

TESLA



PORTLAND ME

SITE ADDRESS:
295 FOREST AVENUE
PORTLAND, ME 04101



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



Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NOT FOR
CONSTRUCTION

SITE INFORMATION	APPLICABLE CODES	PROJECT DESCRIPTION	ZONING INFORMATION	DRAWING INDEX																																																				
<p>PROPOSED TESLA EV SITE ADDRESS: 295 FOREST AVENUE PORTLAND, ME 04101</p> <p>EXISTING SITE ADDRESS: 295 FOREST AVENUE PORTLAND, ME 04101</p> <p>PROPERTY OWNER: HANNAFORD BROS CO 295 FOREST AVENUE PORTLAND, ME 04101</p> <p>PARCEL ID: 034A-C001</p> <p>EQUIPMENT SUPPLIER: TESLA MOTORS, INC. 3500 DEER CREEK RD PALO ALTO, CA 94304 (650) 681-5000</p> <p>POWER COMPANY: CENTRAL MAINE POWER CONTACT: PAUL DUPERRÉ PAUL.DUPERRÉ@CMP.CO.COM</p> <p>COUNTY: CUMBERLAND COUNTY</p> <p>LATITUDE*: 43° 39' 51.89" N</p> <p>LONGITUDE*: 70° 16' 10.62" W *BASED ON GOOGLE EARTH</p> <p>CONTACT ENGINEER: MATTHEW TILDEN DEWBERRY ENGINEERS INC. (617) 531-0813 MTILDEN@DEWBERRY.COM</p>	<p>ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:</p> <p>MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC), CONSISTENT WITH THE FOLLOWING CODES:</p> <p>2015 INTERNATIONAL RESIDENTIAL CODE (IRC) 2015 INTERNATIONAL BUILDING CODE (IBC) 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2017 NATIONAL ELECTRICAL CODE (NEC)</p> <p>IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.</p>	<ul style="list-style-type: none">• INSTALL (6) TESLA SUPERCHARGER CABINETS• INSTALL (12) TESLA CHARGING POSTS• INSTALL (1) 480V SWITCHGEAR• INSTALL (6) AUTO-TRANSFORMERS• INSTALL (2) PEDESTRIAN LIGHT POLE AND FIXTURES• INSTALL (1) UTILITY POLE (BY UTILITY COMPANY)• INSTALL (1) TRANSFORMER (BY UTILITY COMPANY)	<p>PERMITTING JURISDICTION: CITY OF PORTLAND ME</p> <p>ZONING DISTRICT: B2 – COMMUNITY BUSINESS</p> <p>BUILDING SETBACKS:</p> <p>FRONT: 0'</p> <p>SIDE: 0'</p> <p>REAR: 10'</p>	<table><thead><tr><th>SHT. NO.</th><th>SHEET TITLE</th></tr></thead><tbody><tr><td>T-1</td><td>TITLE SHEET</td></tr><tr><td>GN-1</td><td>GENERAL NOTES-I</td></tr><tr><td>GN-2</td><td>GENERAL NOTES-II</td></tr><tr><td>C-1</td><td>SITE PLAN</td></tr><tr><td>C-2</td><td>DETAILED SITE PLAN</td></tr><tr><td>C-3</td><td>EQUIPMENT ELEVATIONS</td></tr><tr><td>C-4</td><td>CONSTRUCTION DETAILS-I</td></tr><tr><td>C-5</td><td>CONSTRUCTION DETAILS-II</td></tr><tr><td>C-6</td><td>CONSTRUCTION DETAILS-III</td></tr><tr><td>C-7</td><td>CONSTRUCTION