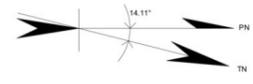


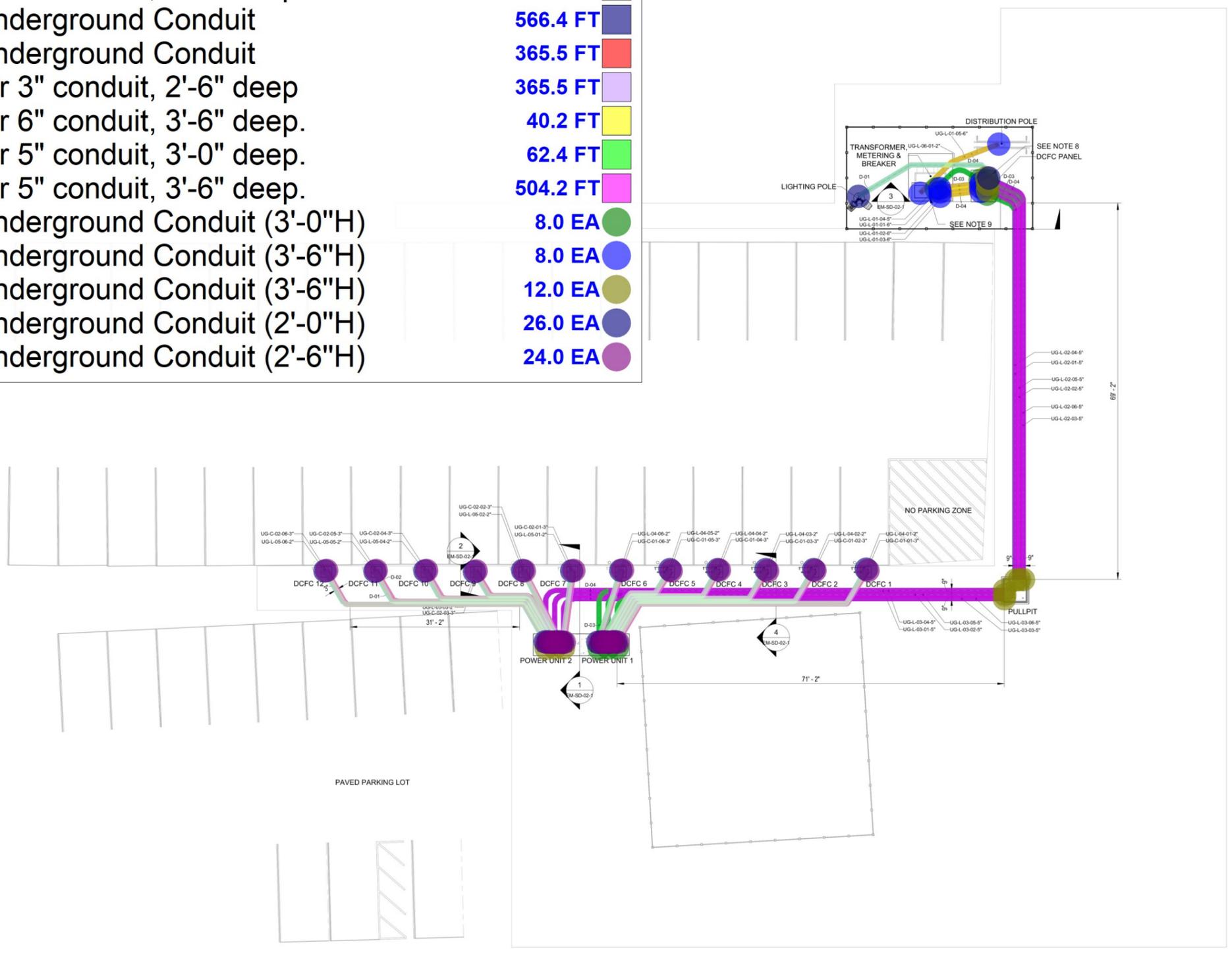
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 ELEC. REF. FILE: PLOT SCALE:

- 6" Dia. Underground Conduit
- 2" Dia. Underground Conduit
- Trench for 2" conduit, 2'-0" deep
- 5" Dia. Underground Conduit
- 3" Dia. Underground Conduit
- Trench for 3" conduit, 2'-6" deep
- Trench for 6" conduit, 3'-6" deep.
- Trench for 5" conduit, 3'-0" deep.
- Trench for 5" conduit, 3'-6" deep.
- 5" Dia. Underground Conduit (3'-0"H)
- 6" Dia. Underground Conduit (3'-6"H)
- 5" Dia. Underground Conduit (3'-6"H)
- 2" Dia. Underground Conduit (2'-0"H)
- 3" Dia. Underground Conduit (2'-6"H)

- 40.7 FT
- 392.8 FT
- 392.8 FT
- 566.4 FT
- 365.5 FT
- 365.5 FT
- 40.2 FT
- 62.4 FT
- 504.2 FT
- 8.0 EA
- 8.0 EA
- 12.0 EA
- 26.0 EA
- 24.0 EA



- NOTES:**
- ALL PVC CONDUITS SHALL BE SCHEDULE 40 UNLESS OTHERWISE SPECIFIED.
 - CONDUIT RUNS SHOWN ARE APPROXIMATE, ACTUAL LOCATION TO BE DETERMINED IN FIELD. CONDUIT DEPICTED FOR VISUALIZATION PURPOSES. FIELD TO ENSURE 360° OF BEND MAXIMUM.
 - FIELD TO VERIFY EXACT CONDUIT STUB-UP LOCATION BASED UPON ABOVE GRADE BOX AND EQUIPMENT LOCATIONS.
 - ALL CONDUIT SHALL PENETRATE ON THE BOTTOM OF ANY OUTDOOR EQUIPMENT BOX. TOP CONDUIT ENTRY SHALL NOT BE ALLOWED.
 - FOR SEALING THE ENDS OF CONDUITS TERMINATING AT BOXES OR PANEL BOARDS, CONTRACTOR SHALL USE DUCTSEAL OR EQUIVALENT.
 - AVOID EXCAVATION CLOSE TO FOUNDATIONS. CONDUIT SHALL BE MIN 8" AWAY FROM ANY FOUNDATIONS.
 - VENDOR PRINTS FOR THE DCFC PANEL PENDING. DESIGN TO BE FINALIZED AFTER FINAL RECEIPT OF PRINTS.
 - TRANSFORMER, METERING AND BREAKER UNDER UTILITY SCOPE.
 - BASED ON THE DATASHEET OF CABLE PROPOSED CONTRACTOR CAN RECOMMEND SMALLER SIZE CONDUIT. HOWEVER THE CONDUIT FILL SHALL COMPLY WITH NEC REQUIREMENT.
- REFERENCES:**
- OC-EVCS-EM-GA-01-1 GENERAL ARRANGEMENT PLAN (OPTION 1)
 - OC-EVCS-EM-SD-02-1 CONDUIT DETAILS (OPTION 1)
 - OC-EVCS-CV-GA-05-1 OVERALL FOUNDATION PLAN (OPTION 1)
- LEGENDS:**
- ==> PVC CONDUIT
- | MINIMUM BENDING RADIUS FOR CONDUIT AS PER NEC 322.24, (TABLE 2 CHAPTER 9) | |
|---|------------------------------|
| TRADE SIZE | MIN. BENDING RADIUS (INCHES) |
| 2" | 9 1/2" |
| 3" | 13" |
| 5" | 24" |
| 6" | 30" |
- | CONDUIT KEYNOTES | |
|------------------|--------------------------------------|
| KEY | CONDUIT DEPTH (BELOW FINISHED GRADE) |
| D-01 | Depth=2'-0" |
| D-02 | Depth=2'-6" |
| D-03 | Depth=3'-0" |
| D-04 | Depth=3'-6" |
- CONDUIT LABEL LEGEND:**
- XX-X-XX-XX-X"
- CONDUIT SIZE
 - CONDUIT NUMBER
 - SEQUENCE NUMBER
 - L - POWER UP TO 2000V
 - C - COMMUNICATION
 - AG - ABOVEGROUND CONDUIT
 - UG - UNDERGROUND CONDUIT



CLIENT
ORANGE COUNTY, NORTH CAROLINA

TITLE
DESIGN & ENGINEERING SERVICES
ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
CONDUIT LAYOUT PLAN (OPTION 1)

SCALE 1"= 10'-0" DRAWING No. OC-EVCS-EM-GA-02-1 SHEET 1 OF 1

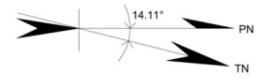
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5" Dia. Underground Conduit	426.1 FT	
6" Dia. Underground Conduit	47.1 FT	
2" Dia. Underground Conduit	373.6 FT	
Trench for 2" conduit, 2'-0" deep	373.6 FT	
3" Dia. Underground Conduit	364.3 FT	
Trench for 3" conduit, 2'-6" deep	364.3 FT	
Trench for 5" conduit, 3'-0" deep.	99.7 FT	
Trench for 6" conduit, 3'-6" deep.	32.2 FT	
Trench for 6" conduit, 2'-6" deep.	15.1 FT	
Trench for 5" conduit, 3'-6" deep.	335.2 FT	
6" Dia. Underground Conduit (3'-6"H)	6.0 EA	
6" Dia. Underground Conduit (3'-0"H)	2.0 EA	
6" Dia. Underground Conduit (2'-6"H)	2.0 EA	
5" Dia. Underground Conduit (3'-0"H)	8.0 EA	
5" Dia. Underground Conduit (3'-6"H)	6.0 EA	
2" Dia. Underground Conduit (2'-0"H)	26.0 EA	
3" Dia. Underground Conduit (2'-6"H)	24.0 EA	



- NOTES:**
- ALL PVC CONDUITS SHALL BE SCHEDULE 40 UNLESS OTHERWISE SPECIFIED.
 - CONDUIT RUNS SHOWN ARE APPROXIMATE, ACTUAL LOCATION TO BE DETERMINED IN FIELD. CONDUIT DEPICTED FOR VISUALIZATION PURPOSES. FIELD TO ENSURE 360° OF BEND MAXIMUM.
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 - TRANSFORMER, METERING AND BREAKER UNDER UTILITY SCOPE.
 - BASED ON THE DATASHEET OF CABLE PROPOSED CONTRACTOR CAN RECOMMEND SMALLER SIZE CONDUIT. HOWEVER THE CONDUIT FILL SHALL COMPLY WITH NEC REQUIREMENT.

- REFERENCES:**
- OC-EVCS-EM-GA-01-2 GENERAL ARRANGEMENT PLAN (OPTION 2)
 - OC-EVCS-EM-SD-02-2 CONDUIT DETAILS (OPTION 2)
 - OC-EVCS-CS-GA-05-2 OVERALL FOUNDATION PLAN (OPTION 2)

CONSTRUCTION NOTES:

OC-EVCS-EM-GA-02-2 CONDUIT DETAILS OPTION 2 IS PROPOSED AS ALTERNATIVE TO AVOID PULLBOX. IF CONTRACTOR CHOOSE TO CONSTRUCT AS PER THIS OPTION, CONTRACTOR SHALL DESIGN DETAIL AND TERMINATION THEMSELVES.

