/25	120/1/60	INLET SAFETY SCREEN AND DISCONNECT SWITCH
SF-S3	TUNNEL	TUNNEL	-	EF-12	377 (800)	0.08	1/25	120/1/60	INLET SAFETY SCREEN AND DISCONNECT SWITCH
SF-S4	TUNNEL	TUNNEL	-	EF-12	377 (800)	0.08	1/25	120/1/60	INLET SAFETY SCREEN AND DISCONNECT SWITCH

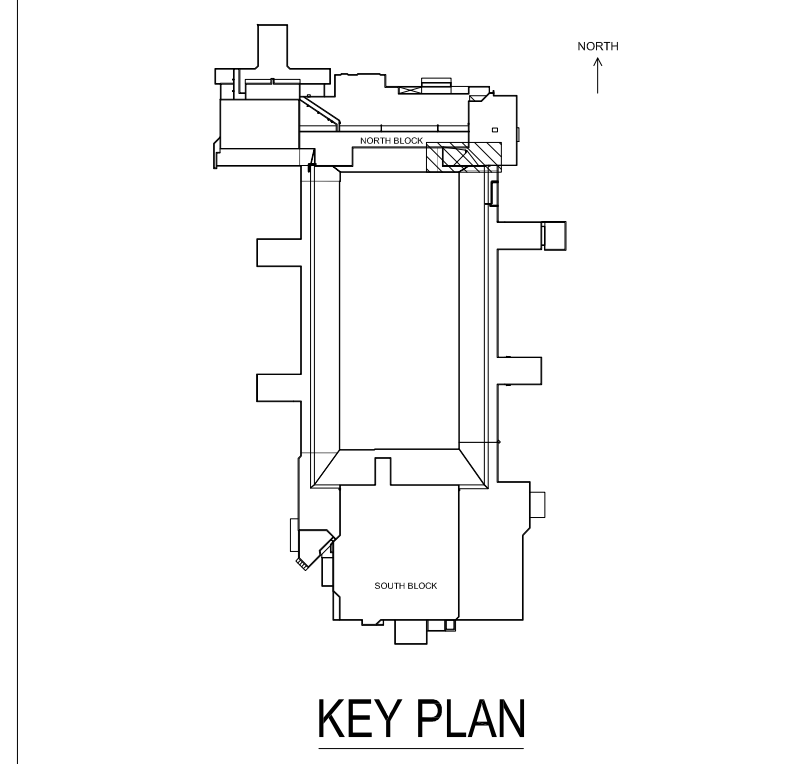


CONSULTANTS:



ARCHITECTURE | 49

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KEY PLAN

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Drawn by/Dessiné par
LU

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PREETIPAL PAUL

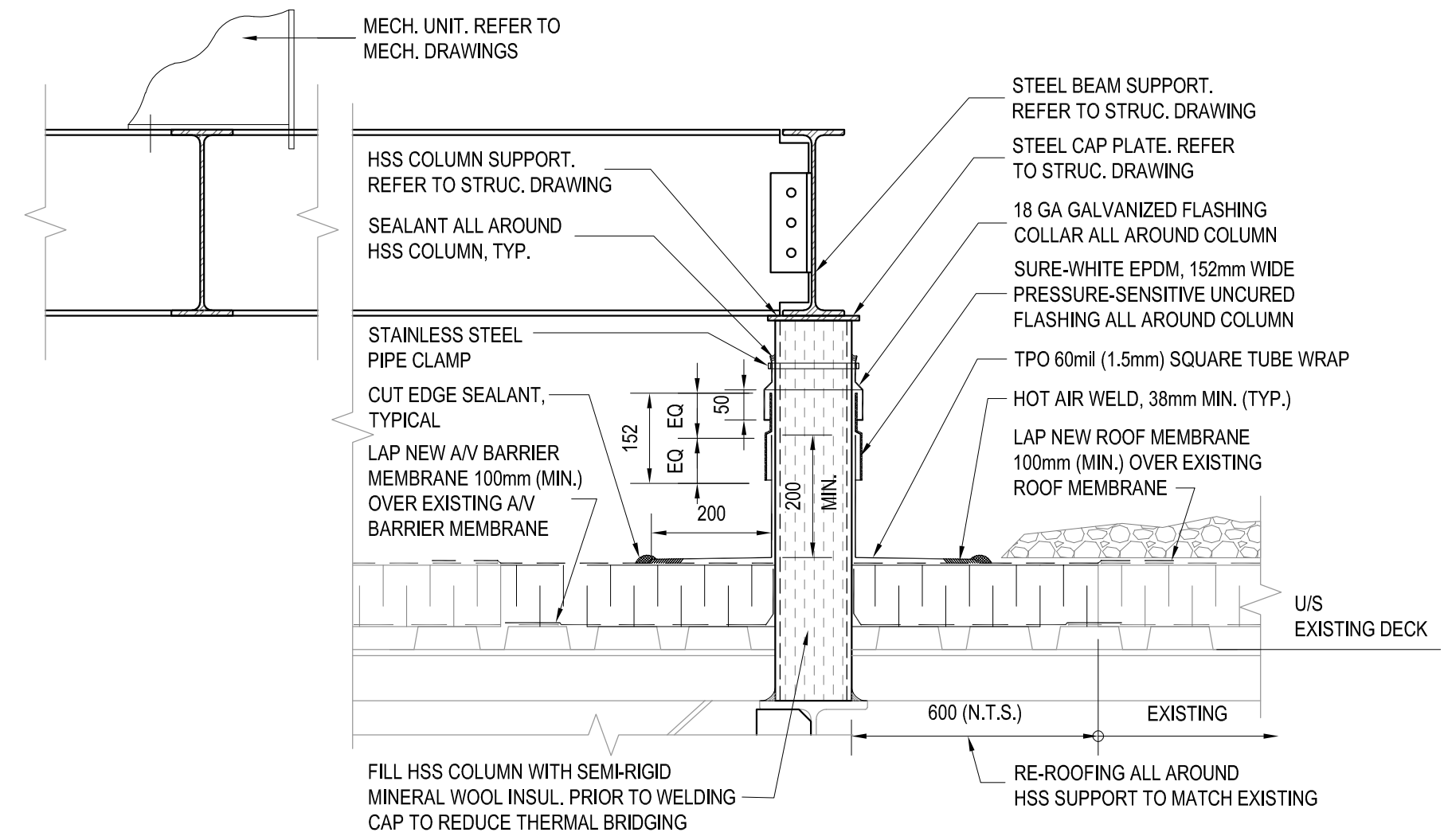
Drawing title/Titre du dessin

PARTIAL FLOOR PLANS, KEY NOTES AND DETAILS

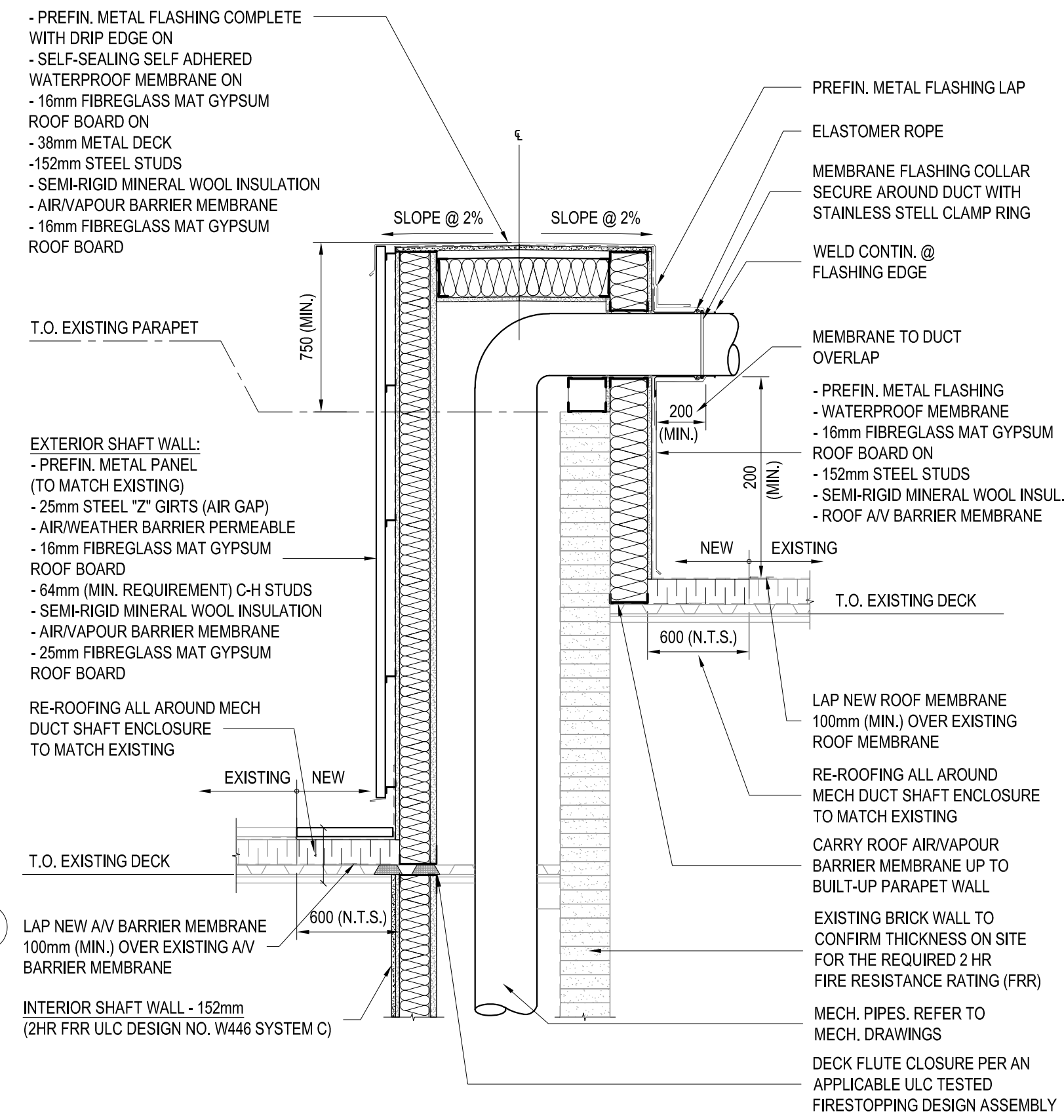
Project No./No. du projet R.106216.001	Sheet/Feuille A0-01 1 OF 1	Revision no./ Le Révision no. 4
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KEYNOTES:

