



# BOARD OF ZONING APPEALS STAFF REPORT

**To:** Members of the Board of Zoning Appeals

**From:** Tom Vander Woude, Planning Director

**Meeting Date:** March 14, 2023

**Agenda Item:** N/A

**Hearing:** N/A

**Application Type:** Request for Interpretation

**Summary:** Request for determination whether electric vehicle charging stations are a permitted accessory use in the CD-4.A, CD-4.B, CD-5, CZ, SD-PUD, and SD-M districts.

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## BACKGROUND

**SECTION 26-6.801 B. Referral to Board of Zoning Appeals for Interpretation** states the following:

*If the Zoning Administrator is in doubt as to the meaning or intent of any provision of this Article... such person shall refer the matter to the Board of Zoning Appeals for interpretation and decision.*

Representatives from the Tesla company submitted a Site Plan Review application in September of this year. The applicants proposed to install electric vehicle (EV) charging stations within the existing parking lot at the Target store at 8005 Calumet Avenue. The plans are attached to this memo.

For reference, EV charging stations can be classified as follows:

1. Level 1 is considered slow charging and operates on a fifteen-to-twenty-amp breaker on a one hundred twenty-volt AC circuit.
2. Level 2 is considered medium charging and operated on a forty-to-one-hundred-amp breaker on a two hundred eight or two hundred forty-volt AC circuit.
3. Level 3 is considered fast or rapid charging and operated on a sixty amp or higher breaker on a four hundred eighty volt or higher three phase circuit with special grounding equipment. Level 3 stations can also be referred to as rapid charging stations that are typically characterized by industrial grade electrical outlets that allow for faster recharging of electric vehicles.

In this instance, the plans include both Level 3 Tesla Supercharger stations that can be used exclusively by Tesla vehicles and Level 2 charging stations that can be used by any electric vehicle.

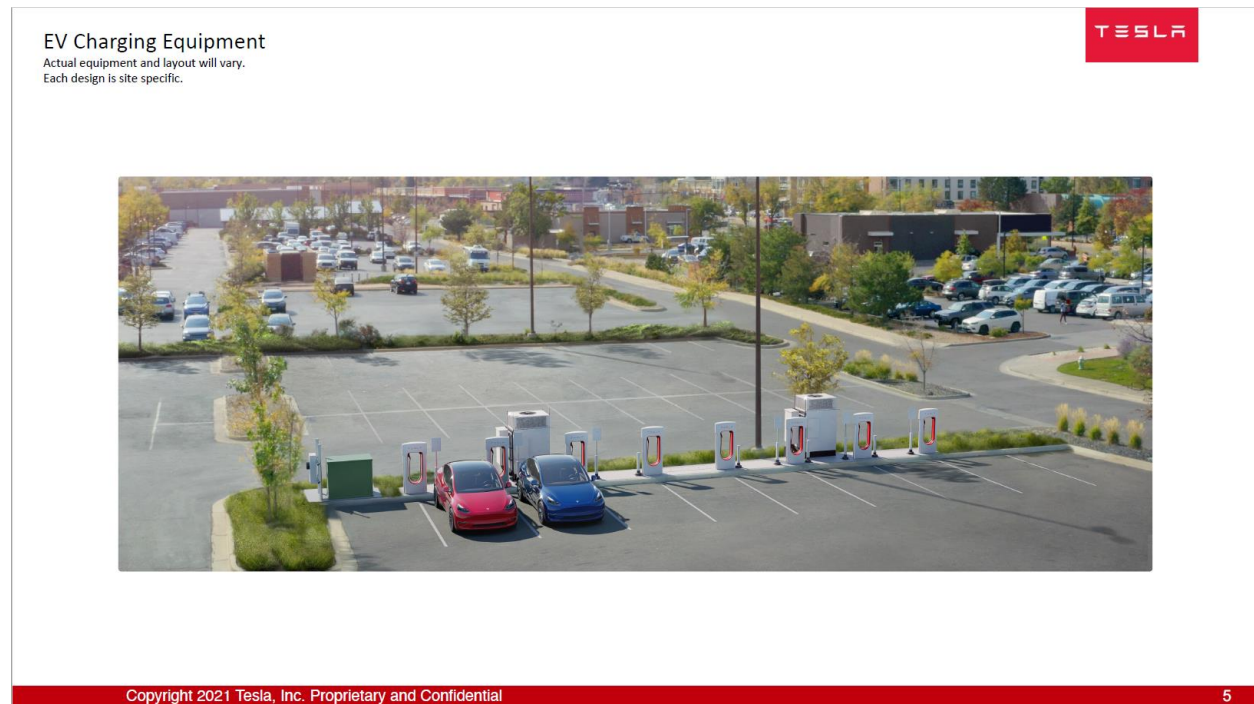


Figure 1 Example of EV charging stations in parking lot.



Figure 2 Example of EV charging stations in parking lot.



Figure 3 Example of EV charging stations in parking lot.

## CURRENT ZONING

EV charging stations and infrastructure are not defined in the Munster zoning ordinance. The closest type of defined use is a 'gas station' which is permitted with a conditional use permit as a primary use in CD-4.A, CD-4.B, CD-5, and SD-M districts. EV charging stations are distinct, though, in that they can be installed within existing parking lots as an accessory use to a residential, commercial, civic, or manufacturing use and are not typically installed as primary uses.

While not listed specifically as an accessory use in the CD-4.A, CD-4.B, CD-5, CZ, SD-PUD, and SD-M districts, each one of these districts contains a catch-all permitted accessory use: *Other Uses that are Subordinate and Customarily Incidental to a Permitted Principal Use*.

Staff is requesting a determination whether EV charging stations are to be considered a *use that is subordinate and customarily incidental to a permitted principal use* in the CD-4.A, CD-4.B, CD-5, CZ, SD-PUD, and SD-M districts. This determination will establish whether EV charging stations are a permitted accessory use.

If the Board determines that EV charging stations are a permitted accessory use, a business would be permitted to install or permit another company to install EV charging stations within its parking lot provided that all development standards are otherwise met. These standards include:

- Minimum parking spaces
- Location of parking spaces
- Landscaping
- Site lighting

- Screening of utilities and infrastructure
- Signage standards

If the Board determines that EV charging stations are not a permitted accessory use, then I will refer the matter to the Plan Commission for discussion whether to amend the zoning ordinance.

#### ADDITIONAL INFORMATION

Staff researched best practices in zoning for EV charging stations. A summary of the research is provided below.

Document	Author	Date	Takeaway
Indiana Electric Vehicle Infrastructure Deployment Plan	INDOT	July, 2022	INDOT intends to <i>Collaboratively plan, build, and maintain safe and innovative EV infrastructure that enhances quality of life, drives economic growth, and facilitates the movement of people and goods.</i> INDOT has the goal of 100% of Indiana population to be within 40 miles of an EV charging station.
Municipal EV Readiness Toolkit	Southern Maine Planning & Development Commission & Maine Clean Communities Coalition	2021	Best practices <ul style="list-style-type: none"> <li>• Permit Level 1, Level 2 EV, and Level 3 EVCS as an accessory use in all zoning districts and overlay zones (5.1).</li> <li>• Clarify that EV charging stations at residential properties are designated as private restricted use (5.1).</li> <li>• Use a standard permit process for all accessory use EV charging station installations rather than</li> </ul>
ZONING PRACTICE: Preparing for the Electric Vehicle Surge	American Planning Association	October, 2022	...EV charging stations are most frequently accessory uses, with an array of principal uses in residential, commercial, industrial, institutional, and recreational zones. Because EV charging stations do not contaminate the air, soil, or ground water, zoning of EV fueling stations should differ from traditional gas stations. EV chargers should only be subject to aesthetic or landscaping standards where cities have established standards for surface parking lots. Applying design or aesthetic standards uniquely to EV charging infrastructure could be deemed arbitrary.



Leading the Charge: City Codes and Electric Vehicles	Iowa Clean Cities Coalition	Undated	Permit Level 1 and Level 2 charging stations as accessory uses in every zoning district, restrict Level 3 charging stations to areas where zoning permits commercial uses.
Summary of Best Practices in Electric Vehicle Ordinances	Great Plains Institute	June, 2019	<p>Best practices: Treats different types of EVSE as different land uses and may distinguish between where different types of charging stations are allowed.</p> <ul style="list-style-type: none"> <li>• Charging station types are typically distinguished as different “levels” contingent on charging speed (see “definitions” p11-12).</li> <li>• Most often, levels 1 &amp; 2 are allowed in all zones while level 3 stations are restricted to specific zoning districts.</li> <li>o May provide a table to delineate use permitted zoning districts for each station type.</li> <li>• May also allow for all three levels in all zoning districts.</li> </ul>

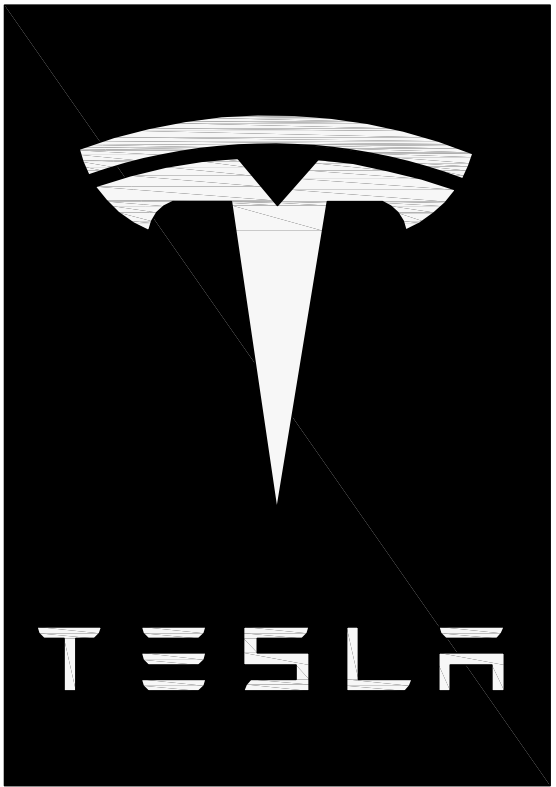
In addition, staff spoke with Sheila Shine, Planning & Building Director, in Merrillville, IN about the installation of Tesla charging stations within the parking lot at the Meijer store at 611 US-30. Ms. Shine indicated that there have been no adverse impacts caused by these stations with respect to parking or traffic.

## RECOMMENDATION

Staff recommends discussion and a motion confirming that electric vehicle charging stations are to be considered a *use that is subordinate and customarily incidental to a permitted principal use* in the CD-4.A, CD-4.B, CD-5, CZ, SD-PUD, and SD-M districts.



TESLA



SUPERCHARGER STATION

SITE NAME: MUNSTER, IN (TRT: 18681)

TARGET STORE # T-1913:

8005 CALUMET AVE

MUNSTER, IN 46321

SITE INFORMATION	APPLICABLE CODES	PROJECT DESCRIPTION	ZONING INFORMATION		DRAWING INDEX	
<p>PROPOSED TESLA EV SITE ADDRESS: 8005 CALUMET AVE MUNSTER, IN 46321</p> <p>EXISTING SITE ADDRESS: 8005 CALUMET AVE MUNSTER, IN 46321</p> <p>PROPERTY OWNER: CHRIS ARMSTRONG PROJECT MANAGER Christopher.Armstrong1@target.com (612) 304-9760</p> <p>EQUIPMENT SUPPLIER: TESLA MOTORS, INC. 3500 DEER CREEK RD PALO ALTO, CA 94304 (650) 681-5000</p> <p>POWER COMPANY: NIPSCO</p> <p>COUNTY: LAKE</p> <p>LATITUDE (NAD83): 41° 34' 04.7" N 41.567982°</p> <p>LONGITUDE (NAD83): 87° 30' 29.4" W -87.508153°</p>	<p>ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:</p> <p>2012 INTERNATIONAL BUILDING CODE (1ST PRINTING), WITH 2014 INDIANA AMENDMENTS 2008 NATIONAL ELECTRICAL CODE (1ST PRINTING), WITH INDIANA AMENDMENTS</p> <p>IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL</p>	<ul style="list-style-type: none"><li>INSTALL (3) TESLA SUPERCHARGER CABINETS</li><li>INSTALL (12) TESLA CHARGING STATIONS</li><li>INSTALL (1) UTILITY TRANSFORMER</li><li>INSTALL (1) SWITCHGEAR ASSEMBLY</li><li>INSTALL (2) H-FRAME MOUNTED METER</li><li>INSTALL (2) H-FRAME MOUNTED CT CABINET</li><li>INSTALL (2) CHARGEPOINT LEVEL 2 CT4021 DUAL PORT CHARGERS</li></ul>	PERMITTING JURISDICTION:	TOWN OF MUNSTER IN THOMAS VANDER WOUDE PLANNING DIRECTOR tvanderwoude@munster.org (219) 836-6995	SHEET NO:	SHEET TITLE
			DO NOT SCALE DRAWINGS		T-1	TITLE SHEET & PROJECT DATA
			CONTRACTOR SHALL VERIFY ALL PLANS, EXIST'G DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.		10F 1	TOPOGRAPHIC SURVEY
					A-1	OVERALL SITE PLAN
					A-2	DEMOLITION PLAN
					A-3	PROPOSED SITE PLAN
					A-4	SITE ELEVATIONS
					E-1	UTILITY PLAN
					E-2	ELECTRICAL PLAN & PANEL SCHEDULE 'MDP'
					E-3	SYSTEM ONE-LINE & V3 SUPERCHARGER INTERCONNECTION DIAGRAM
					G-1	GROUNDING DETAILS
					D-1	INSTALLATION DETAILS
					D-2	INSTALLATION DETAILS
					D-3	INSTALLATION DETAILS
					D-4	INSTALLATION DETAILS
					D-5	INSTALLATION DETAILS



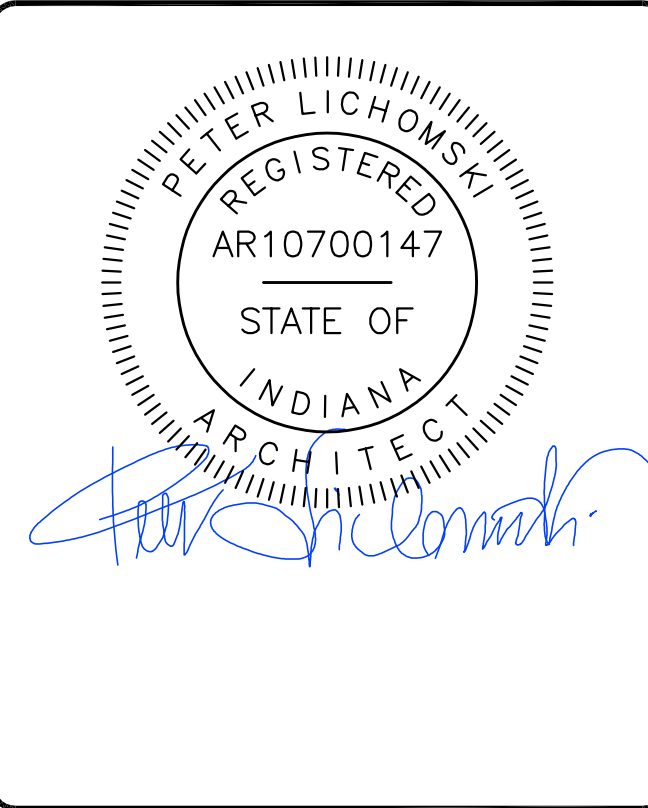
3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000

LAB

49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY: RC  
CHECKED BY: PL

REV	DATE	DESCRIPTION
B	06/11/2022	CD100
A	05/27/2022	CD50

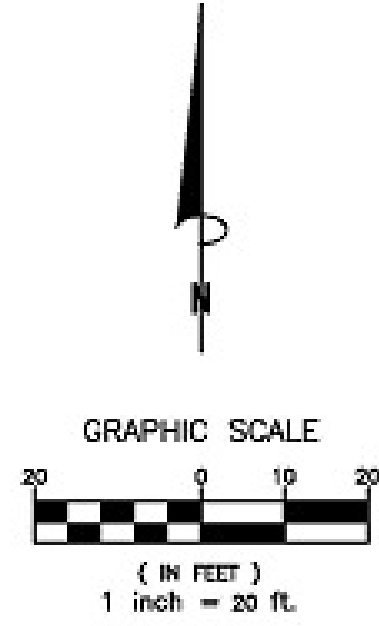


SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

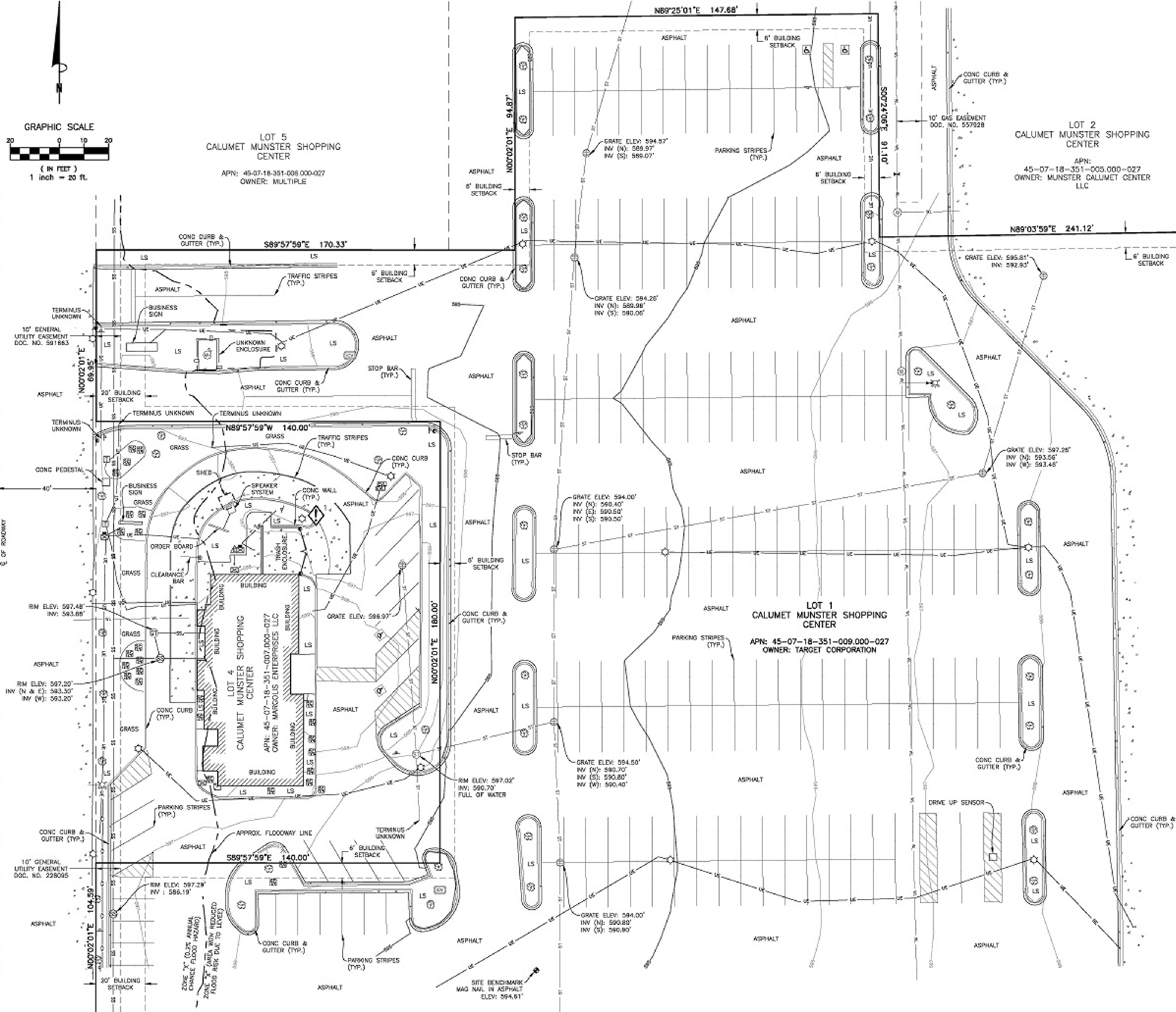
SHEET TITLE  
TITLE SHEET &  
PROJECT DATA

SHEET NUMBER  
T-1





CALUMET AVENUE  
(60' PUBLIC R.O.W.)