LEGENDS:

PVC CONDUIT

MINIMUM BENDING RADIUS FOR CONDUIT AS PER NEC 322.24, (TABLE 2 CHAPTER 9)

TRADE SIZE	MIN. BENDING RADIUS (INCHES)
2"	9 1/2"
3"	13"
5"	24"
6"	30"

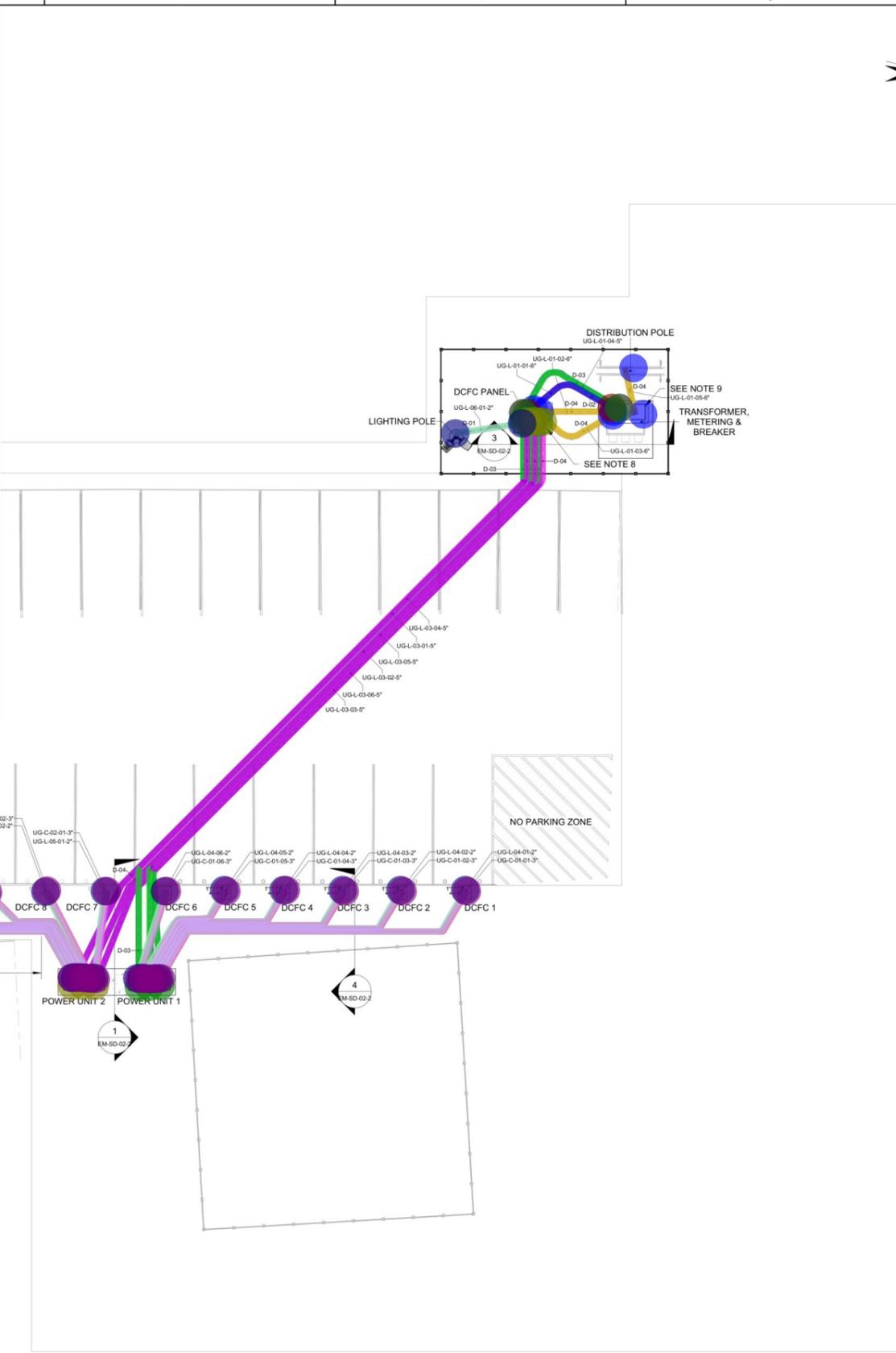
CONDUIT KEYNOTES

KEY	CONDUIT DEPTH (BELOW FINISHED GRADE)
D-01	Depth=2'-0"
D-02	Depth=2'-6"
D-03	Depth=3'-0"
D-04	Depth=3'-6"

CONDUIT LABEL LEGEND:

XX-X-XX-XX-X"

- CONDUIT SIZE
- CONDUIT NUMBER
- SEQUENCE NUMBER
- P - POWER
- C - COMMUNICATION
- AG - ABOVEGROUND CONDUIT
- UG - UNDERGROUND CONDUIT



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C-5232
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TITLE
DESIGN & ENGINEERING SERVICES
ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
CONDUIT LAYOUT PLAN (OPTION 2)

SCALE 1" = 10'-0"

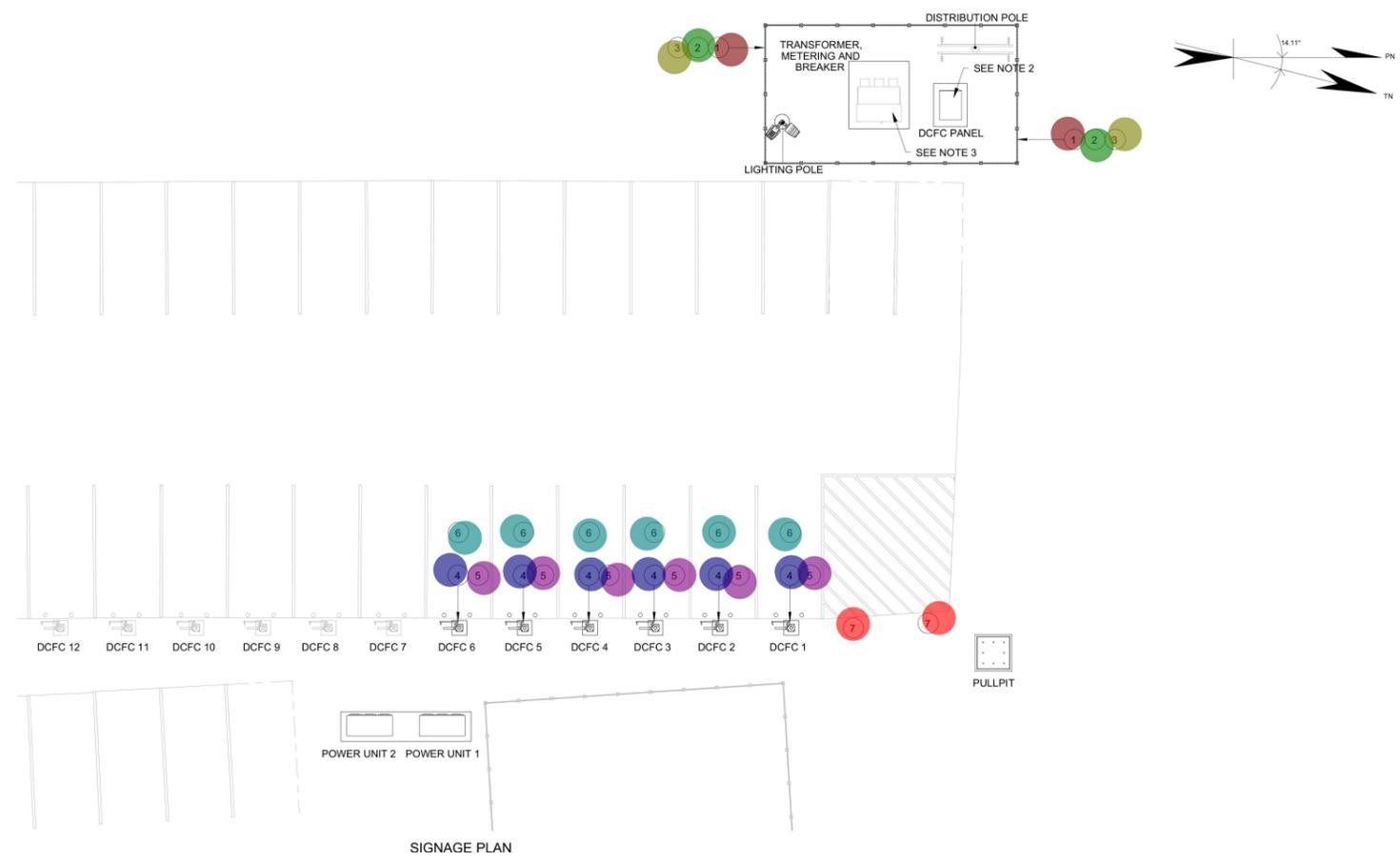
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ELECT. REF. FILE: PLOT SCALE:



- SIGNAGE BUBBLE NUMBER:**
- 1 NO TRESPASSING (VIDEO SURVEILLANCE)
 - 2 DANGER KEEP OUT
 - 3 HIGH VOLTAGE WARNING SIGN
 - 4 EV CHARGING ONLY SIGN - WITH STICKER
 - 5 EV CHARGING - VEHICLE MOVE SIGN
 - 6 EV CHARGING GROUND STENCIL
 - 7 ACCESS AISLE - NO PARKING
 - 8 VEHICLE CHARGING WAYFINDING SIGN
 - 9 VEHICLE CHARGING STATION SIGN

- NOTES:**
1. SIGNS MOUNTED ON SITE FENCING SHALL BE 6 FEET TO THE TOP OF THE SIGN.
 2. SIGNS SHALL BE MOUNTED TO FENCING USING ANTI-THEFT MOUNTING BRACKETS OR STAINLESS-STEEL ZIP TIES.
 3. SIGN EDGES SHALL BE SMOOTH, NON-SHARP, AND FREE OF BURRS. CORNER RADIUS SHALL BE CONSTANT ARCS. HOLES SHALL BE PERFECTLY ROUND AND FREE OF BURRS. PRINT SHALL BE EXECUTED CLEANLY WITHOUT SAWTOOTHING, MOTTILING, SMUDGES, OR VOIDS.
 4. THE BASE MATERIAL OF ALL POLYCARBONATE SIGNS SHALL BE CLEAR WINDOW GRADE POLYCARBONATE. UV GLAZING SHALL BE APPLIED TO THE ONE SIDE (OUTWARD FACING) OF THE SIGN.
 5. FOR ALL SAFETY SIGNS THE 0.033" BACK LAMINATE MUST BE REFLECTIVE AND OPAQUE AND FEATURE A NON-YELLOWING, UV RESISTANT PERMANENT ACRYLIC SOLVENT-BASED ADHESIVE.
 6. NON-REFLECTIVE SIGNS SHALL BE PRINTED IN THE SAME MANNER AS NOTE 4, THE BACK LAMINATE SHALL FEATURE A COATING. THE BACK LAMINATE SHALL BE 0.014".
 7. SIGNS MUST MEET THE MOST REVISIONS OF ANSI Z535.1 SAFETY COLORS ANSI Z535.2 ENVIRONMENTAL AND FACILITY SAFETY SIGNS, ANSI Z535.3 CRITERIA FOR SAFETY SYMBOLS, NESC C2.
 8. SIGNS SHALL BE SUBSURFACELY PRINTED, USING AUTOMOTIVE GRADE SOLVENT-BASED INK, THICKNESS BY 0.0004" +/- 0.001" WITH 30-MICRON EMULSION, APPLIED USING A 158-MESH SCREEN. UV INKS ARE NOT ACCEPTABLE.
 9. BACK LAMINATING FILM SHALL BE APPLIED USING PRESSURE SEALING LAMINATION ROLLERS, AND SHALL BE FREE OF WRINKLERS, AIR POCKETS, AND ENTRAPPED DUST OR CONTAMINATION.
 10. SIGNAGE 8 AND 9 SHALL BE PLACED ON LOCATION (APPROACH ROAD OR THE ENTRANCE OF THE PARKING AREA) SO THAT DRIVER KNOW A PARKING FACILITY IS AHEAD.

