



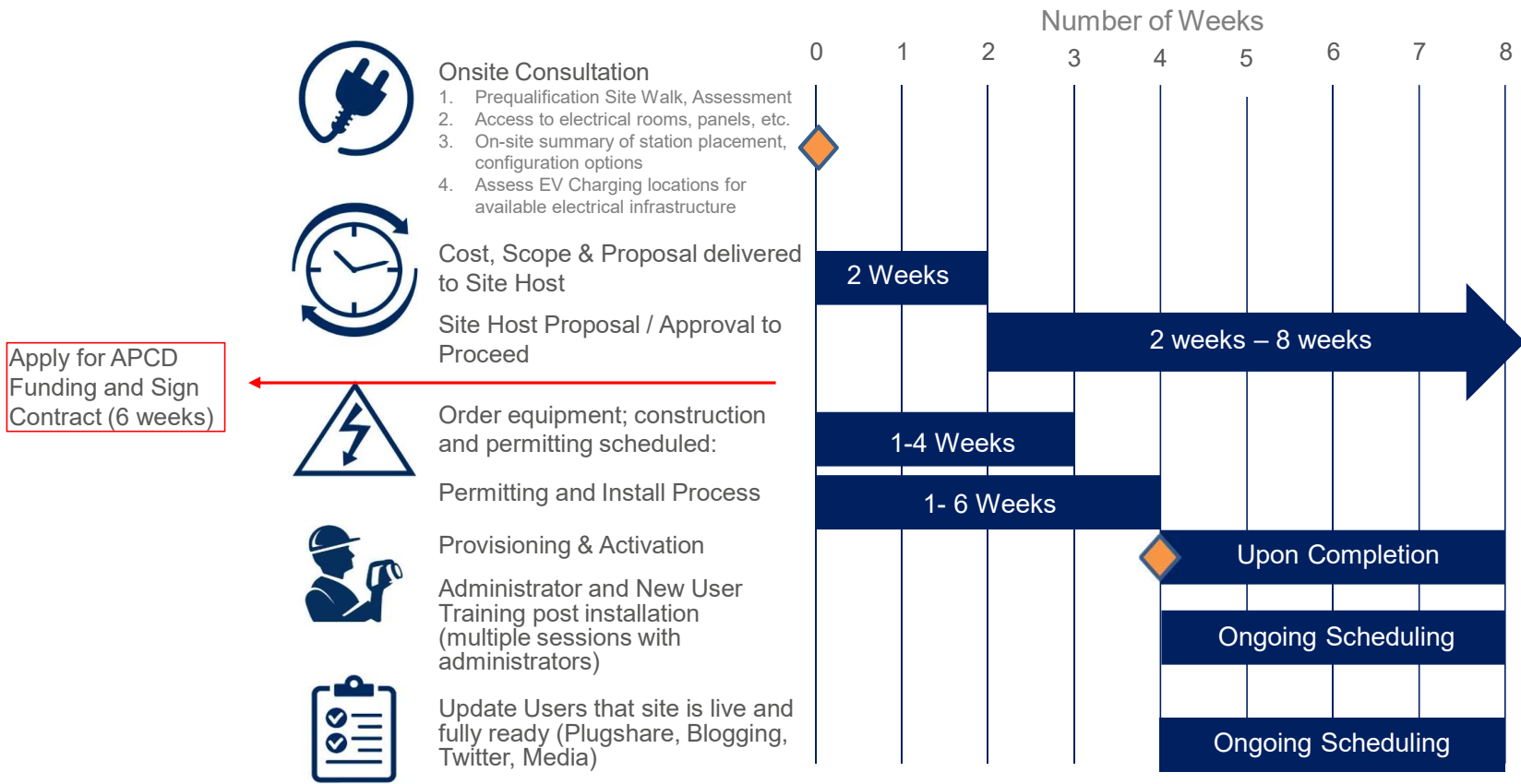
# San Luis Obispo County Electric Vehicle Charging Station Installation Webinar

Presented by SLOCAPCD and ABM

# Agenda

1. Introductions
2. Installation Process Timeline
3. EVSE Site Assessment Documents & Quote Review
4. Next Steps
5. How to Fund your Project
6. Open Discussion & Process Feedback
7. Additional Questions

# Installation Process Timeline



# EV Charging Station Design & Budget Review

## Price Drivers

- Trenching, concrete, pavement, specialty concrete services
- Distance from panel to charger (over 150' increases conduit/wire size)
- Service upgrades, (new transformers, panelboards, breaker kits)
- Existing infrastructure, (spare conduits, existing breakers)
- 100% Fleet usage only (changes in network fees and equipment type for the AC Chargers)
- 100% public access or mixed usage (Commercial network fees)

# Two Examples to review

- 1) Health Campus – San Luis Obispo (proposal and drawing package)
- 2) Paso Robles USD – (proposal and drawing package)



## ABM Electrical Power Services (ABMEPS) Terms and Conditions

**Terms of Payment:** 1. Terms are net thirty (30) days. Any invoice not paid within thirty (30) days from the date of invoice will be subject to a service charge equal to the lesser of One and One-half percent (1.5%) per month on account balances or the maximum percentage permitted by law. 2. At ABMEPS's option, customers may be invoiced on a monthly basis for services provided over more than one month. 3. All pricing and payment terms contained herein are contingent upon a favorable Credit Report for the customer/client to whom this quotation is provided. Upon receipt of a less than favorable credit report ABMEPS reserves the right to withdraw this proposal, modify the pricing, or require payment when services are rendered, or advance payment of the total job quotation before providing services. 4. For material purchases in excess of \$50,000, ABMEPS reserves the option to invoice 50% of the total at the time of material order and the remaining 50% at the time of material delivery. 5. Customer agrees to pay ABMEPS, to the extent permitted by applicable law, all costs and expenses, including but not limited to reasonable attorney's fees, incurred by ABMEPS in connection with any collection activities or actions to collect unpaid invoices under this quotation.

**Delays:** ABMEPS shall not be liable for delays or performance resulting from causes beyond its reasonable control, acts of God, acts or omissions of Buyer, fire, strike or other labor difficulty. Should there be a delay, the date of delivery or performance shall be extended.

**Cancellation:** Notice of cancellation of services to be performed must be received thirty-six (36) hours prior to the agreed upon date and time. Unless such notification is provided, charges will be incurred. These charges will be ABMEPS's cost plus ten percent (10%) and will include any rental equipment for the Project.

**Disclaimer:** ABMEPS assumes no responsibility for any damage or injury to any property caused directly or indirectly as a result of ABMEPS performing its duties under this agreement except such damage or injury that may be held to result solely and directly from or out of: Any grossly negligent performance by ABMEPS in its obligations under this Agreement or any willful misconduct on the part of ABMEPS, its agents or employees.

**Responsibility:** All services are performed in accordance with industry standards, project specifications and/or NETA specifications. Where remediation is beyond the scope of normal reliability testing, and where corrective action is required, such services will be quoted separately.

**Assignment:** ABMEPS reserves the right to assign this project in part or in total to an affiliated entity.

**Termination:** An order may be terminated only by mutual written agreement between Buyer and ABMEPS and only upon payment of costs and expenses already incurred by ABMEPS.

**Safety:** ABMEPS agrees to comply with all applicable federal, state, local, National Electric Codes and project safety rules and regulations. ABMEPS reserves the right not to perform work that in its opinion violates OSHA Electrical Safety-Related Work Practices; Final Rule or other safety rules and regulations.

**Standby Time:** When ABMEPS service personnel are on the job site but unable to perform services requested because of circumstances beyond ABMEPS's control, the customer will be charged standby time at the applicable rate for each such ABMEPS service person (up to a maximum of eight (8) hours per day per person).

**Liability:** ABM Electrical Power Services and its contractors and suppliers of any tier, shall not be liable in contract, in tort or otherwise for damage or loss of property or equipment, loss of profits or revenue, loss of use of equipment or power system, cost of capital, cost of purchased or replacement power or temporary equipment (including additional expenses incurred in using existing facilities), claims of customers of Buyer, or for any special, indirect, incidental, or consequential damages of any kind, whether arising in or based on contract, tort, statute, strict liability, warranty or otherwise.

**Warranties:** All material and equipment delivered and/or installed will be the products of reputable manufacturers. ABMEPS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE HEREBY EXPRESSLY EXCLUDED, CONCERNING MATERIAL AND EQUIPMENT MANUFACTURED BY OTHERS. ABMEPS sells and delivers all materials and equipment not manufactured by it "AS IS," but ABMEPS will use its best reasonable efforts to obtain from the manufacturer, in accordance with the manufacturer's customary practices, the repair or replacement of any material or equipment which may prove defective in workmanship or material. The foregoing shall be the exclusive remedy of Buyer and the sole obligation of ABMEPS with respect to material and equipment manufactured by others. To the extent permitted by law, ABMEPS warrants its labor for one (1) year and any materials obtained from ABMEPS's inventory carry a ninety (90) day warranty.

**Unforeseen underground issues:** The estimate does not include any costs or contingencies for rock or other abnormal ground conditions, and Owner/Customer shall be responsible for the costs of correcting any such conditions. Should such abnormal conditions be encountered on the site in connection with excavation or installation of sewer lines, water lines, or other utility services, ABM shall promptly inform Owner/Customer of same and estimated costs of the additional work. Such costs may include, but are not necessarily limited to jack hammer, backhoe and/or rock drill operations. The actual costs will be reflected in an increase in the actual invoicing. If we are not able to complete any bore due to rock or abnormal conditions, an attempt/mobilization fee of \$3,000.00 USD, plus the cost to return materials will apply.

**Unforeseen hazardous materials:** This project agreement does not include costs or responsibility for any hazardous material abatement that is discovered by ABM or others during the course of the project.

We instruct ABM Electrical Power Services, LLC (ABMEPS) or subsidiaries to proceed with scheduling and performing the work described in the attached proposal.

\* **ABMEPS Proposal Number:** \_\_\_\_\_

**Project Site Address(es):** \_\_\_\_\_

\* **Authorized Project Amount:** \$ \_\_\_\_\_ Proposed Date to Begin Work: \_\_\_\_\_

Project Comments/Notes: \_\_\_\_\_

Site Contact Name: \_\_\_\_\_ Site Contact Phone: \_\_\_\_\_

**AUTHORIZATION TO PROCEED REQUIRED**

\* **Customer Authorization Signature:** \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Date: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

**BILLING INFORMATION REQUIRED**

ABMEPS is instructed to bill this project per the pricing outlined in the proposal accordingly:

\* **Purchase/Service Order or Contract Number is (Mark One):**  Required on invoice  Not Required

If Required, Provide Number Here: \_\_\_\_\_

**Full Billing Name:** \_\_\_\_\_

**Billing Address:** \_\_\_\_\_

**Billing City, State, Zip Code:** \_\_\_\_\_

Accounts Payable Contact: \_\_\_\_\_

AP Phone Number: \_\_\_\_\_ AP Email Address: \_\_\_\_\_

**Email Address For Invoice Processing:** \_\_\_\_\_

\* Please help streamline invoicing by providing an email address for invoice processing

\* **ABMEPS Project Authorization Signature:** \_\_\_\_\_

**Terms and Conditions:**

The attached ABM Electrical Power Services, LLC Terms and Conditions will apply. Authorization to proceed with the work outlined in this quotation shall constitute Site Host ("Buyer's") acceptance of these terms and conditions in full. Oral authorizations to proceed must be confirmed to ABMEPS in writing (Fax or e-mail) before project start. If there is a conflict or discrepancy between terms and conditions in the Buyer's purchase authorization and this quotation, this quotation shall prevail unless specifically authorized, in writing, by ABM Electrical Power Services, LLC.

Sincerely,

*Van D. Wilkins, Jr.*

National Accounts Manager



# Health Campus

SCOPE: INSTALL FOUR - CT4000 SINGLE PORT CHARGERS.



**SHEET INDEX:**

1. TITLE SHEET
2. SITE CONDITIONS
3. SITE SKETCH
4. SINGLE LINE (LINE)
5. CT4000 SPECIFICATIONS
6. CT4000 DETAILS
7. CIVIL DETAILS
8. PARKING INFO
9. STANDARDS

**A C** LEVEL 2 CHARGER PORT





**EVG-250.1 General**

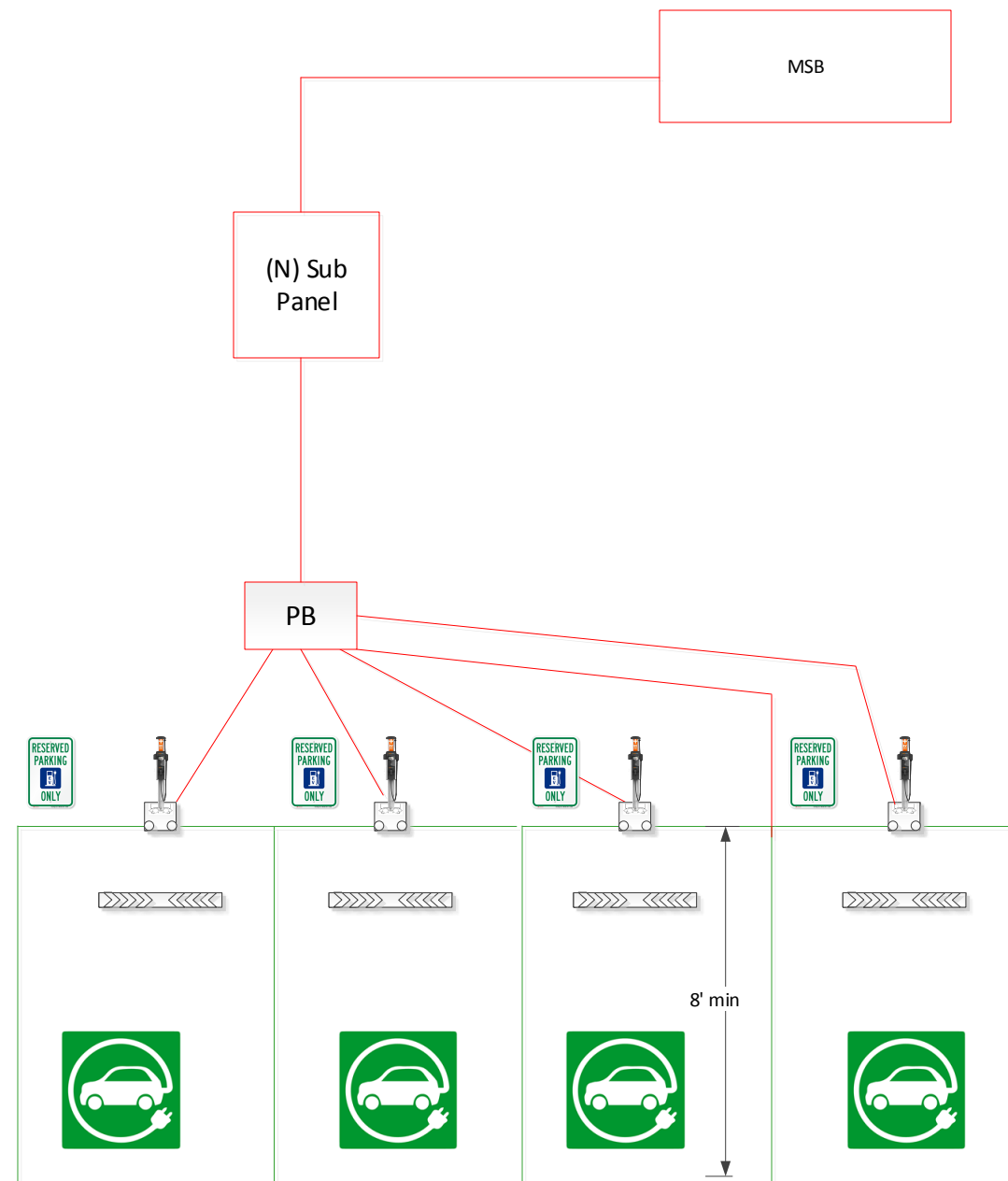
Where provided, electrical vehicle charging stations shall comply with EVG-250.



