

# **ELECTRIC VEHICLE FLEET PROGRAM MADERA UNIFIED SCHOOL DISTRICT TRANSPORTATION YARD**



**LOCATION MAP**  
NOT TO SCALE



GENERAL CONTRACT NOTES:

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS SUCH AS TOOLS, EQUIPMENT, LABOR, AND INCIDENTALS REQUIRED INCLUDING THE CONSTRUCTION OF ALL PROPOSED IMPROVEMENTS SHOWN ON THE PLANS AND AS SPECIFIED BY THE GOVERNING STANDARDS AND/OR THE CIVIL AND ELECTRICAL ENGINEERS.
2. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
3. IF DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE IN KIND ALL EXISTING STRUCTURES, WALKWAYS, CURB & GUTTER, CLOSING, AND/OR OTHER IMPROVEMENTS TO AN EXISTING OR BETTER CONDITION.
4. CONTRACTOR SHALL REPLACE ALL EXISTING STRIPING, SIGNAGE AND MARKINGS DAMAGED DUE TO PROJECT CONSTRUCTION ACTIVITIES.
5. ALL WORK SHALL BE CONFINED WITHIN THE EASEMENTS AND/OR CONSTRUCTION LIMITS AS SHOWN ON THE PLANS.
6. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT OR NOTICE TO PROCEED HAS BEEN ISSUED.
7. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL NOTIFY ALL UTILITY AUTHORITIES OR UTILITY COMPANIES HAVING POSSIBLE INTEREST IN THE WORK OF THE CONTRACTOR'S INTENTION TO EXCAVATE PROXIMATE TO EXISTING FACILITIES AND THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UTILITIES IN THE WORK AREA. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) TWO (2) DAYS PRIOR TO BEGINNING ANY EXCAVATION.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM ANY PROPERTY OWNER GIVING HIM PERMISSION TO ENTER HIS PROPERTY FOR THE PURPOSE OF CONSTRUCTING THE IMPROVEMENTS DELINEATED ON THE PLANS AND TRANSITION THERETO.
9. ALL BILL OF MATERIALS AND/OR EQUIPMENT SHALL BE PROVIDED AS SPECIFIED WITHIN THIS SET OR APPROVED EQUAL. ALL BILL OF MATERIALS AND/OR EQUIPMENT SHALL MATCH THE SAME QUALITY AND CAPACITY AS INDICATED HEREIN.
10. CONTRACTOR SHALL FIELD VERIFY ALL GRADES AND SLOPES PRIOR TO THE PLACEMENT OF CONCRETE AND/OR PAVEMENT FOR CONFORMANCE WITH ADA ACCESS COMPLIANCE REQUIREMENTS. EXAMPLES OF MINIMUM AND MAXIMUM LIMITS RELATED TO ADA ACCESS COMPLIANCE INCLUDE, BUT ARE NOT LIMITED TO:
  - A) ACCESSIBLE PATH OF TRAVEL CROSS-SLOPE SHALL NOT EXCEED 2%
  - B) ACCESSIBLE PATH OF TRAVEL LONGITUDINAL SLOPES SHALL NOT EXCEED 5%
  - C) RAMP LONGITUDINAL SLOPES SHALL NOT EXCEED 8.33%
  - D) WALKS SHALL NOT HAVE LESS THAN 48 INCHES IN UNOBSTRUCTED WIDTH
  - E) ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION
  - F) LANDINGS AT THE TOP AND BOTTOM OF ACCESSIBLE RAMPS SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION
  - G) GUTTERS AND ROAD SURFACES DIRECTLY ADJACENT TO AND WITHIN 2 FEET OF A CURB RAMP SHALL HAVE A COUNTER SLOPE NOT TO EXCEED 5%
11. CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IDENTIFIED BY THE PROFESSIONAL ENGINEERING SEAL AND SIGNATURE ON THESE PLANS, OF ANY SITE CONDITION(S) AND/OR DESIGN INFORMATION THAT PREVENTS THE CONTRACTOR FROM COMPLYING WITH THE LAWS, REGULATIONS AND/OR BUILDING CODES GOVERNING ADA ACCESS COMPLIANCE.

UTILITY NOTE:

UTILITY INFORMATION SHOWN HEREON IS BASED ON RECORD INFORMATION SUPPLIED TO THE ENGINEER BY UTILITY COMPANIES, PUBLIC AGENCIES AND THE PROJECT OWNER. TOGETHER WITH OBSERVATION OF VISIBLE EVIDENCE, THE ENGINEER CAN MAKE NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF THE UNDERGROUND UTILITY FACILITIES SHOWN. PRIOR TO ANY SITE EXCAVATIONS, THE CONTRACTOR SHALL CONTACT THE OWNER AND UNDERGROUND SERVICE ALERT (U.S.A.) AND REQUEST THAT THEY IDENTIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AT THE SITE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PROJECT LOCATION:

PROJECT IS LOCATED AT  
1200 GILL AVE.  
MADERA, CA 93636  
APN: 012-402-003

DESIGN CRITERIA:

CALIFORNIA BUILDING CODE (CBC) 2019  
CALIFORNIA ELECTRICAL CODE (CEC) 2019  
NATIONAL ELECTRICAL CODE (NEC) 2017

FLOOD ZONE NOTES:

1. PROJECT SITE LOCATED WITHIN FLOOD HAZARD ZONE "X," AREA OF MINIMAL FLOOD HAZARD.
2. FIRM PANEL: 06039C1155E
3. MAP EFFECTIVE DATE: 09/26/2008
4. MAP IS COUNTYWIDE, PANEL PRINTED

SCOPE OF EV IMPROVEMENT WORK:

1. SITE AND ELECTRICAL INFRASTRUCTURE IMPROVEMENTS AND INSTALLATION OF EV CHARGERS
2. IMPACTED EXISTING PARKING = 10 TOTAL SPACES; 10 FLEET SPACES
3. WORK DONE BY PG&E IS LABELED TTM (TO THE METER) AND IS SHOWN FOR REFERENCE ONLY.

PROPOSED EV CHARGER TABULATION		
EV CHARGER	NO. OF EVSE(S)	NO. OF PORT(S)
SINGLE	10	10
TOTAL	TOTAL EVSE(S) = 10	TOTAL PORT(S) = 10

CBC 11B-228.3.2 EXCEPTION #1: EVCS NOT AVAILABLE TO THE GENERAL PUBLIC AND INTENDED FOR USE BY A DESIGNATED VEHICLE OR DRIVER SHALL NOT BE REQUIRED TO COMPLY WITH SECTION 11B-228.3.2

LIST OF CONSULTANTS:

CIVIL:	ELECTRICAL:
CASSIE SMITH	BRIAN DUFFY
BLAIR CHURCH & FLYNN	BLAIR CHURCH & FLYNN
451 CLOVIS AVE. STE 200	451 CLOVIS AVE. STE 200
CLOVIS, CA 93612	CLOVIS, CA 93612
(559) 326-1400	(559) 326-1400

OWNER/REPRESENTATIVE  
INFORMATION:

MADERA UNIFIED SCHOOL DISTRICT  
1200 GILL AVE.  
MADERA, CA 93636  
TELEPHONE: (559) 675-4500  
CONTACT: SANDON M SCHWARTZ

SHEET INDEX	
SHEET NO.	TITLE
T1.0	TITLE SHEET
C1.0	OVERALL SITE PLAN
C2.0	DEMOLITION PLAN
C3.0	SITE PLAN
C4.0	DETAILS
E1.0	ELECTRICAL CONDUIT PLAN
E2.0	CONDUIT SECTIONS AND DETAILS
E2.1	CONDUIT SECTIONS AND DETAILS
E3.0	ELECTRICAL SCHEDULE AND CIRCUITS
R1.0	REFERENCE DRAWINGS
R2.0	TITLE 24 DOCUMENTS
TOTAL NUMBER OF SHEETS = 11	



PROJECT LOCATION: 1200 GILL AVE. MADERA, CA 93636



Date Signed \_\_\_\_\_

**CONSULTANT**  
**Blair, Church & Flynn**  
**Consulting Engineers**  
**451 Clovis Avenue,**  
**Suite 200**  
**Clovis, California 93611**  
**Tel (559) 326-1400**  
**Fax (559) 326-1500**

REF. &amp; REV.

MADERA UNIFIED SCHOOL DISTRICT

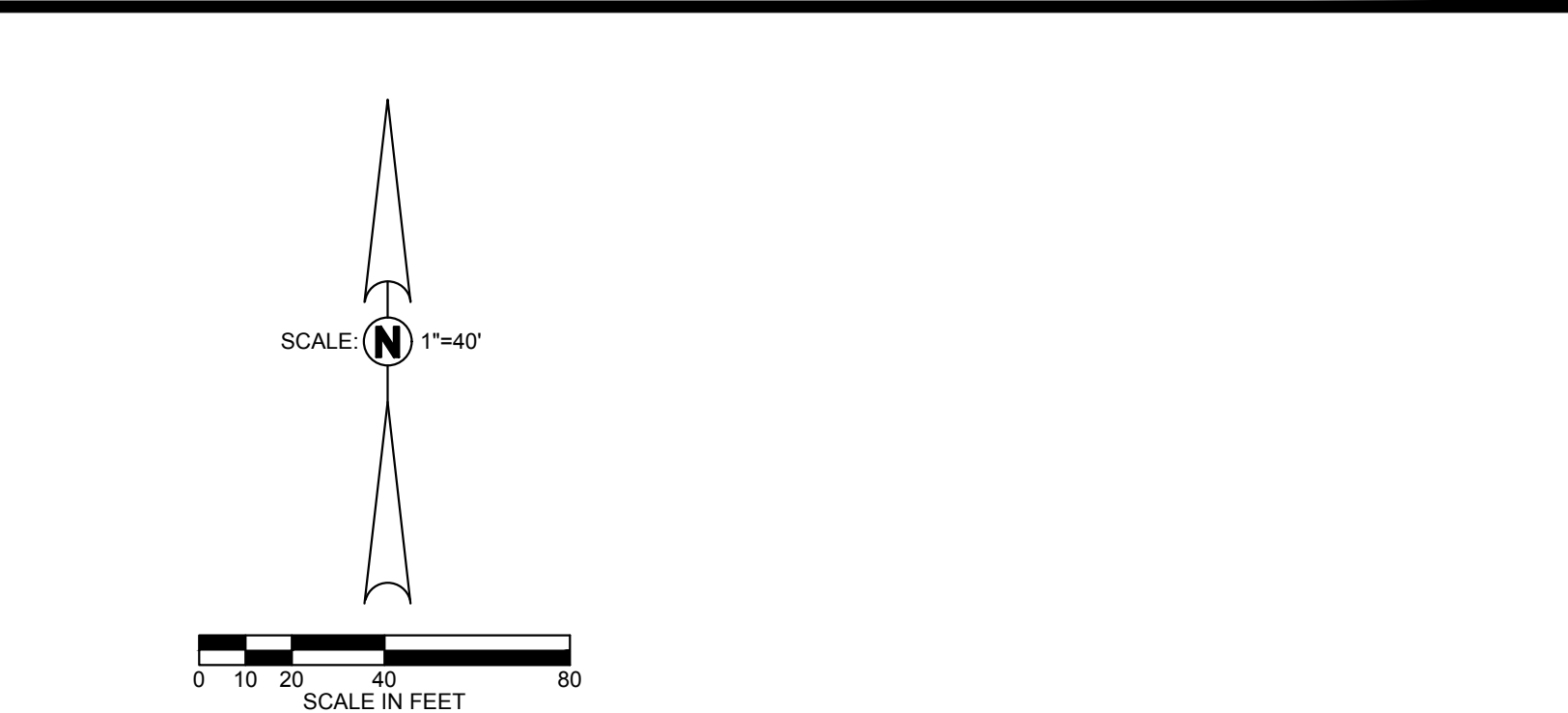
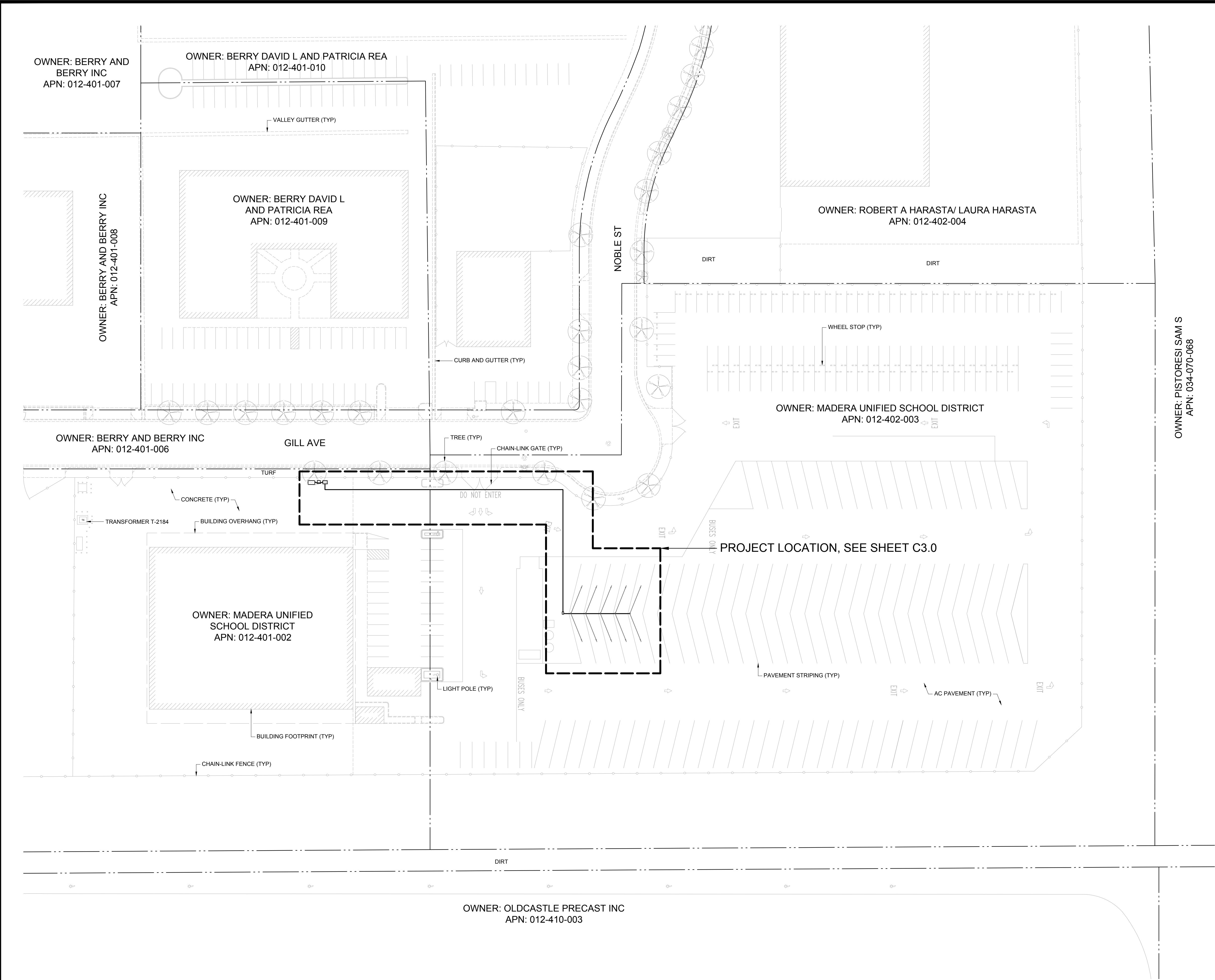
# ELECTRIC VEHICLE FLEET PROGRAM TRANSPORTATION YARD TITLE SHEET