REFERENCES:
OC-EVCS-EM-GA-01-1 GENERAL ARRANGEMENT PLAN (OPTION 1)

BILL OF MATERIALS - SIGNAGE		
SIGNAGE BUBBLE NUMBER	DESCRIPTION	QTY.
1	NO TRESPASSING (VIDEO SURVEILLANCE)	2
2	DANGER KEEP OUT	2
3	HIGH VOLTAGE WARNING SIGN	2
4	EV CHARGING ONLY SIGN - WITH STICKER	6
5	EV CHARGING - VEHICLE MOVE SIGN	6
6	EV CHARGING GROUND STENCIL	6
7	ACCESS AISLE - NO PARKING	2
8	VEHICLE CHARGING WAYFINDING SIGN	1
9	VEHICLE CHARGING STATION SIGN	1

- EV Charging ground stencil marking for parking bays
- EV Charging notice sign – Vehicles must move after charging
- EV Charging Only sign with operational instruction sticker
- Access Aisle sign indicating No Parking zone
- No Trespassing sign with 24-hour video surveillance notice
- Danger – Keep Out safety sign for restricted area
- High Voltage warning sign for electrical hazard areas
- Vehicle Charging wayfinding directional sign
- Vehicle Charging Station identification sign at entry point

6.0 EA

6.0 EA

6.0 EA

2.0 EA

2.0 EA

2.0 EA

2.0 EA

1.0 EA

1.0 EA






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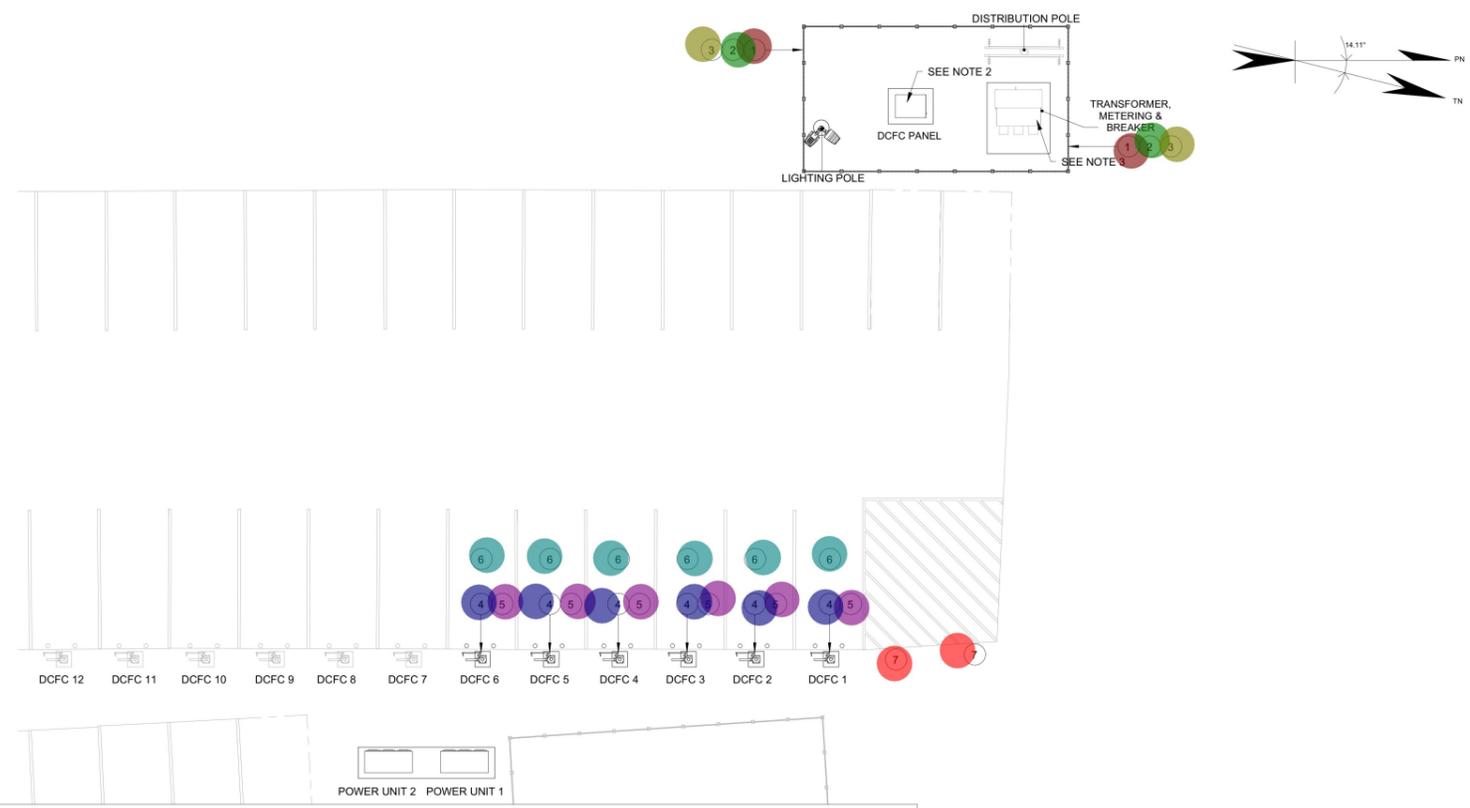
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EQUAGEN ENGINEERS
C-5232
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TITLE	DESIGN & ENGINEERING SERVICES ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT SIGNAGE DETAIL (OPTION 1)		
SCALE	NTS	DRAWING No.	OC-EVCS-EM-GA-01-1
SHEET	1	CONTD	-
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- SIGNAGE BUBBLE NUMBER:**
- 1 NO TRESPASSING (VIDEO SURVEILLANCE)
 - 2 DANGER KEEP OUT
 - 3 HIGH VOLTAGE WARNING SIGN
 - 4 EV CHARGING ONLY SIGN - WITH STICKER
 - 5 EV CHARGING - VEHICLE MOVE SIGN
 - 6 EV CHARGING GROUND STENCIL
 - 7 ACCESS AISLE - NO PARKING
 - 8 VEHICLE CHARGING WAYFINDING SIGN
 - 9 VEHICLE CHARGING STATION SIGN

- NOTES:**
- SIGNS MOUNTED ON SITE FENCING SHALL BE 6 FEET TO THE TOP OF THE SIGN.
 - SIGNS SHALL BE MOUNTED TO FENCING USING ANTI-THEFT MOUNTING BRACKETS OR STAINLESS-STEEL ZIP TIES.
 - SIGN EDGES SHALL BE SMOOTH, NON-SHARP, AND FREE OF BURRS. CORNER RADIUS SHALL BE CONSTANT ARCS. HOLES SHALL BE PERFECTLY ROUND AND FREE OF BURRS. PRINT SHALL BE EXECUTED CLEANLY WITHOUT SAWTOOTHING, MOTTLING, SMUDGES, OR VOIDS.
 - THE BASE MATERIAL OF ALL POLYCARBONATE SIGNS SHALL BE CLEAR WINDOW GRADE POLYCARBONATE. UV GLAZING SHALL BE APPLIED TO THE ONE SIDE (OUTWARD FACING) OF THE SIGN.
 - FOR ALL SAFETY SIGNS THE 0.033" BACK LAMINATE MUST BE REFLECTIVE AND OPAQUE AND FEATURE A NON-YELLOWING, UV RESISTANT PERMANENT ACRYLIC SOLVENT-BASED ADHESIVE.
 - NON-REFLECTIVE SIGNS SHALL BE PRINTED IN THE SAME MANNER AS NOTE 4. THE BACK LAMINATE SHALL FEATURE A COATING. THE BACK LAMINATE SHALL BE 0.014".
 - SIGNS MUST MEET THE MOST REVISIONS OF ANSI Z535.1 SAFETY COLORS ANSI Z535.2 ENVIRONMENTAL AND FACILITY SAFETY SIGNS, ANSI Z535.3 CRITERIA FOR SAFETY SYMBOLS, NESC C2.
 - SIGNS SHALL BE SUBSURFACELY PRINTED, USING AUTOMOTIVE GRADE SOLVENT-BASED INK, THICKNESS BY 0.0004" +/- 0.001" WITH 30-MICRON EMULSION, APPLIED USING A 158-MESH SCREEN. UV INKS ARE NOT ACCEPTABLE.
 - BACK LAMINATING FILM SHALL BE APPLIED USING PRESSURE SEALING LAMINATION ROLLERS, AND SHALL BE FREE OF WRINKLERS, AIR POCKETS, AND ENTRAPPED DUST OR CONTAMINATION.
 - SIGNAGE 8 AND 9 SHALL BE PLACED ON LOCATION (APPROACH ROAD OR THE ENTRANCE OF THE PARKING AREA) SO THAT DRIVER KNOW A PARKING FACILITY IS AHEAD.

