

1 SITE KEYPLAN
E-001 SCALE: 1:2000

APPROXIMATE LOCATION OF EXISTING COAST GUARD HANGAR DISTRIBUTION PANEL 6PA

LOCATION OF RCMP HANGAR
APPROXIMATE LOCATION OF EXISTING UNDERGROUND HANGAR ELECTRICAL SERVICE

AREA OF WORK
1
E-002

CIVIC ADDRESS	
1 COAST GUARD RD, PRINCE RUPERT, BC V8J 3R1	
CODE LOAD CALCULATION:	
BASIC	
GARAGE AREA (442 sq. m. @ 10W/sq. m.)	= 4,420 W
OFFICE AREA (116 sq. m. @ 50W/sq. m.)	= 5,800 W
MECHANICAL LOADS	
MOTOR (9kW AT 75% DEMAND LOAD)	= 6,750 W
GROUND POWER UNIT	= 20,500 W
WELDER	= 8,500 W
HEAT (6 x 500W @ 75% DEMAND)	= 2,250 W
HOT WATER TANK (3000W @ 75% DEMAND)	= 2,250 W
TOTAL LOAD	= 50,270 W
MIN. MAIN BREAKER @ 600V, 3Ø = $\frac{50,270W}{600V\sqrt{3}} \times 1.25 = 60A$	
FULL GENERATOR STANDBY ALLOWING 0% HEADROOM.	

ANNOTATIONS	
SYMBOL	DESCRIPTION
	REFERENCE NOTE (1 DENOTES SEE NOTE 1)
	NEW EQUIPMENT
	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE REMOVED

SINGLE LINE DIAGRAM SYMBOLS	
SYMBOL	DESCRIPTION
	AUTOMATIC TRANSFER SWITCH WITH DOUBLE BYPASS
	GENERATOR
	MOLDED CASE CIRCUIT BREAKER, "L" WHERE SHOWN, DENOTES DEVICE w/ CURRENT LIMITERS
	BREAKER DISCONNECT SWITCH
	CONTACT - NORMALLY CLOSED
	CONTROL RELAY
	CONTACTOR - AUTOMATIC RESET TYPE
	METER
	BUSBAR
	CONNECTION POINT
	SURGE PROTECTION DEVICE
	PANELBOARD

DRAWING LIST	
DRAWING NUMBER	DRAWING TITLE
E-001	ELECTRICAL LEGEND, SITE KEYPLAN AND GENERAL NOTES
E-002	ELECTRICAL PLAN AND SINGLE LINE DIAGRAM
E-003	ELECTRICAL DETAILS AND SCHEDULE
S-001	STRUCTURAL GENERAL NOTES, SITE PLAN AND TYPICAL GENERATOR PAD DETAIL

POWER SYMBOLS	
SYMBOL	DESCRIPTION
	SINGLE SURFACE MOUNTED / FLUSH MOUNTED PANELBOARD, "PP" DENOTES POWER PANEL, "LP" DENOTES LIGHTING AND POWER PANEL.
	DISCONNECT SWITCH UNLESS NOTED OTHERWISE

SITE SYMBOL	
SYMBOL	DESCRIPTION
	UNDERGROUND SERVICE CONDUCTORS

FIRE ALARM SYMBOLS	
SYMBOL	DESCRIPTION
	FIRE ALARM PULL STATION MOUNTED 4'-0" (1200) ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE NOTED.
	RECESSED OR SURFACE MOUNTED FIRE ALARM CONTROL PANEL.

SECURITY	
SYMBOL	DESCRIPTION
	SECURITY SYSTEM MOTION DETECTOR



SEAL:

#	Description	Y/M/D
0	ISSUED FOR TENDER	2020/10/07

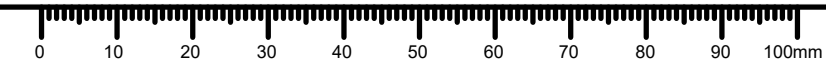
Client / client
ROYAL CANADIAN MOUNTED POLICE

Project title / Titre du projet
PRINCE RUPERT HANGAR GENERATOR UPGRADE

Consultant Approval Box Only
 Designed by / Concept par
 DT/MRO
 Drawn by / Dessiné par
 MASOOD DEZFOOLI
 PWGSC, Project Manager / Administrateur de Projets GRC
 Regional Manager, Architectural and Engineering Services / Gestionnaire régionale, Services d'architecture et de génie.GRC
 FREETIPAL PAUL

Drawing title / Titre du dessin
ELECTRICAL LEGEND, SITE KEYPLAN AND GENERAL NOTES

