

NRC AST CAMPUS U87 ELECTRIC VEHICLE (EV) CHARGING STATION



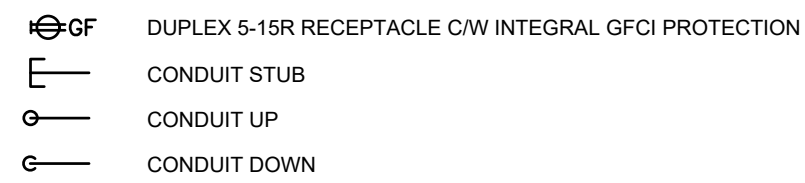
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LEGEND:

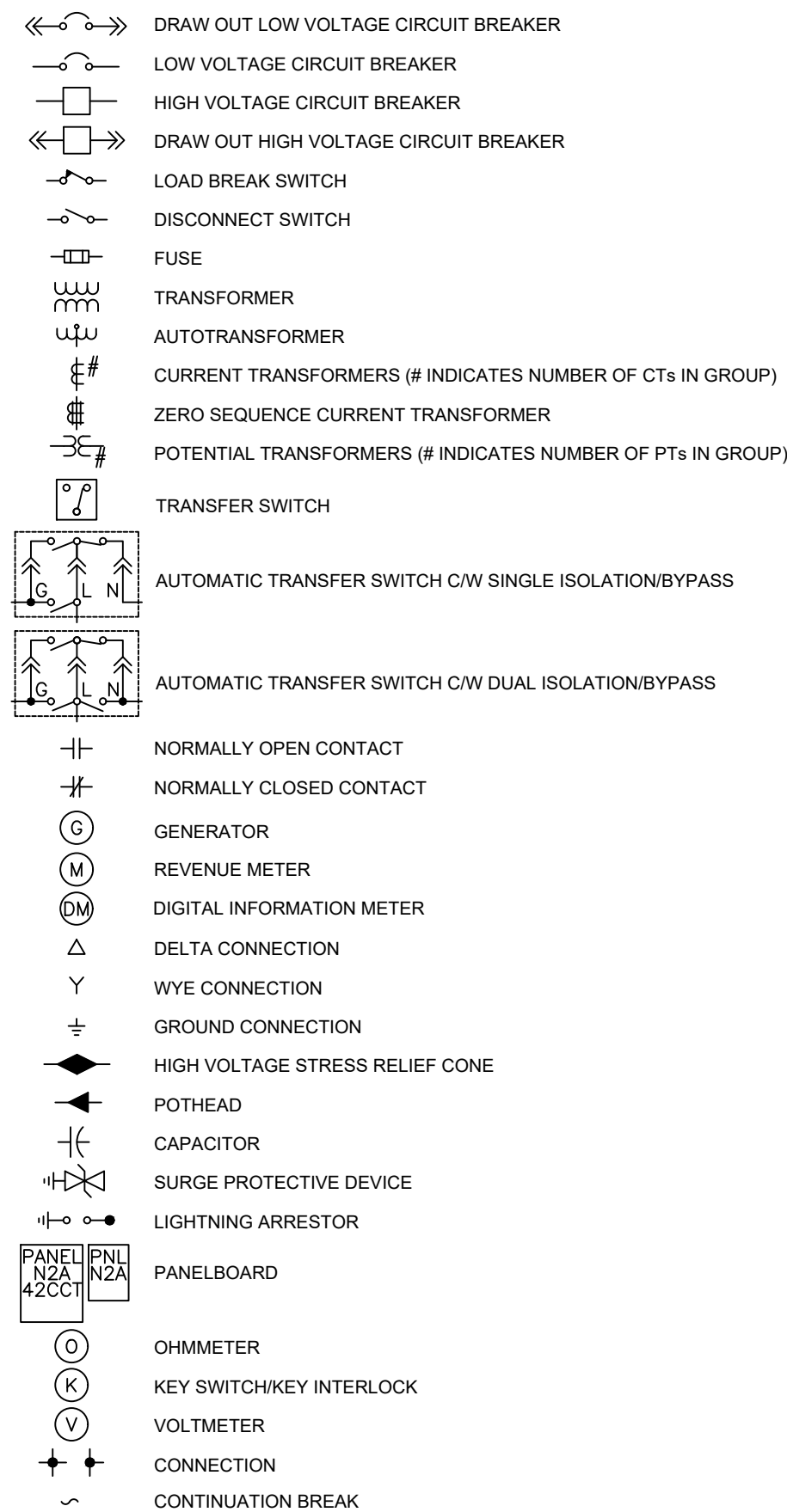
LIGHTING PLAN SYMBOLS



POWER PLAN SYMBOLS



SCHEMATIC SYMBOLS



ABBREVIATIONS:

EV	ELECTRIC VEHICLE
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HOL	HYDRO OTTAWA LIMITED
SPD	SURGE PROTECTIVE DEVICE
TYP	TYPICAL
WP	WEATHERPROOF

DRAWING LIST:

ELECTRICAL	
E-001	LEGEND, ABBREVIATIONS, AND DRAWING LIST
E-101	AST CAMPUS - SITE PLAN
E-102	BUILDING U89B AND SITE PLAN - NEW DISTRIBUTION
E-103	SITE PLAN (CONTINUED) - NEW DISTRIBUTION
E-501	DETAILS
E-601	SINGLE LINE DIAGRAM - EXISTING BLDG SERVICE ENTRANCES
E-603	SINGLE LINE DIAGRAM - NEW CONSTRUCTION

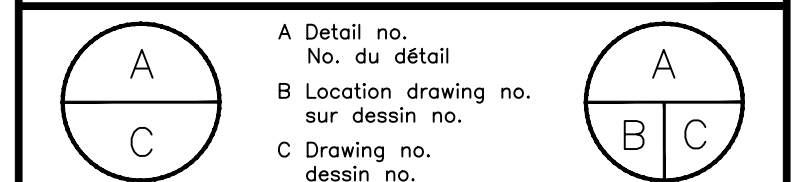
SCOPE OF WORK:

- CONTRACTOR TO SUPPLY AND INSTALL NEW BREAKERS IN EXISTING BUILDING U89B, 600V MAIN SWITCHBOARD 'PDX'.
- CONTRACTOR TO SUPPLY AND INSTALL ALL 600V DISTRIBUTION EQUIPMENT, CONDUITS, AND CABLING TO SUPPLY A NEW 350kW EV CHARGING STATION.
- CONTRACTOR TO SUPPLY AND INSTALL NEW EV CHARGING EQUIPMENT AS WELL AS ALL AC AND DC CABLING, INCLUDING DUCT BANKS, CONCRETE PADS, AND EQUIPMENT FOUNDATIONS.
- CONTRACTOR TO SUPPLY AND INSTALL NEW AUTOMATIC SWITCHED DETUNED CAPACITOR BANK AND ASSOCIATED ELECTRICAL DISTRIBUTION EQUIPMENT.
- CONTRACTOR TO SUPPLY AND INSTALL NEW 120VAC CIRCUITS FOR SUPPLY OF TASK LIGHTING AND RECEPTACLE INSTALLED AT EV CHARGING STATION.
- CONTRACTOR TO SUPPLY AND INSTALL REVENUE METERING FOR EV CHARGER.