T1.0

DR. BY: <u>BC</u>	SHEET NO. <u>1</u> OF <u>11</u> SHEETS
CH. BY: <u>RF</u>	
DATE: <u>04-06-2020</u>	
SCALE AS NOTED	



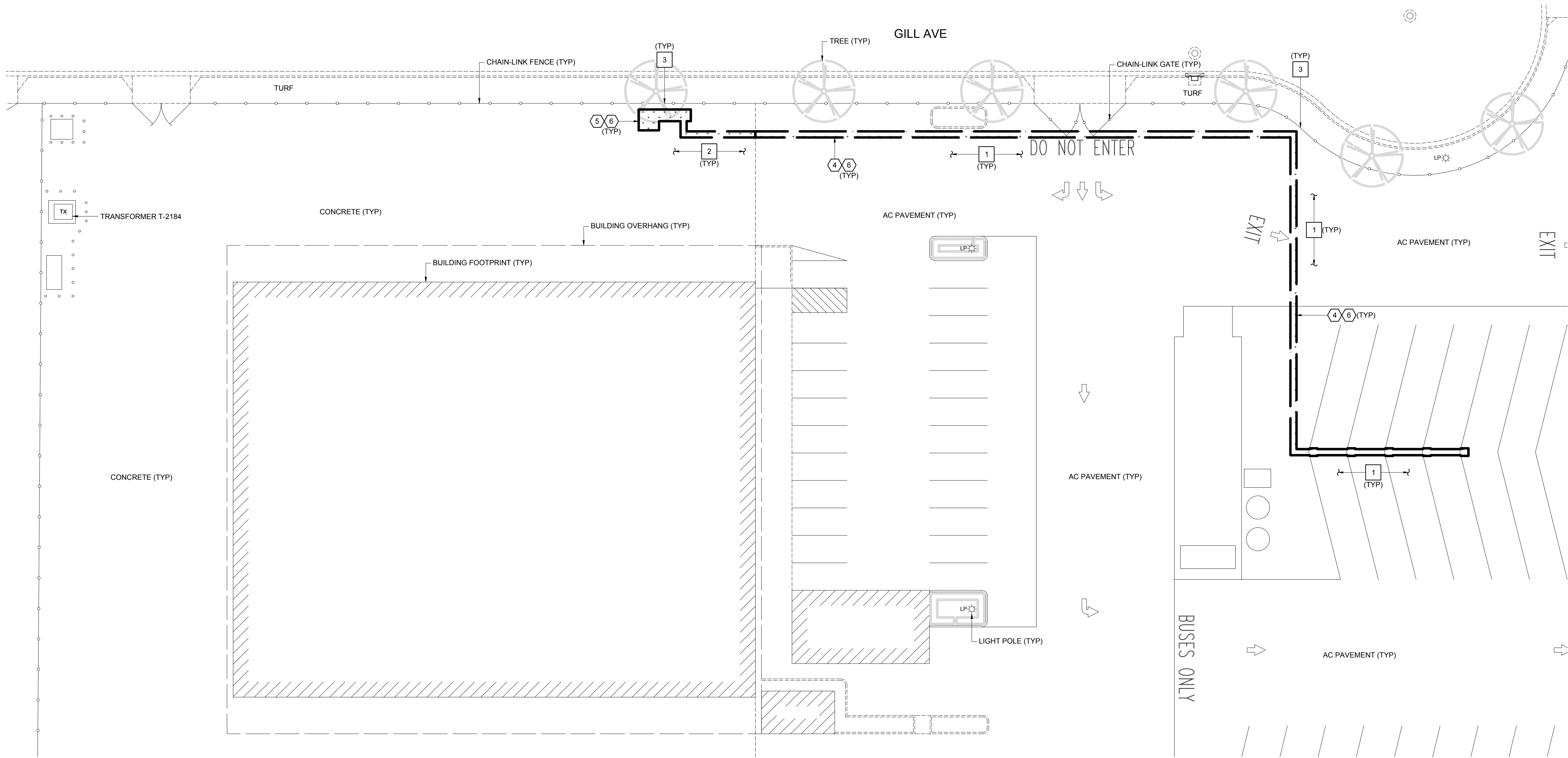
Drawing: P:\219-030308\Madera Unified School District - FLEET\000823710\Products\Drawings\FLEET\000823710\_MUSD\_001.dwg 2 Overall Site Plan - 8/27/20  
Rev'd by: 1/2/2020  
Rev'd by: 1/2/2020



**SYMBOL LEGEND:**  
--- EXISTING PROPERTY LINE  
--- AREA OF WORK

PRELIMINARY QC\_01

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636					PG&E FLEET NO: 000823710				
<div><div><div>Blair, Church &amp; Flynn</div><div>CONSULTING ENGINEERS</div></div><div><div><div>REGISTERED PROFESSIONAL ELECTRICAL ENGINEER PLAN REVIEW ONLY NOT FOR CONSTRUCTION 2020 STATE OF CALIFORNIA</div><div>Date Signed: _____</div></div></div></div> <td colspan="2">CONSULTANT  Blair, Church &amp; Flynn Consulting Engineers 4851 Clovis Avenue, Suite 200 Clovis, California 93612 Tel (559) 325-1400 Fax (559) 325-1500</td> <td colspan="2">REF. &amp; REV.</td> <td colspan="5">MADERA UNIFIED SCHOOL DISTRICT</td>	CONSULTANT  Blair, Church & Flynn Consulting Engineers 4851 Clovis Avenue, Suite 200 Clovis, California 93612 Tel (559) 325-1400 Fax (559) 325-1500		REF. & REV.		MADERA UNIFIED SCHOOL DISTRICT				
					ELECTRIC VEHICLE FLEET PROGRAM			C1.0	
					TRANSPORTATION YARD			DR. BY: _____ BC _____ RF _____ DATE: 04-06-2020 SCALE AS NOTED	
					OVERALL SITE PLAN			SHEET NO. 2 OF 11 SHEETS	



**DEMOLITION LEGEND:**

- |   |  |
|---|--|
| 1 | PROTECT EXISTING ASPHALT CONCRETE PAVEMENT TO REMAIN               |
| 2 | PROTECT EXISTING CONCRETE TO REMAIN                                |
| 3 | PROTECT EXISTING CHAIN LINK FENCE TO REMAIN                        |
| 4 | REMOVE AND LAWFULLY DISPOSE OF ASPHALT CONCRETE PAVEMENT: 682 S.F. |
| 5 | REMOVE AND LAWFULLY DISPOSE OF CONCRETE: 142 S.F.                  |
| 6 | SAWCUT   |
- REMOVE EXISTING IMPROVEMENTS AS NECESSARY TO CONSTRUCT NEW IMPROVEMENTS SHOWN ON THESE PLANS UNLESS OTHERWISE NOTED ON THE PLAN. THE REMOVAL OF IMPROVEMENTS MUST BE COORDINATED WITH ALL PLAN SHEETS. CONTRACTOR MUST ALSO COORDINATE REMOVAL OF IMPROVEMENTS WITH UTILITY AGENCIES. PROTECT ALL IMPROVEMENTS NOT DESIGNATED FOR REMOVAL. SEE NOTE 1

**DEMOLITION NOTES:**

- THE "LIMIT OF DEMOLITION" SHOWN IS APPROXIMATE AND IS GENERALLY CONSIDERED TO BE THE MINIMUM REMOVAL REQUIREMENTS. CONTRACTOR MUST COORDINATE AS NOTED IN THE LEGEND.
- CONTRACTOR SHALL LEGALLY DISPOSE OF ALL DEMOLISHED MATERIALS OFF SITE.
- CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY IMPROVEMENTS NOT SPECIFICALLY DESIGNATED FOR REMOVAL.
- THE ON-SITE UNDERGROUND UTILITIES SHOWN ON THIS SHEET ARE AT AN APPROXIMATE LOCATION. THE EXTENT, LOCATIONS AND SIZES ARE UNKNOWN. THE CONTRACTOR SHALL POTHOLE TO LOCATE AND VERIFY THE UNDERGROUND UTILITY LINES PRIOR TO REMOVAL.
- CONTRACTOR TO PROTECT AND PRESERVE IN PLACE ANY FOUND SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE RESET BY A LICENSED SURVEYOR AND THE APPROPRIATE PAPERWORK FILED WITH THE CITY OR COUNTY.
- ALL HAZARDOUS MATERIALS ENCOUNTERED DURING SITE DEMOLITION SHALL BE REMEDIATED AND DISPOSED OF PER STATE AND EPA REQUIREMENTS.
- CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL UTILITY AGENCIES PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION.
- ANY EXISTING UTILITIES AND/OR IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE OWNER AND AGENCY HAVING AUTHORITY, AT THE CONTRACTOR'S SOLE EXPENSE.

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710

**Blair,  
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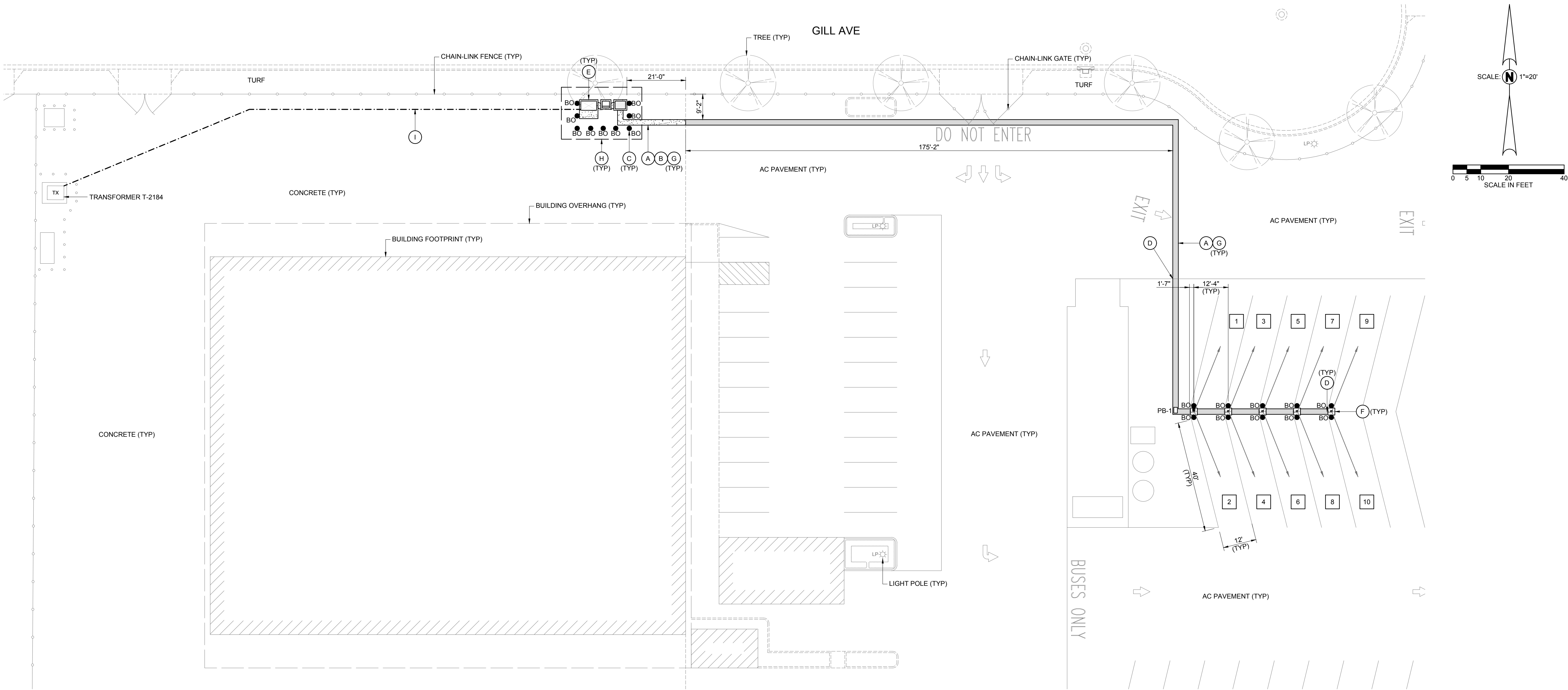
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**MADERA UNIFIED SCHOOL DISTRICT**

**ELECTRIC VEHICLE FLEET PROGRAM  
TRANSPORTATION YARD  
DEMOLITION PLAN**

**C2.0**

DR. BY: BC	SHEET NO. 3
CH. BY: RF	OF 11 SHEETS
DATE: 04-06-2020	
SCALE AS NOTED	



**CONSTRUCTION LEGEND:**

- (A) 2' WIDE ELECTRICAL UTILITY TRENCH. TRENCH, BACKFILL AND RESURFACING PER DETAIL [C/E2.1]
- (B) TRENCH TO BE REINFORCED WITH #5 DOWELS ON BOTH SIDES EVERY 24" PER DETAIL [B/C4.0]
- (C) FURNISH AND INSTALL FIXED BOLLARDS PER DETAIL [C/C4.0] (SEE NOTE)
- (D) REPAINT STRIPING REMOVED DURING TRENCHING TO MATCH EXISTING
- (E) CONSTRUCT EQUIPMENT PAD PER DETAIL [A/C4.0]. EQUIPMENT PAD SHALL BE POURED FLUSH WITH ADJACENT IMPROVEMENTS
- (F) INSTALL BLINK [MODEL IQ 200] CHARGER ON CONCRETE FOUNDATION PER DETAIL [E/C4.0]
- (G) SEE ELECTRICAL CONDUIT PLAN FOR ADDITIONAL ELECTRICAL IMPROVEMENTS
- (H) SEE DETAIL [A/E1.0] FOR ENLARGED EQUIPMENT PLAN
- (I) PROPOSED PG&E CONDUIT ROUTING, BY OTHERS.

- (2) PROPOSED BLINK [MODEL IQ 200] SINGLE CHARGE PORT STYLE CHARGERS MOUNTED ON A SINGLE POST. SEE DETAIL [D/C4.0] AND [E/C4.0]
- LIMITS OF ASPHALT CONCRETE PAVEMENT IMPROVEMENTS
- LIMITS OF CONCRETE IMPROVEMENTS

PROPOSED ELECTRIC VEHICLE CHARGERS				
EVSE-#	WALL/PEDESTAL MOUNT EVSE	SINGLE/DUAL EVSE	STALL/CHARGE PORT #	CHARGE PORT TYPE
1	PEDESTAL	SINGLE	1	FLEET
2	PEDESTAL	SINGLE	2	FLEET
3	PEDESTAL	SINGLE	3	FLEET
4	PEDESTAL	SINGLE	4	FLEET
5	PEDESTAL	SINGLE	5	FLEET
6	PEDESTAL	SINGLE	6	FLEET
7	PEDESTAL	SINGLE	7	FLEET
8	PEDESTAL	SINGLE	8	FLEET
9	PEDESTAL	SINGLE	9	FLEET
10	PEDESTAL	SINGLE	10	FLEET

**NOTE:**

1. BOLLARDS TO BE PLACED TO ADEQUATELY PROTECT FRONT FACE OF CHARGERS. CONTRACTOR TO VERIFY IN FIELD FOR APPROPRIATE LOCATION.