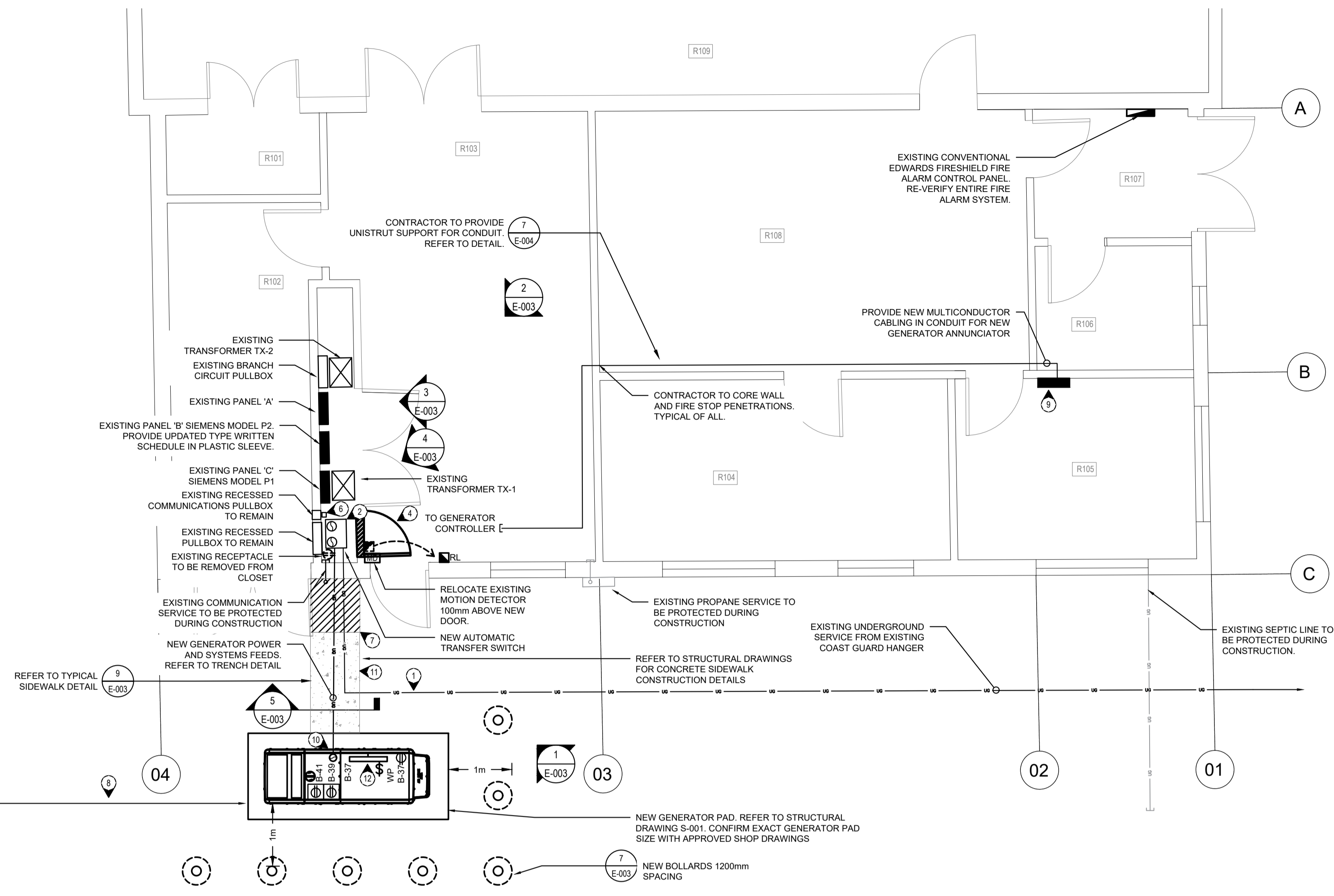
Project No. / No. du projet. R.105637.001	Sheet / Feuille E-001	Revision no. / Revision no. 0
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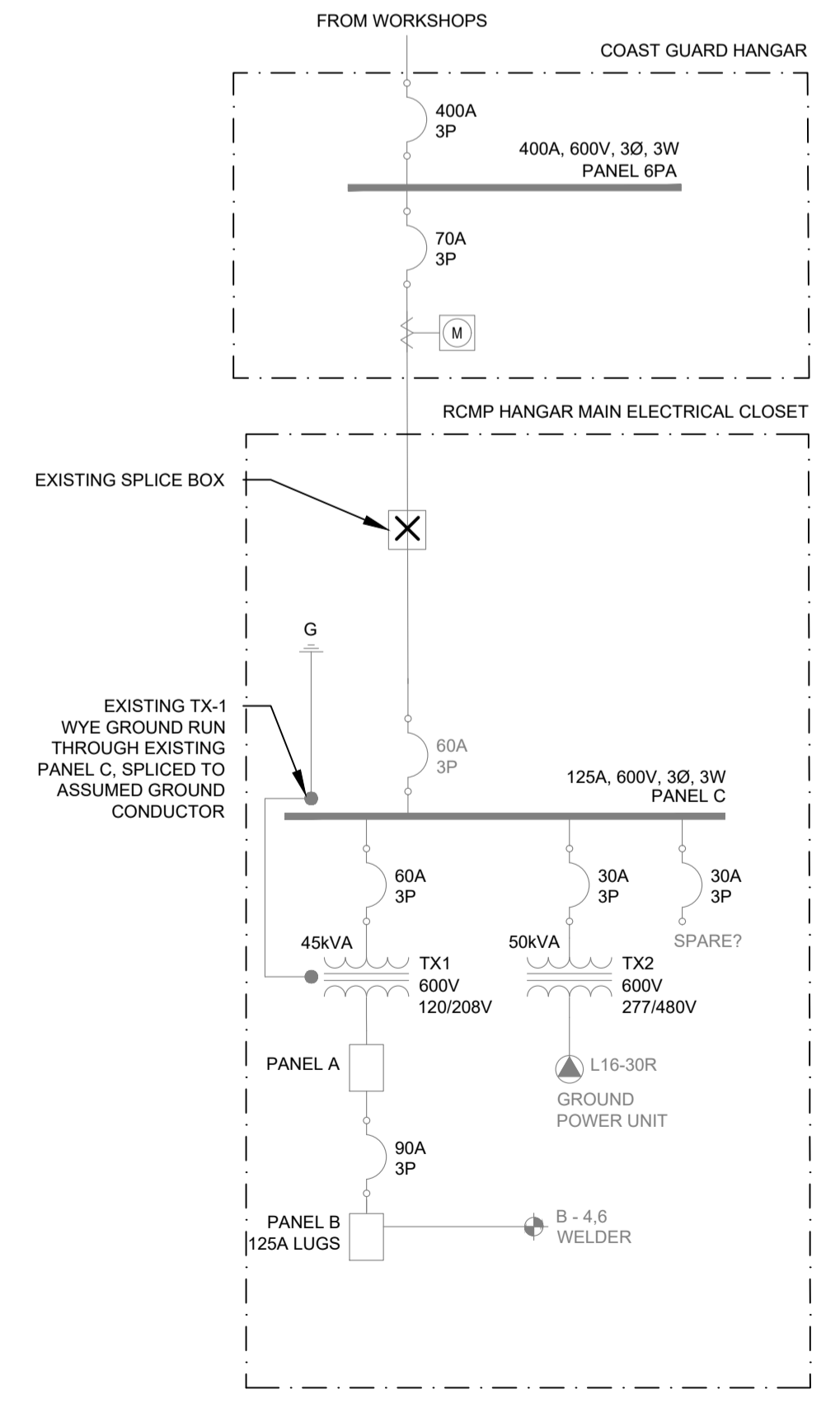