No.	Date	Revision	By:
D	24.02.02	ISSUED FOR TENDER, REV 2	DvG
C	23.04.03	ISSUED FOR TENDER, REV 1	DvG
B	23.03.22	ISSUED FOR TENDER	DvG
A	23.03.10	ISSUED FOR 90% REVIEW	DvG

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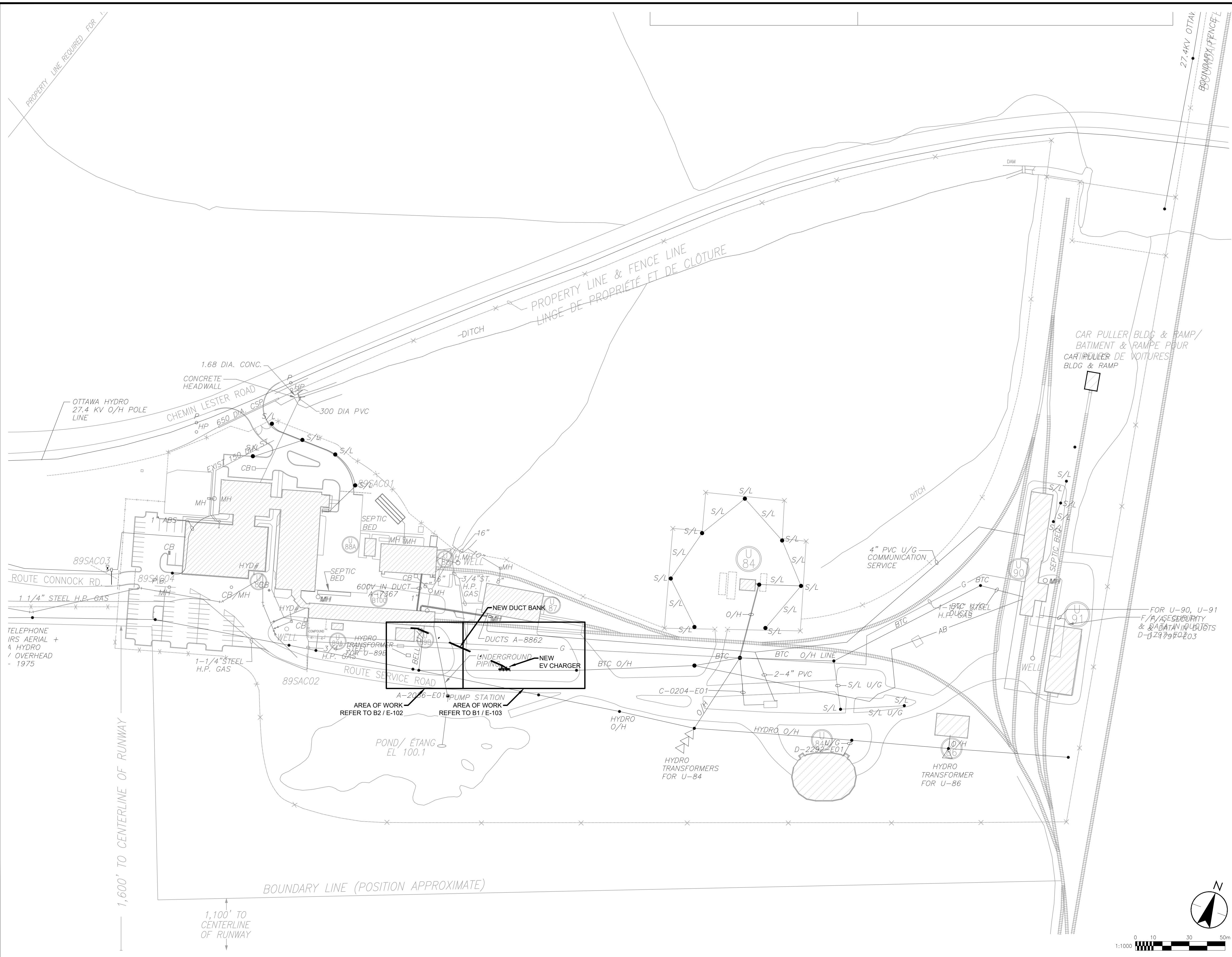
- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: **AST CAMPUS U87 ELECTRIC VEHICLE CHARGING STATION**
2320 LESTER ROAD, OTTAWA, ONTARIO

ELECTRICAL LEGEND, ABBREVIATIONS, AND DRAWING LIST

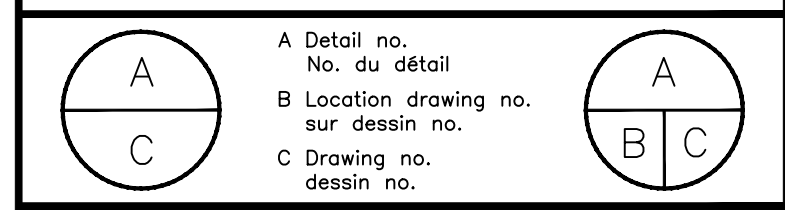
designed	conçu	date	date
D. van GAAL		2022.11.18	
drawn	dessiné	scale	échelle
H. SULLIVAN		AS NOTED	
checked	vérifié	sheet	feuille
		of/de	
approved	approuvé	W.O.no.	D.T.no.
		997637	
		Stantec No: 163303309	
dwg.no.	dessin no.		
6263-E-001			



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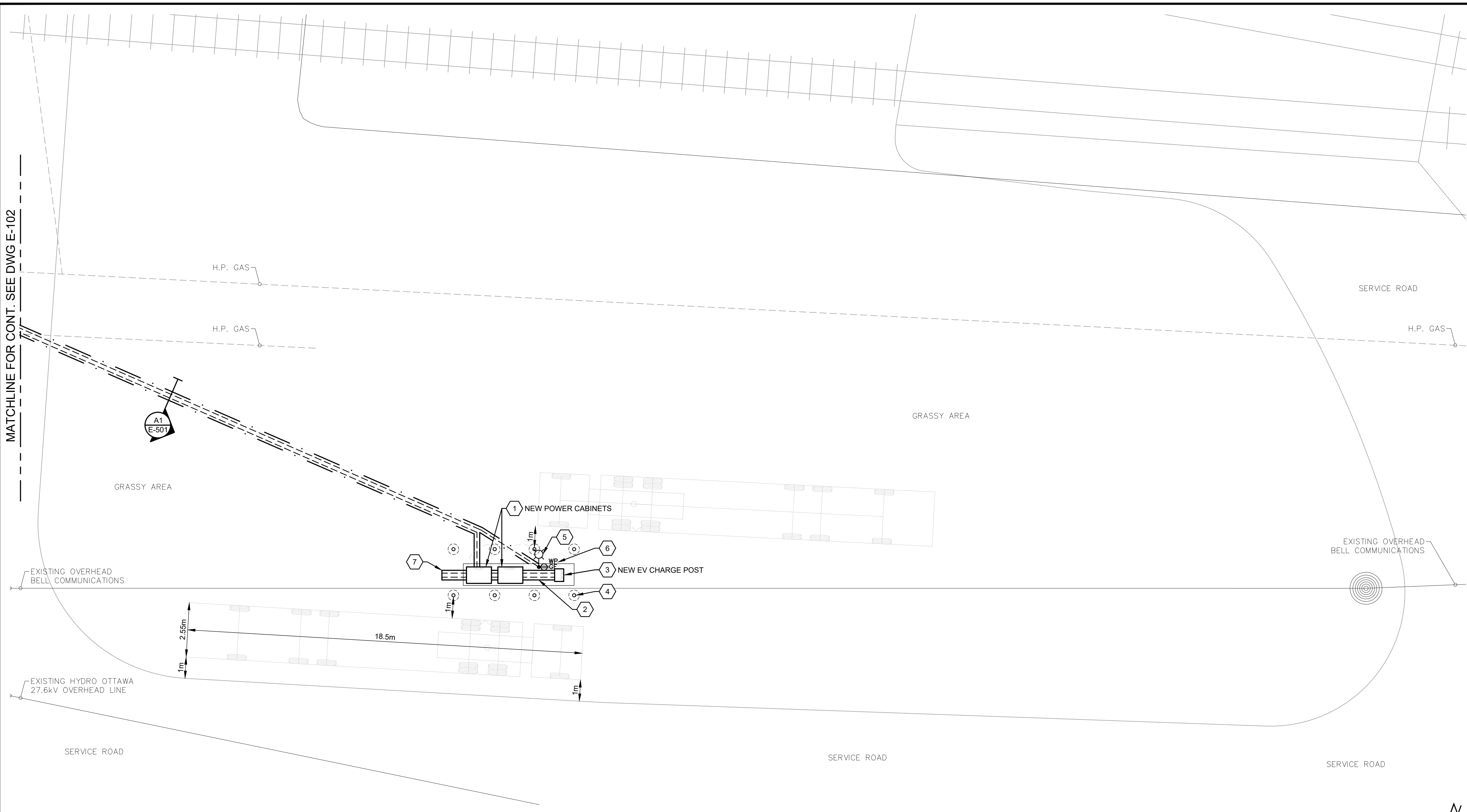
project: **AST CAMPUS U87 ELECTRIC VEHICLE CHARGING STATION**
 2320 LESTER ROAD, OTTAWA, ONTARIO