ADVISORY: EVG-250.1 General Existing conditions, terrain, electric infrastructure and other factors dictate that not every electric vehicle charging station can be fully accessible. With electric vehicle charging station being functionally similar to and usually intergraded with parking, the ratios of accessible to standard electric vehicle charging stations in these guidelines are the same as those for accessible to standard parking in the 2010 ADA standards and the 2013 California Building Code. The numbers of required accessible electric vehicle charging stations for both on-site and public rights-of-way locations are shown in Tables EVG-250.2 On-site Electric Vehicle Charging Stations and EVG-250.3 On-street Electric Vehicles Charging Stations

NO.	REVISIONS	DATE	REV'D	APP'D			DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	<p>ABM ELECTRICAL POWER SERVICES 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	SCALE	NTS
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						HEALTH CAMPUS		
						HEALTH CAMPUS 2180 JOHNSON AVENUE SAN LUIS OBISPO, CA		



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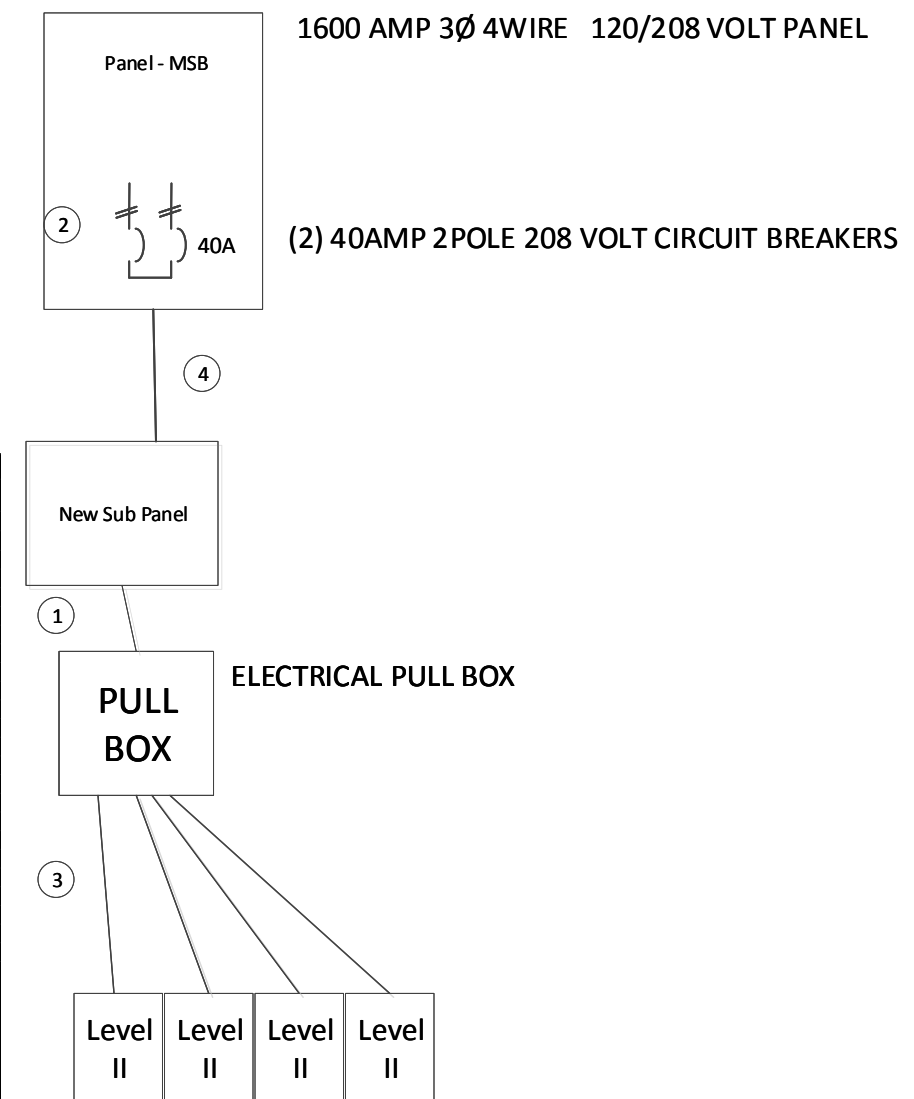
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**NOTES:**

- ① 1-1/4" PVC CONDUIT W/ (10) #8 AND (1) #10 GND COPPER THHN CONDUCTORS
- ② TWO 40AMP 2POLE 208 VOLT CIRCUIT BREAKERS W/ BREAKER TIE BAR AND GROUNDING BAR KIT
- ③ 1" PVC CONDUIT W/(2)#8 AND (1)#10 GND COPPER THHN CONDUCTORS
- ④ 2" EMT W/(3)3/0 AND (1)#6 GND COPPER CONDUCTORS

ELECTRICAL SUB PANEL SCHEDULE																				
PANEL MSB																				
120/208 VOLT (1600) AMP (3) PH (4) W																				
L.C.L	CK	LOAD	OUTLET			BRKR			PHASE			PHASE			OUTLET			LOAD	CK	L.C.L
			LTG	REC	MISC	POLE	AMP	A	B	C	A	B	C	AMP	POLE	MISC	REC			
	1																		2	
	3	SPACE																	4	
	5	SPACE																6		
	7																	8		
	9																	10		
	11																	12		
	13																	14		
	15																	16		
	17																	18		
	19																	20		
	21																	22		
	23																	24		
	25																	26		
	27																	28		
	29																	30		
PER PHASE & TOTAL LOAD										TOTAL LOAD										364210 W
A						121470						L.C.L						364210		
B						121370						L.C.L @ 125%						455263		
C						121370	ACTUAL LOAD AMPS 1012					L.C.L WATTS (Additional)						91053		
TOTAL OF PHASE LOADS					364210						TOTAL LOAD					455263				
										TOTAL AMPS					1406					

ELECTRICAL SUB PANEL SCHEDULE																				
NEW SUB PANEL																				
120/208 VOLT (200) AMP (3) PH (4) W																				
L.C.L	CK	LOAD	OUTLET			BRKR			PHASE			PHASE			OUTLET			LOAD	CK	L.C.L
			LTG	REC	MISC	POLE	AMP	A	B	C	A	B	C	AMP	POLE	MISC	REC			
	1																		2	
	3	CT4021 (N)		X															4	
	5	CT4021 (N)																	6	
	7																		8	
	9	CT4021 (N)																	10	
	11																		12	
	13	CT4021 (N)																	14	
	15																		16	
	17	SPACE																	18	
	19	SPACE																	20	
	21	SPACE																	22	
	23	SPACE																	24	
	25	SPACE																	26	
	27	SPACE																	28	
	29	SPACE																	30	
PER PHASE & TOTAL LOAD										TOTAL LOAD										26624 W
A						9984						L.C.L						26624		
B						9984	ACTUAL LOAD AMPS 74					L.C.L @ 125%						33280		
C						6656						L.C.L WATTS (Additional)						6656		
TOTAL OF PHASE LOADS					26624						TOTAL LOAD					33280				
										TOTAL AMPS					103					



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DESIGNED **James Pierson**

DRAWN **James Pierson**

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**ABM**™  
Building Value

**Electricraft** INC.  
Electrical Contractors

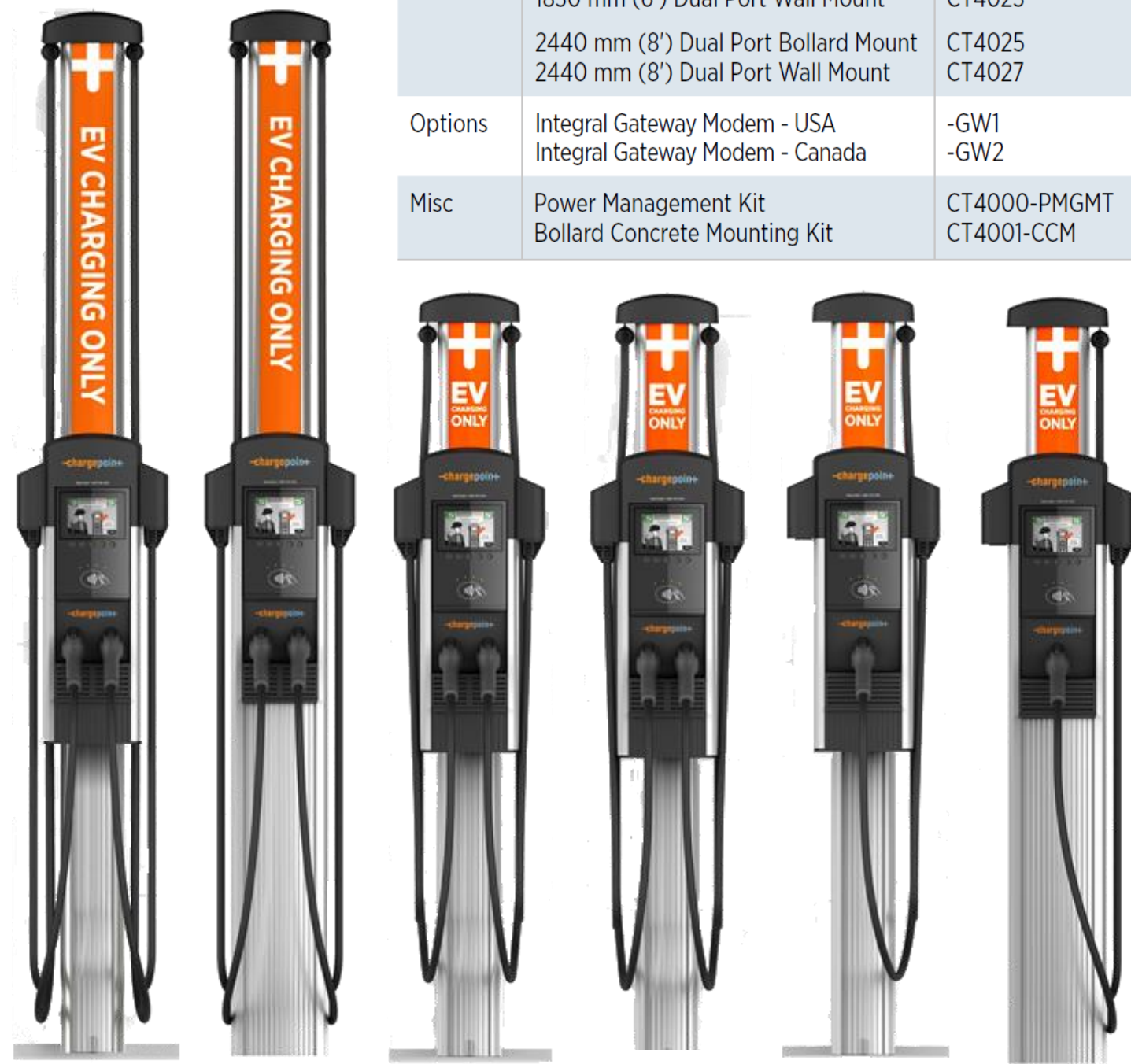
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Electrical Input	Single Port (AC Voltage 208/240V AC)			Dual Port (AC Voltage 208/240V AC)		
	Input Current	Input Power Connection	Required Service Panel Breaker	Input Current	Input Power Connection	Required Service Panel Breaker
Standard	30A	One 40A branch circuit	40A dual pole (non-GFCI type)	30A x 2	Two independent 40A branch circuits	40A dual pole (non-GFCI type) x 2
Standard Power Share	n/a	n/a	n/a	32A	One 40A branch circuit	40A dual pole (non-GFCI type)
Power Select 24A	24A	One 30A branch circuit	30A dual pole (non-GFCI type)	24A x 2	Two independent 30A branch circuits	30A dual pole (non-GFCI type) x 2
Power Select 24A Power Share	n/a	n/a	n/a	24A	One 30A branch circuit	30A dual pole (non-GFCI type)
Power Select 16A	16A	One 20A branch circuit	20A dual pole (non-GFCI type)	16A x 2	Two independent 20A branch circuits	20A dual pole (non-GFCI type) x 2
Power Select 16A Power Share	n/a	n/a	n/a	16A	One 20A branch circuit	20A dual pole (non-GFCI type)
Service Panel GFCI	Do not provide external GFCI as it may conflict with internal GFCI (CCID)					
Wiring - Standard	3-wire (L1, L2, Earth)			5-wire (L1, L1, L2, L2, Earth)		
Wiring - Power Share	n/a			3-wire (L1, L2, Earth)		
Station Power	8W typical (standby), 15W maximum (operation)					

Electrical Output		
Standard	7.2kW (240V AC @ 30A)	7.2kW (240V AC@30A) x 2
Standard Power Share	n/a	7.2kW (240V AC@30A) x 1 or 3.8kW (240V AC@16A) x 2
Power Select 24A	5.8kW (240V AC@24A)	5.8kW (240V AC@24A) x 2
Power Select 24A Power Share	n/a	5.8kW (240V AC@24A) x 1 or 2.9kW (240V AC@12A) x 2
Power Select 16A	3.8kW (240V AC@16A)	3.8kW (240V AC@16A) x 2
Power Select 24A Power Share	n/a	3.8kW (240V AC@16A) x 1 or 1.9kW (240V AC@8A) x 2

Functional Interfaces		
Connector(s) Type	SAE J1772™	SAE J1772™ x 2
Cable Length - 1830 mm (6') Cable Management	5.5 m (18')	5.5 m (18') x 2
Cable Length - 2440 mm (8') Cable Management	n/a	7 m (23')
Overhead Cable Management System	Yes	
LCD Display	145 mm (5.7") full color, 640x480, 30fps full motion video, active matrix, UV protected	
Card Reader	ISO 15693, ISO 14443, NFC	
Locking Holster	Yes	Yes x 2



### Hardware

Description	Order Code	
Model	1830 mm (6') Single Port Bollard Mount 1830 mm (6') Dual Port Bollard Mount 1830 mm (6') Single Port Wall Mount 1830 mm (6') Dual Port Wall Mount 2440 mm (8') Dual Port Bollard Mount 2440 mm (8') Dual Port Wall Mount	CT4011 CT4021 CT4013 CT4023 CT4025 CT4027
Options	Integral Gateway Modem - USA Integral Gateway Modem - Canada	-GW1 -GW2
Misc	Power Management Kit Bollard Concrete Mounting Kit	CT4000-PMGMT CT4001-CCM

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DESIGNED James Pierson  
DRAWN James Pierson  
CHECKED \_\_\_\_\_

**ABM**™ *Electriccraft* INC.  
Building Value  
ABM ELECTRICAL POWER SERVICES  
14201 FRANKLIN AVE.  
TUSTIN, CA 92780

HEALTH CAMPUS  
  
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2180 JOHNSON AVENUE  
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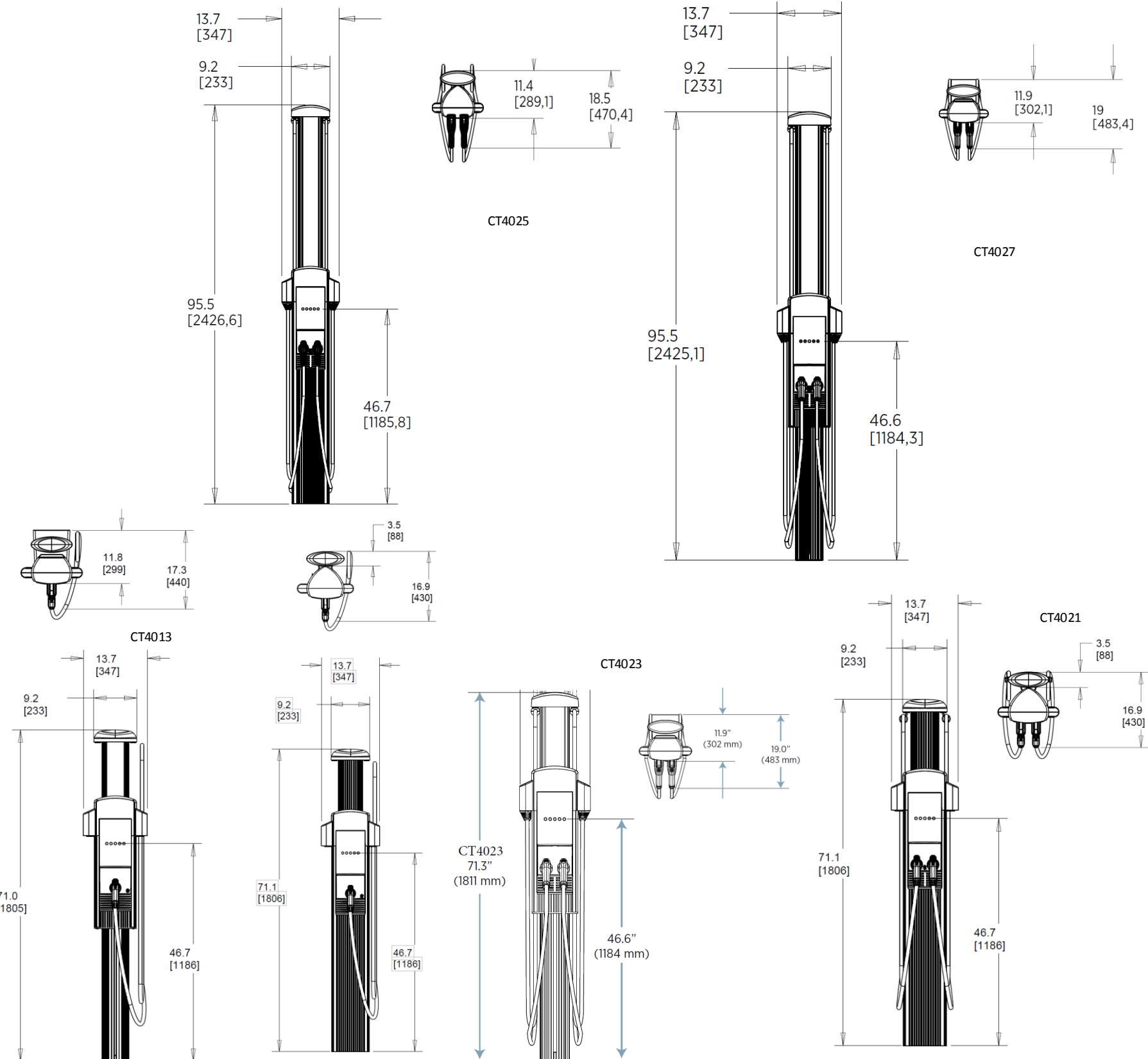
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## Safety and Connectivity Features

Ground Fault Detection	20mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772™ specifications
Power Measurement Accuracy	+/- 2% from 2% to full scale (30A)
Power Report/Store Interval	15 minute, aligned to hour
Local Area Network	2.4 GHz Wi-Fi (802.11 b/g/n)
Wide Area Network	3G GSM, 3G CDMA

## Safety and Operational Ratings

Enclosure Rating	Type 3R per UL 50E
Safety Compliance	UL listed for USA and cUL certified for Canada; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625
Surge Protection	6kV @ 3000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15 Class A
Operating Temperature	-30°C to +50°C (-22°F to 122°F)
Storage Temperature	-30°C to +60°C (-22°F to 140°F)
Non-Operating Temperature	-40°C to +60°C (-40°F to 140°F)
Operating Humidity	Up to 85% @ +50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% @ +50°C (122°F) non-condensing
Terminal Block Temperature Rating	105°C (221°F)
Charging Stations per 802.11 Radio Group	Maximum of 10. Each station must be located within 45m (150') "line of sight" of a gateway station.



