



SEAL:

0	ISSUED FOR TENDER	2020/10/09
#	Description	Y/M/D

Client / client

ROYAL CANADIAN MOUNTED POLICE

Project title / Titre du projet

SICAMOUS RCMP DETACHMENT GENERATOR UPGRADE

Consultant Approval Box Only

Designed by / Concept par MRO

Drawn by / Dessiné par MRO

PWGSC, Project Manager / Administrateur de Projets GRC MASOOD DEZFOOLI

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

Drawing title / Titre du dessin

ELECTRICAL LEGEND, SITE PLAN AND GENERAL NOTES

Project No. / No. du projet. R.105954.001	Sheet / Feuille E-001	Revision no. / La Revision no. 0
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**CODE LOAD CALCULATION:**  
BC HYDRO 1 YEAR HISTORICAL LOAD INFORMATION: = 22,000 W  
MAXIMUM MONTHLY PEAK LOAD MEASURED 2018-2019  
MIN. MAIN BREAKER @ 120/240V, 1Ø =  $\frac{22,000W}{240V} = 92A \times 1.25 = 115A$   
FULL GENERATOR STANDBY ALLOWING 30% HEADROOM  
1.3 x 22,000W = 28,600W  
FINAL SIZING => 40KW STANDBY GENERATOR

DRAWING LIST	
DRAWING NUMBER	DRAWING TITLE
E-001	ELECTRICAL LEGEND, SITEPLAN AND GENERAL NOTES
E-002	ELECTRICAL FLOOR PLAN AND DETAILS
E-003	ELECTRICAL DETAILS
S-001	STRUCTURAL GENERAL NOTES, SITE PLAN AND TYPICAL GENERATOR PAD DETAIL

ANNOTATIONS			
DENOTE	DESCRIPTION	DENOTE	DESCRIPTION
BND	BOND WIRE (AS PER SPECIFICATIONS)	FIA	FIRE ALARM
GND	GROUND WIRE (#)	GFI	GROUND FAULT INTERRUPTOR
CW	COMPLETE WITH	SPD	SURGE PROTECTION DEVICE
DISC	DISCONNECT	TR	TAMPER RESISTANT
RR	REMOVE	WP	WEATHERPROOF
EX	EXISTING TO REMAIN	WT	WATER TIGHT
ER	EXISTING TO BE RELOCATED	AFF	ABOVE FINISHED FLOOR
RE	REPLACE EXISTING WITH NEW DEVICE IN SAME LOCATION	AFG	ABOVE FINISHED GRADE
RL	EXISTING DEVICE IN RELOCATED LOCATION		
SYMBOL	DESCRIPTION		
	MECHANICAL EQUIPMENT TAG		
	REFERENCE NOTE (1 DENOTES SEE NOTE 1)		
	ELECTRICAL CONDUCTOR AND CONDUIT TAG		
	REVISION IDENTIFICATION TAG		
	PANEL IDENTIFICATION TAG		
	NEW EQUIPMENT		
	EXISTING EQUIPMENT TO REMAIN		
	EXISTING EQUIPMENT TO BE REMOVED		

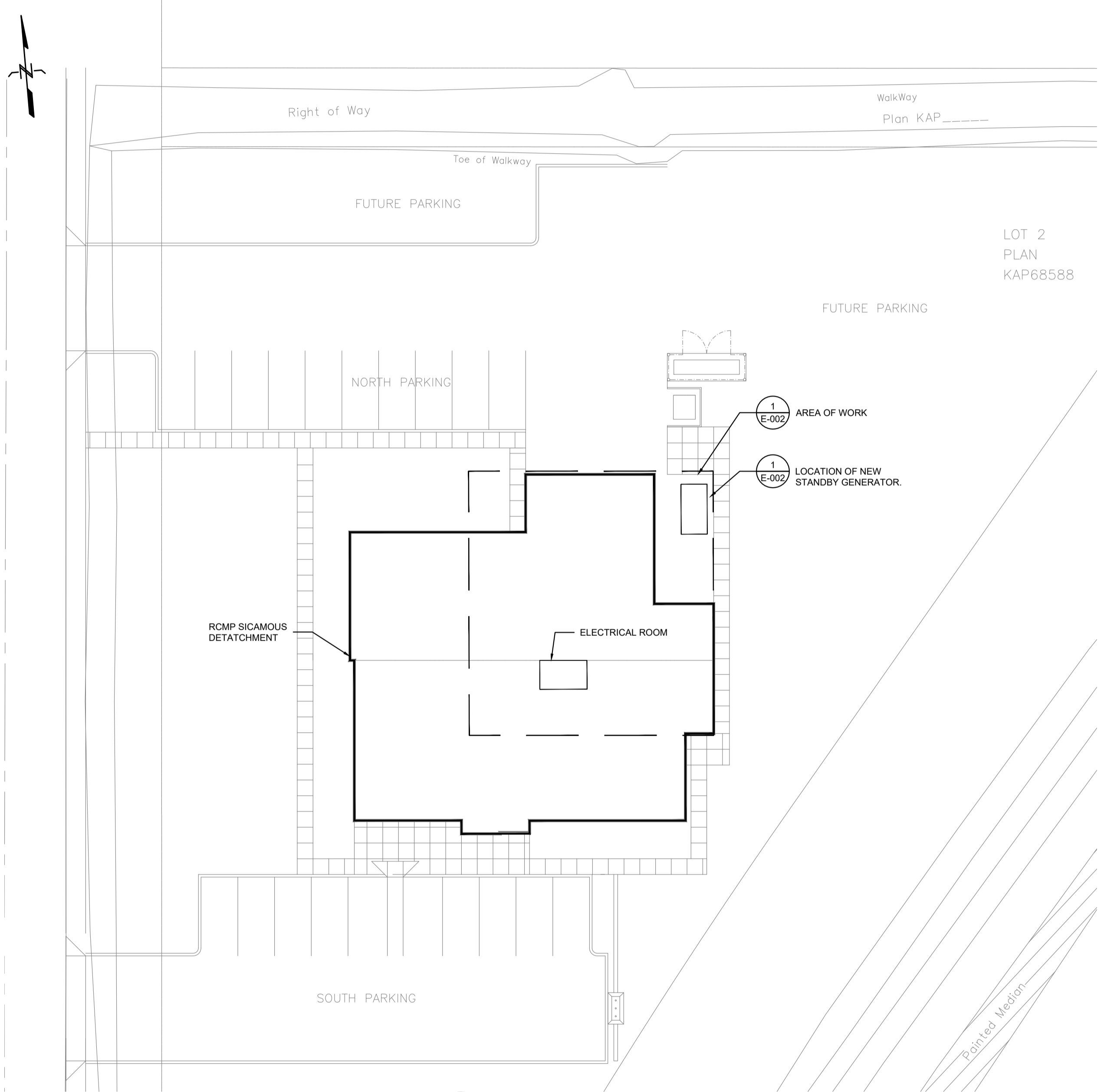
SINGLE LINE DIAGRAM SYMBOLS	
SYMBOL	DESCRIPTION
	AUTOMATIC TRANSFER SWITCH WITHOUT BYPASS
	GENERATOR
	MOLDED CASE CIRCUIT BREAKER "L" WHERE SHOWN, DENOTES DEVICE WITH CURRENT LIMITERS
	BREAKER DISCONNECT SWITCH
	METER
	BUSBAR
	H.V. POT HEAD
	CONNECTION POINT
	SURGE PROTECTION DEVICE
	PANELBOARD
	PANELBOARD AND BREAKER