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710

**Blair,  
Church & Flynn**  
CONSULTING ENGINEERS



Date Signed:

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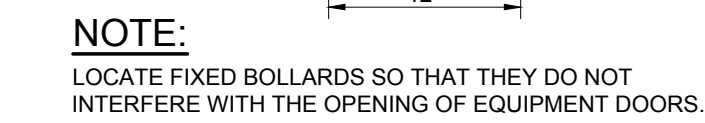
MADERA UNIFIED SCHOOL DISTRICT

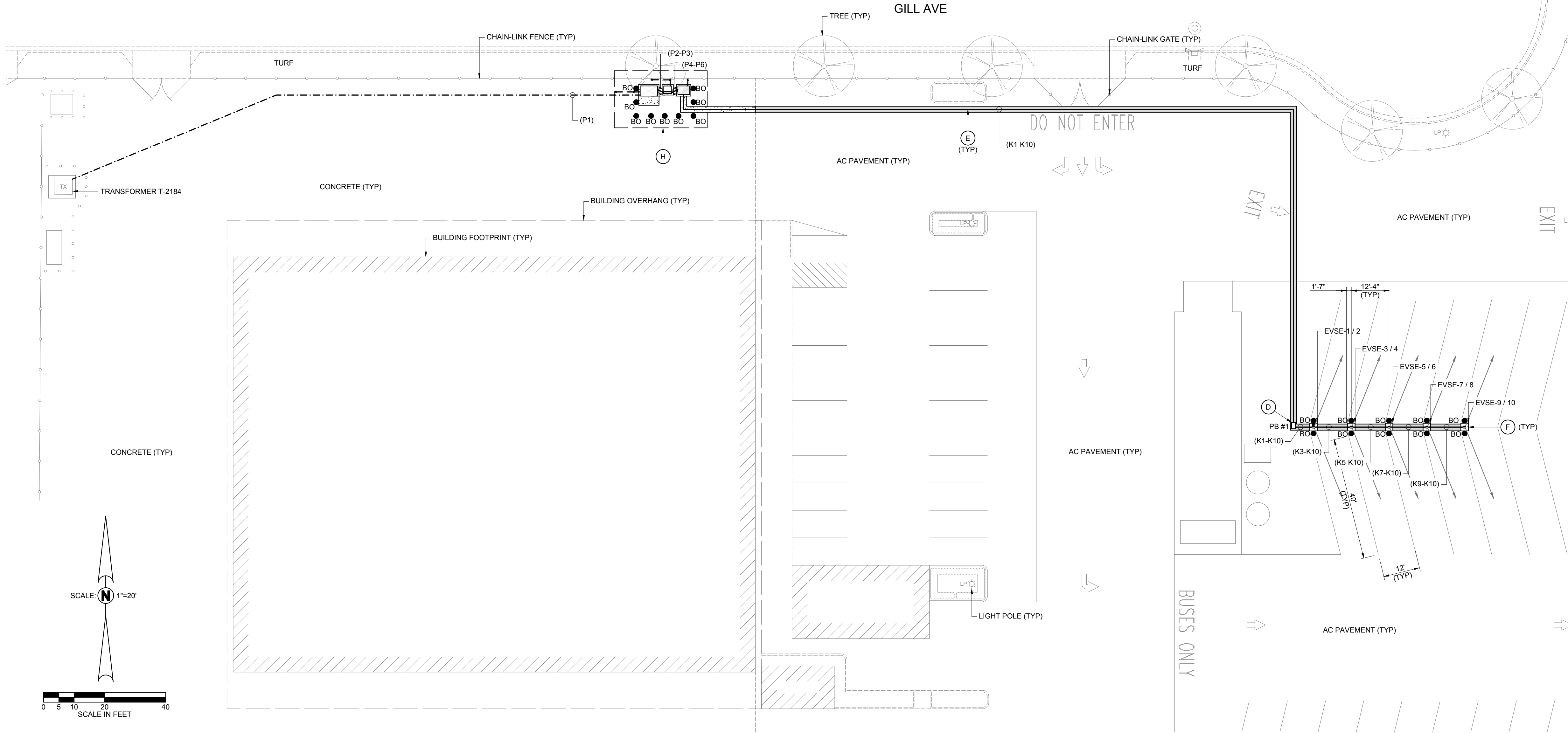
ELECTRIC VEHICLE FLEET PROGRAM  
TRANSPORTATION YARD  
SITE PLAN

C3.0

DR. BY: BC  
CH. BY: RF  
DATE: 04-06-2020  
SCALE AS NOTED  
SHEET NO. 4  
OF 11 SHEETS





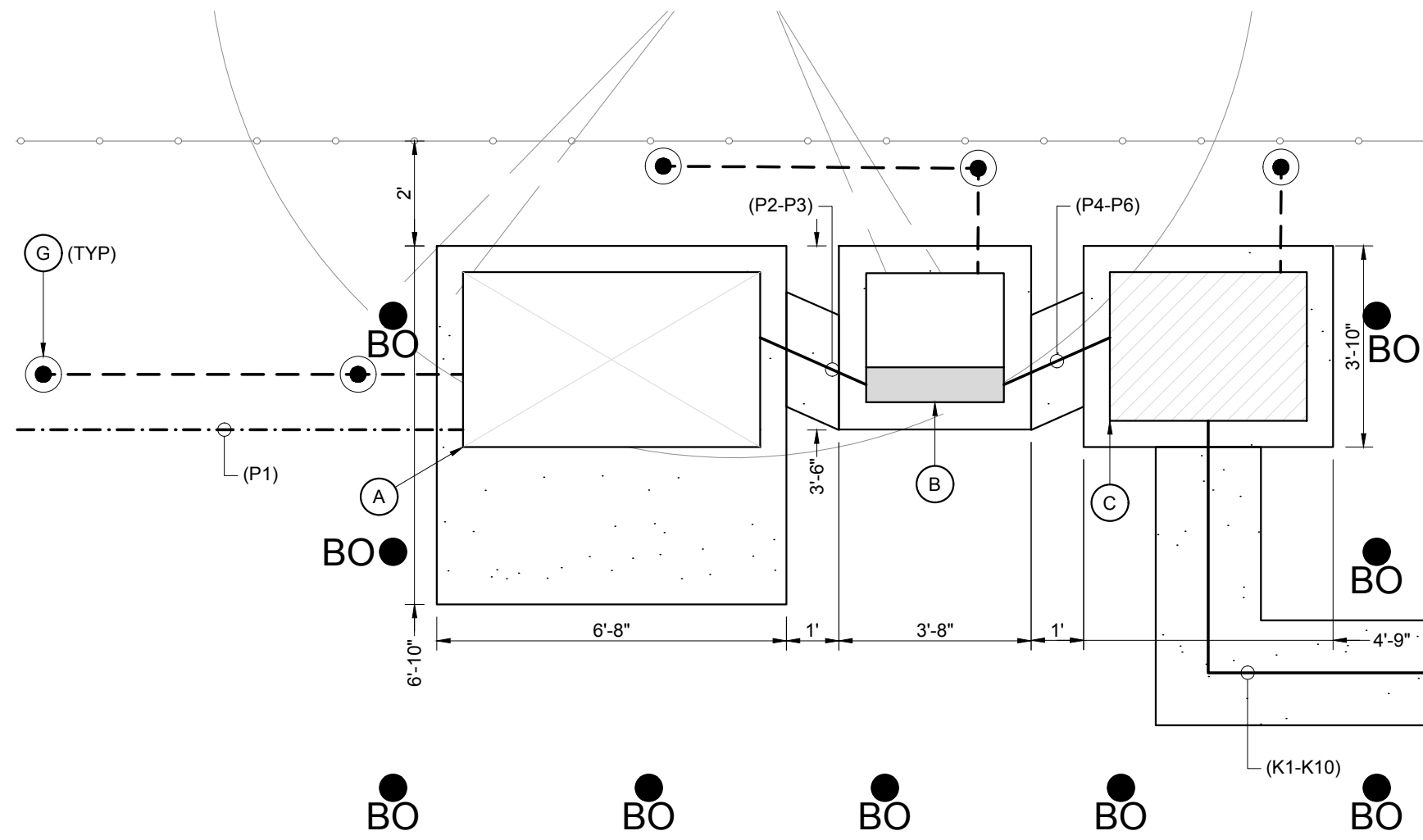


ELECTRICAL LEGEND:

- A** FURNISH AND INSTALL 480/277V, 400 AMP SERVICE CT METER AND MAIN SWITCHBOARD PER DETAILS [A/E2.0] AND [B/E3.0]
- B** FURNISH AND INSTALL 480-208/120V, 3Ø, 225KVA STEP DOWN TRANSFORMER PER DETAILS [B/E2.0]
- C** FURNISH AND INSTALL 208/120V, 800 AMP, 3Ø, 4W, DISTRIBUTION PANEL PER DETAILS [A/E2.1] AND [E/E3.0]
- D** FURNISH AND INSTALL JENSEN PRECAST 24"x36"x12"D OPEN BOTTOM FLAT WALL PULL BOX WITH TRAFFIC RATED SECURITY BOLTED MARKED "ELECTRIC" COVER, GROUT SEAL, CONDUIT PENETRATIONS AND SEAL CONDUITS WITH DUCT SEAL OR EQUAL TO PREVENT WATER ENTRY. SEE DETAIL [B/E2.1]
- E** SEE DETAIL [C/E2.1] FOR THE FURNISHING AND INSTALLATION OF BELOW GRADE PVC CONDUIT. SEE CONDUIT SCHEDULE FOR COUNT AND CONDUIT SIZE
- F** INSTALL BLINK [MODEL IQ 200] CHARGER ON CONCRETE FOUNDATION PER DETAIL [E/C4.0]
- G** GROUND ROD 12" (MIN) BELOW SURFACE
- H** SEE ENLARGED EQUIPMENT PLAN PER DETAIL [A/E1.0]
- PROPOSED DISTRIBUTION PANEL
- PROPOSED STEP DOWN TRANSFORMER
- PROPOSED PULL BOX
- 5/8" X 8" COPPER CLAD GROUND ROD, ERICO OR APPROVED EQUAL
- GROUND ACCESS WELL AND 5/8" X 8" COPPER CLAD GROUND ROD
- (2) PROPOSED BLINK [MODEL IQ 200] SINGLE CHARGE PORT STYLE CHARGERS MOUNTED ON A SINGLE POST. SEE DETAIL [D/C4.0] AND [E/C4.0]
- BURIED BARE COPPER GROUND WIRE
- ELECTRICAL CONDUIT, SIZE AND COUNT AS NOTED
- ELECTRICAL SERVICE SUPPLY TO METER, BY PG&E (SHOWN FOR REFERENCE ONLY)

ELECTRICAL NOTES:

- ELECTRICAL UTILITY LINE TO BE PROTECTED IN PLACE WHEN POSSIBLE. IF EXISTING LINES INTRODUCE EXCESSIVE CONSTRAINTS DURING THE INSTALLATION OF THE ELECTRICAL EQUIPMENT, REMOVE AND RELOCATE EXISTING LINES AS NEEDED. USING THE PROPOSED UTILITY TRENCH. IF THE ELECTRICAL LINE CANNOT BE SALVAGED THE CONTRACTOR MUST LAWFULLY DISPOSE OF THE ELECTRICAL LINE AND REPLACE WITH LIKE-IN-KIND.
- ALL ELECTRICAL POWER IN CLOSE PROXIMITY TO THE INSTALLATION OF THE ELECTRICAL EQUIPMENT MUST BE POWERED OFF PRIOR TO THE START OF CONSTRUCTION, TO PREVENT ANY ELECTRICAL INJURIES.
- HAND DIG ALL UTILITIES IN CLOSE PROXIMITY TO THE INSTALLATION OF THE ELECTRICAL EQUIPMENT TO AVOID DAMAGING ANY UTILITY LINE.
- SEE SINGLE LINE DIAGRAM ON SHEET E3.0.
- SEE CONDUIT SCHEDULE FOR WIRE SIZE, CONDUIT FILL AND WIRE TAGS.
- THE METHODS CONTAINED IN CEC/NEC ARTICLE 250 SHALL BE FOLLOWED TO COMPLY WITH GROUNDING AND BONDING OF ELECTRICAL SYSTEMS AND NON-CURRENT CARRYING CONDUCTIVE MATERIALS, ENCLOSURES, OR ITEMS FORMING PART OF ANY SUCH EQUIPMENT THAT ENCLOSES OR CARRIES ELECTRICAL CONDUCTOR OR EQUIPMENT THAT IS LIKELY TO BECOME ENERGIZED. SEE CEC/NEC 250.4(A)(1) THROUGH (5) FOR FURTHER DESCRIPTION.
- WHERE TWO OR MORE GROUND RODS ARE TO BE INSTALLED, THE MINIMUM SEPARATION SHALL BE 6' PER CEC/NEC 250.53 (A)(2), AND (3) RESISTANCE OF ELECTRODES.
- MINIMUM CONDUIT BURIAL DEPTH SHALL BE 24".
- PER CEC/NEC 110.26 "ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED ABOUT ALL ELECTRICAL EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE OF SUCH EQUIPMENT."



**A** ENLARGED EQUIPMENT PLAN  
E1.0 SCALE: 1" = 3'

CONDUIT SCHEDULE					
CONDUIT NUMBER	FROM	TO	CONDUCTORS ALL 90°C THWN-2 OR SIMILAR UNLESS NOTED OTHERWISE	CONDUIT SIZE AND TYPE	COMMENTS
P1	PG&E TRANSFORMER, 480Y/277V	SERVICE CT METER AND MAIN SWITCHBOARD 'MSB-EV'	TO BE INSTALLED BY PG&E	5" PVC	UTILITY POWER TO SERVICE CT METER
P2	400 AMP, 480/277V, 3Ø, 4W, CT METER AND MAIN SWITCHBOARD 'MSB-EV'	225 KVA, 480V - 208V/120V, 3Ø, 4W TRANSFORMER 'T-EV'	SOUTHWIRE (3) #3/0, (1) #2 GRN GROUND, (L1/L2 / L3 / GND)	2" PVC	TRANSFORMER 'T-EV' FEEDER
P3	400 AMP, 480/277V, 3Ø, 4W, CT METER AND MAIN SWITCHBOARD 'MSB-EV'	225 KVA, 480V - 208V/120V, 3Ø, 4W TRANSFORMER 'T-EV'	SOUTHWIRE (3) #3/0, (1) #2 GRN GROUND, (L1/L2 / L3 / GND)	2" PVC	TRANSFORMER 'T-EV' FEEDER
P4	225 KVA, 480V - 208V/120V, 3Ø, 4W TRANSFORMER 'T-EV'	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL 'EV'	SOUTHWIRE (4) #300 MCM, (1) #2/0 GRN GROUND, (L1 / L2 / L3 / N / GND)	3" PVC	SWITCHBOARD 'EV' FEEDER
P5	225 KVA, 480V - 208V/120V, 3Ø, 4W TRANSFORMER 'T-EV'	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL 'EV'	SOUTHWIRE (4) #300 MCM, (1) #2/0 GRN GROUND, (L1 / L2 / L3 / N / GND)	3" PVC	SWITCHBOARD 'EV' FEEDER
P6	225 KVA, 480V - 208V/120V, 3Ø, 4W TRANSFORMER 'T-EV'	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL 'EV'	SOUTHWIRE (4) #300 MCM, (1) #2/0 GRN GROUND, (L1 / L2 / L3 / N / GND)	3" PVC	SWITCHBOARD 'EV' FEEDER
K1	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-1	SOUTHWIRE (2) #2/0, (1) #3 GRN GROUND, TAGGED EVSE-1, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K2	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-2	SOUTHWIRE (2) #2/0, (1) #3 GRN GROUND, TAGGED EVSE-2, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER

**B** CONDUIT SCHEDULE  
E1.0 NO SCALE

K3	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-3	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-3, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K4	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-4	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K5	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-5	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K6	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-6	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K7	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-7	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K8	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-8	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K9	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-9	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER
K10	800 AMP, 208/120V, 3Ø, 4W, DISTRIBUTION PANEL	EVSE-10	SOUTHWIRE (2) #3/0, (1) #3 GRN GROUND, TAGGED EVSE-4, CHARGE PORT 3 (L1 / L2 / GND)	1-1/2" PVC	POWER WIRING AND GROUNDING TO EV CHARGER