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DESIGNED	James Pierson
DRAWN	James Pierson
CHECKED	




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HEALTH CAMPUS
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DATE	11/28/18
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**STRUCTURAL NOTES:**

**GENERAL:**

1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE – CURRENT EDITION, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION.
2. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR PERMIT.
3. JOB SAFETY AND PROCEDURES FOR SAFE CONSTRUCTION ARE OF UTMOST IMPORTANCE, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WORK NOT EXPRESSLY SHOWN ON SPECIFIC PARTS OF THE DRAWINGS OR SPECIFICATIONS, BUT REASONABLY IMPLIED BY SIMILAR WORK SHOWN, SHALL BE REPEATED.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEMBERS AND MATERIALS TO CONFORM TO ACTUAL SITE CONDITIONS, CONTRACTOR SHALL REPORT DIFFERING SITE CONDITIONS AND DEVIATIONS IN NOTED PROCEDURE TO THE ENGINEER FOR REVIEW.
6. CONTRACTOR SHALL TAKE CARE TO PROTECT ALL EXISTING STRUCTURES AND UTILITIES FROM DAMAGE.
7. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS. DRAWINGS SHALL TAKE PRECEDENCE OVER SPECIFICATIONS.
8. IF THERE APPEARS TO BE A CONFLICT BETWEEN NOTES, DETAILS, OR SPECIFICATIONS, CONTRACTOR SHALL APPLY THE MOST RIGID REQUIREMENTS TO THE WORK. CONTRACTOR SHALL NOT DEVIATE FROM DRAWINGS WITHOUT APPROVAL OF THE ENGINEER.
9. IT IS THE INTENTION OF THIS SET OF DESIGN DRAWINGS TO PRODUCE CONSTRUCTION SHOP DRAWINGS FOR THE FABRICATION AND ASSEMBLY OF THE BUILDING SYSTEMS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY REMAINING COORDINATION, DETAILING AND MISCELLANEOUS DESIGN NOT INCLUDED HEREIN AND SHALL VERIFY CONFORMANCE TO ALL LOCAL BUILDING CODES AND PROFESSIONAL FILING REQUIREMENTS.

**STRUCTURAL DESIGN DATA:**

ALL DEAD AND LIVE LOADS ARE PER THE INTERNATIONAL BUILDING CODES, CURRENT EDITION

1. DEAD LOADS:  
ALL DEAD LOADS ARE REPRESENTATIVE OF ACTUAL, MATERIAL WEIGHT PER SQ. FT.

CHARGER STAND .....450 BS  
CONCRETE PAD ..... SW/300PSF

2. LIVE LOADS:  
ALL LIVE LOADS ARE PER IBC 1607.8.3; CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL BUILDING CODES.

VEHICULAR IMPACT .....6,000 LBS @ 2'-3" FROM BASE

**FOUNDATIONS:**

1. FOOTINGS ARE TO BEAR ON MIN. 3,000 PSF SUITABLE BEARING MATERIAL
2. NO FOOTINGS ARE TO BE CAST ON UNCONTROLLED FILL, SOIL, ORGANIC MATERIAL, FROZEN GROUND, MUD, SOFT CLAYS OR OTHER OBJECTIONABLE OR UNAPPROVED MATERIALS.

**CAST IN PLACE CONCRETE:**

1. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI BUILDING CODE, ACI 318, LATEST EDITION, THE INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION, DETAILS SHALL BE IN ACCORDANCE WITH ACI-315, LATEST EDITION.
2. ALL CONCRETE FOR CAST IN PLACE WORK SHALL BE STONE CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
3. NO ADMIXTURES SHALL BE ALLOWED WITHOUT PRIOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
4. ALL REQUIREMENTS FOR BATCHING, MIXING, FINISHING, CURING ETC. SHALL BE AS PER ACI 301.
5. ALL REINFORCEMENT SHALL CONFIRM TO ASTM A615 GRADE 60 AND BE SECURELY TIED IN PLACE AND ADEQUATELY SUPPORTED. ALL BARS MARKED 'CONTINUOUS' (CONT.) SHALL BE LAPPED 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. IF REQUIRED, CONTRACTOR SHALL PROVIDE ADDITIONAL BARS OR STIRRUPS TO ADEQUATELY SUPPORT ALL BARS.
6. SHOP DRAWINGS SHALL INDICATE THE FOLLOWING: ALL NECESSARY REINFORCING, LOCATIONS OF ALL CONSTRUCTION AND CONTROL JOINTS. DETAILING AND AMOUNT OF REINFORCING FOR CONDITIONS NOT SHOWN SHALL BE PROVIDED AS SHOWN IN SIMILAR CONDITIONS. ALL INSERTS AND OTHER OBJECTS WHICH MAY AFFECT PLACING OF REINFORCING BARS SHALL BE INDICATED ON THE SHOP DRAWINGS.
7. MINIMUM CLEAR CONCRETE COVER SHALL BE 3", THIS DIMENSIONS ARE TYPICAL, UNLESS OTHERWISE NOTED ON PLANS AND DETAILS.
8. CONTRACTOR SHALL PROVIDE REINFORCING STEEL RECTOR WITH A SET OF STRUCTURAL PLANS FOR FIELD USE.
9. CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, CURBES, ETC. AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
10. CONTRACTOR SHALL COORDINATE LOCATION OF SLOTTED INSERTS, WELDED PLATES, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH CHARGING STATION MANUFACTURER.
11. CONTRACTOR SHALL USE RIGID TEMPLATES TO INSTALL ANCHOR BOLTS.
12. PIPES OR CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3 TIMES THE DIAMETER ON CENTER. PIPES AND CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF THE SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 12 INCHES OF ANY COLUMN FACE.

**DETAIL NOTES:**

A.1- 2' ROUND SONOTUBE STYLE FORMED BASE TO BE POURED FLUSH WITH EXISTING PAVEMENT OR EXISTING FINISHED GRADE

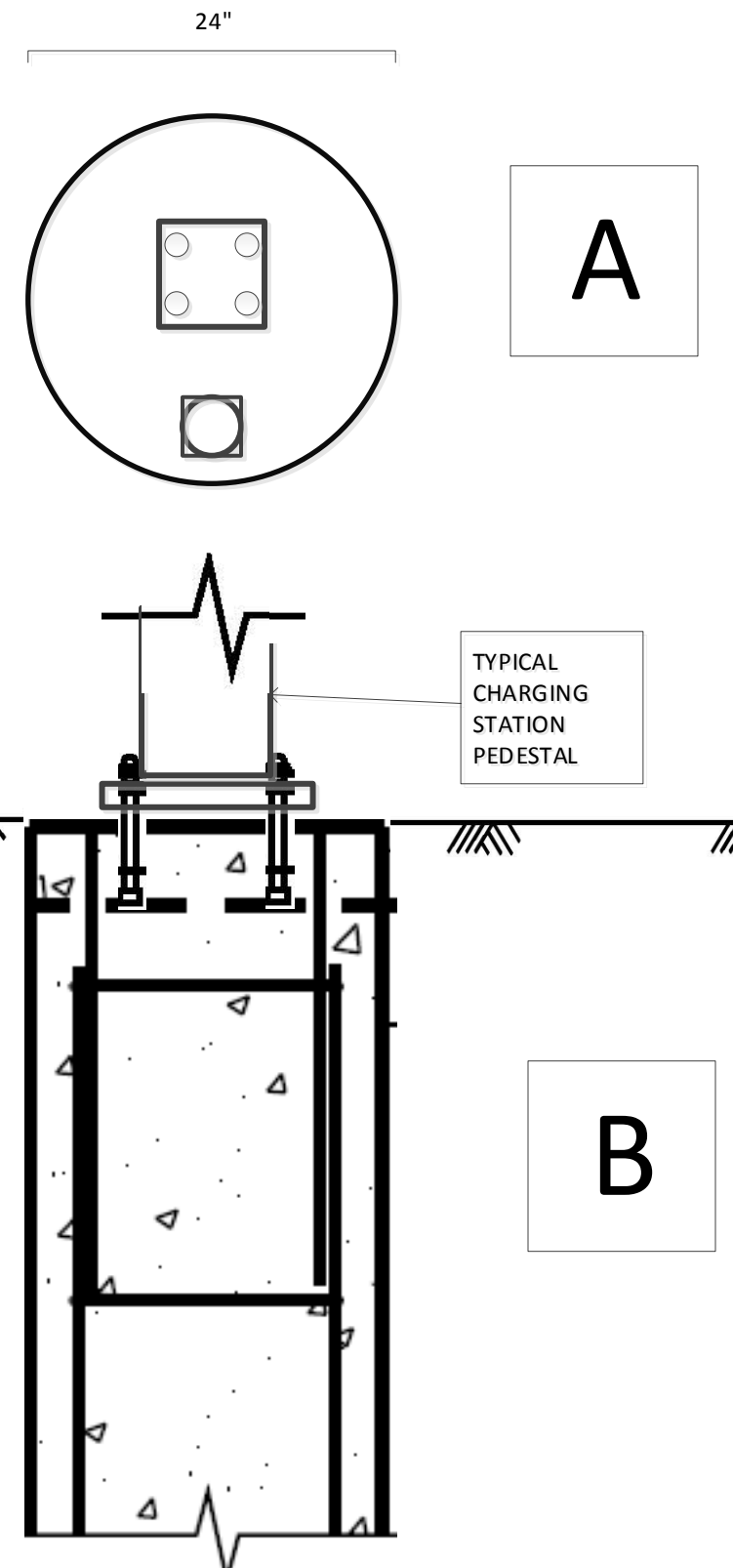
A.2- STANDARD BOLTDOWN BOLLARD TO BE INSTALLED ON FRONT OF PAD, SEE BOLLARD DETAIL

A.3- CHARGING STATION PEDESTAL TO BE INSTALLED PER PEDESTAL DETAILS

**DETAIL NOTES:**

B.1- 24" SONOTUBE PIER WITH (4)- #8 VERT. AND DOWELS AND #4 TIES@ 16" O.C. VERT.

B.2- PROVIDE MIN. 24" EMBEDMENT IN SOIL BELOW GRADE



NO.	REVISIONS	DATE	REV'D	APP'D
1	INITIAL RELEASE	11/28/18	REV'D	APP'D
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--	--	-	-	--
--	--	-	-	-

DESIGNED James Pierson  
DRAWN James Pierson  
CHECKED \_\_\_\_\_




**ABM ELECTRICAL POWER SERVICES**  
**14201 FRANKLIN AVE.**  
**TUSTIN, CA 92780**

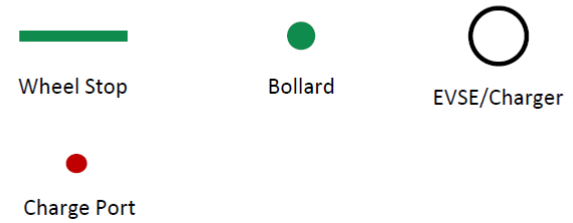
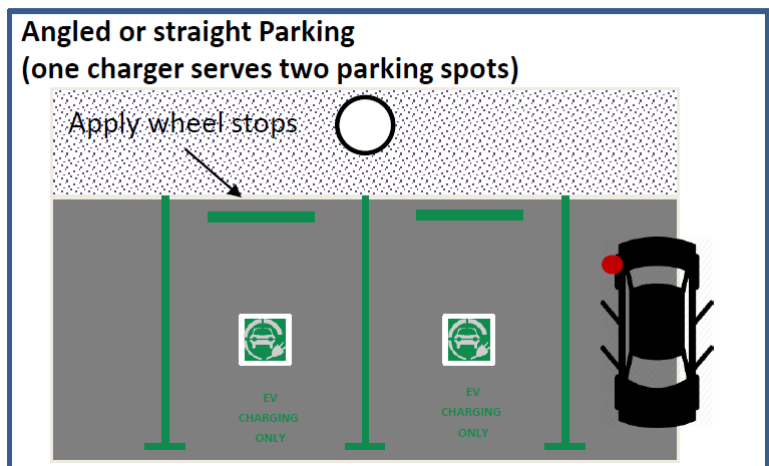
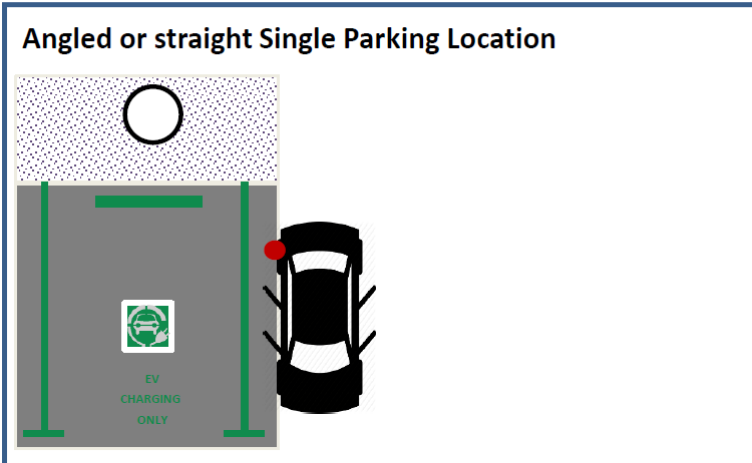
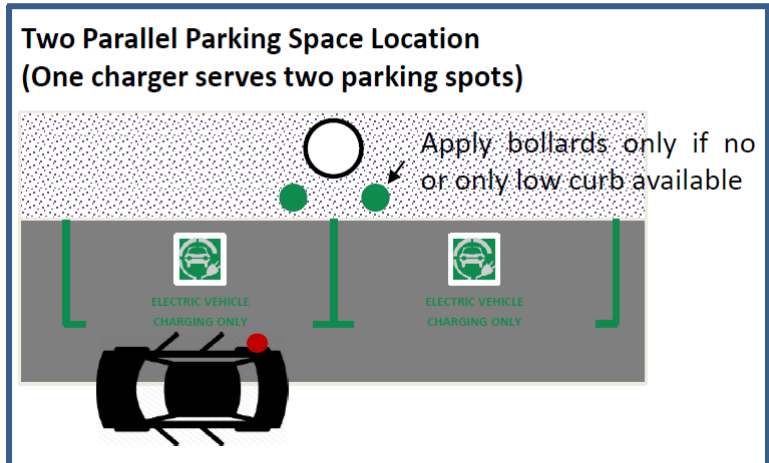
HEALTH CAMPUS

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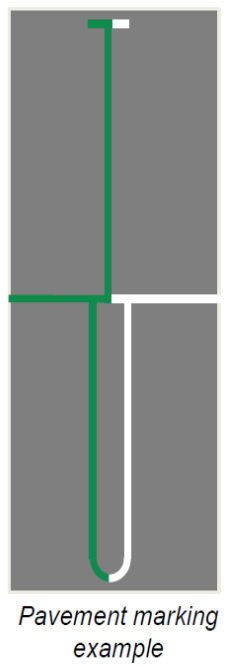
HEALTH CAMPUS  
2180 JOHNSON AVENUE  
SAN LUIS OBISPO, CA

DATE	11/28/18
SCALE	NTS
JOB #	NTS
SHEET	7
SHEET #	9

# Parking Site Guidelines and Layout



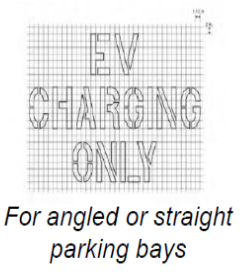
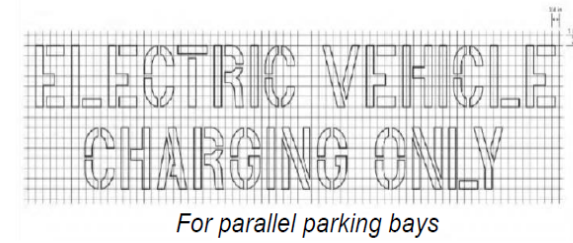
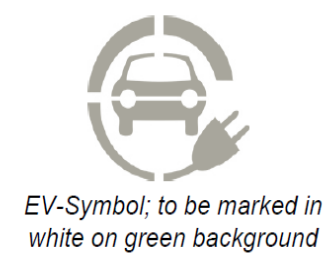
- Pavement marking, wheel stops and bollards and, if it fits into the overall site appearance, also curbs have to be painted in RAL 6026 (opal green).
- The marking of the EV-Charging parking spot has to be prioritized over existing markings.
- If there is any striping in different colors, it has to be painted over with the opal green color.
- Stencils to be used for marking to be found below.
- Dimensions:
  - EV-Symbol: 36 in x 36 in on a 38 in x 38 in green background frame
  - 'EV Charging only' and 'Electrical Vehicle Charging only' according to California Code: Figure 3B-108 (CA) Electric Vehicle Charging Station Pavement Marking Details (Sheet 1 & 2)



36" Fixed Carbon Steel Bollard rounded top, with 4-3/4" Outside Dia.