REFERENCES:
 OC-EVCS-EM-GA-01-2 GENERAL ARRANGEMENT PLAN (OPTION 2)

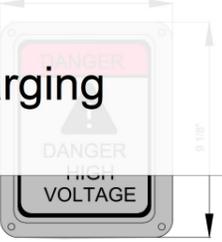
BILL OF MATERIALS - SIGNAGE		
SIGNAGE BUBBLE NUMBER	DESCRIPTION	QTY.
1	NO TRESPASSING (VIDEO SURVEILLANCE)	2
2	DANGER KEEP OUT	2
3	HIGH VOLTAGE WARNING SIGN	2
4	EV CHARGING ONLY SIGN - WITH STICKER	6
5	EV CHARGING - VEHICLE MOVE SIGN	6
6	EV CHARGING GROUND STENCIL	6
7	ACCESS AISLE - NO PARKING	2
8	VEHICLE CHARGING WAYFINDING SIGN	1
9	VEHICLE CHARGING STATION SIGN	1

- No Trespassing sign with 24-hour video surveillance notice
- Vehicle Charging Station identification sign at entry point
- Vehicle Charging wayfinding directional sign
- High Voltage warning sign for electrical hazard areas
- Danger – Keep Out safety sign for restricted area
- EV Charging Only sign with operational instruction sticker
- Access Aisle sign indicating No Parking zone
- EV Charging notice sign – Vehicles must move after charging
- EV Charging ground stencil marking for parking bays

- 2.0 EA
- 1.0 EA
- 1.0 EA
- 2.0 EA
- 2.0 EA
- 6.0 EA
- 2.0 EA
- 6.0 EA
- 6.0 EA

surveillance. 24 horas.
 Police authorized to arrest under SC 16-11-620. La policia esta autorizada a arrestarle segun el Art. SC 16-11-620.

or death. Authorized personnel only. muerte severas. El personal autorizado solo.
 Duke Energy



CLIENT
 ORANGE COUNTY, NORTH CAROLINA

TITLE
 DESIGN & ENGINEERING SERVICES
 ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
 SIGNAGE DETAIL (OPTION 2)

SCALE
 NTS DRAWING No. OC-EVCS-EM-GA-04-2 SHEET 1 OF 1 CONTD. REV. 00

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NOTES:
 1. BASED ON THE DATASHEET OF CABLE PROPOSED CONTRACTOR CAN RECOMMEND SMALLER SIZE CONDUIT, HOWEVER THE CONDUIT FILL SHALL COMPLY WITH NEC REQUIREMENT.

- Tag K2: 2" PVC Conduit w/ Bell end, Sch... 1.0 EA
- Tag K3: 3" PVC Conduit w/ Bell End, Sch... 1.0 EA
- Tag K5: 5" PVC Conduit w/ Bell End, Sch... 1.0 EA
- Tag K6: 6" PVC Conduit w/ Bell End, Sch... 1.0 EA
- Tag K2B: 2" PVC Coupling 1.0 EA
- Tag K2E: 2" PVC 90° Std Radius Elbow, ... 1.0 EA
- Tag K2N: 2" PVC Bell End 1.0 EA
- Tag K3B: 3" PVC Coupling 1.0 EA
- Tag K3E: 3" PVC 90° Std Radius Elbow, ... 1.0 EA
- Tag K3N: 3" PVC Bell End 1.0 EA
- Tag K5B: 5" PVC Coupling 1.0 EA
- Tag K5E: 5" PVC 90° Std Radius Elbow, ... 1.0 EA
- Tag K5N: 5" PVC Bell End 1.0 EA
- Tag K6B: 6" PVC Coupling 1.0 EA
- Tag K6E: 6" PVC 90° Std Radius Elbow, ... 1.0 EA
- Tag K6N: 6" PVC Bell End 1.0 EA
- Tag C1: 4/0 Bare Copper Cable, 19-Stran... 1.0 EA
- Tag C2: Exothermic Mold, Tee 4/0 Run to... 6.0 EA
- Tag C3: 5/8" x 10' Copper-Bonded Grou... 12.0 EA
- Tag C4: Split Bolt Connector, 6 Sol – 4/0... 21.0 EA
- Tag C5: Exothermic Mold for 4/0 to 5/8" ... 8.0 EA
- Tag C6: Parallel Tap Ground Connector, ... 7.0 EA
- Tag C7: 4/0 CU Compression Terminal, ... 10.0 EA
- Tag C8: Weld Material, 115 T-Connectio... 10.0 EA
- Tag C9: Weld Material, 150 Horizontal (... 24.0 EA
- Tag C10: Mechanical Grounding Connec... 10.0 EA
- Tag C11: 228-Series Loadbreak Elbow, 2... 3.0 EA
- Tag E1: Transformer, 13.8kV/480V, 1500 ... 1.0 EA
- Tag E2: Service Switchgear & Metering U... 1.0 EA
- Tag E3: DCFC Panel Board 1.0 EA
- Tag E4: 600 kW Power Unit 1.0 EA
- Tag E5: Power Cabinet 1.0 EA
- Tag E6: Power Module 12.0 EA
- Tag E7: Satellite Charger, CCS1 400A/5M 5.0 EA
- Tag E8: LED Floodlight, 480V with Acces... 2.0 EA
- Tag E9: 30' Lighting Pole 1.0 EA

BILL OF MATERIALS-CONDUIT					
ITEMS	MANUFACTURER	PART NO.	DESCRIPTION	QUANTITY	UNIT
K2	CARLON OR EQUIVALENT	49011-010	CONDUIT, 2" PVC, WITH BELL END, SCHEDULE 40	1	LOT
K3	CARLON OR EQUIVALENT	49013-010	CONDUIT, 3" PVC, WITH BELL END, SCHEDULE 40	1	LOT
K5	CARLON OR EQUIVALENT	49016-010	CONDUIT, 5" PVC, WITH BELL END, SCHEDULE 40	1	LOT
K6	CARLON OR EQUIVALENT	49017-010	CONDUIT, 6" PVC, WITH BELL END, SCHEDULE 40	1	LOT
K2B	CARLON OR EQUIVALENT	E940J	COUPLING, 2" PVC	1	LOT
K2E	CARLON OR EQUIVALENT	UA9AJB	ELBOW, 2" PVC, STANDARD RADIUS, 90 DEGREE SWEEP, BELLED END, SCHEDULE 40	1	LOT
K2N	CARLON OR EQUIVALENT	E997J	BELL END, 2", PVC	1	LOT
K3B	CARLON OR EQUIVALENT	E940L	COUPLING, 3" PVC	1	LOT
K3E	CARLON OR EQUIVALENT	UA9ALB-CAR	ELBOW, 3" PVC, STANDARD RADIUS, 90 DEGREE SWEEP, BELLED END, SCHEDULE 40	1	LOT
K3N	CARLON OR EQUIVALENT	E997L	BELL END, 3", PVC	1	LOT
K5B	CARLON OR EQUIVALENT	E940P	COUPLING, 5" PVC	1	LOT
K5E	CARLON OR EQUIVALENT	UA9APB	ELBOW, 5" PVC, STANDARD RADIUS, 90 DEGREE SWEEP, BELLED END, SCHEDULE 40	1	LOT
K5N	CARLON OR EQUIVALENT	E997P	BELL END, 5", PVC	1	LOT
K6B	CARLON OR EQUIVALENT	E940R	COUPLING, 6" PVC	1	LOT
K6E	CARLON OR EQUIVALENT	UA9ARB	ELBOW, 6" PVC, STANDARD RADIUS, 90 DEGREE SWEEP, BELLED END, SCHEDULE 40	1	LOT
K6N	CARLON OR EQUIVALENT	E997R	BELL END, 6", PVC	1	LOT
			PULL PIT	1	EA

BILL OF MATERIALS-GROUNDING					
ITEMS	MANUFACTURER	PART NO.	DESCRIPTION	QUANTITY	UNIT
1	BURNDY OR EQUIVALENT	13673950	WIRE/CABLE, 4/0 AWG, CU, SOFT DRAWN, 19 STR, BARE COPPER	1	FT.
2	BURNDY OR EQUIVALENT	M-241	EXOTHERMIC MOLD, TEE, 4/0 RUN TO 4/0 TAP TEE (TO BE USED WITH (1) #150 WELD METAL)	6	EA
3	ERICO OR EQUIVALENT	615800	ROD, GROUND, COPPER BONDED STEEL, SECTIONAL, 5/8" x 10'	12	EA
4	BURNDY OR EQUIVALENT	YC4C4	CONNECTOR, ELECT., SPLIT BOLT, 6 SOL - 4/0 STR AWG CONDUCTOR	21	EA
5	BURNDY OR EQUIVALENT	M-550	EXOTHERMIC MOLD, HORIZONTAL CABLE THROUGH TOP OF GROUND ROD, 4/0 TO 5/8" GROUND ROD	8	EA
6	BURNDY OR EQUIVALENT	YGHC29C29	GROUND CONNECTOR, COMPRESSION, PARALLEL TAP, 2/0-250KCMIL RUN TO 2/0-250KCMIL TAP	7	EA
7	BURNDY OR EQUIVALENT	YA282N	GROUND TERMINAL, COMPRESSION, 4/0 CU TO NEMA 2-HOLE PAD	115	EA
8	BURNDY OR EQUIVALENT	115	WELD MATERIAL, 115 T-CONNECTION FOR 4/0 TO 5/8 GROUND ROD	10	EA
9	BURNDY OR EQUIVALENT	150	WELD MATERIAL, 150 T OR 4/0 TO 4/0 HORIZONTAL GROUNDING CONDUCTOR	24	EA
10	BURNDY OR EQUIVALENT	GB29	MECHANICAL GROUNDING CONNECTOR, CABLE TO BAR	10	EA
11	3M OR EQUIVALENT	228LB508B	LOADBREAK ELBOW 228-SERIES, 200 AMP, 125KV BIL, 25/28KV	3	EA

BILL OF MATERIALS-EQUIPMENT					
ITEMS	MANUFACTURER	PART NO.	DESCRIPTION	QUANTITY	UNIT
1	TBD	TBD	TRANSFORMER, 13.8 kV/480 V, 1500 kVA 3 PH, NEC COMPLIANCE	1	EA
2	TBD	TBD	SERVICE SWITCHGEAR AND METERING UNIT, 480 VAC, 60 Hz, 3 PHASE ENERGY METER, 480 VAC, 3 POLE, 2500 A ACB, METERING AND BREAKER PANEL, NEMA 3R (OUTDOOR) NEC COMPLIANCE	1	EA
3	TBD	TBD	DCFC PANEL BOARD	1	EA
4	KEMPOWER OR EQU.	TBD	POWER UNIT, 600 KW	1	EA
5	KEMPOWER OR EQU.	500V/DS6 V3	POWER CABINET	1	EA
6	KEMPOWER OR EQU.	550 V1	POWER MODULE	12	EA
7	KEMPOWER OR EQU.	CCS1 400A/5M	SATELLITE	5	EA
8	LITHONIA OR EQU.	RSXF3 LED P4 40K WFL 480 IS DDBXD	LED FLOODLIGHT, 480VAC, WITH NECESSARY ACCESSORIES	2	EA
9	TBD	TBD	30' TALL POLE	1	EA

REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	APVD BY	APVD BY	APVD BY

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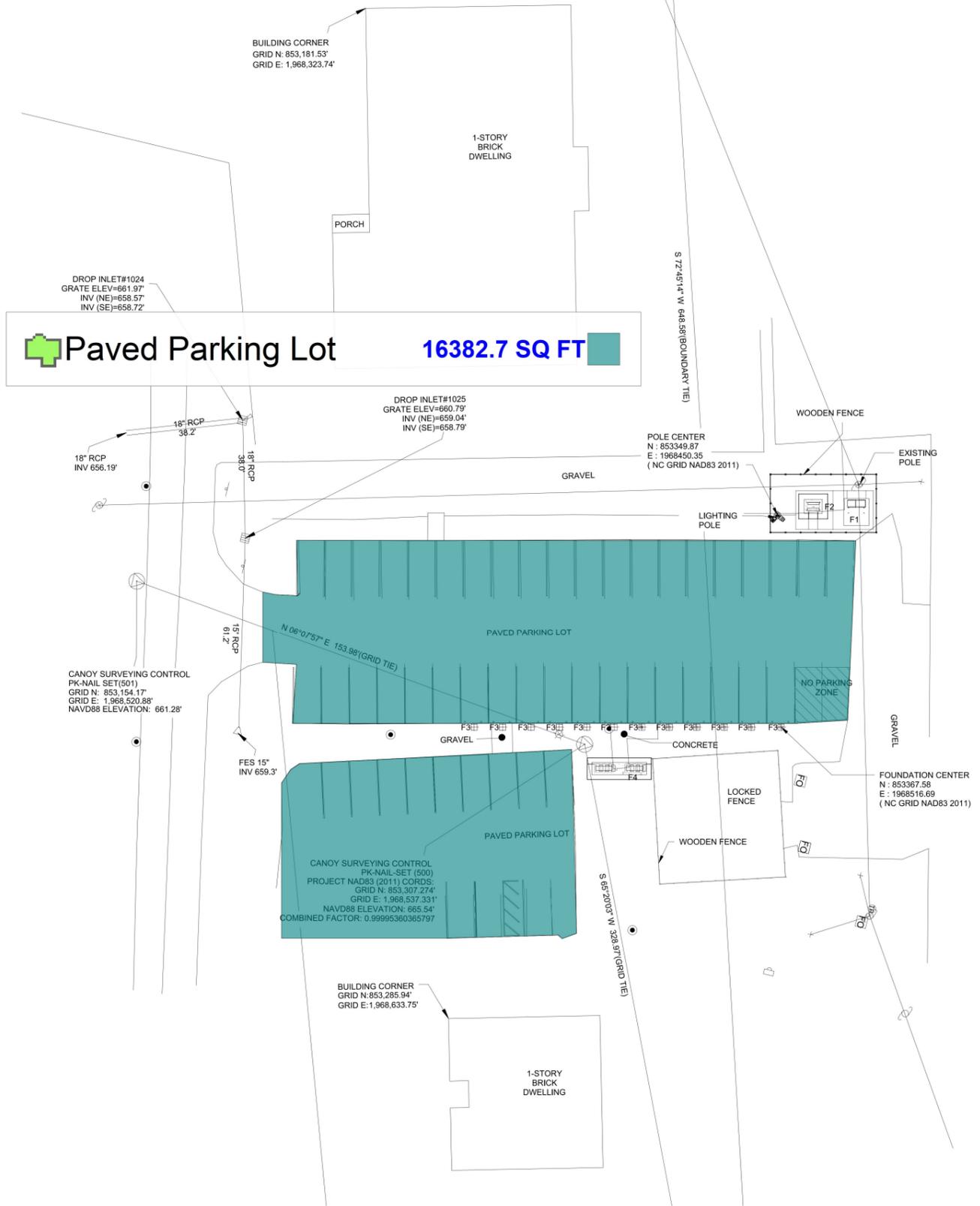
OrangeCounty PUBLIC TRANSIT

TITLE: DESIGN & ENGINEERING SERVICES
ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
BILL OF MATERIAL (OPTION 1)

SCALE: As Indicated | DRAWING No.: OC-EVCS-EM-SD-04-1 | SHEET: 1 | CONTD: - | REV: 01



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1 SITE PLAN
 1" = 20'-0"

- NOTES:**
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 - IT'S CONTRACTOR'S RESPONSIBILITY TO REMOVE EXISTING CONCRETE ON SITE AREA AND RELOCATE ANY SEWER OR UTILITY LINE IF ENCOUNTERED ON CONSTRUCTION SITE.

- LEGENDS:**
- WOODEN FENCE
 - TRANSFORMER (480V)
 - CONTROL AND DISTRIBUTION PANELS
 - CHARGING EQUIPMENT
 - CHARGING EQUIPMENT (FUTURE)
 - POWER UNIT



CLIENT
 ORANGE COUNTY, NORTH CAROLINA



TITLE
 DESIGN & ENGINEERING SERVICES
 ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
SITE PLAN

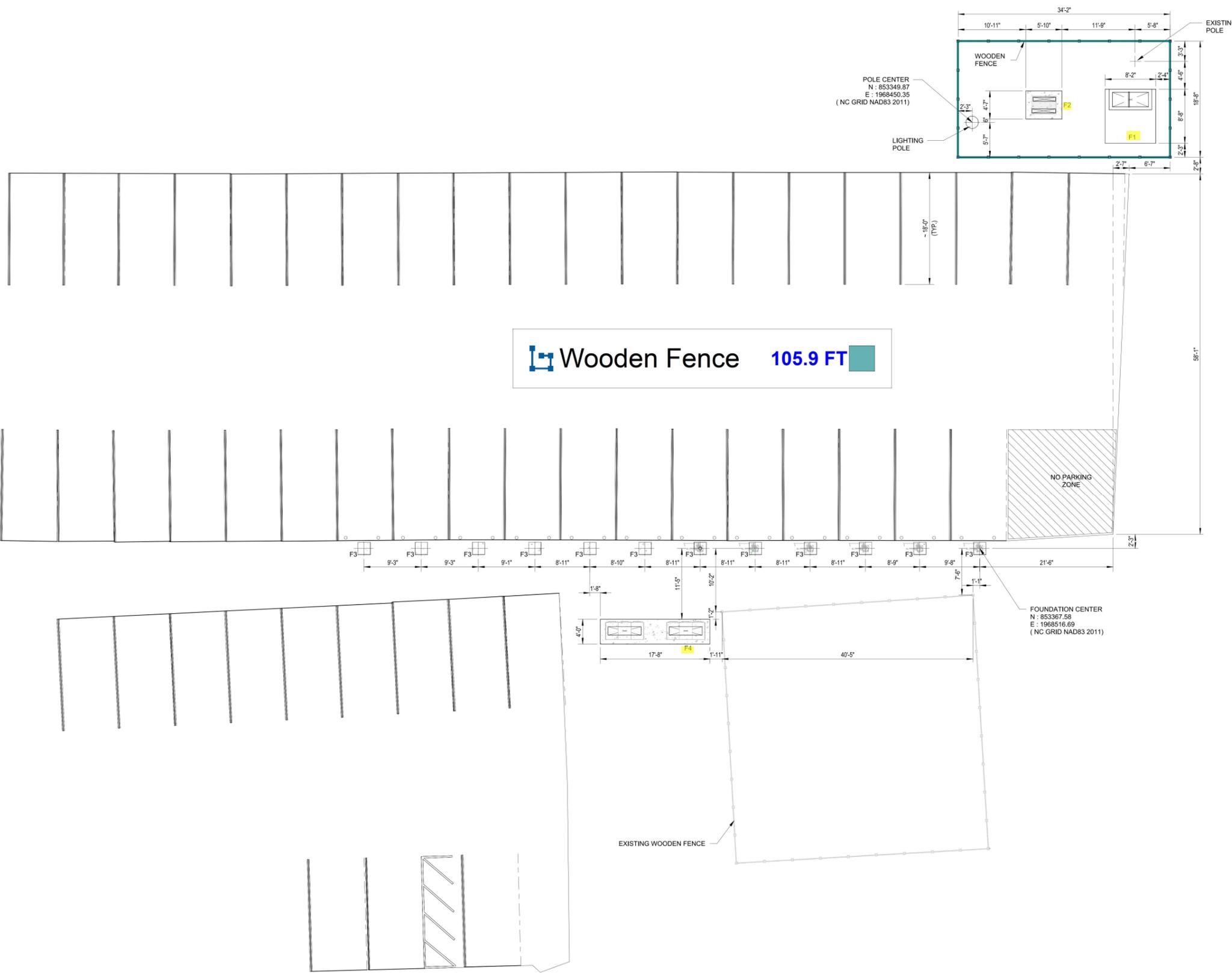
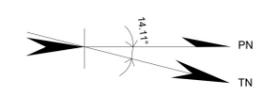
SCALE	As Indicated	DRAWING No.	OC-EVCS-CV-GA-04-2	SHEET	1	CONT'D	-	REV.	00
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- LEGENDS:**
- WOODEN FENCE
 - TRANSFORMER (480V)
 - CONTROL AND DISTRIBUTION PANELS
 - CHARGING EQUIPMENT
 - CHARGING EQUIPMENT (FUTURE)
 - POWER UNIT

FOUNDATION SCHEDULE

DESCRIPTIONS	SYMBOL	QTY
TRANSFORMER FOUNDATION	F1	1
CONTROL AND DISTRIBUTION PANELS FOUNDATION	F2	1
CHARGING EQUIPMENT FOUNDATION	F3	12
POWER UNIT FOUNDATION	F4	1

1 OVERALL FOUNDATION PLAN
 1/8" = 1'-0"



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EQUAGEN ENGINEERS
 C-5232
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TITLE

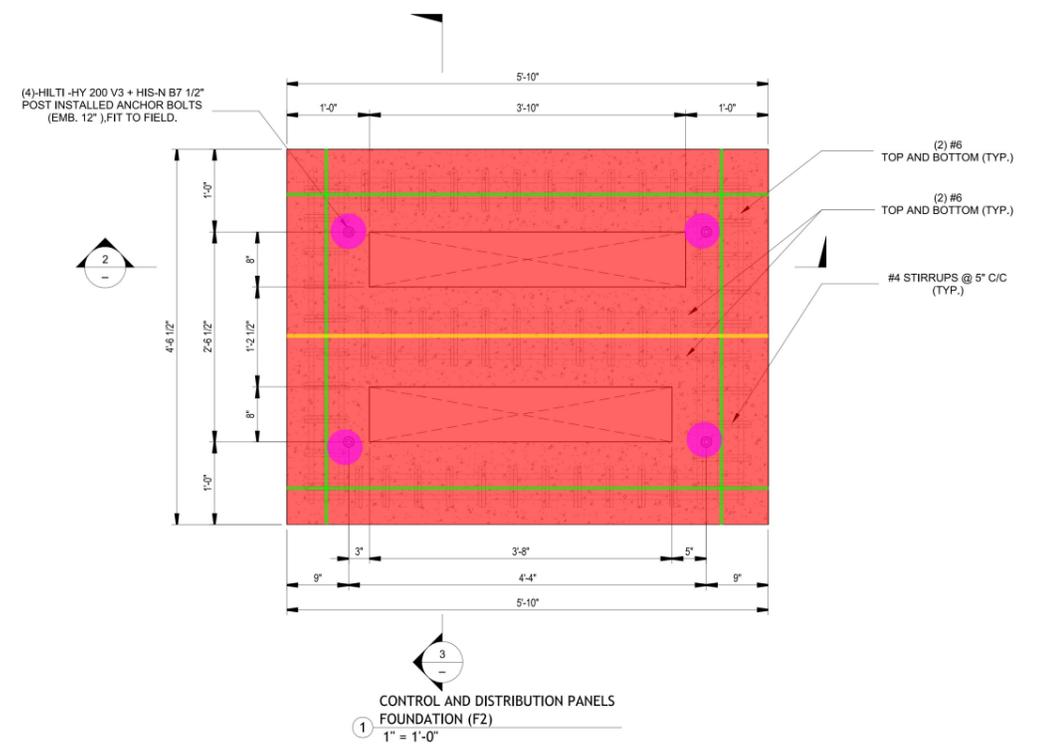
DESIGN & ENGINEERING SERVICES
 ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
OVERALL FOUNDATION PLAN