- LEGEND
- SITE BENCHMARK
  - SANITARY MANHOLE
  - GREASE TRAP
  - STORM MANHOLE
  - STORM INLET (ROUND)
  - FIRE HYDRANT
  - WATER VALVE
  - IRRIGATION CONTROL VALVE
  - WATER MANHOLE
  - LIGHT POLE
  - ELECTRIC METER
  - ELECTRIC TRANSFORMER
  - ELECTRIC CABINET
  - ELECTRIC VAULT
  - TELEPHONE PEDESTAL
  - UNKNOWN MANHOLE
  - HANDICAP PARKING
  - CLEARANCE BAR POST
  - DECIDUOUS TREE
  - SHRUB
  - LANDSCAPED AREA
  - BOLLARD
  - SIGN
  - FENCE GATE
  - ST — STORM LINE (UNDERGROUND)
  - SS — SANITARY LINE (UNDERGROUND)
  - WL — WATER LINE (UNDERGROUND)
  - GL — GAS LINE (UNDERGROUND)
  - EL — ELECTRIC LINE (UNDERGROUND)
  - TL — TELEPHONE LINE (UNDERGROUND)
  - W — WOOD FENCE
  - I — IRON FENCE
  - C — CONCRETE AREA
  - △ EXCEPTION NUMBER
  - ⚠ AREA OF CONCERN

LOT 5  
CALUMET MUNSTER SHOPPING  
CENTER  
APN: 45-07-18-351-005.000-027  
OWNER: MULTIPLE

LOT 2  
CALUMET MUNSTER SHOPPING  
CENTER  
APN: 45-07-18-351-005.000-027  
OWNER: MUNSTER CALUMET CENTER  
LLC

LOT 1  
CALUMET MUNSTER SHOPPING  
CENTER  
APN: 45-07-18-351-009.000-027  
OWNER: TARGET CORPORATION

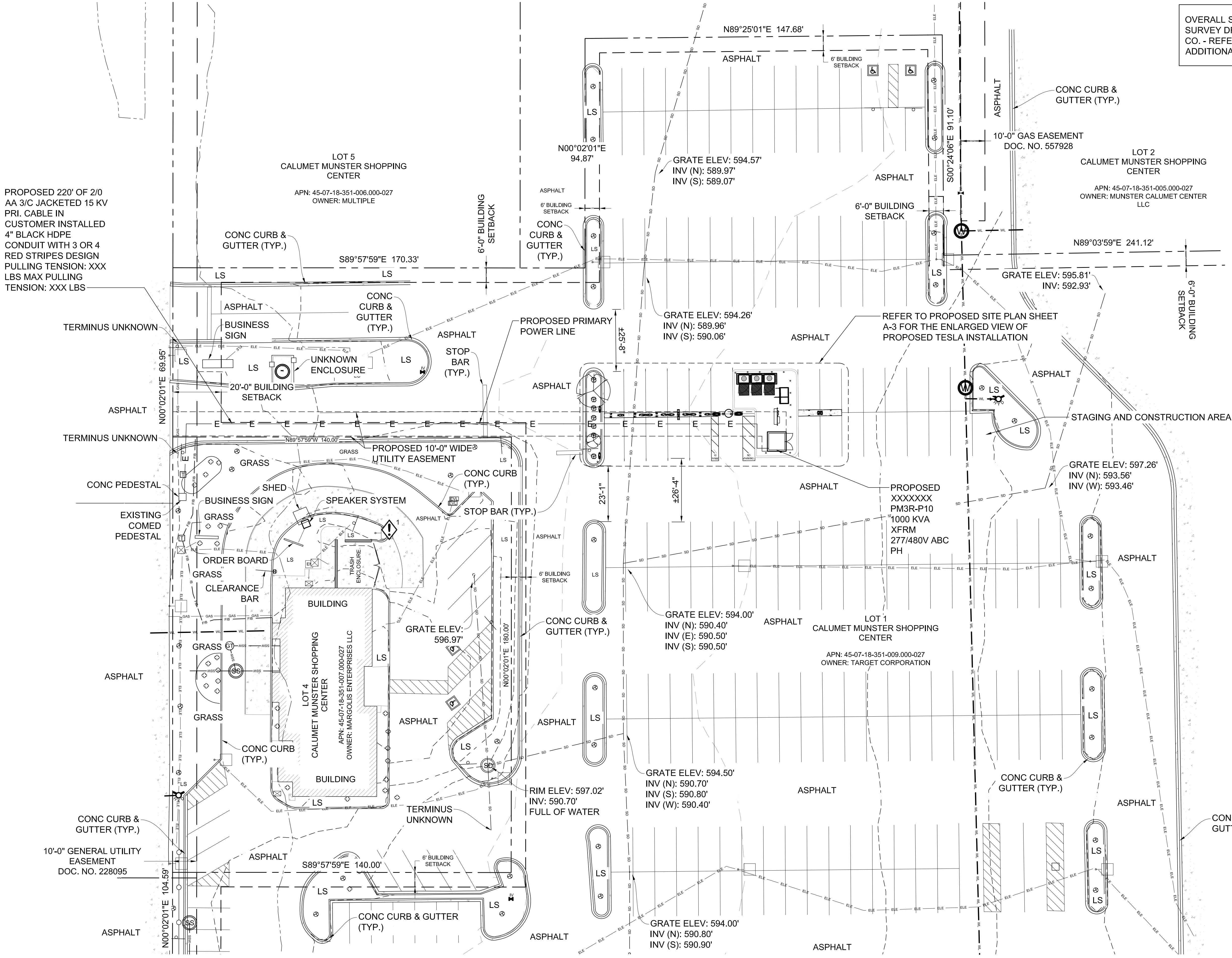
LOT 4  
CALUMET MUNSTER SHOPPING  
CENTER  
APN: 45-07-18-351-002.000-027  
OWNER: MARCUS ENTERPRISES LLC

Revisions	
No.	Description

SITE NAME:  
Target - 18681

ENGINEERING DESIGN SURVEY  
A PORTION OF LOT 1  
CALUMET MUNSTER SHOPPING CENTER  
TOWN OF MUNSTER, LAKE COUNTY, INDIANA

PROPOSED 220' OF 2/0  
AA 3/C JACKETED 15 KV  
PRI. CABLE IN  
CUSTOMER INSTALLED  
4" BLACK HDPE  
CONDUIT WITH 3 OR 4  
RED STRIPES DESIGN  
PULLING TENSION: XXX  
LBS MAX PULLING  
TENSION: XXX LBS



OVERALL SITE PLAN CREATED BASED ON  
SURVEY DRAWING PREPARED BY CLARK  
CO. - REFER TO SHEET 1 OF 1 FOR  
ADDITIONAL INFO.



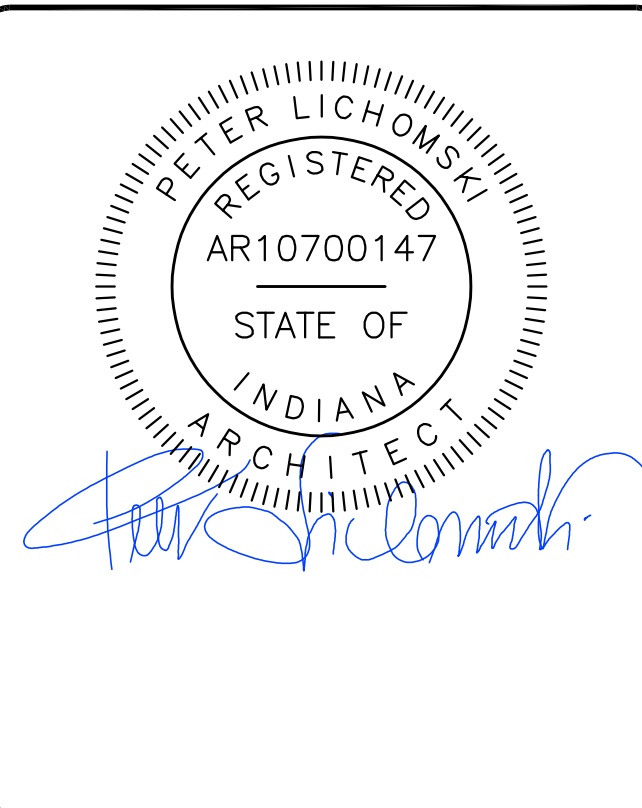
3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000



49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY: RC  
CHECKED BY: PL

REV	DATE	DESCRIPTION
B	06/11/2022	CD100
A	05/27/2022	CD50

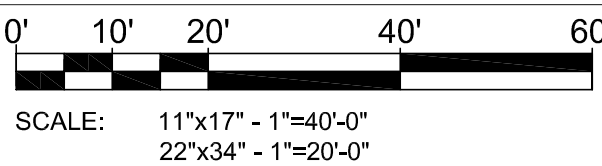


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MUNSTER, IN 46321

SHEET TITLE  
OVERALL SITE PLAN

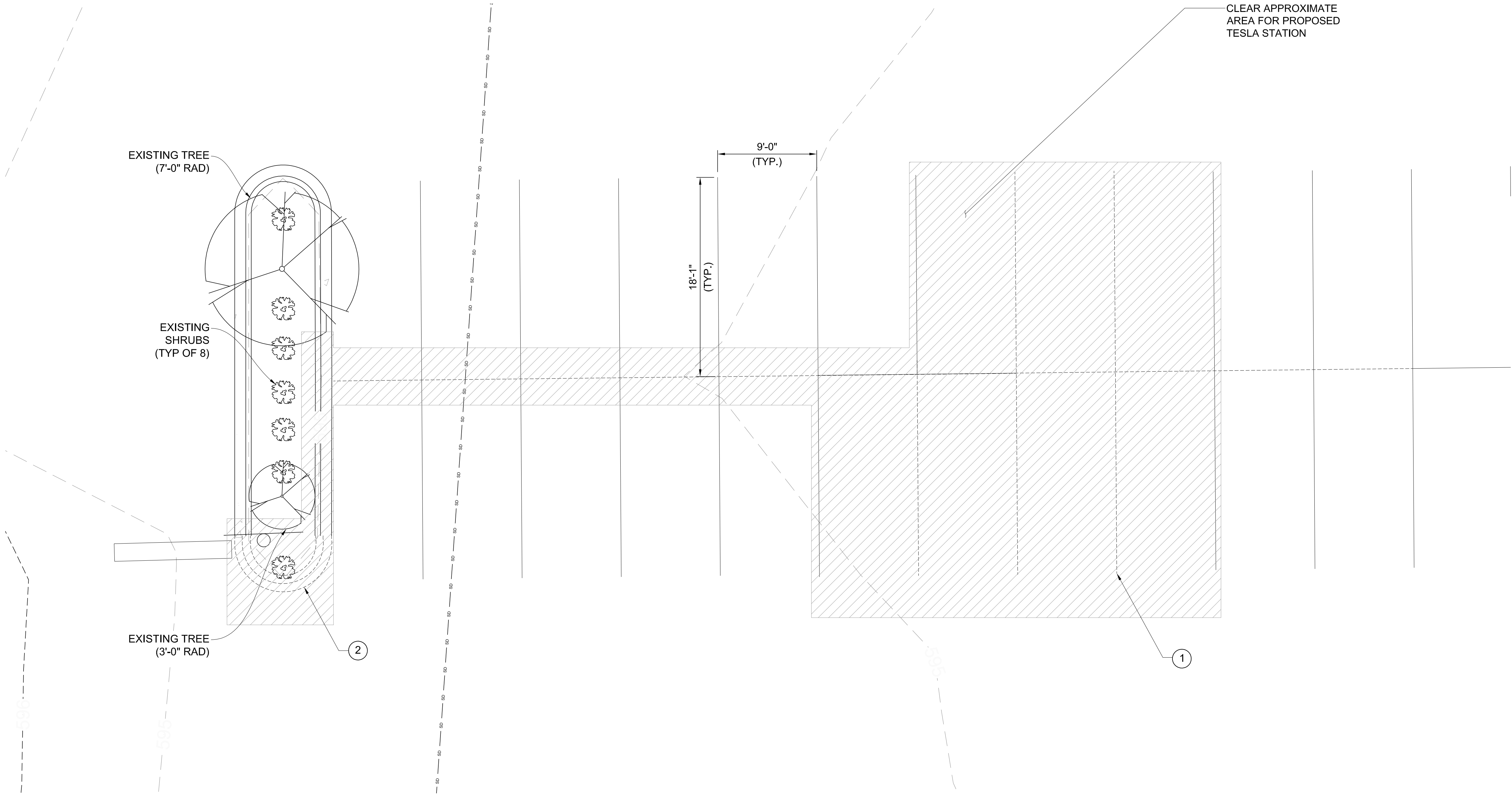
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A-1

OVERALL SITE PLAN

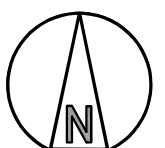




DEMOLITION SCOPE OF WORK	
①	EXISTING PARKING STRIPES TO BE REMOVED (TYP OF 5)
②	EXISTING CURB AND GUTTER TO BE REMOVED AND REPLACED



DEMOLITION PLAN



0' 2'-8" 5'-4" 10'-8" 16'

SCALE: 11"x17" - 3/32"=1'-0"  
22"x34" - 3/16"=1'-0"



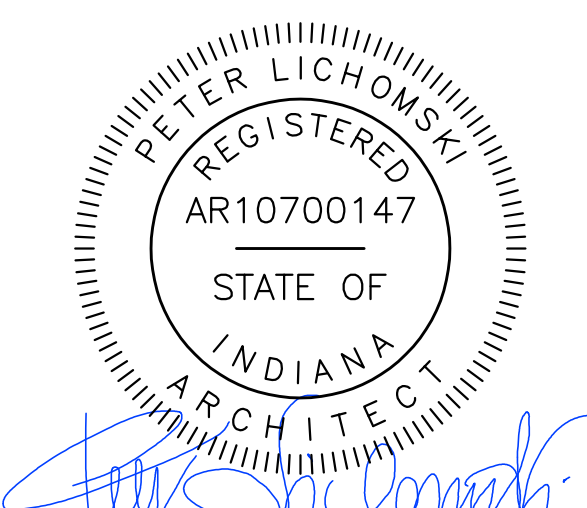
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PHONE: 248-705-9212

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CHECKED BY:	PL

REV	DATE	DESCRIPTION
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A	05/27/2022	CD50



PETER LICHOWSKI  
REGISTERED  
AR10700147  
STATE OF  
INDIANA  
ARCHITECT

SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
**DEMOLITION SITE PLAN**

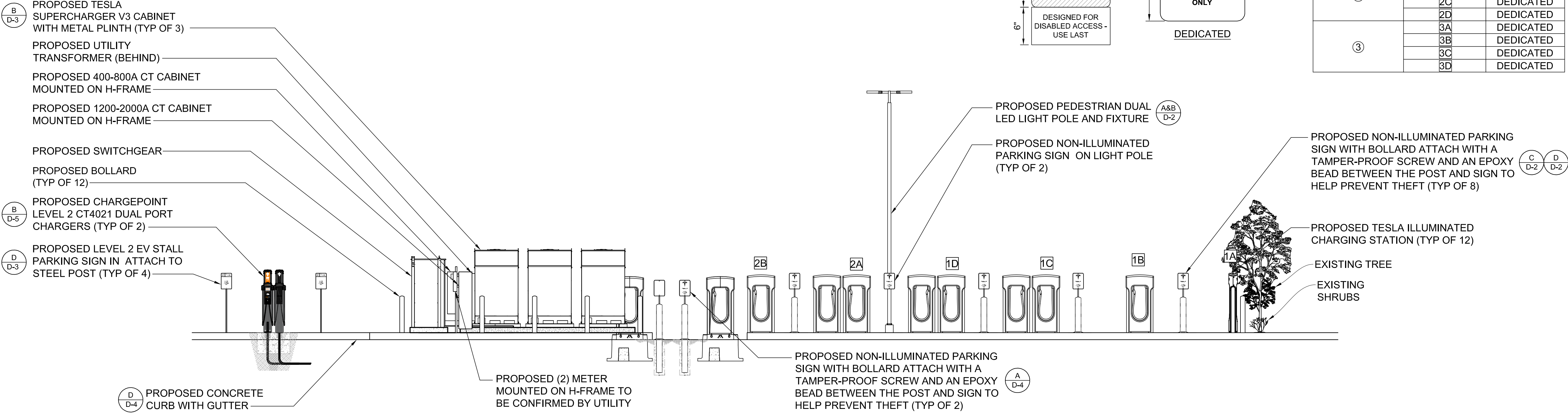
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**A-2**



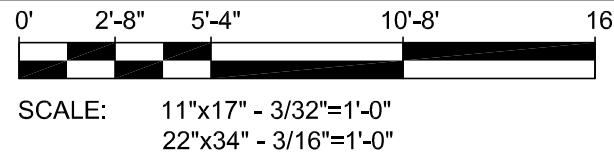


NOTES

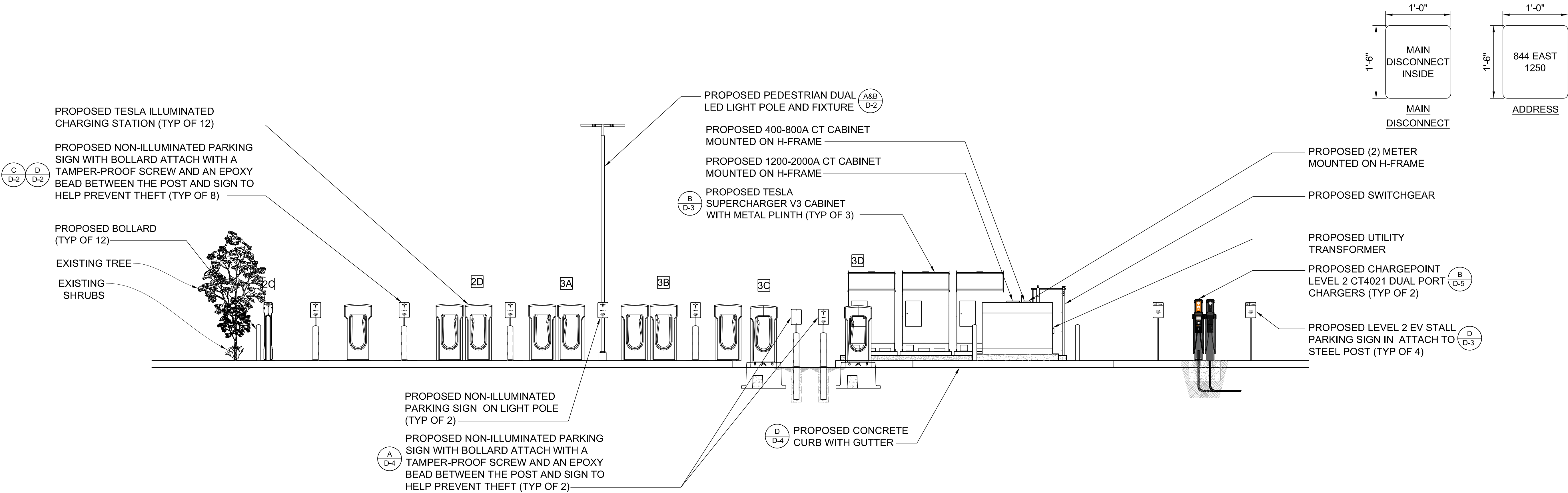
1. BOTTOM OF LOWEST SIGN TO BE INSTALLED 54" ABOVE GRADE.
2. ADDITIONAL PARKING SIGNS TO BE INSTALLED 2" ABOVE TOP OF PREVIOUS SIGN.
3. DO NOT ANCHOR SIGNAGE OR PENETRATE SIDE OF SWITCHGEAR ASSEMBLY.
4. SIGNAGE TO BE REFLECTIVE VINYL.
5. SIGNAGE SHALL BE PRINTED WITH RED LETTERING ON A WHITE BACKGROUND.
6. ALL TEXT SHALL BE CAPITAL LETTERS. LABEL FONT SHALL BE ARIAL (OR SIMILAR) AND IS NOT TO BE BOLD.
7. CONTRAST BETWEEN CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL BE 70% MINIMUM AND HAVE A NON GLARE FINISH.