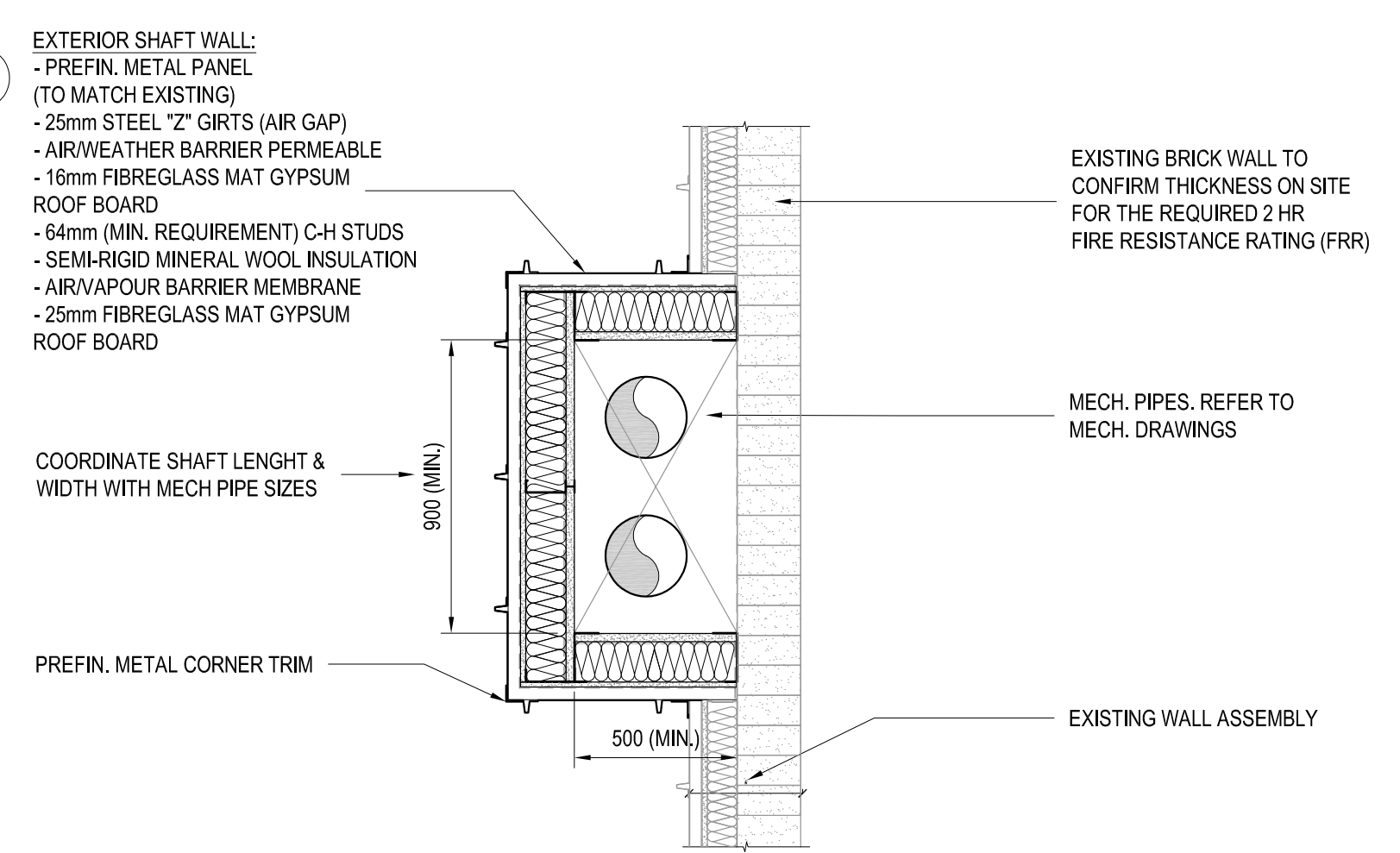
- MECH. DUCTS/PIPES UP TO ROOF. REFER TO MECH. DRAWINGS
- LINE OF LIBRARY WALL ABOVE
- MANHOLE ACCESS, REPAIR AND MAKE GOOD MANHOLE STEEL ACCESS COVER AND STEEL FRAME INCLUDING ATTACHMENT TO CONCRETE FLOOR AS REQUIRED
- LINE OF MANHOLE BELOW
- MECH. DUCTS/PIPES DOWN TO SEWER. REFER TO MECH. DRAWINGS
- LINE OF TUNNEL WALL BELOW
- MECH. DUCT SHAFT ENCLOSURE - INTERIOR
- SAW CUT AND REMOVE EXISTING ROOF ASSEMBLY AS REQUIRED FOR NEW MECH. SHAFT. RE-ROOF ALL AROUND NEW MECH. SHAFT TO MATCH EXISTING. PATCH AND MAKE GOOD.
- MECH. DUCT SHAFT ENCLOSURE - EXTERIOR
- SUPPLY ROUND AIR DUCT. REFER TO MECH. DRAWINGS
- EXHAUST ROUND AIR DUCT. REFER TO MECH. DRAWINGS
- MECH. UNIT. REFER TO MECH. DRAWINGS.
- RE-ROOF ALL AROUND NEW MECH. UNIT CURB. PATCH AND MAKE GOOD TO MATCH EXISTING.
- EXISTING RTU LOCATIONS.
- SERVICE STAIR FOR MECH. UNIT. REFER TO STRUC. DRAWINGS.
- STEEL BEAM SUPPORT FOR SERVICE STAIR & MECH. UNIT. REFER TO STRUC. DRAWINGS.
- HSS POST, TYPICAL OF 2. REFER TO STRUC. DRAWINGS.