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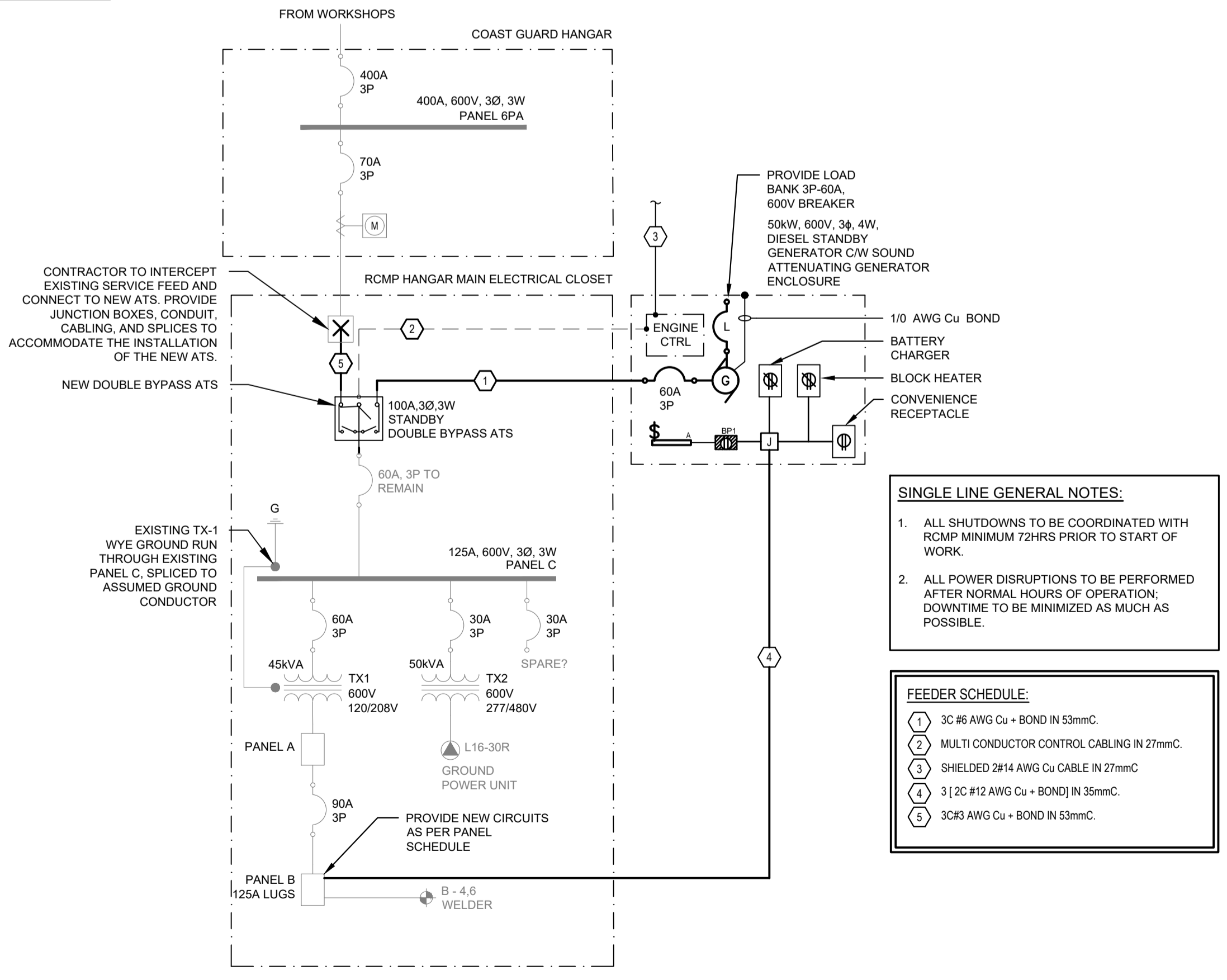
- KEYNOTES:**
- EXISTING UNDERGROUND SERVICE FROM EXISTING COAST GUARD HANGER SHOWN FOR REFERENCE PURPOSES ONLY. EXACT LOCATION OF UNDERGROUND SERVICE TO BE DETERMINED BY CONTRACTOR ON SITE PRIOR TO ANY COMMENCEMENT OF WORK.
 - PROVIDE NEW AUTOMATIC TRANSFER SWITCH MOUNTED WITHIN EXISTING RCMP HANGAR CLOSET ADJACENT TO EXISTING ELECTRICAL PANELS. CONTRACTOR TO ALLOW FOR RELOCATION OF IDC TERMINAL BLOCK AND RECONNECT EQUIPMENT CONNECTED TO IDC TERMINAL BLOCK. CONTRACTOR TO INTERCEPT EXISTING FEED INTO BUILDING AND EXTEND CONNECTION TO NEW TRANSFER SWITCH AS PER SINGLE LINE DIAGRAM ON DRAWING E-002.
 - INSTALL NEW PRIMARY AND SECONDARY CONDUCTORS AS PER SINGLE LINE DIAGRAM.
 - CONTRACTOR TO ALLOW FOR ADDITIONAL DOOR TO BE INSTALLED IN EXISTING CLOSET TO MAINTAIN CLEARANCE OF 1.0m IN FRONT OF ELECTRICAL EQUIPMENT. NEW DOOR TO MATCH EXISTING ON SITE. CONTRACTOR TO SITE INVESTIGATE TO MATCH EXISTING DOOR. CONTRACTOR TO SAW CUT EXISTING WOOD PANEL WALL TO MAKE WAY FOR NEW DOOR AND DISPOSE OF MATERIALS FROM SITE.
 - REMOVED
 - CONTRACTOR TO RELOCATE EXISTING BICS BLOCKS TO MAKE SPACE FOR NEW AUTOMATIC TRANSFER SWITCH.
 - CONTRACTOR TO SAW CUT EXISTING CONCRETE PATHWAY AND HAND DIG NEW CONDUCTOR TRENCH. PROVIDE GROUND PENETRATING RADAR SURVEY TO IDENTIFY ALL BURIED SYSTEMS PRIOR TO STARTING WORK.
 - CONTRACTOR TO CONFIRM MINIMUM WATERWAY SETBACK REQUIREMENTS WITH DFO REPRESENTATIVE PRIOR TO INSTALLATION. REFER TO ENVIRONMENTAL PROCEDURES SPECIFICATION FOR FURTHER REQUIREMENTS.
 - CONTRACTOR TO PROVIDE NEW RECESSED GENERATOR ANNUNCIATOR PANEL IN OPERATION MANAGERS OFFICE. EXACT LOCATION TO BE CONFIRMED WITH END USERS.
 - CONTRACTOR TO COORDINATE LOCATION OF CONDUIT STUB UP WITH GENERATOR ENCLOSURE. ALL CONDUITS TO BE CONCEALED WITHIN ENCLOSURE.
 - CONTRACTOR TO PROVIDE NEW CONCRETE PATHWAY TO NEW GENERATOR ENCLOSURE. PROVIDE BROOM FINISH.
 - CONTRACTOR TO PROVIDE 1" STRIP LIGHT