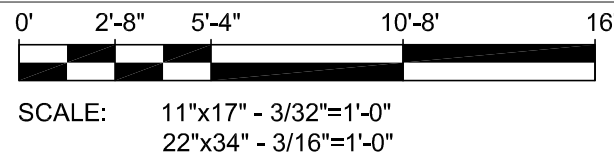
SITE ELEVATION



A



SITE ELEVATION



B



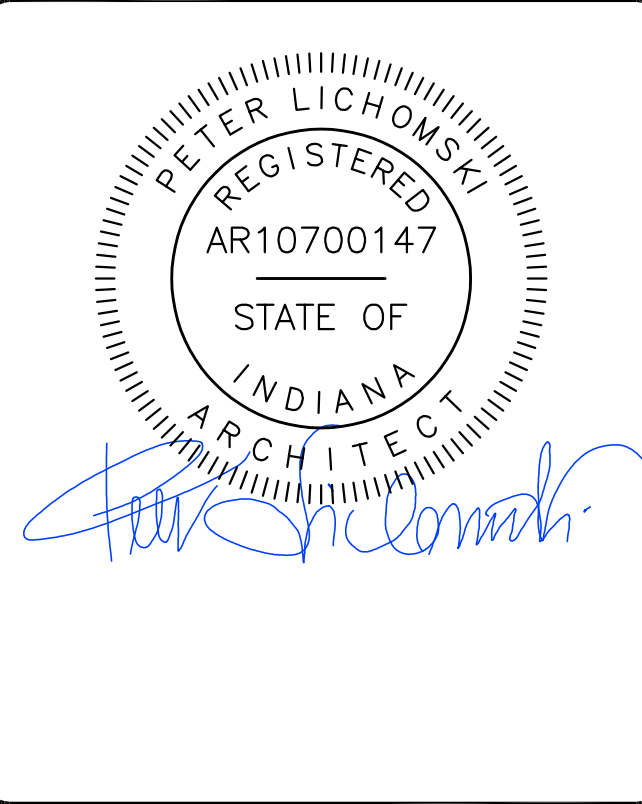
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REV	DATE	DESCRIPTION



SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE

SITE ELEVATION

SHEET NUMBER

A-4



NOTES:

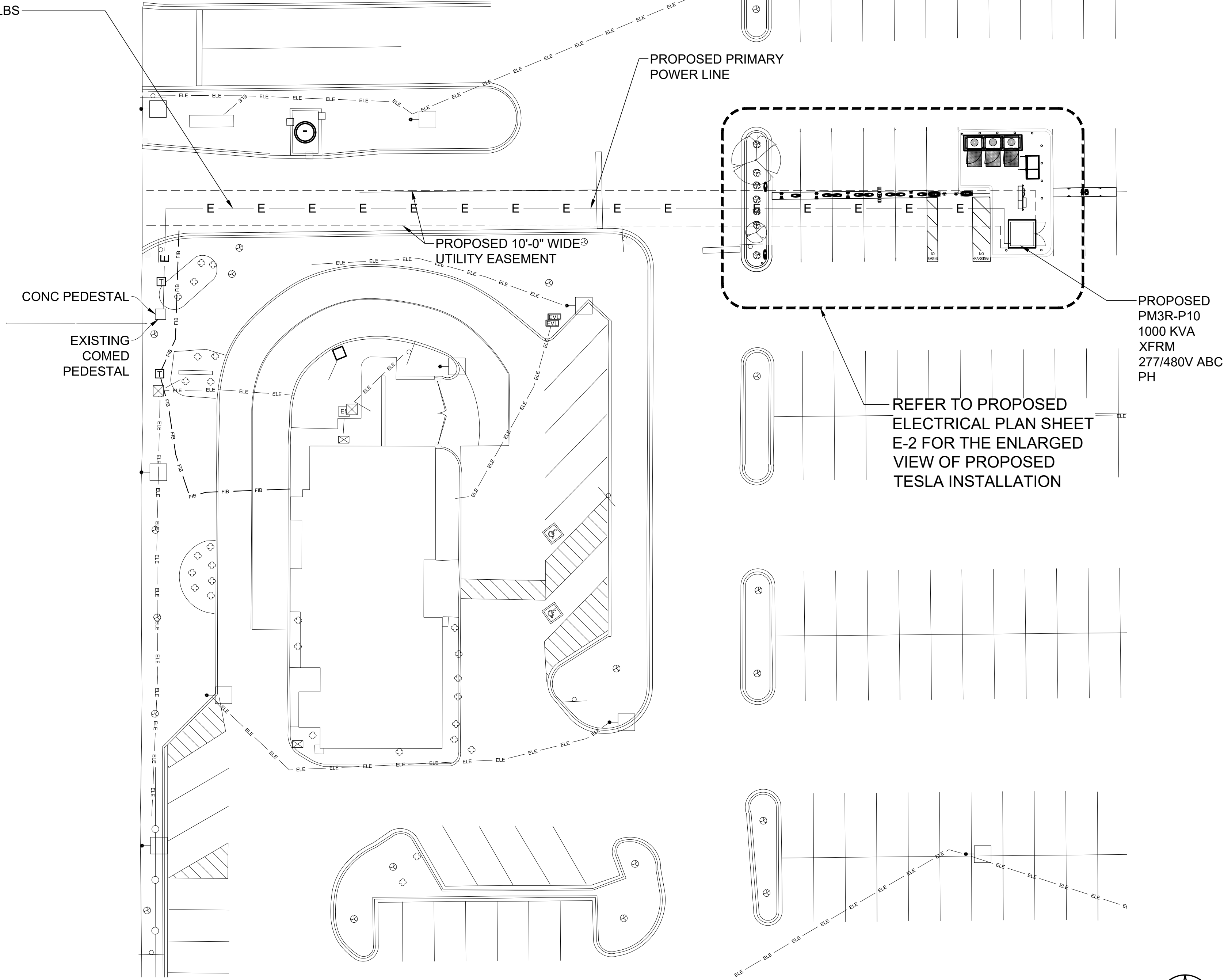
1. THE UTILITY DESIGN DETAILS SUMMARIZED ON THIS SHEET ARE FOR PROPERTY OWNER REVIEW. THE CONTRACTOR SHALL REFERENCE THE UTILITY DESIGN PACKAGE (UDP), PROVIDED WITH THE "ISSUED FOR CONSTRUCTION" DRAWINGS FOR BIDDING. THE CONTRACTOR SHALL INSTALL THE UTILITY RELATED SCOPE OF WORK PER UTILITY CONSTRUCTION SPECIFICATION REQUIREMENTS.
2. UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK AND TERMINATION OF SERVICE CONDUCTORS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRECONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATIONS.
3. TRANSFORMER BOLLARD PROTECTION TO BE INSTALLED PER UTILITY SPECIFICATION. ADDITIONAL BOLLARD PROTECTION MAY BE REQUIRED AT THE DISCRETION OF THE UTILITY FIELD INSPECTION PERSONNEL.

ELECTRICAL SCOPE OF WORK RESPONSIBILITIES		
SCOPE	BY UTILITY	BY TESLA
PROVIDE PRIMARY SIDE TRENCHING		X
PROVIDE & INSTALL PRIMARY SIDE CONDUITS		X
PROVIDE & INSTALL PRIMARY SIDE CONDUCTORS	X	
PROVIDE & INSTALL UTILITY TRANSFORMER PAD		X
PROVIDE UTILITY TRANSFORMER	X	
INSTALL UTILITY TRANSFORMER	X	
INSTALL CONNECTIONS AT UTILITY TRANSFORMER (PRIMARY)	X	
INSTALL CONNECTIONS AT UTILITY TRANSFORMER (SECONDARY)		X
PROVIDE METER BASE (UTILITY TO PROVIDER APPROVED SPECS)	X	
INSTALL METER BASE		X
PROVIDE METER	X	
INSTALL METER	X	
PROVIDE CTs	X	
INSTALL CTs (INSIDE CT CABINET)	X	
PROVIDE SECONDARY SIDE TRENCHING		X
PROVIDE & INSTALL SECONDARY SIDE CONDUITS W/ PULLWIRE		X
PROVIDE & INSTALL SECONDARY SIDE CONDUCTORS		X
PROVIDE ROAD CUTS / ROAD BORES / PAVEMENT REPLACEMENT		X
PROVIDE & INSTALL LANDSCAPE REMEDIATION		X

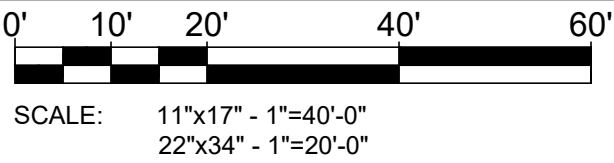
NOTE: SCOPE SHOWN ABOVE WAS PROVIDED BY NIPSCO. FIELD VERIFY PRIOR TO CONSTRUCTION.

NIPSCO CONTACT:  
RODNEY GOLSON  
(219) 302-8743

PROPOSED 220' OF 2/0  
AA 3/C JACKETED 15 KV  
PRI. CABLE IN  
CUSTOMER INSTALLED  
4" BLACK HDPE  
CONDUIT WITH 3 OR 4  
RED STRIPES DESIGN  
PULLING TENSION: XXX  
LBS MAX PULLING  
TENSION: XXX LBS



ELECTRICAL SITE PLAN



3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000



49030 Pontiac Trail, Ste 400  
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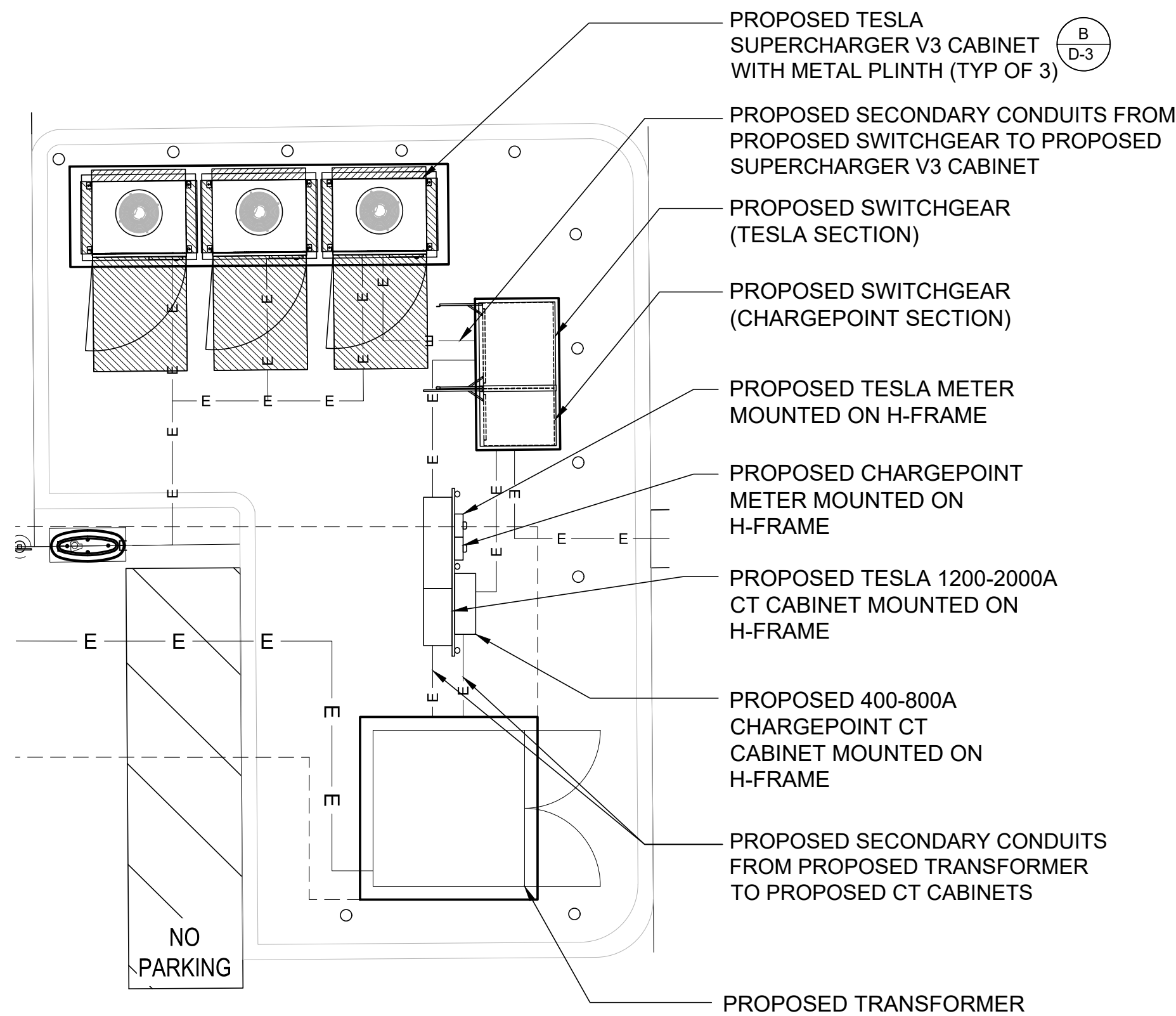
SITE NAME: MUNSTER, IN  
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MUNSTER, IN 46321

SHEET TITLE  
ELECTRICAL SITE PLAN

SHEET NUMBER

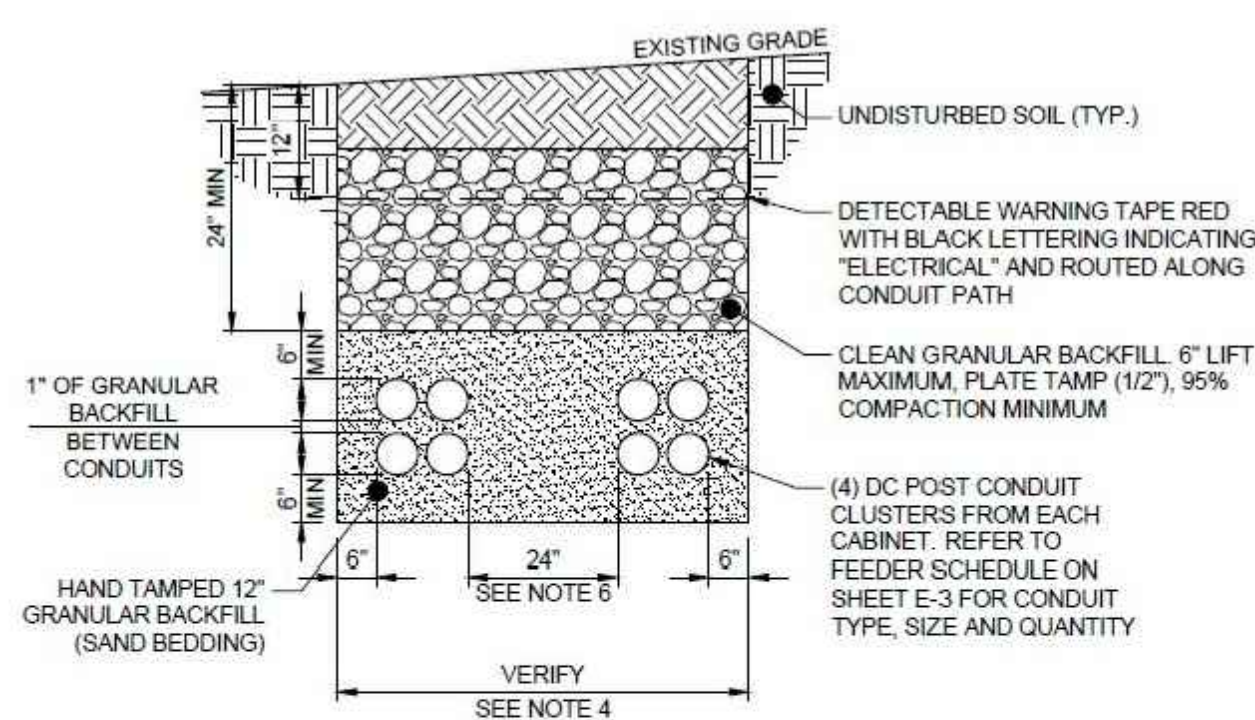
E-1





## ENLARGED ELECTRICAL PLAN

SCALE: 11"x17" - 3/32"=1'-0"  
22"x34" - 3/16"=1'-0"



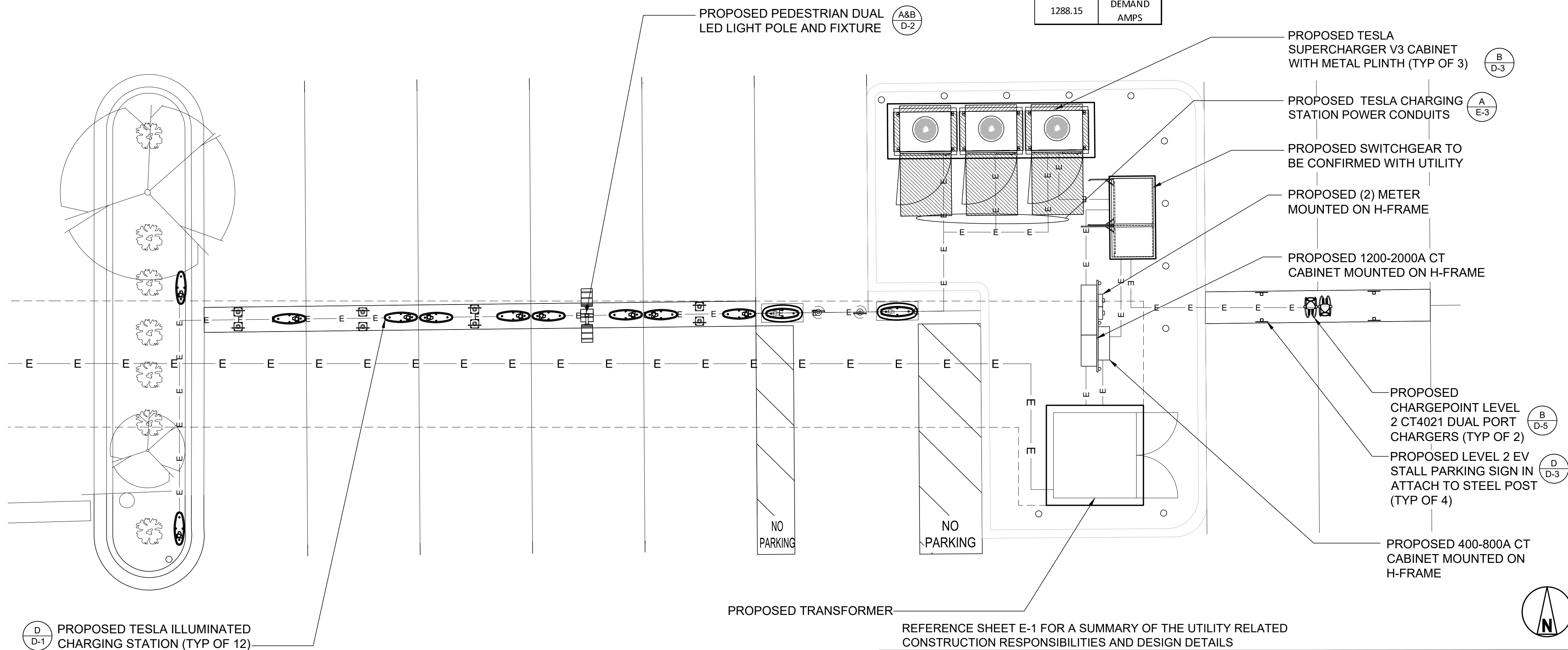
## DC CHARGING POST CONDUIT ARRANGEMENT DIAGRAM

NO SCALE

### NOTES:

- BIDDING CONTRACTOR TO VERIFY DEPTHS AND LENGTHS IN FIELD.
- THE EXACT ROUTING PATH AND CONDUCTOR RUN LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD BASED ON PHYSICAL MEASUREMENTS. CONTRACTOR TO ORDER CONDUCTOR BASED ON FIELD MEASUREMENTS (MUST BE APPROVED BY TESLA INSTALLATION MANAGER).
- ALL ELECTRICAL WORK AND RELATED ACTIVITIES PERFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) STANDARDS BEING ENFORCED BY ALL APPLICABLE JURISDICTIONAL REQUIREMENTS AT THE TIME OF CONSTRUCTION.
- THE MAXIMUM RUN LENGTH BETWEEN SUPERCHARGER CABINET AND CHARGING POST, INCLUDING BURIED DEPTH IS NOT TO EXCEED 330'.
- SEE SHEET E-3 FOR CONDUIT AND WIRE SIZES.
- UTILIZE SLURRY FOR ANY CONDUIT RUNS WHERE MORE THAN (4) CONDUITS ARE PRESENT.
- ALL CONDUIT RUNS SHALL UTILIZE SCHEDULE 40 PVC OR HDPE.

SITE ID: MUNSTER, IN (TESLA)			MODEL #: LINCOLN		WIRE: 4
VOLTAGE: 277/480V			BUSS RATING: 1600 AMP		GND BAR: YES
PHASE: 3Ø			NEU BAR: YES		N TO G BOND: YES; SEE A/E-3
SERVICE LOAD (kVA)	USAGE FACTOR	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION
		ON	3	1600	MAIN BREAKER
356	1.0	ON	3	600	TESLA V3 SUPERCHARGER
356	1.0	ON	3	600	TESLA V3 SUPERCHARGER
356	1.0	ON	3	600	TESLA V3 SUPERCHARGER
0.5	1.0	ON	2	20	MASTER CONTROLLER
0.5	1.0	ON	1	15	HEATER
0.131	1.25	ON	1	15	POLE LIGHT
1069.13	CONNECTED kVA				
1288.11	CONNECTED AMPS				
1288.15	DEMAND AMPS				



CAUTION - ALL TRADES  
USE EXTREME CAUTION IN AREA  
OF EXISTING UTILITIES - HAND DIG -  
USE ELECTRONIC DETECTION  
PRIOR TO DIGGING

## ELECTRICAL PLAN

0' 2'-8" 5'-4" 10'-8" 16'  
SCALE: 11"x17" - 3/32"=1'-0"  
22"x34" - 3/16"=1'-0"

**TESLA**

3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000

**LAB**

49030 Pontiac Trail, Ste 400  
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PHONE: 248-705-9212

DRAWN BY: JSR  
CHECKED BY: RCH

B	06/11/2022	CD100
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REV	DATE	DESCRIPTION



SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
**ELECTRICAL PLANS &  
LOAD SCHEDULE**

SHEET NUMBER  
**E-2**



ELECTRICAL FEEDER SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY TRANSFORMER/ METERING	PROPOSED SERVICE EQUIPMENT; INCOMING	(3) 600MCM AI (XHHW-2) (1) 600MCM AI (XHHW-2) NEUT IN EACH OF (5) 4" PVC CONDUIT
2	PROPOSED SERVICE EQUIPMENT; INCOMING	PROPOSED SERVICE EQUIPMENT; MAIN BREAKER	FACTORY INSTALLED BUSS
3	PROPOSED SERVICE EQUIPMENT; MAIN BREAKER	PROPOSED SERVICE EQUIPMENT; DISTRIBUTION PANEL	FACTORY INSTALLED BUSS
4	PROPOSED SERVICE EQUIPMENT; DISTRIBUTION PANEL	PROPOSED TESLA V3 CHARGING CABINETS	(3) 500MCM AI (XHHW-2, THWN-2, OR RW90) (1) 500MCM AI (XHHW-2, THWN-2, OR RW90) NEUT (1) #1 AWG Cu GND IN EACH OF (2) 4" PVC CONDUIT
6	SITE MASTER CONTROLLER	PROPOSED TESLA CHARGING CABINETS	CAT6, SHIELDED, WEATHPROOF, COMMUNICATIONS CABLE. BELDEN 7919A OR EQUAL. INSTALL WITH METAL CONNECTOR AT SITE MASTER END IN 1"C. PVC OR HDPE.
7	PROPOSED TESLA V3 CHARGING CABINET	PROPOSED TESLA CHARGING POST	(4) 350MCM AI (1000V) (1) #1 AWG Cu GND (1) 600V COMM CABLE IN 4" PVC CONDUIT
8	CENTER CHARGING CABINET (SHARED DC BUS CABINET)	DC BUS OF EACH CHARGING CABINET	(2) 600MCM AI (XHHW-2, THWN-2, OR RW90) (1) #1/0 AWG Cu GND, (1) #3/0 AWG AI DC MID IN EACH OF (2) 3" PVC CONDUIT OR PRECAST CONCRETE WIREWAY
9	PROPOSED SERVICE EQUIPMENT; DISTRIBUTION PANEL	PROPOSED INTERNAL EQUIPMENT HEATER	FACTORY INSTALLED CABLING (BY MANUFACTURER)
10	PROPOSED SERVICE EQUIPMENT; DISTRIBUTION PANEL	PROPOSED LIGHT POLE	(1) #12 AWG Cu (THWN-2) (1) #12 AWG Cu (THWN-2) NEUT (1) #12 AWG Cu (THWN-2) GND IN 3/4" PVC CONDUIT

- GENERAL SHEET NOTES
1. NEUTRAL MUST BE INCLUDED FOR PROPER OPERATION OF TESLA SUPERCHARGERS.