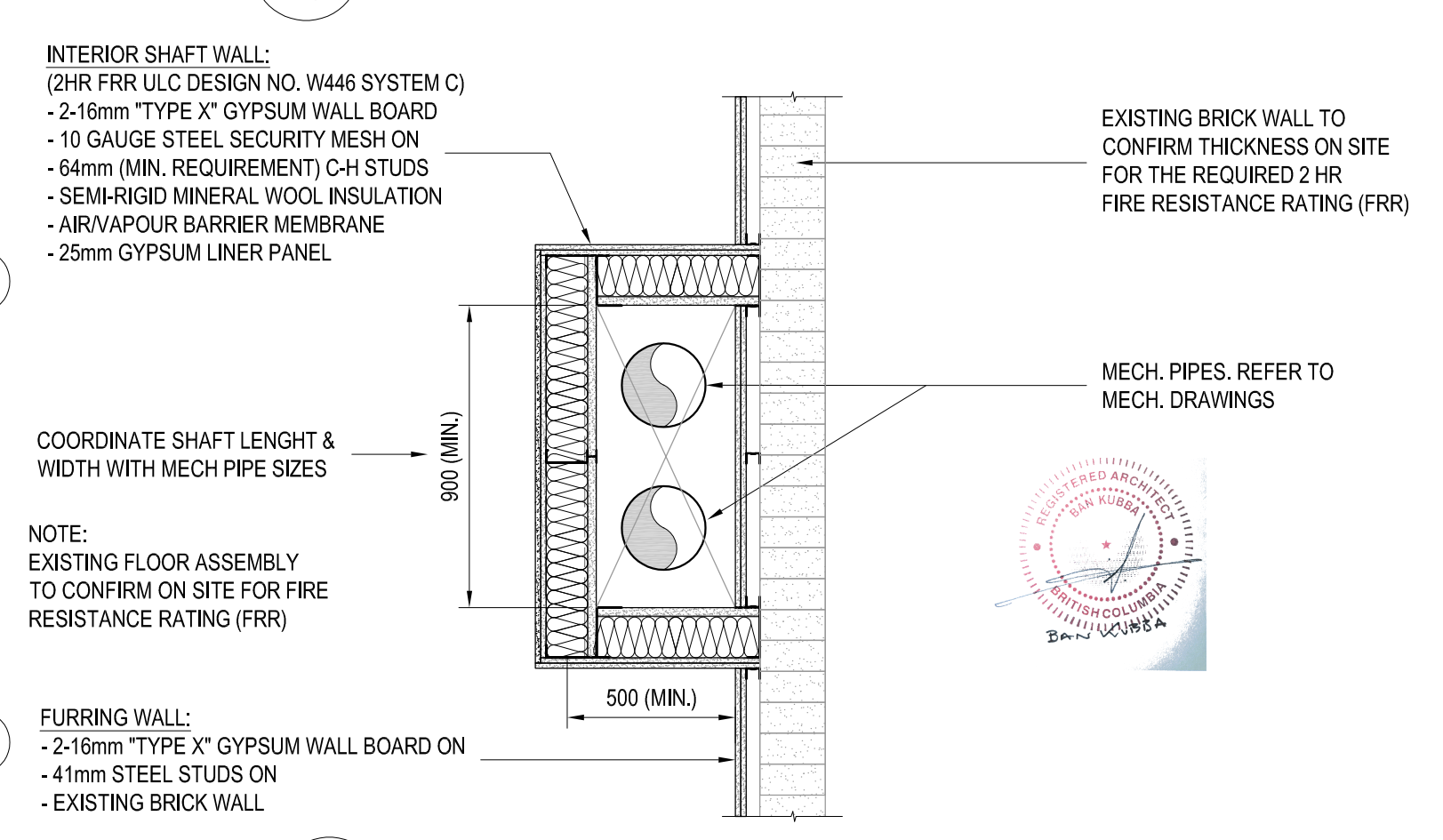
TYP. STEEL COLUMN SUPPORT FOR MECH. UNIT
SCALE: 1:10



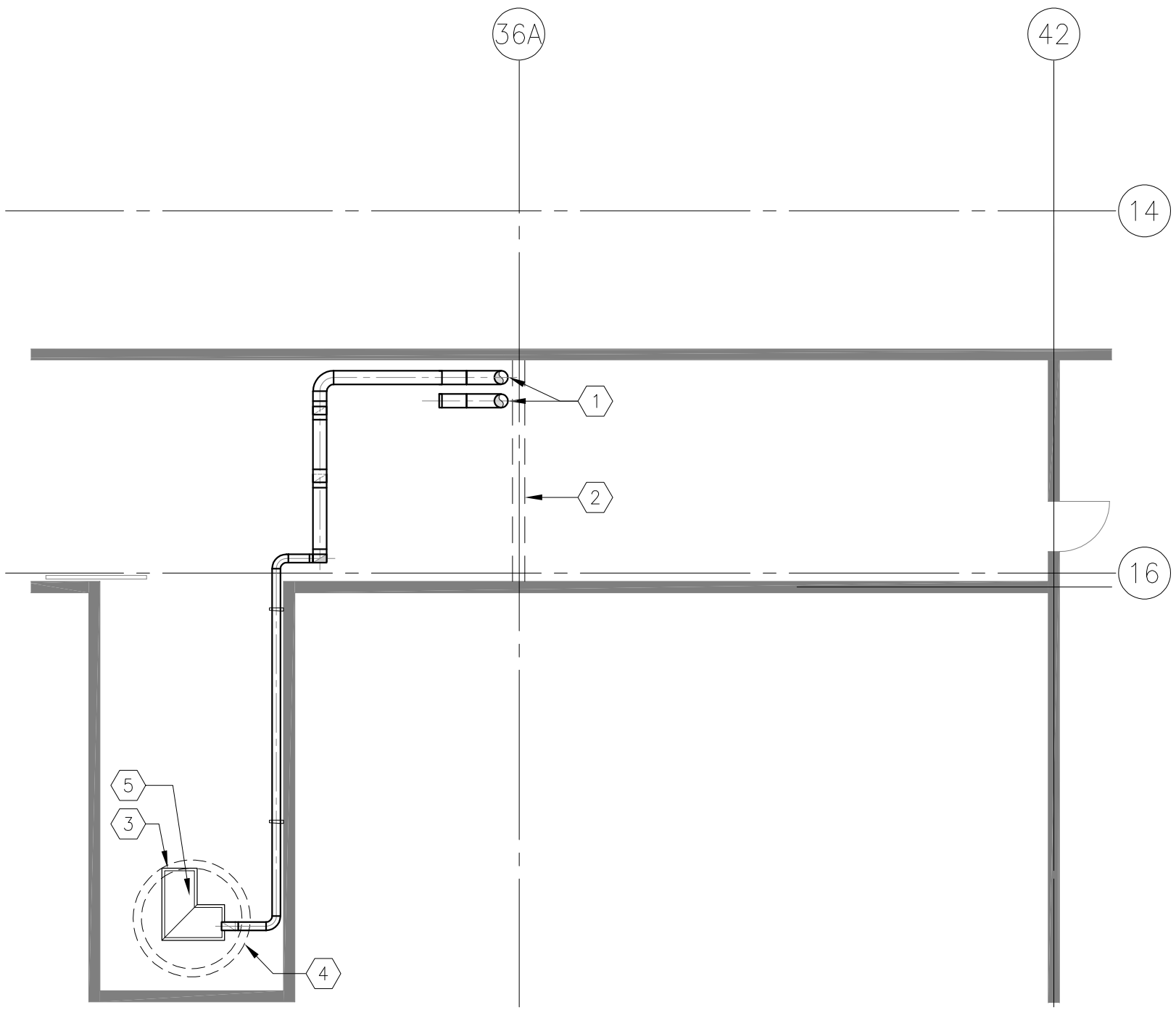
EXTERIOR MECH SHAFT SECTION DETAIL
SCALE: 1:20



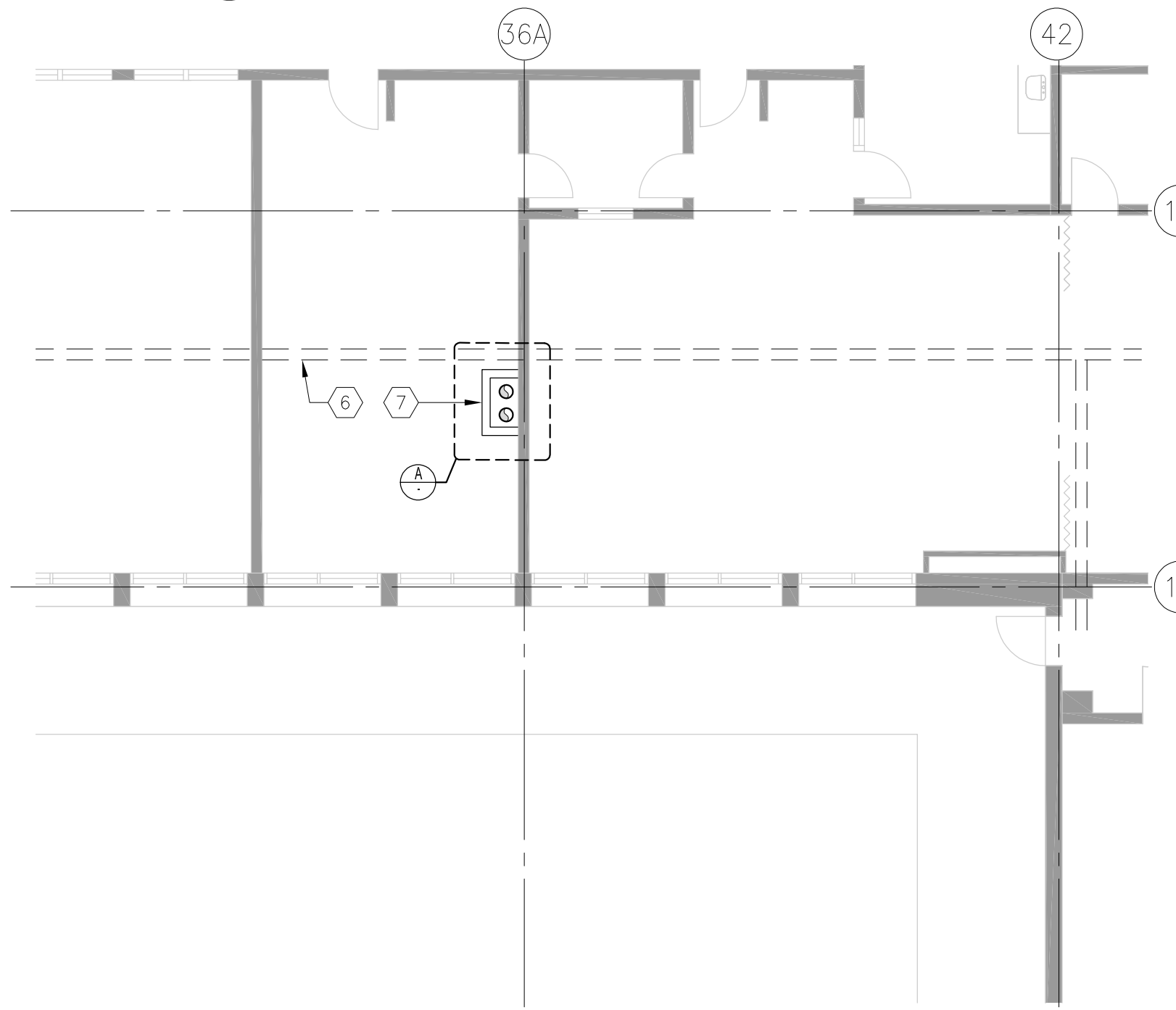
EXTERIOR MECH SHAFT PLAN DETAIL
SCALE: 1:20



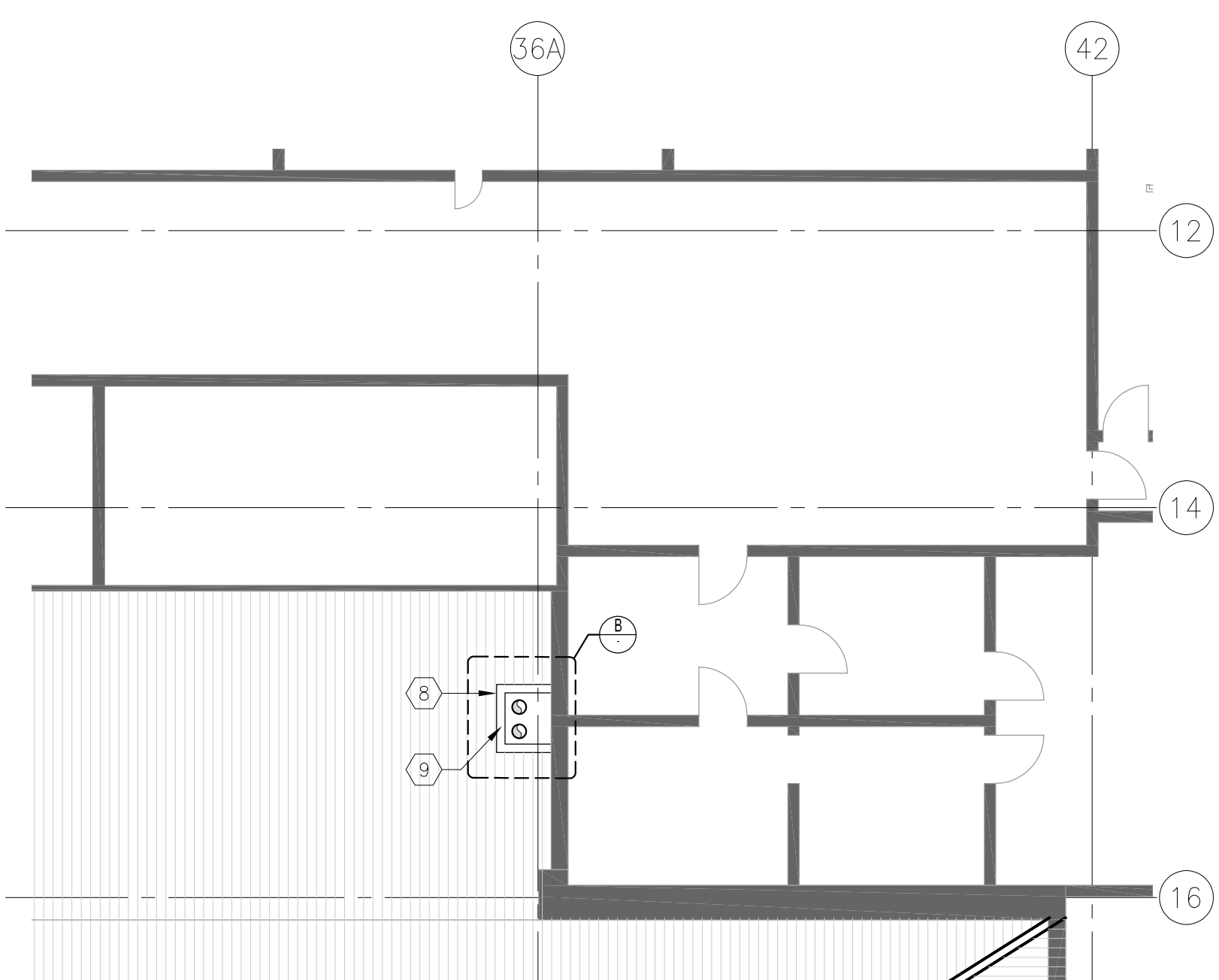
INTERIOR MECH SHAFT PLAN DETAIL
SCALE: 1:20



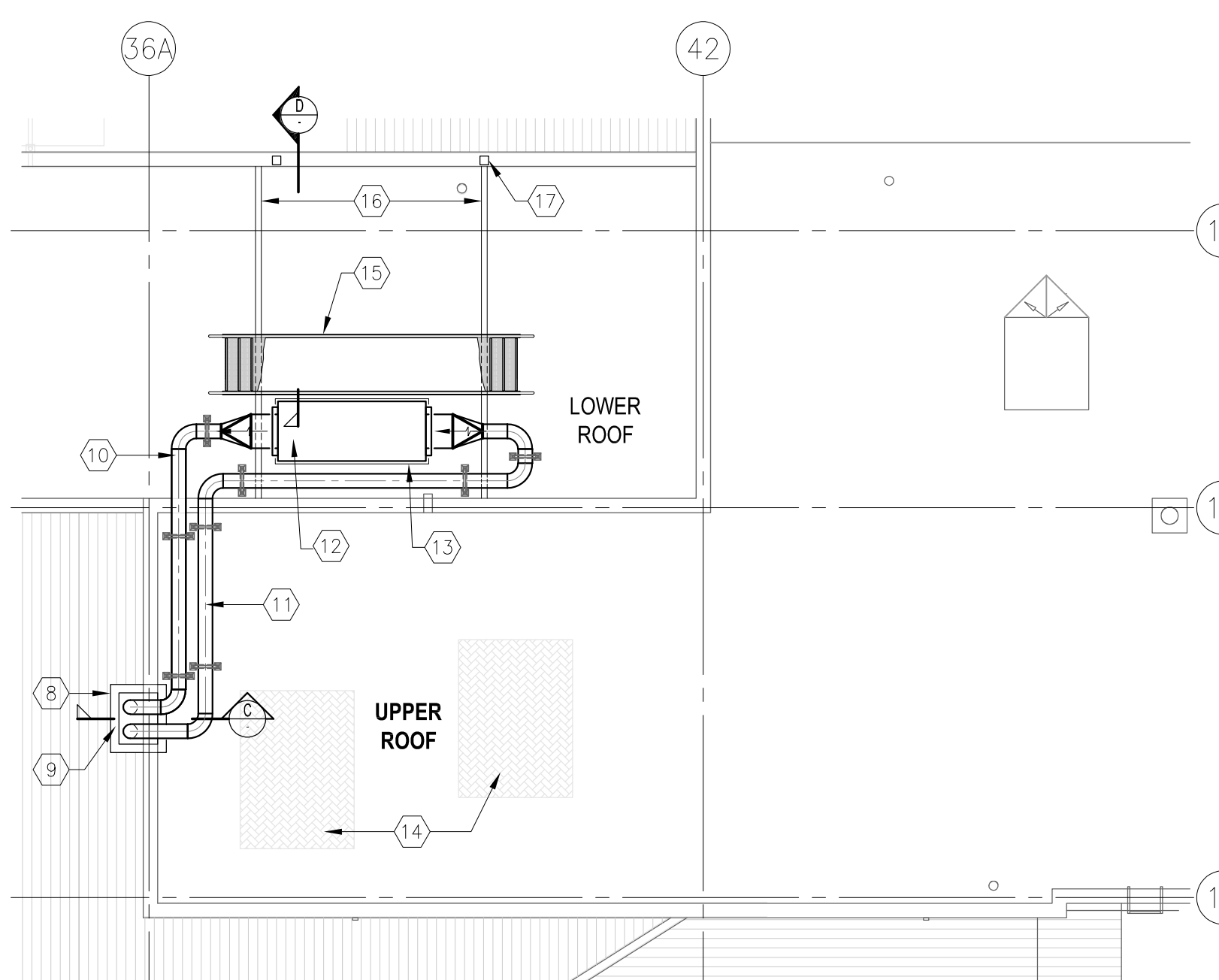
PARTIAL TUNNEL FLOOR PLAN
SCALE: 1:100



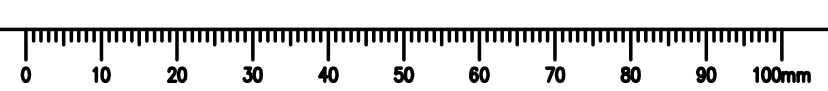
PARTIAL GROUND FLOOR PLAN AT CHAPEL
SCALE: 1:100



PARTIAL GROUND FLOOR PLAN AT CHAPEL ROOF
SCALE: 1:100



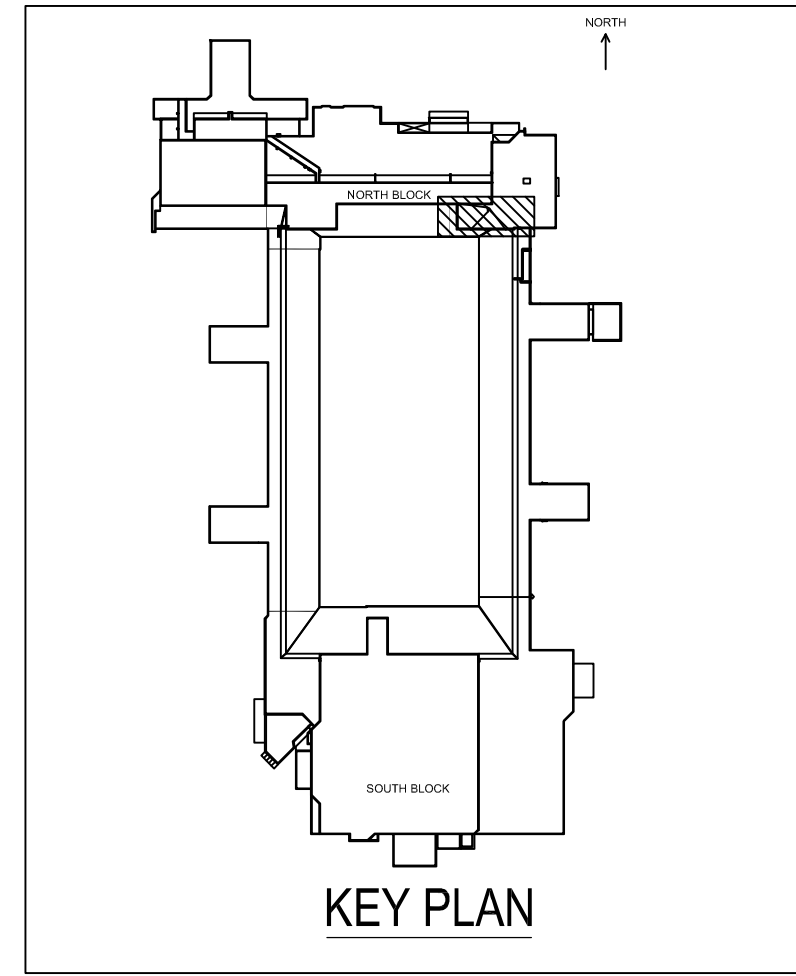
PARTIAL UPPER ROOF PLAN
SCALE: 1:100



CONSULTANTS:



PROJECT #181-06918-05



Revision/Revisions	Description/Description	Date/Date
4	ISSUED FOR TENDER	2021.07.14
3	RE-ISSUED FOR 99% CD	2021.05.10
2	ISSUED FOR 99%	2021.03.16
1	ISSUED FOR 66%	2021.01.22

Client/client

CORRECTIONAL SERVICE CANADA

Project title/Titre du projet
AGASSIZ, BC KENT MAXIMUM SECURITY INSTITUTION

MECHANICAL SYSTEM UPGRADE - TUNNEL EXHAUST AND VENTILATION SYSTEM UPGRADE

Consultant Signature Box Only

Designed by/Concept par
RM

Drawn by/Dessiné par
PB

PWGSC Project Manager/Administrateur de Projets TPSGC
TONY TANG

PWGSC, Regional Manager, Architectural and Engineering Services/
Gestionnaire régional, services d'architecture et de génie, TPSGC
PREETIPAL PAUL

Drawing title/Titre du dessin

GENERAL NOTES, PLANS, SECTIONS & DETAILS

Project No./No. du projet	Sheet/Feuille	Revision no./La Révision no.
R.106216.001	S1-01	4