POWER SYMBOLS	
SYMBOL	DESCRIPTION
	DUPLEX U-GROUND 15A, 125VOLT, 2 POLE, 3 WIRE GROUNDING RECEPTACLE "E" WHERE SHOWN, DENOTES CONNECTION TO EMERGENCY POWER "WP" WHERE SHOWN, DENOTES DEVICE MOUNTED IN WEATHERPROOF F.S. BOX WITH WEATHERPROOF COVER "GFI" WHERE SHOWN, DENOTES GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE "H" WHERE SHOWN, DENOTES DEVICE DEDICATED TO "HOUSEKEEPING" SERVICE, PROVIDE ENGRAVED NAMEPLATE "TL" WHERE SHOWN, DENOTES TWISTLOCK "SW" WHERE SHOWN, DENOTES SWITCHED RECEPTACLE "DC" WHERE SHOWN, DENOTES TWISTLOCK "TL" WHERE SHOWN, DENOTES TWISTLOCK
	DUPLEX U-GROUND 15A, 125V, 2P 3 WIRE GROUNDING RECEPTACLE PROTECTED BY G.F.C.I. BREAKER AT PANELBOARD, MOUNTED APPROXIMATELY 30" (1550 mm) ABOVE FINISHED FLOOR.
	SPECIAL PURPOSE RECEPTACLE AS DENOTED
	HARDWIRED EQUIPMENT CONNECTION
	SINGLE SURFACE MOUNTED / FLUSH MOUNTED PANELBOARD, "WP" DENOTES POWER PANEL, "LP" DENOTES LIGHTING AND POWER PANEL
	SINGLE SURFACE MOUNTED / FLUSH MOUNTED LOW VOLTAGE PANEL "LV" DENOTES LOW VOLTAGE PANEL
	JUNCTION BOX
	DISCONNECT SWITCH UNLESS NOTED OTHERWISE
	ELECTRIC BASEBOARD HEATER
	GROUND ROD

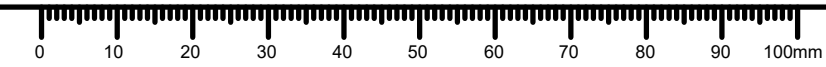
LIGHTING SYMBOLS	
SYMBOL	DESCRIPTION
	STRIP SURFACE LUMINAIRE, LETTER "A" INDICATES LUMINAIRE TYPE AS PER LUMINAIRE SCHEDULE.
	ONE, TWO, THREE LINE VOLTAGE TOGGLE SWITCH AND LOW VOLTAGE SWITCH MOUNTED 4'-0" (1.2m) ABOVE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
	EMERGENCY BATTERY PACK (w/ RECEPTACLE)

SITE SYMBOL	
SYMBOL	DESCRIPTION
	POWER POLE
	OVERHEAD COMMUNICATIONS CABLE
	UNDERGROUND COMMUNICATIONS CABLE
	OVERHEAD SERVICE CONDUCTORS
	OVERHEAD SERVICE CONDUCTORS
	PULL BOX (FIBRE GLASS, PVC, ETC.)
	OVERHEAD UTILITY SERVICE MAST