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710

**Blair, Church & Flynn**  
Consulting Engineers  
4831 Clovis Avenue,  
Suite 200  
Clovis, California 93612  
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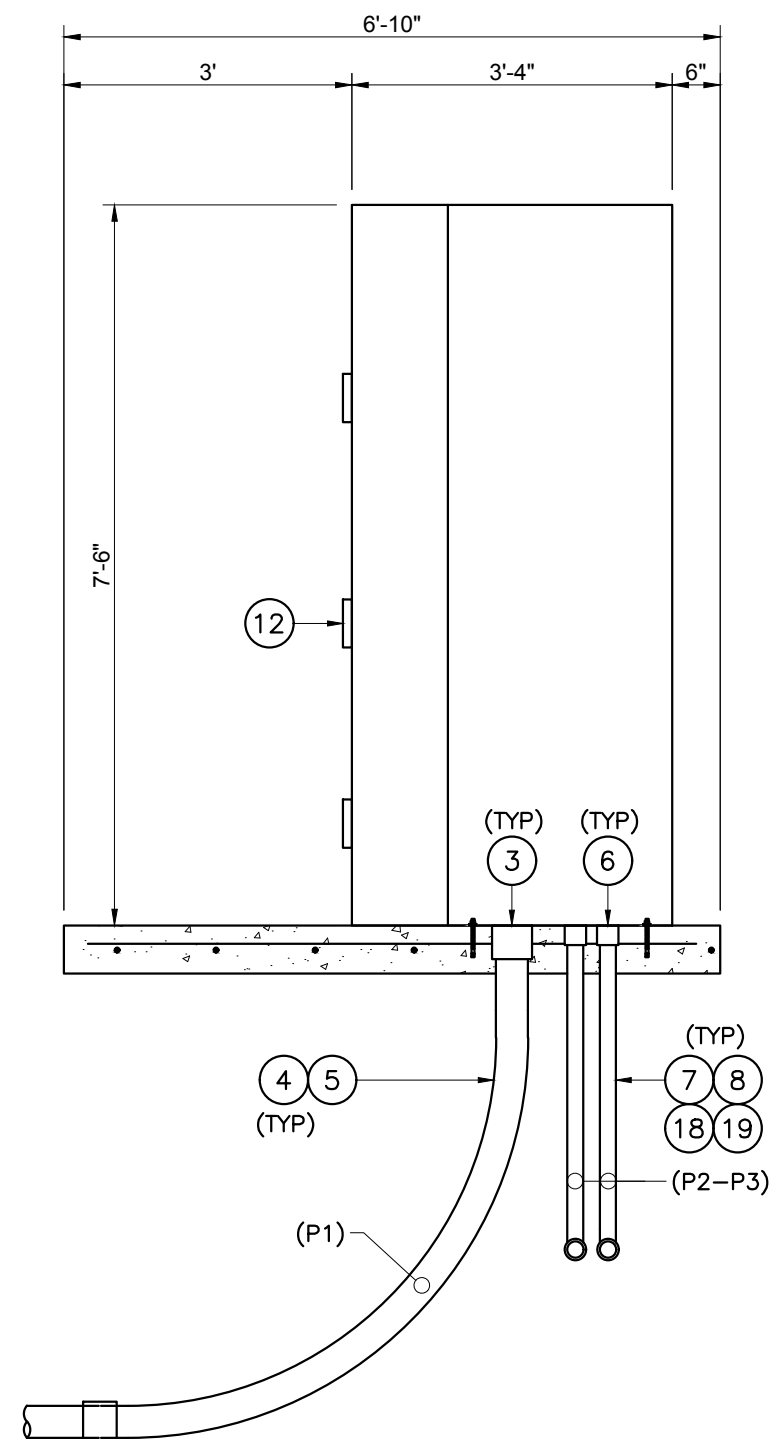
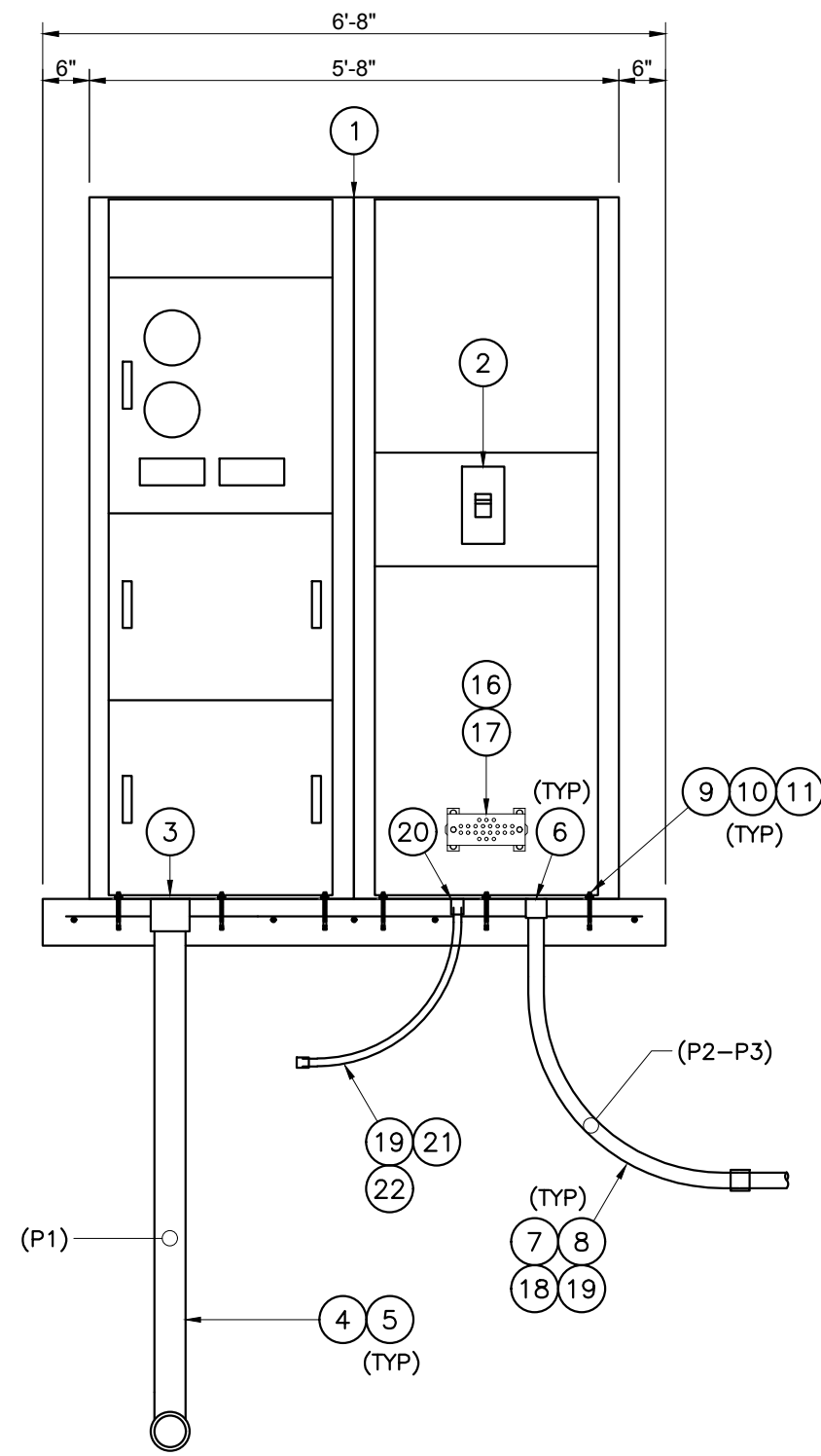
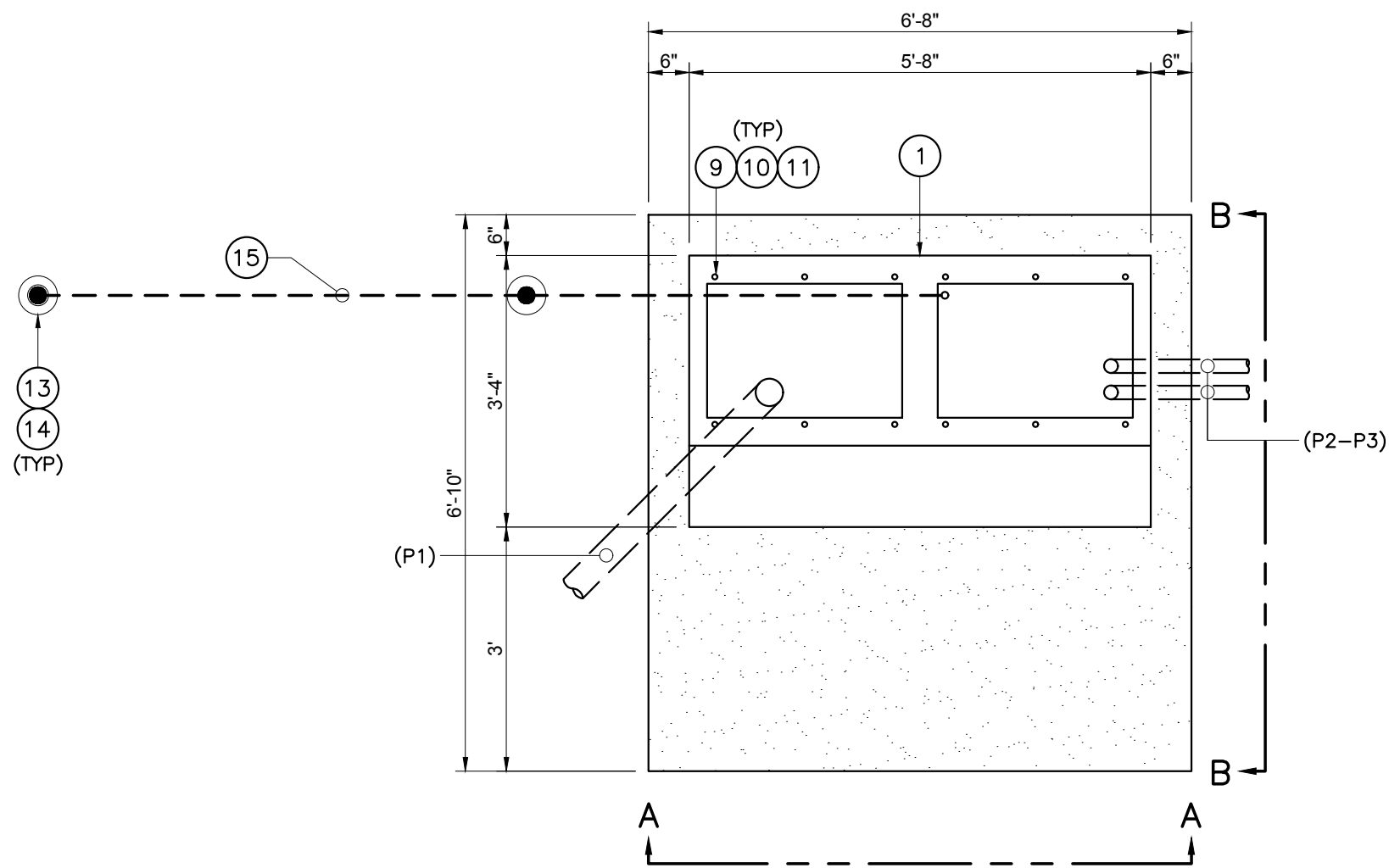
REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA  
No. 10000  
Exp. 12/31/2024

DATE: 04-06-2020  
SCALE: AS NOTED

CONSULTANT	REF. & REV.
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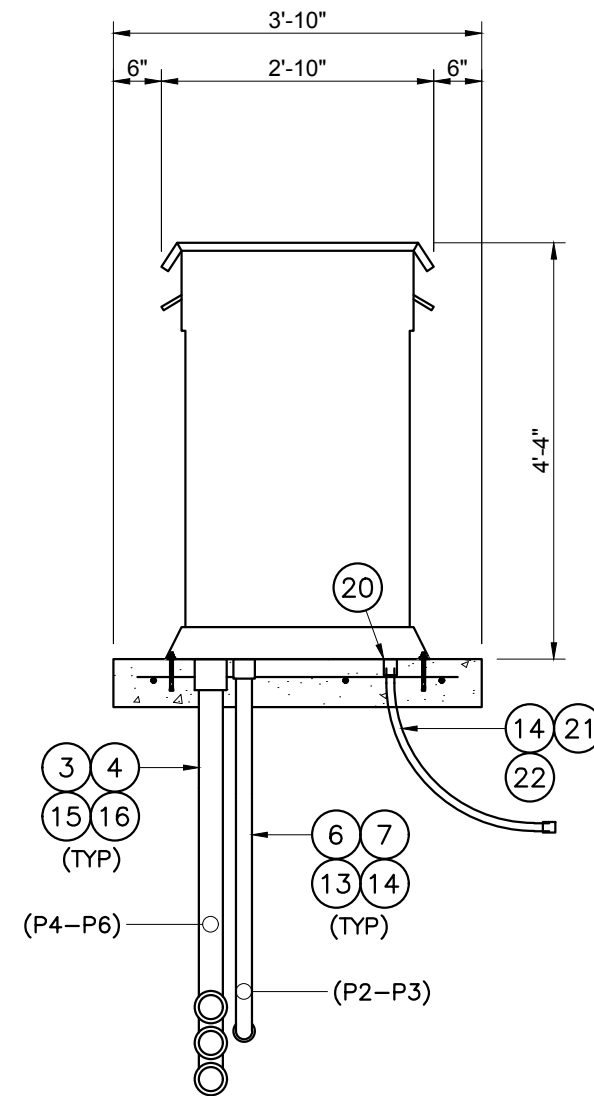
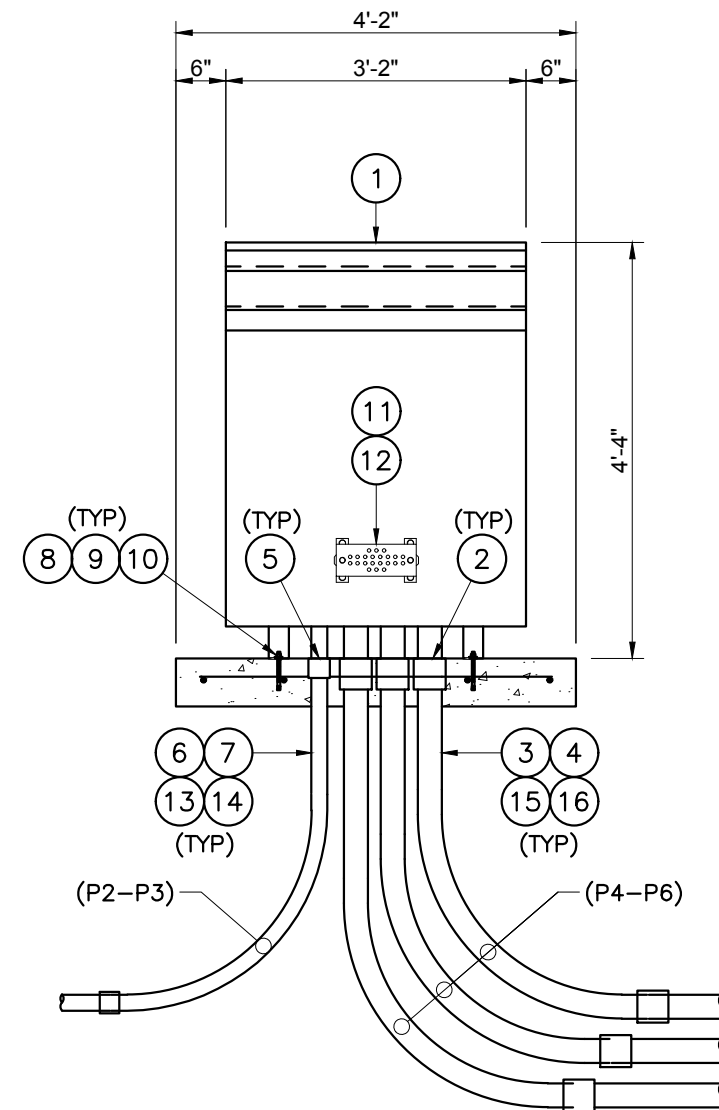
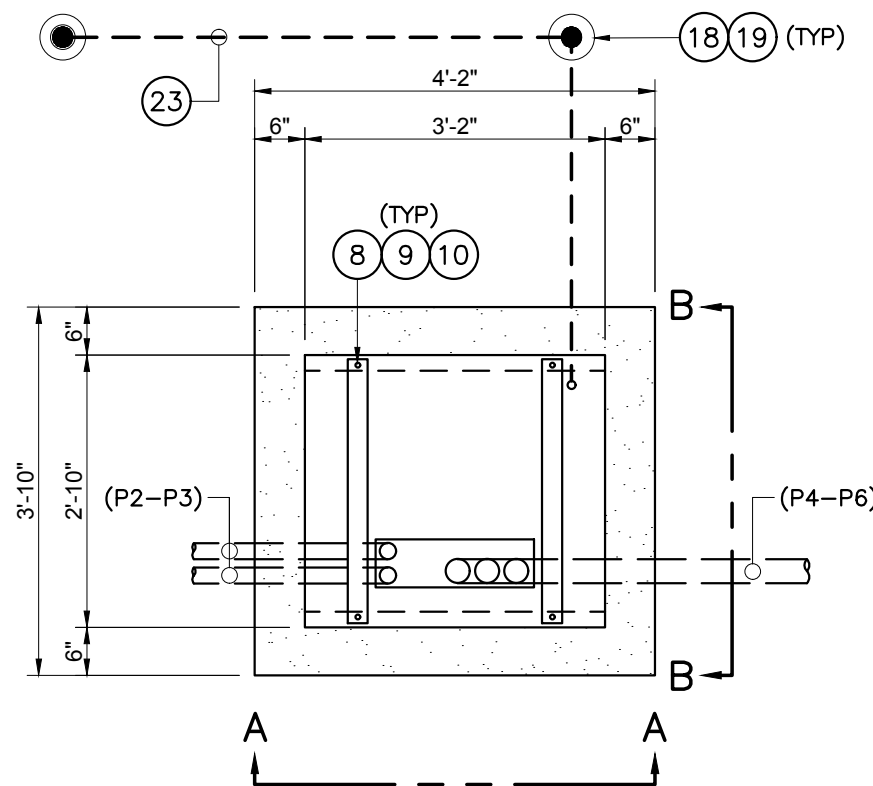
MADERA UNIFIED SCHOOL DISTRICT	
ELECTRIC VEHICLE FLEET PROGRAM TRANSPORTATION YARD ELECTRICAL CONDUIT PLAN	E1.0
DR. BY: BC CH. BY: RF DATE: 04-06-2020 SCALE: AS NOTED	SHEET NO. 6 OF 11 SHEETS





