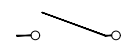







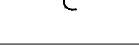










SUNSHINE COAST REGIONAL DISTRICT

EV CHARGING

DRAWING LIST	
E0	COVER
E1	FIELD ROAD - SITE PLAN
E2	MASON ROAD - SITE PLAN
E3	FIELD ROAD - POWER LAYOUT
E4	MASON ROAD - POWER LAYOUT
E5	FIELD ROAD - SINGLE LINE DIAGRAMS
E6	MASON ROAD - SINGLE LINE DIAGRAMS
E7	ELECTRICAL ROOM DETAILS
E8	SCHEDULES
E9	DETAILS
E10	PHOTOS
E11	SPECIFICATIONS

SYMBOL LEGEND	
	DISCONNECT
	TRANSFER SWITCH
	TRANSFORMER
	TRANSFORMER (SINGLE LINE DIAGRAM)
	CIRCUIT BREAKER
	FUSE
	METER
	CURRENT TRANSFORMER (CT)
	BUS (IN PANEL) OR BUSDUCT
	HANDHOLE
	GENERATOR
	PANELBOARD
	2 x EVSE MOUNTED ON PEDESTAL
	1 x EVSE MOUNTED ON PEDESTAL
	1 x EVSE WALL- MOUNTED ON PEDESTAL
	WHEEL STOP
	INDICATIVE TRENCHING



Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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Phone: (778) 622-9634
www.rbqEngineering.com

SEAL:

REV	DESCRIPTION	DATE
3	ISSUED FOR PRICING	APR. 28, 2025
2	ISSUED FOR REVIEW	MAR. 31, 2025
1	ISSUED FOR REPORT	SEP. 22, 2024

PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

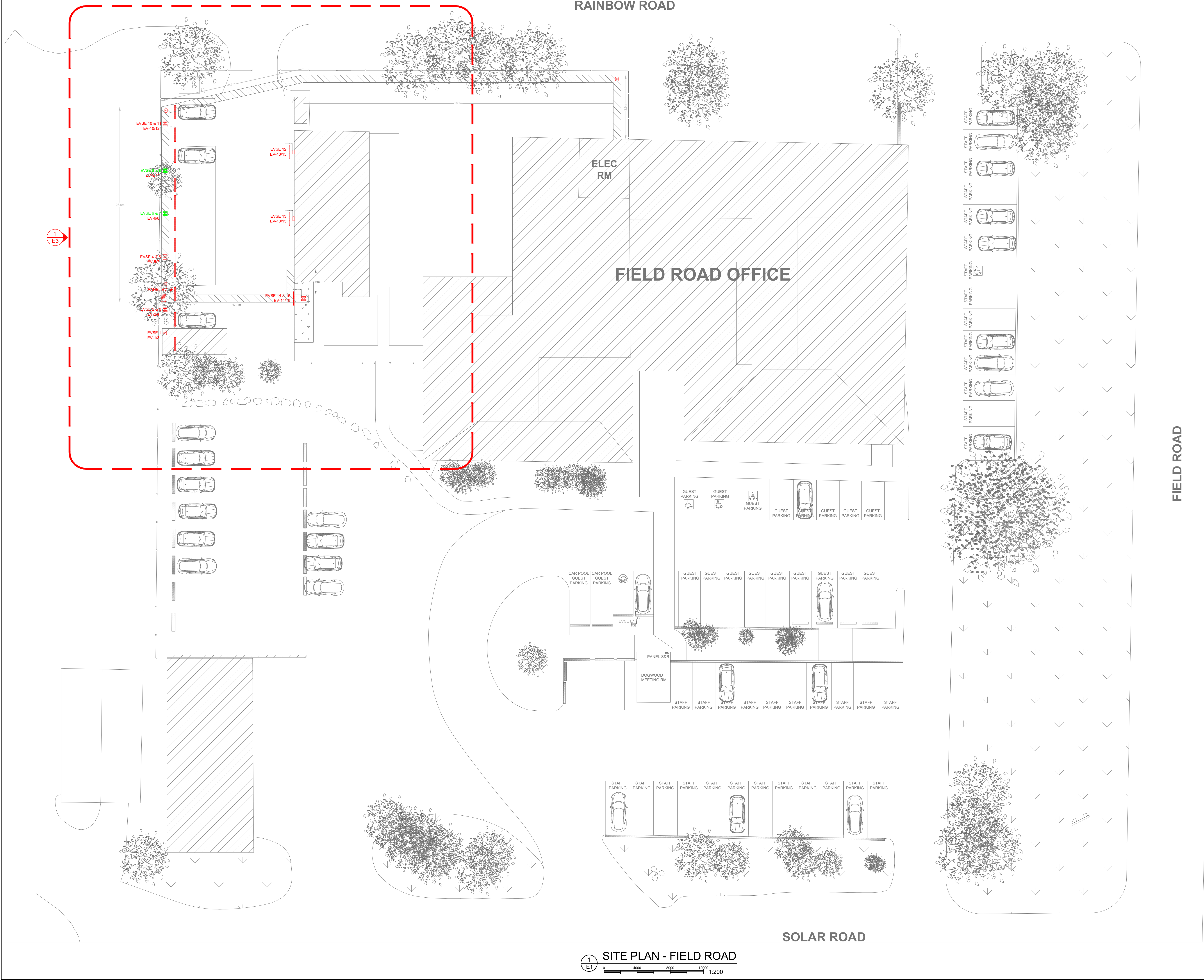
DRAWING TITLE:

COVER

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E0

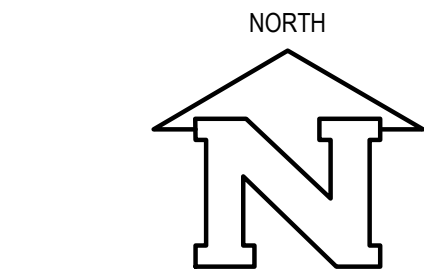


BC HYDRO
(3x100KVA)

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REGIONAL DISTRICT
EV CHARGING

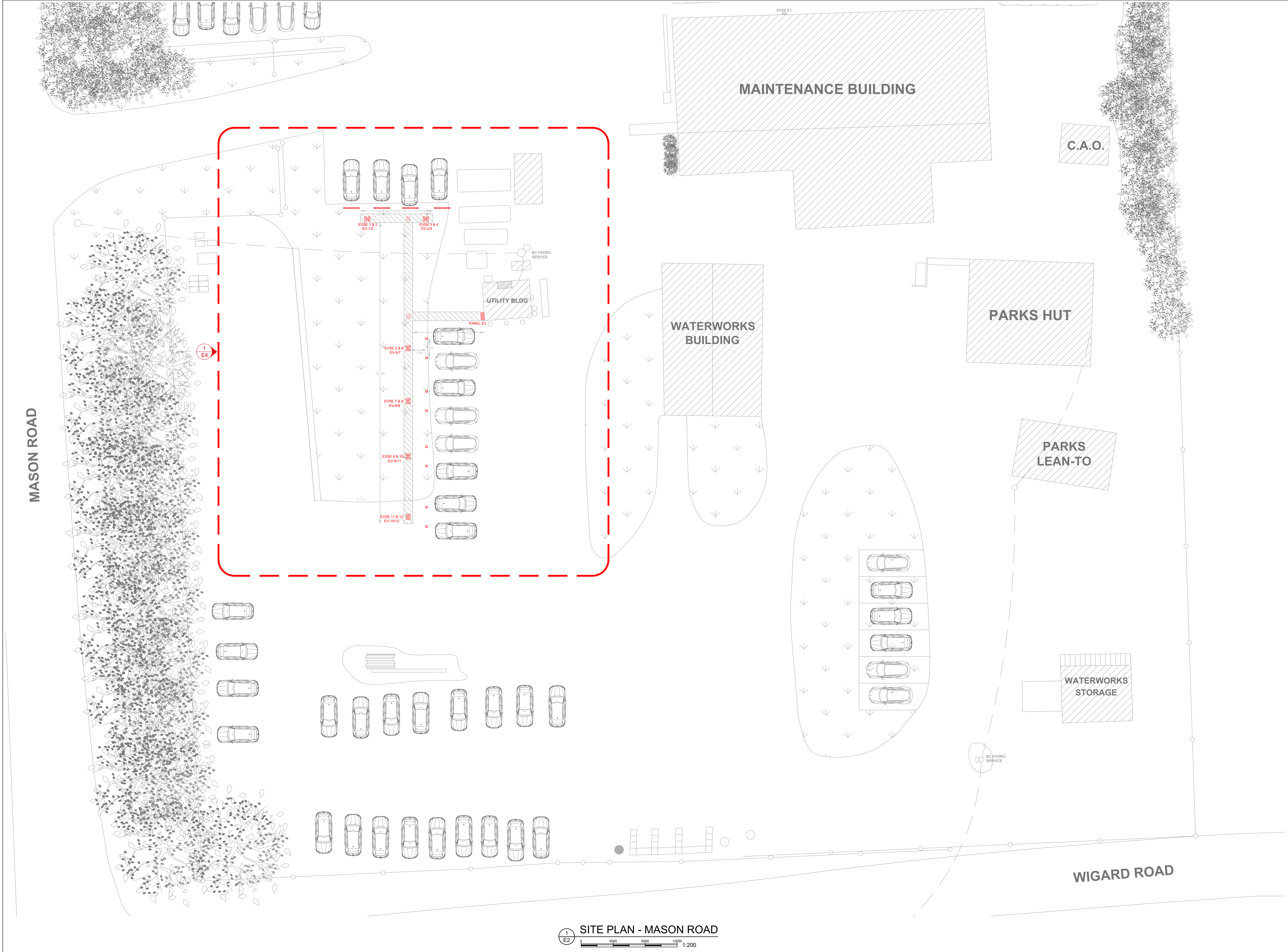
DRAWING TITLE:

FIELD ROAD
SITE PLAN

DATE:	APRIL 28, 2025
SCALE:	1:200
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E1

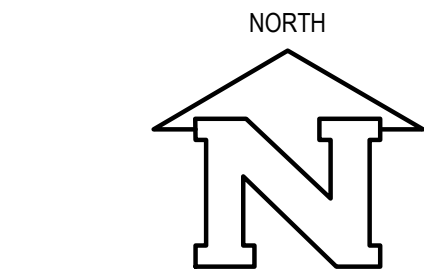


1
E2
SITE PLAN - MASON ROAD
0 4000 8000 12000
1:200

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REGIONAL DISTRICT
EV CHARGING

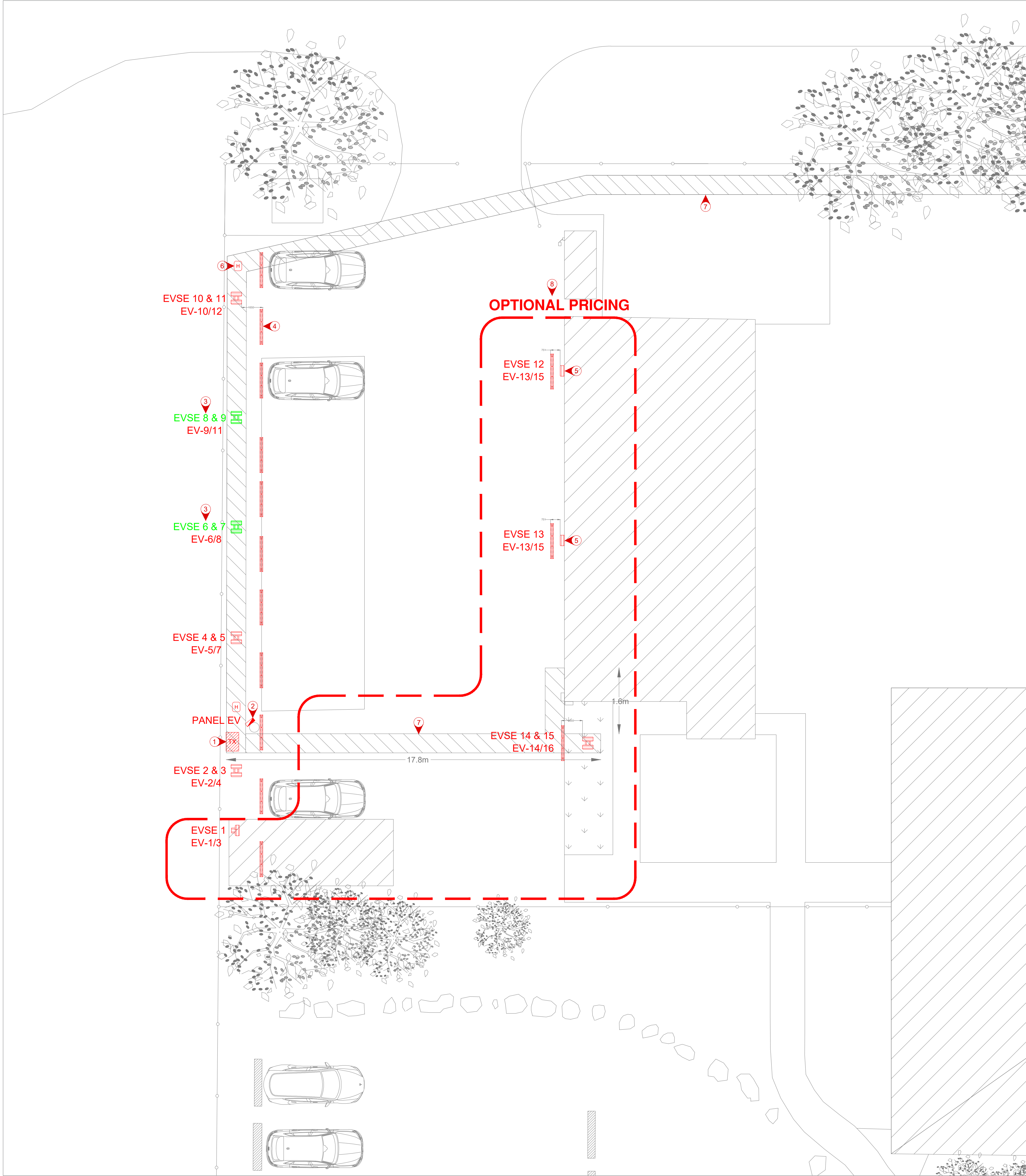
DRAWING TITLE:

MASON ROAD
SITE PLAN

DATE:	APRIL 28, 2025
SCALE:	1:200
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E2



1
E3 FIELD ROAD - POWER LAYOUT

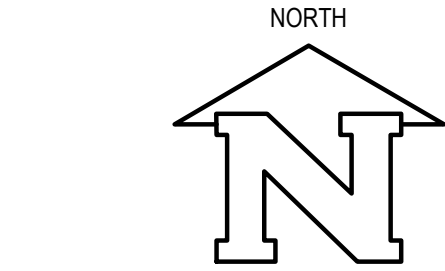
KEYNOTES:

1. PROVIDE OUTDOOR RATED (ENCAPSULATED) TRANSFORMER ON CONCRETE PAD (200MM ABOVE GROUND), AND METAL BASE.
2. REPLACE EXISTING POLE-MOUNTED PANELBOARD.
3. PROVIDE NEW CIRCUITS TO EXISTING CHARGERS..
4. PROVIDE WHEEL STOPS (TYPICAL).
5. INSTALL WALL-MOUNTED CHARGERS.
6. INDICATIVE HANDHOLE LOCATIONS. THE CONTRACTOR IS TO DETERMINE THE BEST LOCATIONS ON SITE.
7. INDICATIVE TRENCH LOCATIONS. THE CONTRACTOR IS TO DETERMINE THE BEST LOCATIONS ON SITE.
8. PROVIDE ITEMS INSIDE DASHED LINE AS OPTIONAL PRICING (I.E. NOT PART OF BASE PRICING VALUE).