**LEGAL DESCRIPTION**  
LOT 2, PLAN KAP68588, DISTRICT LOT 497, K.D.Y.D.



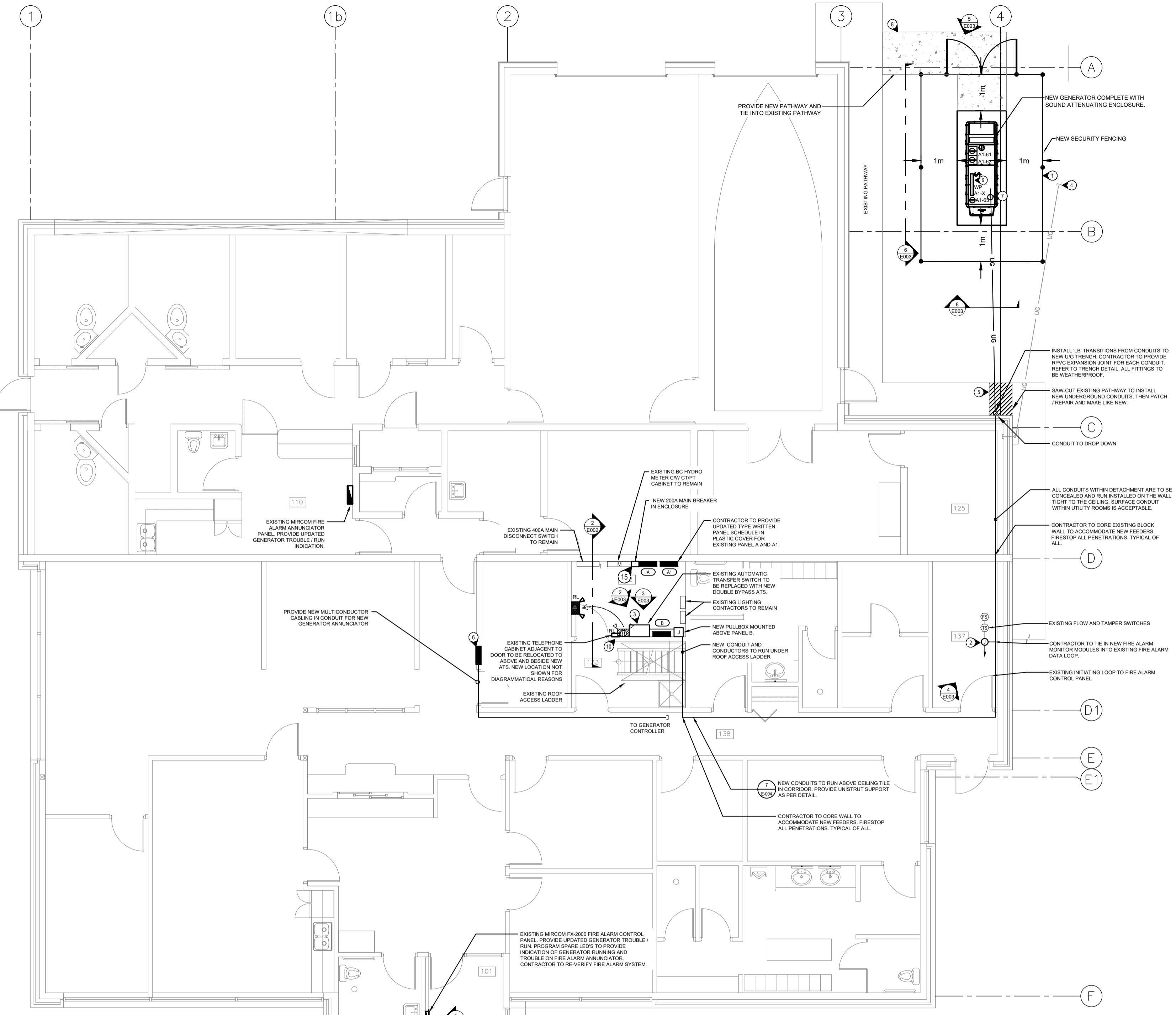
1 SITE KEYPLAN  
E-001 SCALE: 1:500



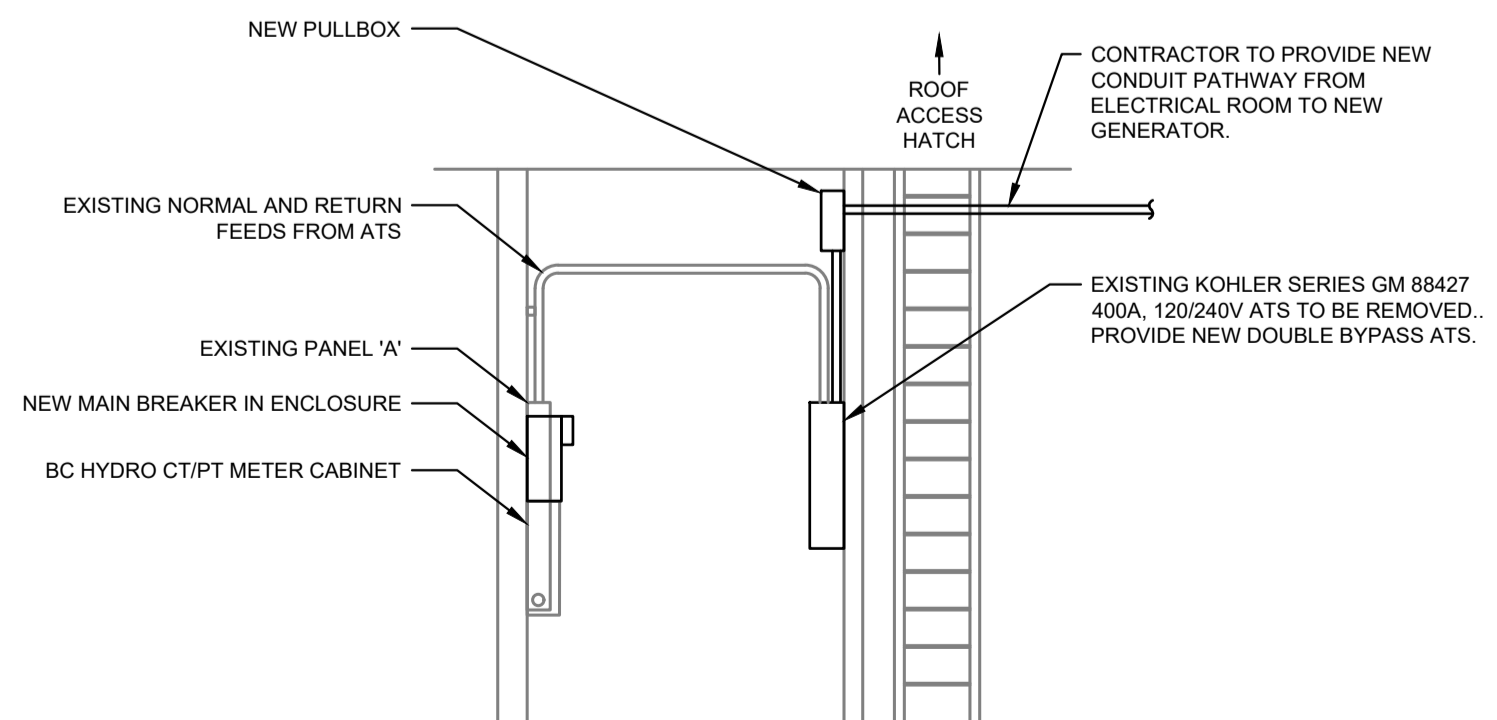


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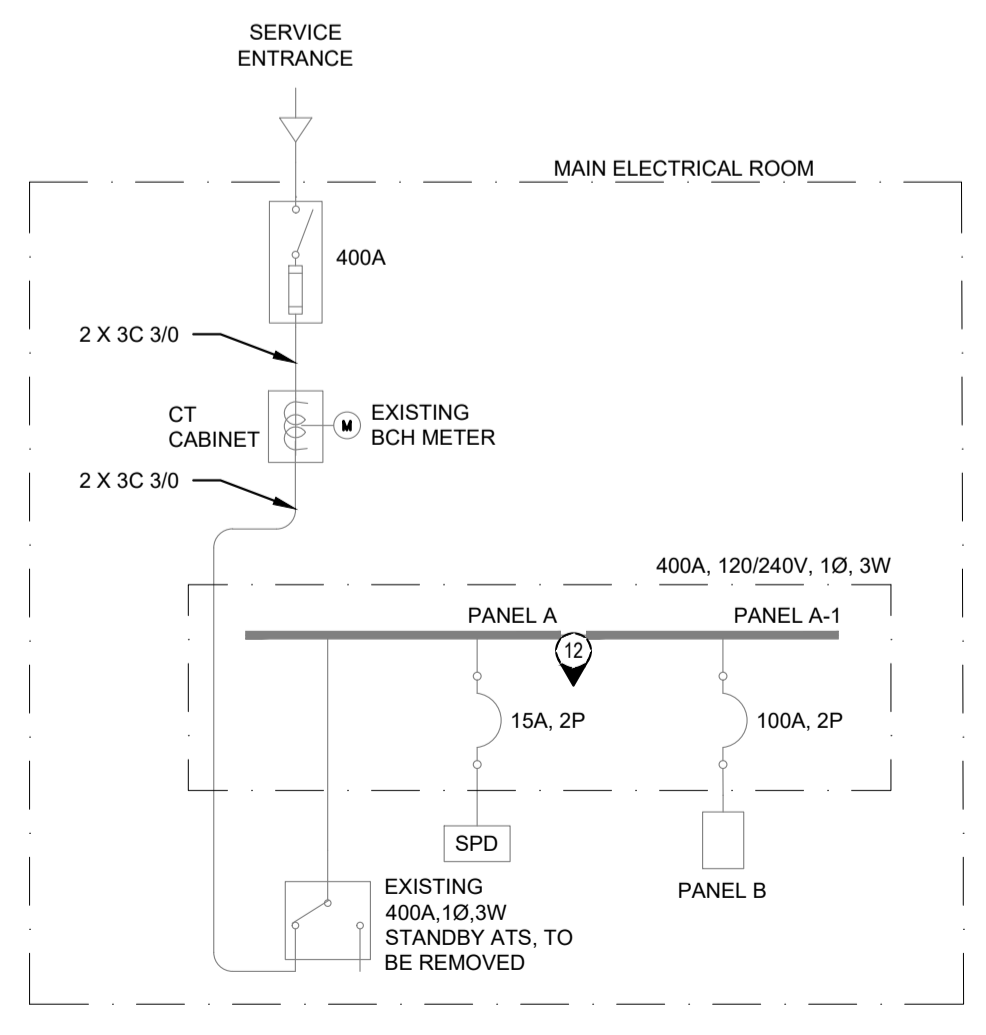
- KEYNOTES:**
- CONTRACTOR TO PROVIDE NEW SECURITY FENCING AROUND NEW GENERATOR ENCLOSURE. REFER TO ELEVATION DETAIL.
  - CONTRACTOR TO INTERCEPT EXISTING FIRE ALARM INITIATING LOOP AND PROVIDE NEW MONITORING MODULES FOR GENERATOR TROUBLE AND RUN ALARM CIRCUITS. CONTRACTOR TO UPDATE FIRE ALARM PANEL ZONES AND RE-VERIFY SYSTEM.
  - PROVIDE NEW AUTOMATIC TRANSFER SWITCH ADJACENT TO PANEL B. CONTRACTOR TO ALLOW FOR RELOCATION OF EXISTING SIX BLOCK CABINET AND ASSOCIATED EQUIPMENT, AND EMERGENCY BATTERY PACK.
  - CONTRACTOR TO PROTECT EXISTING PROPANE SERVICE DURING CONSTRUCTION.