SCALE	DRAWING No.	SHEET	CONT'D	REV.
As Indicated	OC-EVCS-CV-GA-05-2	1	-	00

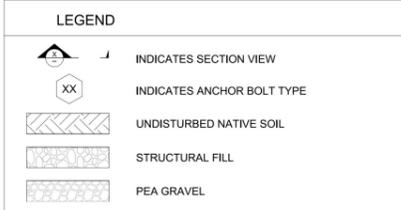
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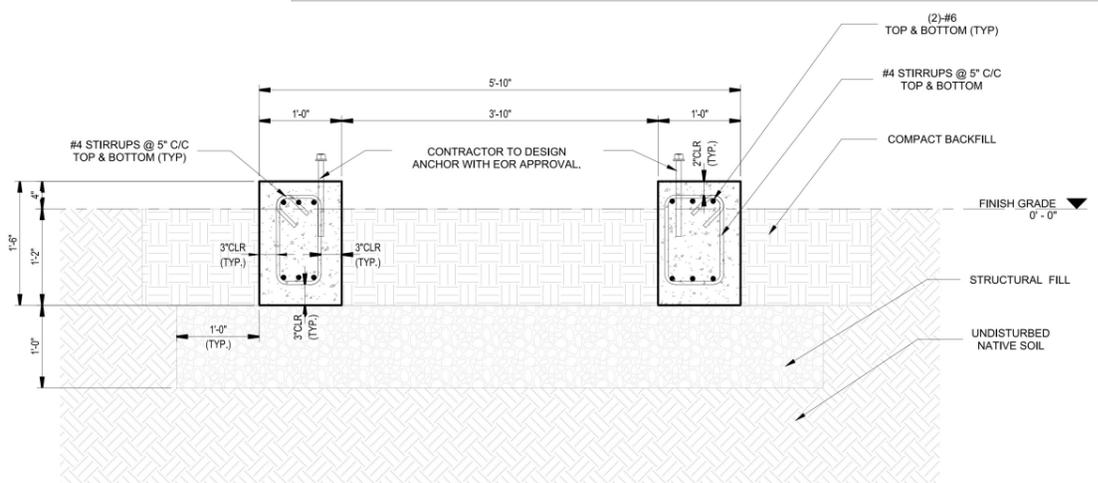


- NOTES**
1. NOTIFY THE ENGINEER IF SITE CONDITIONS VARY FROM THE DRAWINGS OR THE GEOTECHNICAL REPORT.
 2. ALL BACKFILL AROUND FOUNDATIONS SHALL BE SLOPED TO PREVENT PONDING AND DIRECT RUNOFF AWAY FROM THE FOUNDATION. SLOPE SHALL BE MINIMUM OF 1.5% TOWARDS THE DRAINAGE LINE.
 3. BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY PER ASTM D1557.
 4. STRUCTURAL FILL SHOULD HAVE CALTRANS CLASS II AGGREGATE BASE WITH PARTICLE SIZE 3 INCHES OR LESS WITH FINES CONTENT LESS THAN 40% PASSING NO. 200 SIEVE, LIQUID LIMIT <30 & PLASTICITY INDEX <10.
 5. STRUCTURAL FILL SHOULD BE COMPACTED TO 95% OF MAX. DENSITY AS DETERMINED BY MODIFIED PROCTOR TEST (ASTM D1557). MAXIMUM LIFT THICKNESS SHOULD BE LIMITED TO 8 INCH IN LOOSE THICKNESS FOR HEAVY EQUIPMENT AND 4 TO 6 INCHES IN LOOSE THICKNESS WHEN HAND GUIDED EQUIPMENT IS USED.
 6. THE CONTRACTOR SHALL VERIFY FOUNDATION DIMENSIONS AND OPENINGS AS PER FINALIZED EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OF ANY DISCREPANCIES OR OMISSIONS PRIOR TO CONSTRUCTION.

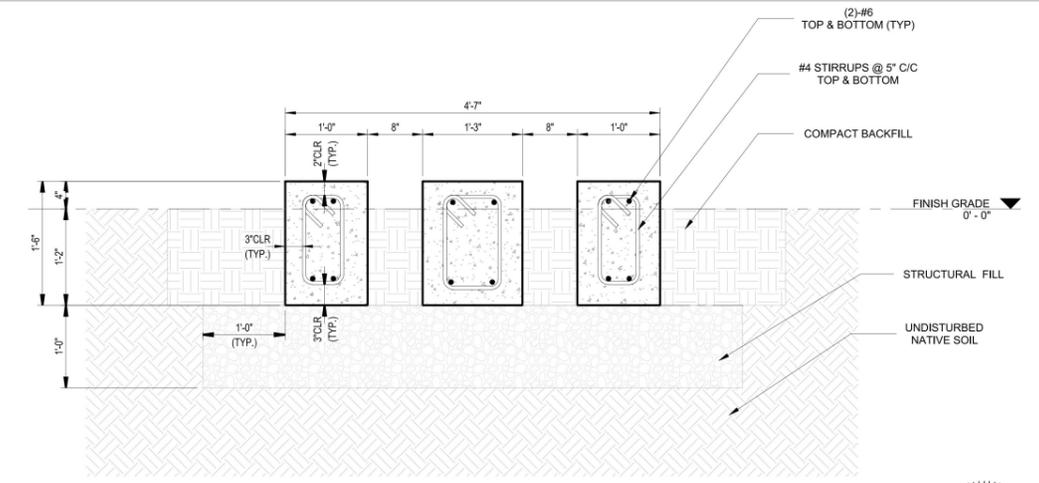


- REFERENCES:**
- CUSTOMER GUIDE FOR INSTALLING CONDUIT-PAGE (1-17) (DUKE ENERGY)
 - CUSTOMER GUIDE FOR INSTALLING CONDUIT- CHECKLIST PAGE (18-19) (DUKE ENERGY)

	1'-0" Deep Structural Fill	26.6 SQ FT
	1'-0" X 1'-6" Continuous Concrete Footing w/ 2-#6 T & B , #4 Stirrups @ 5" C/C T & B	20.8 FT
	1'-3" X 1'-6" Continuous Concrete Footing w/ 2-#6 T & B , #4 Stirrups @ 5" C/C T & B	5.8 FT
	HILTI HY 200 V3 + HIS-N 1/2" post-installed anchor bolts, 12" embedment	4.0 EA



CONTROL AND DISTRIBUTION PANELS FOUNDATION (F2) SECTION
1" = 1'-0"



CONTROL AND DISTRIBUTION PANELS FOUNDATION (F2)- SECTION
1" = 1'-0"



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ORANGE COUNTY, NORTH CAROLINA

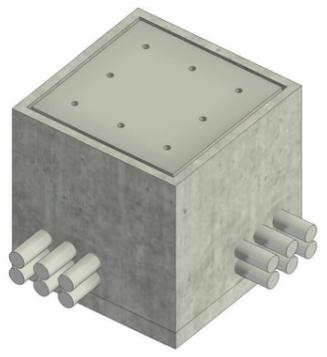
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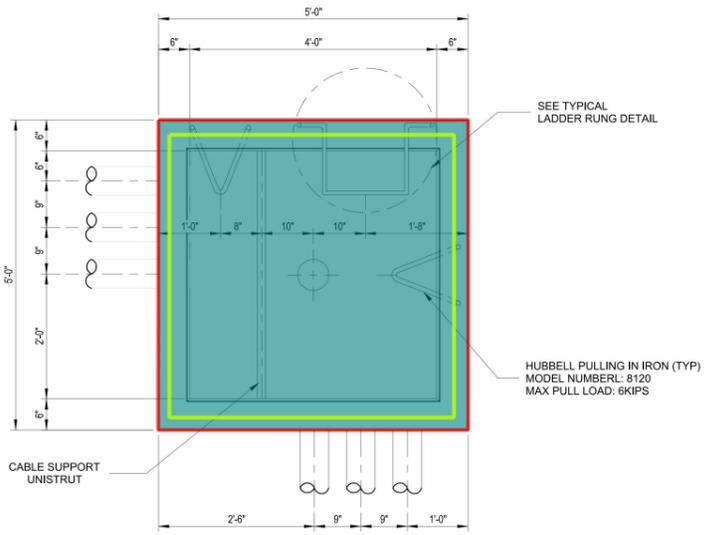
TITLE
DESIGN & ENGINEERING SERVICES
ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
CONTROL AND DISTRIBUTION PANELS FOUNDATION PLAN

SCALE: As Indicated
DRAWING No.: 00-EVCS-CV-GA-09-2
SHEET: 1
CONT'D: -
REV: 00

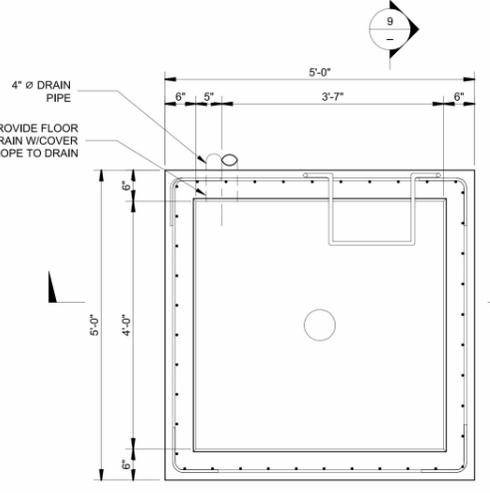
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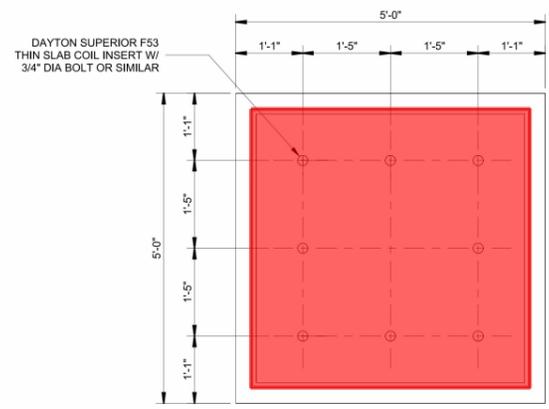
1 PULL BOX - 3D ISOMETRIC VIEW