Where there is no curb, wheel stops are an alternative.  
72"x 6" x 3" Plastic, 20 lbs, maintenance free, no painting



WALL MOUNTED OR POST MOUNTED EV PARKING SIGNAGE



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1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	 <b>ABM ELECTRICAL POWER SERVICES</b> 14201 FRANKLIN AVE. TUSTIN, CA 92780	HEALTH CAMPUS	SCALE	NTS
--	--	-	-	-	DRAWN <b>James Pierson</b>			HEALTH CAMPUS 2180 JOHNSON AVENUE SAN LUIS OBISPO, CA	JOB #
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--	--	-	-	-				SHEET #	9



**ELECTRICAL - BASIC REQUIREMENTS**

1. Provide all labor, materials, necessary equipment and services to complete all required Electrical Work including all additional items required for a complete and proper installation as indicated on the Drawings or as required. Work includes but is not limited to the following.

- A. Service entrance system.
- B. All wiring and components to the charging systems

2. Installation shall be in accordance with the latest edition of the National Electrical Code and all applicable regulations of governing Local, State, County and Federal Codes including Utility Companies special requirements.

3. In the event of a conflict between equipment as drawn and these Specifications, the more stringent requirements will be applicable.

4. Coordinate delivery and installation of equipment required under this Section with the construction schedule.

5. Coordinate work with other trades and drawings.

6. All materials shall be new, free of defects and shall be U.L listed, bearing U.L. label or be labeled or listed with an approved, nationally recognized Electrical Testing Agency.

7. Make final connections between all equipment furnished under this Contract.

8. The Contractor shall check all dimensions and verify all conditions pertaining to these Drawings at the building and site and shall report any discrepancies or conditions that are detrimental to proper completion of work to the Engineer at once.

9. Carefully examine all Project Drawings included for this Contract and those included under other contracts and report any discrepancies to Engineer and Architect.

10. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, access panels and similar parts which may be required. Drawings are generally indicative of work to be installed. Carefully examine structural and finish conditions affecting work and arrange all work accordingly, furnishing necessary parts and equipment as may be required to meet actual field conditions.

11. Lay out work from dimensions of Architectural and Structural Drawings and actual dimensions of equipment being installed. Layouts in congested areas shall not be scaled from Mechanical and Electrical Drawings. Do not make final layouts until Shop or Equipment Drawings are approved and job conditions verified.

12. The right is reserved to make any reasonable change in locations of equipment and similar items within the building and at building exterior prior to installation without involving additional compensation.

13. All concrete saw cutting, removal and patching to be included.

14. All work shown on Drawings shall be supplemented by all Laws, Ordinances and Codes governing the work of these Divisions, which Laws, Ordinances or Codes shall take precedence in the event of any conflict between same, except where methods or materials shown are superior to the legal requirements.

15. Obtain all required certificates from Governing Agency and turn over to the Owner at completion of Work. Obtain exact charges for fees, permits and other costs required and include such amounts in Bid Price.

16. Contractor shall provide a warranty substantiating that all materials are as herein specified, and that he shall repair or replace any defective materials or workmanship in an acceptable manner, without cost to the Owner. Warranty period shall be for one (1) year unless specified longer for specific equipment. Date of warranty start shall be from substantial completion and beneficial use.

17. Contractor will obtain a building permit for his portion of the work.

18. Contractor to provide pitch pans and penetrations required for electrical items which pierce roof whether or not shown on Drawings.

19. Contractor to Furnish and install reinforced concrete pads for equipment as required.

20. In general, all similar equipment is to be supplied and manufactured by same Manufacturer, but must be submitted and approved equal to that specified.

21. Locate all openings required for work performed under this section. Provide sleeves, guards or other approved methods to allow passage of items installed under this section.

22. Provide switched supply with-in 36" of equipment supplied and installed by other contractors. Motor starters and controls will be provided by others (except where noted) to be installed by the Electrical Contractor.

23. Wherever the Contractor provides power consuming equipment which differs from Contract Documents, the wiring and associated circuit components for such equipment shall be changed to proper sizes to match at additional expense to Owner.

24. It is the Contractor's responsibility to coordinate the exact required location of floor outlets, floor ducts, floor stub-ups, etc., with Owner and Architect and receive approval prior to rough in. Locations shown on plans are only approximate locations.

**ELECTRICAL - GENERAL REQUIREMENTS**

1. Wire sizes are #12 THWN unless noted otherwise on Drawings or Schedules or if larger size is required for equipment furnished.

2. Code sized green grounding conductor is to be provided for all branch circuits.

3. Provide cable strain relief for feeders in risers. Install access panels where required.

4. Coordinate power locations with owner.

5. Coordinate with other subs if required for complete, proper operation and installation of all equipment.

6. Multi-section branch circuit panelboards are shown as individual panels on panel schedules. Circuit numbering indicated on drawings reflect consecutive numbering for single panel.

**ELECTRICAL - GENERAL CONSTRUCTION NOTES**

1. Electrical Contractor shall coordinate his work with other trades in order to avoid conflicts.

2. The minimum conduit size shall be 1/2".

3. Voltage drop minimum wire sizing (20A circuit) use -

- 1. 120V circuit over 100' use #10 minimum
- 2. 208V circuit over 200' use #10 minimum
- 3. 277V circuit over 200' use #10 minimum

Minimum branch circuit wire size shall be #12.

4. All openings in fire rated walls, floor and partitions for conduits shall be sealed with fire resistant foam or UL approved "Fire Stop" system to maintain the fire rating.

5. All wiring will be in "MC" cable as by code. Underground conduit will be Sched 40 PVC with fittings, conduit above grade installed is to be EMT.

6. Electrical Contractor shall have the option of grouping homeruns in one conduit, per the requirements of Section 310 of the National Electrical Code.

**ELECTRICAL - GENERAL REQUIREMENTS**

8. Utility company fees by others.

9. All circuits indicated on these drawings are 20A, 1P circuit breakers in panels unless otherwise noted.



10. No conduit shall be installed exposed in area open to the public.

11. Outlet boxes for receptacles shall be mounted 18" above finish slab, unless noted otherwise.

12. All dimensions indicated are to centerline of junction boxes, floor boxes, etc., unless otherwise noted. Refer to Interior Drawings for all dimensions.

13. The work "provide" shall mean "to furnish and install".

- 16. A.F.F. = Above Finished Floor
- U.N.O. = Unless Noted Otherwise
- B.E.C. = Building Electrical Contractor
- F.C. = Fixture Contractor

NO.	REVISIONS	DATE	REV'D	APP'D				DATE	11/28/18
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--	--	-	-	-	DRAWN <b>James Pierson</b>			JOB #	NTS
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# Example #2 to review

2) Paso Robles USD – (proposal and drawing package)



**ABM Electrical Power Services**  
 14201 Franklin Ave,  
 Tustin, CA 92780  
 Office 866.226.2838  
 Mobile 949.343.2929  
[van.wilkins@abm.com](mailto:van.wilkins@abm.com)

**EV Charging Station Infrastructure Proposal**

Proposal # TC8021819 - 8  
 Date: February 18, 2019  
 Customer: Paso Robles Joint Unified SD  
 2910 Union Road  
 Paso Robles, CA 93446

Site ID: Paso Robles Joint Unified SD  
 2910 Union Road  
 Paso Robles, CA 93446  
 Kelly Stainbrook  
 805-769-1160  
[kstainbrook@pasoschools.org](mailto:kstainbrook@pasoschools.org)

QTY	DESCRIPTION OF WORK		PRICE EA.	EXTENDED
1	<p>This quotation includes all electrical work including material and labor during straight time hours Monday through Friday for a complete installation as outlined below:            Per initial site visit and communications with facilities manager.            Specifically included are the following:            1. Install one Terra HP175 Charge Station and Charge Post 350 C2, charging equipment understood to be delivered direct to customers location.            2. Provide and install 300A breaker in existing Panel.            3. Provide and install conduit and conductors from panel MSB to charge location as shown on drawings.            4. Provide and install conduit and conductors between Charge Station and Charge Post consisting of (2) 4" pvc conduits, 350mcm 2000v DLO cable, (4) #12 thhn conductors, (1) 16/2 twisted shielded pair, (1) 4 strand OM3 fiber optic patch cord(ends to be determined).            5. Provide and install concrete housekeeping pad for Charge Station and Charge Post.            6. Provide and install 4" bollards to protect equipment.            7. Provide and install buss parking stop in front of charge post.            8. Provide excavation, backfill and surface replacement for required trenching based on no rock conditions.            Specifically excluded are the following:            1. Changes to discussed charger location during site visit as portrayed on drawings.            2. DSA approval and/or corrections.            3. Patch and Paint to building where conduit enters if required.            4. Repairs to unmarked utilities during excavation.            5. Any additional work not clearly outlined in plans.            6. Not responsible for re-allocating of parking stalls to meet parking lot requirements for ADA or city/county requirements.            7. Owner responsible to locate all utilities not located by USA 811 Dig Alert.</p>		\$117,193.59	\$117,193.59
1	6AGC067633 6AGC072427	THPUL175-L THPCPUL500-C-7-0-L Terra HP PC UL - 160kW (175kWp) Long Distance Terra HP Charge Post UL - 500A CCS-1	\$118,855.08	\$118,855.08
1	4EPY450059R1	Web tool to view charger status, user access control via PIN/RFID, data reporting, case management	\$526.41	\$526.41
1	4EPY450060R1	Credit Card Kit - Annual Operating Fee	\$170.46	\$170.46
1	4EPY450053-1	OCPP API	\$85.23	\$85.23
1	6AGC064781	Charger Connect (first year) Includes GSM connectivity, live software updates and 24/7 NOC monitoring	\$170.46	\$170.46
1	DESTINATION - TERRA	Activation Fee (REQUIRED) Includes packaging and remote SAT commissioning	\$2,301.28	\$2,301.28
1	6AGC068165, 6AGC068181	Extended warranty Terra HP 175 for up to 5 years	\$17,860.46	\$17,860.46
<b>Subtotal All options</b>				<b>\$257,162.97</b>
EQUIPMENT	All equipment to be purchased directly through Porsche and equipment cost is not included in this proposal		N/A	N/A
TAXES	Sales, use or other indirect pass-through taxes will be imposed as required by municipal statutes in accordance with laws covering separated charges for materials, installation labor, optional warranty coverage and software updates.		7.75%	\$19,930.13
<b>Grand Total</b>			<b>CAD\$</b>	<b>\$277,093.10</b>

**Exclusions/Clarifications: (PRICING VALID FOR 120-DAYS)**

- 1) EV CHARGING EQUIPMENT NOT INCLUDED, CUSTOMER TO PURCHASE EQUIPMENT DIRECTLY FROM PORSCHE. We will compile the parts list for the Porsche supplied parts list and submit the order to Porsche, the parts will be billed to the Dealer under its parts consignment.
- 2) Job will be done in three phases, A) initial underground and concrete installation for ChargeBox and Kiosks, B) L2 Installation, C) ChargeBox/systems & 19.2kW L2 Chargers final Installation/startup, (either late 2018 or Early 2019).
- 3) Charges or Fees from the Utility Company for Service Connect/Disconnect/Upgrade or Demand increase fees
- 4) Construction permitting does not include additional requirements from zoning issues or previous site problems with the municipalities

## ABM Electrical Power Services (ABMEPS) Terms and Conditions

**Terms of Payment:** 1. Terms are net thirty (30) days. Any invoice not paid within thirty (30) days from the date of invoice will be subject to a service charge equal to the lesser of One and One-half percent (1.5%) per month on account balances or the maximum percentage permitted by law. 2. At ABMEPS's option, customers may be invoiced on a monthly basis for services provided over more than one month. 3. All pricing and payment terms contained herein are contingent upon a favorable Credit Report for the customer/client to whom this quotation is provided. Upon receipt of a less than favorable credit report ABMEPS reserves the right to withdraw this proposal, modify the pricing, or require payment when services are rendered, or advance payment of the total job quotation before providing services. 4. For material purchases in excess of \$50,000, ABMEPS reserves the option to invoice 50% of the total at the time of material order and the remaining 50% at the time of material delivery. 5. Customer agrees to pay ABMEPS, to the extent permitted by applicable law, all costs and expenses, including but not limited to reasonable attorney's fees, incurred by ABMEPS in connection with any collection activities or actions to collect unpaid invoices under this quotation.

**Delays:** ABMEPS shall not be liable for delays or performance resulting from causes beyond its reasonable control, acts of God, acts or omissions of Buyer, fire, strike or other labor difficulty. Should there be a delay, the date of delivery or performance shall be extended.

**Cancellation:** Notice of cancellation of services to be performed must be received thirty-six (36) hours prior to the agreed upon date and time. Unless such notification is provided, charges will be incurred. These charges will be ABMEPS's cost plus ten percent (10%) and will include any rental equipment for the Project.

**Disclaimer:** ABMEPS assumes no responsibility for any damage or injury to any property caused directly or indirectly as a result of ABMEPS performing its duties under this agreement except such damage or injury that may be held to result solely and directly from or out of: Any grossly negligent performance by ABMEPS in its obligations under this Agreement or any willful misconduct on the part of ABMEPS, its agents or employees.

**Responsibility:** All services are performed in accordance with industry standards, project specifications and/or NETA specifications. Where remediation is beyond the scope of normal reliability testing, and where corrective action is required, such services will be quoted separately.

**Assignment:** ABMEPS reserves the right to assign this project in part or in total to an affiliated entity.

**Termination:** An order may be terminated only by mutual written agreement between Buyer and ABMEPS and only upon payment of costs and expenses already incurred by ABMEPS.

**Safety:** ABMEPS agrees to comply with all applicable federal, state, local, National Electric Codes and project safety rules and regulations. ABMEPS reserves the right not to perform work that in its opinion violates OSHA Electrical Safety-Related Work Practices; Final Rule or other safety rules and regulations.

**Standby Time:** When ABMEPS service personnel are on the job site but unable to perform services requested because of circumstances beyond ABMEPS's control, the customer will be charged standby time at the applicable rate for each such ABMEPS service person (up to a maximum of eight (8) hours per day per person).

**Liability:** ABM Electrical Power Services and its contractors and suppliers of any tier, shall not be liable in contract, in tort or otherwise for damage or loss of property or equipment, loss of profits or revenue, loss of use of equipment or power system, cost of capital, cost of purchased or replacement power or temporary equipment (including additional expenses incurred in using existing facilities), claims of customers of Buyer, or for any special, indirect, incidental, or consequential damages of any kind, whether arising in or based on contract, tort, statute, strict liability, warranty or otherwise.

**Warranties:** All material and equipment delivered and/or installed will be the products of reputable manufacturers. ABMEPS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE HEREBY EXPRESSLY EXCLUDED, CONCERNING MATERIAL AND EQUIPMENT MANUFACTURED BY OTHERS. ABMEPS sells and delivers all materials and equipment not manufactured by it "AS IS," but ABMEPS will use its best reasonable efforts to obtain from the manufacturer, in accordance with the manufacturer's customary practices, the repair or replacement of any material or equipment which may prove defective in workmanship or material. The foregoing shall be the exclusive remedy of Buyer and the sole obligation of ABMEPS with respect to material and equipment manufactured by others. To the extent permitted by law, ABMEPS warrants its labor for one (1) year and any materials obtained from ABMEPS's inventory carry a ninety (90) day warranty.