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

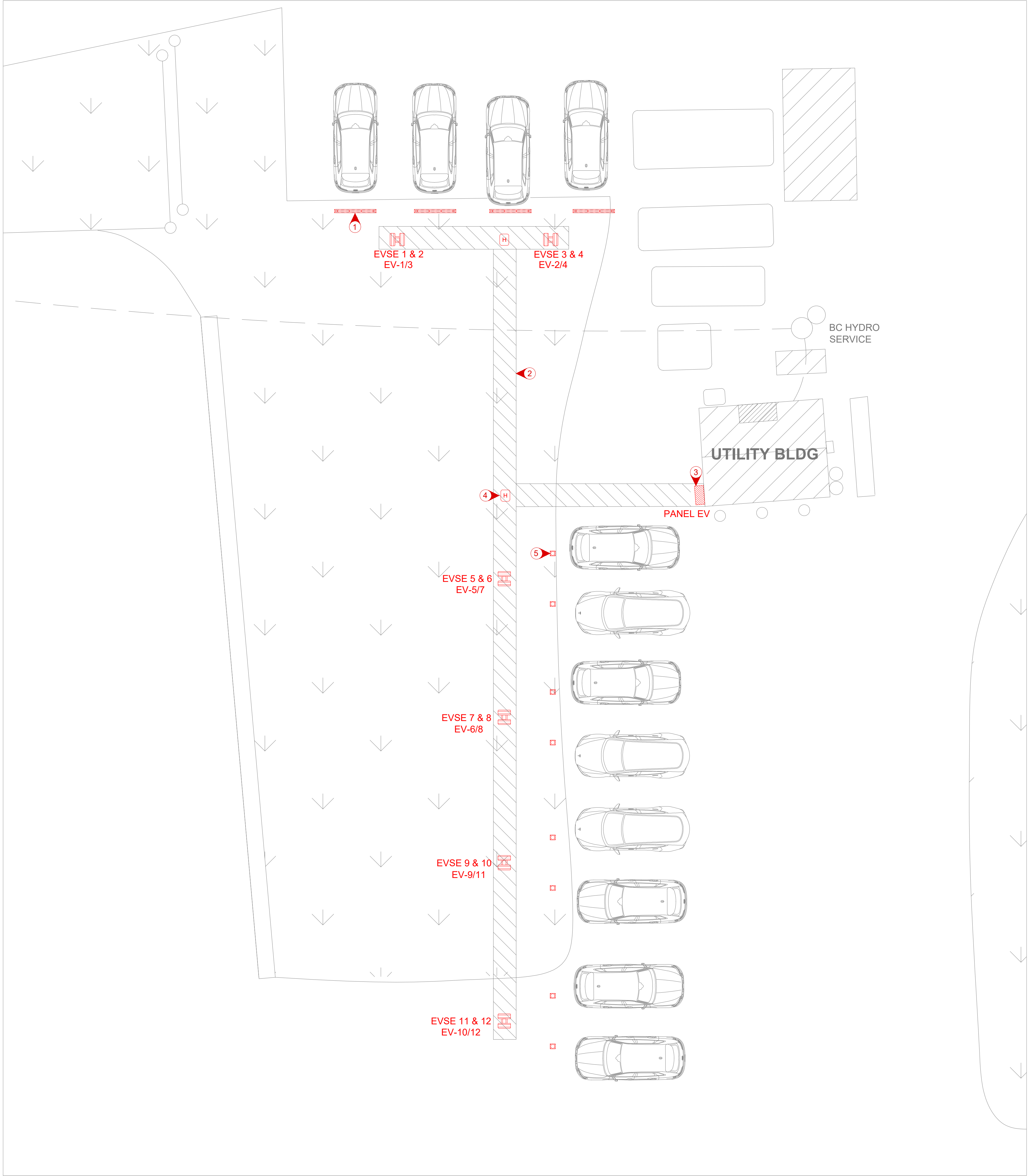
DRAWING TITLE:

FIELD ROAD
POWER LAYOUT

DATE:	APRIL 28, 2025
SCALE:	1:100
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E3



2 E4 MASON ROAD - POWER LAYOUT

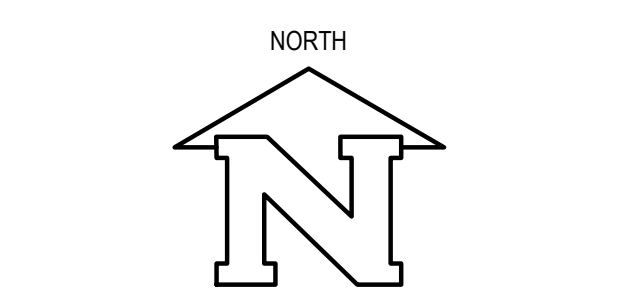
KEYNOTES:

- 1. PROVIDE WHEEL STOPS (TYPICAL).
- 2. INDICATIVE TRENCH LOCATIONS. THE CONTRACTOR IS TO DETERMINE THE BEST LOCATIONS ON SITE.
- 3. PROVIDE NEW WALL MOUNTED PANELBOARD ON UTILITY BUILDING.
- 4. INDICATIVE HAND HOLE LOCATION. CONTRACTOR TO CONFIRM FINAL LOCATION ON SITE.
- 5. PROVIDE HEAVY-DUTY METAL BOLLARDS (TYPICAL), WITH CONCRETE BASES.

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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REV	DESCRIPTION	DATE

PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

DRAWING TITLE:

MASON ROAD
POWER LAYOUT

DATE:	APRIL 28, 2025
SCALE:	1:100
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E4

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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REGIONAL DISTRICT
EV CHARGING

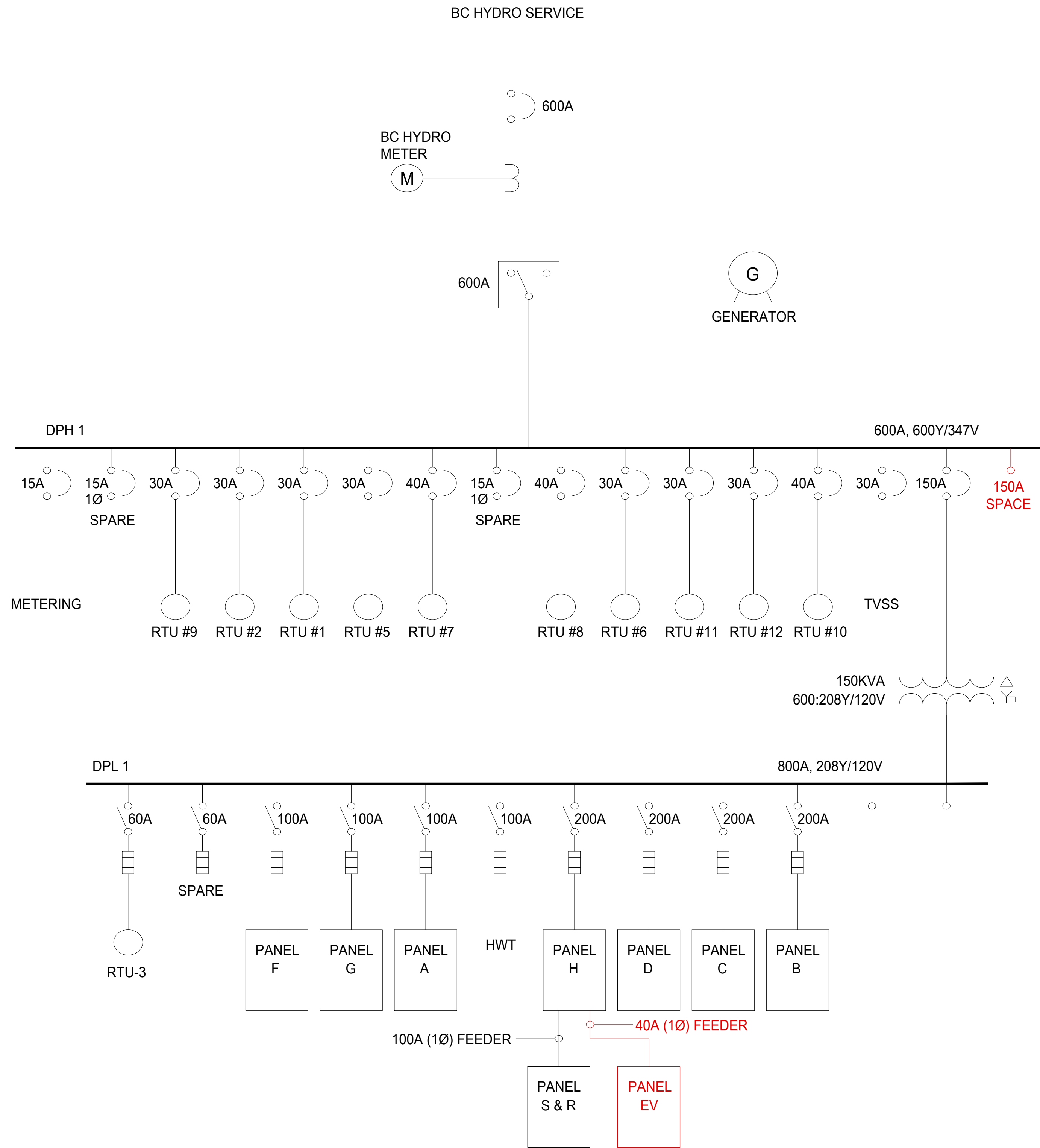
DRAWING TITLE:

FIELD ROAD SINGLE LINE DIAGRAMS

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

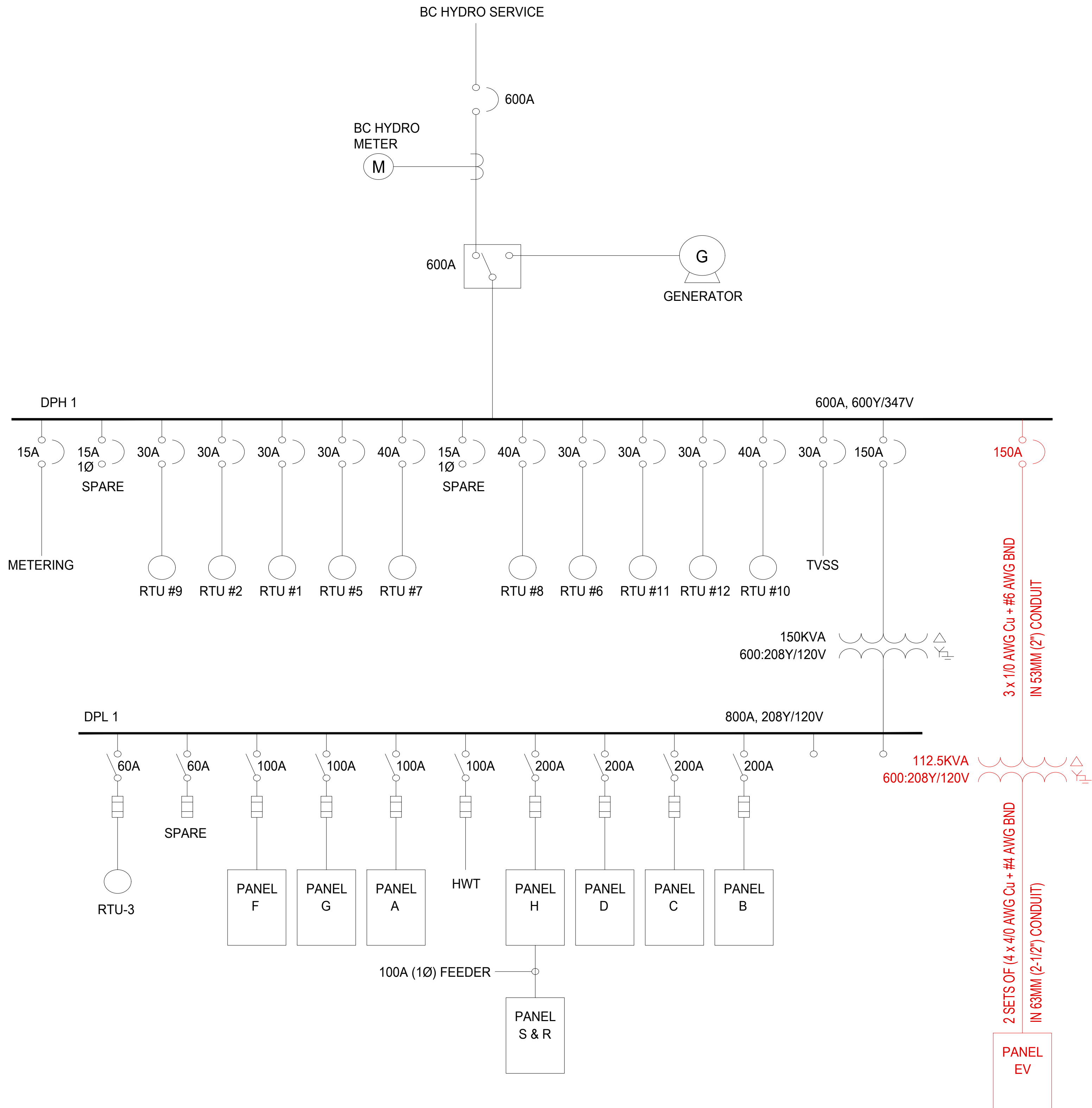
E5



1
E5

FIELD ROAD - EXISTING SINGLE LINE DIAGRAM

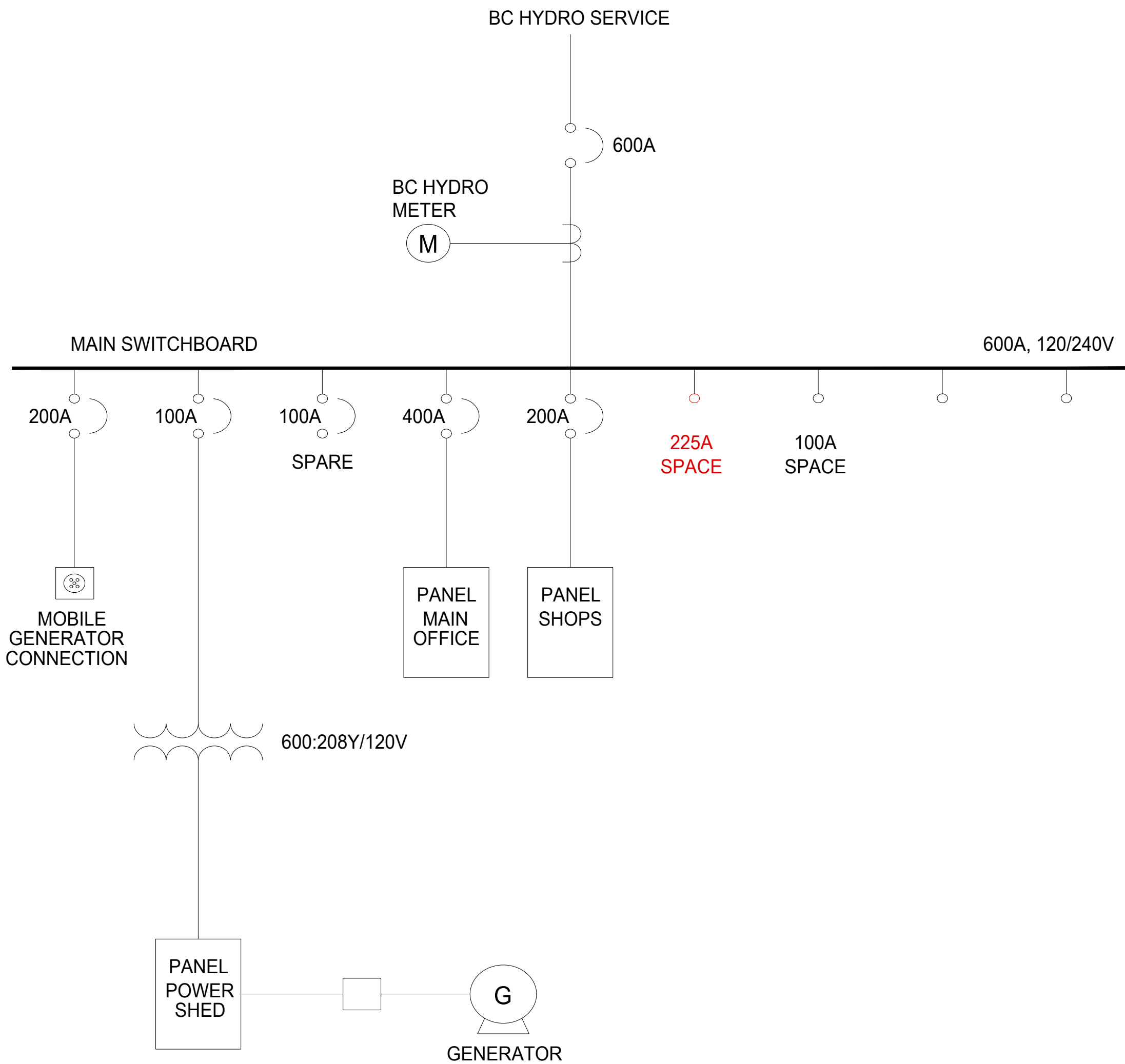
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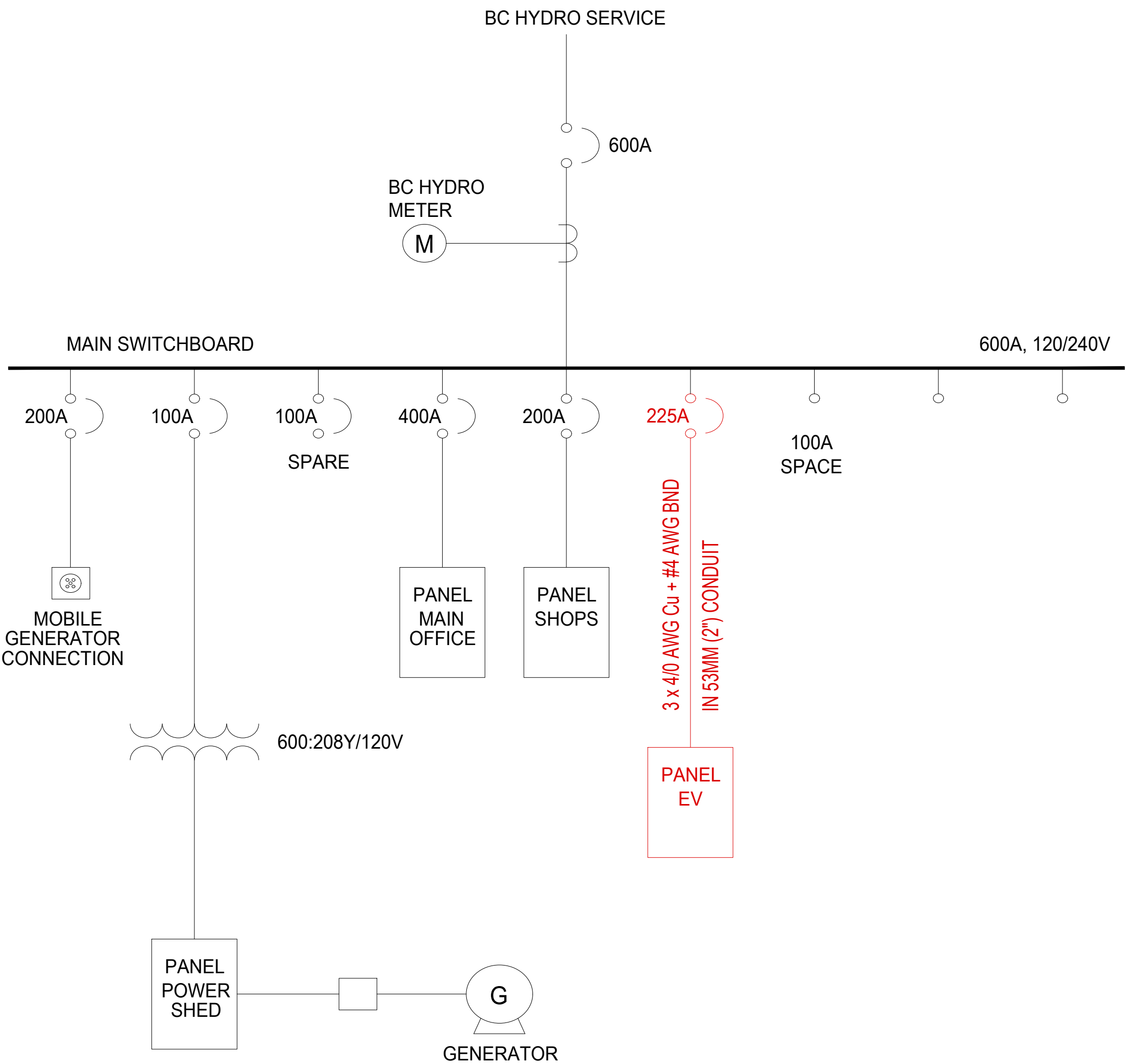
2
E5

FIELD ROAD - NEW SINGLE LINE DIAGRAM

NTS



1 MASON ROAD - EXISTING SINGLE LINE DIAGRAM
E6 NTS



2 MASON ROAD - NEW SINGLE LINE DIAGRAM
E6 NTS

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SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

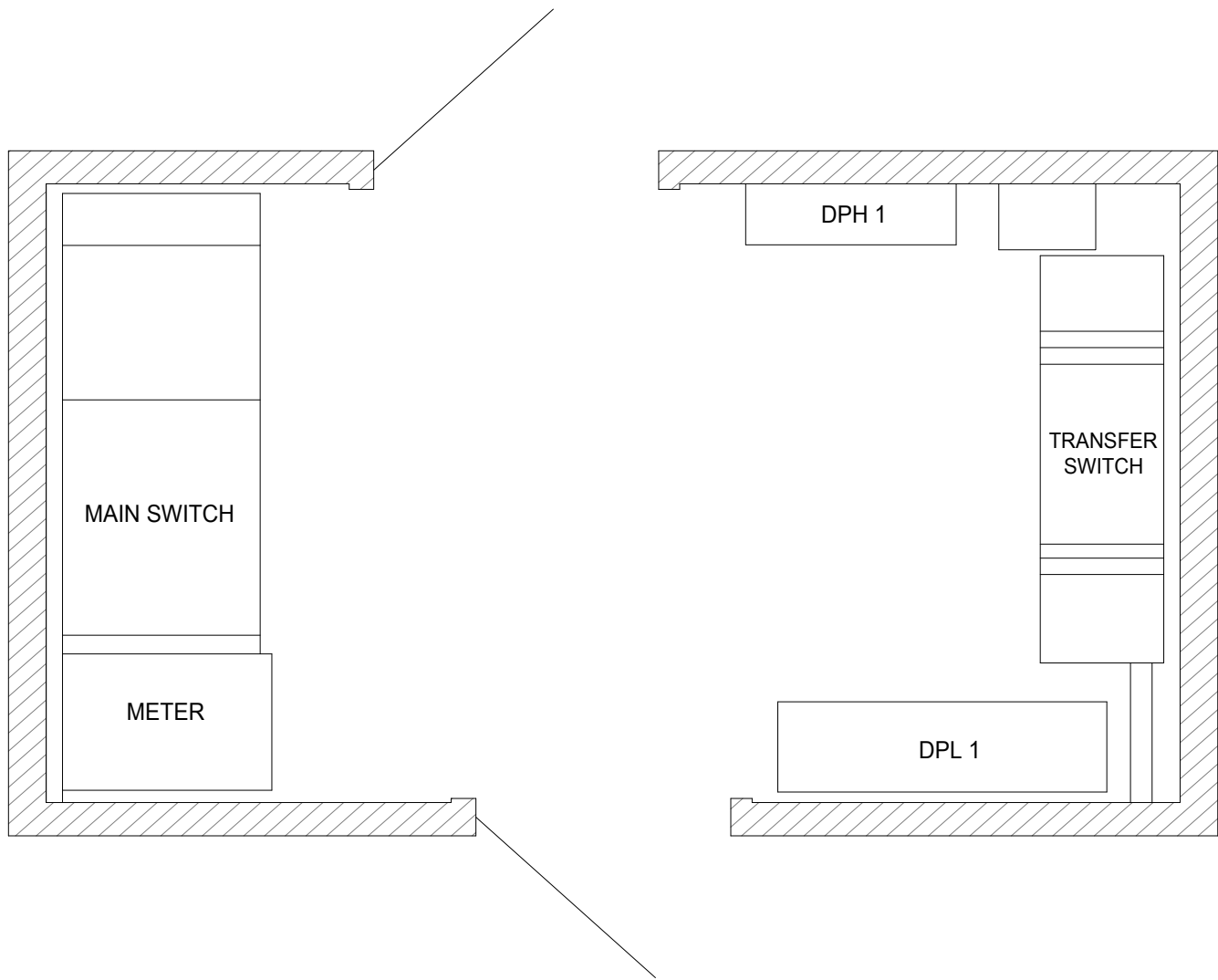
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MASON ROAD
SINGLE LINE DIAGRAMS

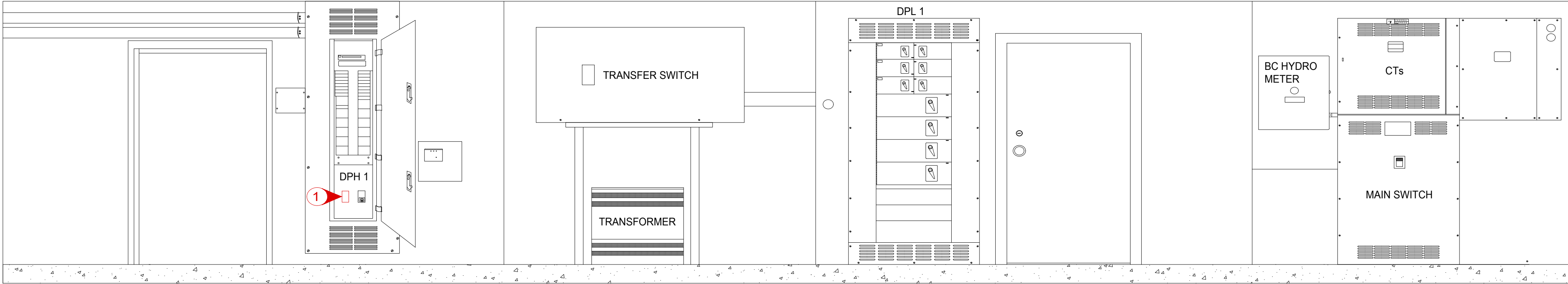
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SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