2. PROPOSED UTILITY PTS & CTS SHALL BE LOCATED IN H-STAND MOUNTED CT CABINET. PROPOSED METER SHALL BE MOUNTED ON H-STAND. COORDINATE EXACT WIRING WITH UTILITY. PROVIDE 1"C. TO METER.

3. SEE SHEET E-2 FOR PANEL SCHEDULES.

4. ALL CONDUIT FURNISHED AND INSTALLED BY CONTRACTOR. ALL WIRING FURNISHED BY TESLA AND INSTALLED BY CONTRACTOR.

5. ALL CONDUITS ACCESSIBLE TO THE GENERAL PUBLIC OR WHICH CONDUITS CAN BE DAMAGED SHALL BE RIGID GALVANIZED STEEL.

6. ALL BUSHINGS AND INTERNAL WIRING OF PROPOSED SERVICE EQUIPMENT PROVIDED BY MANUFACTURER. ANY MODIFICATIONS SHALL REQUIRE ENGINEERING APPROVAL PRIOR TO ANY CHANGES BEING MADE.

7. CONTRACTOR SHALL PERFORM ARC FLASH CALCULATIONS AS REQUIRED IN THE FOLLOWING: NFPA 70; NFPA 70E; OSHA 29; AND IEEE STANDARDS 1584. CONTRACTOR SHALL OBTAIN ALL NECESSARY INFORMATION FROM POWER COMPANY TO CALCULATE FLASH PROTECTION BOUNDARIES, INCIDENT ENERGY LEVELS, AND SHALL DETERMINE MINIMUM PPE REQUIREMENTS FOR COMPLETING THE WARNING LABELS. PROVIDE WARNING LABELS CONTAINING ALL THE LATEST INFORMATION AS REQUIRED BY LOCAL JURISDICTION, STATE AND FEDERAL CODES AND LAWS.

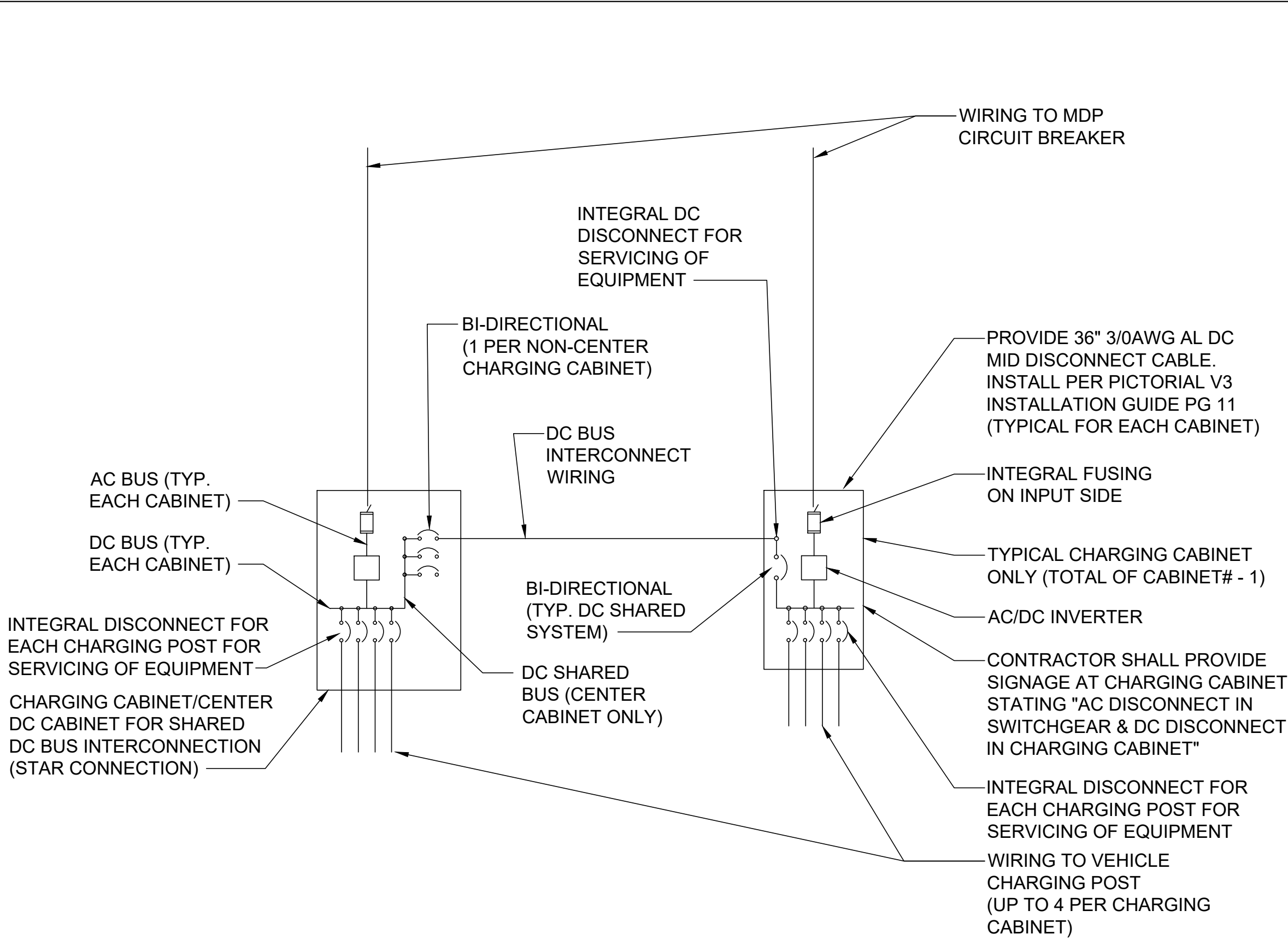
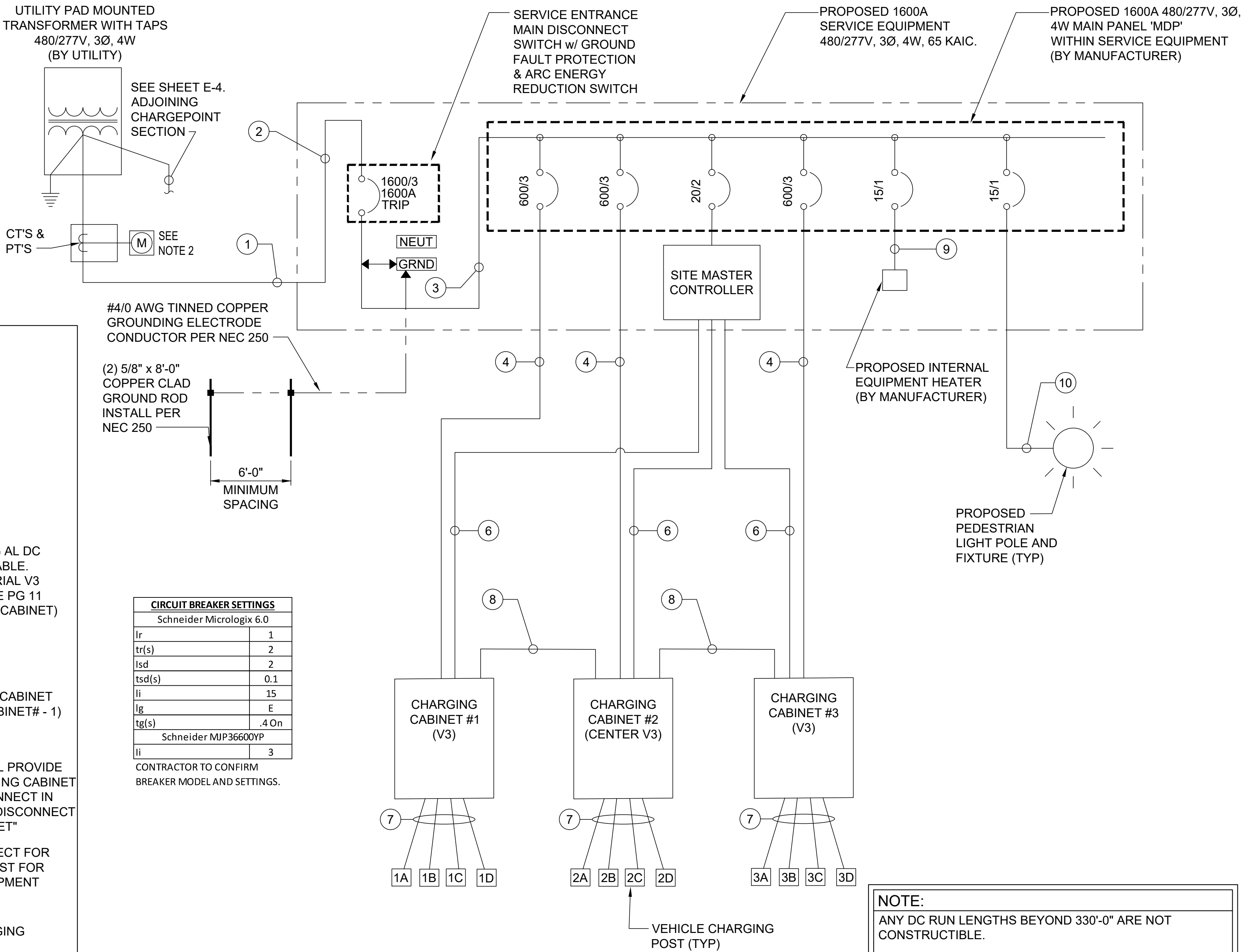
8. VERIFY AVAILABLE FAULT CURRENT AT THE SECONDARY OF THE UTILITY TRANSFORMER WITH THE POWER COMPANY. CONDUCT A FAULT CURRENT ANALYSIS TO DETERMINE THE INTERRUPTING CAPACITY (AIC RATING) OF THE ELECTRICAL EQUIPMENT. AIC RATING OF EQUIPMENT SHALL BE BASED UPON CONTRACTOR'S FAULT CURRENT ANALYSIS.

9. ALL ALUMINUM (AI) CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION. ALL OTHER CONDUCTORS ARE COPPER UNLESS NOTED OTHERWISE.

10. THE CHARGING CABINETS AND THE CHARGING POSTS USED ON THIS PROJECT COMPLY WITH THE FOLLOWING STANDARDS:
  - UL 2202
  - CSA 22.2 NO 107.1-16
  - UL 1998 PENDING

11. THE AFOREMENTIONED STANDARDS IDENTIFY THE REQUIREMENTS MET BY THE EQUIPMENT, INCLUDING BUT NOT LIMITED TO:
  - PROTECTION AGAINST ELECTRIC SHOCK
  - OVERLOAD AND SHORT CIRCUIT PROTECTION
  - FAULT PROTECTION
  - DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS LIVE PARTS
  - THE INTERNAL COMPONENTS OF THE SYSTEM ARE PROPRIETARY. ANY QUESTIONS CONCERNING ACTUAL INTERNAL PROTECTIVE DEVICES MUST BE COORDINATED DIRECTLY WITH TESLA.

12. CONTRACTOR SHALL VERIFY AC AND DC WIRING REQUIREMENTS WITH VENDOR'S SCHEMATIC WIRING DRAWINGS.



TYPICAL V3 SUPERCHARGER INTERCONNECTION DIAGRAM

NO SCALE

B

TYPICAL SYSTEM ONE-LINE DIAGRAM

NO SCALE

A



3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000



49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY: JSR  
CHECKED BY: RCH

REV	DATE	DESCRIPTION
B	06/11/2022	CD100
A	05/27/2022	CD50

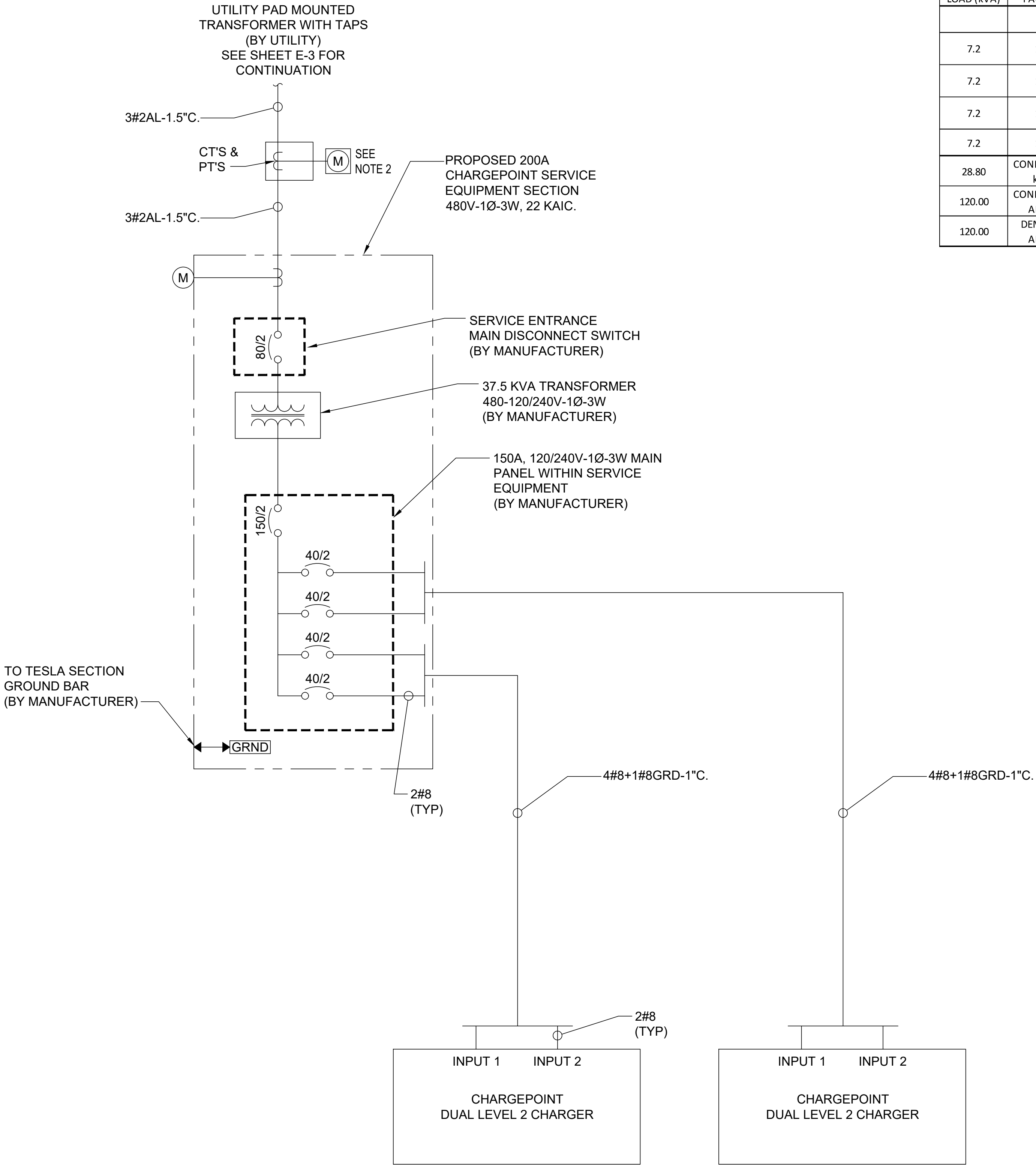


SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
**SYSTEM ONE-LINE & V3  
SUPERCHARGER  
INTERCONNECTION DIAGRAM**

SHEET NUMBER

**E-3**



SITE ID: MUNSTER, IN (CHARGEPOINT)			MODEL #: LINCOLN		WIRE: 3
VOLTAGE: 120/240V			BUSS RATING: 200 AMP		GND BAR: YES
PHASE: 1Ø			NEU BAR: YES		N TO G BOND: YES; SEE A/E-3
SERVICE LOAD (kVA)	USAGE FACTOR	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION
		ON	2	150	MAIN BREAKER
7.2	1.0	ON	2	40	CHARGEPOINT CT4021 #1
7.2	1.0	ON	2	40	CHARGEPOINT CT4021 #1
7.2	1.0	ON	2	40	CHARGEPOINT CT4021 #2
7.2	1.0	ON	2	40	CHARGEPOINT CT4021 #2
28.80	CONNECTED kVA				
120.00	CONNECTED AMPS				
120.00	DEMAND AMPS				

NOTE:  
REFER TO NOTES ON SHEET E-3.



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PALO ALTO, CA 94304  
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CHECKED BY: RCH

B	06/11/2022	CD100
A	05/27/2022	CD50
REV	DATE	DESCRIPTION



SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
CHARGEPOINT SYSTEM

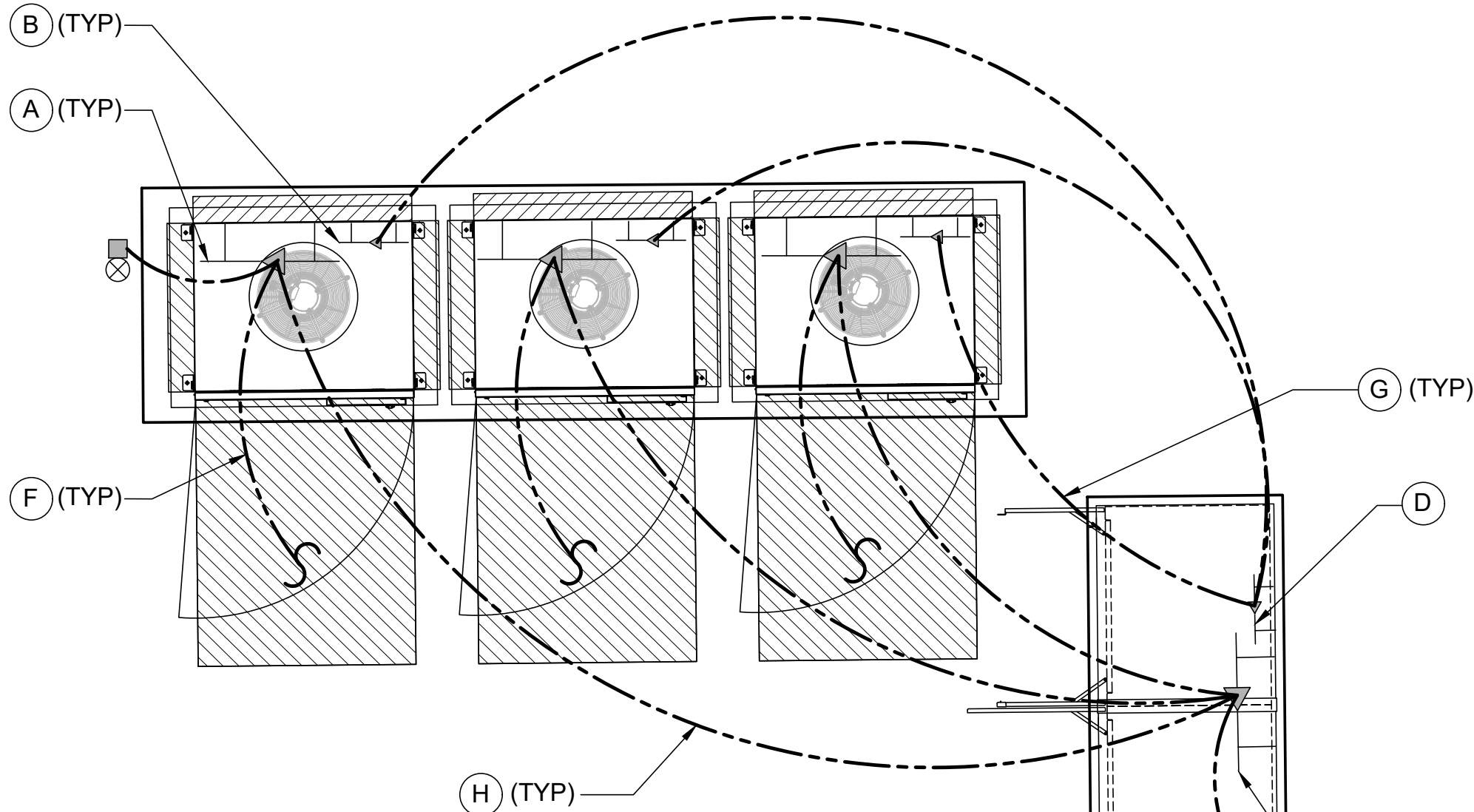
SHEET NUMBER

E-4



GROUNDING LEGEND

- EXOTHERMIC WELD (2) TWO, #6 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR/LUG. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE."
- ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUND BUS.
- NUT AND WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUND TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
- TESLA CHARGERS HAVE INTERNAL HIGH IMPEDANCE GROUND FAULT PROTECTION (10MΩ).
- EMC - ELECTROMAGNETIC COMPATIBILITY.
- ALL GROUNDING HARDWARE SUPPLIED AND INSTALLED BY CONTRACTOR.