**Unforeseen underground issues:** The estimate does not include any costs or contingencies for rock or other abnormal ground conditions, and Owner/Customer shall be responsible for the costs of correcting any such conditions. Should such abnormal conditions be encountered on the site in connection with excavation or installation of sewer lines, water lines, or other utility services, ABM shall promptly inform Owner/Customer of same and estimated costs of the additional work. Such costs may include, but are not necessarily limited to jack hammer, backhoe and/or rock drill operations. The actual costs will be reflected in an increase in the actual invoicing. If we are not able to complete any bore due to rock or abnormal conditions, an attempt/mobilization fee of \$3,000.00 USD, plus the cost to return materials will apply.

**Unforeseen hazardous materials:** This project agreement does not include costs or responsibility for any hazardous material abatement that is discovered by ABM or others during the course of the project.

We instruct ABM Electrical Power Services, LLC (ABMEPS) or subsidiaries to proceed with scheduling and performing the work described in the attached proposal.

\* **ABMEPS Proposal Number:** \_\_\_\_\_

**Project Site Address(es):** \_\_\_\_\_

\* **Authorized Project Amount:** \$\_\_\_\_\_ **Proposed Date to Begin Work:** \_\_\_\_\_

**Project Comments/Notes:** \_\_\_\_\_

**Site Contact Name:** \_\_\_\_\_ **Site Contact Phone:** \_\_\_\_\_

**AUTHORIZATION TO PROCEED REQUIRED**

\* **Customer Authorization Signature:** \_\_\_\_\_

**Printed Name & Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**BILLING INFORMATION REQUIRED**

ABMEPS is instructed to bill this project per the pricing outlined in the proposal accordingly:

\* **Purchase/Service Order or Contract Number is (Mark One):**  Required on invoice  Not Required

If Required, Provide Number Here: \_\_\_\_\_

**Full Billing Name:** \_\_\_\_\_

**Billing Address:** \_\_\_\_\_

**Billing City, State, Zip Code:** \_\_\_\_\_

**Accounts Payable Contact:** \_\_\_\_\_

**AP Phone Number:** \_\_\_\_\_ **AP Email Address:** \_\_\_\_\_

**Email Address For Invoice Processing:** \_\_\_\_\_

\* Please help streamline invoicing by providing an email address for invoice processing

\* **ABMEPS Project Authorization Signature:** \_\_\_\_\_

**Terms and Conditions:**

The attached ABM Electrical Power Services, LLC Terms and Conditions will apply. Authorization to proceed with the work outlined in this quotation shall constitute Site Host ("Buyer's") acceptance of these terms and conditions in full. Oral authorizations to proceed must be confirmed to ABMEPS in writing (Fax or e-mail) before project start. If there is a conflict or discrepancy between terms and conditions in the Buyer's purchase authorization and this quotation, this quotation shall prevail unless specifically authorized, in writing, by ABM Electrical Power Services, LLC.

**ANY REQUESTED CUSTOMER REQUESTED EXCLUSIONS TO THE SCOPE: (Initial Exclusions)**

ABM-ESU \_\_\_\_\_ ABM-CIVIL \_\_\_\_\_ ABM-ELEC \_\_\_\_\_ ABM-MECH \_\_\_\_\_

ABM-DATA \_\_\_\_\_ L2-UPGRADE \_\_\_\_\_ ABM-ELS \_\_\_\_\_

FOR EACH SCOPE ITEM EXCLUSION \$900.00 USD\$ will be added to ABM-DESIGN for inspection and verification of installation per the required design.

The information contained in this proposal is considered to be of a confidential and proprietary nature, the rights of which belong to ABM and are protected under copyright and trade secret laws. This information is being provided to the purchaser to evaluate ABM's proposal and performance should a contract be awarded to ABM. Neither this proposal nor any information contained therein nor any proprietary information furnished pursuant thereto, shall be disclosed to others or used for any purpose other than set forth above without the prior written approval of ABM. If you should have any questions, please feel free to contact us at (866) 226-2838.

Sincerely,

*Van D. Wilkins, Jr.*

National Accounts Manager

# Paso Unified

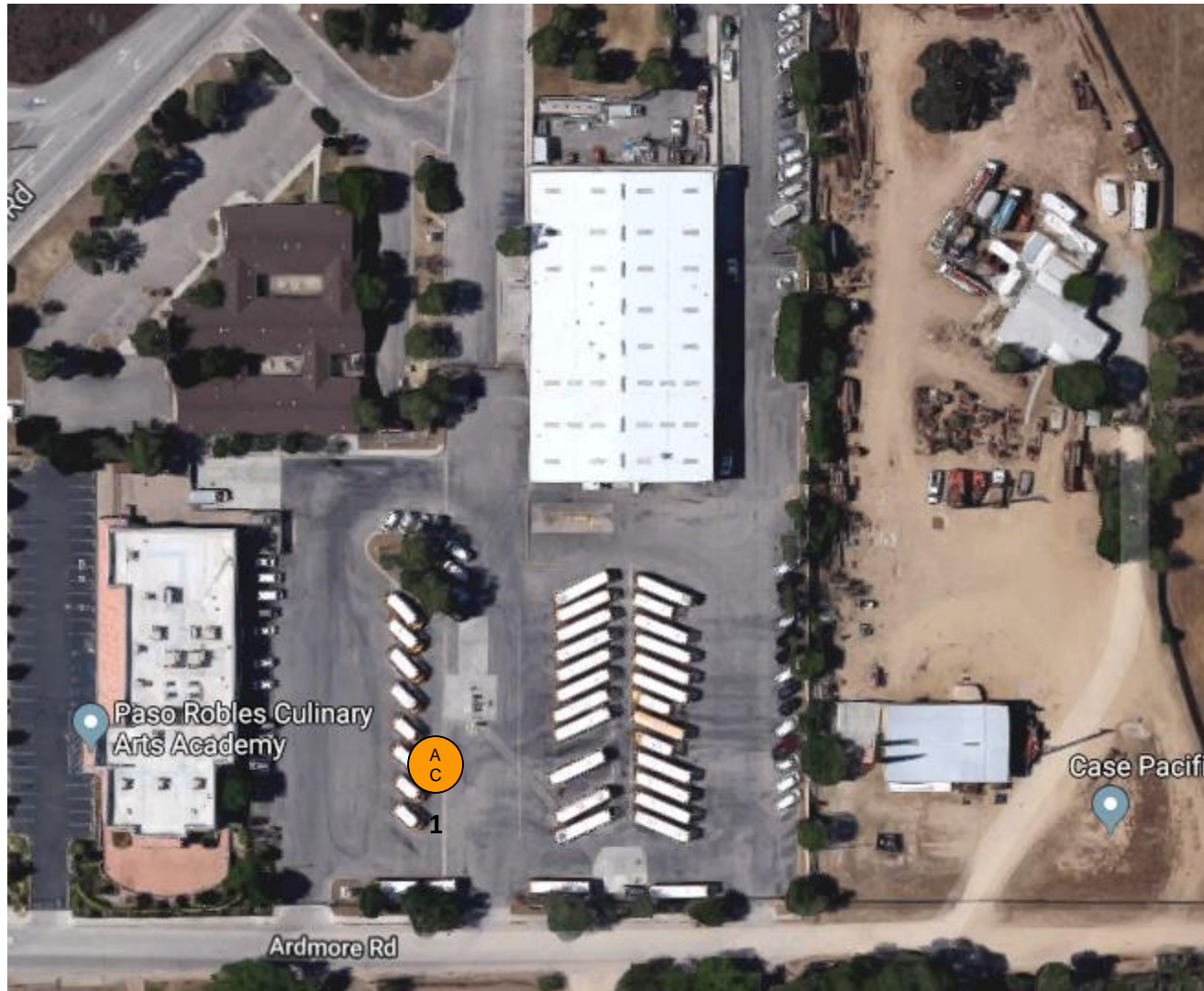
SCOPE: INSTALL ONE – 175KVA SINGLE PORT CHARGER.



**SHEET INDEX:**

1. TITLE SHEET
2. SITE CONDITIONS
3. SITE SKETCH
4. SINGLE LINE (LINE)
5. TERRA HP 175 SPECIFICATIONS
6. TERRA HP 175 DETAILS
7. CIVIL DETAILS
8. PARKING INFO
9. STANDARDS



**A C** DC FAST CHARGER PORT

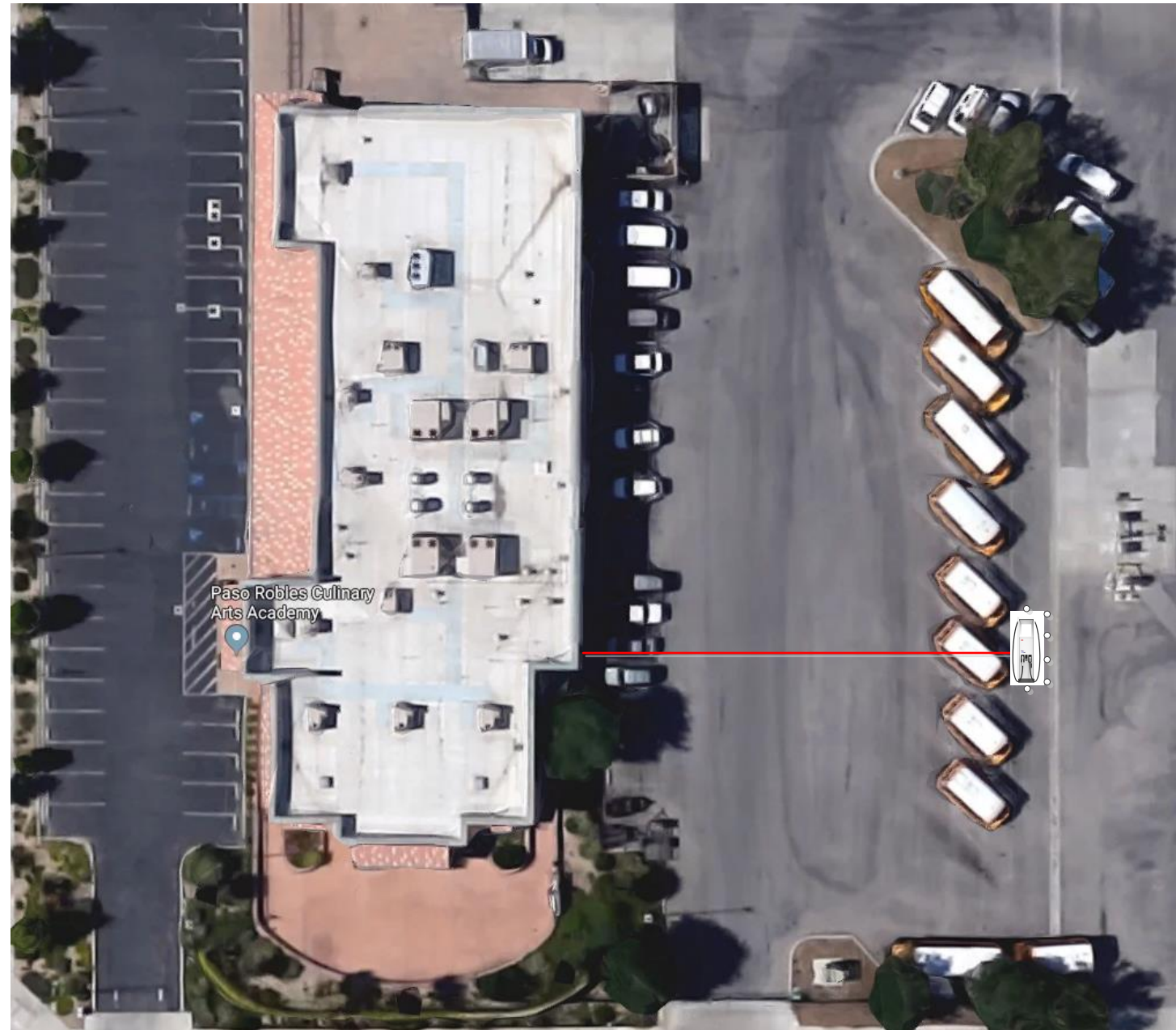


**EVG-250.1 General**

Where provided, electrical vehicle charging stations shall comply with EVG-250.



ADVISORY: EVG-250.1 General Existing conditions, terrain, electric infrastructure and other factors dictate that not every electric vehicle charging station can be fully accessible. With electric vehicle charging station being functionally similar to and usually intergraded with parking, the ratios of accessible to standard electric vehicle charging stations in these guidelines are the same as those for accessible to standard parking in the 2010 ADA standards and the 2013 California Building Code. The numbers of required accessible electric vehicle charging stations for both on-site and public rights-of-way locations are shown in Tables EVG-250.2 On-site Electric Vehicle Charging Stations and EVG-250.3 On-street Electric Vehicles Charging Stations

NO.	REVISIONS	DATE	REV'D	APP'D				DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	  <p><b>ABM ELECTRICAL POWER SERVICES</b> 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	PASO UNIFIED	SCALE	NTS
--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
--	--	-	-	-	CHECKED		SHEET		1
--	--	-	-	-			SHEET #	9	



**NOTES:**

- 1- Chargers to be installed per manufactures recommendations
- 2- Contractor to install chargers in compliance w ith CA building code - Chapter 11B for ADA compliance
- 3- Mimimum conduit cover of 18" in planters and 24" under paved areas
- 4- Compacted native backfill
- 5- PVC to be SCH40

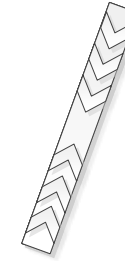
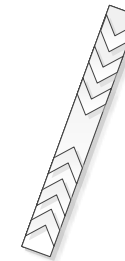
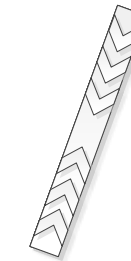
NO.	REVISIONS	DATE	REV'D	APP'D				DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	  <p><b>ABM ELECTRICAL POWER SERVICES</b> 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	PASO UNIFIED	SCALE	NTS
--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
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MSB

125'



30' Min



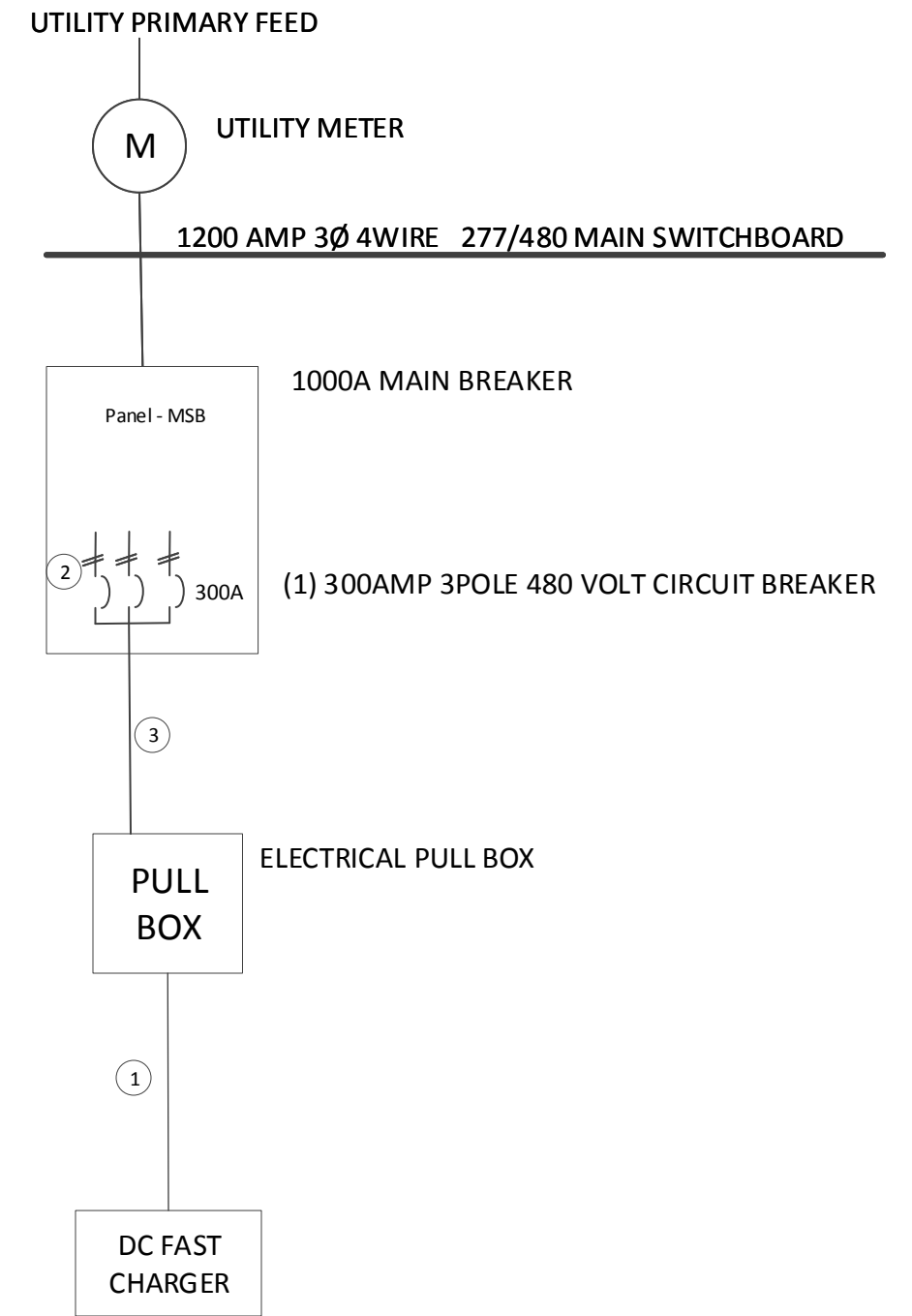
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--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
--	--	-	-	--	CHECKED				SHEET
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**NOTES:**