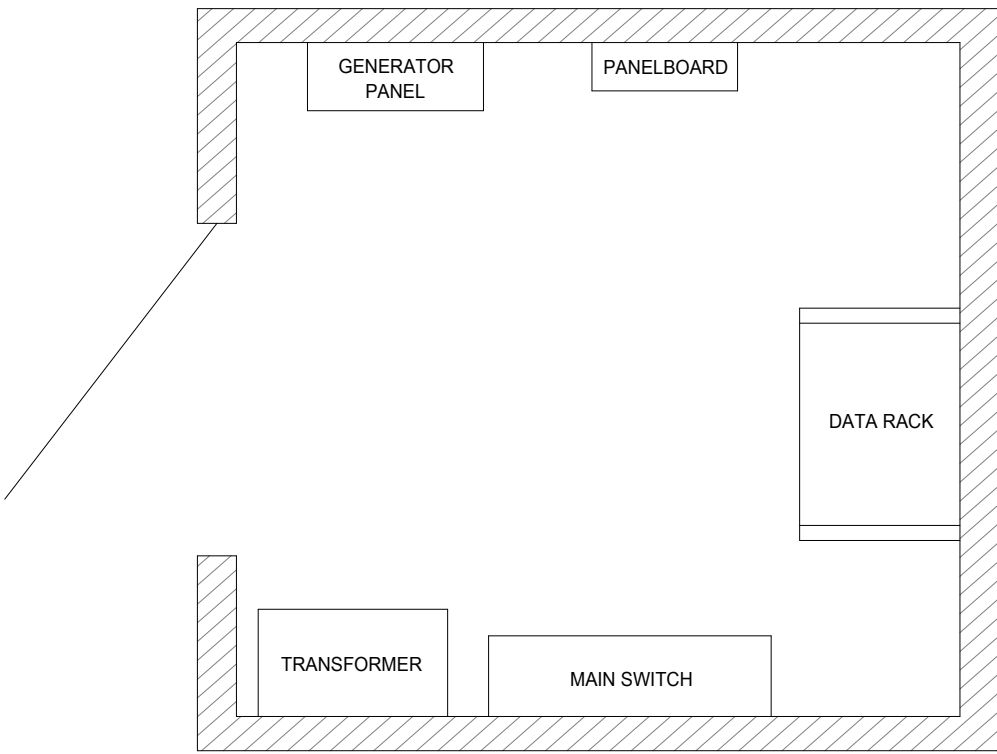
E6



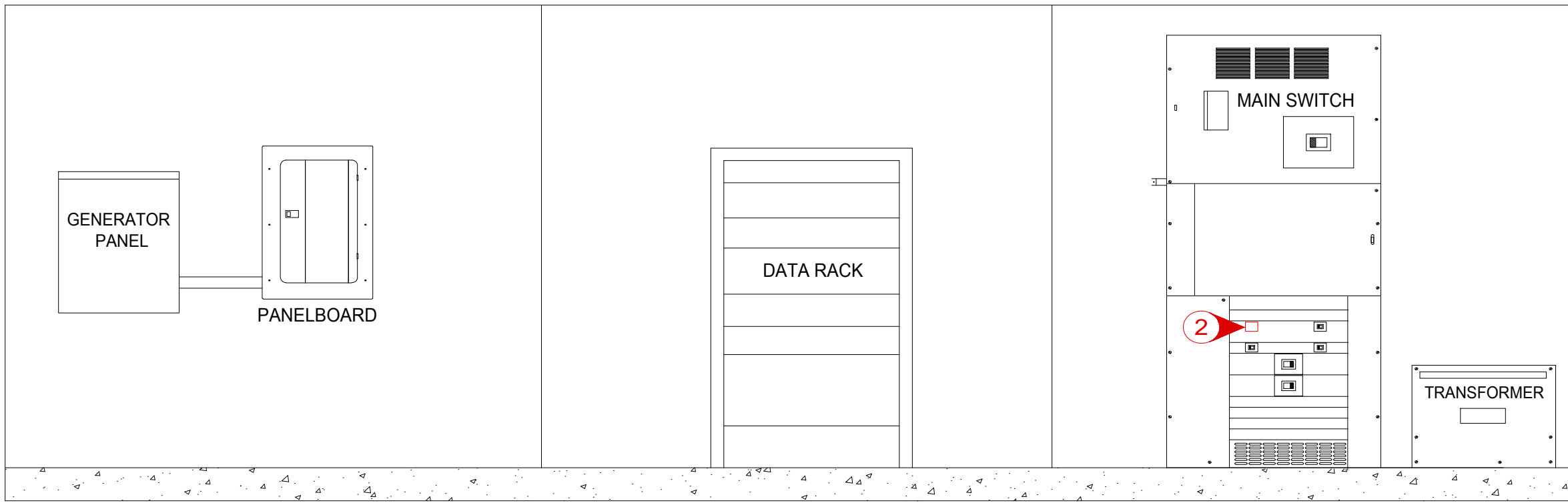
1
E7
FIELD ROAD - ELECTRICAL ROOM PLAN
NTS



2
E7
FIELD ROAD - ELECTRICAL ROOM ELEVATION
NTS



3
E7
MASON ROAD - ELECTRICAL ROOM PLAN
NTS



4
E7
MASON ROAD - ELECTRICAL ROOM ELEVATION
NTS

KEYNOTES:

1. SPACE FOR CONNECTION OF NEW 150A, 600V BREAKER.
2. SPACE FOR CONNECTION OF NEW 225A, 240V BREAKER.

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PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

DRAWING TITLE:

ELECTRICAL ROOM
DETAILS

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E7

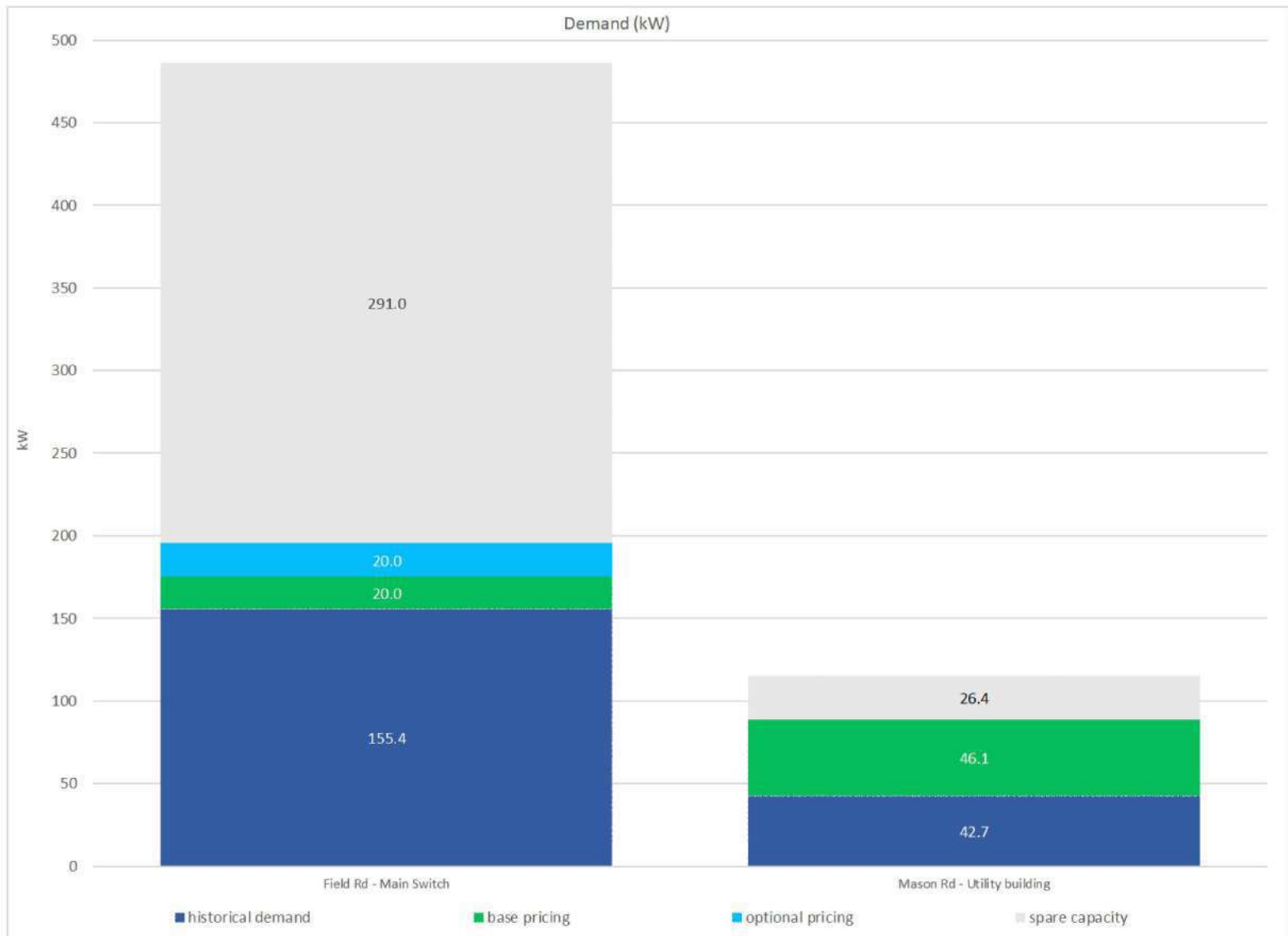
FIELD ROAD - PANEL EV (EXISTING)											
RATING:	200A, 208Y/120V				MAIN BREAKER:		MAIN LUGS ONLY				
TYPE:	3R				SUPPLIED FROM:		PANEL H				
LOCATION:	POLE MOUNTED IN FLEET PARKING AREA				FAULT RATING:		10 kAIC				
MOUNTING:	SURFACE MOUNT										
DESCRIPTION		CCT	BRK (A)	LOAD (W)	PH	LOAD (W)	BRK (A)	CCT	DESCRIPTION		
POLE LIGHT		1	15	75	A	-	-	2			
		3	-	75	B	120	15	4	SEACAN		
		5	-	-	C	-	-	6			
		7	-	-	A	1,248	15	8	EV CHARGER 101		
		9	-	-	B	1,248	15	10			
		11	-	-	C	-	-	12			
		13	-	-	A	1,248	15	14	EV CHARGER 102		
		15	-	-	B	1,248	15	16			
		17	-	-	C	-	-	18			
		19	-	-	A	1,248	15	20	EV CHARGER 103		
		21	-	-	B	1,248	15	22			
		23	-	-	C	-	-	24			
		25	-	-	A	1,248	15	26	EV CHARGER 104		
		27	-	-	B	1,248	15	28			
		29	-	-	C	-	-	30			
								PHASE	LOAD		
									(W)	(A)	
								A	5,067	42	
								B	5,187	43	
								C	-	0	
								10 kVA			
								28 A			

MASON ROAD - PANEL EV (NEW)												
RATING:	225A, 120/240V				MAIN BREAKER:		MAIN LUGS ONLY					
TYPE:	3R				SUPPLIED FROM:		PANEL EV					
LOCATION:	EXTERIOR				FAULT RATING:		10 kA/IC					
MOUNTING:	SURFACE MOUNT											
DESCRIPTION		CCT	BRK (A)	LOAD (W)	PH	LOAD (W)	BRK (A)	CCT	DESCRIPTION			
EVSE 1 & 2		1	40	3,840	A	3,840	40	2	EVSE 3 & 4			
		3		3,840	B	3,840		4				
EVSE 5 & 6		5	40	3,840	A	3,840	40	6	EVSE 7 & 8			
		7		3,840	B	3,840		8				
EVSE 9 & 10		9	40	3,840	A	3,840	40	10	EVSE 11 & 12			
		11		3,840	B	3,840		12				
-		13	-	-	A	-	-	14	-			
-		15	-	-	B	-	-	16	-			
-		17	-	-	A	-	-	18	-			
-		19	-	-	B	-	-	20	-			
-		21	-	-	A	-	-	22	-			
-		23	-	-	A	-	-	24	-			
-		25	-	-	B	-	-	26	-			
-		27	-	-	A	-	-	28	-			
-		29	-	-	B	-	-	30	-			
-		31	-	-	A	-	-	32	-			
-		33	-	-	B	-	-	34	-			
-		35	-	-	A	-	-	36	-			
-		37	-	-	B	-	-	38	-			
-		39	-	-	A	-	-	40	-			
-		41	-	-	B	-	-	42	-			
Note: 1. The load management system is to restrict maximum demand for the panel to 180A, 120/240V (43.2 kW)									PHASE		LOAD	
											(W)	(A)
									A		23,040	192
									B		23,040	192
									46.1 kVA 192 A			

NOTES:

1. CONNECT TWO CHARGERS (TYPICALLY) PER 40A CIRCUIT FOR FLEET CHARGERS (AT BOTH SITES).
2. THE SCOPE INCLUDES TWO NEW PANELBOARDS - ONE AT FIELD ROAD, AND ONE AT MASON ROAD.
3. THE EXISTING POLE-MOUNTED PANELBOARD AT FIELD ROAD IS TO BE REMOVED.

FIELD ROAD - PANEL EV (NEW)											
RATING:	400A, 208Y/120V				MAIN BREAKER:		MAIN LUGS ONLY				
TYPE:	3R				SUPPLIED FROM:		PANEL EV				
LOCATION:	EXTERIOR				FAULT RATING:		10 kAIC				
MOUNTING:	SURFACE MOUNT										
DESCRIPTION	CCT	BRK (A)	LOAD (W)	PH	LOAD (W)	BRK (A)	CCT	DESCRIPTION			
EVSE 1	1	40	3,328	A	3,328	40	2	EVSE 2 & 3			
	3		3,328	B	3,328		4				
EVSE 4 & 5	5	40	3,328	C	3,328	40	6	EVSE 6 & 7			
	7		3,328	A	3,328		8				
EVSE 8 & 9	9	40	3,328	B	3,328	40	10	EVSE 10 & 11			
	11		3,328	C	3,328		12				
EVSE 12 & 13	13	40	3,328	A	3,328	40	14	EVSE 14 & 15			
	15		3,328	B	3,328		16				
EVSE P1	17	40	3,328	C	3,328	40	18	EVSE P2			
	19		3,328	A	3,328		20				
EVSE P3	21	40	3,328	B	3,328	40	22	EVSE P4			
	23		3,328	C	3,328		24				
EVSE P5	25	40	3,328	A	3,328	40	26	EVSE P6			
	27		3,328	B	3,328		28				
POLE LIGHT	29	15	75	C	120	15	30	SEACAN			
-	31		75	A	-	-	32				
-	33	-	-	B	-	-	34				
-	35	-	-	C	-	-	36				
-	37	-	-	A	-	-	38				
-	39	-	-	B	-	-	40				
-	41	-	-	C	-	-	42				
Notes: 1. EVSE 6, 7, 8, & 9 are existing chargers (on pedestals), to be recircuited. 2. Reconnect existing pole light and seacan to new panel. 3. Optional pricing items are indicated in red.								PHASE	LOAD		
									(W)	(A)	
								A	33,355	278	
								B	33,280	277	
								C	26,819	223	
								93.5 kVA			
								259 A			