1 ELECTRICAL PLAN
E-002 SCALE: 1:50



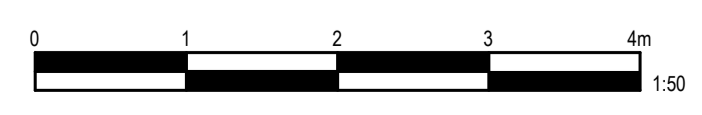
2 SINGLE LINE DIAGRAM (EXISTING)
E-002 SCALE: N.T.S.



3 SINGLE LINE DIAGRAM (NEW)
E-002 SCALE: N.T.S.

- SINGLE LINE GENERAL NOTES:**
- ALL SHUTDOWNS TO BE COORDINATED WITH RCMP MINIMUM 72HRS PRIOR TO START OF WORK.
 - ALL POWER DISRUPTIONS TO BE PERFORMED AFTER NORMAL HOURS OF OPERATION. DOWNTIME TO BE MINIMIZED AS MUCH AS POSSIBLE.

- FEEDER SCHEDULE:**
- 3C #6 AWG Cu + BOND IN 53mmC.
 - MULTI CONDUCTOR CONTROL CABLING IN 27mmC.
 - SHIELDED 2#14 AWG Cu CABLE IN 27mmC.
 - 3 [2C #12 AWG Cu + BOND] IN 35mmC.
 - 3C#3 AWG Cu + BOND IN 53mmC.