drawing: **ELECTRICAL AST CAMPUS SITE PLAN**

designed D. van GAAL	conçu 2022.11.18	date	date
drawn H. SULLIVAN	dessiné AS NOTED	scale	échelle
checked	vérifié	sheet of/de	feuille
approved	approuvé	W.O.no. 997637	D.T.no.
dwg.no. 6263-E-101	dessin no.	Stantec No: 163303309	

6263-E-101

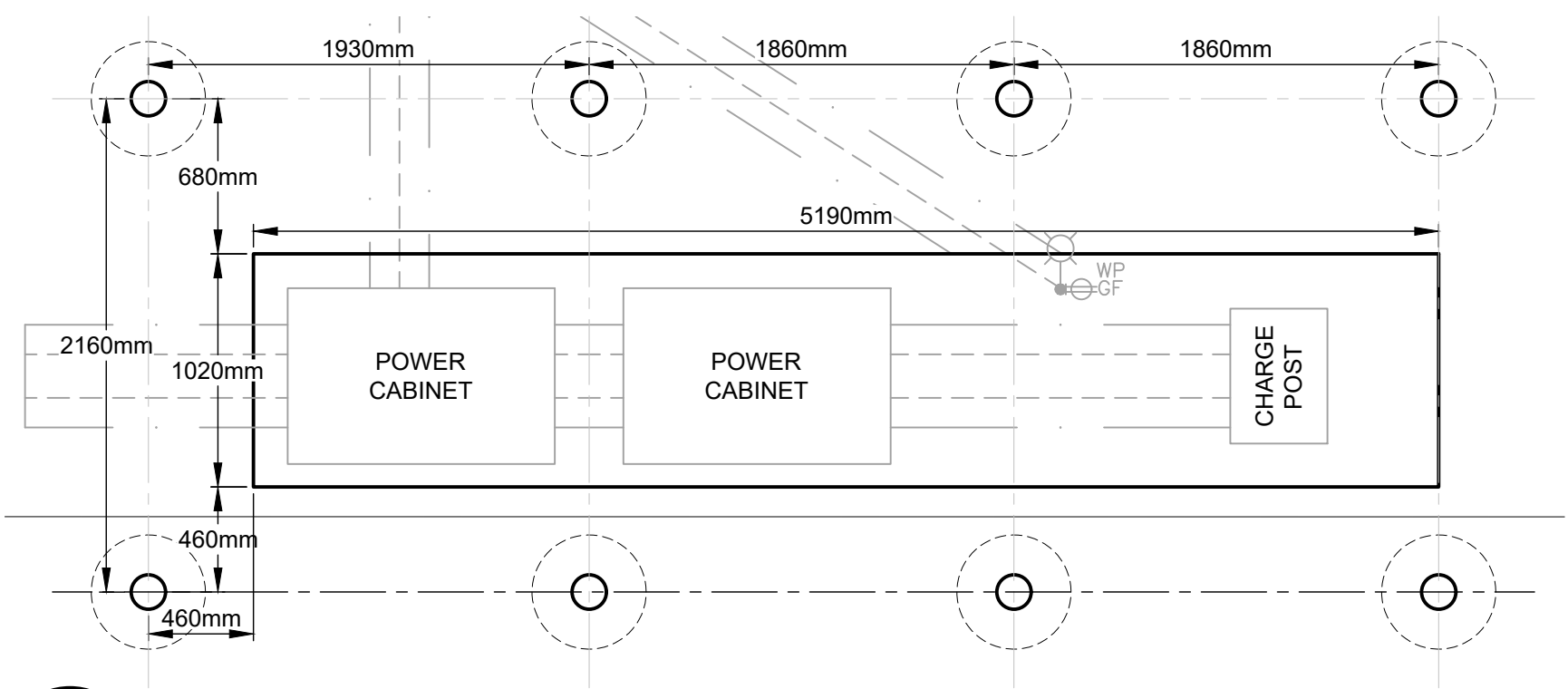
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 2024/02/01 9:51 AM By: Sullivan, Heather



B1 SITE PLAN (CONTINUED) - NEW DISTRIBUTION
 E-101

- GENERAL NOTES**
- EXCEPT AS NOTED OTHERWISE ALL EXISTING EQUIPMENT TO REMAIN IS SHOWN IN THIN SOLID LINES.
 - EXCEPT AS NOTED OTHERWISE ALL EQUIPMENT TO BE DEMOLISHED IS SHOWN IN THICK DASHED LINES.
 - EXCEPT AS NOTED OTHERWISE ALL EQUIPMENT TO BE RELOCATED IS SHOWN IN THICK DASHED LINES AND INDICATED WITH 'R'.
 - EXCEPT AS NOTED OTHERWISE ALL NEW EQUIPMENT IS SHOWN IN THICK SOLID LINES.