GROUNDING LEGEND

- (A) GROUND BUSBAR WITHIN PROPOSED SUPERCHARGER CABINET
- (B) NEUTRAL BUSBER WITHIN PROPOSED SUPERCHARGER CABINET
- (C) GROUND BUSBAR WITHIN PROPOSED MAIN SERVICE EQUIPMENT
- (D) NEUTRAL BUS BER WITHIN PROPOSED MAIN SERVICE EQUIPMENT
- (E) GROUNDED CONDUCTOR AND CONNECTION PER UTILITY REQUIRMENTS FROM MAIN SERVICE EQUIPMENT TO TRANSFORMER
- (F) EGC, TYP. "DC#" FROM PROPOSED SUPERCHARGER CABINET TO PROPOSED SUPERCHARGER POST.
- (G) NEUTRAL, TYP. "SPR#" FROM MAIN SERVICE EQUIPMENT TO SUPERCHARGER CABINET
- (H) EGC, TYP. "SPR#" FROM MAIN SERVICE EQUIPMENT TO SUPERCHARGER CABINET

- PROPOSED GROUND CONDUCTOR
- CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD

1. Aluminum Grounds for the AC input and DC Post runs (DC Buss must remain copper)

**9.3 AC Input**

- (2) 4" conduit
- -(4) 500 MCM Al (1 per phase/neutral)
- -(1) 1 AWG Cu EGC or 2/0 Al EGC\*

\*Previously only copper was specified. Modified per NEC 250.64 (A) (2).

**9.5 DC Post**

NOTE: The DC Post conductors are certified as equipment wiring in the V3 Supercharger system certification. Tesla takes responsibility for the specification of these conductors specifically.

NOTE: Use 1000V rated conductors.

- (1) 4" conduit
- -(4) 350 MCM Aluminum (two +, two -)
- -(1) #1 AWG Cu EGC or 2/0 Al EGC\*
- -(1) Tesla Signal Cable

\*Previously only copper was specified. Modified per NEC 250.64 (A) (2).

TRENCHING NOTES

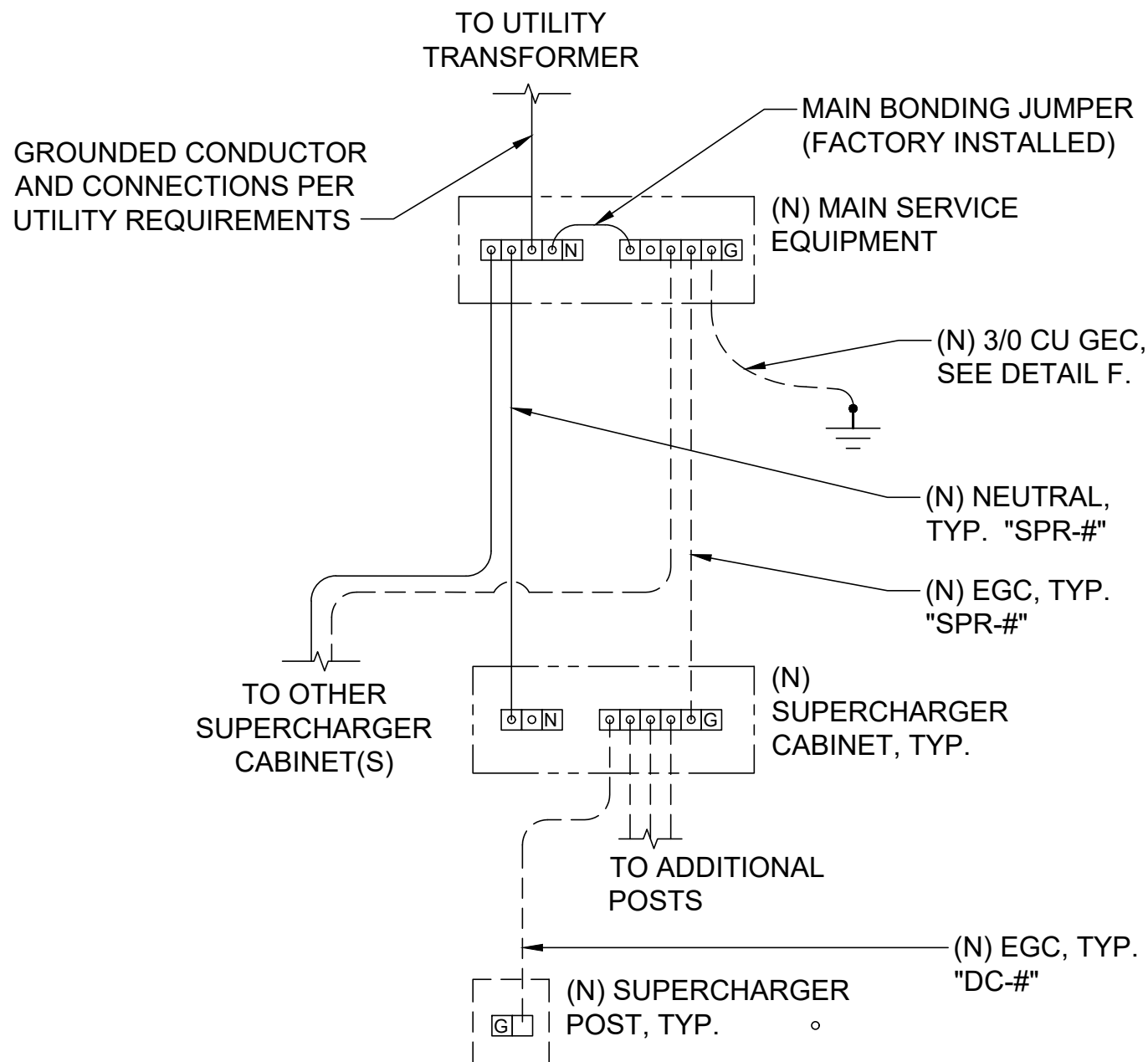
- THE TRENCH DESIGNS ARE THE RESULT OF A THERMAL ANALYSIS OF THE CONDUCTORS UNDER LOAD. FOR PROPER PROTECTION THEY MUST BE FOLLOWED.
- APPROVED BACKFILL IS REQUIRED TO MEET THE DESIGNED RHO VALUES. USE THE SPECIFIED BACKFILL LISTED BELOW OR TEST NATIVE SOIL CONDITIONS TO CONFIRM MAX DEFINED RHO VALUES
- RHO 90 BACKFILL** - LOW STRENGTH FLUIDIZED THERMAL (SLURRY) BACKFILL WITH MIN 28 DAY COMPRESSIVE STRENGTH OF 150 PSI MUST BE USED TO ACHIEVE MAX RHO 90.
- FOR TRENCHES WITH MIXED CIRCUIT TYPES, APPLY THE CONDUIT SPACING FOR THE CIRCUIT TYPE WITH THE LARGER SPACING REQUIREMENT.
- CONDUIT TO BE INSTALLED TO A MAX COVER OF 24". COVER MAY BE REDUCED PER THE NEC TABLE 300.5.

GROUNDING NOTES

- REFER TO ONE-LINE DIAGRAM FOR SPECIFIC CIRCUIT IDENTIFIERS BETWEEN EQUIPMENT.
- REFER TO AC & DC CIRCUIT SCHEDULES FOR NEUTRAL/GROUND SIZING PER CIRCUIT.

SYMBOLS LEGEND

- |   |   |   |  |
|---|---|---|--|
| ⊖ | NEUTRAL BUSBAR                                      | ⊖ | TERMINAL ON NEUTRAL OR GROUND BUSBAR           |
| ⊖ | GROUND BUSBAR                                       | • | IRREVERSIBLE SPLICE OR CRIMP PER NEC 250.64(C) |
| ⊖ | PRIMARY OR SECONDARY COMMON TERMINAL, AS APPLICABLE | ⊖ | NEC 250.52(A)-COMPLIANT GROUNDING ELECTRODE    |



GROUNDING PLAN

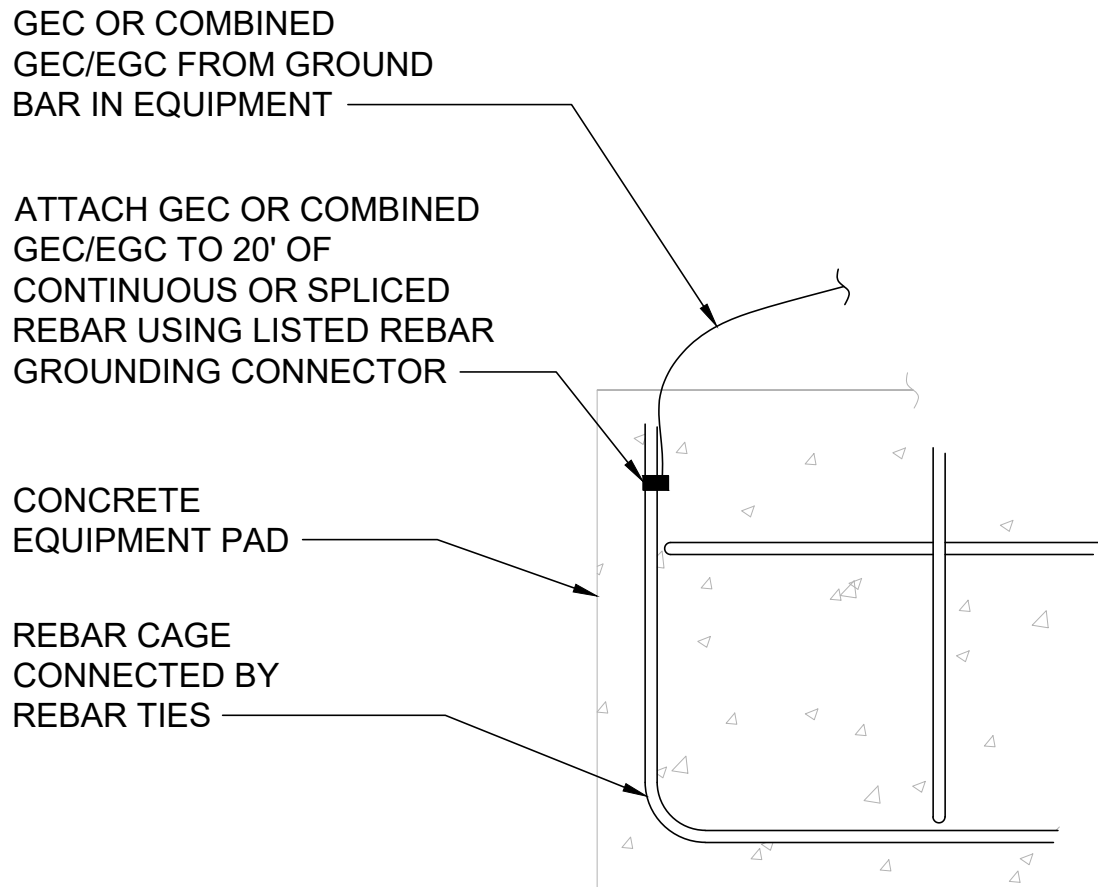
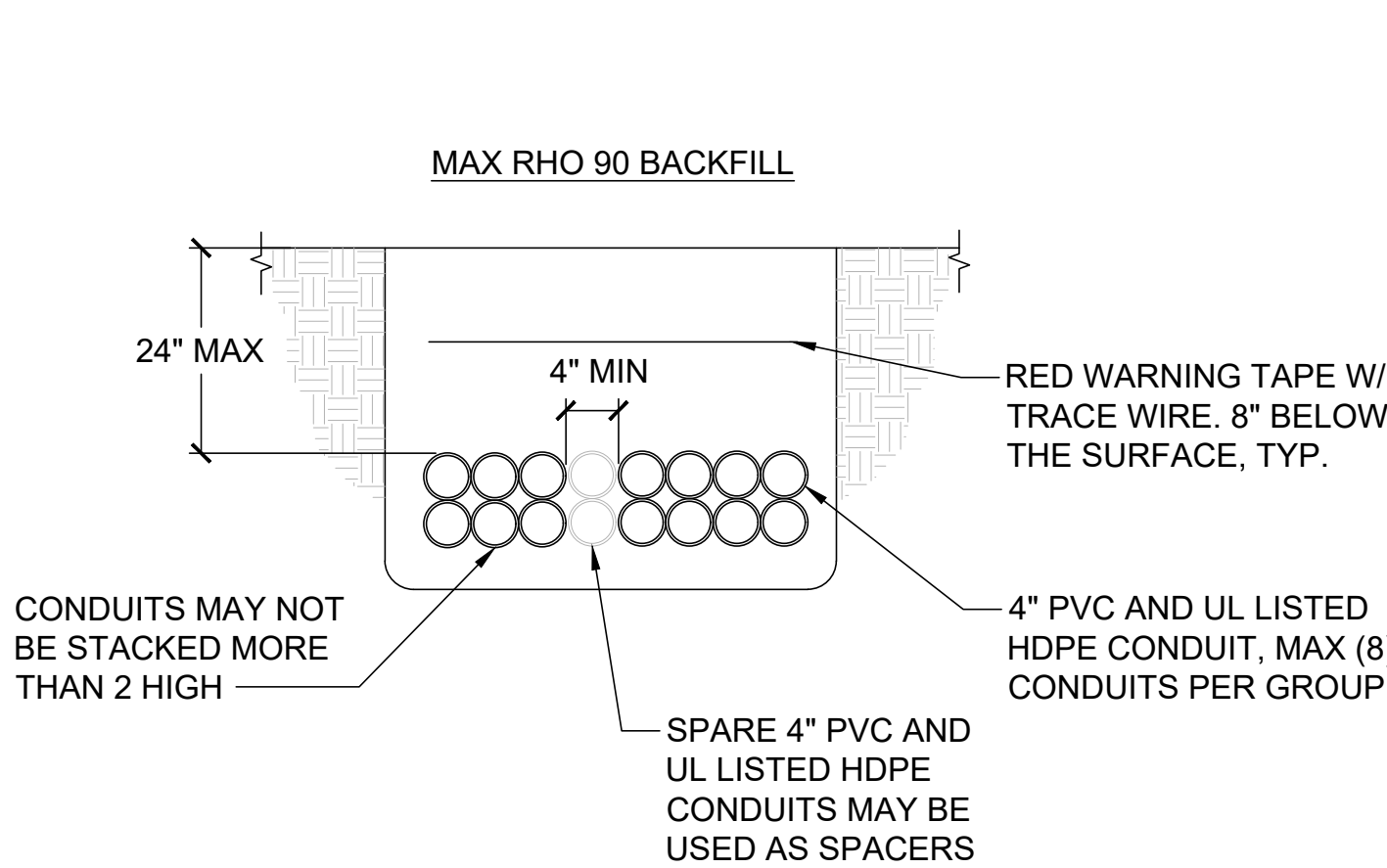
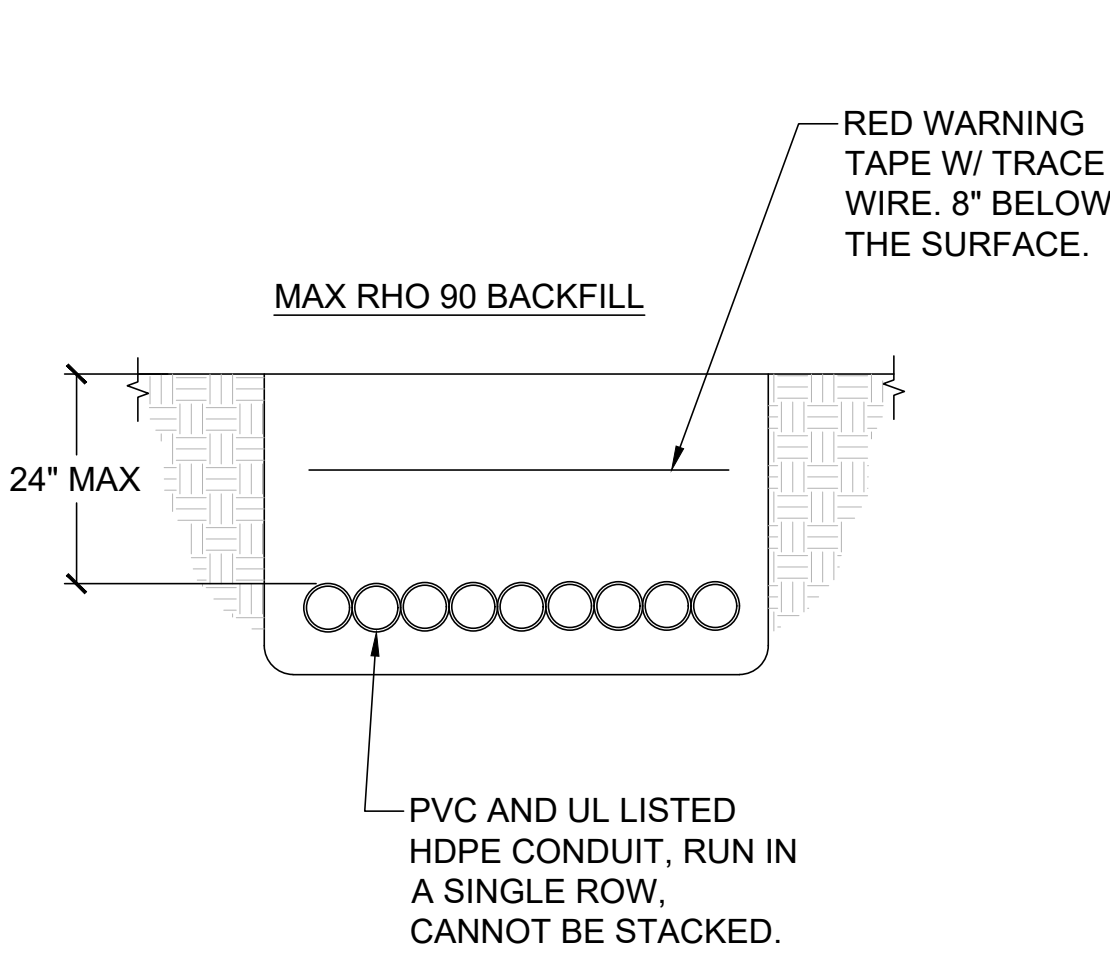
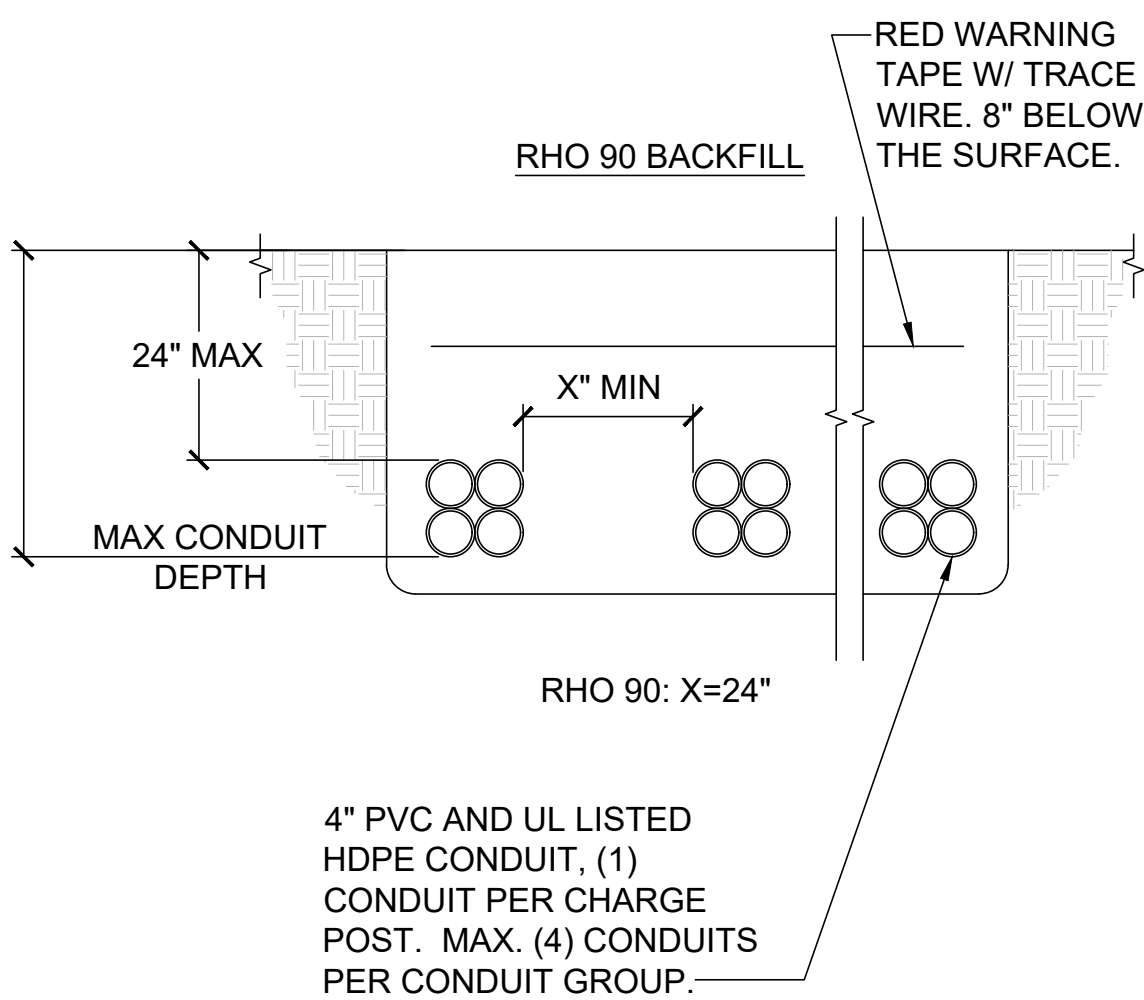
NO SCALE