- ① 4" PVC CONDUIT W/(3)#300MCM AND (1)#300 GND COPPER THHN CONDUCTORS
- ② ONE (1) 300AMP 3POLE 480 VOLT CIRCUIT BREAKER W/ BREAKER TIE BAR AND GROUNDING BAR KIT
- ③ 4" EMT CONDUIT W/(3)#300MCM AND (1)#300 GND COPPER THHN CONDUCTORS

ELECTRICAL SUB PANEL SCHEDULE																							
PANEL MSB																							
277/480 VOLT (1200) AMP (3) PH (4) W																							
L.C.L	CK	LOAD	OUTLET			BRKR		PHASE			PHASE			OUTLET			LOAD	CK	L.C.L				
			LTG	REC	MISC	POLE	AMP	A	B	C	A	B	C	AMP	POLE	MISC				REC	LTG		
	1	SPACE										58000				265	3		X		TERRA HP 175	2	
	3	SPACE											58000			265	3		X		TERRA HP 175	4	
	5	SPACE												58000		265	3		X		TERRA HP 175	6	
	7	PANEL AC					3	600								80	3				BLAST FREEZER	8	
	9																80	3				BLAST FREEZER	10
	11	PANEL AC					3	600								80	3				BLAST FREEZER	12	
	13																125	3				WALK IN FREEZER	14
	15	PANEL AC					3	600								125	3				WALK IN FREEZER	16	
	17																125	3				WALK IN FREEZER	18
	19	SPACE																			SPACE	20	
	21	SPACE																			SPACE	22	
	23	SPACE																			SPACE	24	
	25	SPACE																			SPACE	26	
	27	SPACE																			SPACE	28	
	29	SPACE																			SPACE	30	
	31	XFMR K					3	600								100	3				PANEL H1	32	
	33																100	3				PANEL H1	34
	35	XFMR K					3	600								100	3				PANEL H1	36	
	37																70	3				XFMR L	38
	39	XFMR K					3	600								70	3				XFMR L	40	
	41																70	3				XFMR L	42
	43	SPACE																			SPACE	44	
	45	SPACE																			SPACE	46	
	47	SPACE																			SPACE	48	
PER PHASE & TOTAL LOAD												TOTAL LOAD			174000 W								
	A		58000									L.C.L			174000								
	B		58000						ACTUAL LOAD AMPS 210			L.C.L @ 100%			174000								
	C		58000									L.C.L. WATTS (Additional)			0								
TOTAL OF PHASE LOADS			174000									TOTAL LOAD			174000								
												TOTAL AMPS			233								



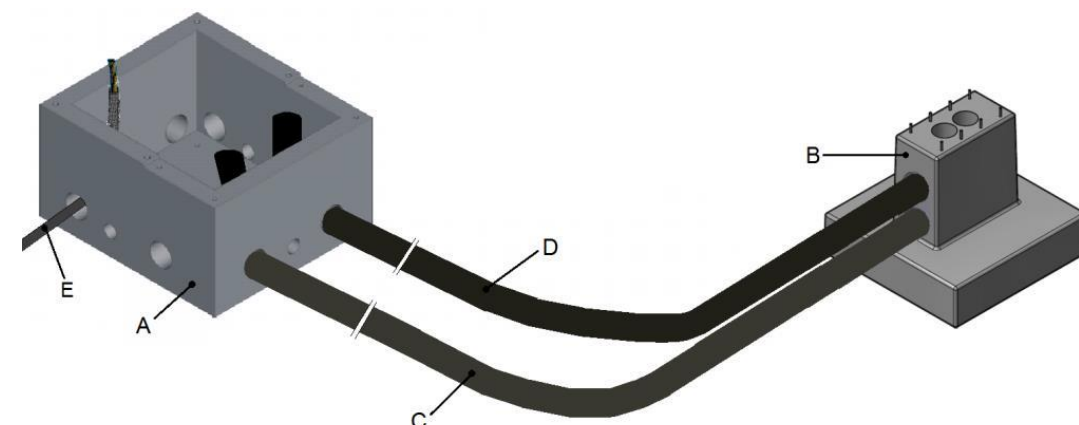
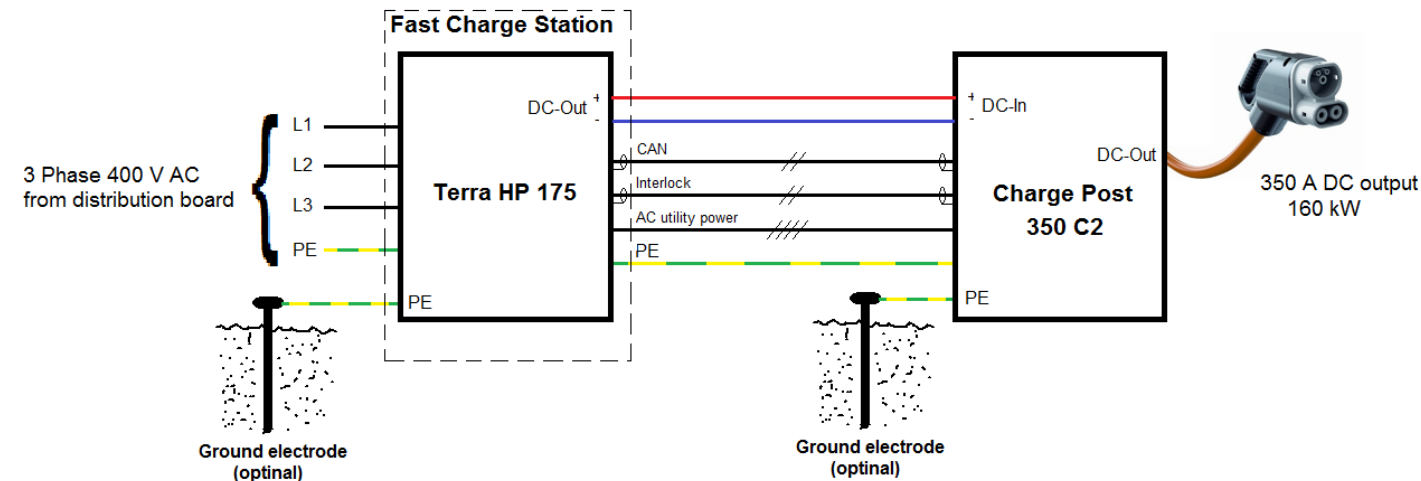
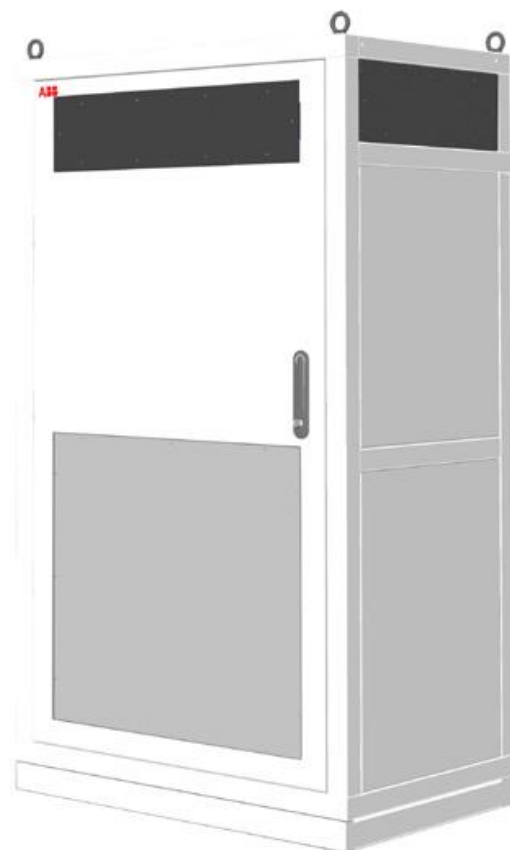
**NOTES:**

- ① Existing peak power demand for MSB is 172Kw per highest usage from Utility bills over the passed year. Additionally Solar load must be accounted for in calculation.

NO.	REVISIONS	DATE	REV'D	APP'D			DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED: James Pierson	<p><b>ABM</b>™ Building Value</p> <p><i>Electricraft</i> INC. Electrical Contractors</p> <p>ABM ELECTRICAL POWER SERVICES 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	PASO UNIFIED	SCALE: NTS
--	--	-	-	-	DRAWN: James Pierson		PASO UNIFIED	JOB #: NTS
--	--	-	-	-	CHECKED: _____		2910 Union Road, Paso Robles, CA	SHEET: 4
--	--	-	-	-				SHEET #: 9

**Technical specifications**

DC output power per power cabinet	175 kW peak 160 kW continuous (375 A)
DC output voltage range	150 – 920 V <sub>DC</sub>
Maximum DC output current	375 or 500 A per charge post
AC Input (UL version)	3-phase 480 V <sub>AC</sub> ± 10% 265 A, 174 kVA, 60 Hz
Power factor	> 0.99
Efficiency (full load)	95 %
Mechanical impact protection	IK 10 (screen: IK 08)
Environment	IP 54, stainless steel, outdoor use
Operating temperature	-35 °C to +55 °C
RFID	ISO/IEC 14443A/B, ISO/IEC 15393, FeliCa™1, NFC, Mifare, Calypso (option: Legic)
Network connections	GSM/2G/3G 10/100 base-T Ethernet
Compliance and certification	CE, UL, cUL, RMC, EAC, KC, EN 61851, EN 62196, CHAdeMO 1.2 IEC 61000-6-3 EMC Class B DIN 70121, ISO 15118
<b>Power cabinet</b>	
Dimensions (H x W x D)	82.8 x 46.1 x 30.3 in 2103 x 1170 x 770 mm
Weight	1340 kg / 2954 lbs
<b>Charge post</b>	
Dimensions (H x W x D)	94 x 23.2 x 17.3 in 2390 x 590 x 440 mm
Weight	550 lbs / 250 kg



- A - Foundation of Fast Charge Station
- B - Foundation of Charge Post
- C - Flexible conduit for DC power cables
- D - Flexible conduit for AC utility power, PE wire and data cables
- E - AC power cable

NO.	REVISIONS	DATE	REV'D	APP'D
1	INITIAL RELEASE	11/28/18	REV'D	APP'D
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DESIGNED James Pierson  
 DRAWN James Pierson  
 CHECKED \_\_\_\_\_


  
**ABM ELECTRICAL POWER SERVICES**  
 14201 FRANKLIN AVE.  
 TUSTIN, CA 92780

PASO UNIFIED	DATE	11/28/18
	SCALE	NTS
PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #	NTS
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**Main AC Power supply:**  
2x power switch 3P  
6x fused 300A  
no neutral required

**Distribution board**

**Input power cable:**  
2x AC power cable 3P+PE: 4x240mm<sup>2</sup> maximum  
**Optional:** Ethernet cable for central cloud communication and/or site power control.

**Specification Power Cabinet:**  
Nominal input voltage: 480V AC ± 10% WYE  
Nominal frequency: 60Hz ± 1%  
Nominal input current: 2x231A  
Short Circuit Rating: 25 kA  
Upstream fuse: JClass, 300A to 400A rating  
Power Factor (cos φ): ≥ 0.95  
Peak output current: 500 ADC  
Voltage output range: 50-920 VDC  
Total Harmonic Distortion: < 8%



**Power Cabinet**  
2x Terra HP175  
Dimensions per unit: 2077 x 1170 x 770 mm (HxWxD)  
Weight: 1350 kg per unit

**Footprint/fixing points:** refer to page 2.

**Cables between cabinets:**  
1x PE wire: 1x35mm<sup>2</sup>  
1x Interlock cable: 2x1.5mm<sup>2</sup> shielded

**Cables between cabinet and Charge Post:**  
2 Separate conduits for DC conductor pairs  
2x2 DC 185 mm<sup>2</sup> cable rated 90°C

**Auxiliary conduit:**

1x Interlock cable: 2x1.5mm<sup>2</sup> shielded  
1x PE wire: 1x35mm<sup>2</sup>  
1x AC utility power: 4x2.5mm<sup>2</sup>  
1x communication 4 strings glass fibre  
(example: Article code CABLESYS: GCFAZTM10-10; 625V125 DUPLEX)

**Maximum distance between Fast Charge Stations and Charge Post:** 100 m.

**Charge Post (dispenser):**  
CCS Output charging protocol:  
Output voltage range: 150 – 920 VDC.  
Maximum output current: 500 ADC



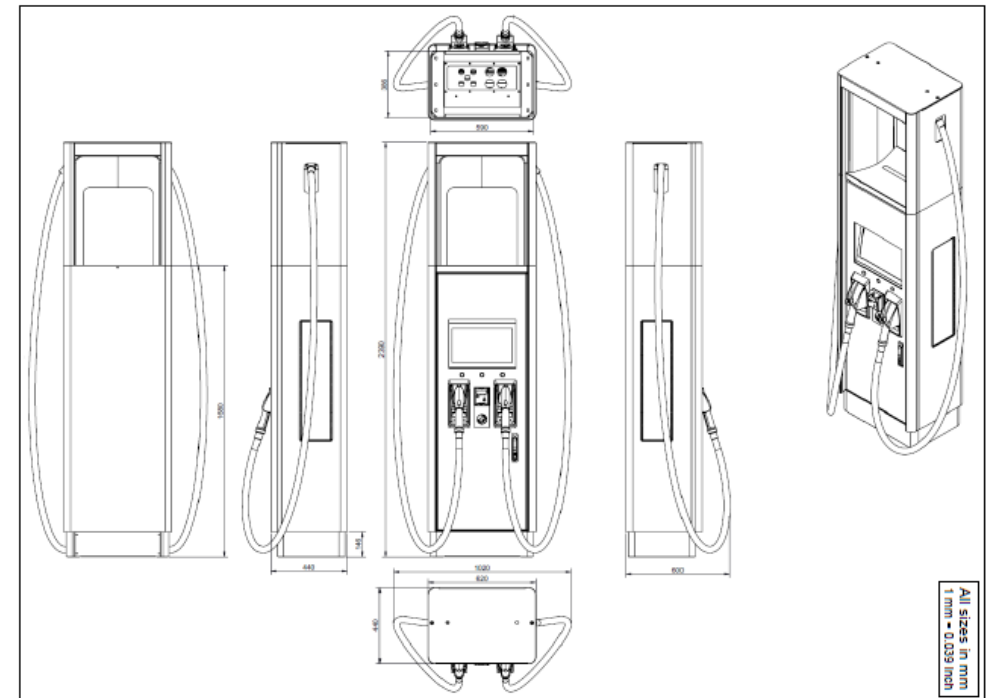
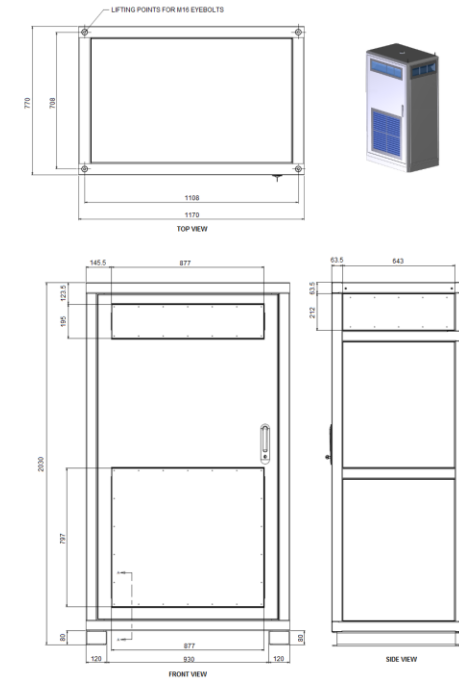
**Charge post (dispenser)**  
Dimensions: 2390 x 590 x 440 mm (HxWxD).  
Weight: 250 kg