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PRINCE RUPERT HANGAR GENERATOR UPGRADE

Consultant Approval Box Only

Designed by / Dessiné par
MRO

Drawn by / Dessiné par
DT/MRO

PWGSC, Project Manager / Administrateur de Projets GRC
MASOOD DEZFOOLI

Regional Manager, Architectural and Engineering Services /
Gestionnaire régionale, Services d'architecture et de génie, GRC
PREETIPAL PAUL

Drawing title / Titre du dessin

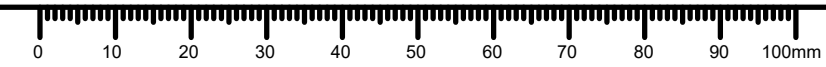
ELECTRICAL PLAN AND SINGLE LINE DIAGRAM

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Revision
no.

R.105637.001 E-002 0





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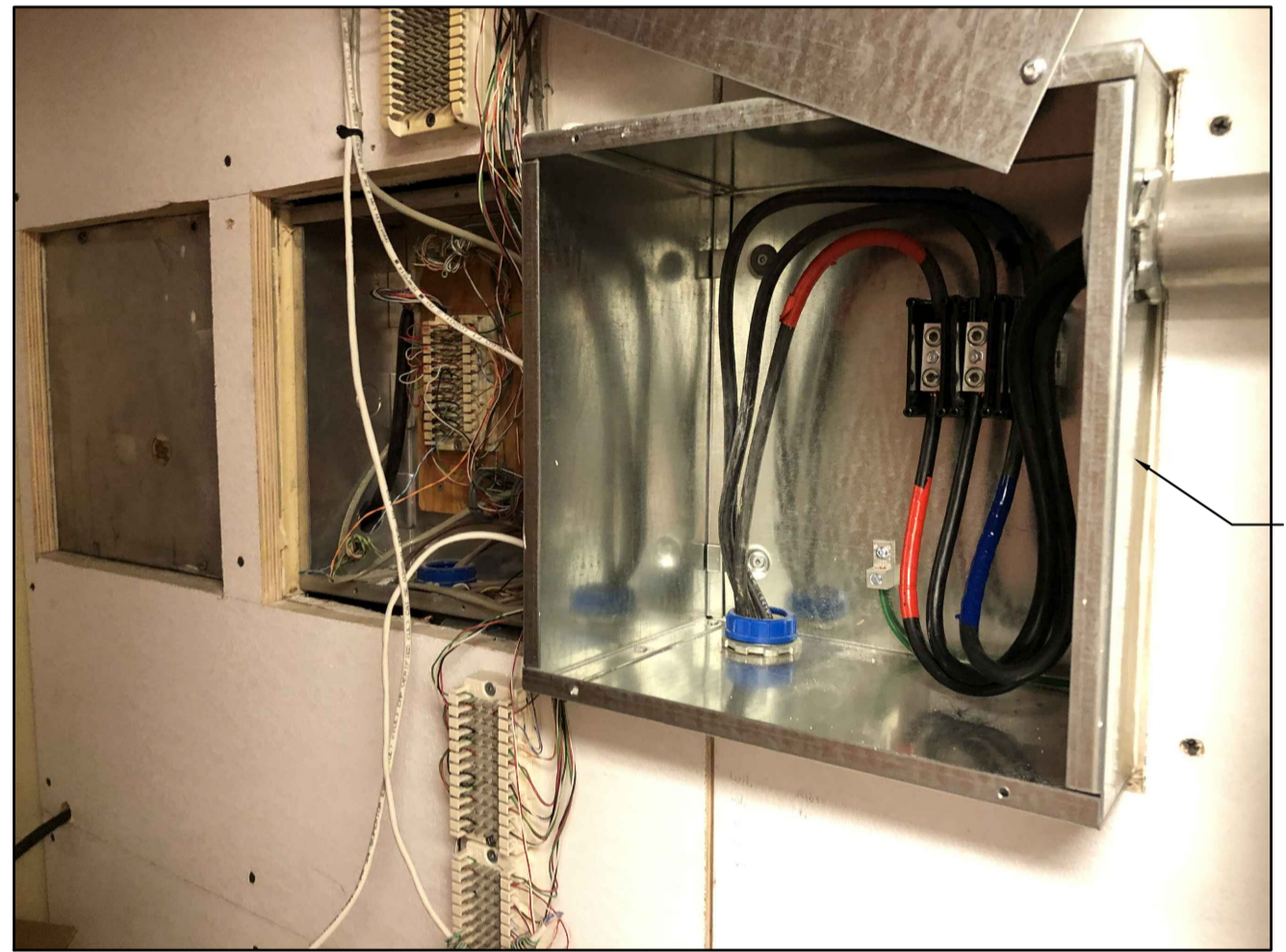
1 IMAGE 1 - SITE CONDITIONS
SCALE: N.T.S.