  - 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 PROVIDE NEW FLUSH MOUNTED GENERATOR ANNUNCIATOR PANEL IN OFFICE AREA. 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. REFER TO MMCD STANDARD DRAWING C2
  - CONTRACTOR TO PROVIDE 1" STRIP LIGHT
  - CONTRACTOR TO REVISE EXISTING TELEPHONE CABINET LOCATION AND RE-CONNECT EXISTING CONDUITS AND CONDUCTORS TO NEW LOCATION AS SHOWN.
  - REMOVE EXISTING CABLE AT THE CT CABINET AND PROVIDE NEW. COORDINATE WITH BC HYDRO FOR BREAKING SEAL IN CT CABINET FOR WORK. CONTRACTOR SHALL PAY FOR ALL ASSOCIATED COSTS
  - PANEL A AND A-1 ARE ONE DOUBLE TUB PANEL
  - SEE PANEL SCHEDULE
  - CABLE SIZED AS PER CEC RULE 14-100 (C), BASED ON STANDARD EQUIPMENT SIZES IT IS ANTICIPATED THAT THIS CABLE LENGTH WILL NOT EXCEED 7.5m. REPORT TO ENGINEER IMMEDIATELY IF THE CABLE WILL EXCEED 7.5m
  - INSTALL BREAKER AND ENCLOSURE ABOVE EXISTING CT METERING CABINET



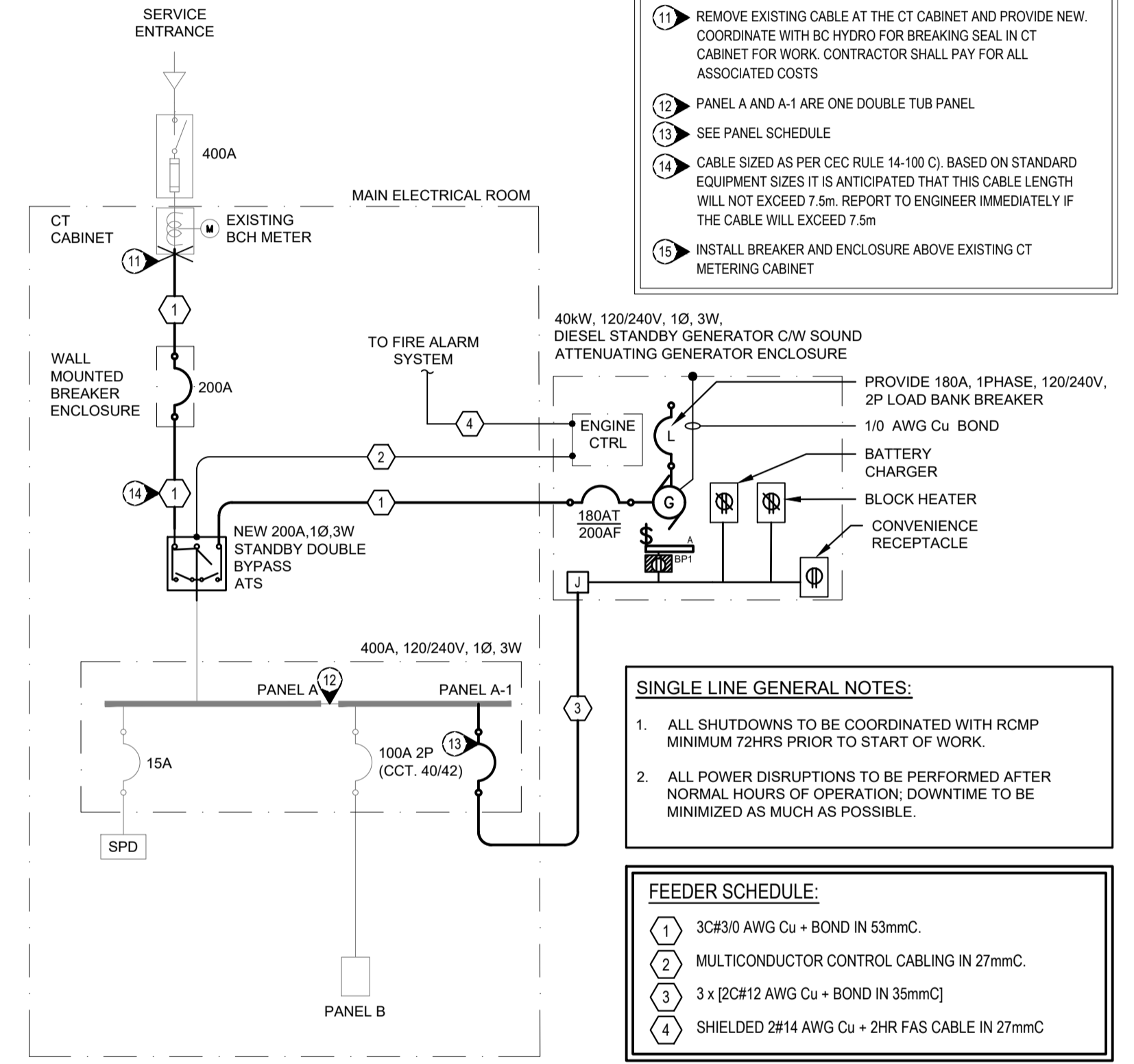
**1 ELECTRICAL PLAN**  
E-002 SCALE: 1:75