BILL OF MATERIALS		
REFERENCE NUMBER	ITEM	QUANTITY
1	METERED PANELBOARD, NEMA TYPE 3R, 480/277V, 3Φ, 4W, 400 AMP, 30 KAIC	1 UNIT
2	MAIN BREAKER, GE, TYPE SPECTRA RMS, 480 VOLT, SG600 FRAME, 400 AMP TRIP, 42 KAIC AT 480V, 3 POLE	1 EA
3	CANTEX CATALOGUE NO. 5144012, 4" PVC BELL END OR EQUAL	1 EA
4	5" SCH. 40 PVC, 48" RADIUS OR EQUAL	1 EA
5	5" SCH. 40 PVC, CANTEX OR EQUAL	AR
6	CANTEX CATALOGUE NO. 5144008, 2" PVC BELL END OR EQUAL	2 EA
7	2" SCH. 40 PVC, 24" RADIUS OR EQUAL	2 EA
8	2" SCH. 40 PVC, CANTEX OR EQUAL	AR
9	HILTI KWIK BOLT TZ 5/8" X 4"	AR
10	GALVANIZED NUT, 5/8"	AR
11	GALVANIZED LOCK WASHER, 5/8"	AR
12	CUSTOMER SUPPLIED PADLOCK	1 EA
13	5/8" X 8" ERICO COPPER CLAD GROUND ROD, INSTALLED VERTICALLY WITH MIN. 1" EARTH COVER	2 EA
14	BURNDY YGHP29C2 FIGURE "6" GROUND TAP COMPRESSION FITTING, #2 TO 5/8" ROD	2 EA
15	#2 BARE COPPER GROUND WIRE	AR
16	ILSCO BBFC-4-10-22A-KIT GROUND BUS BAR KIT	1 EA
17	BURNDY YGHA2C-2N HEAVY DUTY IRREVERSIBLE COMPRESSION TERMINAL, #2 TWO-HOLE LUG	AR
18	#3/0 MCM CONDUCTOR THWN-2	AR
19	#2 CONDUCTOR GRN INSULATION THWN-2	AR
20	CANTEX CATALOGUE NO. 5144005, 1" PVC BELL END OR EQUAL	1 EA
21	1" SCH. 40 PVC, 18" RADIUS OR EQUAL	1 EA
22	1" SCH. 40 PVC, CANTEX OR EQUAL	AR

**A**  
**E2.0** 400A CT METER SECTION  
NOT TO SCALE



BILL OF MATERIALS		
REFERENCE NUMBER	ITEM	QUANTITY
1	480-208/120V, 3Φ, 225 KVA STEP DOWN TRANSFORMER, NEMA TYPE 3R	1 EA
2	CANTEX CATALOGUE NO. 5144010, 3" PVC BELL END OR EQUAL	3 EA
3	3" SCH. 40 PVC, 24" RADIUS OR EQUAL	3 EA
4	3" SCH. 40 PVC, CANTEX OR EQUAL	AR
5	CANTEX CATALOGUE NO. 5144008, 2" PVC BELL END OR EQUAL	2 EA
6	2" SCH. 40 PVC, 24" RADIUS OR EQUAL	2 EA
7	2" SCH. 40 PVC, CANTEX OR EQUAL	AR
8	HILTI KWIK BOLT TZ 5/8" X 4"	AR
9	GALVANIZED NUT, 5/8"	AR
10	GALVANIZED LOCK WASHER, 5/8"	AR
11	ILSCO BBFC-4-10-22A-KIT GROUND BUS BAR KIT	1 EA
12	BURNDY YGHA2C-2N HEAVY DUTY IRREVERSIBLE COMPRESSION TERMINAL, #2 TWO-HOLE LUG	AR
13	#3/0 CONDUCTOR THWN-2	AR
14	#2 CONDUCTOR GRN INSULATION THWN-2	AR
15	#300 MCM CONDUCTOR THWN-2	AR
16	#2/0 CONDUCTOR GRN INSULATION THWN-2	AR
17	BURNDY YGHA25-2N HEAVY DUTY IRREVERSIBLE COMPRESSION TERMINAL, #1/0 TWO-HOLE LUG	3 EA
18	5/8" X 8" ERICO COPPER CLAD GROUND ROD, INSTALLED VERTICALLY WITH MIN. 1" EARTH COVER	2 EA
19	BURNDY YGHP29C2 FIGURE "6" GROUND TAP COMPRESSION FITTING, #2 TO 5/8" ROD	2 EA
20	CANTEX CATALOGUE NO. 5144005, 1" PVC BELL END OR EQUAL	1 EA
21	1" SCH. 40 PVC, 18" RADIUS OR EQUAL	1 EA
22	1" SCH. 40 PVC, CANTEX OR EQUAL	AR
23	#2 BARE COPPER GROUND WIRE	AR

**B**  
**E2.0** 300KVA STEP DOWN TRANSFORMER  
NOT TO SCALE

Drawing: P:\216-03030\Blair Church & Flynn\United School District - FLEET\000823710\_MJSD\_0102.dwg, 7: Conduit Sections and Details - BGF.dwg  
 Plot by: karmarkar, Apr 26, 2020, 2:30pm  
 PRELIMINARY QC\_01

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710

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CONSULTANT

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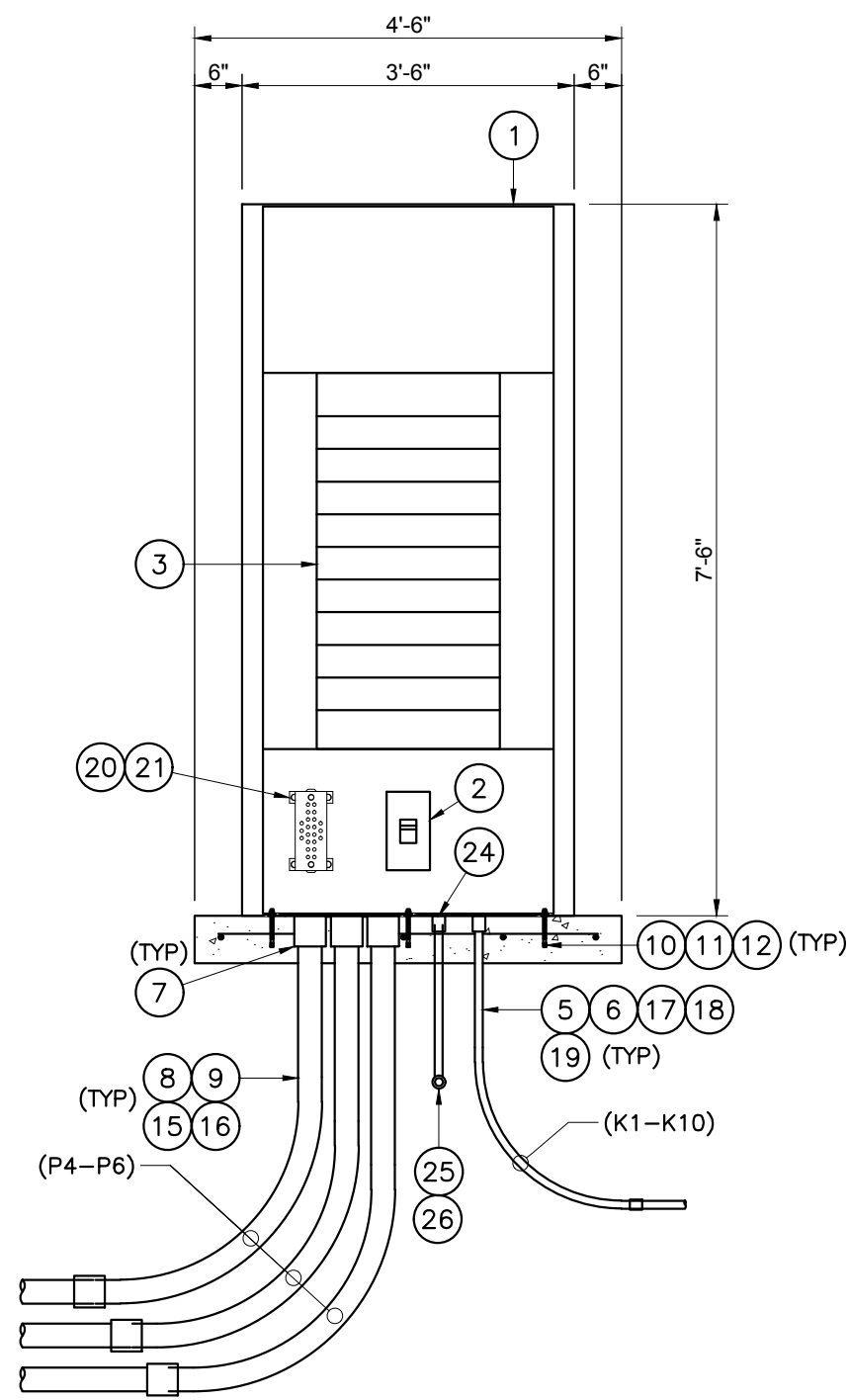
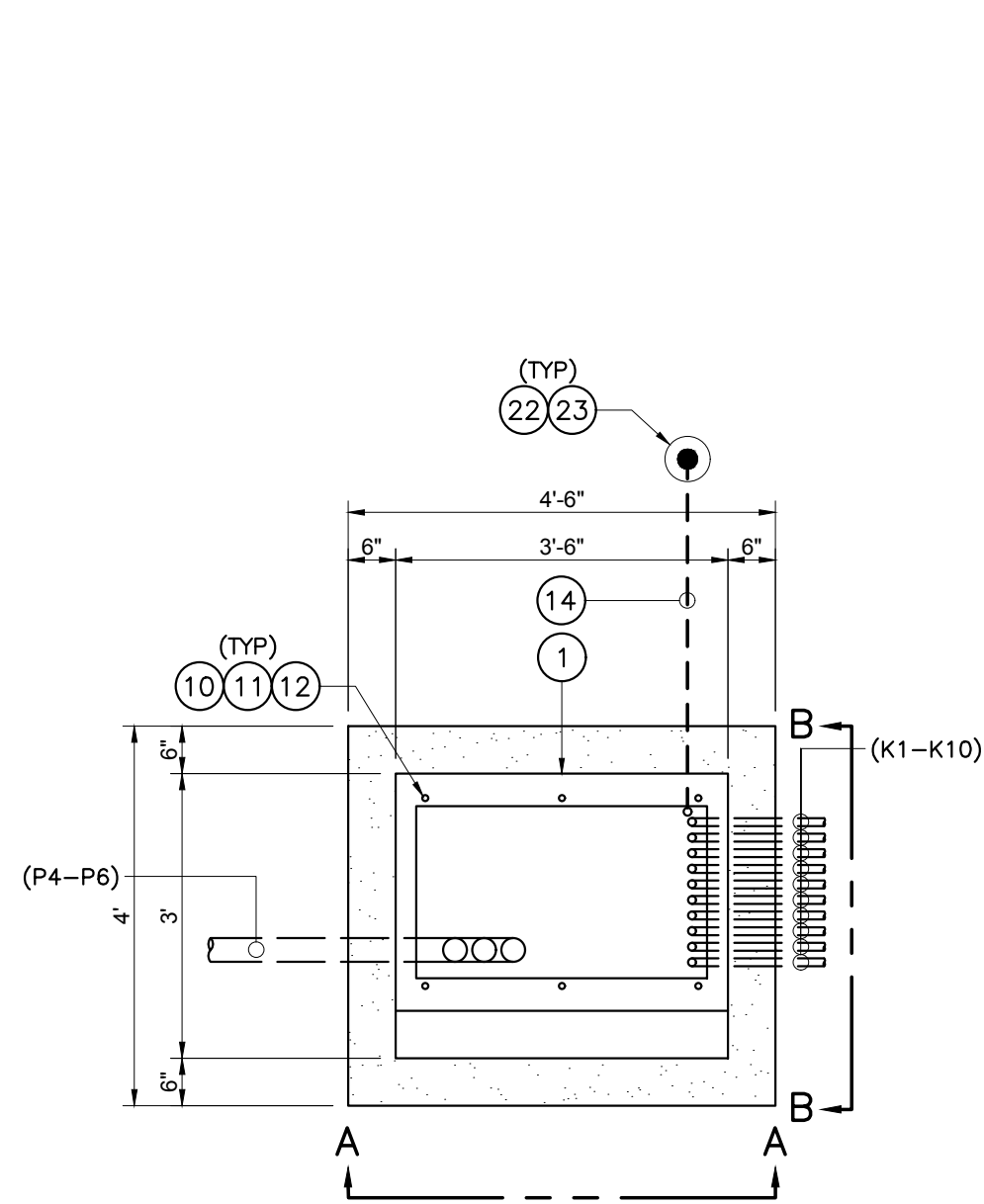
MADERA UNIFIED SCHOOL DISTRICT