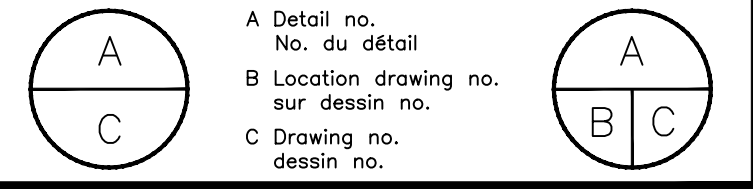
- # SHEET KEYNOTES**
- SUPPLY AND INSTALL NEW POWER CABINETS AND ASSOCIATED CIVIL BASES FOR EV CHARGER. INSTALL CONDUIT PENETRATIONS AS DETAILED ON DRAWING E-501.
 - SUPPLY AND INSTALL NEW DUCT BANK AND DC FEEDER CABLES TO CONNECT POWER CABINETS TO EV CHARGING POST AS DETAILED ON DRAWING E-501.
 - SUPPLY AND INSTALL NEW EV CHARGING POST AND ASSOCIATED CIVIL BASES.
 - SUPPLY AND INSTALL BOLLARDS AROUND EV CHARGER AND POWER CABINETS. BOLLARDS TO BE 1200mm IN HEIGHT AND INSTALLED AS PER DETAIL C1 ON DRAWING E-501.
 - SUPPLY AND INSTALL NEW OUTDOOR LAMP AND ASSOCIATED POLE. ANCHOR POLE TO CONCRETE BASE. SEE DETAIL C3 ON DRAWING E-501.
 - SUPPLY AND INSTALL NEW GFI RECEPTACLE. MOUNT RECEPTACLE ON LAMP POLE 1000mm ABOVE GRADE.
 - SUPPLY AND INSTALL NEW DUCT BANK, EXTENDED 1m BEYOND CIVIL BASE, FOR FUTURE CHARGING POST.



A4 PAD AND BOLLARD LAYOUT

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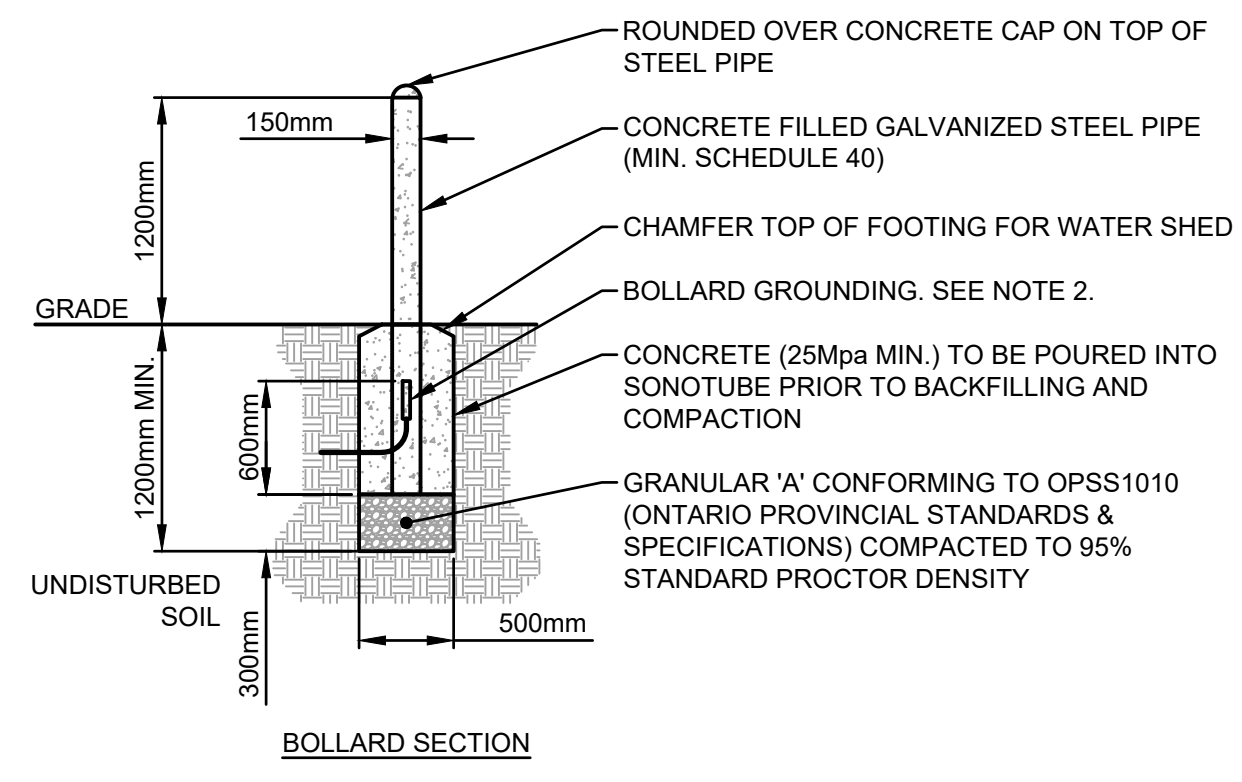


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 2320 LESTER ROAD, OTTAWA, ONTARIO

ELECTRICAL SITE PLAN (CONTINUED) NEW DISTRIBUTION

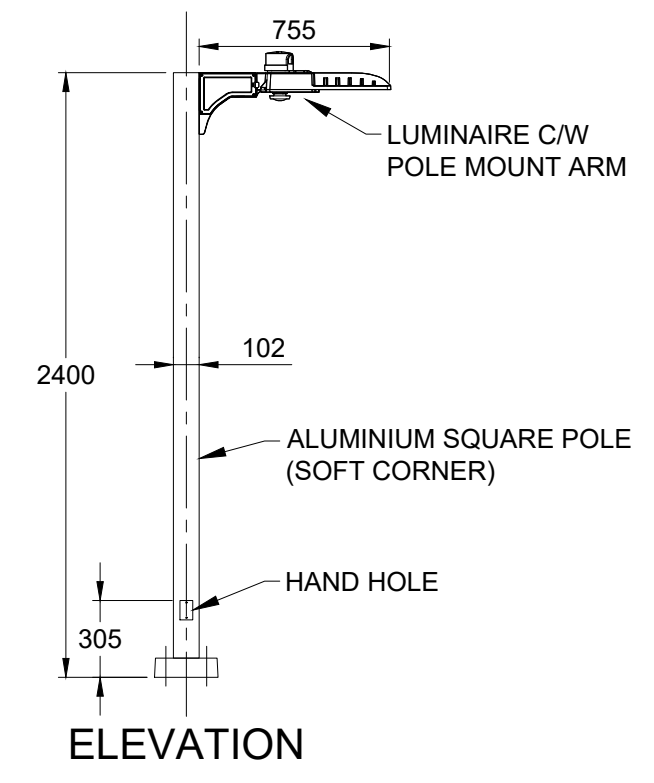
designed / conçu	date	date
D. van GAAL	2022.11.18	
drawn / dessiné	scale / échelle	
H. SULLIVAN	AS NOTED	
checked / vérifié	sheet / feuille	of / de
approved / approuvé	W.O.no. / D.T.no.	
	997637	
	Stantec No: 163303309	