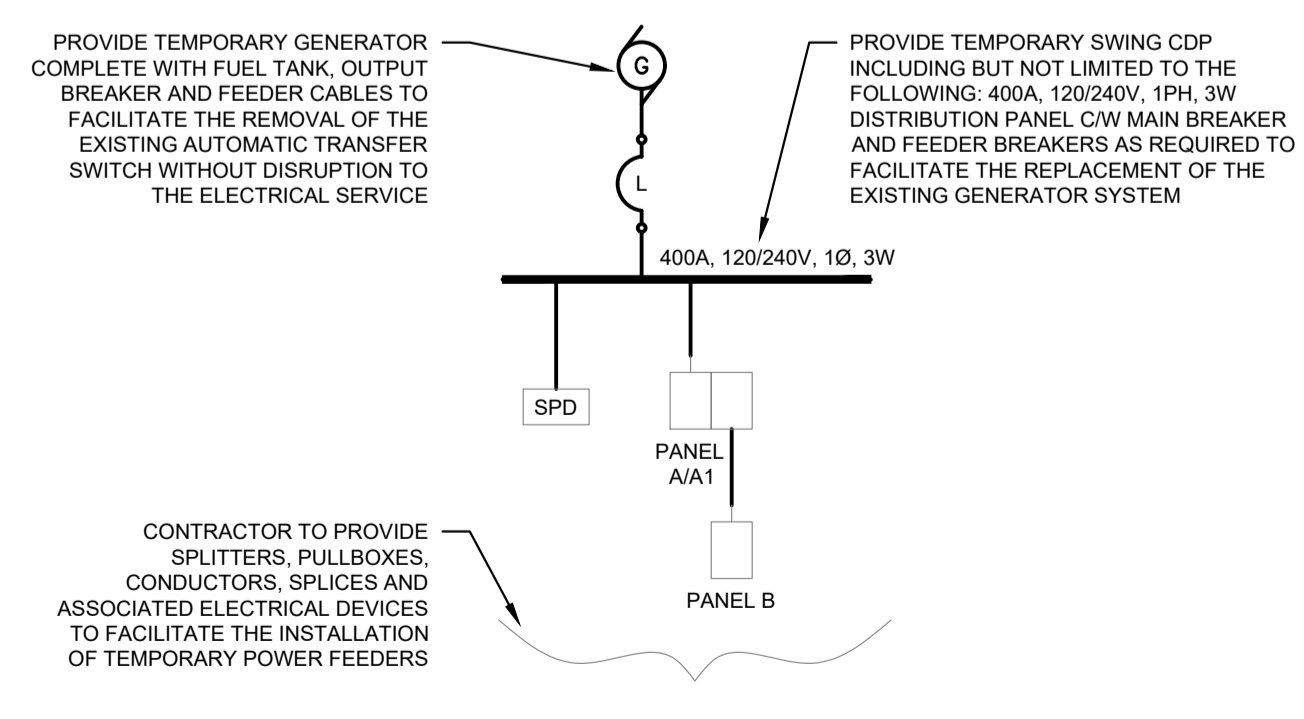
**2 ELECTRICAL ROOM ELEVATION DETAIL**  
E-002 SCALE: 1:50



**3 EXISTING SINGLE LINE DIAGRAM**  
E-002 SCALE: N.T.S.



**4 NEW ELECTRICAL SINGLE LINE DIAGRAM**  
E-002 SCALE: N.T.S.



**5 TEMPORARY POWER SINGLE LINE DIAGRAM**  
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#30 AWG Cu + BOND IN 53mmC.
  - MULTICONDUCTOR CONTROL CABLING IN 27mmC.
  - 3 x [2C#12 AWG Cu + BOND IN 35mmC]
  - SHIELDED 2#14 AWG Cu + 2HR FAS CABLE IN 27mmC

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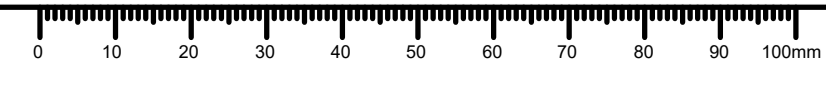
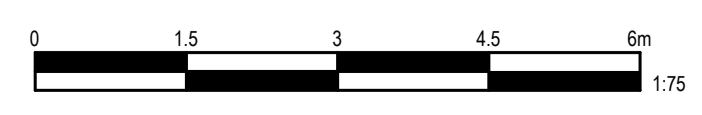
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PREETIPAL PAUL

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**ELECTRICAL FLOOR PLAN AND DETAILS**

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1 IMAGE 1 - FIRE ALARM CONTROL PANEL  
E-003 SCALE: N.T.S.



2 IMAGE 2 - EXISTING TRANSFER SWITCH  
E-003 SCALE: N.T.S.



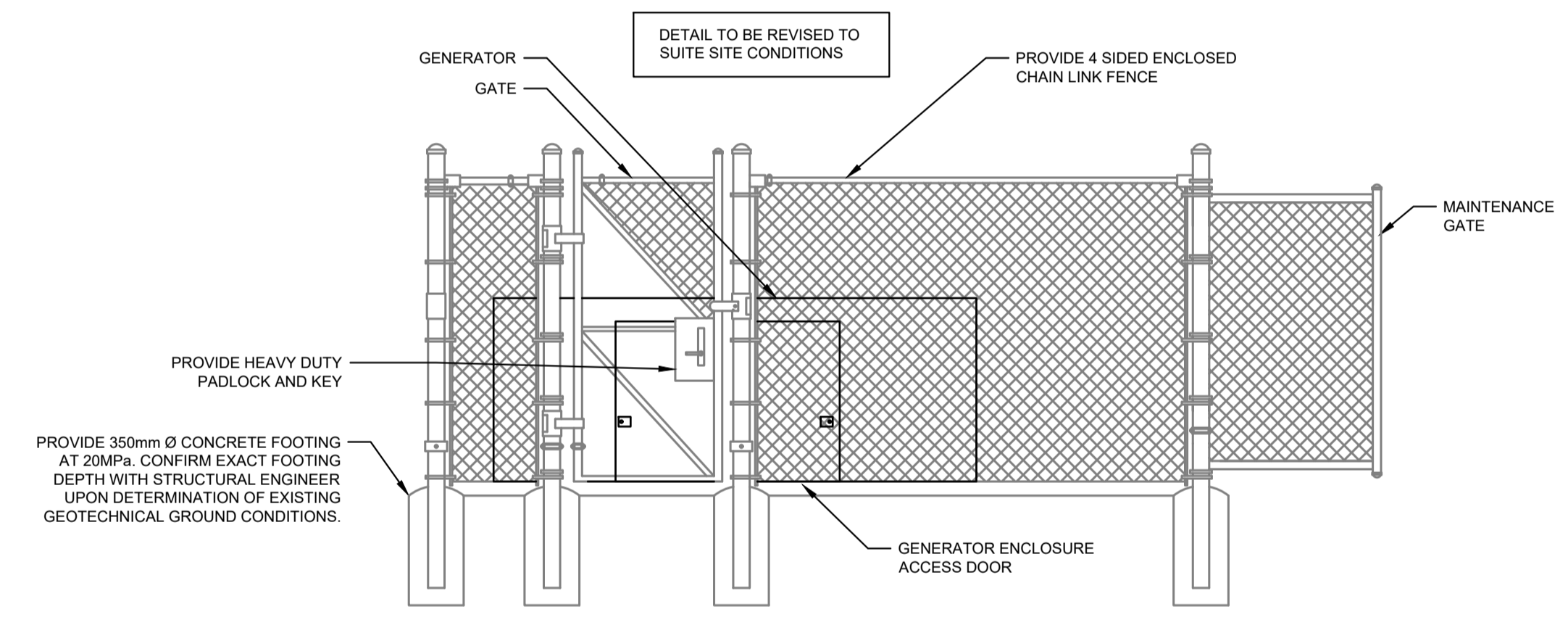
3 IMAGE 3 - ELECTRICAL ROOM WALL  
E-003 SCALE: N.T.S.