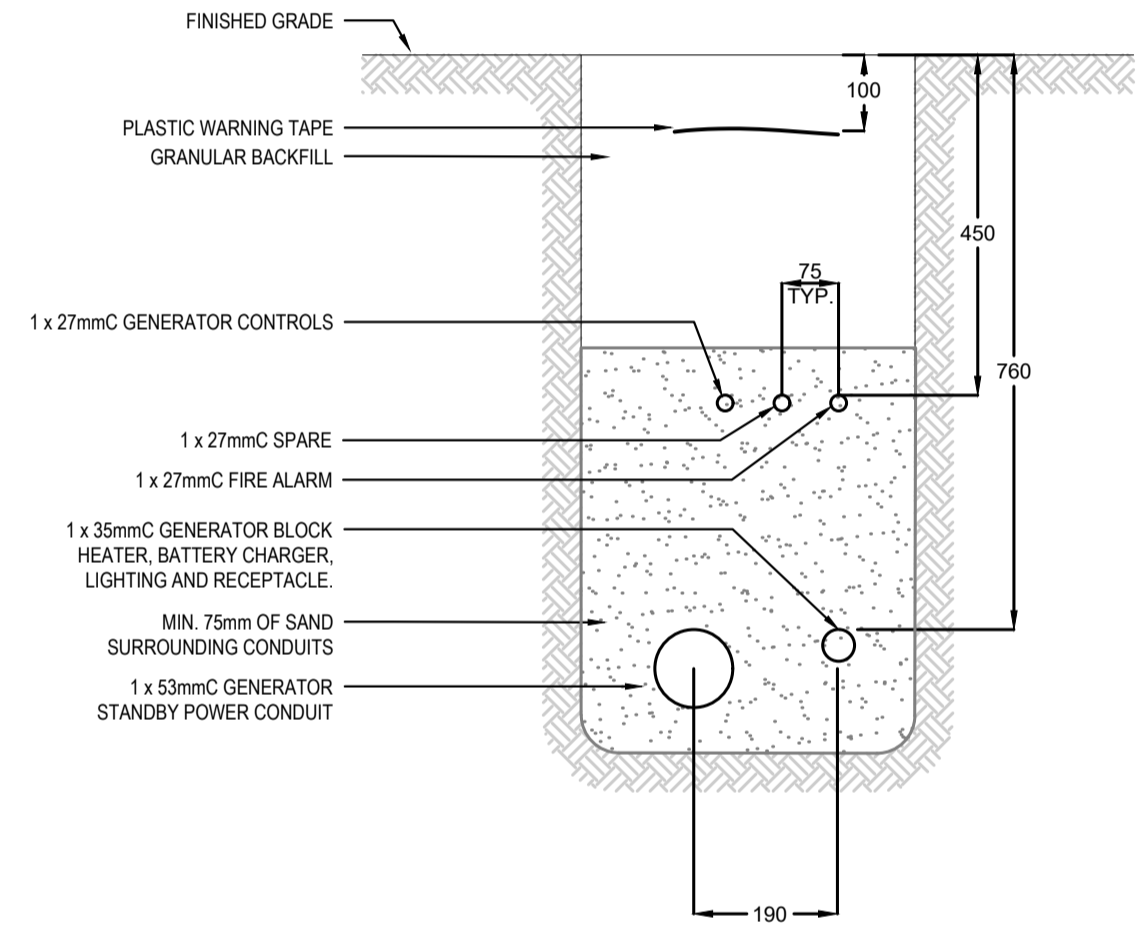
2 IMAGE 2 - ELECTRICAL CLOSET
SCALE: N.T.S.



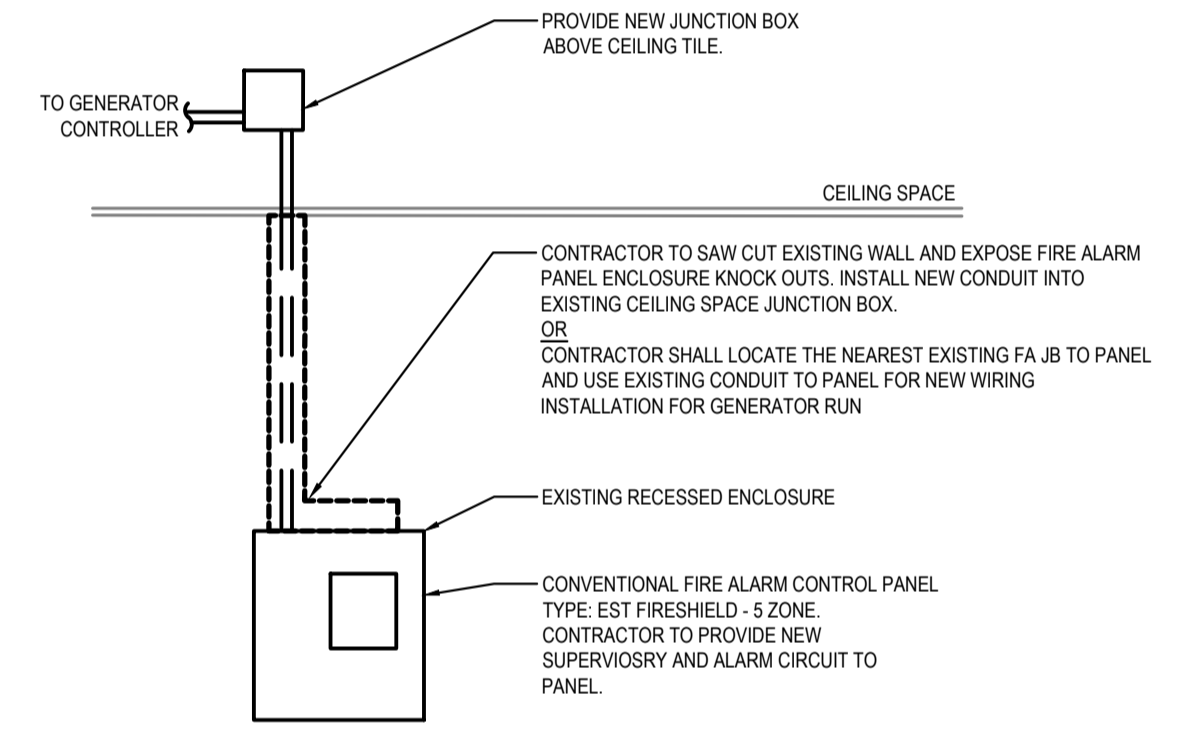
3 IMAGE 3 - ELECTRICAL CLOSET DISTRIBUTION
SCALE: N.T.S.