dwg.no. **6263-E-103** dessin no. **6263-E-103**

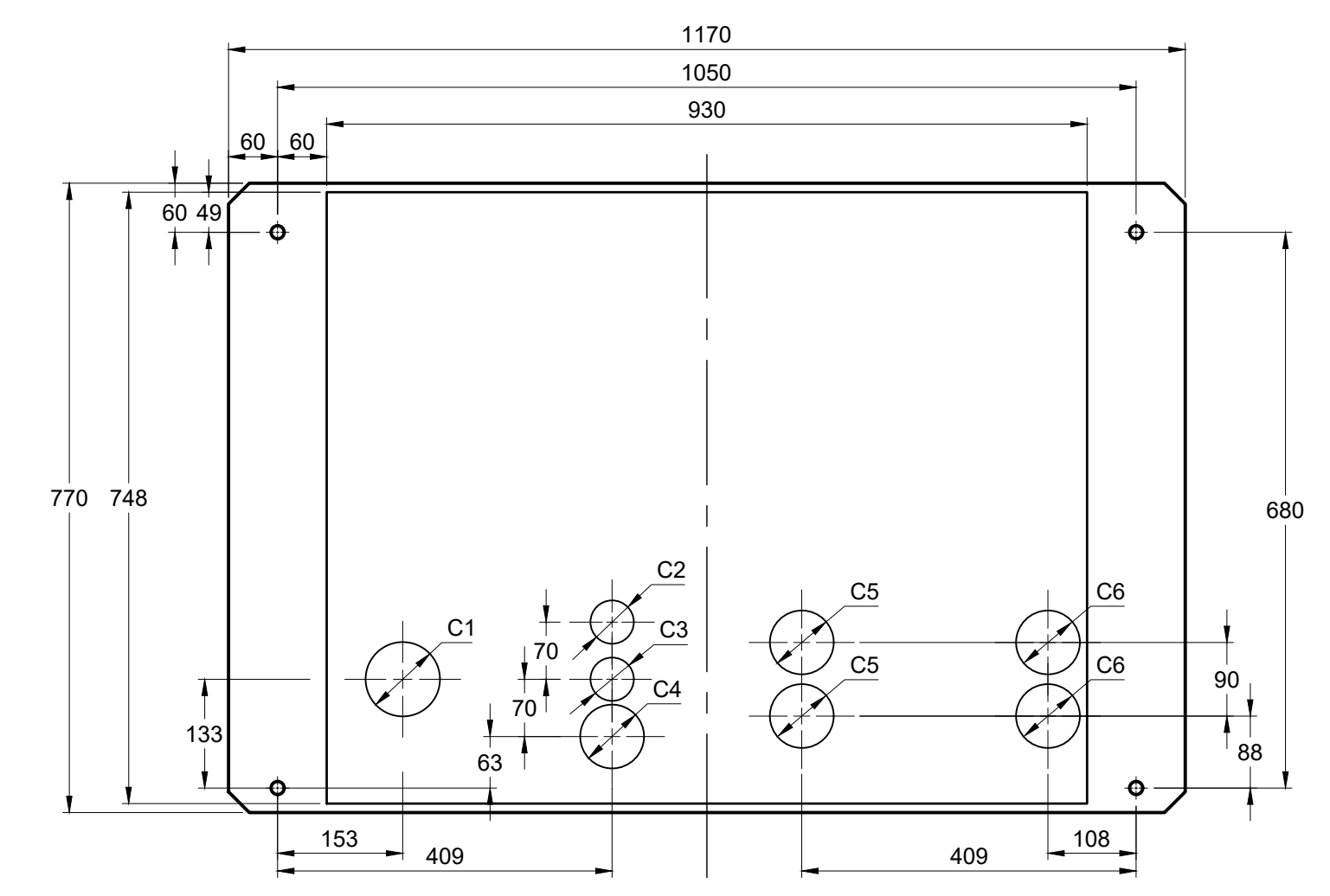


- BOLLARD INSTALLATION NOTES:**
1. PROTECTIVE BOLLARD PIPE DIMENSIONS: HEIGHT 1200mm, DIAMETER 150mm
 2. CONNECT BOLLARD TO GROUND BAR OF EV POWER CABINET.

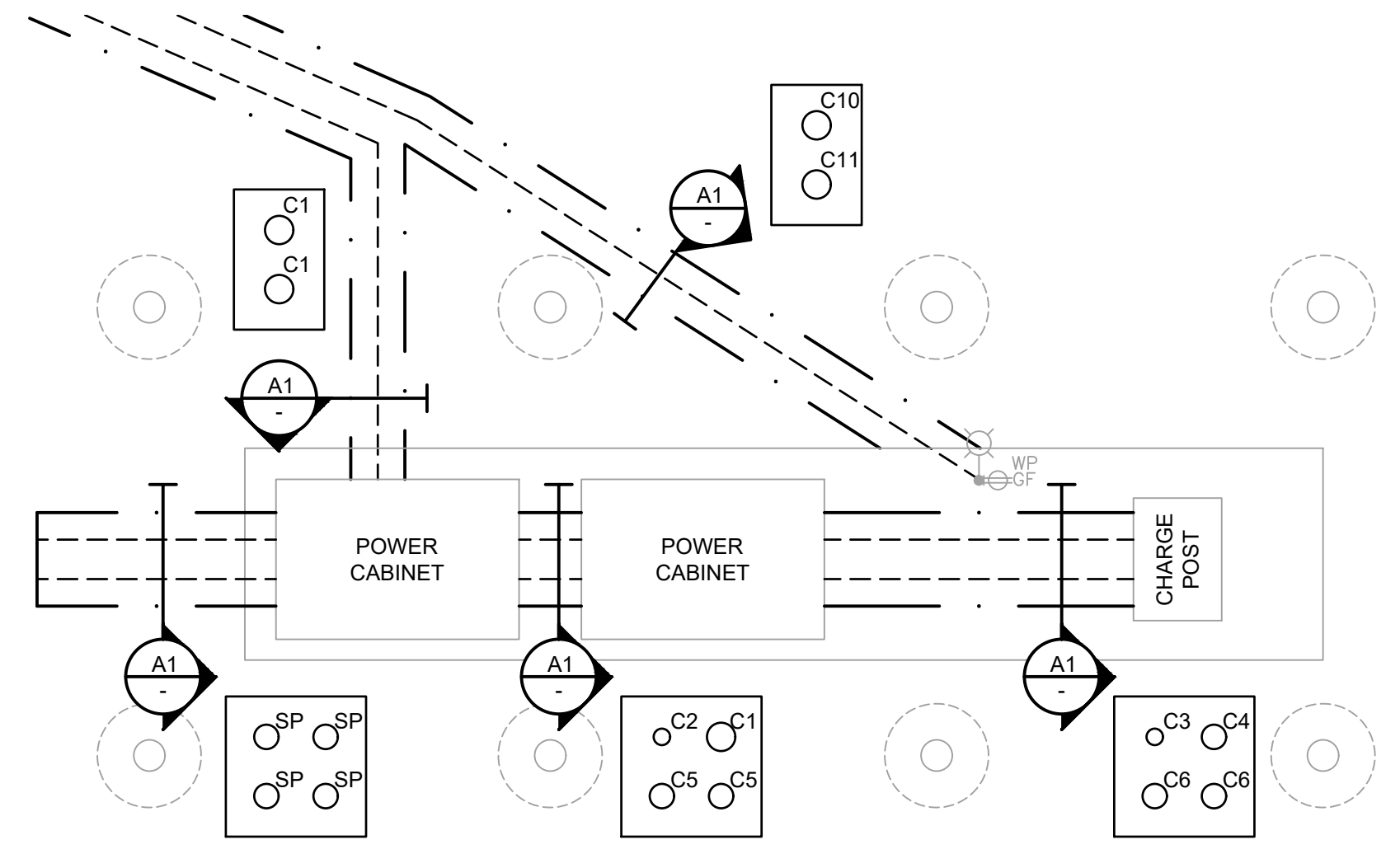
C1 TYPICAL BOLLARD DETAIL
 STANDARD NONE