DETAILS-IV</td></tr><tr><td>E-1</td><td>UTILITY PLAN</td></tr><tr><td>E-2</td><td>CONDUIT TRENCHING PLAN</td></tr><tr><td>E-3</td><td>ELECTRICAL RISER DIAGRAM & CIRCUIT SCHEDULE</td></tr><tr><td>E-4</td><td>ELECTRICAL DETAILS</td></tr><tr><td>E-5</td><td>AUTOTRANSFORMER DETAILS</td></tr><tr><td>E-6</td><td>SWITCHGEAR DETAILS</td></tr><tr><td>G-1</td><td>GROUNDING DETAILS</td></tr></tbody></table>	SHT. NO.	SHEET TITLE	T-1	TITLE SHEET	GN-1	GENERAL NOTES-I	GN-2	GENERAL NOTES-II	C-1	SITE PLAN	C-2	DETAILED SITE PLAN	C-3	EQUIPMENT ELEVATIONS	C-4	CONSTRUCTION DETAILS-I	C-5	CONSTRUCTION DETAILS-II	C-6	CONSTRUCTION DETAILS-III	C-7	CONSTRUCTION DETAILS-IV	E-1	UTILITY PLAN	E-2	CONDUIT TRENCHING PLAN	E-3	ELECTRICAL RISER DIAGRAM & CIRCUIT SCHEDULE	E-4	ELECTRICAL DETAILS	E-5	AUTOTRANSFORMER DETAILS	E-6	SWITCHGEAR DETAILS	G-1	GROUNDING DETAILS	<p>DRAWN BY: SK</p> <p>CHECKED BY: MFT</p> <p>APPROVED BY: BBR</p> <p>PROJECT #: 50097792</p> <p>JOB #: 50102492</p> <table><thead><tr><th>REV.</th><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td>D</td><td>07/03/18</td><td>ISSUED FOR 90% REVIEW</td></tr><tr><td>C</td><td>05/16/18</td><td>ISSUED FOR 50% REVIEW</td></tr><tr><td>B</td><td>05/09/18</td><td>ISSUED FOR 50% REVIEW</td></tr><tr><td>A</td><td>05/08/18</td><td>ISSUED FOR 50% REVIEW</td></tr></tbody></table> <p>SITE NAME: PORTLAND ME</p> <p>SITE ADDRESS: 295 FOREST AVENUE PORTLAND, ME 04101</p> <p>SHEET TITLE TITLE SHEET</p> <p>SHEET NUMBER T-1</p>	REV.	DATE	DESCRIPTION	D	07/03/18	ISSUED FOR 90% REVIEW	C	05/16/18	ISSUED FOR 50% REVIEW	B	05/09/18	ISSUED FOR 50% REVIEW	A	05/08/18	ISSUED FOR 50% REVIEW
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<p>CONTRACTOR NOTE</p> <p>CONTRACTOR SHALL COMPLETE INSTALL PER THE SIGNED AND SEALED SET OF DRAWINGS. ANY NECESSARY DEVIATIONS FROM THE DRAWINGS MUST BE SUBMITTED THROUGH AN RFI REQUEST PROCESS WITH ENGINEERING FOR AN APPROVAL PRIOR TO CONTRACTOR PROCEEDING WITH A DEVIATION OF THE SIGNED AND SEALED SET OF DRAWINGS.</p>		<p>AERIAL MAP</p>		<p>LOCATION MAP</p>		<p>BEFORE SCALING</p> <p>CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE TESLA REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.</p>	<p>CALL BEFORE YOU DIG</p> <p> UNDERGROUND SERVICE ALERT UTILITY NOTIFICATION CENTER 811 OR 1-888-344-7233</p> <p>3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION</p>																																																	