2 PULL BOX PLAN
3/4" = 1'-0"

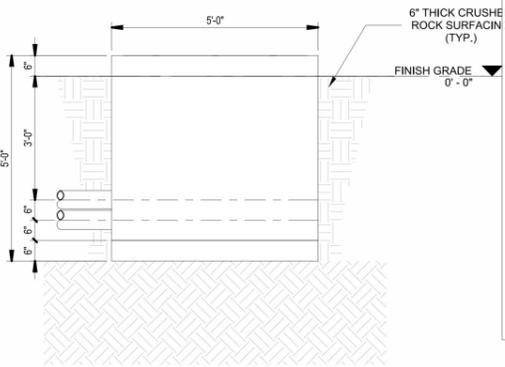


3 PULL BOX - DRAIN DETAIL
3/4" = 1'-0"



4 PULL BOX - LIFTING INSERT LOCATION
3/4" = 1'-0"

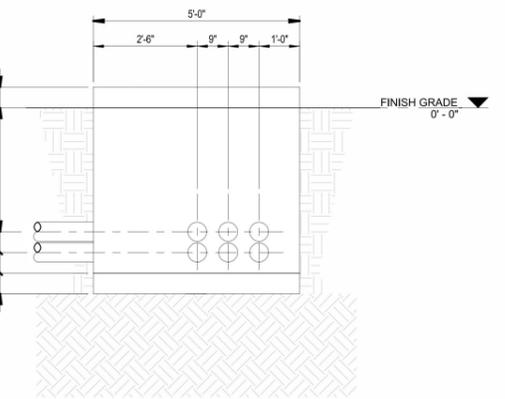
- NOTES:**
- ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE SPECIFIED.
 - UNDERGROUND CONDUITS SHALL SLOPE TOWARDS MANHOLES WITH A MINIMUM OF 3" OF SLOPE PER 100'.
 - CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH (F_c) OF 4000 PSI.
 - ALL REINFORCING STEEL SHALL BE A615 GR.60 UNLESS NOTED OTHERWISE. SUBCONTRACTOR TO SUBMIT REBAR SUBMITTAL TO THE ENGINEER AS PART OF CONSTRUCTION SUBMITTAL.
 - SUBGRADE TO BE COMPACTED TO MINIMUM 95% OF MODIFIED PROCTOR MAX DRY DENSITY WITHIN 2% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.
 - CABLE SHALL ENTER WALL AND CONCRETE DUCTBANK SHOULD TERMINATE OUTSIDE WALL.
 - F53 THIN SLAB COIL INSERTS SHOULD BE SET BACK 1/2" FROM THE SURFACE OF THE CONCRETE, MAINTAINING AT LEAST 3/4" OF CONCRETE BELOW THE INSERT.
 - STRUCTURAL FILL SHOULD BE COHESIVE WITH 7-PI-20, LL<40, MINUS 200 PASSING 50% OR ABOVE.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO KEEP ALL PULL PIT COVERS WATER TIGHT UNTIL THE PROJECT IS HANDLED OVER TO THE CLIENT. THE CLIENT SHALL MAINTAIN SEALANT FOR WATER TIGHT AFTER THE PROJECT IS HANDLED OVER TO THEM.
 - THE VISQUEEN VAPOR BARRIER SHALL BE FIXED IN POSITION ON A LEVELED SURFACE, CONTINUOUSLY ENSURING ADHESION AS PER THE MANUFACTURER'S INSTRUCTIONS AND ASTM E1643 CODE. ALL JOINTS SHALL HAVE MIN 6" OVERLAP USING TAPE OR OTHER MEANS. ALL PENETRATION SHALL BE SEALED.



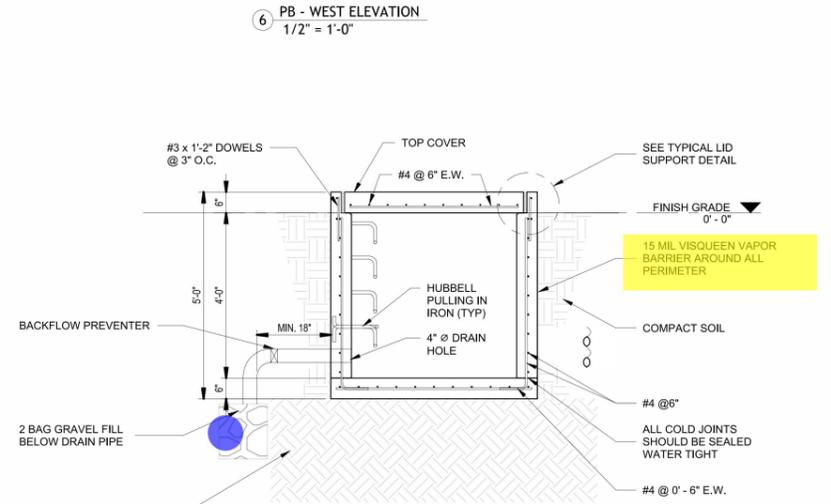
5 PB - EAST ELEVATION
1/2" = 1'-0"

- 6" Thick Concrete Slab w/ #4 @ 6" E.W.
- 6" Thick Concrete Dayton Superior F53 Thin Slab coil insert w/ 3/4" Dia Bolts
- 6" Thick Concrete Wall w/ #4 @ 6" O.C. Each Way
- #3 X 1'-2" Dowels @ 3" O.C. (Extra)
- 2 Bag Gravel Fill Below Drain Pipe
- Linear

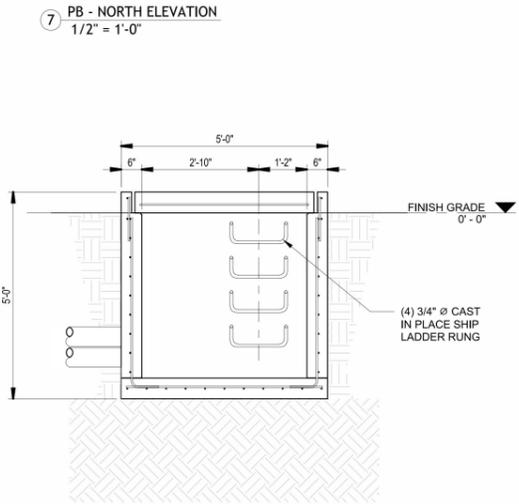
- 25.1 SQ FT
- 20.3 SQ FT
- 18.3 FT
- 18.3 FT
- 1.0 EA
- 38.1 FT



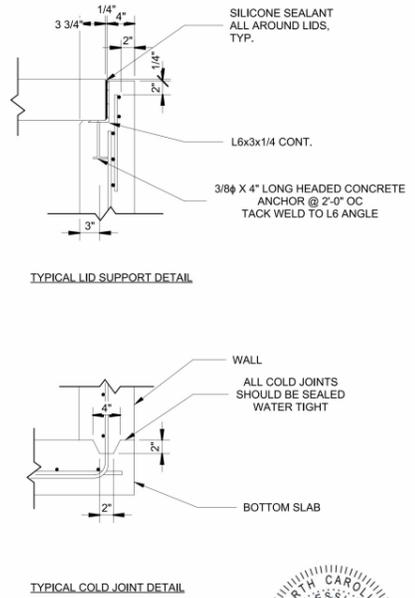
8 PB - SOUTH ELEVATION
1/2" = 1'-0"



9 PULL BOX - SECTION
1/2" = 1'-0"



10 PULL BOX - LADDER RUNG SECTION
1/2" = 1'-0"



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ORANGE COUNTY, NORTH CAROLINA
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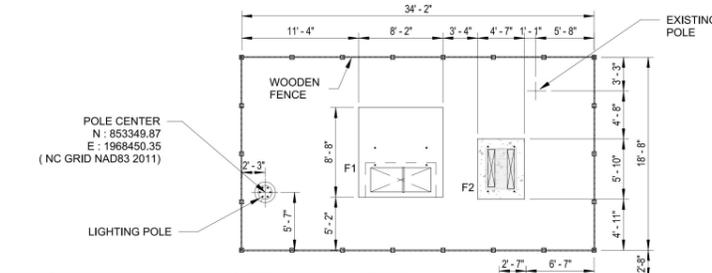
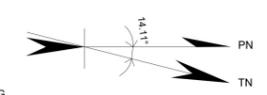
TITLE
DESIGN & ENGINEERING SERVICES
ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
PULL BOX DETAILS

SCALE: As Indicated
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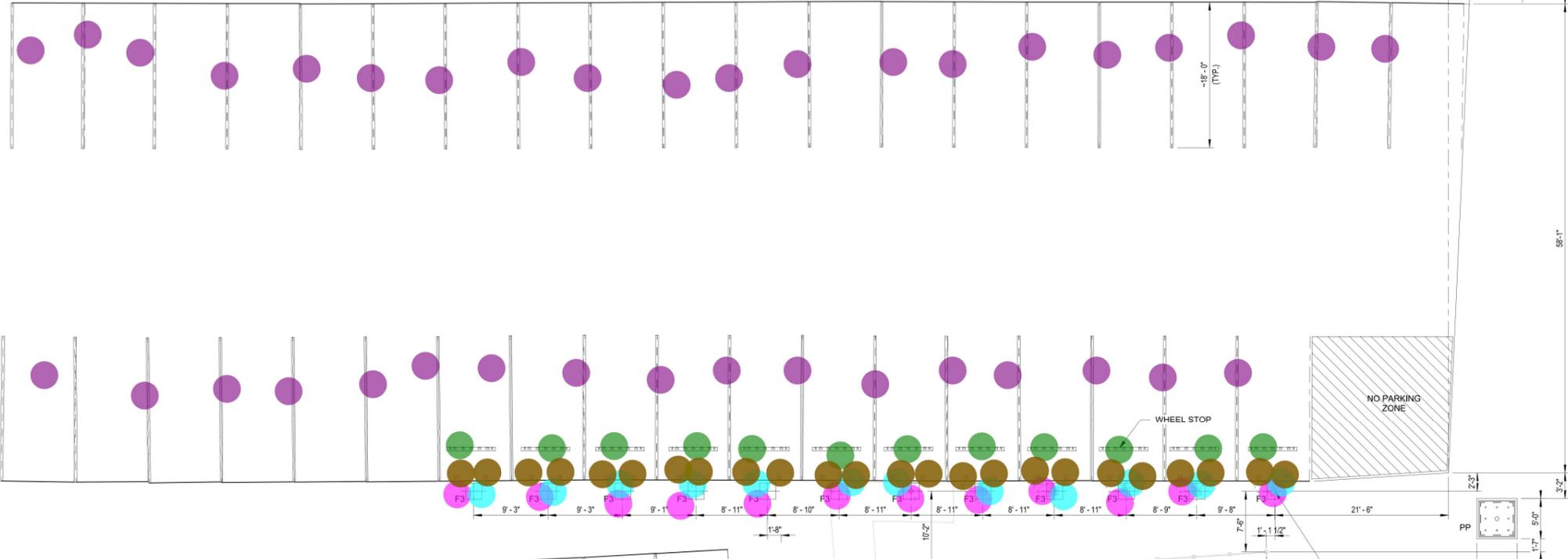


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- LEGENDS:**
- WOODEN FENCE
 - PULL PIT
 - TRANSFORMER (480V)
 - CONTROL AND DISTRIBUTION PANELS
 - CHARGING EQUIPMENT
 - CHARGING EQUIPMENT (FUTURE)
 - POWER UNIT

FOUNDATION SCHEDULE

DESCRIPTIONS	SYMBOL	QTY
TRANSFORMER FOUNDATION	F1	1
CONTROL AND DISTRIBUTION PANELS FOUNDATION	F2	1
CHARGING EQUIPMENT FOUNDATION	F3	12
POWER UNIT FOUNDATION	F4	1
PULL PIT	PP	1