4 IMAGE 4 - ELECTRICAL CLOSET SERVICE DEMARK
SCALE: N.T.S.

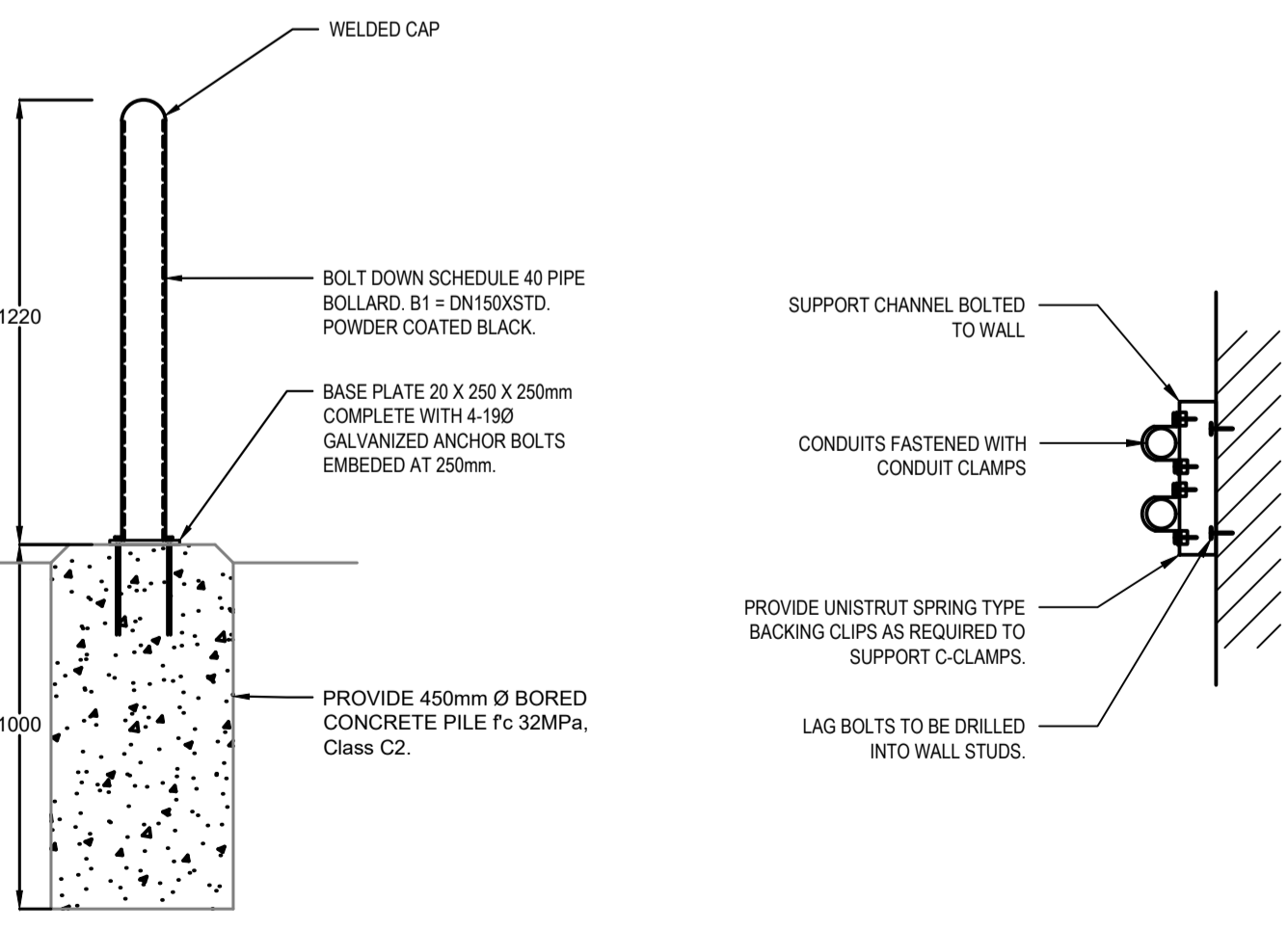


5 TRENCHING DETAIL
SCALE: N.T.S.

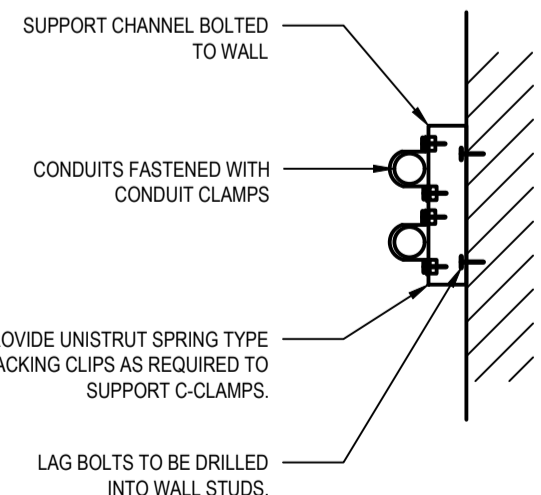


- FIRE ALARM ZONE ANNUNCIATION**
1. MAIN FLOOR OFFICE AREA PULL STATIONS - ALARM
 2. MAIN FLOOR OFFICE AREA SMOKE DETECTORS - ALARM
 3. MAIN FLOOR OFFICE AREA HEAT DETECTORS - ALARM
 4. GENERATOR RUNNING AND GENERATOR TROUBLE - SUPERVISORY