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
PROJECT MANAGER – DEWBERRY ENGINEERS INC.
GENERAL CONTRACTOR(S) OR SUB–CONTRACTOR(S) – CIVIL CONTRACTOR AND/OR ELECTRICIAN CONTRACTOR
PROJECT OWNER – TESLA
PROJECT HOST – LEGAL PROPERTY OWNER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUB–CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGER PRIOR TO THE COMMENCEMENT OF WORK.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUB–CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE THE INSTALLATION AS INDICATED ON THE DRAWINGS FOR A FULLY FUNCTIONAL CHARGING STATION AND COMPLETE PROJECT.

6. THE SUB–CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON DRAWINGS, SUB–CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE PROJECT MANAGER. ONLY WRITTEN APPROVALS SHALL BE DEEMED TO CONFIRM ANY SUCH CHANGES AS BEING APPROVED.

8. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT UNIQUE JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK.

9. SUB–CONTRACTOR SHALL REVIEW ROUTING OF CONDUIT, POWER AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING PLAN DRAWING. SUB–CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE PROJECT MANAGER.

10. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE PROJECT HOST. PROJECT MANAGER SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

11. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF GENERAL CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE PROJECT MANAGER IMMEDIATELY.

12. APPLICABLE BUILDING CODES:
SUB–CONTRACTOR’S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
SUB–CONTRACTOR’S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION

13. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

14. THE PROJECT MANAGER SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

15. PROJECT MANAGER SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S).

16. CONSTRUCTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE.

17. THE PROJECT MANAGER SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S) TO THE SITE AND/OR BUILDING.

18. THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

19. PROJECT MANAGER SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

20. THE PROJECT MANAGER SHALL PROVIDE WRITTEN NOTICE TO THE PROJECT HOST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

21. THE PROJECT MANAGER AND SUB–CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

22. THE PROJECT MANAGER SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OR 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

23. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE PROJECT MANAGER AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

24. GENERAL CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES AND ALL SPECIFIED CLOSE–OUT DOCUMENTATION TO THE PROJECT MANAGER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

25. PROJECT MANAGER SHALL LEAVE THE WORK AREA AND SURROUNDING PREMISES IN A CLEAN CONDITION.

26. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).

27. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
- SITE WORK NOTES:
- PART 1 – GENERAL
- 1.1 REFERENCES:
A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION–CURRENT EDITION).
B. AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS)
C. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).
D. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:
A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB. THIS WORK IS TO BE COORDINATED BY THE PROJECT MANAGER.

B. ALL WORK SHALL BE INSPECTED AND VERIFIED FOR CONFORMANCE AND RELEASED BY THE PROJECT MANAGER WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE GENERAL CONTRACTOR(S) RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:
A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE CONTRACT.

B. AVOID DAMAGE AND TAKE PROTECTIVE MEASURES TO THE SITE AND TO EXISTING FACILITIES, IMPROVEMENTS, STRUCTURES, PAVEMENTS, CURBS, AND LANDSCAPING DESIGNATED TO REMAIN. ANY DAMAGED PART SHALL BE REPAIRED AT SUB–CONTRACTOR(S) EXPENSE TO THE SATISFACTION OF THE PROJECT HOST.

C. KEEP SITE FREE OF ALL PONDING OR STANDING WATER.

D. PROVIDE EROSION CONTROL MEASURES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH STATE DOT, LOCAL PERMITTING AGENCY AND EPA REQUIREMENTS.

E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

F. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUB–CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. THE PROJECT MANAGER SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.

G. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE PROJECT OWNER AND/OR LOCAL UTILITIES.

H. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE PROJECT HOST OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE PROJECT MANAGER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

I. PROVIDE A MINIMUM 48–HOUR NOTICE TO THE PROJECT MANAGER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.

J. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.

K. SUB–CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS, RUBBISH, DEBRIS, STUMPS, STICKS, AND STONES.

L. THE SUB–CONTRACTOR SHALL REMOVE ALL TRASH DEBRIS FROM THE SITE ON A DAILY BASIS.
- PART 2 – PRODUCTS
- 2.1 GRANULAR BACKFILL: SHALL MEET THE FOLLOWING GRADATION:
- | SIEVE SIZE | TOTAL PERCENT PASSING |
|------------|-----------------------|
| 1–1/2 INCH | 100 |
| 1 INCH | 75 TO 100 |
| 3/4 INCH | 80 TO 100 |
| 3/8 INCH | 35 TO 75 |
| NO. 4 | 30 TO 60 |
| NO. 30 | 7 TO 30 |
| NO. 200 | 3 TO 15 |
- 2.2 GRANULAR BEDDING AND TRENCH BACKFILL: WELL–GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW–SM).
- 2.3 ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS SHALL BE SELECT STRUCTURAL FILL MEETING THE GRADATION AND SOUNDNESS REQUIREMENTS IN ACCORDANCE WITH THE FOLLOWING:
- | SIEVE SIZE | TOTAL PERCENT PASSING |
|------------|-----------------------|
| 4 INCH | 100 |
| NO. 40 | 0 TO 70 |
| NO. 200 | 0 TO 40 |
- 2.4 MATERIALS SHALL BE SUBSTANTIALLY FREE OF SHALE OR OTHER SOFT, POOR DURABILITY PARTICLES. IF TESTING IS ELECTED BY PROJECT OWNER, MATERIAL WITH A MAGNESIUM SULFATE SOUNDNESS LOSS EXCEEDING 30% WILL BE REJECTED.
- 2.5 COARSE AGGREGATE FOR SUBBASE COURSE SHALL CONFORM TO ASTM D2940.
- 2.6 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE PROJECT MANAGER. TYPICALLY THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.
- PART 3 – EXECUTION
- 3.1 GENERAL:
A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF A RAIN EVENT, NO SEDIMENT WILL LEAVE THE WORK SITE.