- 2'-0" X 2'-0" X 3'-4" Concrete Pad w/ 8-#6 Reinforcement, #4 Stirr... 12.0 EA
- 4'-0" X 4'-0" X 1'-0" Structural Fill 12.0 EA
- 6'-0" Wheel Stop 12.0 EA
- 1'-6" Dia X 5'-0" Deep Concrete Pile 24.0 EA
- 6" Dia Steel Pipe, Primed & Safety Yellow Plastic Cover (9'-0" Min) 24.0 EA
- Parking Lines Marking (18'-0" Long) 51.0 EA



1 OVERALL FOUNDATION PLAN
1/8" = 1'-0"



CLIENT
ORANGE COUNTY, NORTH CAROLINA



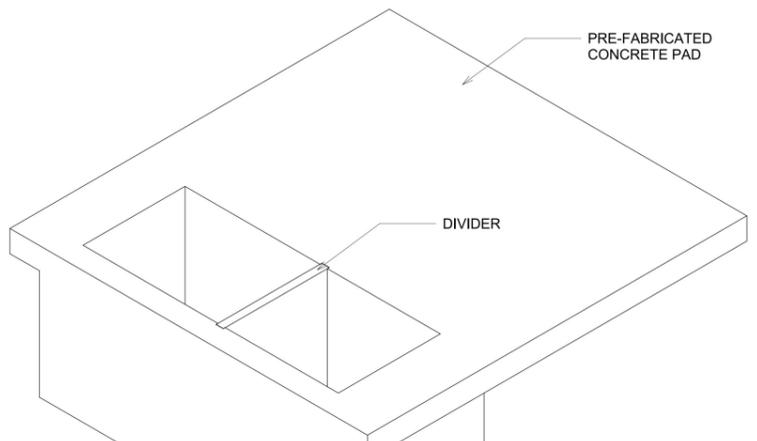
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ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT
OVERALL FOUNDATION PLAN

SCALE	DRAWING No.	SHEET	CONT'D	REV.
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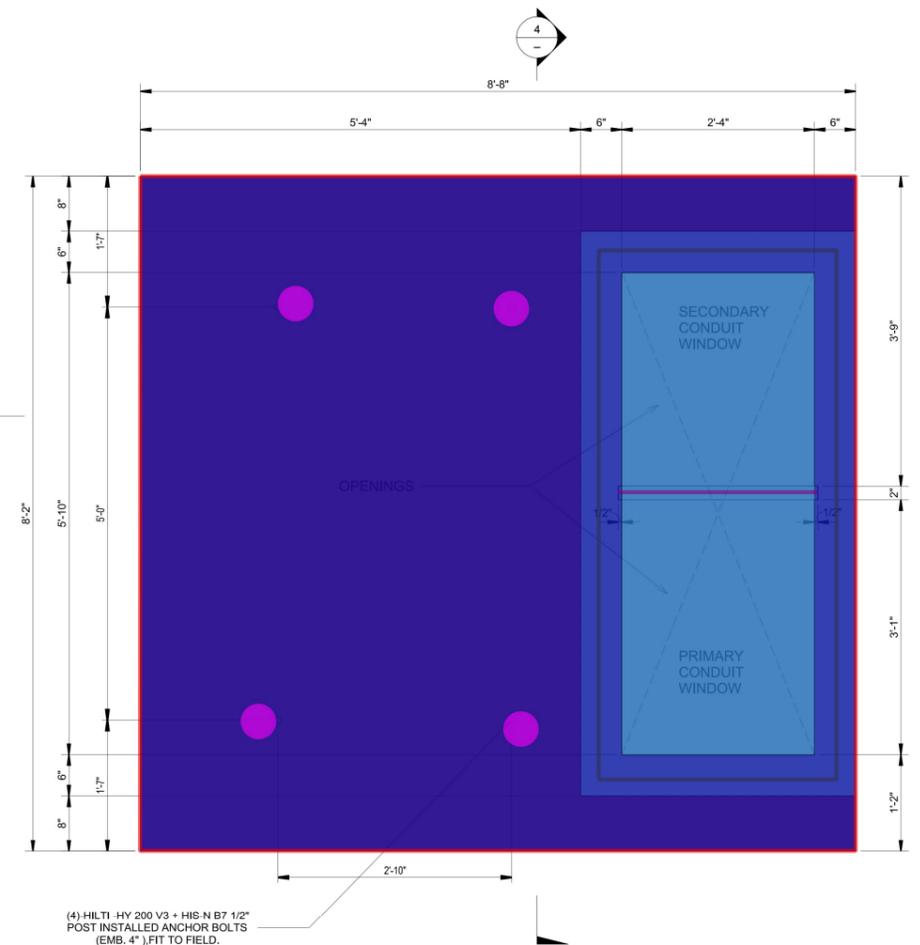
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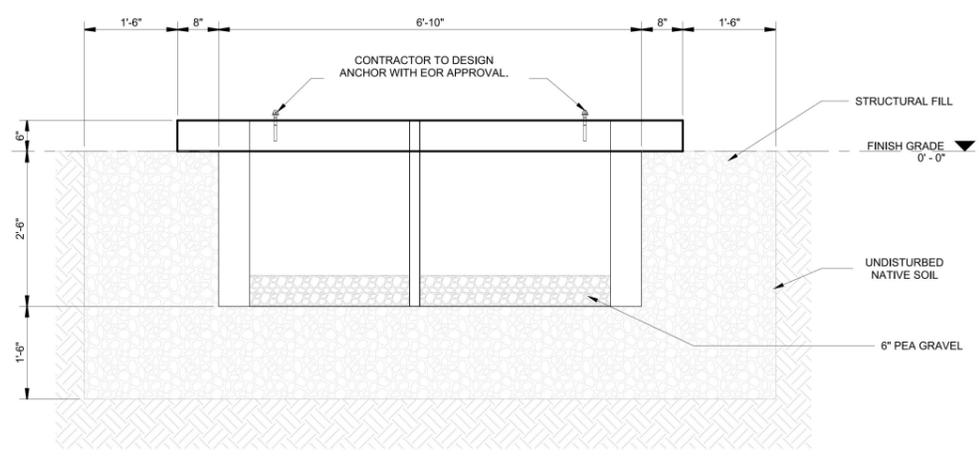
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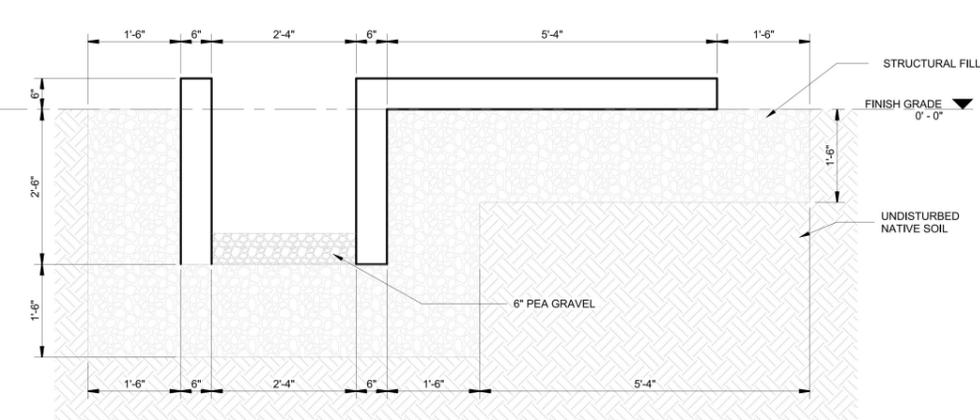
	6" Pea Gravel	13.7 SQ FT
	1'-6" Deep Structural Fill	70.9 SQ FT
	2'-6" Deep Structural Fill	48.1 SQ FT
	F1: 6" Thick Concrete Wall (3'-0"H)	18.6 FT
	F1: 6" Thick Concrete Slab	57.3 SQ FT
	2" Thick Divider (3'-0"H)	2.4 FT
	HILTI HY 200 V3 + HIS-N 1/2" post-installed anc...	4.0 EA
	Linear	33.7 FT



3 TRANSFORMER FOUNDATION (F1) PLAN
1" = 1'-0"



4 FOUNDATION (F1) - SECTION
3/4" = 1'-0"



5 FOUNDATION (F1) SECTION
3/4" = 1'-0"

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 - ALL BACKFILL AROUND FOUNDATIONS SHALL BE SLOPED TO PREVENT PONDING AND DIRECT RUNOFF AWAY FROM THE FOUNDATION. SLOPE SHALL BE MINIMUM OF 1.5% TOWARDS THE DRAINAGE LINE.
 - BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY PER ASTM D1557.
 - STRUCTURAL FILL SHOULD HAVE CALTRANS CLASS II AGGREGATE BASE WITH PARTICLE SIZE 3 INCHES OR LESS WITH FINES CONTENT LESS THAN 40% PASSING NO. 200 SIEVE, LIQUID LIMIT <30 & PLASTICITY INDEX <10.
 - STRUCTURAL FILL SHOULD BE COMPACTED TO 95% OF MAX. DENSITY AS DETERMINED BY MODIFIED PROCTOR TEST (ASTM D1557). MAXIMUM LIFT THICKNESS SHOULD BE LIMITED TO 8 INCH IN LOOSE THICKNESS FOR HEAVY EQUIPMENT AND 4 TO 6 INCHES IN LOOSE THICKNESS WHEN HAND GUIDED EQUIPMENT IS USED.
 - THE CONTRACTOR SHALL VERIFY FOUNDATION DIMENSIONS AND OPENINGS AS PER FINALIZED EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OF ANY DISCREPANCIES OR OMISSIONS PRIOR TO CONSTRUCTION.

LEGEND

	INDICATES SECTION VIEW
	INDICATES ANCHOR BOLT TYPE
	UNDISTURBED NATIVE SOIL
	STRUCTURAL FILL
	PEA GRAVEL

REFERENCES:

CUSTOMER GUIDE FOR INSTALLING CONDUIT-PAGE (1-17) (DUKE ENERGY)

CUSTOMER GUIDE FOR INSTALLING CONDUIT- CHECKLIST PAGE (18-19) (DUKE ENERGY)



CLIENT

ORANGE COUNTY, NORTH CAROLINA

C-5232
MBE | SBAB(A) CERTIFIED

TITLE	DESIGN & ENGINEERING SERVICES ELECTRIC VEHICLE CHARGING STATIONS GRANT PROJECT TRANSFORMER FOUNDATION PLAN (480V)		
SCALE	As Indicated	DRAWING No. 00-EVCS-CV-GA-08-1	SHEET 1
REV.		CONT'D	00

NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY	NO.	DATE	REVISION DESCRIPTION	DRAWN BY	ENGR BY	CHECKED BY	APVD BY
00	09/09/2025	ISSUED FOR CONSTRUCTION	AY	SK	MK	LC							

- CONCEPT
- FOR INFORMATION ONLY
- FOR APPROVAL
- BIDDING DRAWINGS
- FOR CONSTRUCTION
- FOR RECORD