A

CONCRETE ENCASED ELECTRODE DETAIL

NO SCALE

B



DC CIRCUIT TRENCH - RHO 90

NO SCALE

C

"DC-BUS" CIRCUITS TRENCH - MAX RHO 90

NO SCALE

D

AC CIRCUIT TRENCH - MAX RHO 90

NO SCALE

E

CONCRETE PAD GROUNDING DETAIL - RHO 90

NO SCALE

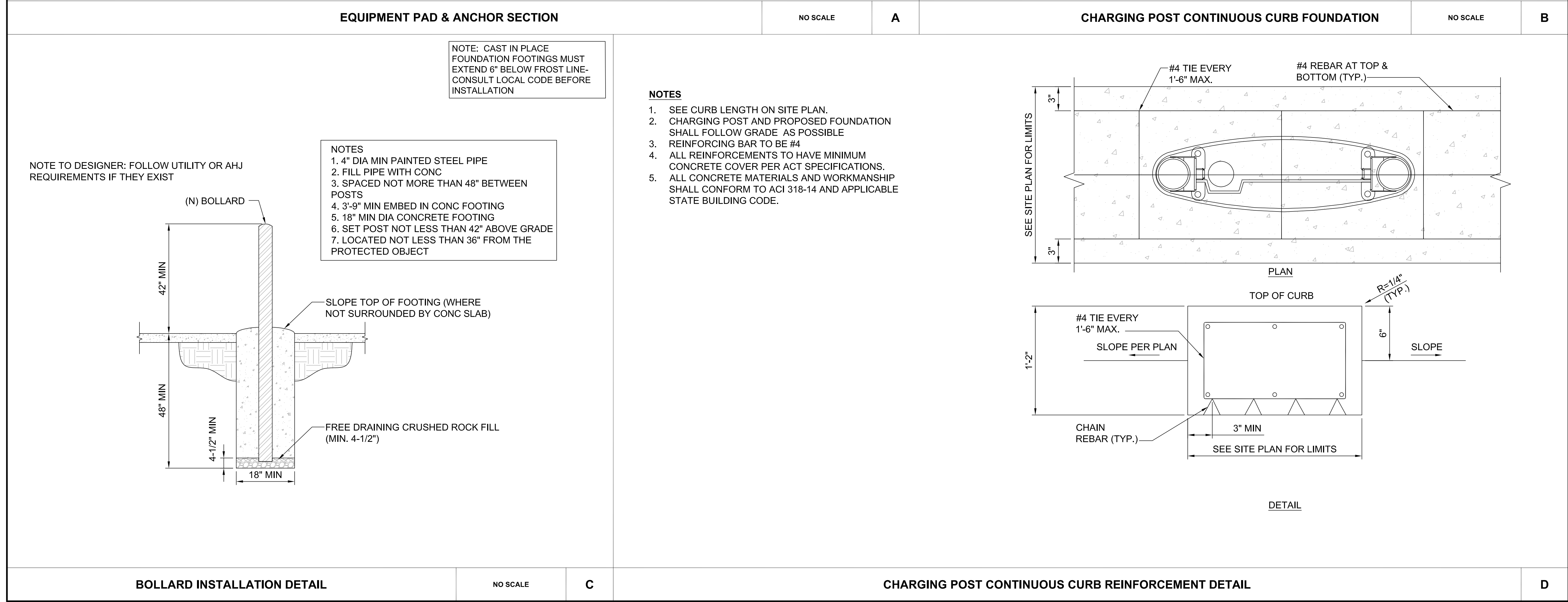
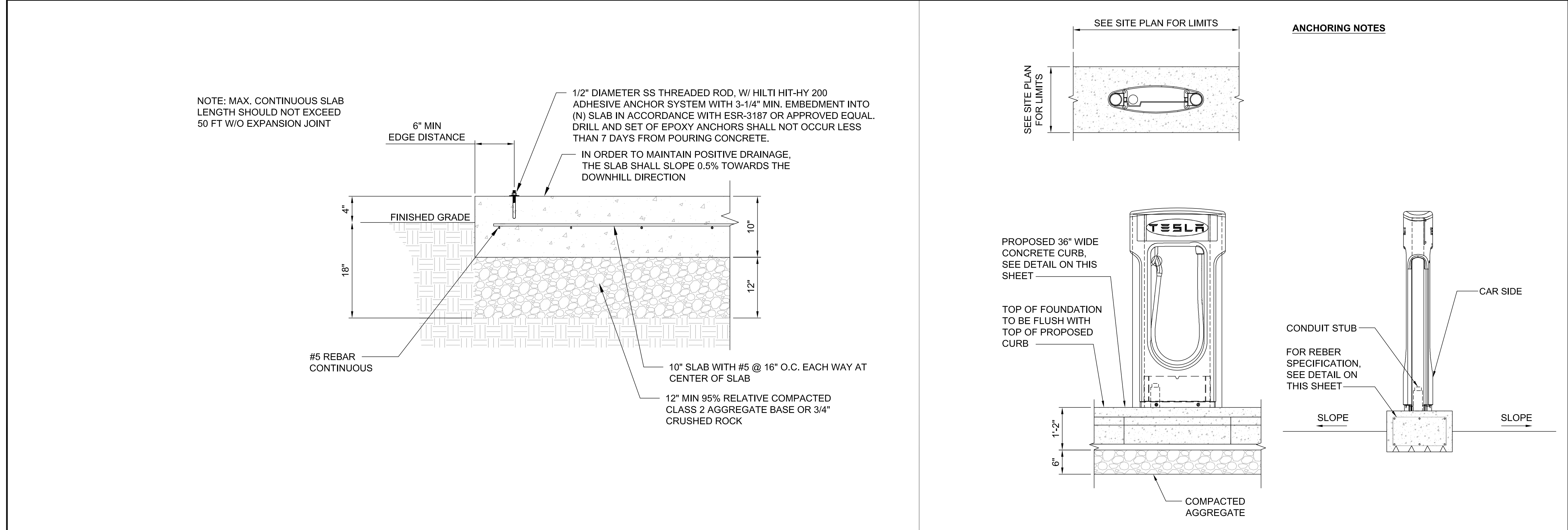
F

SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
**GROUNDING DETAILS**

SHEET NUMBER  
**G-1**





TESLA

3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000

LAB

49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY:	RC
CHECKED BY:	PL

B	06/11/2022	CD100
A	05/27/2022	CD50
REV	DATE	DESCRIPTION

PETER LICHOMSKI

REGISTERED

AR10700147

STATE OF INDIANA

ARCHITECT

SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE

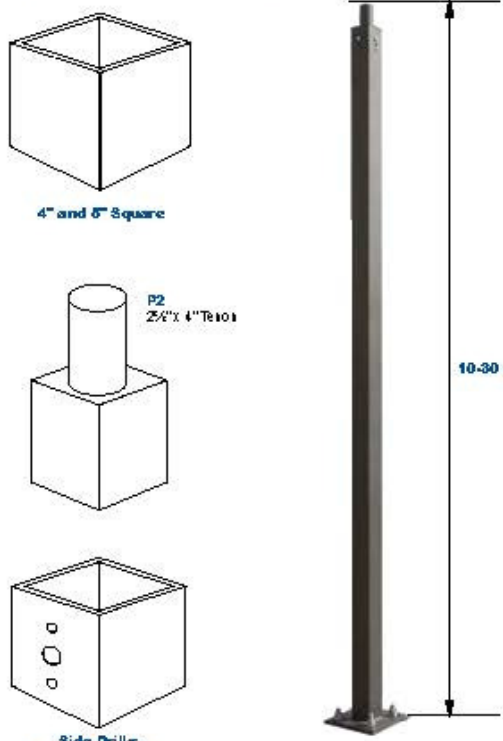
INSTALLATION DETAILS

SHEET NUMBER

D-1



BLPSSS  
Straight Square Steel Poles, 4", 5"



Order Information Example:					BLPSS33007ZJL.BC	
BLPSSS			Z			
Model	Height/Shaft/Gauge (Pick One)	Color	Pole Top Mounting	Drill Template	Options	
BLPSS33007ZJL Square Shaft Pole	4" Square 11 Gauge 26411-2U	4" Square 7 Gauge 26407-2S	6" Square 7 Gauge 30807-7U	2-Flt 2x3	D=2x(8x2) 20mm x 1 100" W Flg. (1) D=2x(8x2) 20mm x 1 100" W Flg. (1) D=2x(8x2) 20mm x 1 100" W Flg. (1)	D=2x(8x2) 20mm x 1 100" W Flg. (1) D=2x(8x2) 20mm x 1 100" W Flg. (1) D=2x(8x2) 20mm x 1 100" W Flg. (1)
					Leave Blank/No Option LAB=Left Axcle/B&C (2) LBC=Left Base Coat (2)	

Project Information:		Notes:	
Project Name:	Fixture Type:	1. Bole drilled pole includes pole, pole cap, 2. All poles include a minor 1/8" 3/16" connection hole for a 1/4" band on pole dimensions	
Complete Catalog #:	Date:	3. All poles include a square 2 pole or bronze base coat	
Comments:			

Specified subject to change without notice.      Rev. 02/16/18

PoleSeries

The LEPO BLPSSS Series Straight Square Steel poles are built from high strength steel tube and are available side drilled for arm mounted area lighting luminaires or with trunion mounts for flood and post top luminaires. Typical area lighting applications include retail centers, industrial parks, schools and universities, public transit and airports, office buildings and medical facilities. Mounting heights of 10 to 30 feet can be used based on selected luminaire application.

Specifications and Features:

**Pole Specifications:**  
Conforms to ASTM A500 Grade B Minimum Yield Strength of 48,000 PSI. Wall Thickness Available in 11 Gauge (120" or 7 Gauge (180").

**Finish:**  
Textured Architectural Bronze Powdercoat Finish, Baked to Ensure Maximum Paint Adhesion, Hardness and Durability.

**Anchor Bolts:**  
Anchor Bolts are Included, Sized Based on Pole Data Charts for the Selected Pole Size.

**Hand Hole:**  
Cast Iron Reinforced Hand Hole and Cover with Ground Screw.

**Base Cover:**  
Poles are Provided With a Two-Piece Formed Steel Base Cover that is Easily Assembled and Fixed Over Pole Base.

**Pole Length:**  
Poles are Available in Standard Lengths as Shown in the Order Matrix. Poles can be Custom Cut to Order. Consult Factory.

**Mounting Options:**  
Standard Length Poles Include 24" OD Tension, Side Drilled 4@90 Degrees, Polycarbonate Top Cover and Hole Plugs for Unused Drilling Locations.

Cut To Order Poles can be Side Drilled for 7@180 Degrees or 4@90 Degrees, Includes Polycarbonate Top Cover and Hole Plugs for Unused Drilling Locations.  
Cut To Order Poles May Also Be Ordered With 24" O.D. Tension for Use With Post Top Decorative Luminaires, Two-Drum Slip Fiber Fixtures, or Any of a Wide Variety of Pole Top Mounting Accessories.

Project Name: \_\_\_\_\_  
Application: \_\_\_\_\_  
Date: \_\_\_\_\_

MADE IN THE USA  
ENERGY STAR  
DLC  
UL  
IP65

SITE LIGHTER (SL1)

Linmore LED Labs Site Lighter (SL1) is a superior combination of performance, value, and form factor. The body of the Site Lighter is unique in that it is extruded aluminum and exceptional at moving thermal energy while the rest of the market uses castings or weldments. Beyond the thermal efficiency of the housing, the aesthetics are modern and attractive. Efficacy averages 165 lumens/watt across our models putting the Site Lighter in rare space and bringing ultra-low wattages to site lighting. A variety of optic packages direct the light where it is needed. Built to last, the Site Lighter incorporates Linmore's drivers for years of sustainable ownership. When the objective is to maximize value in your exterior lighting with power, energy savings, and aesthetics, the Linmore Site Lighter is the clear choice.



HIGHLIGHTS

Optics:

Type 2, Type 3 & Type 5  
Clear, Polycarbonate Lens

Efficacy:

Ultra-High Efficacy Up to 175 Lumens per Watt  
Industry Leading

Construction:

Extruded Aluminum Body  
Heavy Duty Powder Coating  
Modern Form Factor

Controls/Sensors:

Linmore LED Driver 0-10V Dimming  
Motion/Dimming Sensor  
Photo Cell

Mounting Options:

Slip Fitter  
(Knuckle Adapter)

Straight Arm

Trunnion (Yoke)  
Mount

Linmore LED Labs | 2360 S Orange Ave, Fresno CA 93725 | 559-485-6010 | www.linmoreled.com | info@linmoreled.com

SITE LIGHTER (SL1)

Specifications

Suitability	Wet Locations-IP65 Rated	Operating Temperature	-40F to +130F
Warranty	10 Years	Efficacy	(5000K) Up to 170 Lumens/Watt
Expected Life	L70- 150,000 Hours	Voltage	120-277V, 347-480V
System Wattages	75W, 100W, 125W, 150W & 300W	Certifications	UL 1598, Light Facts, FCC CFR 47 Part 15, ROHS, CUL Canada
Color Rendering Index	>70	Design Lights Consortium	Yes
Color Temperature	3500K, 4000K & 5000K		

Ordering Information

Model	Housing Size	Wattage	Kelvin	Optic	Volts	Housing Color	Mounting	Options
LLSL1	Small (SM)	75	3500K (35K)	Type 2 (T2)	120-277V (UNV)	Bronze (BRN)	Slip Fitter (SF)	Sensor (SN)
	Medium (MD)	100	4000K (40K)	Type 3 (T3)	200-480V (HV)	White (WHT)	Standard Arm (SA)	Photo Cell (PC)
	Large (LG)	125	5000K (50K)	Type 5 (T5)			Trunnion (TM)	
		150						
		300						

Example

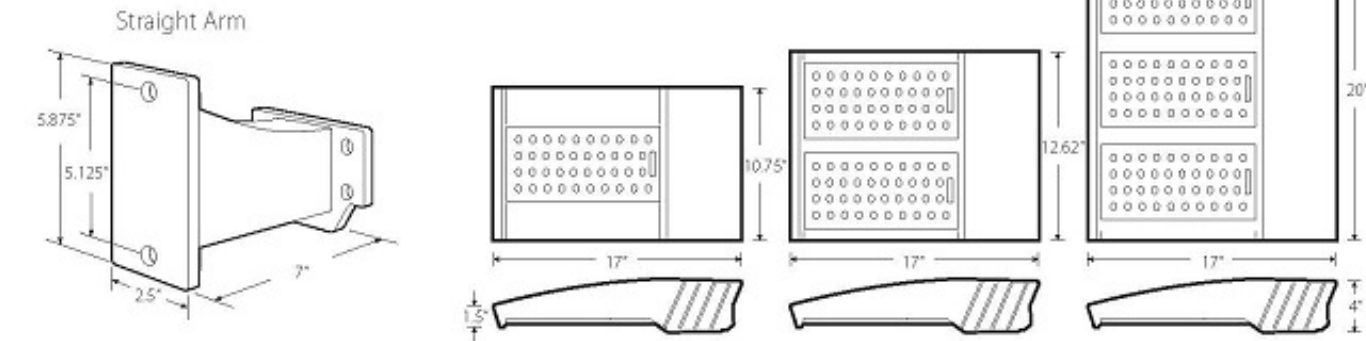
LL-SL1-SM-75W-50K-T2-UNV-BRN-SF-SN

Lumen Packages

	T2	T3	T5	Housing Type	Size (WxLxH)	Weight
75W	13104	13026	12558	Small	10.75 x 17 x 4 (taper to 1.5)	14
100W	16224	16062	16175	Small	10.75 x 17 x 4 (taper to 1.5)	14
125W	21710	21493	21645	Medium	12.62 x 17 x 4 (taper to 1.5)	16
150W	25272	25019	25196	Medium	12.62 x 17 x 4 (taper to 1.5)	16
300W	47424	46950	47282	Large	20 x 17 x 4 (taper to 1.5)	24

\*Lumens are based on 5000K

For EPA information go to: [www.linmoreled.com/support](http://www.linmoreled.com/support)



Specifications are Subject to Change

Linmore LED Labs | 2360 S Orange Ave, Fresno CA 93725 | 559-485-6010 | www.linmoreled.com | info@linmoreled.com

PEDESTRIAN LIGHT POLE MANUFACTURER  
DETAIL - FOR REFERENCE ONLY

NO SCALE

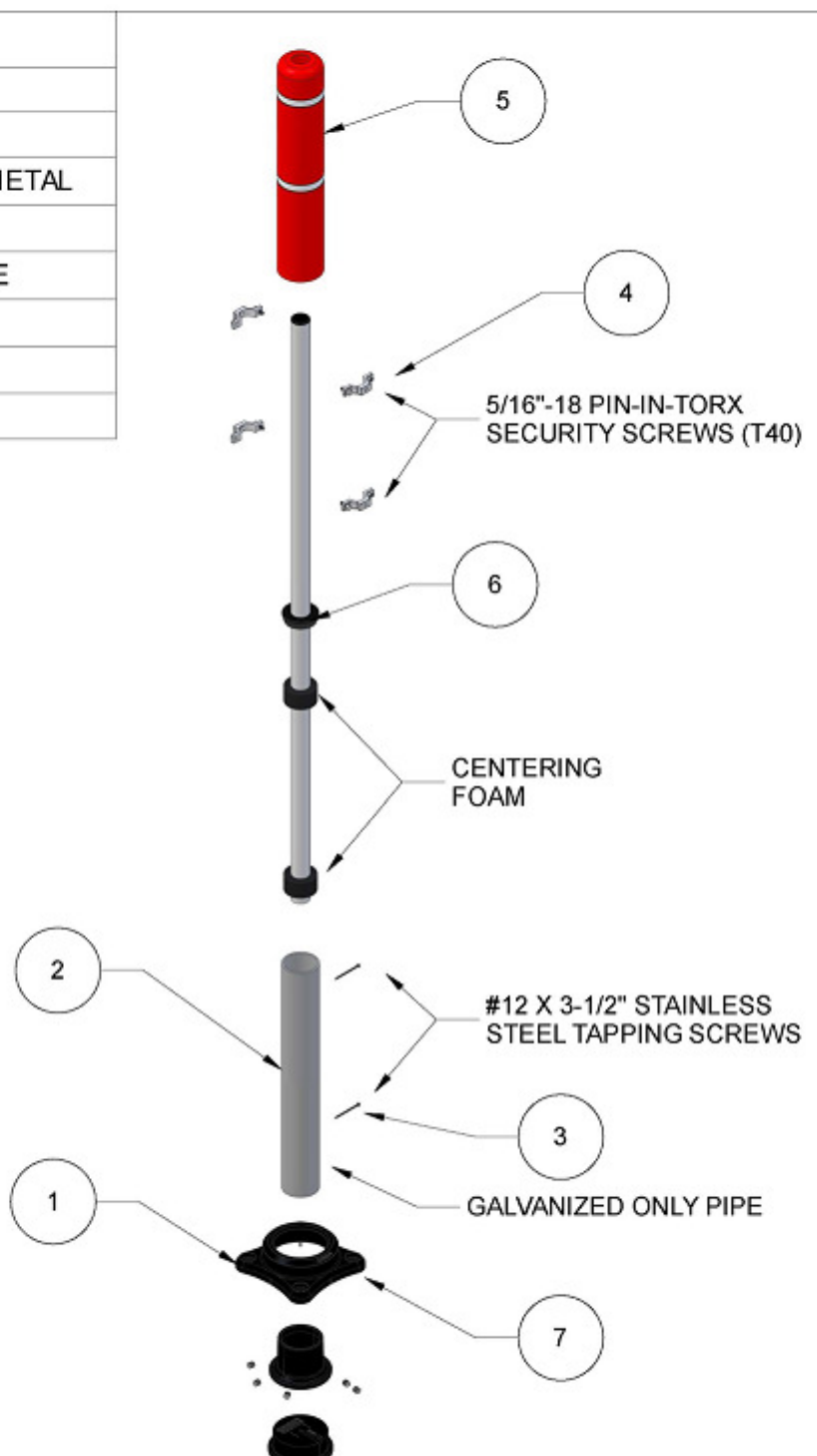
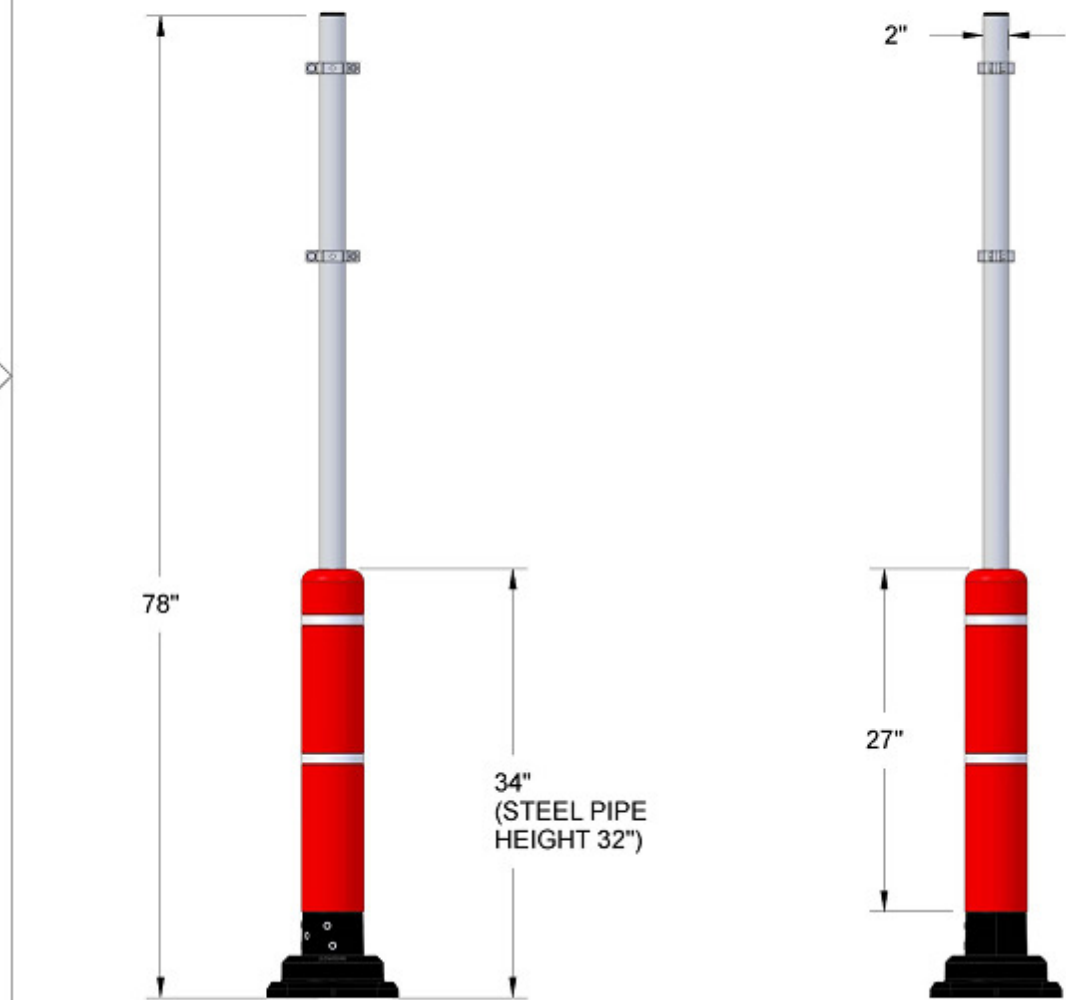
A