C3 LIGHT AND POLE DETAIL
 STANDARD NONE

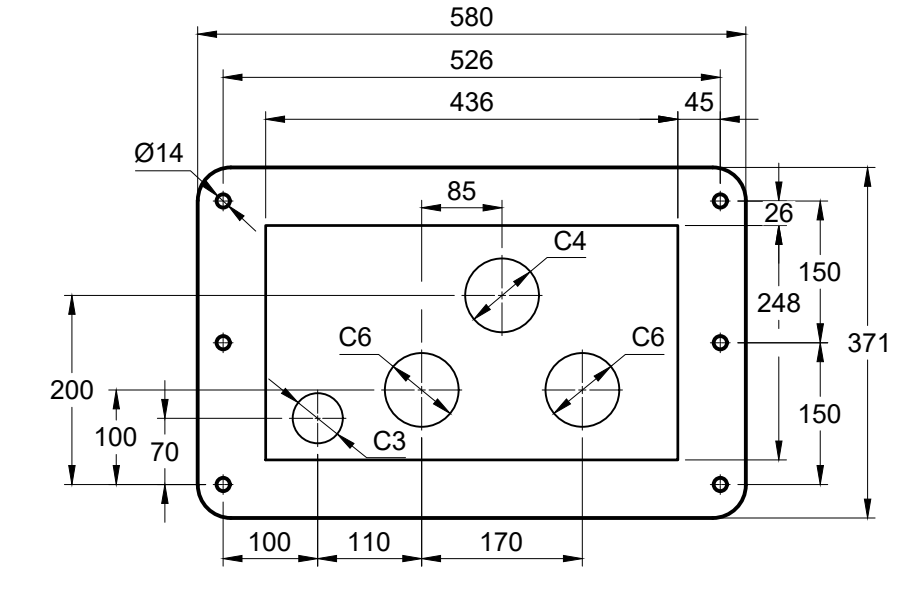


C4 POWER CABINET CUSTOM FOUNDATION DETAIL
 E-103 NONE

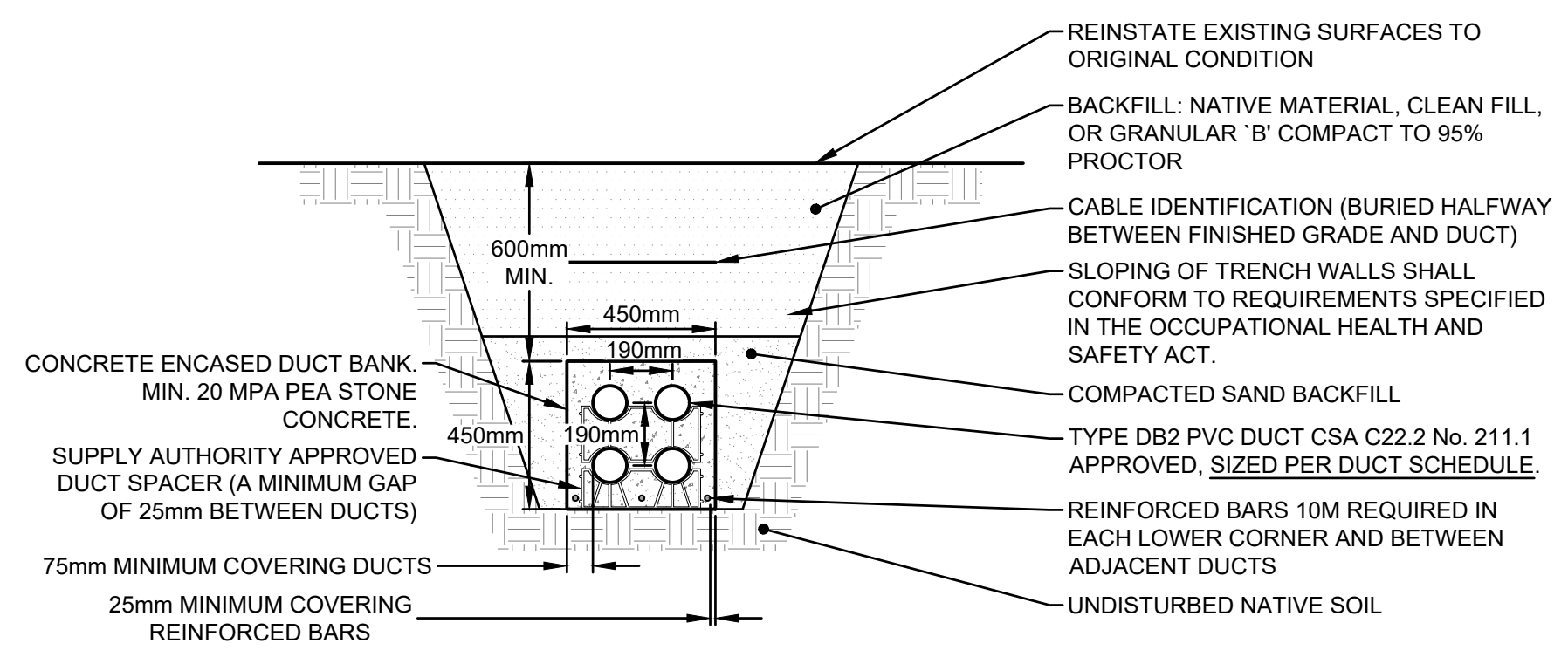


B1 DETAILED DUCT BANK LAYOUT
 E-103

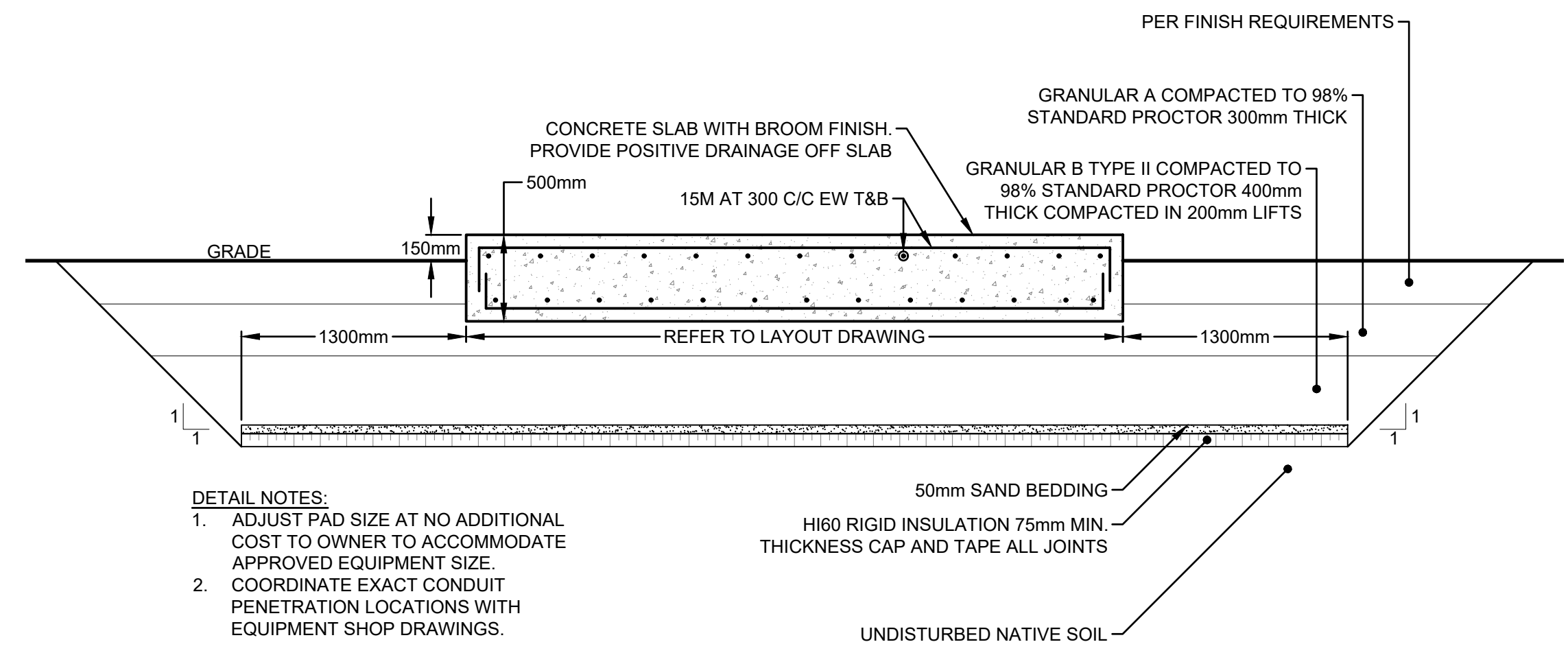
LABEL	CABLE TYPE	CONDUIT	PURPOSE
C1	(3x 1/C 250MCM, Cu, RWU90) + GND	91 mm	AC POWER FROM U89B TO POWER CABINET
C2	4x (2 TWISTED SHIELDED PAIR)	53 mm	SIGNAL WIRES TO OTHER POWER CABINET
C3	3x (2 TWISTED SHIELDED PAIR)	53 mm	SIGNAL WIRES TO CHARGING POST
C4	6/C #12AWG, Cu, RWU90	78 mm	AC POWER TO CHARGING POST
C5	(2x 1/C 250MCM, Cu, DLO, TYPE W ²) + #2AWG GND	78 mm	DC INTERCONNECTING CABLE BETWEEN POWER CABINETS
C6	(2x 1/C 250MCM, Cu, DLO, TYPE W ²) + #2AWG GND	78 mm	DC POWER TO CHARGING POST
C10	(2/C #10AWG, Cu, RWU90) + GND	91 mm	POWER FOR LIGHT
C11	(2/C #10AWG, CU, RWU90) + GND	91 mm	POWER FOR RECEPTACLE
SP	(EMPTY)	78 mm	FUTURE CHARGING POST