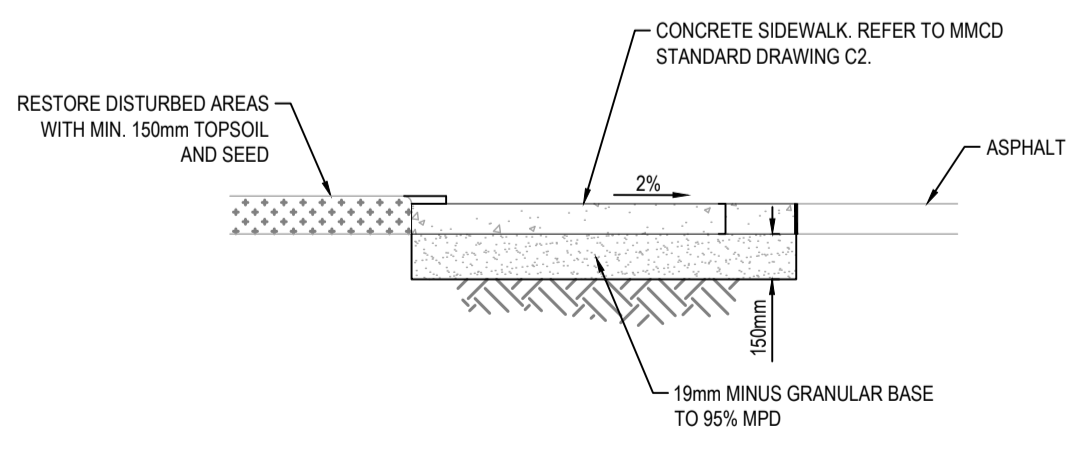
6 FIRE ALARM PANEL ELEVATION
SCALE: N.T.S.



7 BOLLARD DETAIL
SCALE: N.T.S.



8 CONDUIT SUPPORT DETAIL
SCALE: N.T.S.



9 SIDEWALK DETAIL
SCALE: N.T.S.

EXISTING PANEL B												
Voltage: - 120/208V, 3P, 4W												
Location: - ELECTRICAL CLOSET												
Mounting: - SURFACE												
Bus Size: - 200A												
Fault Current Rating: - 10kA												
NOTES: - SIEMENS P2												
CCT	DESCRIPTION	Brk	Ph	A	B	C	Ph	Brk	DESCRIPTION	CCT		
1	RECEPTACLE - EXTERIOR	15	1	X				1	15	FIRE ALARM	2	
3	HEAT - OFFICE	20	1		X			1	50	MILLER WELDING MACHINE	4	
5	HEAT - OFFICE	20	1	X		X		1	20	HOT WATER TANK	6	
7	HEAT - OFFICE	20	1		X			1	20	HOT WATER TANK	8	
9	RECEPTACLE - COUNTERTOP	15	1			X		1	15	UNKNOWN	10	
11	RECEPTACLE - COUNTERTOP	15	1	X				1	15	UNKNOWN	12	
13	HEAT - RADANT	15	1		X			1	30	HANGER ROLL UP DOOR	14	
15	SECURITY SYSTEM	15	1		X			1	15	UNKNOWN	16	
17	UNKNOWN	15	1	X				1	30	BATTERY CHARGER	18	
19	UNKNOWN	15	1		X			1	15	UNKNOWN	20	
21	UNKNOWN	15	1		X			1	15	UNKNOWN	22	
23	UNKNOWN	15	1		X			1	15	UNKNOWN	24	
25	UNKNOWN	15	1	X				1	15	UNKNOWN	26	
27	UNKNOWN	15	1		X			1	15	UNKNOWN	28	
29	UNKNOWN	15	1		X			1	15	UNKNOWN	30	
31	UNKNOWN	15	1	X				1	15	UNKNOWN	32	
33	UNKNOWN	15	1		X			1	15	UNKNOWN	34	
35	BLANK						X			BLANK	36	
37	GEN. ENCLOSURE LIGHT + REC	15	1	X						BLANK	38	
39	GENERATOR BLOCK HEATER	15	1		X					BLANK	40	
41	GENERATOR BATTERY CHARGER	15	1				X			BLANK	42	

PANEL NOTE:

1. NEW LOADS TO BE FED FROM NEW BREAKERS. ALLOW FOR NEW BREAKERS SIZED AS SHOWN. NEW BREAKERS TO MATCH EXISTING FAULT CURRENT RATINGS. EXISTING PANEL MODEL SIEMENS P2 SERIES.

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ELECTRICAL DETAILS AND SCHEDULE

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