**Footprint/fixing points:** refer to page 2.

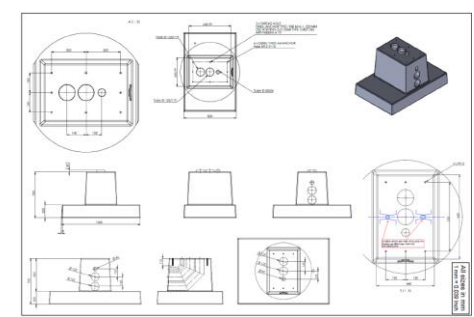
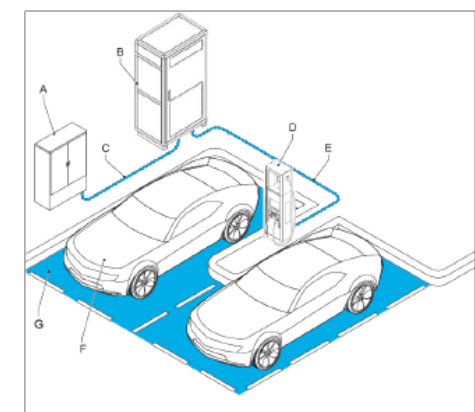
**CHAdEMO Output charging protocol:**  
Output voltage range: 50 – 500 VDC  
Maximum output current: 200 ADC

**Two variants available:**

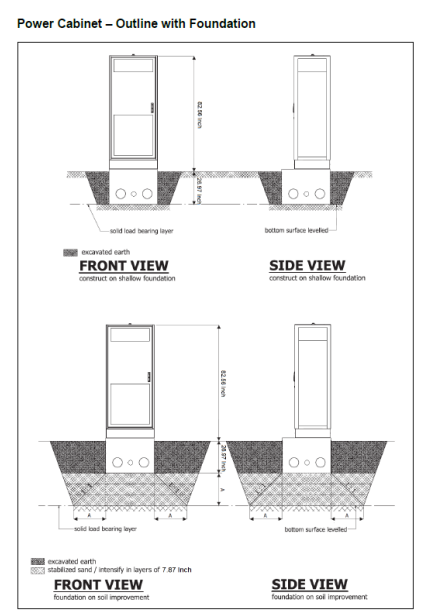
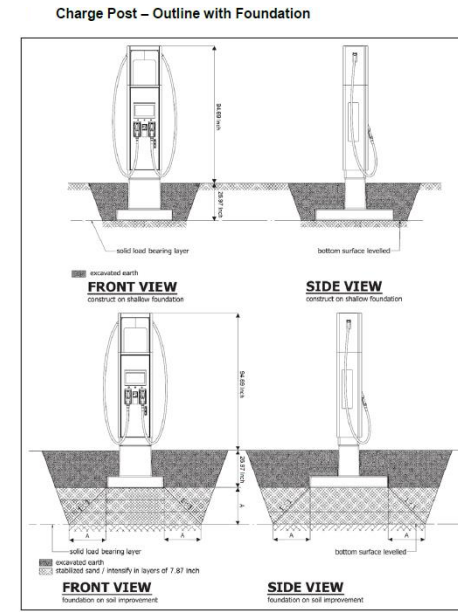
- (a) CC: 2 x CCS
- (b) CJ: CCS and CHAdEMO



All sizes in mm  
1 mm = 0.039 inch



E. Dimensions Concrete Foundation Charge Post



Functional description	Number of cores	Minimum Cross section	Maximum Cross section	Min-Max external diameter to fit through (mm)	Shielding	Conductor	Twisted pair	Nominal Voltage (V)	Test Voltage	Color	Environment	Ambient Temperature (°C)	Min Bending radius (mm)	Generic Standard Reference	RoHS
Interlock cable	4	0.75 mm <sup>2</sup> 18 AWG	2.5 mm <sup>2</sup> 18 AWG	13-21 mm	Shielded (Twisted copper braid)	stranded (not solid)	Yes	600/1000Vdc	1.5 kV	PAIR 1: Brown-White PAIR 2: Green-Yellow (EN 4752 color coding)	Ground cable Submerged In conduit	-40°C to 80°C	51 Outer Diameter (mm)	EN 50375	Yes
Positive DC Power cables	1	NOTE: calculate required cross section based on cable length, cable temperature rating, losses, and load regulation 185 mm <sup>2</sup> 190 kcmil	300 mm <sup>2</sup> 600 kcmil	27-35 mm	Unshielded	stranded tin plated copper or aluminum	No	600/1000 Vdc 900/1500 Vdc	6 kV	Apply color marking during installation	Ground cable Submerged In conduit	-40°C to 80°C	61 Outer Diameter (mm)	EN 50375	Yes
Negative DC Power cables	1	NOTE: calculate required cross section based on cable length, cable temperature rating, losses, and load regulation 185 mm <sup>2</sup> 190 kcmil	300 mm <sup>2</sup> 600 kcmil	27-35 mm	Unshielded	stranded tin plated copper or aluminum	No	600/1000 Vdc 900/1500 Vdc	6 kV	Apply color marking during installation	Ground cable Submerged In conduit	-40°C to 80°C	61 Outer Diameter (mm)	EN 50375	Yes
Protective Earth / Ground	1	35 mm <sup>2</sup> 2 AWG	35 mm <sup>2</sup> 2 AWG	13-21 mm	Unshielded	stranded tin plated copper	No	600/1000Vdc	4 kV	EO: Yellow/Green US: Green/Yellow	Ground cable Submerged In conduit	-40°C to 80°C	61 Outer Diameter (mm)	EN 50375	Yes
AC Power Cable	3 + GND	2.5 mm <sup>2</sup> 12 AWG	2.5 mm <sup>2</sup> 12 AWG	13-21 mm	Unshielded	stranded (not solid)	No	600/1000Vdc	4 kV	EO: L1 Brown, L2 Black, L3 Grey; GND: Yellow/Green US: L1 Brown, L2 Orange, L3 Yellow, GND: Green/Yellow	Ground cable Submerged In conduit	-40°C to 80°C	51 Outer Diameter (mm)	EN 50375	Yes
CAN Bus (between power cabinets)	2	0.5 mm <sup>2</sup> 18 AWG	0.75 mm <sup>2</sup> 18 AWG	No cable gland	Shielded (Twisted copper braid)	stranded (not solid)	Yes	600/1000Vdc	1.5 kV	PAIR 1: Brown-White	Ground cable Submerged In conduit	-40°C to 80°C	51 Outer Diameter (mm)	EN 50376	Yes

Functional description	Number of cores	Connector	Type	Min-Max external diameter to fit through (mm)	Wave length	Material	Environment	Ambient Temperature range	RoHS
CAN via RS485/RS422	2 fibers needed (2 pair) 2 recommended for spares	B-FOC (57*)	OM3 (multimode) pre-terminated	13-21 mm	850 nm	PCF or fiberglass	Ground cable Submerged In conduit	-40°C to 80°C	Yes
Ethernet (if needed)		RS45	CAT 5 FTP (shielded Twisted Pair)	13-21 mm			Ground cable Submerged In conduit	-40°C to 80°C	Yes

NO.	REVISIONS	DATE	REV'D	APP'D
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DESIGNED **James Pierson**  
DRAWN **James Pierson**  
CHECKED

**ABM**™  
Building Value  
ABM ELECTRICAL POWER SERVICES  
14201 FRANKLIN AVE.  
TUSTIN, CA 92780

PASO UNIFIED	DATE	11/28/18
PASO UNIFIED	SCALE	NTS
2910 Union Road, Paso Robles, CA	JOB #	NTS
	SHEET	6
	SHEET #	9

**STRUCTURAL NOTES:**

**GENERAL:**

1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE – CURRENT EDITION, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION.
2. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR PERMIT.
3. JOB SAFETY AND PROCEDURES FOR SAFE CONSTRUCTION ARE OF UTMOST IMPORTANCE, AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WORK NOT EXPRESSLY SHOWN ON SPECIFIC PARTS OF THE DRAWINGS OR SPECIFICATIONS, BUT REASONABLY IMPLIED BY SIMILAR WORK SHOWN, SHALL BE REPEATED.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEMBERS AND MATERIALS TO CONFORM TO ACTUAL SITE CONDITIONS, CONTRACTOR SHALL REPORT DIFFERING SITE CONDITIONS AND DEVIATIONS IN NOTED PROCEDURE TO THE ENGINEER FOR REVIEW.
6. CONTRACTOR SHALL TAKE CARE TO PROTECT ALL EXISTING STRUCTURES AND UTILITIES FROM DAMAGE.
7. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS. DRAWINGS SHALL TAKE PRECEDENCE OVER SPECIFICATIONS.
8. IF THERE APPEARS TO BE A CONFLICT BETWEEN NOTES, DETAILS, OR SPECIFICATIONS, CONTRACTOR SHALL APPLY THE MOST RIGID REQUIREMENTS TO THE WORK. CONTRACTOR SHALL NOT DEVIATE FROM DRAWINGS WITHOUT APPROVAL OF THE ENGINEER.
9. IT IS THE INTENTION OF THIS SET OF DESIGN DRAWINGS TO PRODUCE CONSTRUCTION SHOP DRAWINGS FOR THE FABRICATION AND ASSEMBLY OF THE BUILDING SYSTEMS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY REMAINING COORDINATION, DETAILING AND MISCELLANEOUS DESIGN NOT INCLUDED HEREIN AND SHALL VERIFY CONFORMANCE TO ALL LOCAL BUILDING CODES AND PROFESSIONAL FILING REQUIREMENTS.

**STRUCTURAL DESIGN DATA:**

ALL DEAD AND LIVE LOADS ARE PER THE INTERNATIONAL BUILDING CODES, CURRENT EDITION

1. DEAD LOADS:  
ALL DEAD LOADS ARE REPRESENTATIVE OF ACTUAL, MATERIAL WEIGHT PER SQ. FT.

CHARGER STAND .....450 BS  
CONCRETE PAD ..... SW/300PSF

2. LIVE LOADS:  
ALL LIVE LOADS ARE PER IBC 1607.8.3; CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL BUILDING CODES.



VEHICULAR IMPACT .....6,000 LBS @ 2'-3" FROM BASE

**FOUNDATIONS:**

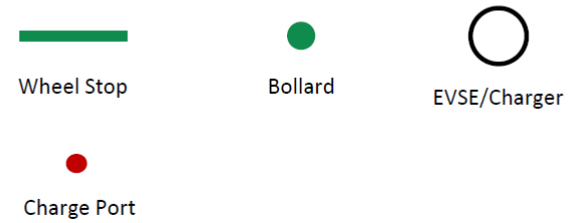
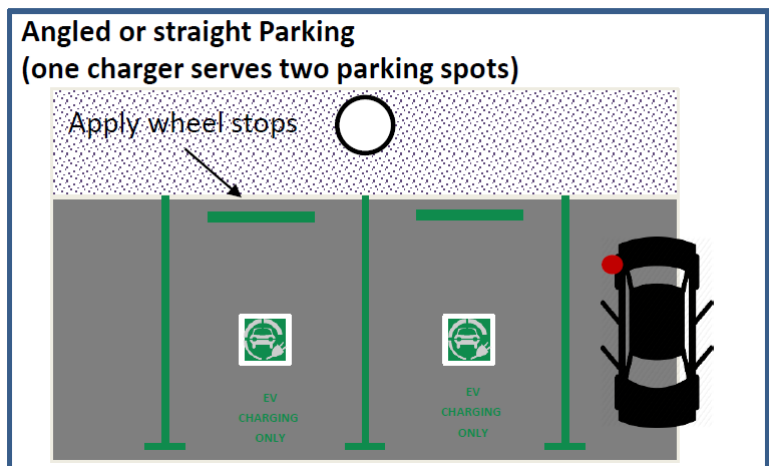
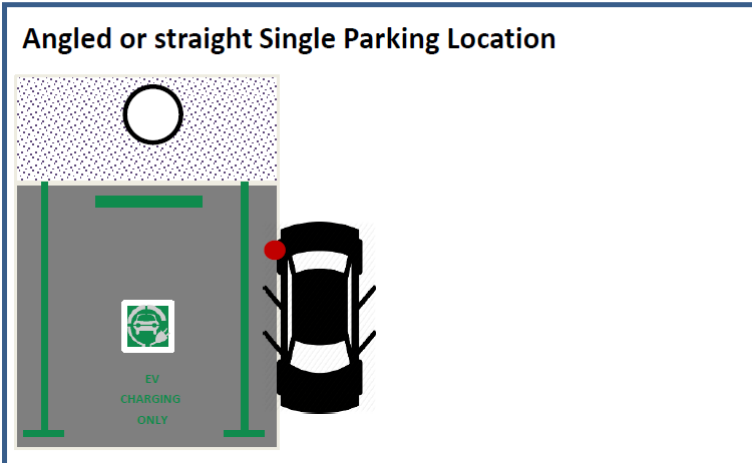
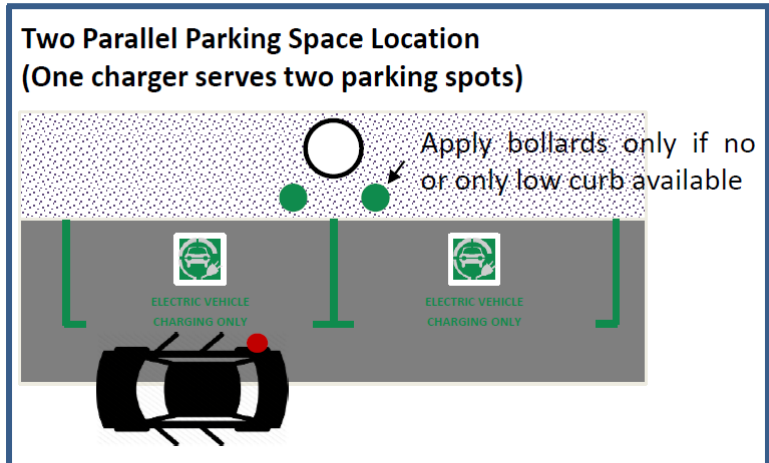
1. FOOTINGS ARE TO BEAR ON MIN. 3,000 PSF SUITABLE BEARING MATERIAL
2. NO FOOTINGS ARE TO BE CAST ON UNCONTROLLED FILL, SOIL, ORGANIC MATERIAL, FROZEN GROUND, MUD, SOFT CLAYS OR OTHER OBJECTIONABLE OR UNAPPROVED MATERIALS.

**CAST IN PLACE CONCRETE:**

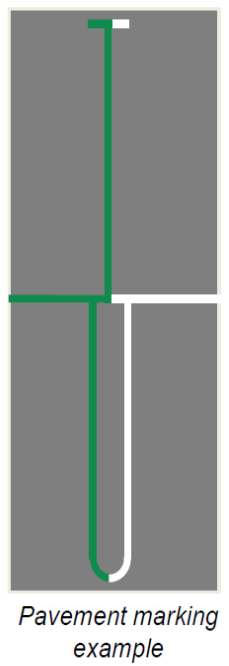
1. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI BUILDING CODE, ACI 318, LATEST EDITION, THE INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS OF AGENCIES HAVING JURISDICTION, DETAILS SHALL BE IN ACCORDANCE WITH ACI-318, LATEST EDITION.
2. ALL CONCRETE FOR CAST IN PLACE WORK SHALL BE STONE CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
3. NO ADMIXTURES SHALL BE ALLOWED WITHOUT PRIOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
4. ALL REQUIREMENTS FOR BATCHING, MIXING, FINISHING, CURING ETC. SHALL BE AS PER ACI 301.
5. ALL REINFORCEMENT SHALL CONFIRM TO ASTM A615 GRADE 60 AND BE SECURELY TIED IN PLACE AND ADEQUATELY SUPPORTED. ALL BARS MARKED 'CONTINUOUS' (CONT.) SHALL BE LAPPED 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. IF REQUIRED, CONTRACTOR SHALL PROVIDE ADDITIONAL BARS OR STIRRUPS TO ADEQUATELY SUPPORT ALL BARS.
6. SHOP DRAWINGS SHALL INDICATE THE FOLLOWING: ALL NECESSARY REINFORCING, LOCATIONS OF ALL CONSTRUCTION AND CONTROL JOINTS. DETAILING AND AMOUNT OF REINFORCING FOR CONDITIONS NOT SHOWN SHALL BE PROVIDED AS SHOWN IN SIMILAR CONDITIONS. ALL INSERTS AND OTHER OBJECTS WHICH MAY AFFECT PLACING OF REINFORCING BARS SHALL BE INDICATED ON THE SHOP DRAWINGS.
7. MINIMUM CLEAR CONCRETE COVER SHALL BE 3", THIS DIMENSIONS ARE TYPICAL, UNLESS OTHERWISE NOTED ON PLANS AND DETAILS.
8. CONTRACTOR SHALL PROVIDE REINFORCING STEEL RECTOR WITH A SET OF STRUCTURAL PLANS FOR FIELD USE.
9. CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, CURBES, ETC. AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
10. CONTRACTOR SHALL COORDINATE LOCATION OF SLOTTED INSERTS, WELDED PLATES, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH CHARGING STATION MANUFACTURER.
11. CONTRACTOR SHALL USE RIGID TEMPLATES TO INSTALL ANCHOR BOLTS.
12. PIPES OR CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3 TIMES THE DIAMETER ON CENTER. PIPES AND CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF THE SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 12 INCHES OF ANY COLUMN FACE.