CABLE & CONDUIT SIZES							
CCT	CIRCUIT	APPROX. LENGTH (M)		CABLE SIZE	CONDUIT	VOLTAGE	VOLTAGE DROP (%)
		(M)	(FT)				
FIELD ROAD							
MSB TO TRANSF.	-	121	397	3 x #1/0 AWG CU + #6 AWG CU BND	53MM (2")	600V, 3Ø	1.32
TRANSF. TO PANEL EV	-	7	23	2 SETS (4 x #4/0 AWG CU + #4 AWG CU BND)	63MM (2-1/2")	208V, 3Ø	0.17
PANEL EV							
EVSE 1	1/3	11	36	2#8 AWG CU + #10 AWG CU BND	27MM (1")	208V, 1Ø	0.87
EVSE 2 & 3	2/4	7	23	2#8 AWG CU + #10 AWG CU BND		208V, 1Ø	0.55
EVSE 4 & 5	5/7	9	30	2#8 AWG CU + #10 AWG CU BND	27MM (1")	208V, 1Ø	0.71
EVSE 6 & 7	6/8	16	52	2#8 AWG CU + #10 AWG CU BND		208V, 1Ø	1.25
EVSE 8 & 9	9/11	23	75	2#8 AWG CU + #10 AWG CU BND	27MM (1")	208V, 1Ø	1.81
EVSE 10 & 11	10/12	31	102	2#8 AWG CU + #10 AWG CU BND		208V, 1Ø	2.44
EVSE 12	13/15	51	167	2#6 AWG CU + #8 AWG CU BND	27MM (1")	208V, 1Ø	2.52
EVSE 13	13/15	40	131				1.98
EVSE 14 & 15	14/16	29	95	2#8 AWG CU + #10 AWG CU BND	27MM (1")	208V, 1Ø	2.28
MASON ROAD							
MSB TO PANEL EV	-	15	49	3 x 4/0 AWG Cu + #4 AWG CU BND	53MM (2")	240V, 1Ø	0.50
PANEL EV							
EVSE 1 & 2	1/3	33	108	2#8 AWG CU + #10 AWG CU BND	27MM (1")	240V, 1Ø	2.25
EVSE 3 & 4	2/4	28	92	2#8 AWG CU + #10 AWG CU BND		240V, 1Ø	1.91
EVSE 5 & 6	5/7	18	59	2#8 AWG CU + #10 AWG CU BND	27MM (1")	240V, 1Ø	1.23
EVSE 7 & 8	6/8	25	82	2#8 AWG CU + #10 AWG CU BND		240V, 1Ø	1.71
EVSE 9 & 10	9/11	33	108	2#8 AWG CU + #10 AWG CU BND	27MM (1")	240V, 1Ø	2.25
EVSE 11 & 12	10/12	41	135	2#8 AWG CU + #10 AWG CU BND		240V, 1Ø	2.80

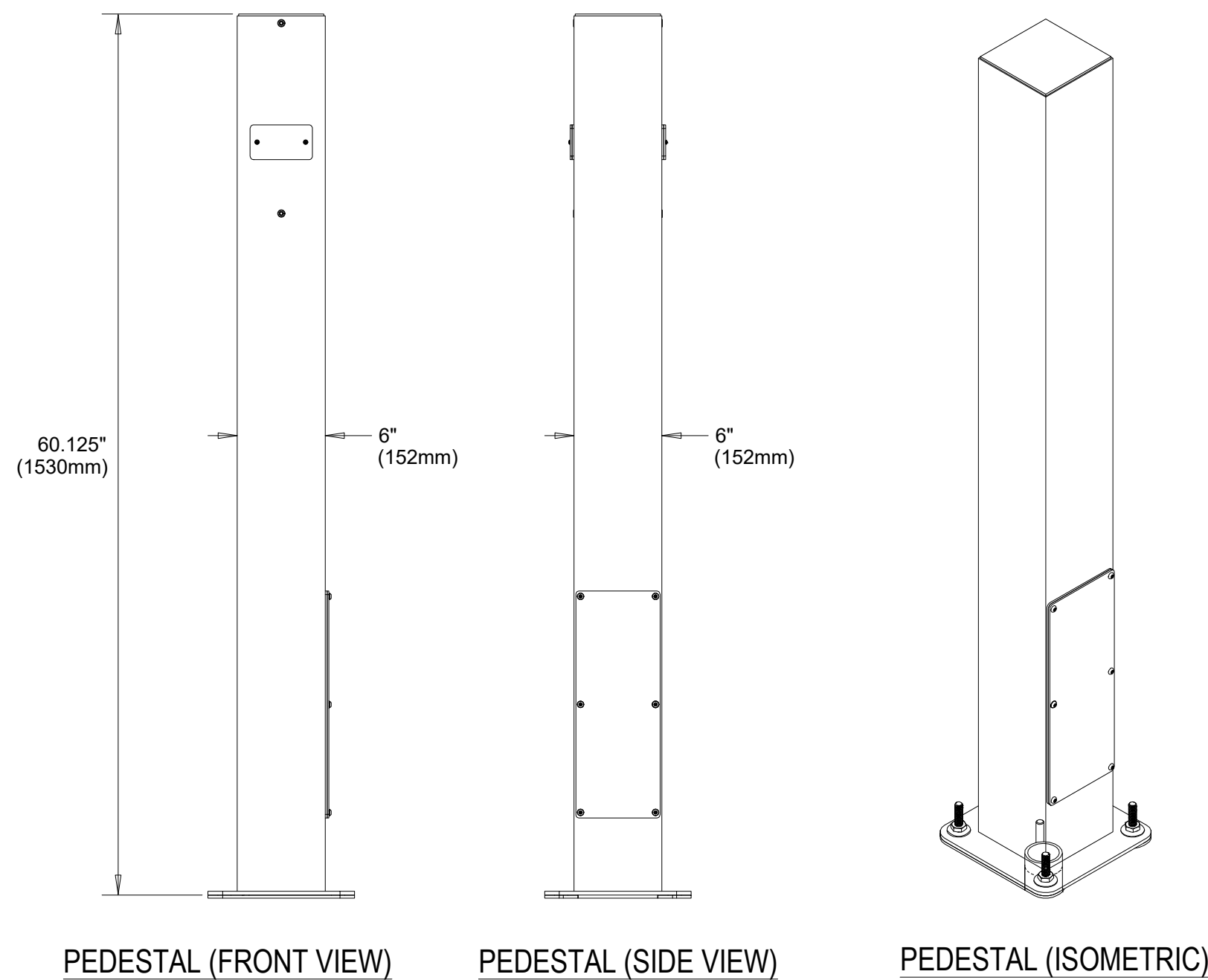
Notes:

- Some sizes have been increased due to voltage drop. Transition to 2#8 at final junction boxes, to connect to chargers.
- Cable lengths are indicative. Contractor to confirm final lengths when exact routing has been determined on site.
- If cable lengths are greater than the allowances indicated in the above table, promptly notify the Electrical Engineer.
- Trench lengths are indicative, only. Contractor to confirm final routing and lengths on site.
- Optional pricing items are indicated in **red**.

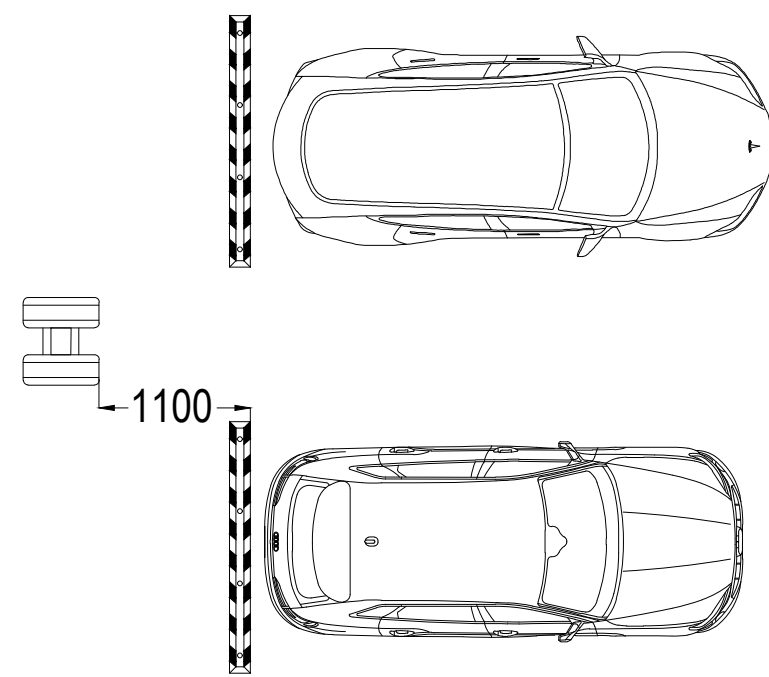
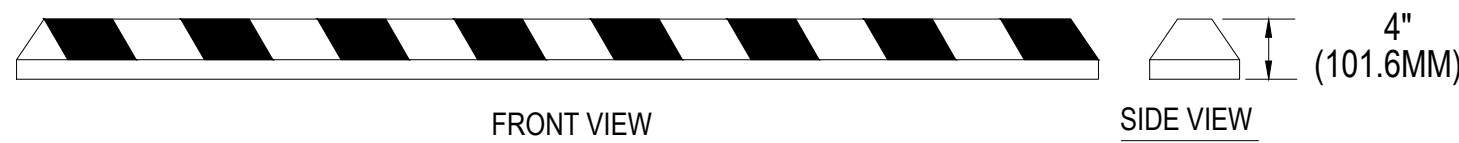
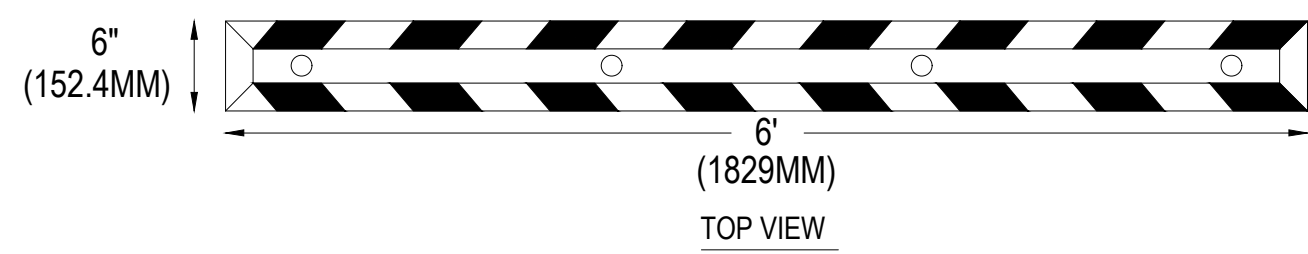
CHARGERS	
MAKE/MODEL:	Zeroxa/Phihong AW32
CHARGING POWER	6.656 kW (208V) - 7.680 kW (240V)
OUTPUT CURRENT	32A, 208V or 240V
PRODUCT DIMENSIONS	260mm W x 100mm D x 280mm H
PRODUCT WEIGHT	5kg
SUPPLY CIRCUITS	40A, 208V or 240V
CHARGE CABLE LENGTH	7m
CABLE MANAGEMENT SYSTEM	Match existing chargers at Field Road Office.
CONNECTOR TYPE	SAE J1772 (OR SAE J3400, DEPENDING ON AVAILABILITY WHEN ORDERING)
INTEGRATED GFCI	20mA
ENCLOSURE	Aluminum, type 3R
OPERATING TEMPERATURE	-30°C to +50°C
COMMUNICATIONS	Cellular
CERTIFICATIONS	cUL



LOAD MANAGEMENT SYSTEM	
PROVIDER	AMPUP, CHARGE LAB, SWITCH, OR APPROVED EQUAL.