4 IMAGE 4 - ROOM 137 CONDUIT ROUTE  
E-003 SCALE: N.T.S.



5 IMAGE 5 - EXTERIOR GENERATOR LOCATION  
E-003 SCALE: N.T.S.



6 TYPICAL SECURITY FENCING ELEVATION DETAIL  
E-003 SCALE: N.T.S.

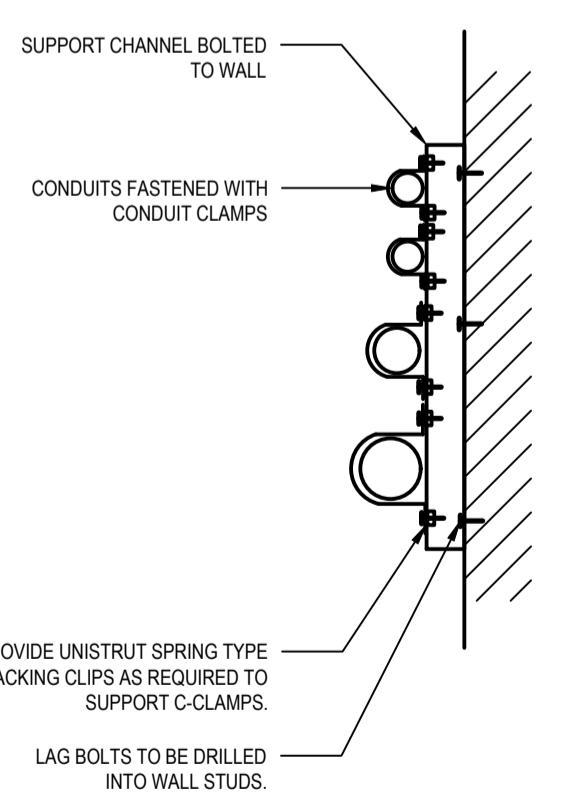
**EXISTING PANEL A1**

Voltage: - 120/240V, 1P, 3W  
Location: - MAIN ELECTRICAL ROOM  
Mounting: - SURFACE  
Bus Size: - 225A  
Fault Current Rating: - 10 KA  
Other: -

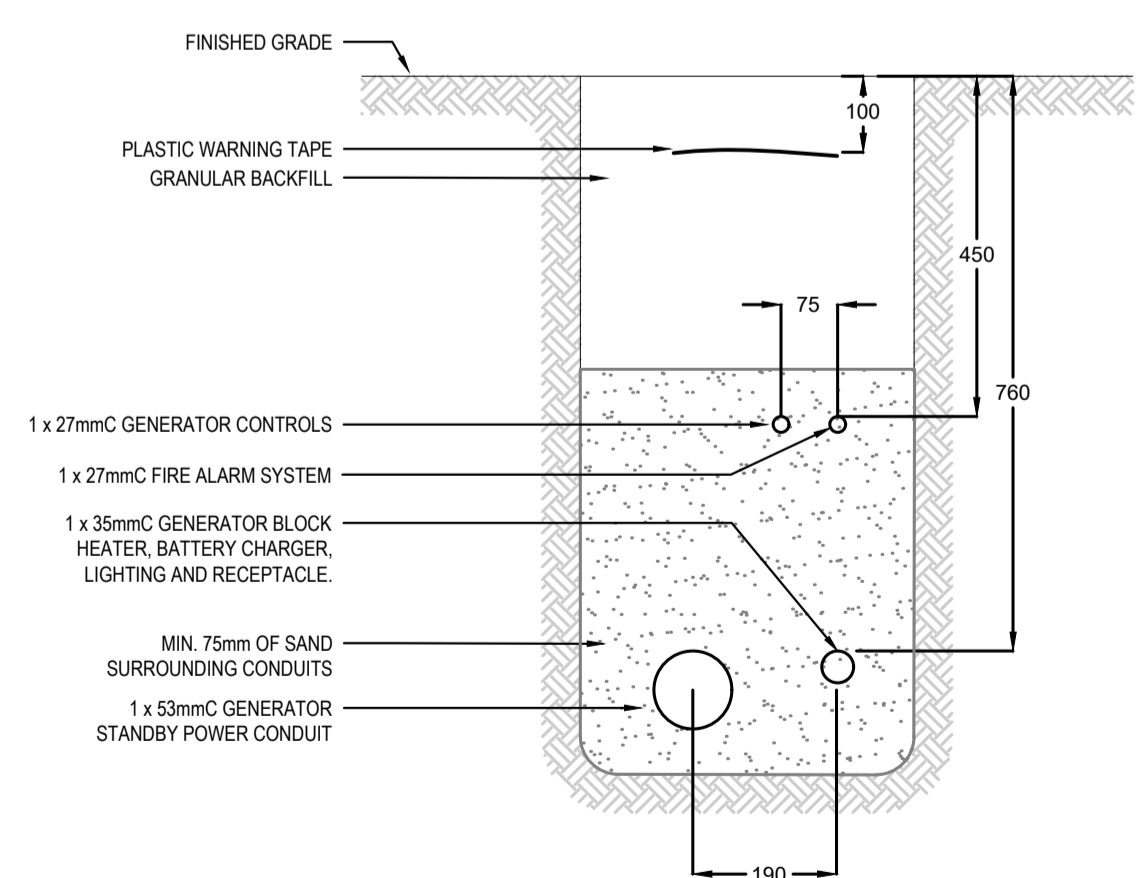
CCT	Description	Bkr	X	A	B	X	Bkr	Description	CCT
1	UNKNOWN LOAD	15A		X			15A	UNKNOWN LOAD	2
3	UNKNOWN LOAD	15A		X	X		15A	UNKNOWN LOAD	4
5	UNKNOWN LOAD	15A		X			15A	UNKNOWN LOAD	6
7	UNKNOWN LOAD	20A			X		15A	UNKNOWN LOAD	8
9	UNKNOWN LOAD	20A	X				15A	UNKNOWN LOAD	10
11	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	12
13	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	14
15	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	16
17	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	18
19	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	20
21	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	22
23	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	24
25	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	26
27	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	28
29	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	30
31	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	32
33	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	34
35	UNKNOWN LOAD	20A			X		15A	UNKNOWN LOAD	36
37	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	38
39	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	40
41	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	42
43	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	44
45	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	46
47	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	48
49	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	50
51	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	52
53	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	54
55	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	56
57	UNKNOWN LOAD	15A	X				15A	UNKNOWN LOAD	58
59	UNKNOWN LOAD	15A			X		15A	UNKNOWN LOAD	60
61	GENSET CARB HEATER	15A		X			15A	UNKNOWN LOAD	62
63	GENERATOR BATTERY CHARGER	15A			X		15A	UNKNOWN LOAD	64
65	GENERATOR RECEPTACLE / LIGHT	20A	X				15A	UNKNOWN LOAD	66