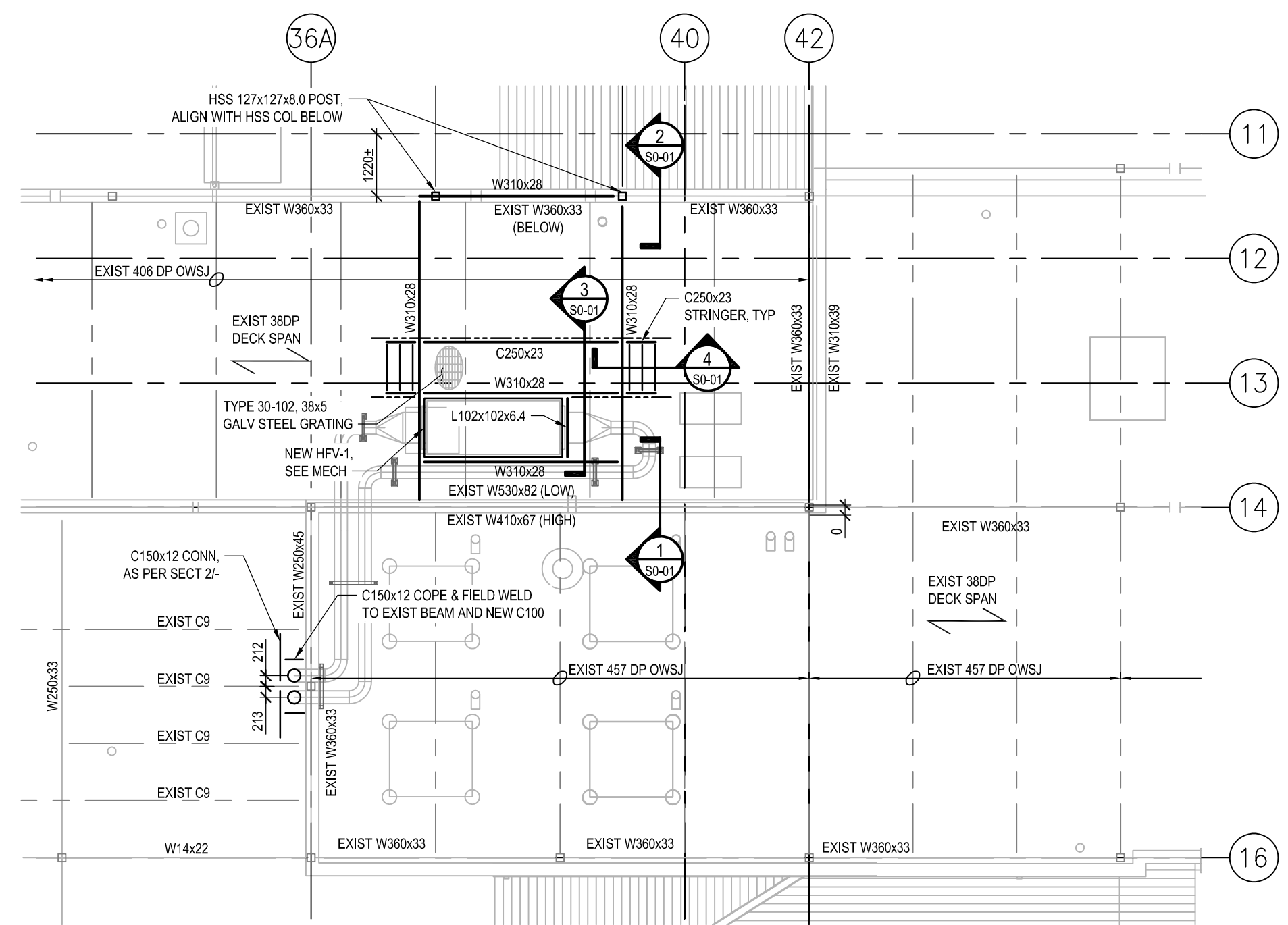
GENERAL NOTES

- PRIOR TO CONSTRUCTION, REVIEW STRUCTURAL DRAWINGS IN CONJUNCTION WITH DRAWINGS PROVIDED BY ALL OTHER CONSULTANTS. CONFIRM ALL DIMENSIONS, ELEVATIONS AND HEADROOM CLEARANCES, AND COORDINATE ALL OPENINGS, SLEEVES AND EMBEDDED ITEMS.
- REPORT ANY DISCREPANCIES OR CONFLICTS BEFORE PROCEEDING WITH THE WORK.
- DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION FROM DEPARTMENTAL REPRESENTATIVE.
- EXISTING STRUCTURAL INFORMATION IS BASED UPON DRAWINGS PREPARED BY CHOULALOS, WOODBURN, MCKENZIE, MARANDA LTD DATED OCTOBER 4, 1976.
- VERIFY EXISTING DIMENSIONS AND CONDITIONS ON SITE PRIOR TO CONSTRUCTION.
- DO NOT SCALE THESE DRAWINGS.
- DRAWINGS SHOW COMPLETED STRUCTURE ONLY. THEY DO NOT SHOW TEMPORARY WORKS FOR WHICH THE CONTRACTOR IS RESPONSIBLE AND WHICH MAY BE REQUIRED FOR EXECUTION OF THE PROJECT, INCLUDING TEMPORARY SHORING, BRACING, GUYS AND TIE DOWNS. THE CONTRACTOR TO ESTABLISH CONSTRUCTION PROCEDURE AND SEQUENCE TO ENSURE SAFETY OF THE WHOLE STRUCTURE AND ALL ITS COMPONENTS DURING ERECTION.
- DESIGN OF ALL TEMPORARY WORKS TO BE CARRIED OUT BY A PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED IN THE PLACE WHERE THE PROJECT IS LOCATED.
- ANCHOR BOLTS AND OTHER EMBEDDED ITEMS ARE DESIGNED FOR LOADS ACTING ON THE COMPLETED STRUCTURE ONLY AND ARE NOT TO BE USED OR RELIED UPON FOR TEMPORARY SUPPORT OR BRACING DURING ERECTION UNLESS REVIEWED AND APPROVED BY THE CONTRACTOR'S ENGINEER RESPONSIBLE FOR THE ERECTION PROCEDURES.
- STEEL FRAMES AND ANCHOR BOLTS LOCATED OUTSIDE THE BUILDING TO BE HOT DIP GALVANIZED.
- CONSTRUCTION LOADS ON COMPLETED STRUCTURE NOT TO EXCEED DESIGN LOADS INDICATED ON DRAWINGS. FULL DESIGN LOADS MAY ONLY BE APPLIED AFTER THE CONCRETE REACHES ITS DESIGN STRENGTH.
- STRUCTURAL UPGRADING OF THE EXISTING BUILDING IS TO THE GENERAL INTENT OF NATIONAL BUILDING CODE (NBC), SUPPLEMENTED BY THE USER'S GUIDE - NBC 2010 STRUCTURAL COMMENTARIES. THE UPGRADING IS LIMITED TO THE AREA(S) SHOWN ON THESE DRAWINGS. FOR THE REMAINDER OF THE EXISTING BUILDING, THE CURRENT PERFORMANCE LEVEL IS MAINTAINED AND SEISMIC OR OTHER STRUCTURAL EVALUATION AND UPGRADING (INCLUDING UPGRADING TO CARRY GRAVITY LOADS) IS NOT INCLUDED IN THE SCOPE OF THE PROJECT. DEPARTMENTAL REPRESENTATIVE ACCEPTS NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THE REMAINDER OF THE EXISTING BUILDING (WHICH REMAINS THE RESPONSIBILITY OF THE ORIGINAL STRUCTURAL ENGINEER), NOR FOR POSSIBLE DETRIMENTAL SEISMIC OR OTHER EFFECTS THE REMAINDER OF THE BUILDING MAY HAVE ON THE RENOVATED AREA(S).
- BASED ON THE USE AND OCCUPANCY, THE BUILDING IS DESIGNED TO THE REQUIREMENTS OF A NORMAL IMPORTANCE CATEGORY.
- SELF WEIGHT (SWT) IS DUE TO THE WEIGHT OF THE STRUCTURE ITSELF, IT VARIES WITH THE STRUCTURAL SYSTEM, AND INCLUDES CONCRETE TOPPING ON STEEL DECK.
- SUPERIMPOSED DEAD LOADS (SDL) ARE NON-STRUCTURAL DEAD LOADS DUE TO NON-STRUCTURAL TOPPING, FINISHES, PARTITIONS, ROOFING MATERIALS, SUSPENDED EQUIPMENT, PAVERS, SOIL, ETC.
- DEAD LOAD (DL) IS THE SELF WEIGHT OF THE STRUCTURE PLUS THE SUPERIMPOSED DEAD LOAD.
- IF ONLY ONE VALUE IS GIVEN FOR A POINT LOAD, CONSIDER IT LIVE LOAD.
- FOR CONNECTION LOADS, '+' SIGN INDICATES TENSION AND '-' SIGN INDICATES COMPRESSION, EXCEPT FOR COLUMN LOADS WHERE '+' SIGN INDICATES COMPRESSION AND '-' SIGN INDICATES TENSION.
- ROOF SNOW LOAD PER EXISTING DRAWINGS:
MINIMUM UNFACTORED SNOW LOAD = 2.3 kPa
- WIND LOAD PER EXISTING DRAWINGS:
MINIMUM UNFACTORED WIND LOAD = 1.8 kPa
- DESIGN LOADS AS PER EXISTING DRAWINGS ARE AS FOLLOWS:

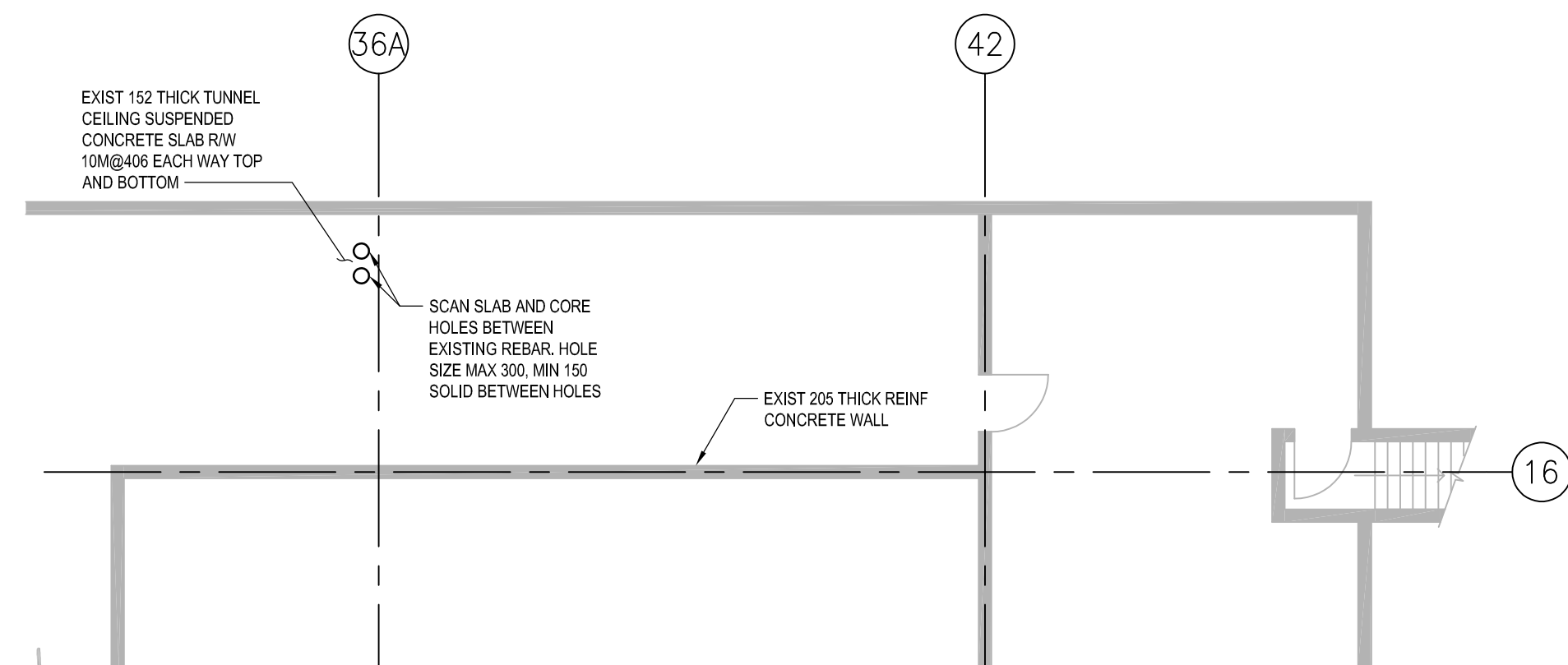
LOCATION	LL
2ND FLOOR OFFICE	3.8 kPa
LIVING UNITS - CELLS	1.9 kPa
LIVING UNITS - GENERAL	4.8 kPa
OBSERVATION GALLERY	2.4 kPa
SHOPS	29.7 kPa
MECHANICAL ROOMS	4.8 kPa

- SEISMIC DATA USED FOR DESIGN OF MECHANICAL UNIT SUPPORTS PER 2015 NBC FOR THE SPECIFIC LOCATION OF AGASSIZ:

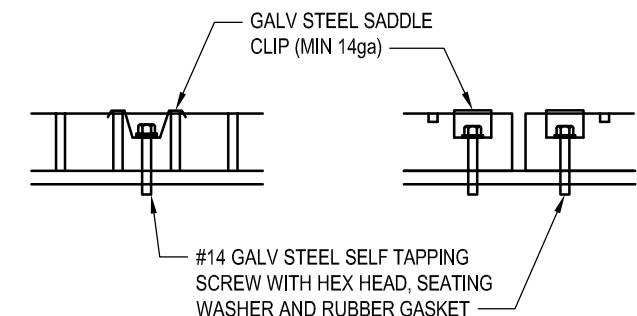
Sa(0.2) = 0.457	PGA = 0.206
Sa(0.5) = 0.384	PGV = 0.306
Sa(1.0) = 0.244	SITE CLASSIFICATION = D (ASSUMED)
Sa(2.0) = 0.157	Ie = 1.0
Sa(5.0) = 0.057	
Sa(10.0) = 0.020	