B4 CHARGE POST CUSTOM FOUNDATION DETAIL
 E-103 NONE



A1 TYPICAL CONCRETE ENCASED DUCT BANK - 2x2 / 1x2
 E-102 & E-103 NONE



A3 PAD DETAIL
 E-103

- DETAIL NOTES:**
1. ADJUST PAD SIZE AT NO ADDITIONAL COST TO OWNER TO ACCOMMODATE APPROVED EQUIPMENT SIZE.
 2. COORDINATE EXACT CONDUIT PENETRATION LOCATIONS WITH EQUIPMENT SHOP DRAWINGS.

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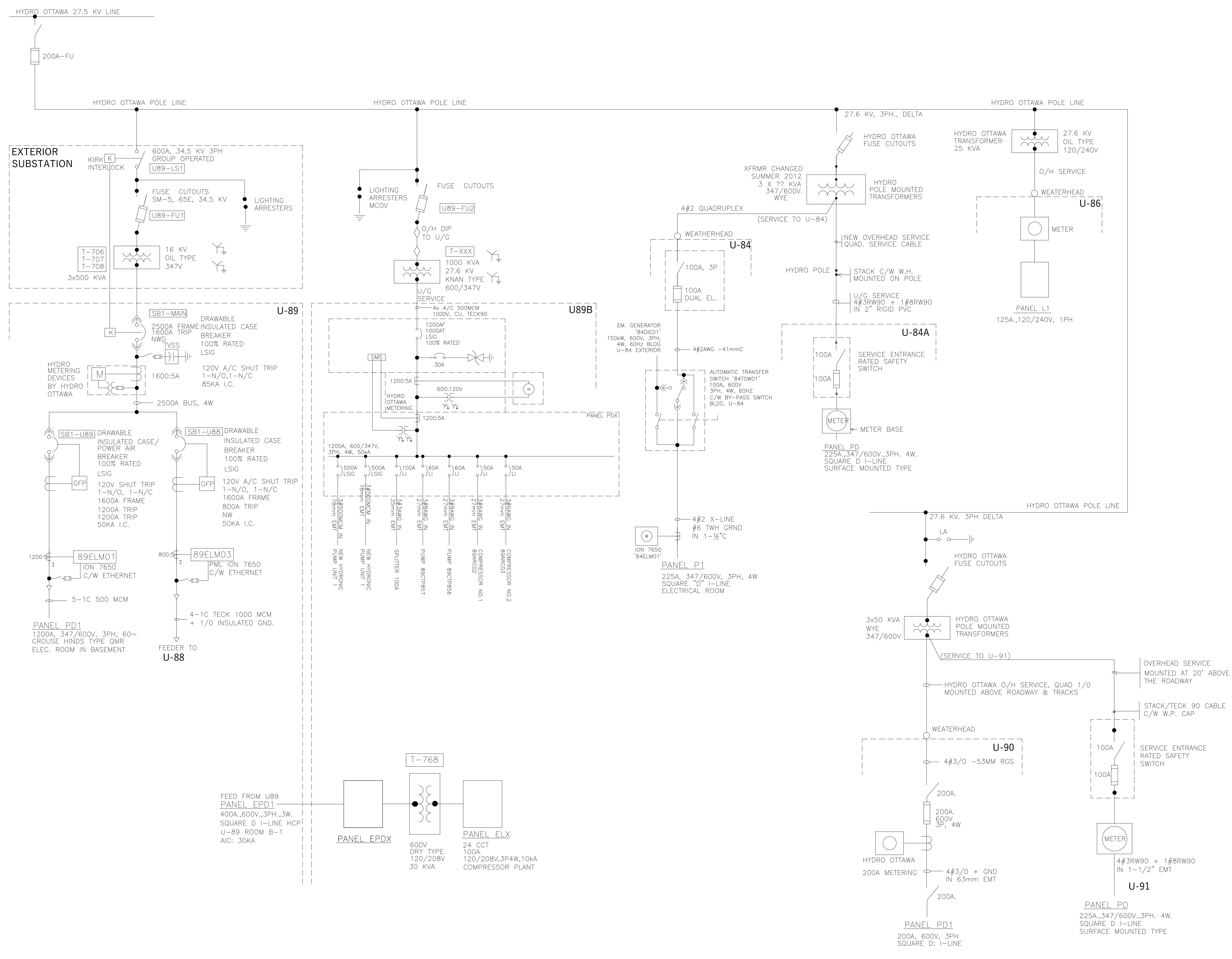
A	B	C
A Detail no. / No. du détail	B Location drawing no. / sur dessin no.	C Drawing no. / dessin no.

project: **AST CAMPUS U87 ELECTRIC VEHICLE CHARGING STATION**
 2320 LESTER ROAD, OTTAWA, ONTARIO

drawing: **ELECTRICAL DETAILS**

designed	conçu	date	date
D. van GAAL		2022.11.18	
drawn	dessiné	scale	échelle
H. SULLIVAN		AS NOTED	
checked	vérifié	sheet	feuille
		of/de	
approved	approuvé	W.O.no.	D.T.no.
		997637	
		Stantec No: 163303309	
dwg.no.	dessin no.		
6263-E-501	6263-E-501		