B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.

C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.

D. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.

E. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR UNDESIRABLE MATERIALS.
- F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH GRANULAR FILL.

G. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.

H. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE PROJECT MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

I. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.

J. DURING EXCAVATION, THE SUB–CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF EXCAVATION.

K. WHEN DIRECTIONAL BORING IS REQUIRED, SUB–CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.
- 3.2 BACKFILL:
- A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST–IN–PLACE CONCRETE, BACKFILL THE EXCAVATION WITH SPECIFIED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.

B. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.

C. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

D. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 12–INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12–INCHES IN LOOSE DEPTH AND COMPACTED.

E. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.

F. WHENEVER THE DENSITY TESTING INDICATES THAT THE SUB–CONTRACTOR(S) HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE PROJECT MANAGER. THE SUB–CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.

G. THE PROJECT MANAGER SHALL OBTAIN GRAB SAMPLES OF SUFFICIENT QUANTITY TO PROVIDE TO LAB FOR PURPOSE OF DETERMINING MAX DRY DENSITY. ALL LOOSE AND/OR ORGANIC MATERIAL SHALL BE REMOVED PRIOR TO PREPARATION OF THE AREA FOR PLACEMENT OF STRUCTURAL BACKFILL. OVERALL PLAN AREA OF WORK SHALL EXTEND 3’–0” MINIMUM BEYOND THE FINAL DIMENSIONS.

H. SCARIFY THE EXISTING SOILS TO A DEPTH OF 6” AND RE–COMPACT USING A VIBRATING PLATE OR TAMPER, ANY SOFT AREAS SHALL BE OVEREXCAVATED 12” AND BACKFILLED WITH MATERIALS AND COMPACTION REQUIREMENTS SHOWN ON THE DRAWINGS.

I. PLACEMENT AND COMPACTION OF STRUCTURAL BACKFILL AND SUBBASE SHALL BE IN 12” LIFTS. EXCAVATE FOR THE FOOTING EDGE AS SHOWN ON THE DRAWINGS.
- 3.3 TRENCHING EXCAVATION:
- J. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.

K. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.

L. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, EXCAVATE THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION, THEN BACKFILL WITH 12” OF GRANULAR MATERIAL.
- 3.4 TRENCHING BACKFILL:
- A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.

B. NOTIFY THE PROJECT MANAGER 24 HOURS IN ADVANCE OF BACKFILLING.

C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.

D. PLACE GRANULAR BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6–INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS AND HAUNCHES.

E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.

F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 12–INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.

G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.

H. PER LOCAL REGULATORY AUTHORITY AND AS APPLICABLE, ALL TRENCHES IN PUBLIC RIGHT–OF–WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.
- 3.5 FINISH GRADING:
- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL MATCH SURROUNDING TOPOGRAPHY AND STRUCTURES.

B. UTILIZE GRANULAR FILL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.

C. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL OR BETTER CONDITION.

D. AREAS OF THE PROJECT HOST’S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT OR PARKING/DRIVING AREAS SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
- 3.6 ASPHALT PAVING ROAD:
- A. AASHTO

B. STATE SPECIFIC ASPHALT SPECIFICATIONS FOR HIGHWAYS

C. THE SUB–CONTRACTOR IS RESPONSIBLE FOR RE–STRIPING AND APPLYING SEALCOATING, UNLESS OTHERWISE SPECIFIED.
-
-
-
- DRAWN BY: SK
- CHECKED BY: MFT
- APPROVED BY: BBR
- PROJECT #: 50097792
- JOB #: 50102492
- | SUBMITTALS | | |
|------------|----------|-----------------------|
| REV. | DATE | DESCRIPTION |
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| D | 07/03/18 | ISSUED FOR 90% REVIEW |
| C | 05/16/18 | ISSUED FOR 50% REVIEW |
| B | 05/09/18 | ISSUED FOR 50% REVIEW |
| A | 05/08/18 | ISSUED FOR 50% REVIEW |
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REINFORCED CONCRETE NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".