ELECTRIC VEHICLE FLEET PROGRAM  
 TRANSPORTATION YARD  
 CONDUIT SECTIONS AND DETAILS

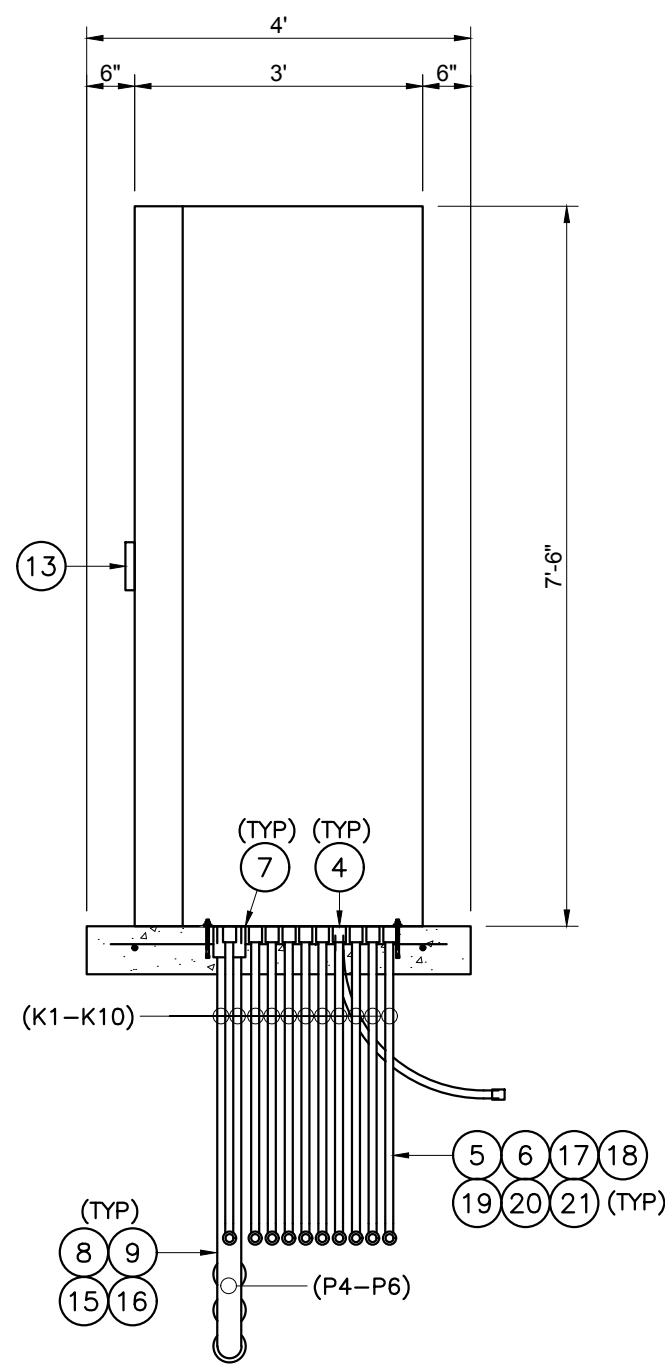
E2.0

DR. BY: BC  
 CH. BY: RF  
 DATE: 04-06-2020  
 SCALE AS NOTED

SHEET NO. 7  
 OF 11 SHEETS



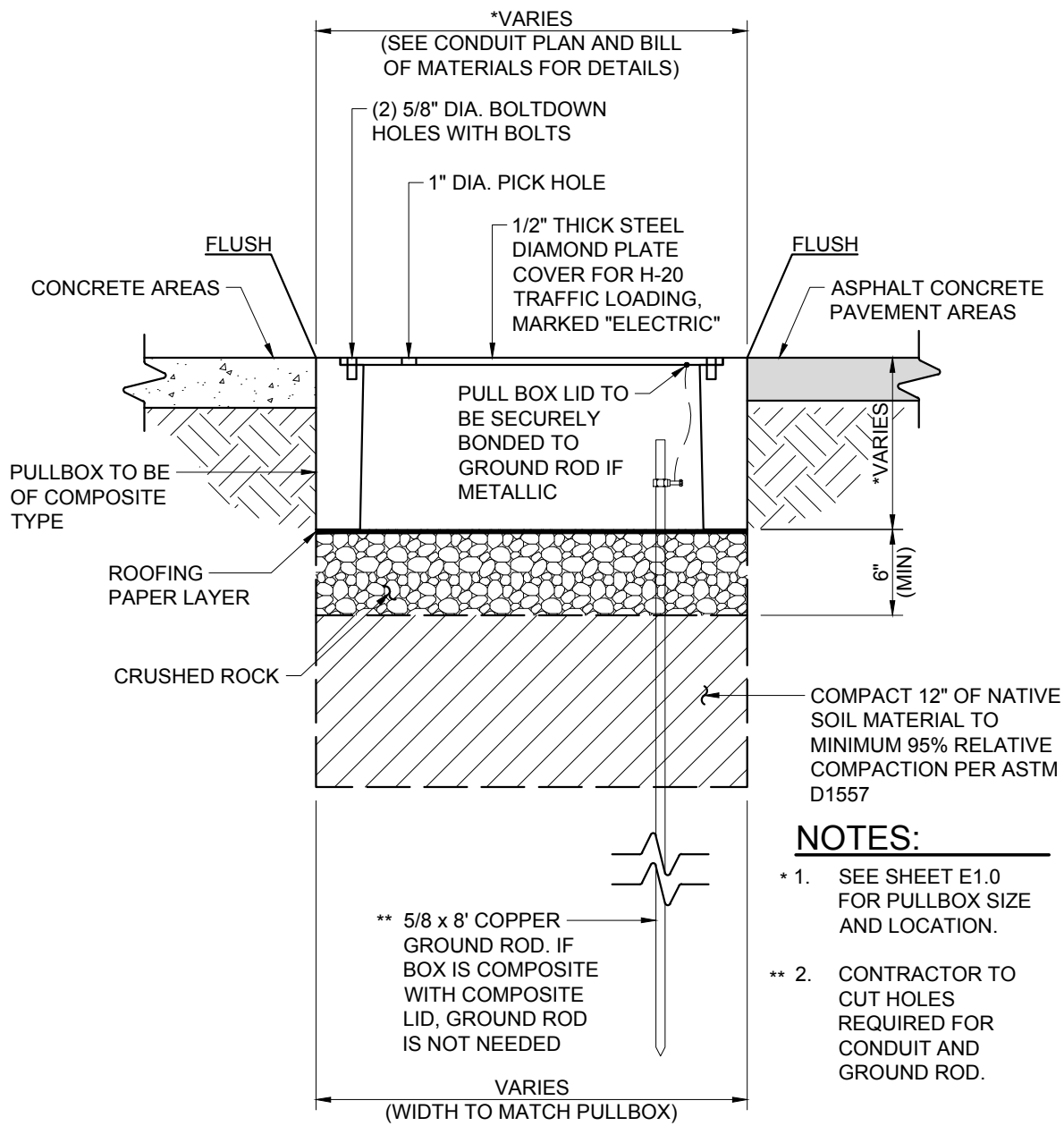
SECTION A-A



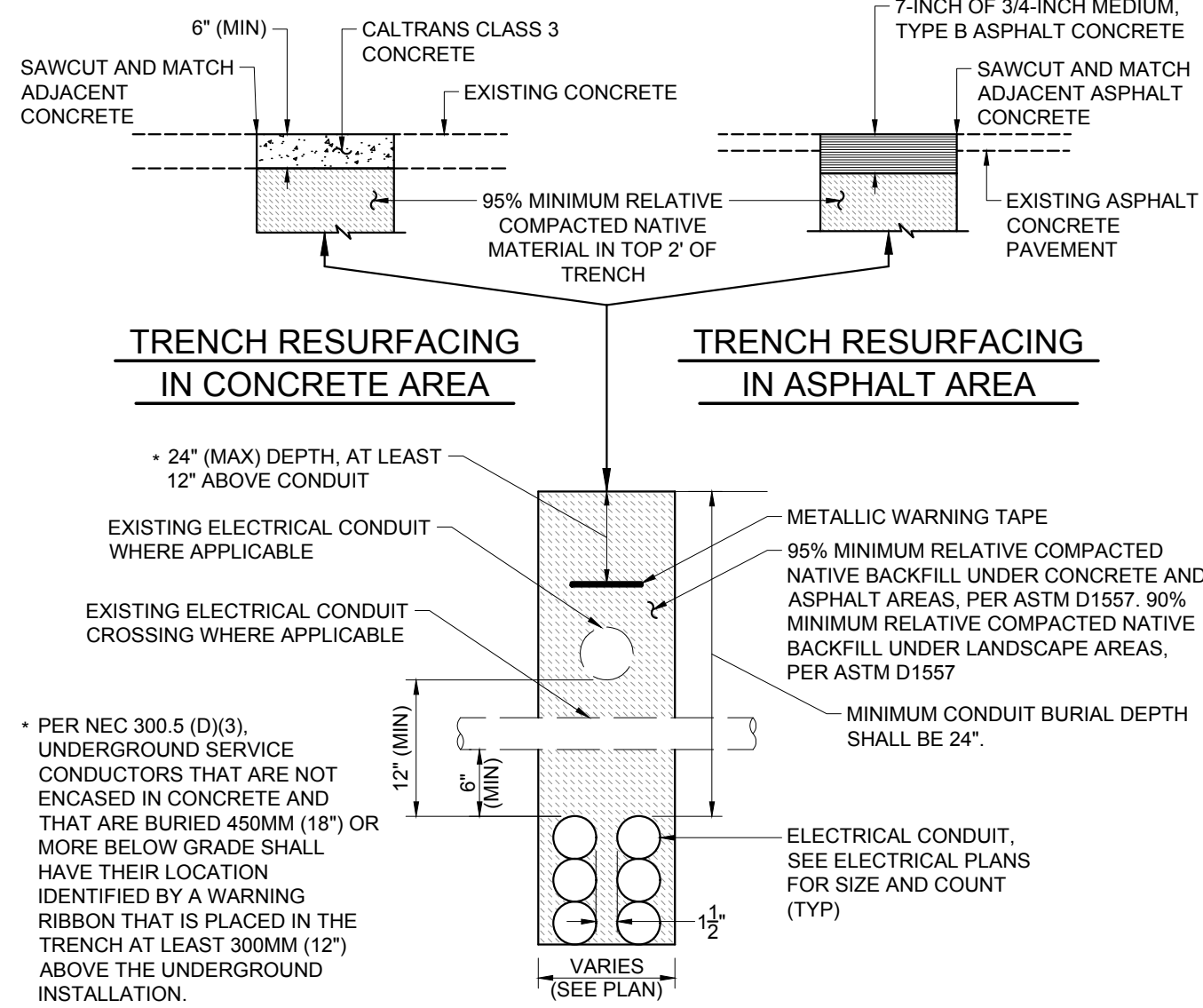
SECTION B-B

BILL OF MATERIALS		
REFERENCE NUMBER	ITEM	QUANTITY
1	DISTRIBUTION SWITCHBOARD 'EV', NEMA TYPE 3R, 208/120V, 3Ø, 4W, 800 AMP, 42 KAIC	1 UNIT
2	MAIN BREAKER, GE, TYPE SPECTRA RMS, 208 VOLT, SK800 FRAME, 800 AMP TRIP, 42 KAIC AT 208V, 3 POLE	1 EA
3	BRANCH BREAKER, GE, TYPE TEY, 208 VOLT, 100 AMP, 42 KAIC AT 208V, 2 POLE	10 EA
4	CANTEX CATALOGUE NO. 5144007, 1-1/2" PVC BELL END OR EQUAL	10 EA
5	1-1/2" SCH. 40 PVC, 24" RADIUS OR EQUAL	10 EA
6	1-1/2" SCH. 40 PVC, CANTEX OR EQUAL	AR
7	CANTEX CATALOGUE NO. 5144010, 3" PVC BELL END OR EQUAL	3 EA
8	3" SCH. 40 PVC, 24" RADIUS OR EQUAL	3 EA
9	3" SCH. 40 PVC, CANTEX OR EQUAL	AR
10	HILTI KWIK BOLT TZ 5/8" X 4"	AR
11	GALVANIZED NUT, 5/8"	AR
12	GALVANIZED LOCK WASHER, 5/8"	AR
13	CUSTOMER SUPPLIED PADLOCK	AR
14	#2 BARE COPPER GROUND WIRE	AR
15	#300 MCM CONDUCTOR THWN-2	AR
16	#2/0 CONDUCTOR GRN INSULATION THWN-2	AR
17	#2/0 CONDUCTOR THWN-2	AR
18	#3/0 CONDUCTOR THWN-2	AR
19	#3 CONDUCTOR GRN INSULATION THWN-2	AR
20	ILSCO BBFC-4-10-22A-KIT GROUND BUS BAR KIT	1 EA
21	BURNDY YGHA2C-2N HEAVY DUTY IRREVERSIBLE COMPRESSION TERMINAL, #2 TWO-HOLE LUG	AR
22	5/8" X 8" ERICO COPPER CLAD GROUND ROD, INSTALLED VERTICALLY WITH MIN. 1' EARTH COVER	2 EA
23	BURNDY YGHP29C2 FIGURE "6" GROUND TAP COMPRESSION FITTING, #2 TO 5/8" ROD	2 EA
24	CANTEX CATALOGUE NO. 5144005, 1" PVC BELL END OR EQUAL	1 EA
25	1" SCH. 40 PVC, 18" RADIUS OR EQUAL	1 EA
26	1" SCH. 40 PVC, CANTEX OR EQUAL	AR

**A**  
**E2.1** 800A DISTRIBUTION SWITCHBOARD 'EV'  
NOT TO SCALE



**B**  
**E2.1** OPEN BOTTOM PULLBOX (TRAFFIC RATED)  
NOT TO SCALE



**C**  
**E2.1** TYPICAL CONDUIT TRENCH DETAIL  
NOT TO SCALE

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710



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MADERA UNIFIED SCHOOL DISTRICT

ELECTRIC VEHICLE FLEET PROGRAM  
TRANSPORTATION YARD  
CONDUIT SECTIONS AND DETAILS

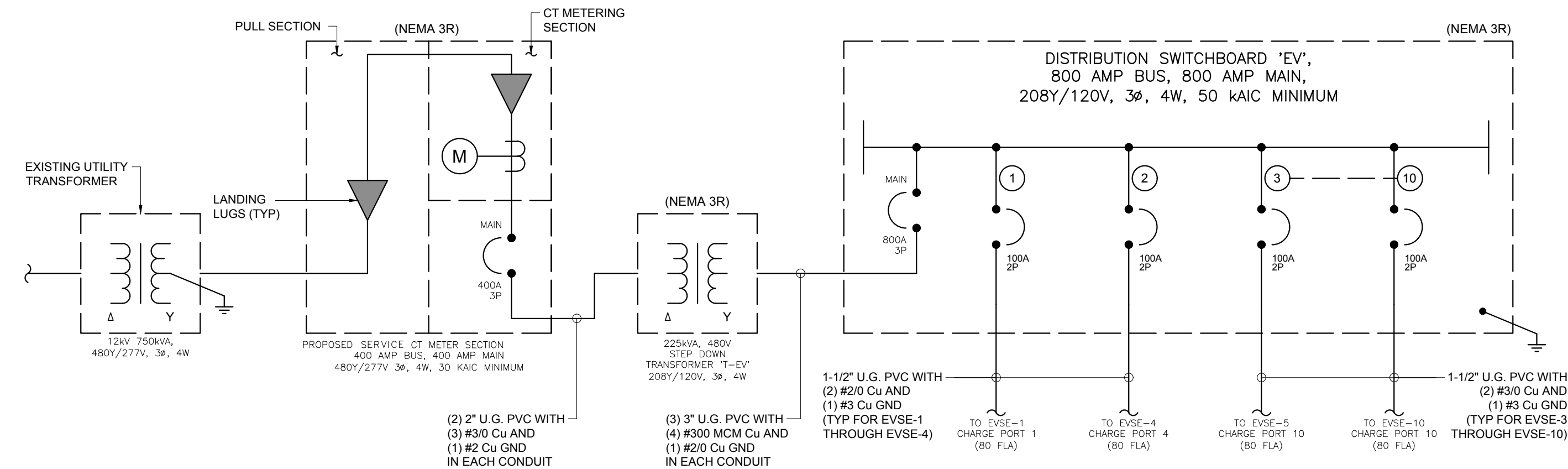
E2.1

DR. BY: BC  
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DATE: 04-06-2020  
SCALE: AS NOTED  
SHEET NO. 8  
OF 11 SHEETS