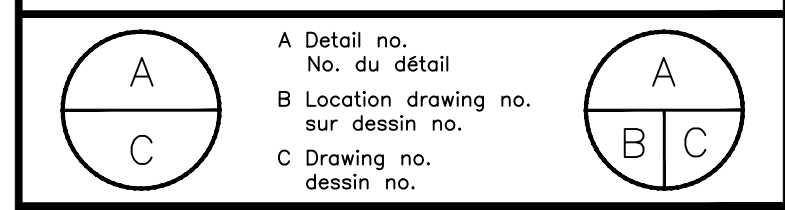
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 2024/02/01 9:52 AM By: Sullivan, Heather



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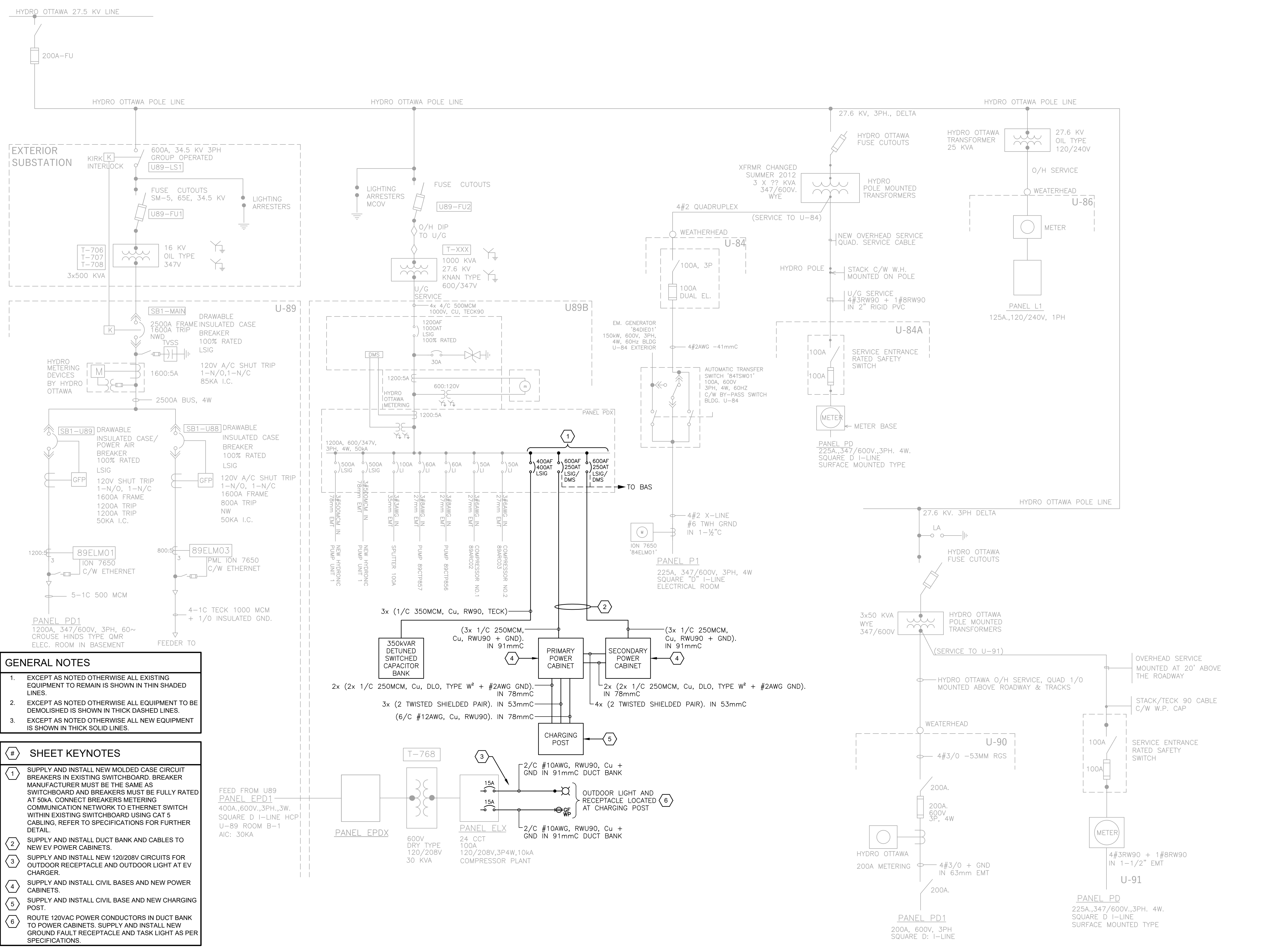


project: **AST CAMPUS U87 ELECTRIC VEHICLE CHARGING STATION**
 2320 LESTER ROAD, OTTAWA, ONTARIO

drawing: **ELECTRICAL SINGLE LINE DIAGRAM EXISTING SERVICE ENTRANCES**

designed	conçu	date	date
D. van GAAL		2022.11.18	
drawn	dessiné	scale	échelle
H. SULLIVAN		AS NOTED	
checked	vérifié	sheet	feuille
		of/de	
approved	approuvé	W.O.no.	D.T.no.
		997637	
		Stantec No: 163303309	
dwg.no.	dessin no.		
6263-E-601			

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 2024/02/01 9:52 AM By: Sullivan, Heather



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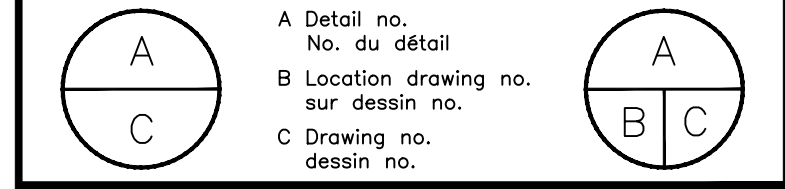
SHEET KEYNOTES

- SUPPLY AND INSTALL NEW MOLDED CASE CIRCUIT BREAKERS IN EXISTING SWITCHBOARD. BREAKER MANUFACTURER MUST BE THE SAME AS SWITCHBOARD AND BREAKERS MUST BE FULLY RATED AT 50kA. CONNECT BREAKERS METERING COMMUNICATION NETWORK TO ETHERNET SWITCH WITHIN EXISTING SWITCHBOARD USING CAT 5 CABLEING. REFER TO SPECIFICATIONS FOR FURTHER DETAIL.
- SUPPLY AND INSTALL DUCT BANK AND CABLES TO NEW EV POWER CABINETS.
- SUPPLY AND INSTALL NEW 120/208V CIRCUITS FOR OUTDOOR RECEPTACLE AND OUTDOOR LIGHT AT EV CHARGER.
- SUPPLY AND INSTALL CIVIL BASES AND NEW POWER CABINETS.
- SUPPLY AND INSTALL CIVIL BASE AND NEW CHARGING POST.
- ROUTE 120VAC POWER CONDUCTORS IN DUCT BANK TO POWER CABINETS. SUPPLY AND INSTALL NEW GROUND FAULT RECEPTACLE AND TASK LIGHT AS PER SPECIFICATIONS.

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D	24.02.02	ISSUED FOR TENDER, REV 2		DvG
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ELECTRICAL SINGLE LINE DIAGRAM NEW CONSTRUCTION

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D. van GAAL				
drawn	dessiné	scale	AS NOTED	échelle
H. SULLIVAN				
checked	vérifié	sheet	of/de	feuille
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			Stantec No: 163303309	
dwg.no.	dessin no.	6263-E-602		
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