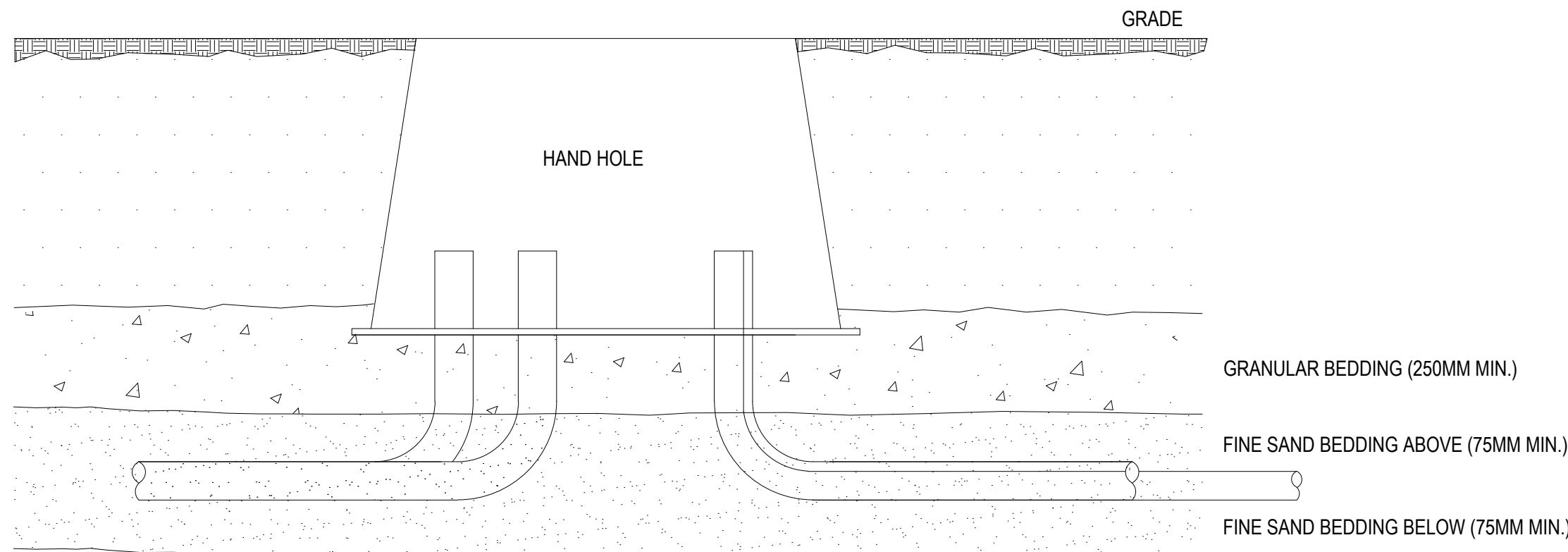


2
E9
NTS
BOLLARDS

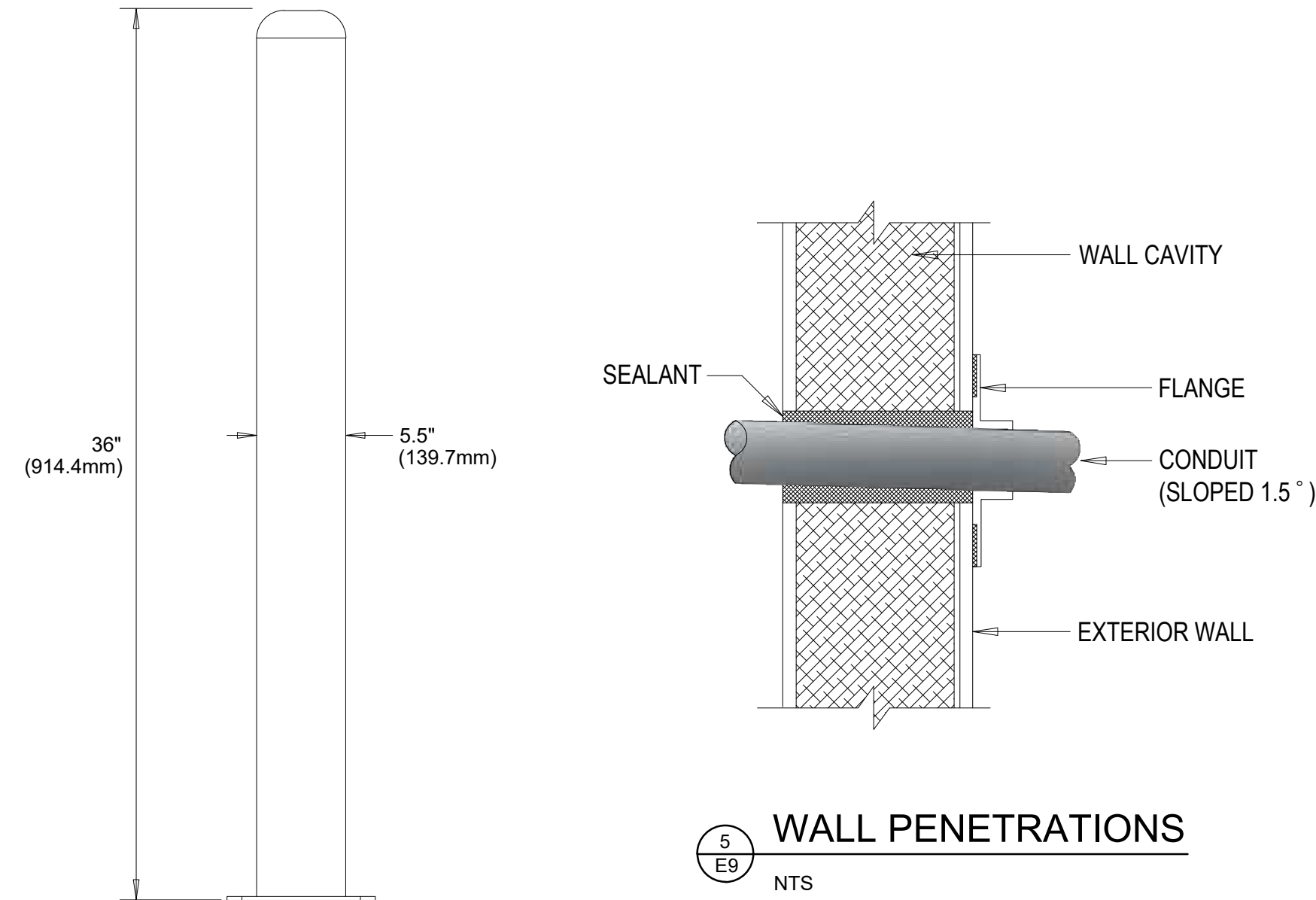


- NOTES:
- DIMENSIONS: 6FT LONG, 6" WIDE, AND 4" HIGH.
 - COLOR: BLACK/YELLOW (REFLECTIVE YELLOW STRIPES).
 - MATERIAL: COMPRESSION MOLDED RUBBER COMPOSITE.
 - FIXED: BOLTED IN PLACE: 16MM DIA.
4 COUNTER-BORED MOUNTING HOLES. 35MM BORE. 19MM DEEP.
 - MAKE: ULINE, SETON, OR APPROVED EQUAL.
 - WHEEL STOP LOCATION: INSTALL 1100MM FROM EDGE OF CHARGERS.

3
E9
NTS
WHEEL STOPS



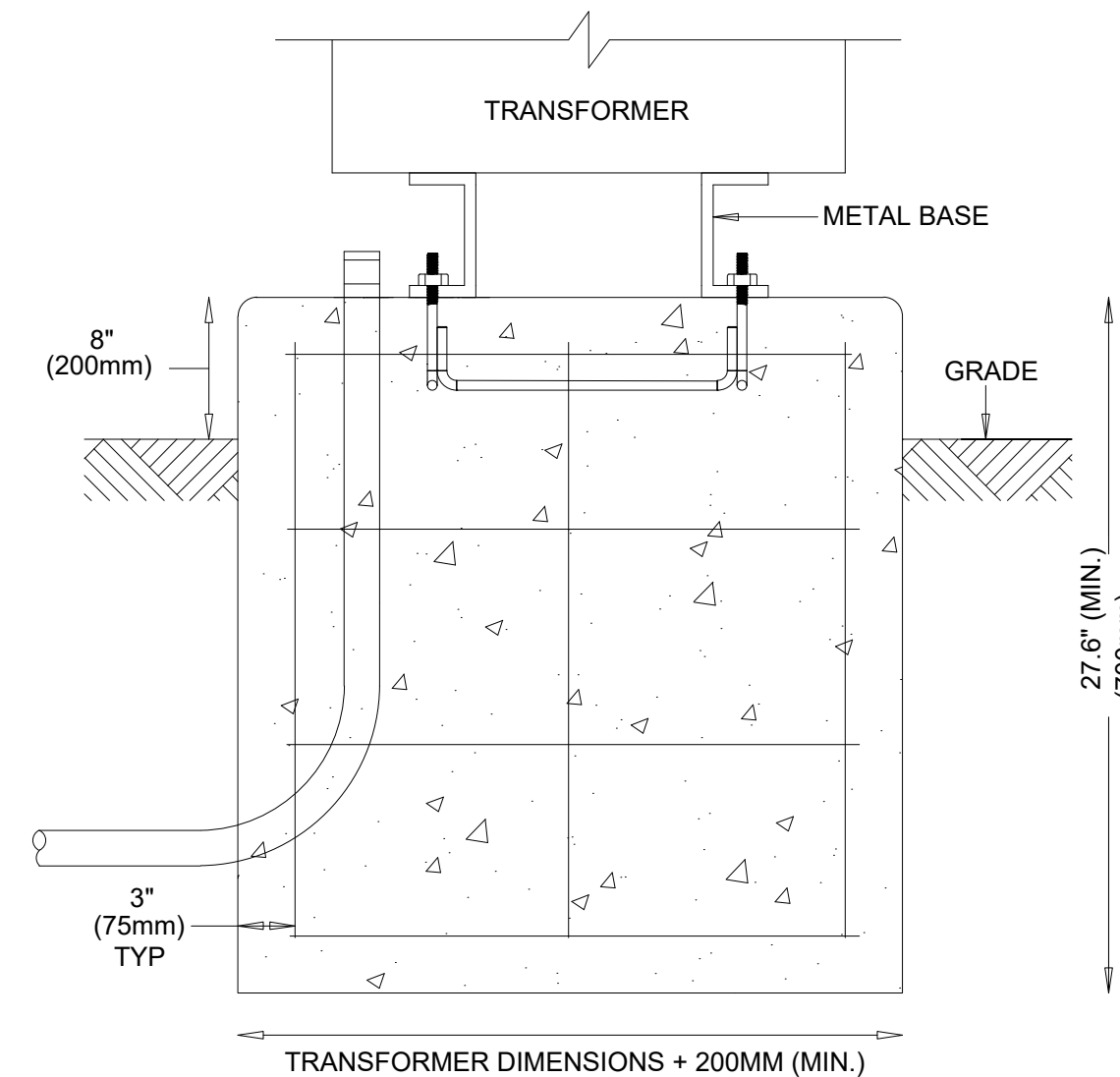
8
E9
NTS
HAND HOLE ELEVATION



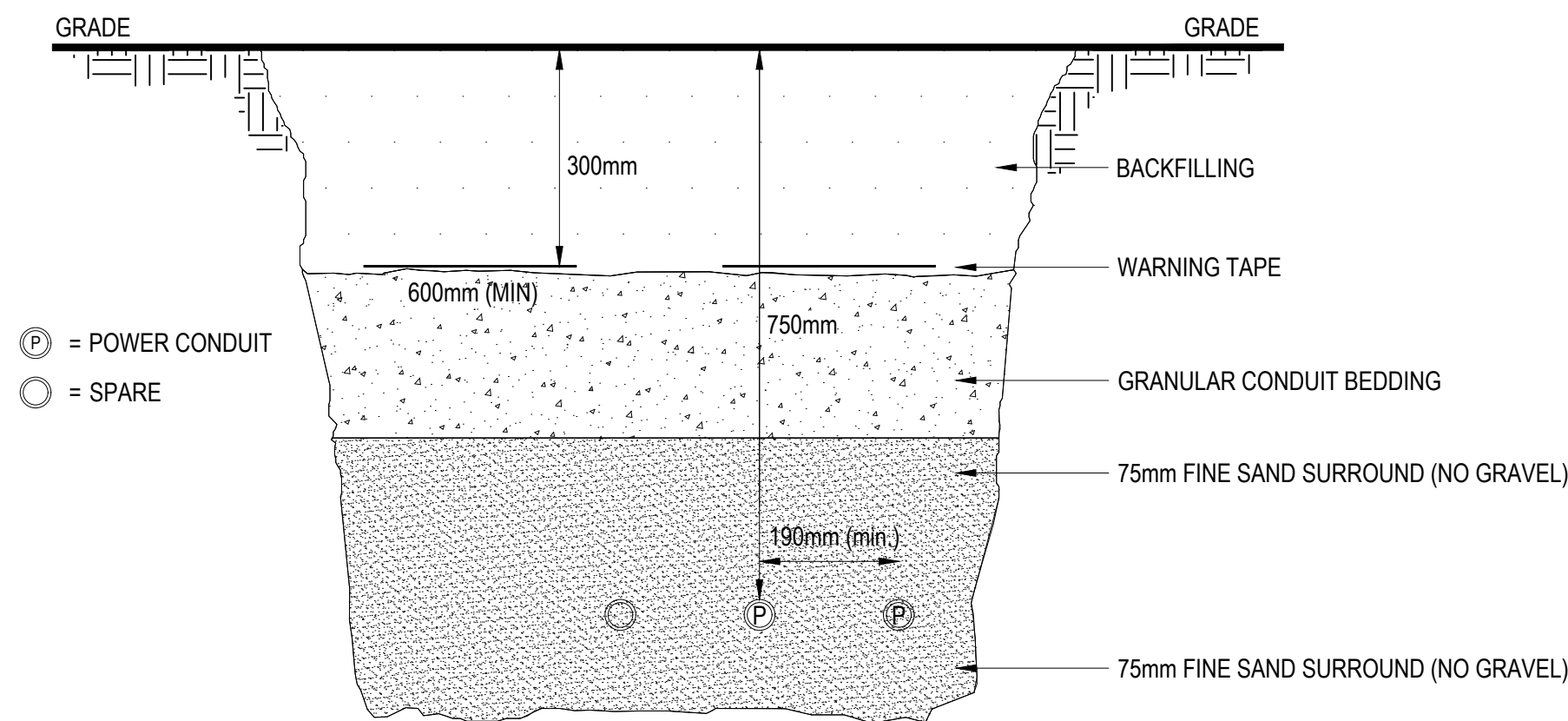
5
E9
NTS
WALL PENETRATIONS

- NOTES:
- PROVIDE HEAVY DUTY STEEL BOLLARDS.
 - BOLLARDS ARE TO BE YELLOW, FOR HIGH VISIBILITY.
 - BOLLARDS ARE TO HAVE CONCRETE BASES.