TYPICAL PEDESTRIAN LIGHT FIXTURE MANUFACTURER DETAIL - FOR REFERENCE ONLY

NO SCALE

B

Item	Qty	Source	Part Number	Part Name
1	2	SLOWSTOP	SS4-PEDESTAL	SLOWSTOP 4" PEDESTAL
2	2	SLOWSTOP	SS4Z-PIPE-29	ANSI 3.5" SCHEDULE 40 PIPE, GALVANIZED
3	2	SLOWSTOP	90822A310	90822A310_HEX HEAD DRILLING SCREWS FOR METAL
4	2	SLOWSTOP	91900A922	5/18"-18 SECURITY SCREW, STAINLESS STEEL
5	1	SLOWSTOP	SS4R-27-COVER-SP	BOLLARD COVER, RED, 27" WITH SIGNPOST HOLE
6	1	SLOWSTOP	SS4-SP-KIT	SLOWSTOP SIGNPOST KIT, 78"
7	4	SLOWSTOP	IM-SS-ANCHOR-SS	KWIK BOLT TZ SS304 WEDGE ANCHOR, 5/8" X 6"
8	1	CUSTOM		TESLA SIGN PLACARD



CONFIDENTIAL & PROPRIETARY The drawing on this print and the information therewith are property of SlowStop Guarding Systems, LLC, and shall not be used or discussed in whole or in part without the consent of SlowStop Guarding Systems, LLC. 4955 STOUT DR. - SAN ANTONIO, TX 78219 - (800) 736-5256				SIZE A	PART NO. SS4R-32-TESLA-SP-PC	DWG. CHARGING STATION SIGN POST	REV 0.93
SCALE				SLOWSTOP GUARDING SYSTEMS, LLC		DATE 27-APR-2021	

BOLLARD WITH SIGN INSTALLATION DETAIL

NO SCALE

C

TESLA DEDICATED NON-ILLUMINATED PARKING SIGN DETAIL

NO SCALE

D

TESLA



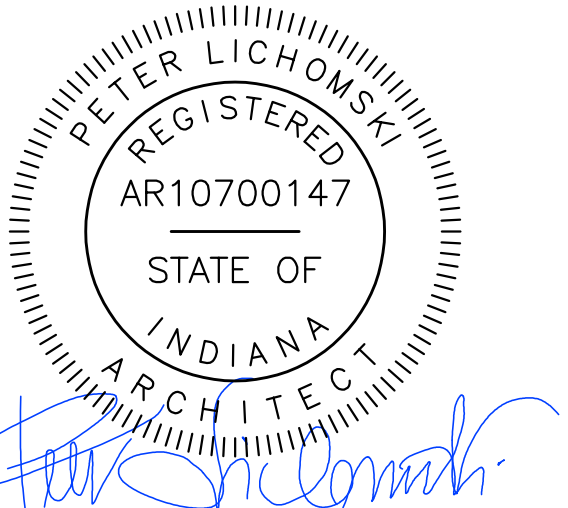
3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000

LAB

49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY: RC  
CHECKED BY: PL

B	06/11/2022	CD100
A	05/27/2022	CD50
REV	DATE	DESCRIPTION



SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
INSTALLATION DETAILS

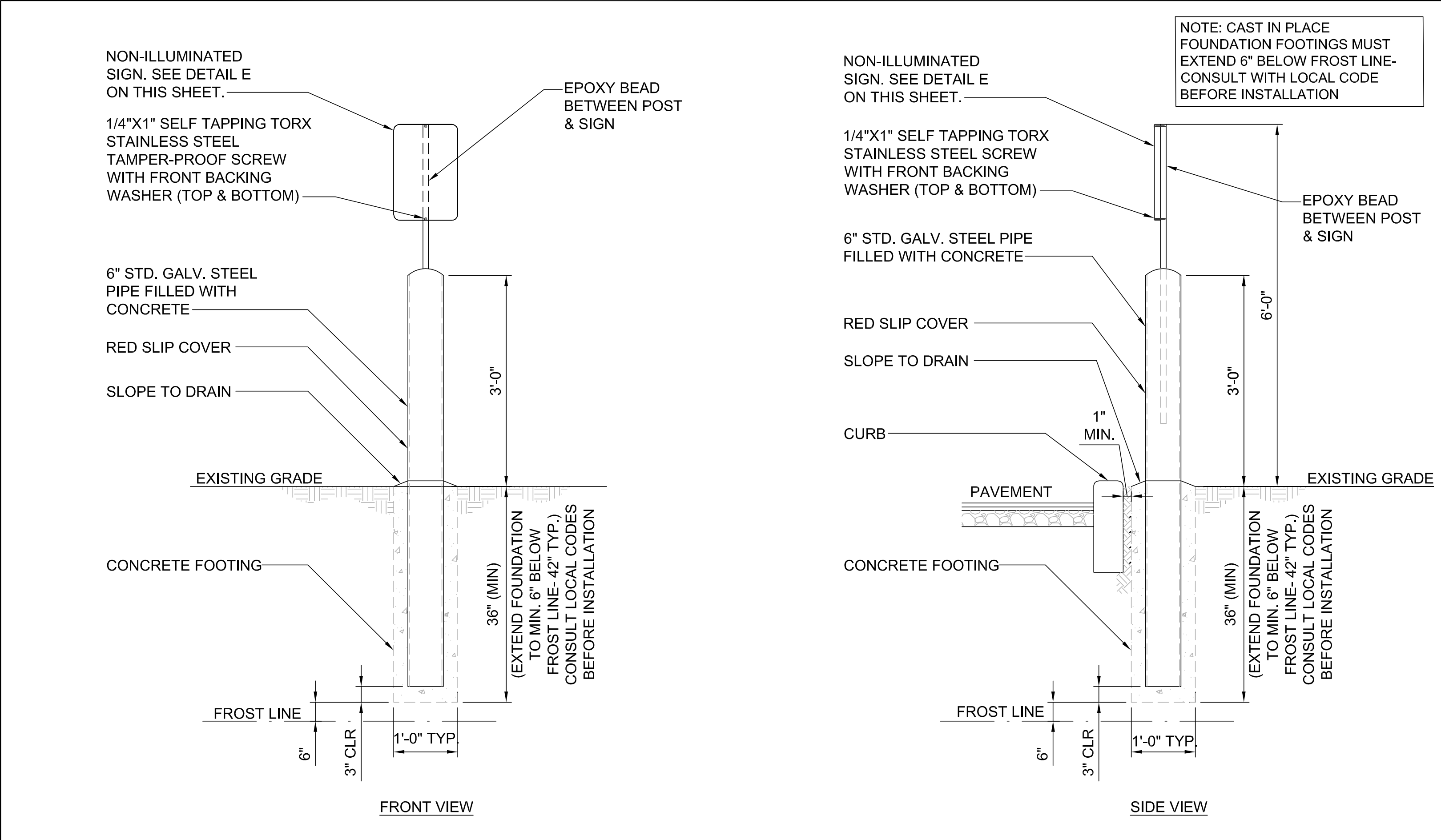
SHEET NUMBER

D-2





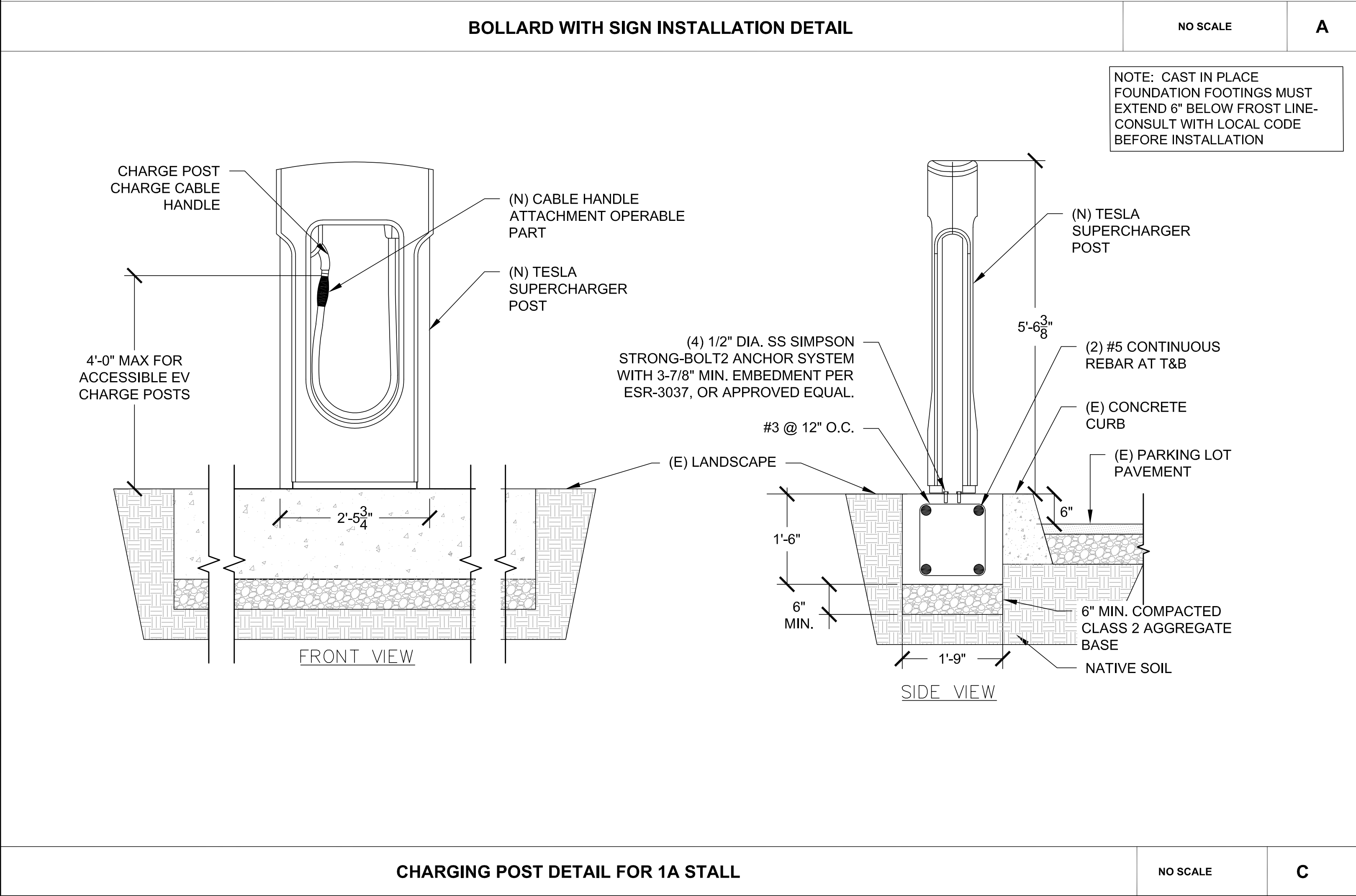




BOLLARD WITH SIGN INSTALLATION DETAIL

NO SCALE

A



CHARGING POST DETAIL FOR 1A STALL

NO SCALE

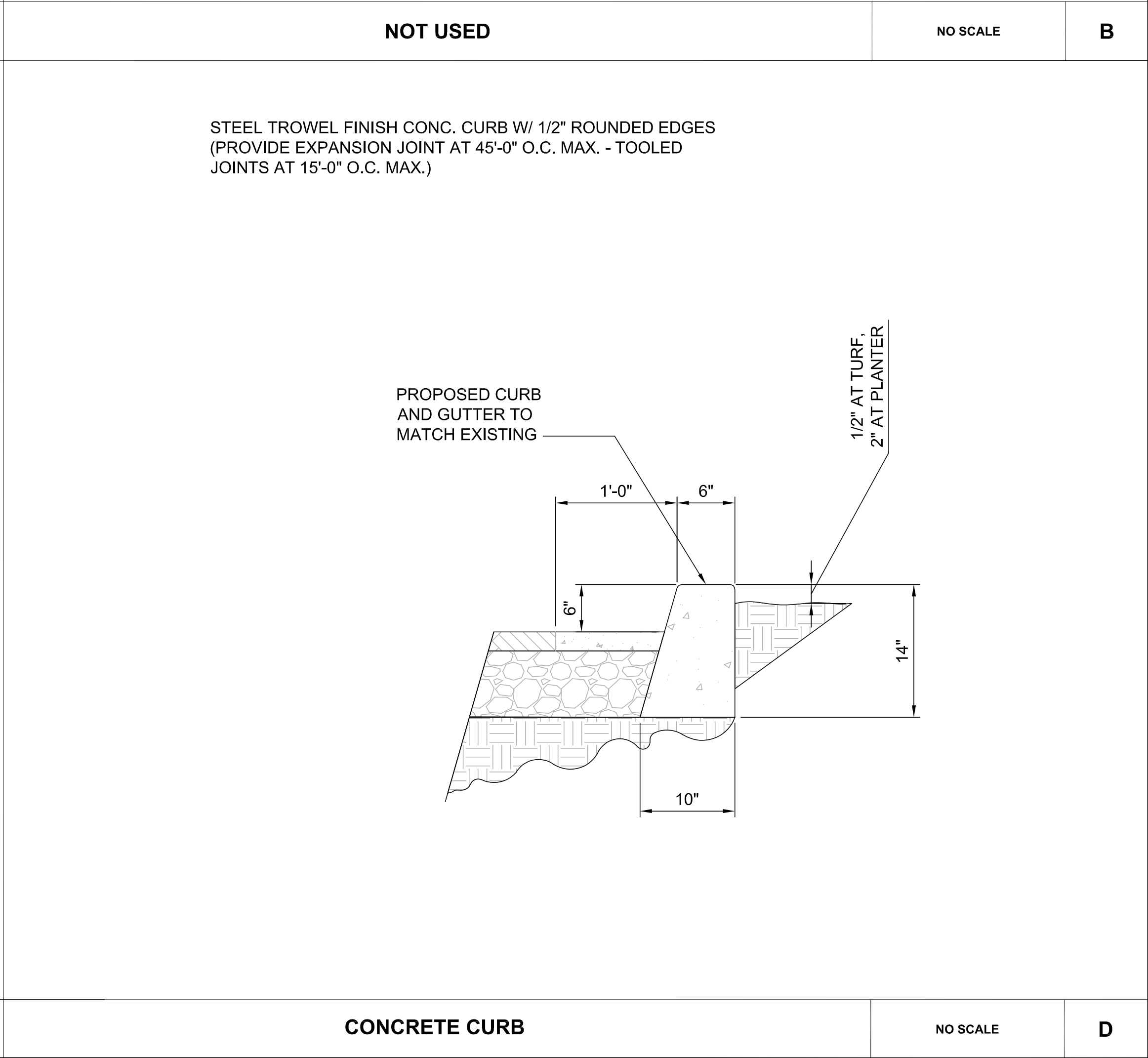
C



NOT USED

NO SCALE

B



CONCRETE CURB

NO SCALE

D



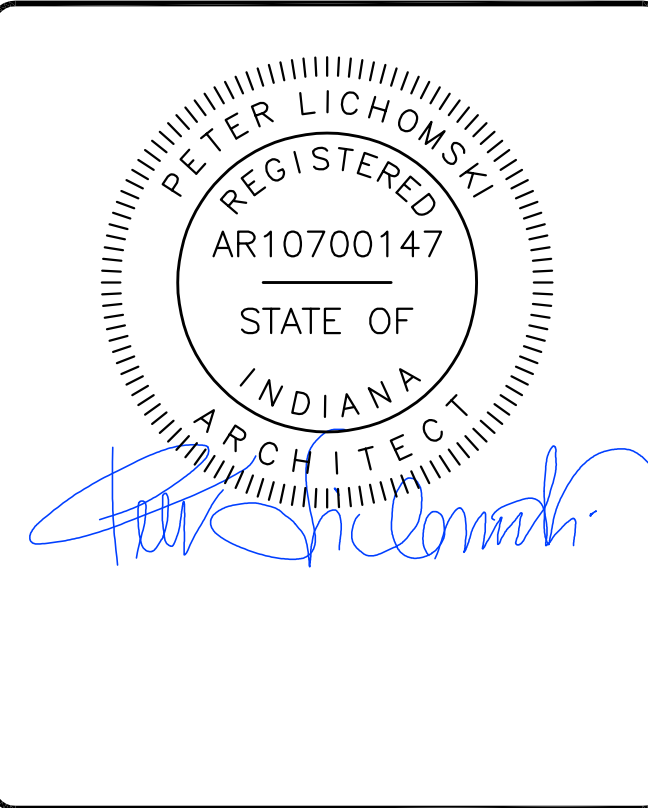
3500 DEER CREEK RD  
PALO ALTO, CA 94304  
(650) 681-5000



49030 Pontiac Trail, Ste 400  
Wixom, Michigan 48393  
PHONE: 248-705-9212

DRAWN BY:	RC
CHECKED BY:	PL

B	06/11/2022	CD100
A	05/27/2022	CD50
REV	DATE	DESCRIPTION



SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
INSTALLATION DETAILS

SHEET NUMBER  
D-4



Concrete Mount Kit

ChargePoint offers an optional CT4000 Concrete Mount Kit for purchase. The kit contains all parts needed to install the CT4000 pedestal mount into new or existing concrete.

Kit Contents	
1	9 galvanized washers
2	3 hot-dipped galvanized threaded bolts
3	1 plastic bolt installation template
4	12 hex nuts
5	CT4000 installation template with CMK footprint

**Note:** The Concrete Mount Kit contains 12 hex nuts and 9 galvanized washers. You need only 6 of each for installation on existing concrete pad.

Installation Instructions

1.

Install two nuts, with two washers captured between them. Lock them together so the lower end of the upper nut is located 150 to 160 mm (6 to 6 1/4 in) from the bottom of the bolt. This sets the length of the exposed threads.
2.

Place the plastic bolt installation template to mark the hole locations.
3.

Remove the template and drill three 25 mm (1 in) diameter holes 150 mm (6 in) deep into the concrete.
  - When locating the template, consider the charging station's total footprint.
  - It is important that the bolts are parallel after installation. Ensure the drill holes are plumb by using a level to check the angle of the drill after drilling 25 to 38 mm (1 to 1 1/2 in).
  - If installing over existing buried conduit, position the center of the template around the conduit stub-up.
  - You may need two drill bits: one for the concrete (with the pilot) and another for the rebar (without the pilot). Always start the hole using the standard drill bit, then switch to the rebar drill bit only if drilling through rebar.
4.

Remove all dust from inside the drilled holes using compressed air, a vacuum, and/or a brush.

5.

If the concrete slab is only 150 mm (6 in) deep, insert a plug (such as McMaster product #9753K56) in each hole to keep the epoxy in place until it hardens. Place the plug over the long end of a bolt and then use the bolt to push the plug to the bottom of the hole.
6.

Fill each hole with epoxy to about 65 to 75 mm (2 1/2 to 3 in) below the top. Continue immediately to the next step because the epoxy sets quickly.

**Note:** Inserting the threaded bolts displaces the epoxy, causing it to fill the holes to the grade level. If the epoxy is below grade level after the next step, add more epoxy.

7.

Place the plastic concrete bolt installation template over the holes. This ensures the relative position of the bolts and that the flange of the pole fits over the bolts.
8.

Insert the bolts through the template, into the holes.

**Important:** Rotate the bolts as you insert them. This allows the epoxy to fully coat the threads of the bolts, reducing the amount of trapped air.

**Note:** The installation template can be left in place.

9.