**PANEL NOTE:**

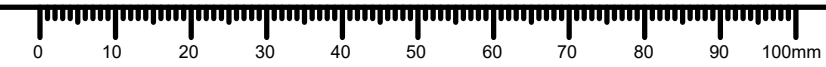
1. NEW LOADS TO BE FED FROM NEW BREAKERS. ALLOW FOR NEW BREAKERS SIZED AS SHOWN. NEW BREAKERS TO MATCH EXISTING FAULT CURRENT RATINGS. EXISTING PANEL MODEL SIEMENS P2 SERIES.



7 CONDUIT SUPPORT DETAIL  
E-003 SCALE: N.T.S.



8 TRENCH DETAIL  
E-003 SCALE: N.T.S.



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**ELECTRICAL DETAILS**

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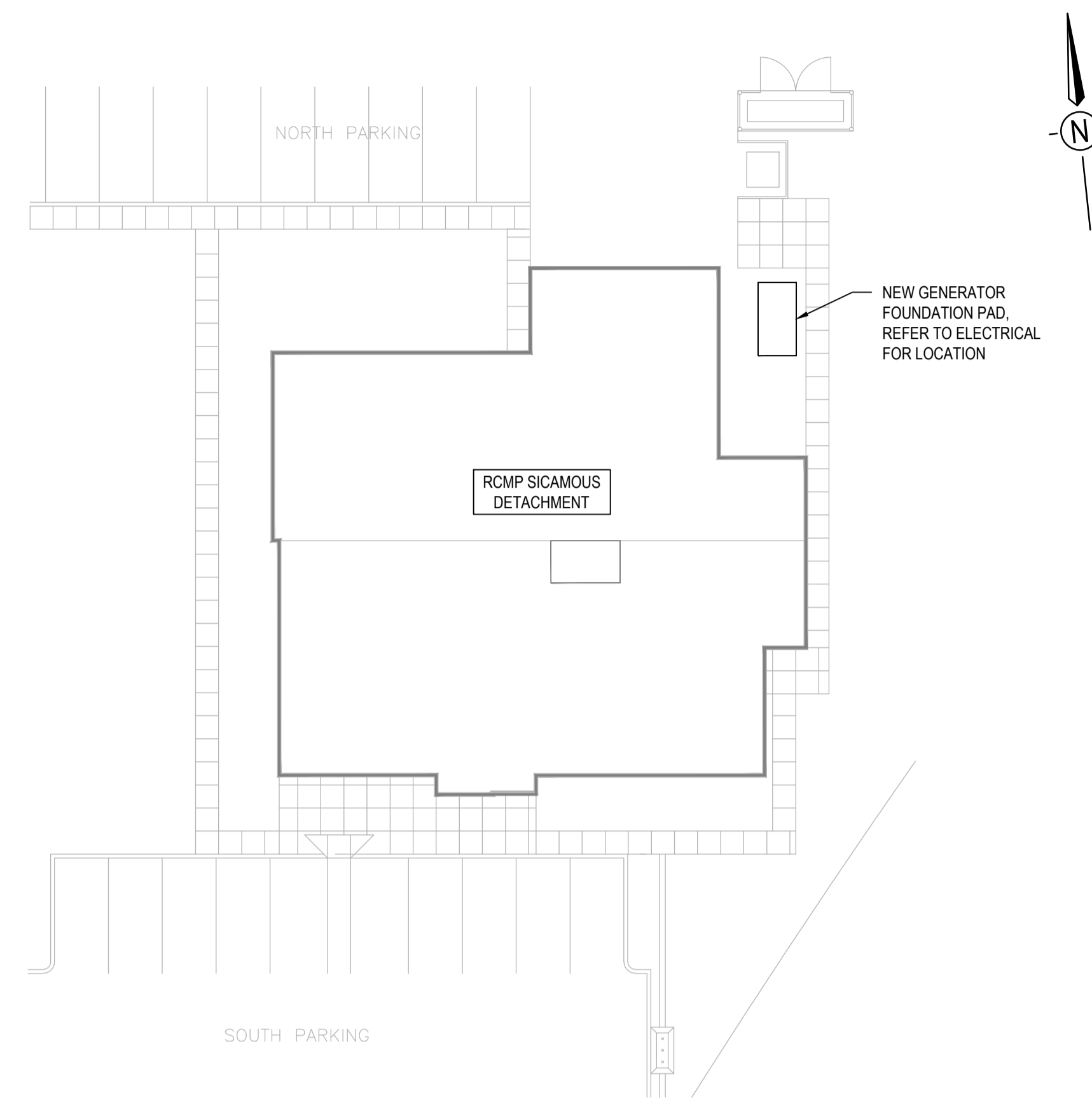