NO.	REVISIONS	DATE	REV'D	APP'D				DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	  <p><b>ABM ELECTRICAL POWER SERVICES</b> 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	PASO UNIFIED	SCALE	NTS
--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
--	--	-	-	--	CHECKED		SHEET		7
--	--	-	-	-			SHEET #	9	

# Parking Site Guidelines and Layout



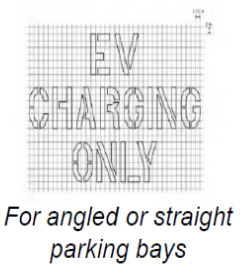
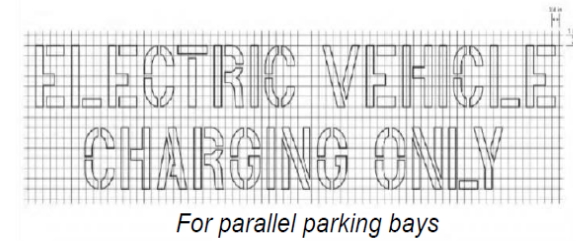
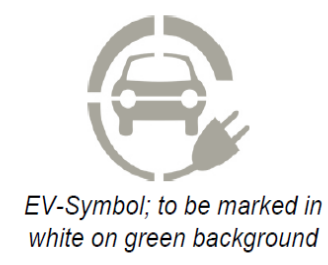
- Pavement marking, wheel stops and bollards and, if it fits into the overall site appearance, also curbs have to be painted in RAL 6026 (opal green).
- The marking of the EV-Charging parking spot has to be prioritized over existing markings.
- If there is any striping in different colors, it has to be painted over with the opal green color.
- Stencils to be used for marking to be found below.
- Dimensions:
  - EV-Symbol: 36 in x 36 in on a 38 in x 38 in green background frame
  - 'EV Charging only' and 'Electrical Vehicle Charging only' according to California Code: Figure 3B-108 (CA) Electric Vehicle Charging Station Pavement Marking Details (Sheet 1 & 2)



36" Fixed Carbon Steel Bollard rounded top, with 4-3/4" Outside Dia.



Where there is no curb, wheel stops are an alternative.  
72"x 6" x 3" Plastic, 20 lbs, maintenance free, no painting



WALL MOUNTED OR POST MOUNTED EV PARKING SIGNAGE



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--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
--	--	-	-	-	CHECKED		SHEET		8
--	--	-	-	-			SHEET #	9	

**ELECTRICAL - BASIC REQUIREMENTS**

1. Provide all labor, materials, necessary equipment and services to complete all required Electrical Work including all additional items required for a complete and proper installation as indicated on the Drawings or as required. Work includes but is not limited to the following.

- A. Service entrance system.
- B. All wiring and components to the charging systems

2. Installation shall be in accordance with the latest edition of the National Electrical Code and all applicable regulations of governing Local, State, County and Federal Codes including Utility Companies special requirements.

3. In the event of a conflict between equipment as drawn and these Specifications, the more stringent requirements will be applicable.

4. Coordinate delivery and installation of equipment required under this Section with the construction schedule.

5. Coordinate work with other trades and drawings.

6. All materials shall be new, free of defects and shall be U.L listed, bearing U.L label or be labeled or listed with an approved, nationally recognized Electrical Testing Agency.

7. Make final connections between all equipment furnished under this Contract.

8. The Contractor shall check all dimensions and verify all conditions pertaining to these Drawings at the building and site and shall report any discrepancies or conditions that are detrimental to proper completion of work to the Engineer at once.

9. Carefully examine all Project Drawings included for this Contract and those included under other contracts and report any discrepancies to Engineer and Architect.

10. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, access panels and similar parts which may be required. Drawings are generally indicative of work to be installed. Carefully examine structural and finish conditions affecting work and arrange all work accordingly, furnishing necessary parts and equipment as may be required to meet actual field conditions.

11. Lay out work from dimensions of Architectural and Structural Drawings and actual dimensions of equipment being installed. Layouts in congested areas shall not be scaled from Mechanical and Electrical Drawings. Do not make final layouts until Shop or Equipment Drawings are approved and job conditions verified.

12. The right is reserved to make any reasonable change in locations of equipment and similar items within the building and at building exterior prior to installation without involving additional compensation.

13. All concrete saw cutting, removal and patching to be included.

14. All work shown on Drawings shall be supplemented by all Laws, Ordinances and Codes governing the work of these Divisions, which Laws, Ordinances or Codes shall take precedence in the event of any conflict between same, except where methods or materials shown are superior to the legal requirements.

15. Obtain all required certificates from Governing Agency and turn over to the Owner at completion of Work. Obtain exact charges for fees, permits and other costs required and include such amounts in Bid Price.

16. Contractor shall provide a warranty substantiating that all materials are as herein specified, and that he shall repair or replace any defective materials or workmanship in an acceptable manner, without cost to the Owner. Warranty period shall be for one (1) year unless specified longer for specific equipment. Date of warranty start shall be from substantial completion and beneficial use.

17. Contractor will obtain a building permit for his portion of the work.

18. Contractor to provide pitch pans and penetrations required for electrical items which pierce roof whether or not shown on Drawings.

19. Contractor to Furnish and install reinforced concrete pads for equipment as required.

20. In general, all similar equipment is to be supplied and manufactured by same Manufacturer, but must be submitted and approved equal to that specified.

21. Locate all openings required for work performed under this section. Provide sleeves, guards or other approved methods to allow passage of items installed under this section.

22. Provide switched supply with-in 36" of equipment supplied and installed by other contractors. Motor starters and controls will be provided by others (except where noted) to be installed by the Electrical Contractor.

23. Wherever the Contractor provides power consuming equipment which differs from Contract Documents, the wiring and associated circuit components for such equipment shall be changed to proper sizes to match at additional expense to Owner.

24. It is the Contractor's responsibility to coordinate the exact required location of floor outlets, floor ducts, floor stub-ups, etc., with Owner and Architect and receive approval prior to rough in. Locations shown on plans are only approximate locations.

**ELECTRICAL - GENERAL REQUIREMENTS**

1. Wire sizes are #12 THWN unless noted otherwise on Drawings or Schedules or if larger size is required for equipment furnished.

2. Code sized green grounding conductor is to be provided for all branch circuits.

3. Provide cable strain relief for feeders in risers. Install access panels where required.

4. Coordinate power locations with owner.

5. Coordinate with other subs if required for complete, proper operation and installation of all equipment.

6. Multi-section branch circuit panelboards are shown as individual panels on panel schedules. Circuit numbering indicated on drawings reflect consecutive numbering for single panel.

**ELECTRICAL - GENERAL CONSTRUCTION NOTES**

1. Electrical Contractor shall coordinate his work with other trades in order to avoid conflicts.

2. The minimum conduit size shall be 1/2".

3. Voltage drop minimum wire sizing (20A circuit) use -

- 1. 120V circuit over 100' use #10 minimum
- 2. 208V circuit over 200' use #10 minimum
- 3. 277V circuit over 200' use #10 minimum

Minimum branch circuit wire size shall be #12.

4. All openings in fire rated walls, floor and partitions for conduits shall be sealed with fire resistant foam or UL approved "Fire Stop" system to maintain the fire rating.

5. All wiring will be in "MC" cable as by code. Underground conduit will be Sched 40 PVC with fittings, conduit above grade installed is to be EMT.

6. Electrical Contractor shall have the option of grouping homeruns in one conduit, per the requirements of Section 310 of the National Electrical Code.

**ELECTRICAL - GENERAL REQUIREMENTS**

8. Utility company fees by others.

9. All circuits indicated on these drawings are 20A, 1P circuit breakers in panels unless otherwise noted.



10. No conduit shall be installed exposed in area open to the public.

11. Outlet boxes for receptacles shall be mounted 18" above finish slab, unless noted otherwise.

12. All dimensions indicated are to centerline of junction boxes, floor boxes, etc., unless otherwise noted. Refer to Interior Drawings for all dimensions.

13. The work "provide" shall mean "to furnish and install".

- 16. A.F.F. = Above Finished Floor
- U.N.O. = Unless Noted Otherwise
- B.E.C. = Building Electrical Contractor
- F.C. = Fixture Contractor

NO.	REVISIONS	DATE	REV'D	APP'D				DATE	11/28/18
1	INITIAL RELEASE	11/28/18	REV'D	APP'D	DESIGNED <b>James Pierson</b>	  <p><b>ABM ELECTRICAL POWER SERVICES</b> 14201 FRANKLIN AVE. TUSTIN, CA 92780</p>	PASO UNIFIED	SCALE	NTS
--	--	-	-	-	DRAWN <b>James Pierson</b>			PASO UNIFIED 2910 Union Road, Paso Robles, CA	JOB #
--	--	-	-	--	CHECKED		SHEET		9
--	--	-	-	--			SHEET #		9
--	--	-	-	-					

# Next Steps

- Internal Site Host review of each quote and design drawing
- **Apply for APCD Funding**
- ABM Engineering team onsite meeting with the site host to review design documents, review operations, finalize design.
- If Design needs adjustments, ABM Engineering to make any adjustments to the quote and permit document, resubmit to Site Host
- Documents finalized
  - **APCD Award Amount adjustments from changes**
- Site Hosts to decide how they will proceed on construction
  - Work with ABM off existing contract mechanisms
  - Internal construction team
  - Put out for RFP
- Awarded vendors
  - Submit for construction permits
  - Order equipment
  - Networking Agreements
  - Civil construction
  - Service Upgrades
  - Electrical construction
  - Equipment Installation
  - Equipment Activation/Commissioning
  - Vehicle Testing
- Public Outreach
  - Press events
  - Social networking notifications



# How to Fund your Project

## SLO APCD Alternative Fuel Infrastructure Program:

- First-come, first-serve - **APCD Needs to Send Award Letters by end of April**
- <https://www.slocleanair.org/community/grants/altfuel.php>
- Key Details of a Complete Application:
  - ✓ Price Quotes and Spec Sheets:
    - ✓ equipment (chargers), installation material and labor
  - Competitive bidding process for publicly accessible stations
  - Signature delegation letter
  - Business structure documentation
  - ✓ Aerial map
  - W-9 form
  - Evidence of leasehold or property ownership
  - Certificates of insurance







## Alt Fuel and Electric Vehicle Infrastructure 2019 APPLICATION CHECKLIST

Applicant Information	Dealer Information
Company name:	Dealership company:
Contact name:	Dealer rep:
Phone:	Phone:
Fax:	Fax:
E-mail:	E-mail:
<i>Option: Attach business card</i>	<i>Option: Attach business card</i>

✓	Application Requirements
<input type="checkbox"/>	<b>Completed Application:</b> Complete and submit this checklist and ALL application pages, sign and date in ink.
<input type="checkbox"/>	<p><b>Price Quotes and Spec Sheet:</b> For the equipment and installation, material and labor quotes must be provided by the equipment manufacturer, manufacturer-approved dealer, or an approved contractor or installation professional.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Itemized quote of the parts, tax, shipping costs and labor to complete the project.</li> <li><input type="checkbox"/> All parts and equipment must be new. Remanufactured or refurbished equipment and parts are not eligible.</li> <li><input type="checkbox"/> Provide manufacturer's specification sheets for the new equipment.</li> <li><input type="checkbox"/> Alt fuel dispensing equipment must have at least a 3 year warranty; EV chargers must have at least a 1 year warranty.</li> </ul>
<input type="checkbox"/>	<p><b>Competitive Bids Required for Certain Projects:</b> If your infrastructure project will be open and available for public use or if it will be funded under the AB923 guidelines (consult APCD), the vendor must be solicited and selected through a competitive bidding process.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Applicant will develop impartial bidding specifications and objective supplier selection criteria with a reasonable deadline to bid, and share this information with potential suppliers and APCD.</li> <li><input type="checkbox"/> Applicant must submit copies of all eligible suppliers' bids to APCD, with a statement of reason for the bid selected.</li> </ul>
<input type="checkbox"/>	<p><b>Signature Delegation Letter:</b> If the owner, partner or corporate officer will not be signing the contract, then they must provide a letter naming and authorizing another individual to sign grant documents on behalf of the business. General partnerships please provide a letter of authorization for the signing partner, signed by the non-signing partner(s).</p>

**Commented [JM1]:** ABM Quotes satisfy these requirements

**Commented [JM2]:** ABM Quotes give varying warranty years, APCD requires at least 1 year.

**Commented [JM3]:** Don't worry about this statement. We generally will not fund non-public projects with AB923 funds.

<input type="checkbox"/>	<p><b>Applicant's Business Structure:</b> Provide one of the following, depending on the structure of your business:</p> <ul style="list-style-type: none"> <li>Articles of Incorporation and specific documentation identifying the officers for the corporation</li> <li>Partnership agreement</li> <li>Sole proprietors provide a signed W9 form and a copy of a photo ID.</li> <li>Other business structure documentation not listed above</li> </ul>
<input type="checkbox"/>	<p><b>Aerial Map:</b> Please provide a description of the geographic location, including specific street address and an aerial map (satellite view from internet) indicating the exact project location.</p>
<input type="checkbox"/>	<p><b>W-9 Form:</b> Complete and submit IRS form W-9, available from the IRS web site: <a href="http://www.irs.gov/pub/irs-pdf/fw9.pdf">www.irs.gov/pub/irs-pdf/fw9.pdf</a>. APCD will issue form 1099 as required by law.</p>
<input type="checkbox"/>	<p><b>Evidence of Leasehold or Property Ownership:</b> Please provide evidence of ownership of the land on which the project will be located, or if owned by others, provide an executed lease agreement or letters of commitment lasting for the duration of the project life, signed by the property owners or authorized representatives.</p>
<input type="checkbox"/>	<p><b>Certificates of Insurance:</b> Provide current certificates of insurance with your application as evidence of coverage for General Liability and Workers' Compensation*.  <i>* If the Applicant is exempt from the requirement of maintaining workers' compensation insurance, provide evidence of such exemption.</i></p>
<input type="checkbox"/>	<p><b>Applications completed by someone other than Applicant:</b> If compensated for completing the application on the owner's/company's behalf, then attach details on the source of payment and the amount paid.</p>

**Commented [JM4]:** For schools and government agencies we don't require a business structure document, but we do need a document explaining authorization of the signer.

**Commented [JM5]:** Included in ABM Quote

	<p><b>Additional Application Requirements, if your project is selected for funding</b></p>
<input type="checkbox"/>	<p><b>Certificates of Insurance:</b> Funded projects will be required to provide certificates of insurance endorsing the APCD as additionally insured for this project for General Liability and Property Insurance that covers the replacement cost of the new equipment. When these policies, as well as your Workers' Compensation policy are renewed or changed, updated certificates must be submitted to the APCD until the Grant Agreement expires.</p>
<input type="checkbox"/>	<p><b>UCC-1 Financing Statement:</b> To protect its financial interest, APCD will perfect its lien against the funded equipment through a UCC-1 financing statement filed with the Secretary of State of California, for the duration of the term of the grant agreement.</p>
<input type="checkbox"/>	<p><b>Building Permits:</b> Before work commences on the project, the applicant must obtain all required land use permits from agencies needed to install and operate the installation. The installation must comply with all applicable rules and regulations, including the Americans with Disabilities Act. A copy of the finalized building permit must be provided to APCD before the grant project is paid.</p>
<input type="checkbox"/>	<p><b>Availability of Utilities:</b> If requested by the APCD, the applicant must be able to provide documentation that power or fuel is being provided to the site (e.g. application, payment to the local utility company for power installation, or contract). Applicants are encouraged to contact the utility company as early as possible in the planning process.</p>

**Commented [JM6]:** Typically, don't do UCC-1 statements for projects under \$50,000

# How to Fund your Project

## SLO APCD Alternative Fuel Infrastructure Program:

- General Steps to Award:

1. Applicant Submits Application
2. APCD Reviews and Sends Application Completeness Letter
3. Applicant submits missing information
4. APCD deems application complete and sends Award Letter - **APCD Deadline end of April**
5. Applicant accepts/declines award
6. APCD sends Contract and Applicant signs
7. Applicant applies for permit, orders equipment, and begins construction
8. APCD performs post-inspection
9. Applicant sends invoice to APCD
10. APCD disburses grant funding





# Open Discussion & EVSE Site Assessment Process Feedback



## Additional Questions?

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