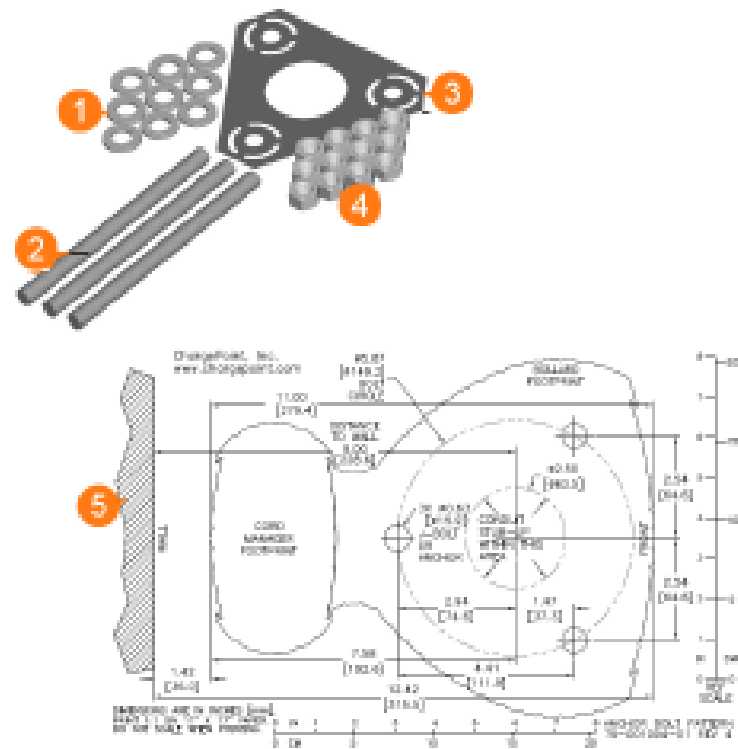
If needed, top the holes with epoxy to grade level.
10.

Use a bubble level to ensure the bolts are plumb.
11.

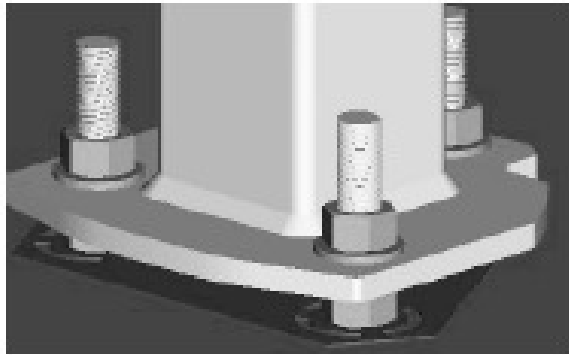
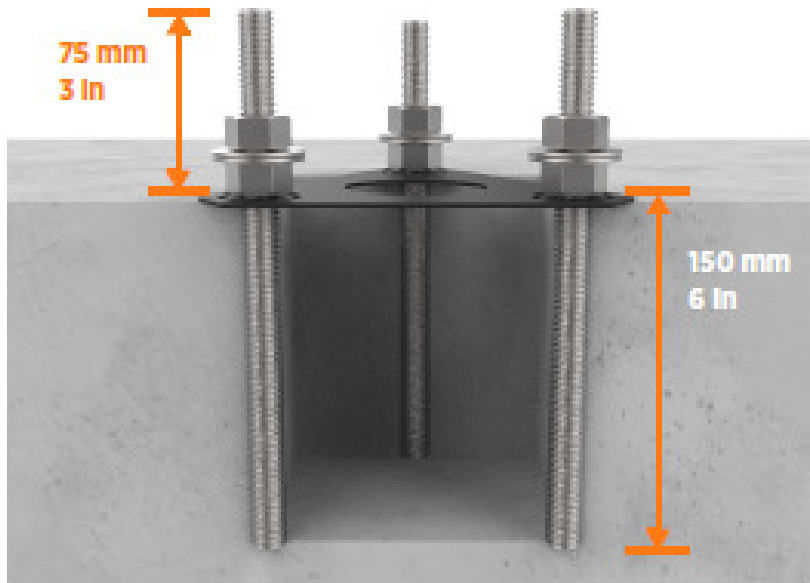
Allow the epoxy to cure (depending on cure times recommended by the epoxy manufacturer) before removing the top nuts and washers.
12.

Allow the epoxy to fully cure (depending on cure times recommended by the epoxy manufacturer) before applying torque to the nuts.

You are now ready to install the CT4000 pedestal mount charging station.

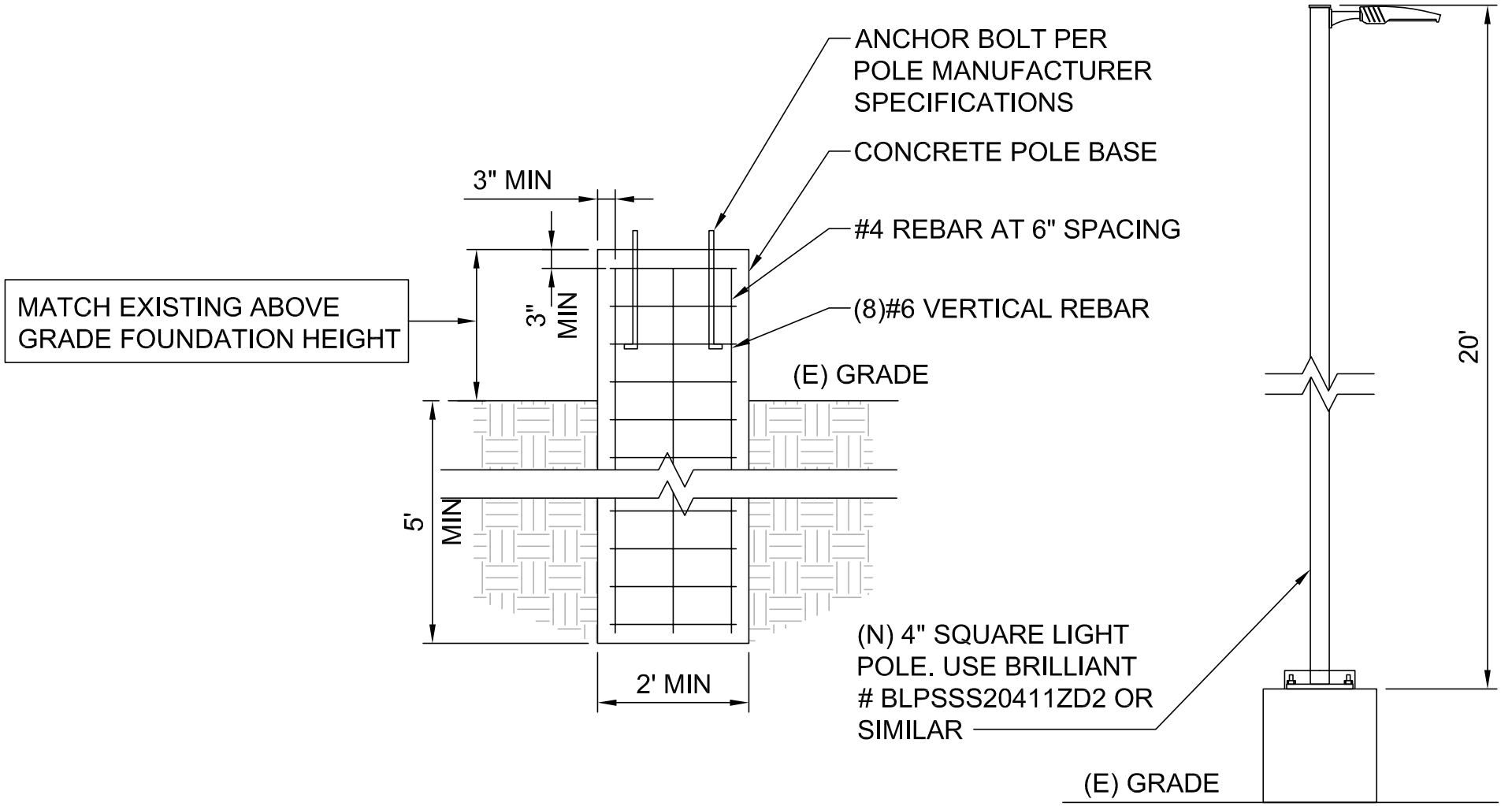


150-160 mm  
6-6 1/4 in



NOTE: CAST IN PLACE FOUNDATION FOOTINGS MUST EXTEND 6" BELOW FROST LINE- CONSULT WITH LOCAL CODE BEFORE INSTALLATION

NOTE: FOUNDATION REVEAL ABOVE GRADE TO MATCH EXISTING BUT NOT TO EXCEED 3'.



LIGHTPOST FOUNDATION DETAIL

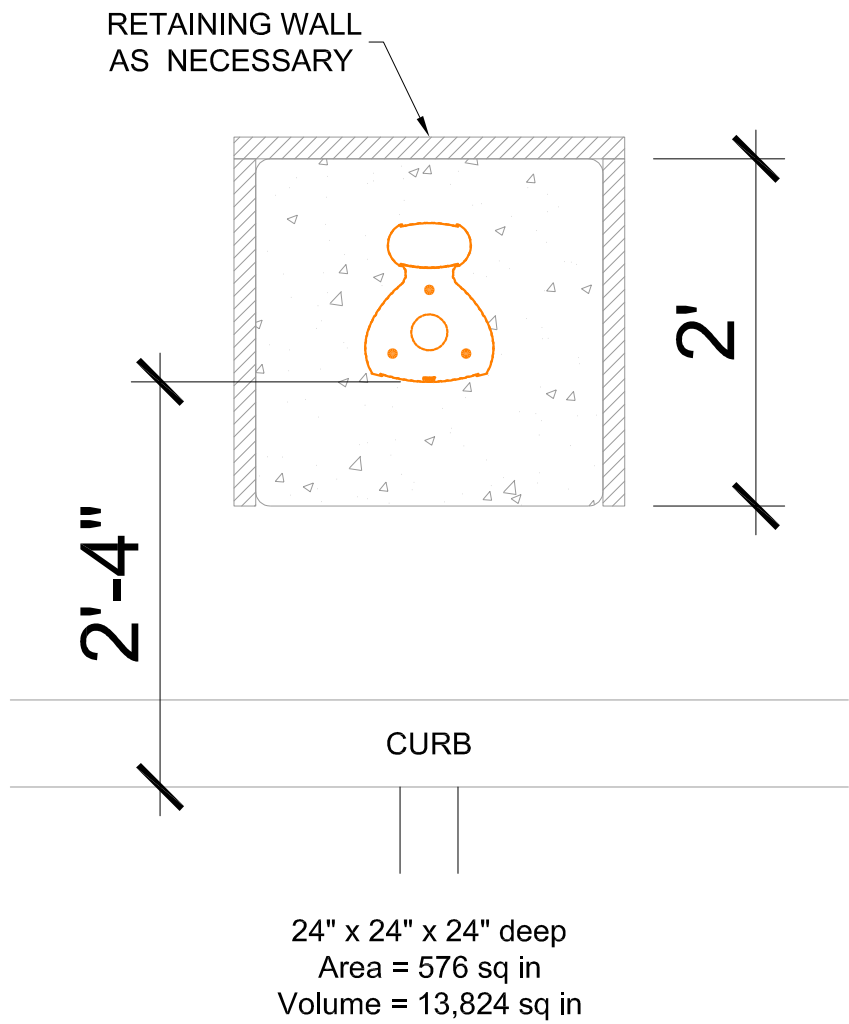
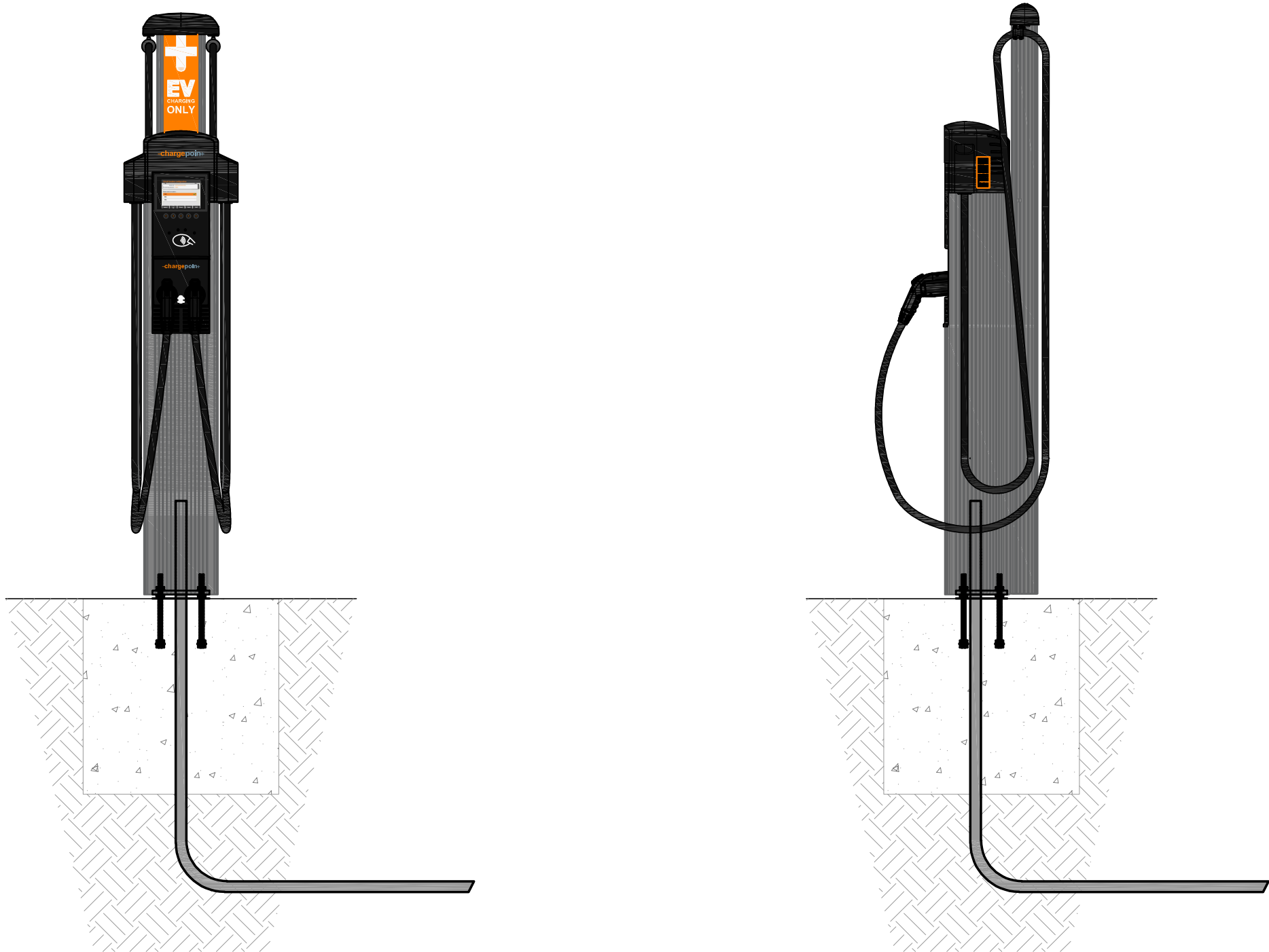
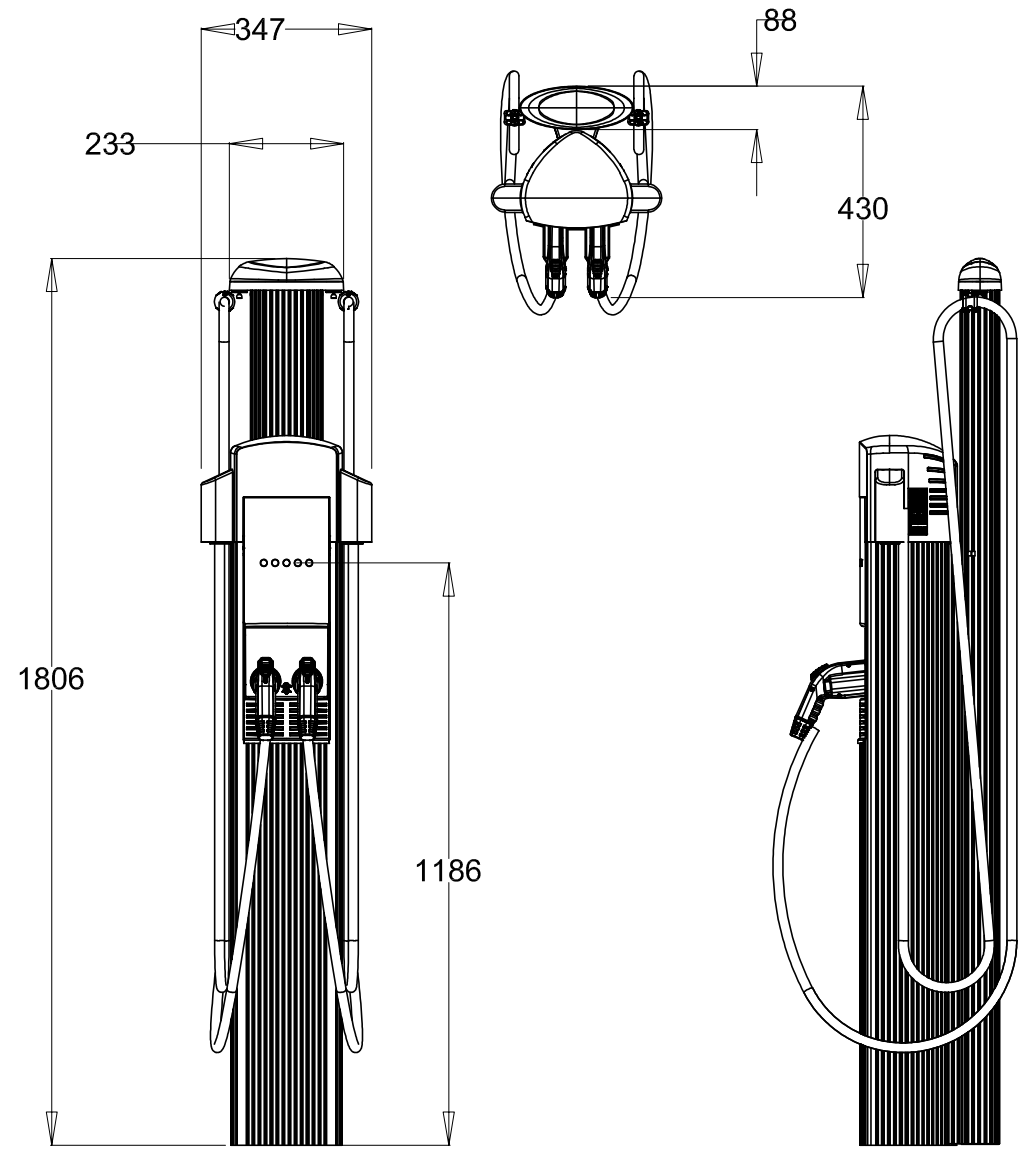
NO SCALE

A

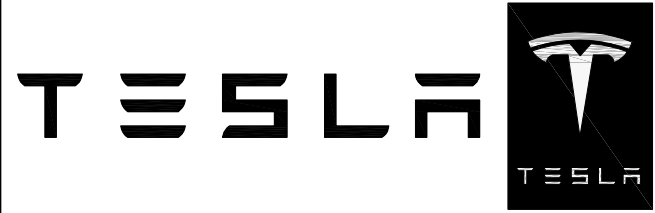
CHARGEPOINT LEVEL 2 CT4021 DUAL PORT CHARGERS DETAIL

NO SCALE

B



IN PLANTER OR BERM  
BETWEEN SPACES



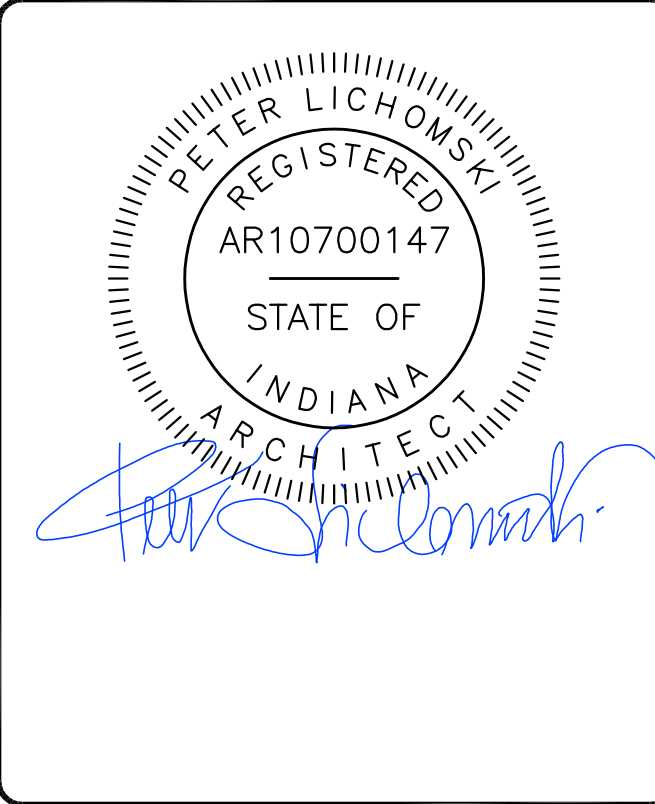
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SITE NAME: MUNSTER, IN  
8005 CALUMET AVE  
MUNSTER, IN 46321

SHEET TITLE  
INSTALLATION DETAILS

SHEET NUMBER

D-5

CHARGEPOINT FOUNDATION INSTALLATION SPECS

NO SCALE

C

TYPICAL CHARGEPOINT FOUNDATION DETAIL

NO SCALE

D