2. DO NOT USE RETEMPERED CONCRETE. OR ADD WATER TO READY-MIX CONCRETE AT THE JOB SITE. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.

3. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

4. MAXIMUM AGGREGATE SIZE SHALL BE 3/4".

5. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:
REINFORCEMENT:
NORMAL WEIGHT AGGREGATE:
WATER:
ADMIXTURES:

ASTM C 150, TYPE I
ASTM A 615, GRADE 60
ASTM C 33
DRINKABLE
NON-CHLORIDE CONTAINING

6. REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH "DETAILING MANUAL-2004 PUBLICATION SP-66" AND "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI-318-08.

7. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B"; ALL HOOKS SHALL BE STANDARD, UNO.

8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH:

3 IN.

CONCRETE EXPOSED TO EARTH OR WEATHER:

#6 AND LARGER
#5 AND SMALLER & WWF

2 IN.
1-1/2 IN.

CONCRETE NOT EXPOSED TO EARTH OR
WEATHER OR NOT CAST AGAINST THE GROUND:

SLAB AND WALL
BEAMS AND COLUMNS

3/4 IN.
1-1/2 IN.

9. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

10. INSTALLATION OF CONCRETE ANCHOR, SHALL BE PER MANUFACTURERS WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.

11. CURING COMPOUNDS SHALL CONFORM TO ASTM C-309.

12. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI-301.

13. DO NOT WELD OR TACKWELD REINFORCING STEEL.

14. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

15. LOCATE ADDITIONAL EXPANSION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.

16. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.

17. PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.

18. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.

19. DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.

20. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES FARENHEIT. FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.

21. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REINFORCEMENT SPLICES SHALL MEET CLASS B, TENSION LAP REQUIREMENTS IN ACCORDANCE WITH ALL PROVISIONS OF ACI 318 LATEST EDITION, UNLESS NOTED OTHERWISE.

22. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING.
- ELECTRICAL NOTES:
1. THE SUB-CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS. ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, SUB--CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE PROJECT MANAGER HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.

2. THE SUB-CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE SUB-CONTRACTOR, PRIOR TO THE SUBMITTAL OF HIS BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE THE SUBCONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL POWER COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:

A. UL - UNDERWRITERS LABORATORIES
B. NEC - NATIONAL ELECTRICAL CODE
C. NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
D. OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
E. SBC - STANDARD BUILDING CODE
F. NFPA - NATIONAL FIRE PROTECTION ASSOCIATION

4. DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH "PROJECT MANAGER" ANY SIZES AND LOCATIONS WHEN NEEDED.

5. EXISTING SERVICES: THE SUB-CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE PROJECT HOST.

6. THE SUB-CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSPECTIONS AND TESTING. THE SUB-CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.

7. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE SUB-CONTRACTOR SHALL FURNISH AND INSTALL, UNLESS OTHERWISE SPECIFIED BY PROJECT MANAGER OR BY PROJECT DEVELOPER.

8. THE SUB-CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE PROJECT HOST'S CONFIRMATION, ETC. ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER, PRIOR TO BEGINNING ANY WORK.

9. CONDUCTORS: SUB-CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER OR ALUMINUM WITH TYPE (THWN-2) INSULATION, 600 VOLT, COLOR CODED UNLESS SPECIFIED DIFFERENTLY ON DRAWINGS.

10. ALL (THWN-2) WIRING INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

11. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

12. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. SUB-CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. SUB-CONTRACTOR IS TO PROVIDE ALL ELECTRICAL EQUIPMENT UNLESS OTHERWISE DIRECTED.

13. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL SUB-CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND SUBJECT TO REGULATORY INSPECTION AND APPROVAL BY PROJECT MANAGER.

14. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

15. PROJECT MANAGER SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

16. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.

17. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.

18. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.

19. GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURES CATALOG INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE PROJECT MANAGER PRIOR TO INSTALLATION.

20. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE SUB-CONTRACTOR(S) RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE PROJECT MANAGER UPON FINAL ACCEPTANCE.

21. THE SUBCONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES.

22. DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.

23. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND SUCH AS "NOALOX" BY IDEAL INDUSTRIAL INC. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED ALUMINUM & COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.

24. ALL EXTERIOR AND INTERIOR ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS SPECIFIED OTHERWISE. RACEWAYS: ALL CONDUITS SHALL BE SCHEDULE 40 EMT MEETING OR EXCEEDING NEMA TC2 - 1990 UNLESS SPECIFIED OTHERWISE. THE SUB-CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 3 FT. RADIUS. EMT CONDUITS WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADS WITH 'BRITE ZINC' OR 'GOLD GALV'.

25. HEAVY WALL PVC CONDUIT SHALL BE USED FOR ALL GROUNDING CONDUCTORS AND OTHER SPECIFIC USES AS INDICATED BY THE DRAWINGS. HEAVY WALL PVC CONDUIT SHALL BE SCHEDULE 40, 90 DEGREES C, UL RATED, CONSTRUCTED OF POLYVINYL CHLORIDE AND CONFORMING TO NEMA TC-2 FOR DIRECT BURIAL OR NORMAL ABOVE GROUND USE. FITTING SHALL BE SOLVENT WELD TYPE. CONDUITS SHALL BE SUPPORTED WITH NON-METALLIC DEVICES.

26. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.

27. CONNECTORS FOR POWER CONDUCTORS: SUB-CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.

28. THE SUB-CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE AT A DEPTH OF 12" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC".

29. WHEN DIRECTIONAL BORING IS REQUIRED, SUB-CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.

30. ALL BOLTS SHALL BE STAINLESS STEEL.

31. ALL MATERIALS AND EQUIPMENT SUPPLIED AND INSTALLED BY THE SUBCONTRACTOR SHOULD BE NEW AND UNUSED.

32. PER NEC 625.22 - THE USER INTERFACE (CHARGE POST) IS CONTROLLED BY THE ELECTRICAL EQUIPMENT (SUPERCHARGER CABINET) AND THE FOLLOWING PRECAUTIONS HAVE BEEN TAKEN TO ENSURE THE SAFETY OF CUSTOMERS AND THOSE AROUND THE EQUIPMENT. BEFORE ANY VOLTAGE OR CURRENT IS APPLIED TO THE CHARGE POST, THE CABINET MUST COMMUNICATE WITH THE TESLA VEHICLE. THERE IS A "HANDSHAKE" BETWEEN THE CAR AND THE CABINET CONFIRMING THAT THE VEHICLE IS ACTUALLY A TESLA AND THAT THE VEHICLE CAN HANDLE THE SUPERCHARGING. VOLTAGE IS THEN APPLIED TO THE POWER SOCKETS IN THE CHARGE POST AND ONCE THE VOLTAGE READING FROM THE CAR IS VERIFIED AS THE SAME IN THE CHARGING CABINET, THEN CURRENT BEGINS TO FLOW. IF AT ANY POINT IN THIS PROCESS A FAULT IS DETECTED, THE CHARGING WILL STOP IMMEDIATELY, WITHIN A MATTER OF MILLISECONDS. DURING THE NORMAL CHARGING CYCLE, IF ANY FAULT OR IRREGULARITY IS DETECTED, THE CHARGING WILL AGAIN STOP WITHIN MILLISECONDS OF DETECTION. BEYOND THIS LOGIC PROTECTION, THERE IS PHYSICAL PROTECTION FROM OVER-CURRENT OR OVER-VOLTAGE WITHIN EACH OF THE CHARGERS. BEYOND THAT, FAST ACTING FUSES ALSO PROTECT THE VEHICLE OUTPUTS FROM OUTPUTTING TOO HIGH OF A CURRENT.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS". STRUCTURAL STEEL SHAPES, PLATES, AND BARS SHALL CONFORM TO ASTM A36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B.