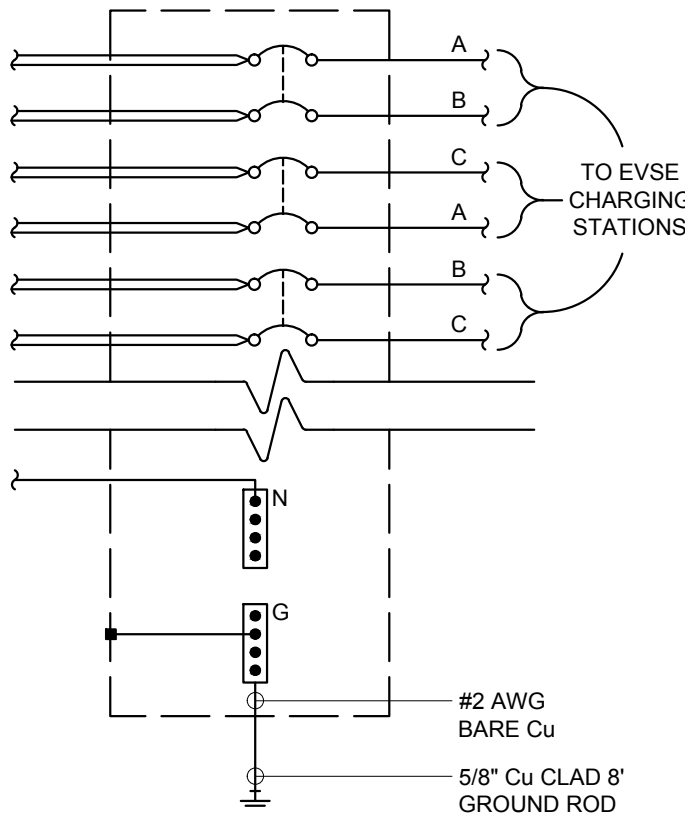


PROPOSED DISTRIBUTION PANEL 'EV' SCHEDULE																	
BUS AMPS: <u>800</u>			MFR: <u>G.E.</u>			LOC: <u>MUSD BUS YARD</u>			MTG: <u>PAD MOUNTED</u>			MAIN AMPS: <u>800</u>					
PHASE: <u>3</u>			WIRES: <u>4</u>			VOLTS: <u>120/208Y</u>			FEEDER: <u>BUS FEED</u>			FEEDER ENTRY AT: <u>BOTTOM</u>			AIC RATING: <u>42,000A SYM.</u>		
DESCRIPTION	VOLT-AMPS			BKR TRIP	CKT	L1	L2	L3	CKT	BKR TRIP	VOLT-AMPS			DESCRIPTION			
	L1	L2	L3								L1	L2	L3				
EVSE-1 CHARGE PORT 1	8320	-	-	100A/2P	1	●			2	100A/2P	8320	-	-	EVSE-3 CHARGE PORT 3			
	-	8320	-		3		●		4		-	8320	-				
EVSE-2 CHARGE PORT 2	-	-	8320	100A/2P	5			●	6	100A/2P	-	-	8320	EVSE-4 CHARGE PORT 4			
	8320	-	-		7	●			8		8320	-	-				
EVSE-5 CHARGE PORT 5	-	8320	-	100A/2P	9		●		10	100A/2P	-	8320	-	EVSE-7 CHARGE PORT 7			
	-	-	8320		11			●	12		-	-	8320				
EVSE-6 CHARGE PORT 6	8320	-	-	100A/2P	13	●			14	100A/2P	8320	-	-	EVSE-8 CHARGE PORT 8			
	-	8320	-		15		●		16		-	8320	-				
EVSE-9 CHARGE PORT 9	-	-	8320	100A/2P	17			●	18	-	-	-	-	BLANK			
	8320	-	-		19	●			20	-	-	-	-				
EVSE-10 CHARGE PORT 10	-	8320	-	100A/2P	21		●		22	-	-	-	-	BLANK			
	-	-	8320		23			●	24	-	-	-	-				
BLANK	-	-	-	-	25				26	-	-	-	-	BLANK			
BLANK	-	-	-	-	27				28	-	-	-	-	BLANK			
BLANK	-	-	-	-	29				30	-	-	-	-	BLANK			
BLANK	-	-	-	-	31				32	-	-	-	-	BLANK			
BLANK	-	-	-	-	33				34	-	-	-	-	BLANK			
BLANK	-	-	-	-	35				36	-	-	-	-	BLANK			
PROPOSED LOAD >				33280	33280	33280	ESTIMATED TOTAL PROPOSED EXPECTED LOAD					24960	24960	16640	< PROPOSED LOAD		
PROPOSED LINE 1 AMP: <u>485.33A</u>						L1		L2		L3		REMARKS:					
PROPOSED LINE 2 AMP: <u>485.33A</u>						58240 VA		58240 VA		49920 VA		166.4 KVA, TOTAL ADDITION PROPOSED LOAD: 608.19A @ 3PH, 208V, 125% CONTINUOUS LOAD, .95 POWER FACTOR (SEE NOTE 11)					
PROPOSED LINE 3 AMP: <u>416.00A</u>																	

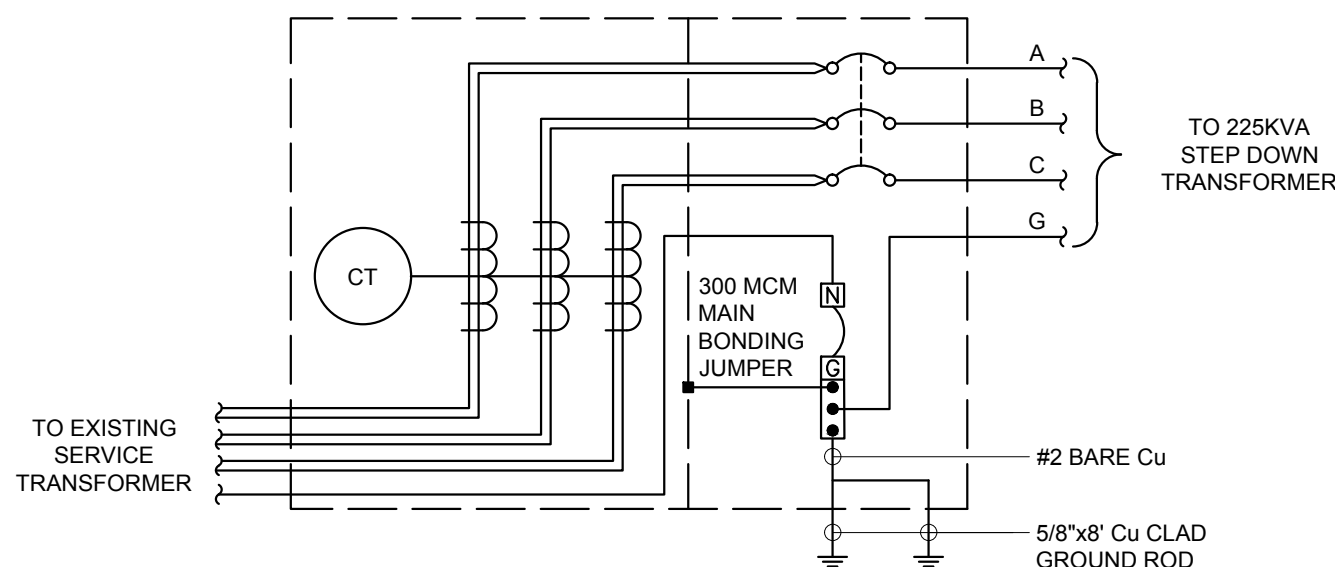
**A** 800A DISTRIBUTION PANEL 'EV' SCHEDULE  
E3.0 NOT TO SCALE



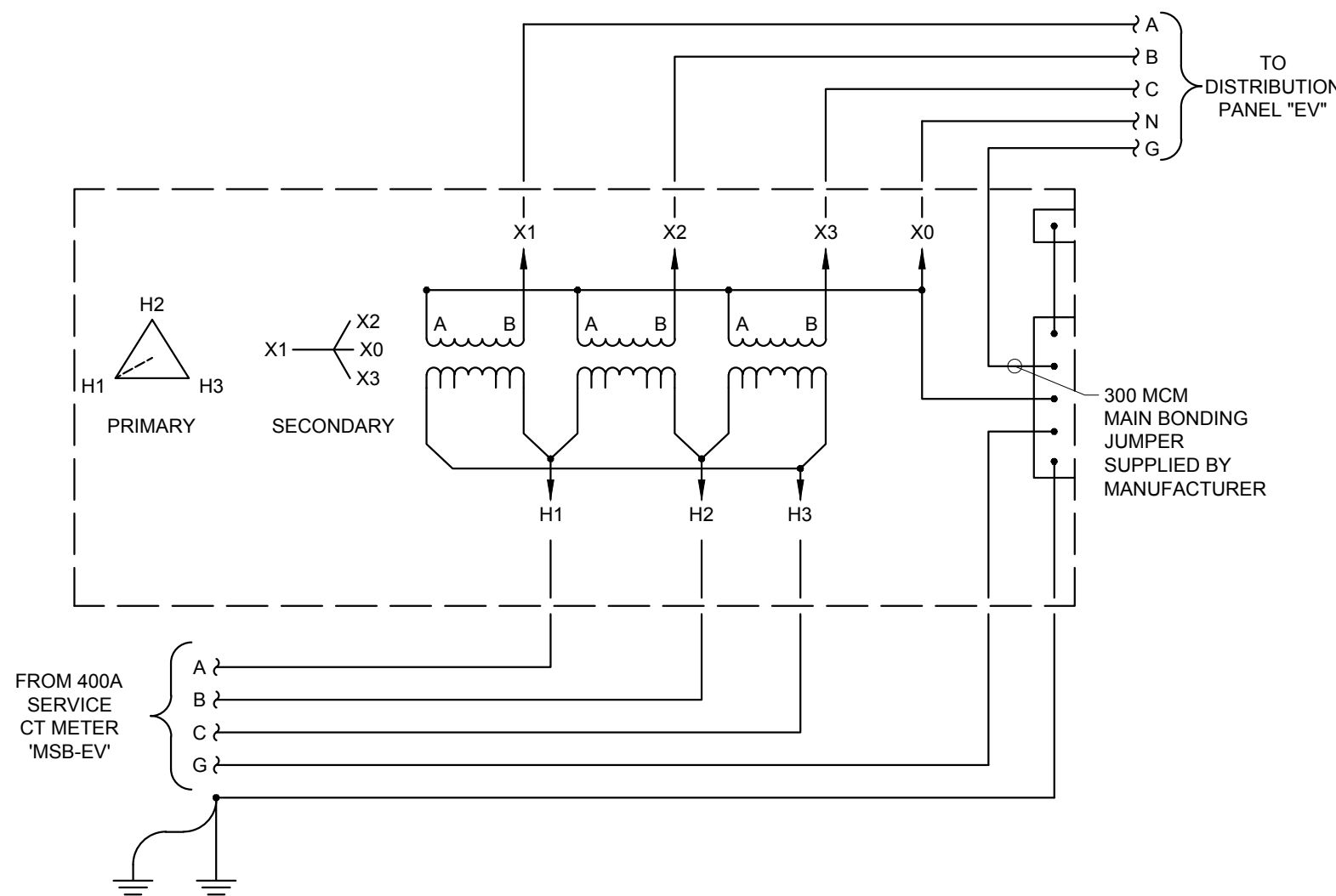
**C** SINGLE LINE DIAGRAM  
E3.0 NOT TO SCALE



**E** PROPOSED DISTRIBUTION SWITCHBOARD 'EV'  
E3.0 NOT TO SCALE



**B** PROPOSED SERVICE CT METER SECTION  
E3.0 NOT TO SCALE



**D** PROPOSED 225KVA STEP DOWN TRANSFORMER  
E3.0 NOT TO SCALE

- NOTES:**
- TOTAL CONNECTED LOAD (10 CHARGING PORTS): 166.4 KVA
  - TYPE TEY 42 KAIC BRANCH BREAKERS
  - TAGGED (CHARGE PORT-#, L1/L2/GND) TYPICAL FOR ALL STATIONS.
  - DO NOT USE GFCI BREAKERS
  - STANDARD RATED SERVICE PANELS, OVER CURRENT PROTECTION DEVICES AND WIRE SIZES BASED ON CEC/NEC REQUIREMENTS AT 125% CONTINUOUS LOAD, 100% RATED SERVICE PANELS, OVER CURRENT PROTECTION DEVICES AND WIRE SIZES BASED ON CEC/NEC REQUIREMENTS AT 100% CONTINUOUS LOAD.
  - TRANSFORMER LOADING BASED ON 16.6 KVA/LEVEL 2 EV CHARGER.
  - ①, INDIVIDUAL CHARGE PORT NUMBER. THIS IS NOT BREAKER SPACE OR EVSE NUMBER. LOAD SCHEDULE INDICATES BREAKER SPACE FOR EACH CHARGE PORT.
  - ②-⑩, INDIVIDUAL CHARGE PORT NUMBER TYPICAL FOR PORTS ② THROUGH ⑩.
  - ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
  - PER CEC/NEC 210.19 (A) INFORMATIONAL NOTE #4, "CONDUCTORS FOR BRANCH CIRCUITS AS DEFINED IN ARTICLE 100, SIZED TO PREVENT A VOLTAGE DROP EXCEEDING 3 PERCENT AT THE FARTHEST OUTLET OF POWER, HEATING, AND LIGHTING LOADS, OR COMBINATION OF SUCH LOADS, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5%."
  - THE METHODS CONTAINED IN CEC/NEC ARTICLE 250 SHALL BE FOLLOWED TO COMPLY WITH GROUNDING AND BONDING OF ELECTRICAL SYSTEMS AND NON-CURRENT CARRYING CONDUCTIVE MATERIALS, ENCLOSURES, OR ITEMS FORMING PART OF ANY SUCH EQUIPMENT THAT ENCLOSES OR CARRIES ELECTRICAL CONDUCTOR OR EQUIPMENT THAT IS LIKELY TO BECOME ENERGIZED. SEE CEC/NEC 250.4(A)(1) THROUGH (5) FOR FURTHER DESCRIPTION.
  - WHERE TWO OR MORE GROUND RODS ARE TO BE INSTALLED, THE MINIMUM SEPARATION SHALL BE 6' PER CEC/NEC 250.53 (A)(2), AND (3) RESISTANCE OF ELECTRODES.
  - MAXIMUM VOLTAGE DROP FOR CONDUCTORS: #2/0 AWG WIRE - 2.91% #3/0 AWG WIRE - 2.75%
  - ALL ELECTRICAL EQUIPMENT SHALL BE LISTED FOR TERMINATION OF ELECTRICAL CONDUCTORS RATED 75C OR HIGHER.