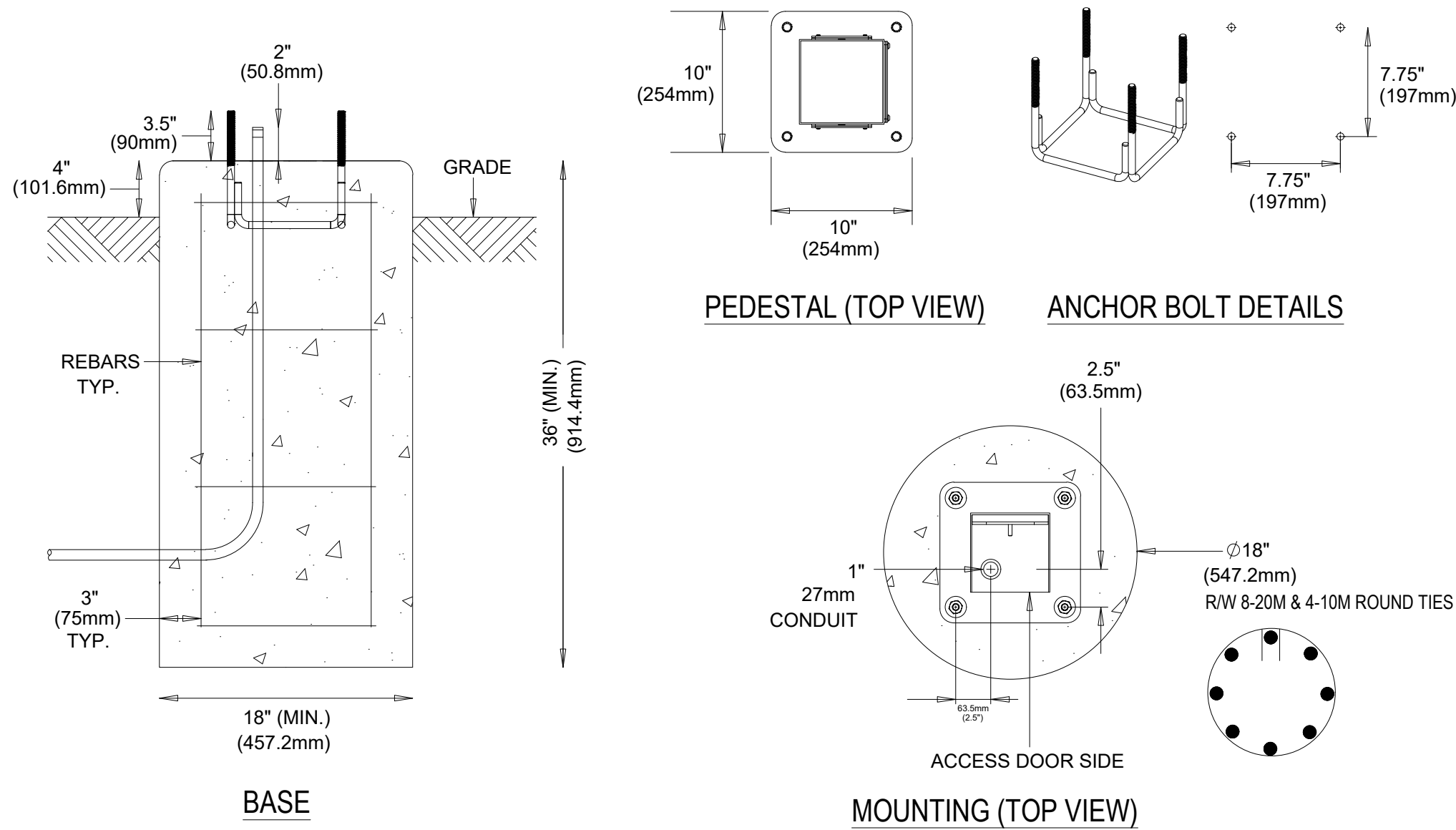
4
E9
NTS
BOLLARDS



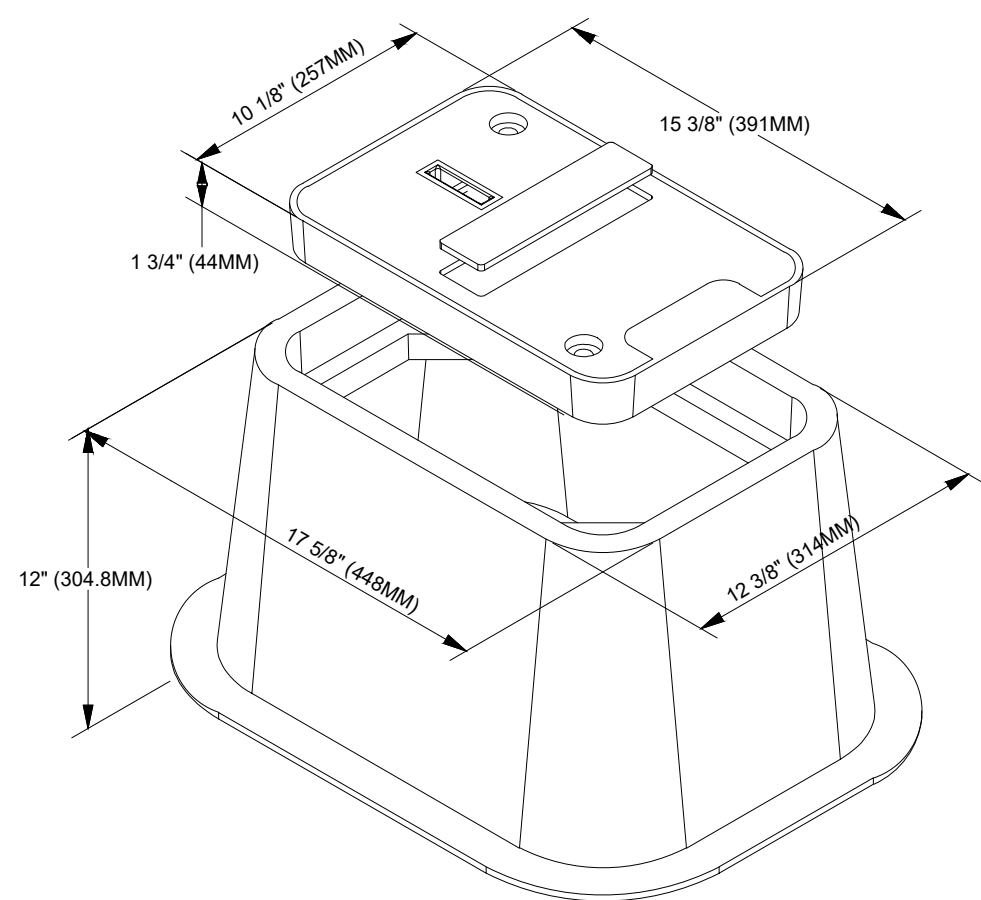
6
E9
NTS
TRANSFORMER PAD



9
E9
NTS
TRENCH



1
E9
NTS
PEDESTALS



- NOTES:
- DETAILS ARE BASED ON POLYMER CONCRETE HAND HOLES FROM NEWBASIS.
 - ALTERNATIVE MANUFACTURERS MAY BE SUBMITTED FOR APPROVAL.

7
E9
NTS
HAND HOLES

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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CLIENT:



ELECTRICAL ENGINEERS:



1310 Richards Street, Vancouver, BC, V6B 0P9
Email: contact@rbq-engineering.com
Phone: (778) 832-0634
www.rbqEngineering.com

SEAL:

REV	DESCRIPTION	DATE
3	ISSUED FOR PRICING	APR. 28, 2025
2	ISSUED FOR REVIEW	MAR. 31, 2025
1	ISSUED FOR REPORT	SEP. 22, 2024

PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

DRAWING TITLE:

DETAILS

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E9



1 FIELD ROAD - GENERAL
E10 NTS



2 FIELD ROAD - FLEET PARKING
E10 NTS



3 FIELD ROAD - FLEET PARKING
E10 NTS



4 FIELD ROAD - FLEET PARKING
E10 NTS



5 FIELD ROAD - FLEET PARKING
E10 NTS



6 FIELD ROAD - FLEET PARKING
E10 NTS



7 FIELD ROAD - EXISTING CHARGER
E10 NTS



8 FIELD ROAD - MAIN SWITCH
E10 NTS



9 FIELD ROAD - ELECTRICAL ROOM
E10 NTS



10 FIELD ROAD - ELECTRICAL ROOM
E10 NTS



11 FIELD ROAD - EV PANEL
E10 NTS



12 MASON ROAD - UTILITY BUILDING
E10 NTS



13 MASON ROAD - UTILITY BUILDING ELEC. RM.
E10 NTS



14 MASON ROAD - UTILITY BUILDING SWITCHBOARD
E10 NTS



15 MASON ROAD - PARKING
E10 NTS

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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SEAL:

REV	DESCRIPTION	DATE
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PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

DRAWING TITLE:

PHOTOS

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E10

SPECIFICATIONS

1. GENERAL

1.

THE SCOPE GENERALLY INCLUDES BUT IS NOT LIMITED TO:

- SUPPLY AND INSTALLATION OF CHARGERS AND CABLE MANAGEMENT (WITH CABLE MANAGEMENT BEING AN "OPTIONAL PRICING" ITEM).

- SUPPLY AND INSTALLATION OF PEDESTALS AND ASSOCIATED BASES FOR CHARGERS.

- SUPPLY AND INSTALLATION OF TRANSFORMER, PANELS, CABLING, AND CONDUITS.

- PROVIDE TRENCHING & BACKFILLING (AND REINSTATEMENT OF FINISHES, WHERE NECESSARY).

- PROVIDE WHEEL STOPS AND BOLLARDS, AS INDICATED.

- ALL REQUIRED SETUP AND COMMISSIONING ASSOCIATED WITH THE EVEMS (LOAD MANAGEMENT SYSTEM).
2.

PRICE THE ITEMS INDICATED AS "OPTIONAL PRICING" SEPARATELY, AND INDICATE IN BID. ALL OTHER ITEMS ARE TO BE INCLUDED UNDER THE BASE FEE.
3.

GENERAL REQUIREMENTS, PRICING INSTRUCTIONS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION. WORK TO INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
4.

IT IS THE INTENT OF THE WORK TO PROVIDE COMPLETE, NEATLY FINISHED, AND OPERATIONAL SYSTEMS AND ANY LABOR, MATERIAL, PERMITS, LICENSES, APPROVALS AND INSPECTIONS REQUIRED FOR COMPLETION OF THE WORK, WHETHER SPECIFICALLY MENTIONED IN THE DRAWINGS OR SPECIFICATIONS OR NOT, ARE TO BE INCLUDED IN THE PRICING.
5.

ALL PERMITTING FEES ARE TO BE INCLUDED IN THIS CONTRACT.
6.

RESPONSIBILITY AS TO WHICH TRADE PROVIDES REQUIRED ARTICLES OR MATERIALS RESTS SOLELY WITH THE GENERAL CONTRACT TRADE. EXTRAS WILL NOT BE CONSIDERED BASED ON GROUNDS OF DIFFERENCE OF INTERPRETATION OF SPECIFICATIONS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.
7.

CLEAN UP AND REMOVE ALL UNUSED WIRING AND CONDUITS ASSOCIATED WITH THE EXISTING CHARGING, WHERE THE EXISTING CHARGING IS BEING MODIFIED.
8.

REMOVE AND REINSTALL EXISTING DEVICES TO FACILITATE CONSTRUCTION AS REQUIRED.
9.

CONFIRM LOCATIONS AND MOUNTING HEIGHTS ON SITE PRIOR TO INSTALLATION.
10.

FIRESTOP ALL FIRE RATED PENETRATIONS AFTER INSTALLATION. SEAL ALL PENETRATIONS.
11.

COORDINATE WITH AND OBTAIN APPROVAL FROM THE SCRD PROJECT MANAGER FOR ALL DRILLING, CORING AND CUTTING OF BUILDING STRUCTURE. COORDINATE LOCATIONS ON SITE PRIOR TO CARRYING OUT THE WORK. ALLOW FOR ALL COSTS FOR X-RAYING/SCANNING, WHERE/IF APPLICABLE.
12.

PROVIDE ALL NECESSARY TEMPORARY POWER AND LIGHTING, WHERE/IF NECESSARY TO COMPLETE THE WORK.
13.

REMOVE ALL ITEMS MADE REDUNDANT BY THE WORKS.
2.

DRAWINGS AND SPECIFICATIONS
1.

DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR BY ONE IS TO BE BINDING AS IF CALLED FOR BY BOTH.
2.

SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS THAT LEAVES THE CONTRACTOR IN DOUBT AS TO TRUE INTENT AND MEANING, OBTAIN RULING FROM THE ENGINEER BEFORE SUBMITTING PRICING, OR ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.
3.

EXAMINATION OF THE SITE
1.

PRIOR TO SUBMITTING PRICING, THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS WHICH MAY IMPACT THE WORK. NO EXTRAS WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT SHOULD HAVE BEEN NOTICED AND ACCOUNTED FOR DURING A THOROUGH EXAMINATION OF THE SITE.
4.

STANDARDS OF MATERIAL AND WORKMANSHIP
1.

ALL MATERIALS ARE TO BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE APPROVED BY CSA OR EQUIVALENT AGENCY RECOGNIZED IN THE PROVINCE OF BRITISH COLUMBIA.
2.

ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESPERSON. THE CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK.
5.

RECORD PLANS & MAINTENANCE MANUALS
1.

THE CONTRACTOR IS TO PRODUCE AT OWN EXPENSE A SET OF RED LINE MARK-UP DRAWINGS, INCLUDING ALL CHANGES TO THE ORIGINAL ISSUED FOR PRICING DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, AND JOB CONDITIONS, AND SUBMIT CAD DRAWINGS TO THE ENGINEER. COMPLETED RECORD DRAWINGS ARE TO BE CLEARLY MARKED "RECORD DRAWINGS".
2.

THE CONTRACTOR SHALL ALLOW FOR A COST OF \$300 PER DRAWING FOR TRANSFERRING RED LINE MARK-UPS TO ELECTRONIC AUTOCAD RECORD DRAWINGS AND THIS AMOUNT SHALL BE INCLUDED IN THE PRICING. THE CONTRACTOR MAY HIRE RBQ ENGINEERING TO PRODUCE THE RECORD CAD DRAWINGS, IF DESIRED.
6.

WARRANTY
1.

THE CONTRACTOR SHALL FURNISH A WRITTEN WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.
2.

THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY IF SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.
7.

SETTING OUT OF THE WORK
1.

THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING CORRECTIONS. WHERE THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS UNCLEAR, OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF THE WORK.
3.

THE CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATIONS AND MOUNTING HEIGHTS ON SITE PRIOR TO INSTALLATION.
4.

ALLOW FOR WORK AFTER HOURS AS REQUIRED AND COORDINATE WITH THE SCRD PROJECT MANAGER.
8.

CUTTING AND PATCHING
1.

THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION.
2.

ALL PENETRATIONS INTO, OR THROUGH, THE BUILDING ENVELOPE SHALL BE PROPERLY SEALED, AND MADE WATERTIGHT TO THE SATISFACTION OF THE ENGINEER. SUBMIT DETAILS OF THE SEALING FOR THE ENGINEER'S REVIEW PRIOR TO PERFORMING WORK.
9.

CLEANUP
1.

THROUGHOUT THE CONSTRUCTION, THE CONTRACTOR AND SUB-TRADES (IF APPLICABLE) ARE TO KEEP THE SITE FREE OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE. ALL WASTE MATERIAL IS TO BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER.
2.

UPON COMPLETION OF WORK, THE NSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE SCRD PROJECT MANAGER.
10.

CODES, PERMITS AND INSPECTION
1.

THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOR, IS TO COMPLY WITH ALL THE REQUIREMENTS OF THE BC BUILDING CODE 2024 AND AUTHORITY HAVING JURISDICTION, AND CSA C22.1-24 (CANADIAN ELECTRICAL CODE, PART I), IF PERMITTED AFTER ADOPTION (PLANNED FOR MARCH, 2024) OF 2024 CEC CODE.
2.

THE CONTRACTOR IS TO OBTAIN ALL PERMITS REQUIRED FOR EACH STAGE OF WORK, AND AFTER COMPLETION OF THE ENTIRE INSTALLATION FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION AUTHORITY.
11.

TESTS
1.

ALL PORTIONS OF ELECTRICAL WORK ARE TO BE TESTED FOR SATISFACTORY OPERATION.
2.

BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE CONTRACTOR SHALL PERFORM MEGGER TESTS ON ALL FEEDERS AND BRANCH CIRCUITS. ANY PROBLEMS DISCOVERED BY SUCH TESTING ARE TO BE CORRECTED BY THE CONTRACTOR AND THE CIRCUITS IN QUESTION RETESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ENGINEER IN REPORT FORMAT.
3.