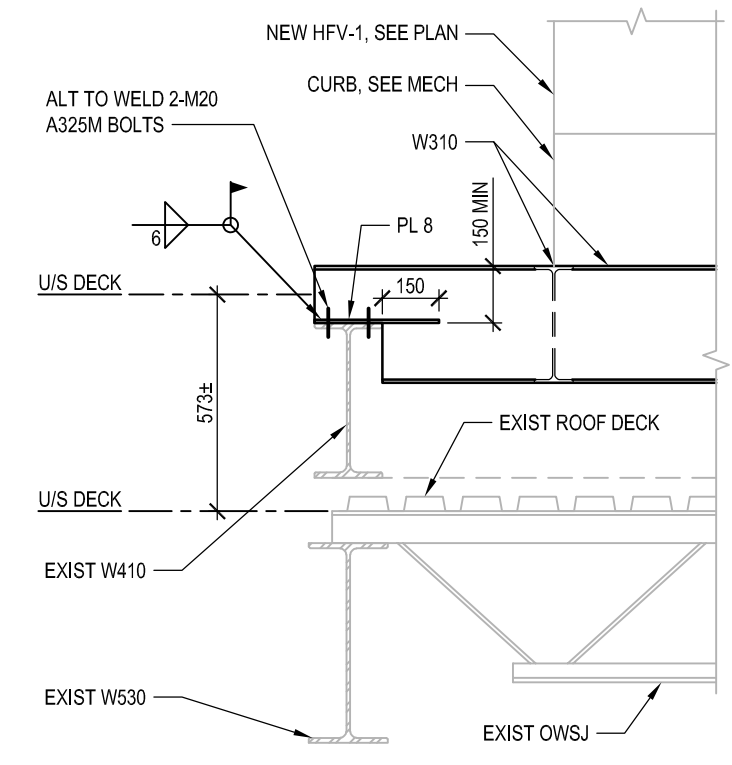
NEW EXHAUST & VENTILATION DUCT AND FANS - ROOF LEVEL
SCALE: 1:100



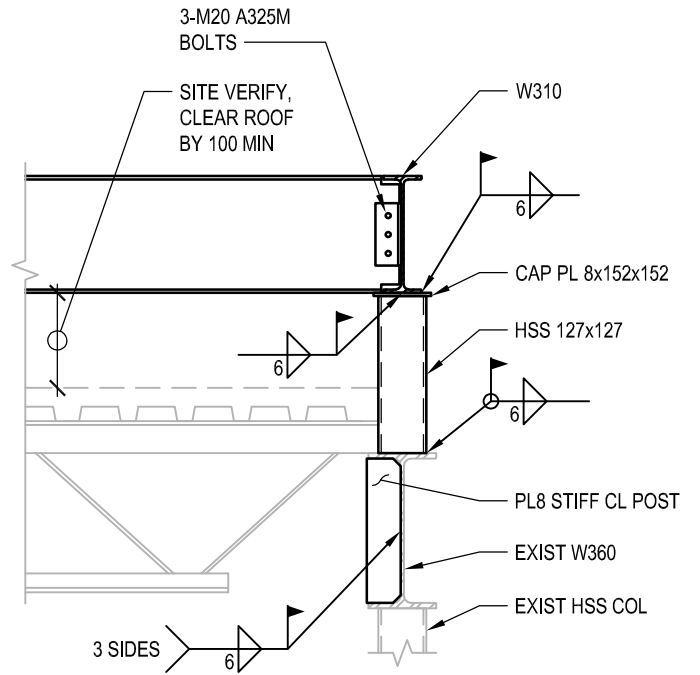
NEW EXHAUST & VENTILATION DUCT - TUNNEL LEVEL
SCALE: 1:100



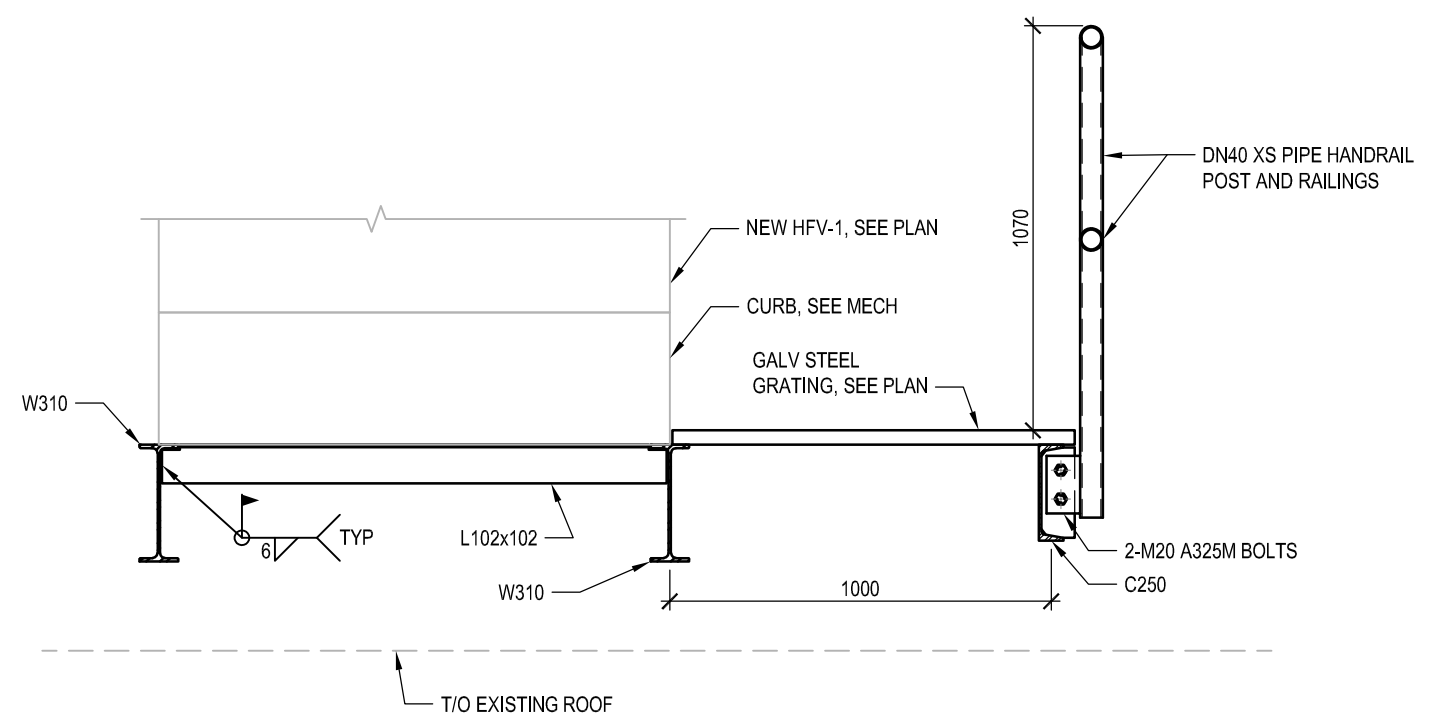
5 STEEL GRATING FASTENING
SCALE: 1:5



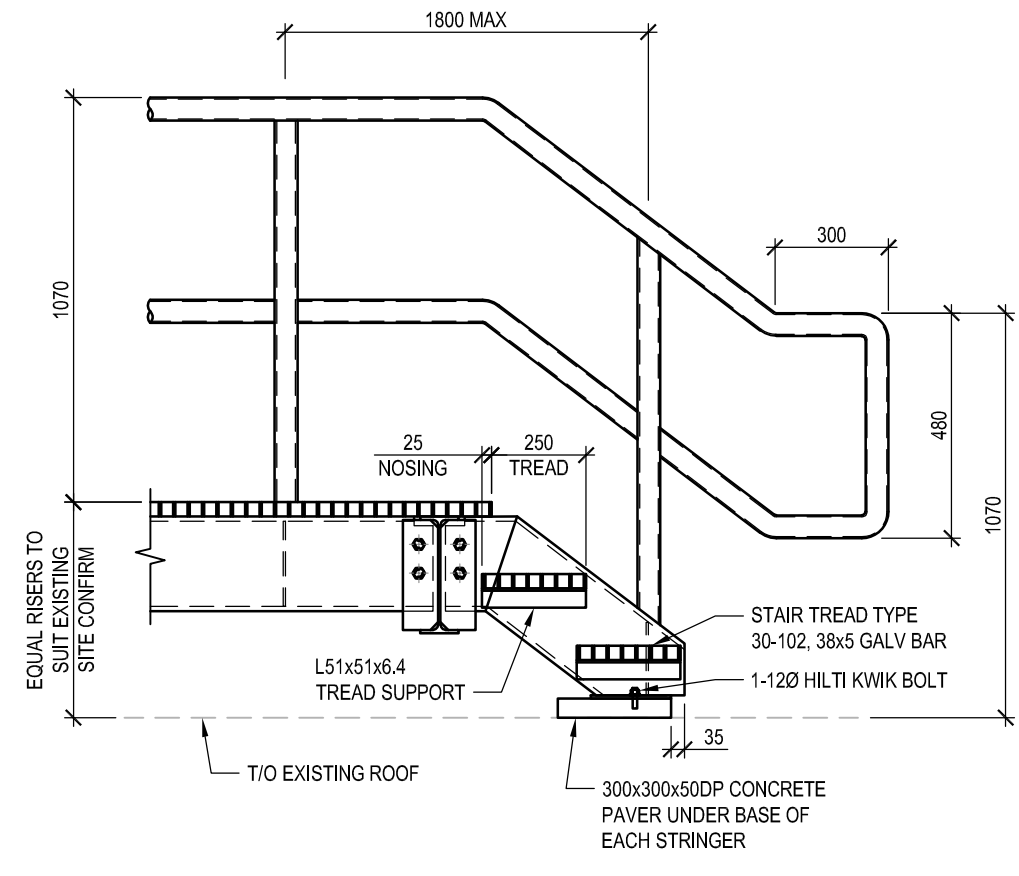
1 SECTION
SCALE: 1:20



2 SECTION
SCALE: 1:20



3 SECTION
SCALE: 1:20



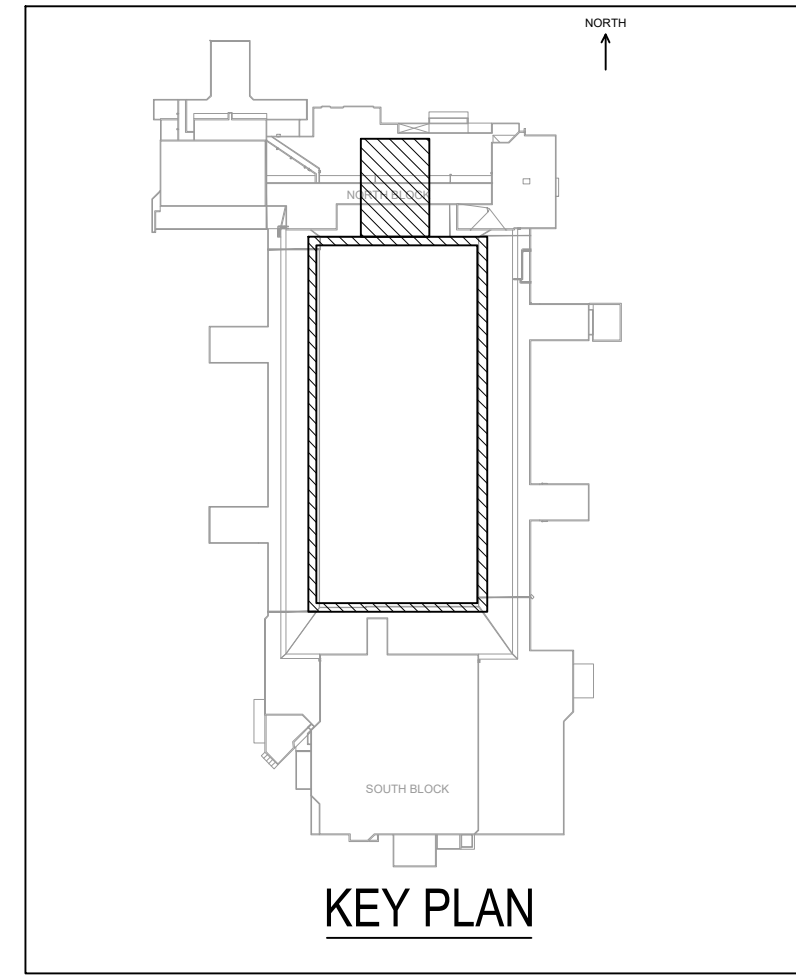
4 SECTION
SCALE: 1:20

NOTE:
ALL STEEL INCLUDING BOLTS AND WASHERS TO BE HOT DIP GALVANIZED. TOUCH UP FIELD WELDS WITH ZINC RICH PAINT: ZINGA OR GALVICON OR APPROVED EQUIVALENT.