Blink IQ 200 • Level 2 AC EV Charging Stations

Blink IQ 200 Charging Stations Comparison

Blink IQ 200 • Pedestal Specifications

Specifications



BLINK IQ 200 PRODUCT SPECIFICATIONS			
MODELS	SMART CHARGING STATION	ADVANCED CHARGING STATION	KIOSK
Model Number	IQW2-80U-W1-N1-N-25	IQW2-80U-M1-R2-N-25	IQW2-00U-M1-R2-N-00
POWER SPECIFICATIONS			
Input/Output Power	19.2kW Max., <10W Standby		19.2W Max. Input Only, <10W Standby
Input Amperage	80A Continuous		0.08A Continuous Input Only
Output Power (kW)	2.9kW, 3.8kW, 7.7kW, 9.6kW, 15.4kW, 17.3kW, 19.2kW		Not Applicable
Output Amperage (A)	12A, 16A, 24A, 32A, 40A, 64A, 72A, 80A		Not Applicable
Circuit Breaker Options (A)	15A, 20A, 30A, 40A, 50A, 80A, 90A, 100A		10A
Input/Output Nominal Voltage	208VAC/240VAC		120/208/240VAC Input
Input / Output Voltage Range	180VAC to 264VAC		90 to 132VAC Input; 180 to 264VAC Input
Input / Output Frequency	60Hz		
Input Wiring Type	Hardwired		
Input Wiring Scheme	L1, L2, GND		L1, N, GND or L1, L2, GND
Cold-Load	Pickup Randomized delay between 120 and 720 seconds before charge resumes after a power failure.		Not Applicable
Power Measurement Accuracy	Embedded meter with a ±1% accuracy at the nominal input.		Not Applicable
Surge Protection	Up to 6kV at 3,000A		
FUNCTIONAL SPECIFICATIONS			
Charge Connector Type	SAE J1772		Not Applicable
Charge Cable Length	25 ft.		Not Applicable
Demand Response	Yes <sup>2</sup>		Not Applicable
Status Indicator	LED and Audio		
User Interface	None <sup>1</sup>	LCD, 7", Color, 800x480, w/Touch Panel	
Access Control	None <sup>1</sup>	Contactless Reader: RFID Cards: ISO/IEC 14443A/B, ISO/IEC 15693, MIFARE Plus, HID iCLASS, NEMEA Smart Credit Cards: Visa, Master Card, Discover, American Express NFC: ISO 18092, Apple Pay, Google Wallet	
NETWORK SPECIFICATIONS			
Local Area Network (LAN)	2.4GHz Wi-Fi (802.11 b/g/n)		
Wide Area Network (WAN)	None	Cellular (3G GSM, 3G CDMA)	
Network Interface	OCPP v1.5, OCPP v1.6		
Mounting Type	Pedestal or Wall Mount		
SAFETY & COMPLIANCE SPECIFICATIONS			
Ground Fault Detection	CCID20, 20mA per UL 2231, Automatic Reset Feature and Manual Reset Feature		
Ground Monitor	Ground Monitor per UL 2231		
Safety Compliance	UL and cUL, NEC Article 625, RoHS		
Protection	Over-Voltage Protection (OVP), Under-Voltage Protection (UVP), Over-Current Protection (OCP), Over-Temp Protection (OTP), Short-Circuit Protection		
EMC Compliance	FCC Part 15		
ADA Compliance	Yes		
Energy Star Certified	Yes	Not Applicable	
OPERATIONAL SPECIFICATIONS			
Enclosure Rating	NEMA Type 3R Indoor/Outdoor		
Operating Temperature	-30°C to +50°C (-22°F to +122°F)		
Storage Temperature	-40°C to +80°C (-40°F to +176°F)		
Operating Humidity	0 to 95% Relative Humidity, Non-Condensing		
Charger Dimensions	13.95"H x 10.65"W x 5.23"D		
Charger Weight (Unpackaged)	TBD		
Charger Weight (Packaged)	TBD		

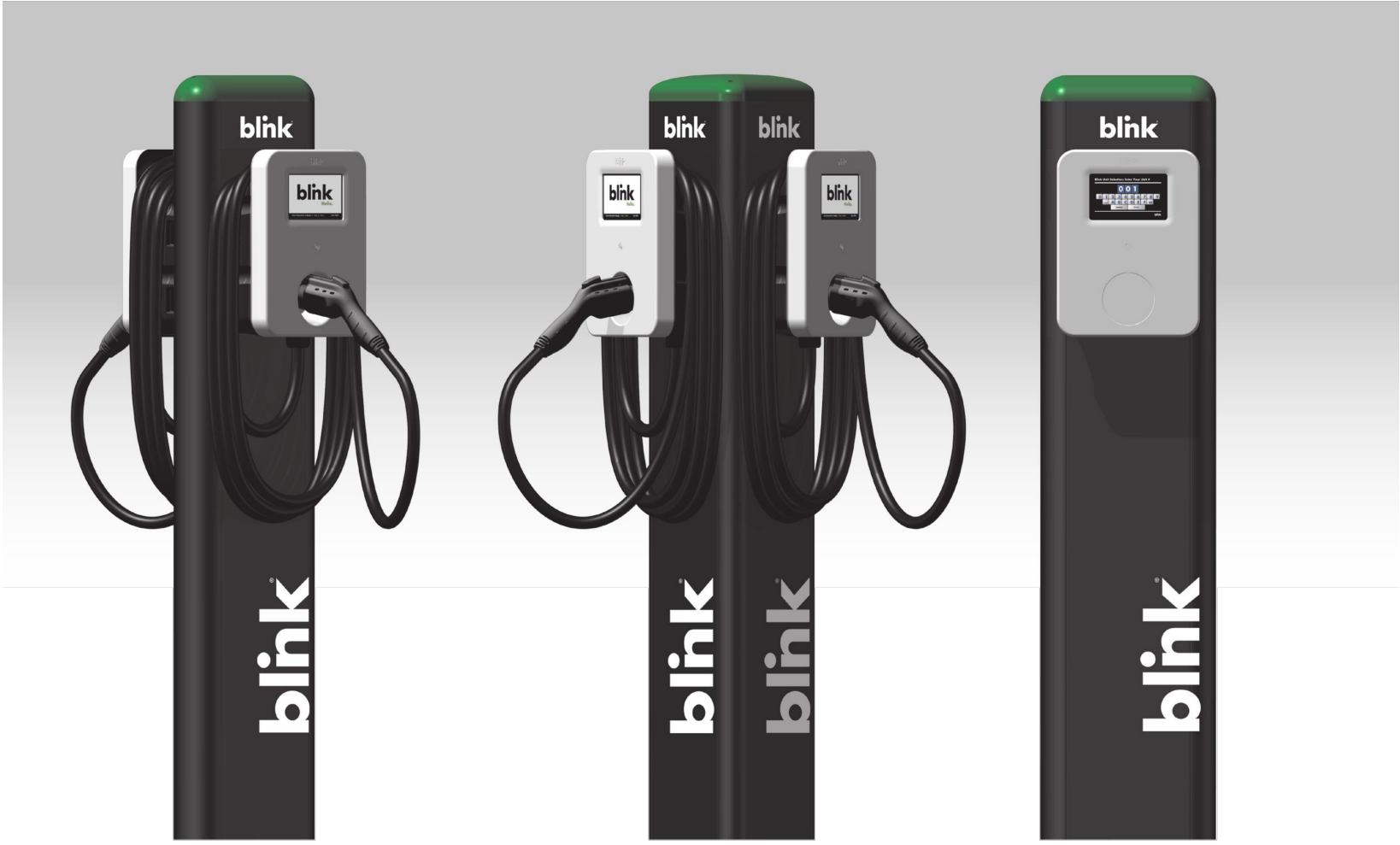
Blink Charging Co. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.  
<sup>1</sup>If applicable, an adjacent primary Advanced Charging Station or Kiosk can provide access control for up to 20 secondary Smart Charging Stations.  
<sup>2</sup>May not be included in the initial product offering.

BLINK IQ 200 PEDESTAL SPECIFICATIONS				
MODELS	RECTANGLE, SINGLE	RECTANGLE, DUAL	TRIANGLE, DUAL	TRIANGLE, TRIPLE
Model Number	01-0210	01-0211	01-0212	01-0213
Number of Supported Charging Stations	1	2	2	3
User Interface Height	48"	48"	48"	48"
Pedestal Dimensions	56.04" H x 13.58"W x 4.28" D	56.04" H x 13.58"W x 4.28" D	59.00" H x 12.50"W x 11.19" D	59.00" H x 12.50"W x 11.19" D
Pedestal Weight (unpacked)	TBD	TBD	TBD	TBD
Pedestal Weight (packaged)	TBD	TBD	TBD	TBD

Rectangular Pedestal  
Single or Dual

Triangular Pedestal  
Dual or Triple

Kiosk



Phone: (888) 998-2546 • support@blinkcharging.com • sales@blinkcharging.com  
18X04.1F

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5 of 8

A  
R1.0  
BLINK IQ 200 SPECIFICATIONS  
NOT TO SCALE

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

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Church & Flynn**  
CONSULTING ENGINEERS

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REF. & REV.

MADERA UNIFIED SCHOOL DISTRICT

ELECTRIC VEHICLE FLEET PROGRAM  
TRANSPORTATION YARD  
REFERENCE DRAWINGS

R1.0

DR. BY: BC  
CH. BY: RF  
DATE: 04-06-2020  
SCALE: AS NOTED  
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OF 11 SHEETS



STATE OF CALIFORNIA

Electrical Power Distribution

NRCC-ELC-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION

NRCC-ELC-E

CERTIFICATE OF COMPLIANCE

This document is used to demonstrate compliance with mandatory requirements in §130.5 for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)(2) for alterations.

Project Name: Madera Unified School District - EV Charger Parking Lot Improvement

Report Page: Page 1 of 5

Project Address: 1200 Gill Ave., Madera, CA 93636

Date Prepared: 3/5/2020

A. GENERAL INFORMATION

01 Project Location (city)

02 Occupancy Types Within Project:

☐ Office

☐ Retail

☐ Warehouse

☐ Hotel/ Motel

☐ School

☐ Support Areas

☐ Parking Garage

☐ High-Rise Residential

☐ Relocatable

☐ Healthcare Facilities

☒ Other (Write In): Parking Lot

B. PROJECT SCOPE

Table Instructions: Include any electrical service systems that are within the scope of the permit application.

01	02	03	04	05	06
Electrical Service Designation/ Description	Scope of Work <sup>1</sup>	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a) <sup>2</sup>	System subject to CA Elec Code Article 517 Exception to §130.5(a)(8)(b) and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.	Demand Response Controls Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.
'MSB-EV'	New electrical service equipment & meter	332.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

<sup>1</sup>FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.  
<sup>2</sup>Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

C. COMPLIANCE RESULTS

Table Instructions: If this table says "DOES NOT COMPLY" refer to Table D, for guidance and review the Table that indicates "No".

01	02	03	04	05				
Service Electrical Metering §130.5(a)	AND	Separation for Monitoring §130.5(b)	AND	Voltage Drop §130.5(c)	AND	Controlled Receptacles §130.5(d)	AND	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		COMPLIES with Exceptional Conditions

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> November 2019

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Report Page: Page 4 of 5

Project Address: 1200 Gill Ave., Madera, CA 93636

Date Prepared: 3/5/2020

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to electrical power distribution requirements.

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Report Page: Page 2 of 5

Project Address: 1200 Gill Ave., Madera, CA 93636

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D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table B indicates the project is exempt from §130.5(a) Service Electrical Metering requirements because the utility company has provided the project a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. SERVICE ELECTRICAL METERING

This Section Does Not Apply

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

Table Instructions: Complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(b). Using the dropdown choices in column 01, indicate the load types included for each service. Any load types that are not included in the service do not need to be shown.

Electrical Service Designation/Description: 'MSB-EV'

01	02	03	04	05
Load Type per Table 130.5-B <sup>1</sup>	Minimum Required Separation of Load per Table 130.5-B	Compliance Method <sup>2</sup>	Location of Requirements in Construction Documents	Field Inspector
Charging stations for electric vehicles	All loads in aggregate	Method 1	E3.0 - Electrical Schedule & Circuits	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

<sup>1</sup>FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.  
<sup>2</sup>Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type  
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type  
Method 3: Branch circuits serve load types individually & provisions for adding future branch circuit monitoring  
Method 4: Complete metering system measures and reports loads by type  
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

<sup>1</sup>FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.  
<sup>2</sup>Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type  
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type  
Method 3: Branch circuits serve load types individually & provisions for adding future branch circuit monitoring  
Method 4: Complete metering system measures and reports loads by type  
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

H. VOLTAGE DROP

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CERTIFICATE OF COMPLIANCE

Project Name: Madera Unified School District - EV Charger Parking Lot Improvement

Report Page: Page 5 of 5

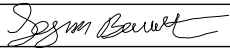
Project Address: 1200 Gill Ave., Madera, CA 93636

Date Prepared: 3/5/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Logan Barnhart

Documentation Author Signature: 

Company: Blair, Church, & Flynn Consulting Engineers

Signature Date: 3/5/2020

Address: 451 Clovis Ave., Suite 200

CEA/ HERS Certification Identification (if applicable):

City/State/Zip: Clovis, CA 93612

Phone: (559) 326-1400

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.


2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)

3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Brian Duffy

Responsible Designer Signature: 

Company: Blair, Church, & Flynn Consulting Engineers

Date Signed: 3/5/2020

Address: 451 Clovis Ave., Suite 200

License: PE# E22220

City/State/Zip: Clovis, CA 93612

Phone: (559) 326-1400

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Project Name: Madera Unified School District - EV Charger Parking Lot Improvement

Report Page: Page 3 of 5

Project Address: 1200 Gill Ave., Madera, CA 93636

Date Prepared: 3/5/2020

Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §130.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)(2)(ii).

01	02	03	04	05
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method	Location of Voltage Drop Calculations <sup>1</sup>	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector
'MSB-EV'	<input checked="" type="checkbox"/> Voltage drop < 5% <input type="checkbox"/> Permitted by CA Elec Code (Exception to §130.5(c))*			<input type="checkbox"/> Pass <input type="checkbox"/> Fail

<sup>1</sup>NOTES If "Permitted by CA Elec Code" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.  
<sup>2</sup>FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES

Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(d). Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

01	02	03	04	05	06
Room Name or Description	Location/ Type of Controlled Receptacles	Shut-Off Controls	Permanent Durable Marking Will be Used	Location of Requirements in Construction Documents	Field Inspector
N/A	NA: No applicable space types on this service		<input type="checkbox"/>		<input type="checkbox"/> Pass <input type="checkbox"/> Fail

<sup>1</sup> If "Other" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at [https://www2.energy.ca.gov/title24/2019standards/2019\\_compliance\\_documents/Nonresidential\\_Documents/NRCL/](https://www2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCL/)

YES	NO	Form/Title	Field Inspector
<input checked="" type="radio"/>	<input type="radio"/>	NRCL-ELC-01-E - Must be submitted for all buildings.	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> November 2019

PROJECT LOCATION: 1200 GILL AVE, MADERA, CA 93636

PG&E FLEET NO: 000823710



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Fax (559) 326-1500

REF. & REV.

MADERA UNIFIED SCHOOL DISTRICT

ELECTRIC VEHICLE FLEET PROGRAM  
TRANSPORTATION YARD  
TITLE 24 DOCUMENTS

R2.0

DR. BY: BC  
CH. BY: RF  
DATE: 04-06-2020  
SCALE: AS NOTED  
SHEET NO. 11  
OF 11 SHEETS