**GENERAL NOTES**

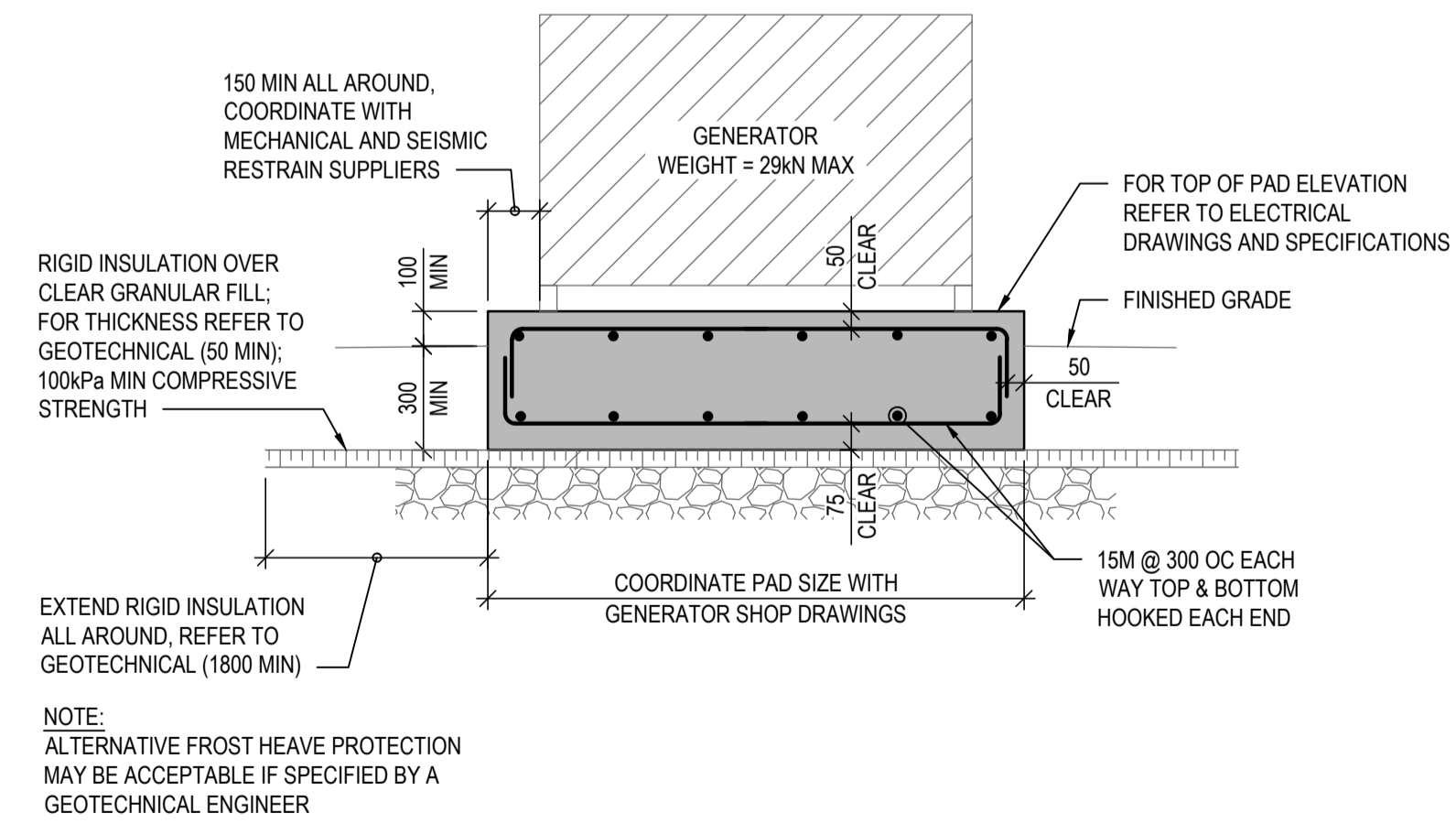
- CONTRACTOR TO VERIFY ALL DIMENSIONS FOR PROJECT PRIOR TO COMMENCEMENT OF WORK AND NOTIFY DEPARTMENTAL REPRESENTATIVE OF ANY DISCREPANCIES.
- STRUCTURAL DRAWINGS SHOW THE COMPLETED PROJECT. THEY DO NOT SHOW COMPONENTS WHICH MAY BE NECESSARY FOR CONSTRUCTION SAFETY. CONTRACTOR IS RESPONSIBLE FOR SAFETY ON AND ABOUT THE JOB SITE DURING CONSTRUCTION.
- CONTRACTOR TO ENSURE THAT ALL WORK IS CARRIED OUT BY THE RULES AND CUSTOMS OF THE BEST TRADE PRACTICES AND THEIR SPECIFICATIONS BY SKILLED TRADES PEOPLE KNOWLEDGEABLE OF THE TYPE OF CONSTRUCTION. THEY ARE TO BE PROPERLY EQUIPPED AND SUPERVISED.
- NOTIFY DEPARTMENTAL REPRESENTATIVE 24 HOURS IN ADVANCE FOR CONSTRUCTION REVIEW OF THE STRUCTURAL PORTION OF THE PROJECT AS SHOWN ON THE STRUCTURAL DRAWINGS.
- SEE ELECTRICAL DRAWINGS FOR SLEEVES, INSERTS, ETC. TO BE ENCASED IN CONCRETE.
- STRUCTURAL DESIGN DATA.
  - ENGINEER OF RECORD: CHELSEA PATON, P. ENG.
  - DESIGN CODE - NATIONAL BUILDING CODE OF CANADA 2015 & BRITISH COLUMBIA BUILDING CODE 2018 - PART 4.

**FOUNDATION NOTES**

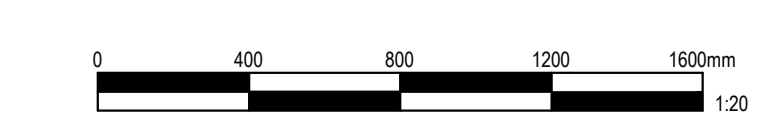
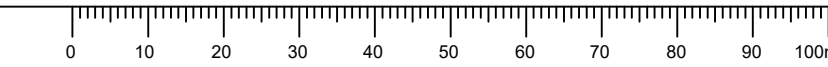
- GEOTECHNICAL ENGINEER TO BE RETAINED BY THE CONTRACTOR TO PROVIDE DESIGN AND FIELD REVIEW SERVICES.
- GEOTECHNICAL ENGINEER TO PROVIDE LETTERS OF ASSURANCE SCHEDULES B AND C-B.
- FOOTINGS HAVE BEEN DESIGNED FOR THE FOLLOWING UNFACTORED BEARING PRESSURES OF 75 kN/m<sup>2</sup>. FOOTINGS TO BEAR ON SUBGRADE APPROVED BY A GEOTECHNICAL ENGINEER.
- BEARING SURFACES MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONCRETE BEING PLACED. DEPARTMENTAL REPRESENTATIVE IS NOT RESPONSIBLE FOR CONFIRMING BEARING CAPACITIES OF SOILS.
- REFER TO GEOTECHNICAL ENGINEER FOR OTHER SPECIFIC DESIGN REQUIREMENTS FOR FOOTINGS, SOIL SLOPES, FROST PROTECTION, MINIMUM COVER, ETC.
- PROTECT BEARING SURFACES FROM FREEZING BEFORE AND AFTER FOUNDATION PAD IS POURED.
- SUB-BASE DESIGN OF SOIL UNDER THE FOUNDATION PAD TO BE DESIGNED BY A GEOTECHNICAL ENGINEER.



**SITE PLAN**  
1:500



**1 FOUNDATION PAD SECTION**  
S-001 1:20



Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

**REAL PROPERTY SERVICES**  
Pacific Region  
**SERVICES IMMOBILIERS**  
Région de Pacifique

**wsp**

WSP PROJECT NO. 191-00960-04

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