CONSULTANTS:



PROJECT #181-06918-05



4	ISSUED FOR TENDER	2021.07.14
3	RE-ISSUED FOR 99% CD	2021.05.10
2	ISSUED FOR 99%	2021.03.15
1	ISSUED FOR 66%	2021.01.22
Revision/	Description/Description	Date/Date
Revision		

CORRECTIONAL SERVICE CANADA

AGASSIZ, BC KENT MAXIMUM SECURITY INSTITUTION

MECHANICAL SYSTEM UPGRADE - TUNNEL EXHAUST AND VENTILATION SYSTEM UPGRADE

Consultant Signature Box Only

Designed by/Concept par
ALEX G

Drawn by/Dessine par
THANG C

PWGSC Project Manager/Administrateur de Projets TPSGC
TONY TANG

PWGSC, Regional Manager, Architectural and Engineering Services/
Gestionnaire régional, services d'architectural et de génie, TPSGC
PREETIPAL PAUL

Drawing title/Titre du dessin

ELECTRICAL FLOOR AND ROOF PLAN, DRAWING LIST, LEGEND, PARTIAL SLD, ELEVATION AND SCHEDULE

Project No./No. du projet R.106216.001	Sheet/Feuille E0-01	Revision no./ La Révision no. 4
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SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	15/20A RECEPTACLE
	DUPLEX RECEPTACLE SPLIT CIRCUIT
	DUPLEX RECEPTACLE ISOLATED GROUND
	SPECIAL PURPOSE OUTLET (HARD WIRED)
	SMOKE DETECTOR - IONIZATION TYPE
	SMOKE DETECTOR C/W RELAY CONTACT
	MOTOR STARTER - MAGNETIC
	MOTOR STARTER - MANUAL
	MOTOR
	FUSED DISCONNECT SWITCH UNLESS NOTED OTHERWISE
	MECHANICAL EQUIPMENT IDENTIFICATION TAG
	JUNCTION BOX
	PANELBOARD
	ELECTRIC RELAY PANEL
	THERMOSTAT
	BASEBOARD OR RADIANT HEATER
	CONDUIT ONLY
	INDICATES DEVICE IS WEATHER PROOF
	INDICATES DEVICE IS EXPLOSION PROOF
	EXISTING DEVICE TO REMAIN
	EXISTING DEVICE TO BE REMOVED
	EXISTING DEVICE TO BE RELOCATED

DRAWING LIST	
ELECTRICAL	E0-01 ELECTRICAL FLOOR AND ROOF PLAN, DRAWING LIST, LEGEND, PARTIAL SLD, ELEVATION AND SCHEDULE

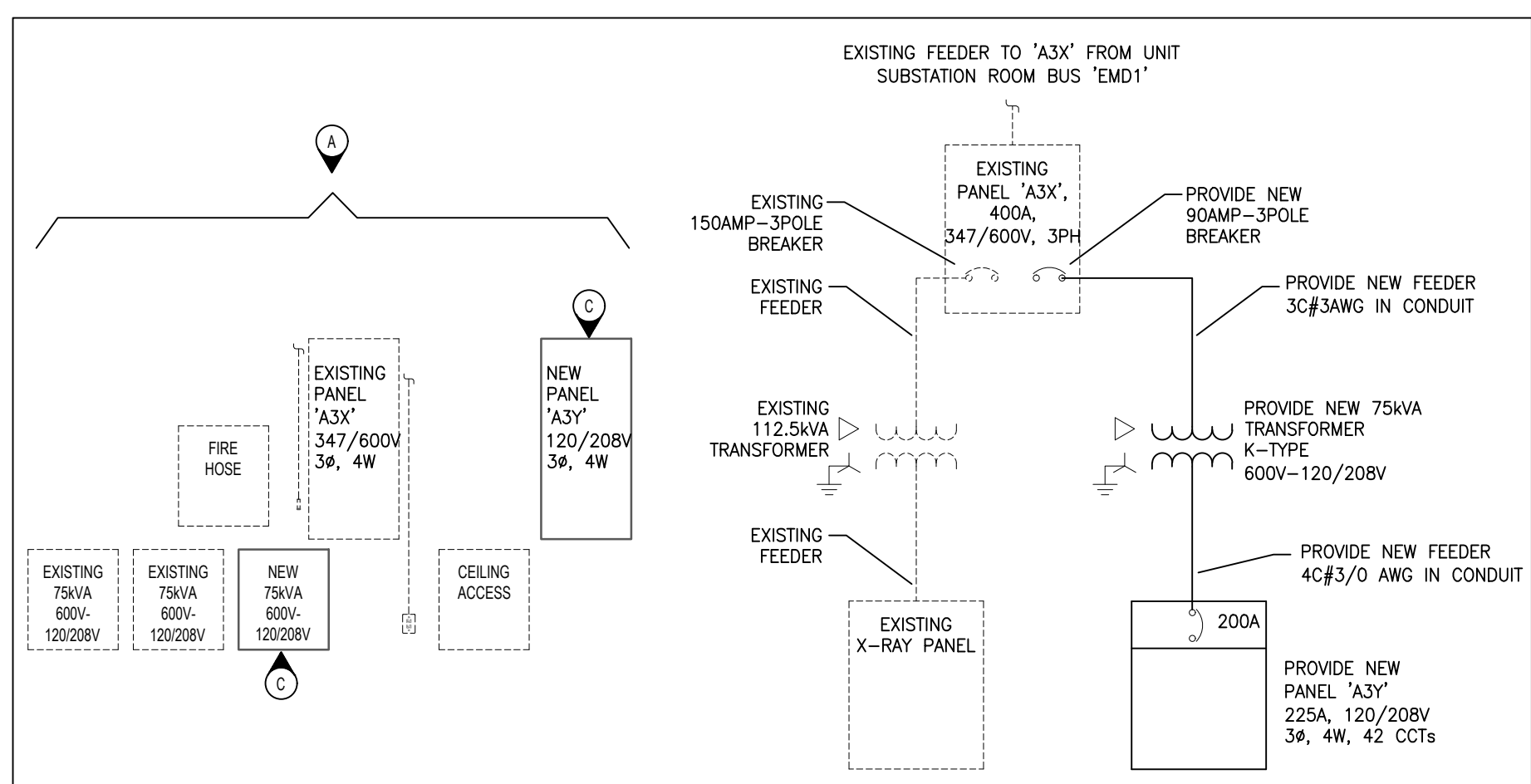
MECHANICAL MOTORLIST																										
EQUIPMENT	QTY	DESCRIPTION	LOCATION	LOAD						CABLE/CONDUIT			DEVICE			STARTER			DISC. SW.			CONTROL				
				HP	kW	F.L.A.	MCA	MOP	KVA	Volts	Ph.	Supply	Install	Connect	Supply	Install	Connect	Type	Supply	Install	Connect	Supply	Install	Connect	Type	
ENERGY RECOVERY VENTILATION SCHEDULE																										
HRV-1	1	HEAT RECOVERY VENTILATION	ROOF		12KW		42.5	45		208	3	3c#8AWG + BOND in 27mm	M	M	E	M	M	E	IN-BUILT	E	E	E	M	M	M	
		ELECTRIC COIL OF HRV			8KW	22.2				208	3															
		SUPPLY FAN OF HRV			5.9					208	3															
		EXHAUST FAN OF HRV			5.9					208	3															
TRANSFER FAN																										
SF-N5		TUNNEL	TUNNEL		1/25HP					120	1	2c#12AWG+Gin 27mm	M	M	E	M	M	E	IN-BUILT	E	E	E	M	M	M	
SF-N6		TUNNEL	TUNNEL		1/25HP					120	1	2c#12AWG+Gin 27mm	M	M	E	M	M	E	IN-BUILT	E	E	E	M	M	M	
SF-S3		TUNNEL	TUNNEL		1/25HP					120	1	2c#12AWG+Gin 27mm	M	M	E	M	M	E	IN-BUILT	E	E	E	M	M	M	
SF-S4		TUNNEL	TUNNEL		1/25HP					120	1	2c#12AWG+Gin 27mm	M	M	E	M	M	E	IN-BUILT	E	E	E	M	M	M	

DEFINITIONS:
 TC=TIME CLOCK
 MAN= MANUAL STARTER
 MAG= MAGNETIC STARTER C/W AUX STATUS CONTACTS
 INT= CONTROL IS INTEGRAL TO UNIT (BY MANUFACTURER)
 SW= WIRED TO SWITCH/STARTER
 RSTAT= REVERSE ACTING THERMOSTAT
 TSTAT= CONTROLLED BY THERMOSTAT
 VFD= VARIABLE FREQUENCY DRIVE

MECHANICAL EQUIPMENT / MOTOR LIST NOTES:
 a. ALL BREAKERS AND FEEDERS MUST BE PROVIDED ACCORDING TO EQUIPMENT DATA SHEET / NAME PLATE. VERIFY ALL INFORMATION PRIOR TO INSTALLATION.
 b. PROVIDE POWER TO HRV ROOFTOP UNIT. PROVIDE NECESSARY WIRING CONNECTIONS BETWEEN HRV, ASSOCIATED FANS, HEATING COIL AS NEEDED. REFER TO MANUFACTURER'S DATA SHEETS.