UPON PROJECT COMPLETION, AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE CONTRACTOR SHALL CHECK THE LOAD BALANCE ON ALL PANELBOARDS THAT ARE MODIFIED AS PART OF THIS CONTRACT. THESE CHECKS ARE TO BE CARRIED OUT BY TURNING ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15%, THE CIRCUITS ARE TO BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.
12.

RACEWAYS
1.

RIGID METAL CONDUIT (GALVANIZED STEEL) OR RIGID PVC CONDUIT IS TO BE INSTALLED UNDERGROUND. RIGID METAL CONDUIT IS TO BE INSTALLED, WHERE SUBJECT TO THE POTENTIAL FOR MECHANICAL DAMAGE. EMT MAY BE USED INSIDE BUILDINGS, WHERE NOT SUBJECT TO THE POTENTIAL FOR MECHANICAL DAMAGE. SET-SCREW TYPE CONNECTIONS ARE NOT TO BE USED FOR WET AREAS. FINAL CONNECTIONS TO CHARGERS ARE BE TO VIA FLEXIBLE METALLIC CONDUITS OR WIPS PROVIDED INTEGRAL TO THE CHARGERS.
2.

CONCEAL RACEWAYS WHEN AND WHERE POSSIBLE.
3.

CONDUIT AND/OR CONDUIT FITTINGS ARE NOT TO BE INSTALLED IN ANY LOCATIONS WHERE THEY MAY CREATE A TRIP HAZARD.
4.

RACEWAYS ARE TO BE INSTALLED FREE FROM DENTS AND BRUISES AND SHALL HAVE THEIR ENDS CAPPED, PLUGGED, OR SEALED AS NECESSARY TO PREVENT ENTRANCE OF DIRT OR MOISTURE.

13. WIRE AND CABLE

1.

ALL BUILDING WIRING IS TO BE RW90, 600V, COPPER, EXCEPT WHERE NOTED OTHERWISE.
2.

A MINIMUM CONDUCTOR SIZE OF #12 AWG COPPER IS TO BE USED, EXCEPT WHERE NOTED OTHERWISE.
3.

ALL CONDUCTORS ARE TO BE COLOR CODED THROUGHOUT THE INSTALLATION AS FOLLOWS:

- EQUIPMENT BONDING CONDUCTOR: GREEN

- NEUTRAL CONDUCTOR: WHITE

- PHASE WIRES: RED, BLACK, BLUE

14. WIRING DEVICES & BOXES

1.

ALIGN ALL DEVICES AND PLATES PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.
2.

ALL JUNCTION BOXES AND PULLBOXES ARE TO HAVE VISIBLE P-TOUCH LABELS INDICATING THE CIRCUIT NUMBERS; PEN OR FELT IS NOT ACCEPTABLE.
3.

ALL JUNCTION BOXES AND PULLBOXES ARE TO BE LABELED BOTH ON THE FRONT OF THE BOX AND INSIDE THE BOX.
4.

SUPPLY AND INSTALL BLANK COVER PLATES FOR ALL UNUSED JUNCTION BOXES, INCLUDING EXISTING.
5.

RECEPTACLES FOR EXTERNAL AREAS SHALL BE CERTIFIED AS WEATHERPROOF WHEN IN USE.

15. LOCATION OF OUTLETS

1.

THE ENGINEER RESERVES THE RIGHT TO CHANGE THE LOCATION OF CHARGERS, WITHIN 3 M OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE, PROVIDED THE CONTRACTOR IS ADVISED BEFORE INSTALLATION.

16. PULL BOXES AND HAND HOLES

1.

THE CONTRACTOR SHALL SUPPLY AND INSTALL PULLBOXES AND HAND HOLES AS REQUIRED TO SUIT JOB CONDITIONS. BOXES SHALL CONFORM TO CEC REQUIREMENTS. IN REMOVABLE CEILING AREAS (WHERE/IF APPLICABLE), PULLBOXES ARE TO BE INSTALLED ABOVE THE CEILING.

17. SUPPORTS

1.

ALL CONDUIT, RACEWAYS, AND OTHER ELECTRICAL EQUIPMENT SHALL BE SECURELY AND ADEQUATELY SUPPORTED, IN ACCORDANCE WITH THE CEC.
2.

WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD INSERTS OR PLASTIC INSERTS ARE TO BE USED IN DRILLED HOLES. SHOT DRIVEN PINS MAY BE USED IN STRUCTURAL CONCRETE ONLY WITH PERMISSION OF THE ENGINEER.

18. GROUNDING AND BONDING

1.

ALL METAL PARTS NOT CARRYING CURRENT, INCLUDING BUT NOT LIMITED TO, SECONDARY FEEDER CIRCUITS, EQUIPMENT AND PANELBOARD ENCLOSURES, METAL RACEWAYS, PULL AND JUNCTION BOXES, SHALL BE PROPERLY BONDED TO GROUND.
2.

METAL RACEWAYS SHALL USE LOCKNUTS AND OTHER FITTINGS WHERE NECESSARY TO PROVIDE BONDING CONTINUITY.
3.

A SEPARATE BONDING CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAY FEEDER RUNS, FLEXIBLE CONDUIT, AND IN CONDUIT INSTALLED UNDERGROUND.
4.

WHERE A GROUNDING CONDUCTOR IS REQUIRED FOR EVSE, IN ADDITION TO EQUIPMENT BONDING, SUCH WIRING IS TO BE PROVIDED BY THE CONTRACTOR AS PER EQUIPMENT INSTALLATION MANUAL.

19. PANELS

1.

PROVIDE COMPLETE PANELBOARDS. UNLESS OTHERWISE INDICATED PANELBOARDS ARE TO BE 120/240V SOLID NEUTRAL DESIGN WITH SEQUENCE STYLE BUSSING AND FULL CAPACITY NEUTRAL WITH BOLT-ON CIRCUIT BREAKERS, PANELBOARD BUSBARS ARE TO BE COPPER (NOT ALUMINUM). PANELBOARDS ARE TO BE EATON MAKE, OR APPROVED EQUAL.
2.

CIRCUIT BREAKERS TO BE RATED MINIMUM 10KA I.C. UNLESS OTHERWISE INDICATED.
4.

PROVIDE TYPEWRITTEN PANEL DIRECTORIES (FOR BOTH NEW AND EXISTING PANELS WHERE ADDITIONAL CIRCUITS ARE BEING ADDED).
5.

BALANCE PANEL LOAD FOR THE PHASES. ALLOW FOR RELOCATING CIRCUITS WITHIN PANELBOARD TO BALANCE THE LOAD. PROVIDE TESTING RECORDS OF LOAD BALANCING TO CONSULTANT, FOR REVIEW.

20. SEISMIC PROTECTION

1.

THE CONTRACTOR SHALL PROVIDE SEISMIC RESTRAINT AND ANCHORAGE FOR ALL EQUIPMENT AND SERVICES IN ACCORDANCE WITH BC BUILDING CODE 2024.
2.

IF REQUESTED, PROVIDE CERTIFIED PROFESSIONALLY SEALED SHOP AND PLACEMENT DRAWINGS WHERE APPLICABLE FOR ALL ELECTRICAL EQUIPMENT AND EQUIPMENT ASSEMBLIES SHOWING THE METHODS OF ATTACHMENT TO THE PARTICULAR STRUCTURE FOR EACH PIECE OF EQUIPMENT AND ASSEMBLY AND PROVIDE ANCHORAGE/ATTACHMENT DETAILS APPROVED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.
3.

INCLUDE IN THE PRICING ALL SERVICES OF A PROFESSIONAL ENGINEER INCLUDING BUT NOT LIMITED TO PROVIDING LETTERS OF ASSURANCE FOR THE PROJECT IN RESPECT OF THE SEISMIC RESTRAINT OF ALL ELECTRICAL MATERIALS AND EQUIPMENT, CONDUCTING THE NECESSARY SITE REVIEWS AND PROVIDING A LETTER UPON COMPLETION OF THE PROJECT, CONFIRMING THAT ALL SEISMIC RESTRAINTS FOR THE ELECTRICAL WORKS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS. PAY ALL ASSOCIATED FEES AS REQUIRED. SEISMIC ENGINEER SHALL PROVIDE PROOF OF INSURANCE AND CREDENTIALS IF REQUESTED.

21. IDENTIFICATION

1.

PROVIDE LAMACOID NAMEPLATE TO ALL NEW BREAKERS, ENCLOSURES, AND EVSE.
2.

PROVIDE CLEAR AND CONSISTENT IDENTIFICATION TO ALL WIRING.

22. FIRE STOP

1.

UPON COMPLETION OF THE ELECTRICAL INSTALLATIONS, ALL PENETRATIONS OF FIRE ZONES (CONDUITS, SLEEVES, ETC.) SHALL BE SEALED USING MATERIAL AND METHODS THAT MEET THE REQUIREMENTS OF ULC STANDARDS CAN/ULC-S115 AND INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2.

LABEL FIRE STOP PENETRATIONS WITH PRODUCT USED AND cUL SYSTEM NUMBER WITH STICKER.

23. EVSE

1.

THE INTENT IS THAT THE EVSE BE ZEROVA/PHIHONG MAKE, TO MATCH THE EXISTING CHARGERS. BIDDERS MAY SELECT OTHER OCPP CHARGERS, PROVIDED THEY CLEARLY INDICATE THE PROPOSED CHARGERS IN THE BID.

24. EVEMS (LOAD MANAGEMENT SYSTEM)

1.

BIDDERS ARE TO PROPOSE TWO POTENTIAL CHARGING MANAGEMENT SERVICE PROVIDERS AS PART OF THEIR BID, FROM WHICH SUNSHINE COAST REGIONAL DISTRICT WILL MAKE THE FINAL SELECTION. AMPUP, CHARGELAB, HYPERCHARGE, AND SWITCH ARE ACCEPTABLE. BIDDERS MAY PROPOSE ALTERNATE COMPANIES - IF SO, ENSURE SUFFICIENT DETAILS ARE INCLUDED FOR REVIEW. IF THE BIDDER'S PRICE FOR ONE OF THE OPTIONS IS GREATER THAN THE OTHER, THE BIDDER IS TO INCLUDE THE INCREASE IN THE "OPTIONAL COSTING", AND IDENTIFY AS SUCH.
2.

ALL SETUP COSTS ARE TO BE INCLUDED IN THE BID. ALL ONGOING COSTS (SUCH AS MONTHLY SERVICE FEES) ARE TO BE OUTLINED IN THE BID RESPONSE (NOT PART OF BASE FEE). INDICATE WHETHER THE PROPOSED CHARGING MANAGEMENT SERVICE PROVIDER HAS ABILITY TO ACCRUE AND SELL CARBON CREDITS, AND OUTLINE ANY ASSOCIATED FEES (SUCH AS BROKER FEES).

25. EVEMS (LOAD MANAGEMENT SYSTEM) TESTING & COMMISSIONING

1.

COMPLETE COMMISSIONING IS TO BE PERFORMED IN COORDINATION WITH THE EVEMS PROVIDER. ALL COSTS ASSOCIATED WITH ENSURING APPROPRIATE INVOLVEMENT OF THE EVEMS PROVIDER ARE TO BE INCLUDED IN THE BID PRICE. THE CONTRACTOR IS TO WORK WITH THE EVEMS PROVIDER AND SCRD TO CONFIGURE THE SYSTEM TO BE FULLY OPERATIONAL FOR THE INTENDED DRIVERS (I.E. INCLUDING CARD PROGRAMMING AND ACCESS LEVELS). SCRD EMPLOYEES HAVE EXISTING KEYCARDS (KANTECH P20DYE 16Prox XSF/26 BIT PROXIMITY CARDS). IF POSSIBLE (DEPENDING ON EVEMS), THE PREFERENCE IS TO USE THESE CARDS FOR CHARGING SESSION ACTIVATION (AND/OR PHONE APP ACTIVATION), INSTEAD OF HAVING ADDITIONAL CARDS.
2.

AS A MINIMUM THE COMMISSIONING IS TO INCLUDE:

- SIMULATION OF COMMUNICATIONS FAILURE AT EACH CHARGER;

- DISCONNECTION AND RECONNECTION OF EACH CHARGER;

- LOAD TESTS, COMMENCING WITH NO CHARGING, AND INCREMENTALLY ADDING LOADS (EVs), TO ACHIEVE MAXIMUM LOADING, AND THEN INCREMENTALLY REMOVING ALL LOADS;

- RANDOM LOAD TESTS;

- SUSTAINED LOADING TESTS (PERIOD OF 2 HOURS OR MORE);

26. CABLE MANAGEMENT

1.

CABLE MANAGEMENT FOR THE CONNECTOR CORDS FOR EACH CHARGER, ARE TO BE INCLUDED IN THE BID AS "OPTIONAL PRICING", AND INDICATED AS SUCH. THE CABLE MANAGEMENT FOR THE EXISTING CHARGERS AT FIELD ROAD IS SUFFICIENT, AS AN EXAMPLE. IF THE CABLE MANAGEMENT INCLUDES AN INTEGRAL ADDITIONAL POST FOR GREATER HEIGHT, PROVIDE DETAILS WITH THE BID.

27. TRAINING

1.

PROVIDE TRAINING (ALLOW A MINIMUM OF 4 HOURS) TO OPERATIONS PERSONNEL, PRIOR TO APPROVAL OF SUBSTANTIAL COMPLETION. THE TRAINING IS TO INCLUDE DETAILS OF THE ELECTRICAL (POWER & COMMUNICATIONS SYSTEMS) ADDITIONS, LOAD MANAGEMENT SYSTEM INTERFACES, AND EV CHARGING OPERATION AND FUTURE ADDITIONS PROCESSES.

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to designer and/or engineer prior to proceeding with work

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CLIENT:



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SEAL:

3	ISSUED FOR PRICING	APR. 28, 2025
2	ISSUED FOR REVIEW	MAR. 31, 2025
1	ISSUED FOR REPORT	SEP. 22, 2024
REV	DESCRIPTION	DATE

PROJECT NAME:

SUNSHINE COAST
REGIONAL DISTRICT
EV CHARGING

DRAWING TITLE:

SPECIFICATIONS

DATE:	APRIL 28, 2025
SCALE:	NTS
DRAWN BY:	SW
CHECKED BY:	RB
JOB NUMBER:	2024-09

DRAWING NUMBER:

E11