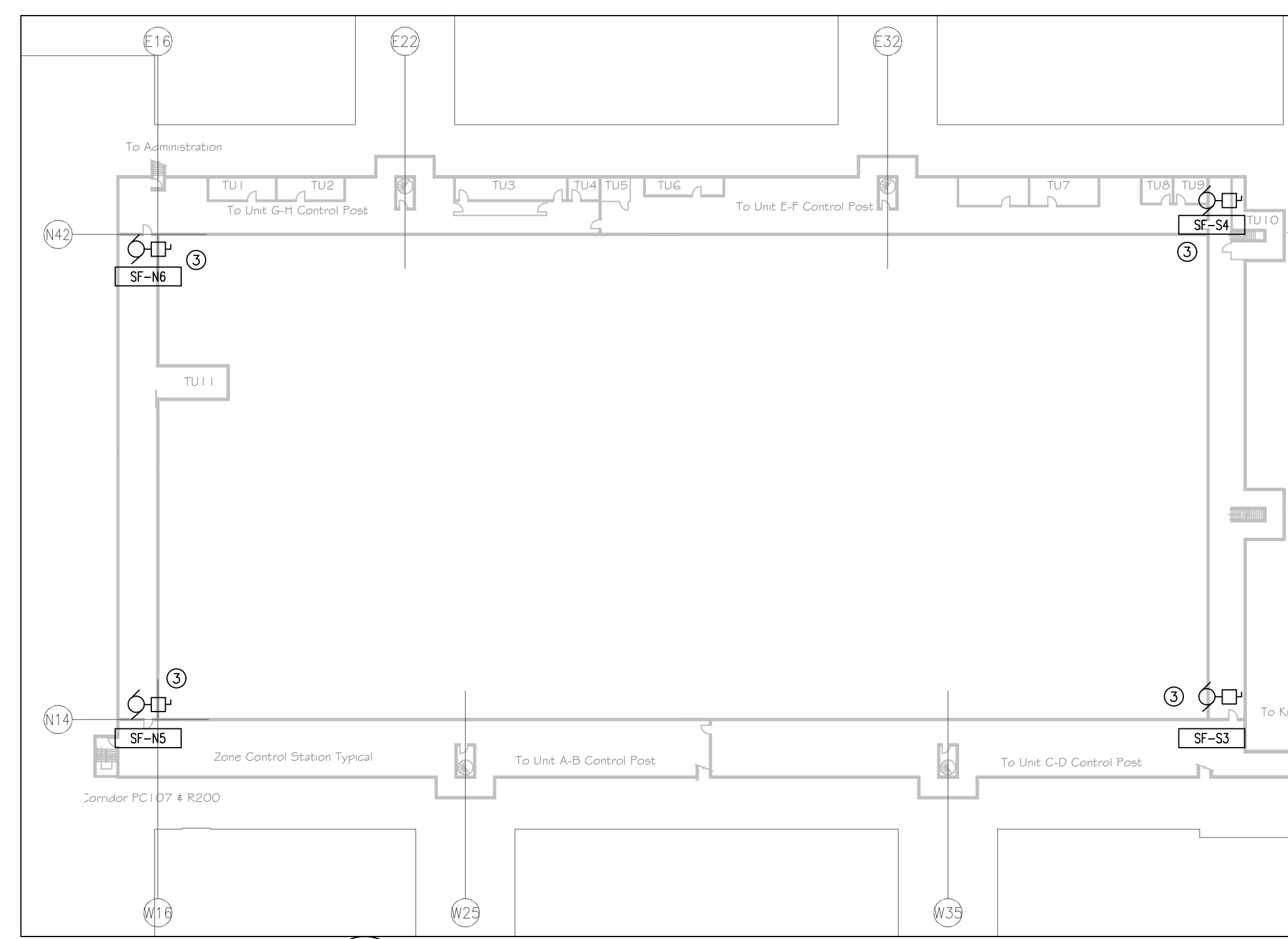
- GENERAL NOTES:**
- EXTEND THE EXISTING CIRCUITS OVER TO THE NEW LOCATION.
 - PROTECT ALL EXISTING DEVICES TO REMAIN.
 - ALL SHUT DOWNS SHALL BE COORDINATED WITH DEPARTMENT REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.
 - PROVIDE APPROPRIATELY RATED FIRESTOP AT ANY LOCATIONS WHERE CABLES PASS THROUGH FIRE RATED STRUCTURES. PROVIDE THE MANUFACTURER'S INFORMATION ON THE FIRESTOPPING MATERIAL BEING USED AND THE APPROPRIATED CUL/UL INSTALLATION DRAWING USED FOR THE INSTALLATION. PROVIDE FIRESTOPPING INFORMATION LABEL NEAR FIRESTOPPED OPENING.
 - ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE, B.C. BUILDING CODE.
 - COORDINATE WITH MECHANICAL DRAWINGS. REFER TO MECHANICALS DRAWINGS FOR ELEVATION AND SECTION DETAILS.
 - PROVIDE NEW PRINTED PANEL SCHEDULE WITH NEW ADDITIONS AS REQUIRED ON EXISTING PANELS.
 - NEW STARTER AND OVERLOAD MUST BE PROPERLY COORDINATED WITH SHOP DRAWINGS.
 - CONTRACTOR MUST SIZE THE GROUNDING PER CEC.
 - CONTRACTOR MUST CONSIDER THE VOLTAGE DROP PER CEC ONCE THE FINAL ROUTE BEEN ESTABLISH.
 - INSPECT AND TEST EXISTING CABLES. CONSULT THE RESULT WITH OWNER AND CONSULTANT. RE-USE THE EXISTING CABLES UPON CONFIRMATION FROM OWNER.
 - ALL DISCONNECT SWITCHES INSTALLED OUTDOORS SHALL BE RATED NEMA 4X.
 - ALL EQUIPMENT LOCATIONS ARE APPROXIMATED ONLY. CONTRACTOR TO VERIFY ALL DISTANCES AND LOCATIONS AT SITE.

- KEY NOTES:**
- NEW MECHANICAL EQUIPMENT ON ROOF, HRV-1. PROVIDE POWER INCLUDING BREAKER AND FEEDER. CONTRACTOR TO ALLOW FOR PENETRATION THROUGH EXISTING OPENING AND RE-SEAL THEM.
 - PROVIDE 1x POWER OUTLET.
 - EXISTING TRANSFER FANS TO BE REPLACED WITH NEW FANS WITH THE SAME ELECTRICAL CHARACTERISTICS. CONTRACTOR TO DISCONNECT EXISTING FEEDERS TO ALLOW FOR REMOVAL OF EXISTING TRANSFER FANS AND RE-CONNECT FEEDERS ONCE NEW FANS ARE INSTALLED. COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT LOCATION. EXTEND FEEDERS AS NEEDED.

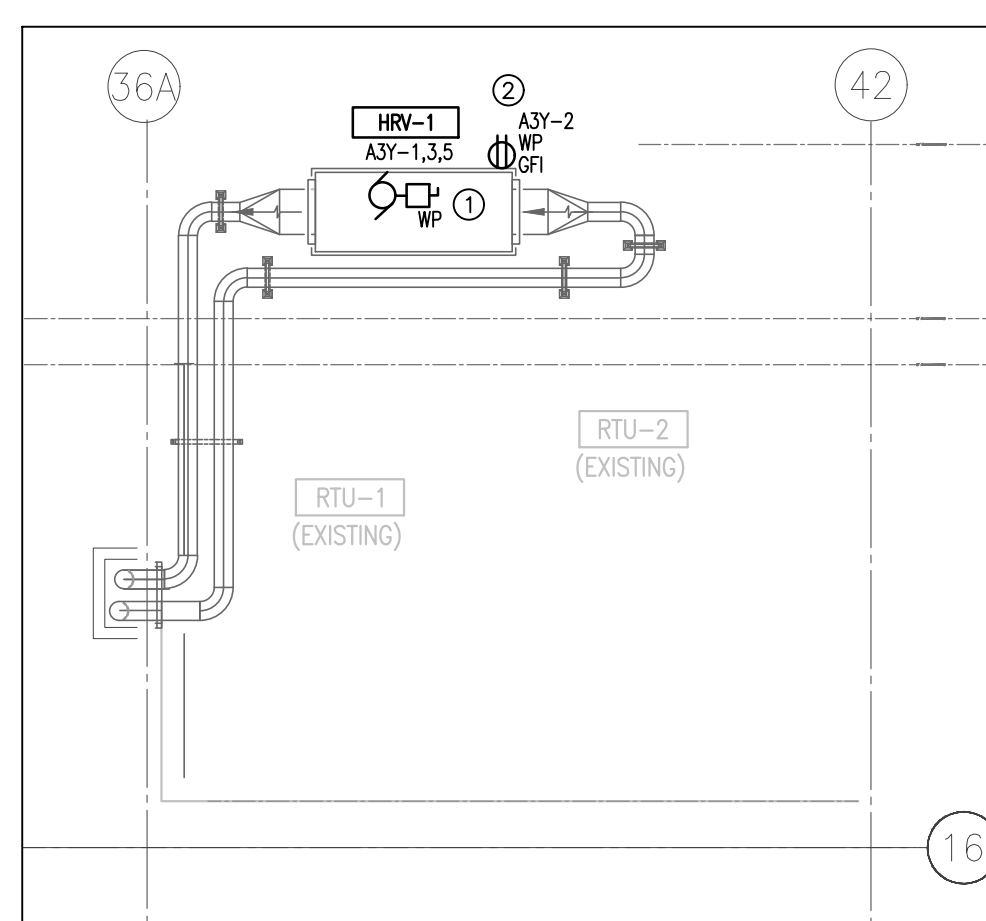


1 ELEVATION VIEW SCALE N.T.S.
2 PARTIAL SINGLE LINE DIAGRAM SCALE N.T.S.

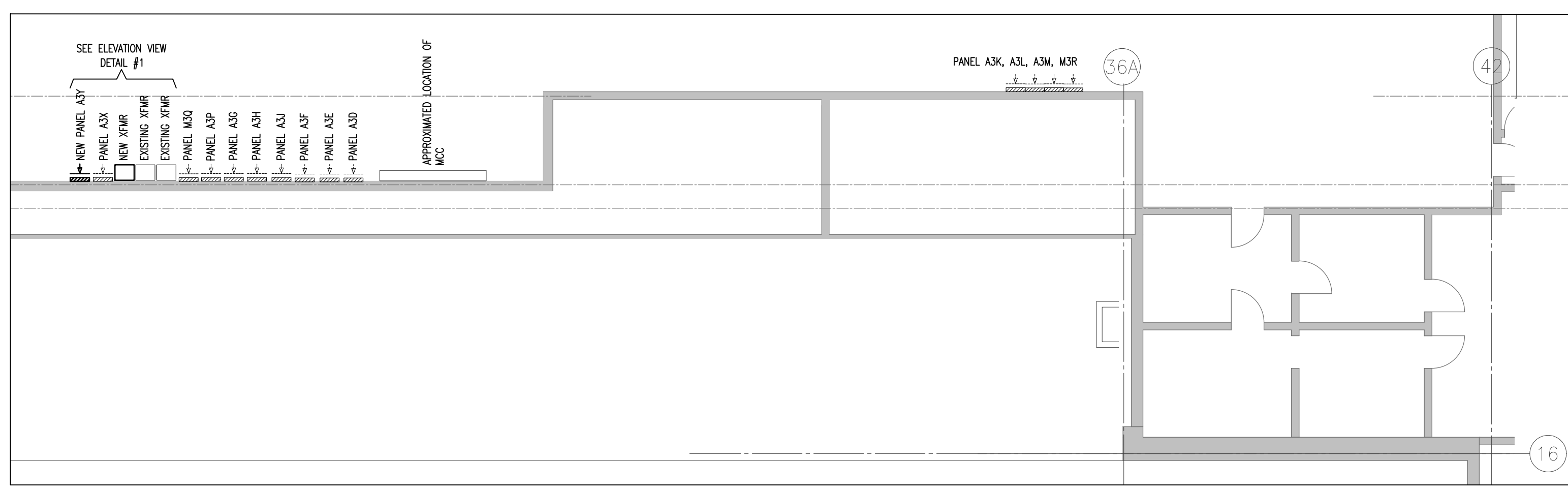
- SLD NOTES:**
- CONTRACTOR TO FIND SPACE FOR NEW TRANSFORMER AND NEW PANELBOARD 'A3Y' TO BE UTILIZED FOR FEEDING NEW HRV-1 UNIT.
 - PROVIDE NEW 75kVA TRANSFORMER TO BE FED FROM EXISTING PANEL 'A3X'. PROVIDE NEW 90A-3POLE BREAKER IN PANEL 'A3Y' AND FEEDERS. PROVIDE NEW PANELBOARD 'A3Y' TO BE 225AMPS, 120/208V, 3PH, 4W C/W 200A MAIN CIRCUIT BREAKER.
 - PROPOSED LOCATIONS OF NEW 75kVA TRANSFORMER AND NEW PANEL 'A3Y'. ALLOW FOR A 100mm (4") CONCRETE HOUSE KEEPING PAD FOR THE TRANSFORMER. LOCATE THE NEW TRANSFORMER AND PANEL WHERE PRACTICAL PER SITE CONDITIONS AND PROVIDE APPROPRIATE LENGTH OF FEEDERS. PROVIDE CLEARANCES AROUND TRANSFORMER PER CEC.



3 TUNNEL FLOOR PLAN SCALE 1:500



4 NEW HRV LOCATION - ROOF LEVEL SCALE 1:100



5 EXISTING PANEL LOCATIONS - NORTH MECHANICAL ROOM PLAN SCALE 1:100



6 PICTURES OF EXISTING PANEL 'A3X' NTS