2. ALL INTERIOR STRUCTURAL STEEL USED SHALL BE, WHEN DELIVERED, FINISHED WITH ONE COAT FABRICATOR'S NON-LEAD, RED OXIDE-CHROMATE PRIMER COMPLYING WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) PAINT SPECIFICATION NUMBER 11. PRIMING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE PRIMED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.

3. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK USING ZRC COLD GALVANIZING COMPOUND OR APPROVED EQUAL.

4. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

5. CONNECTIONS:

A. ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.

B. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

C. ONE HIGH-STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY NUT, A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS. WELDING ELECTRODES SHALL COMPLY WITH AWS.

D. ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 WITH HEAVY HEXAGONAL NUT, UNLESS NOTED OTHERWISE.

E. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

F. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.

6. DO NOT CHANGE SIZE NOR SPACING OF STRUCTURAL ELEMENTS.

7. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

8. BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, AT A MINIMUM.

9. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.

10. SUBMIT FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND TOP STEEL ELEVATIONS FOR APPROVAL. THE SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL CONFORMANCE TO THE CONTRACT DRAWINGS. SUCH APPROVAL SHALL NOT RELIEVE THE FABRICATOR/SUB-CONTRACTOR OF THE RESPONSIBILITY FOR EITHER THE ACCURACY OF THE DETAILED DIMENSIONS IN THE SHOP AND ERECTION DRAWINGS OR THE GENERAL FIT-UP OF PARTS THAT ARE TO BE ASSEMBLED IN THE FIELD.

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

Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NOT FOR
CONSTRUCTION

DRAWN BY: SK

CHECKED BY: MFT

APPROVED BY: BBR

PROJECT #: 50097792

JOB #: 50102492

SUBMITTALS		
REV.	DATE	DESCRIPTION
D	07/03/18	ISSUED FOR 90% REVIEW
C	05/16/18	ISSUED FOR 50% REVIEW
B	05/09/18	ISSUED FOR 50% REVIEW
A	05/08/18	ISSUED FOR 50% REVIEW

SITE NAME:

PORTLAND ME

SITE ADDRESS:

295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE

GENERAL NOTES-II

SHEET NUMBER

GN-2



APN: 112-E007
OWNER: 51 BAXTER LLC

1
C-2

APN: 112-F022
OWNER: CHABOT STREET LLC

APN: 034A-C001
OWNER: HANNAFORD BROS CO

BOOK 4088 PAGE 23

LEGEND

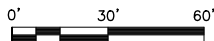
	SANITARY MANHOLE
	STORM MANHOLE
	STORM INLET (RECTANGLE)
	LIGHT POLE
	UTILITY POLE
	DECIDUOUS TREE
	SHRUB
	LANDSCAPED AREA
	SIGN
	STORM LINE (UNDERGROUND)
	SANITARY LINE (UNDERGROUND)
	ELECTRIC LINE (UNDERGROUND)
	ELECTRIC LINE (OVERHEAD)
	TREE LINE
	CONCRETE AREA

NOTE:

- SITE PLAN BASED ON TOPOGRAPHIC SURVEY FOR A PORTION OF 295 FOREST AVENUE, CITY OF PORTLAND, CUMBERLAND COUNTY, MAINE, BY CLARK LAND SURVEYING, INC DATED 04/23/2018.

SITE PLAN

SCALE: 1"=60' FOR 11"x17"
1"=30' FOR 22"x34"



1



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SITE NAME:

PORTLAND ME

SITE ADDRESS:

295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1



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(650) 681-5000



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PORTLAND ME

SITE ADDRESS:

295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE

DETAILED SITE PLAN

SHEET NUMBER

C-2

EQUIPMENT LEGEND

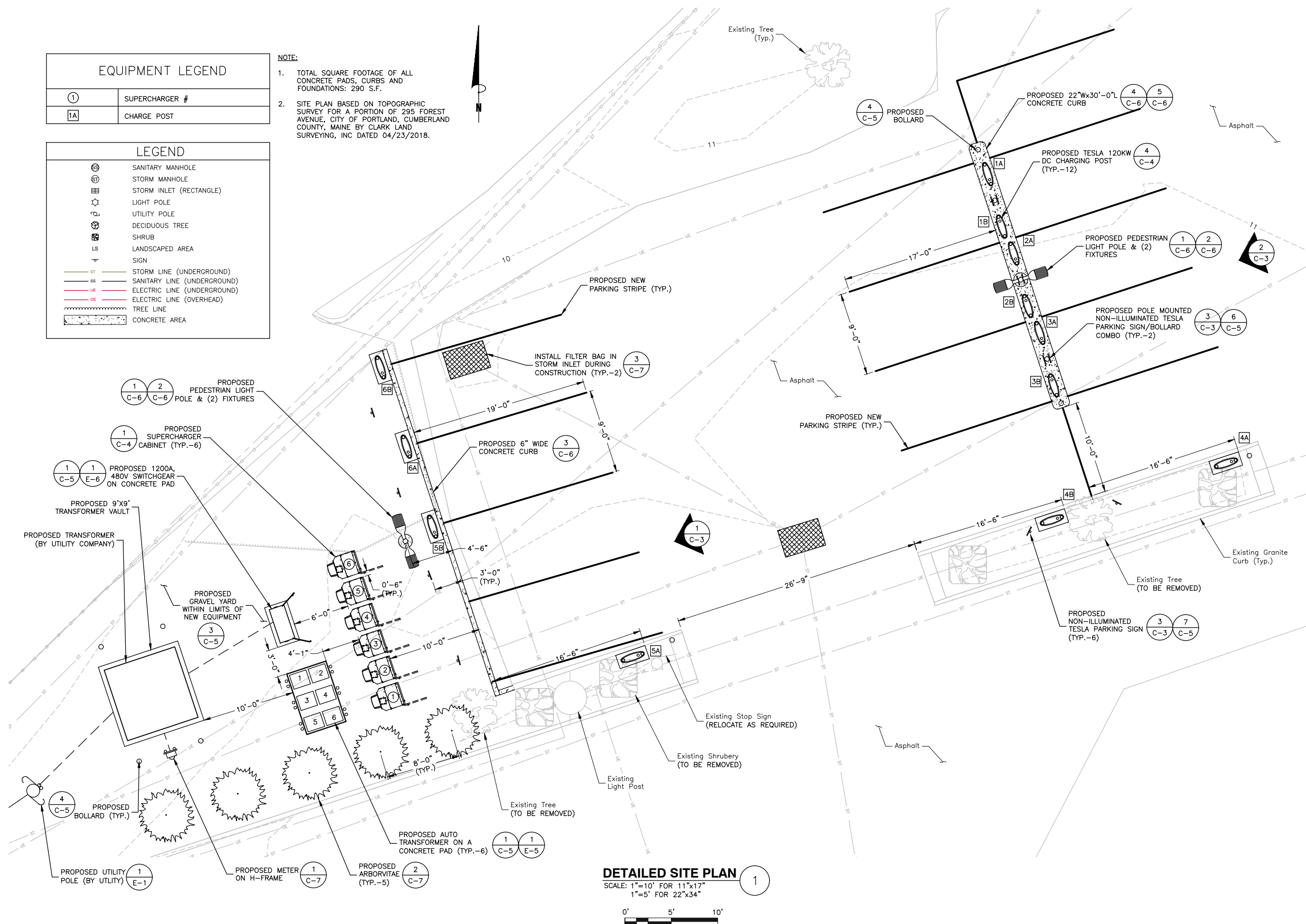
①	SUPERCHARGER #
1A	CHARGE POST

LEGEND

SM	SANITARY MANHOLE
ST	STORM MANHOLE
SI	STORM INLET (RECTANGLE)
LP	LIGHT POLE
UP	UTILITY POLE
DT	DECIDUOUS TREE
SR	SHRUB
LS	LANDSCAPED AREA
S	SIGN
ST	STORM LINE (UNDERGROUND)
SS	SANITARY LINE (UNDERGROUND)
UE	ELECTRIC LINE (UNDERGROUND)
OE	ELECTRIC LINE (OVERHEAD)
TL	TREE LINE
CA	CONCRETE AREA

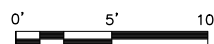
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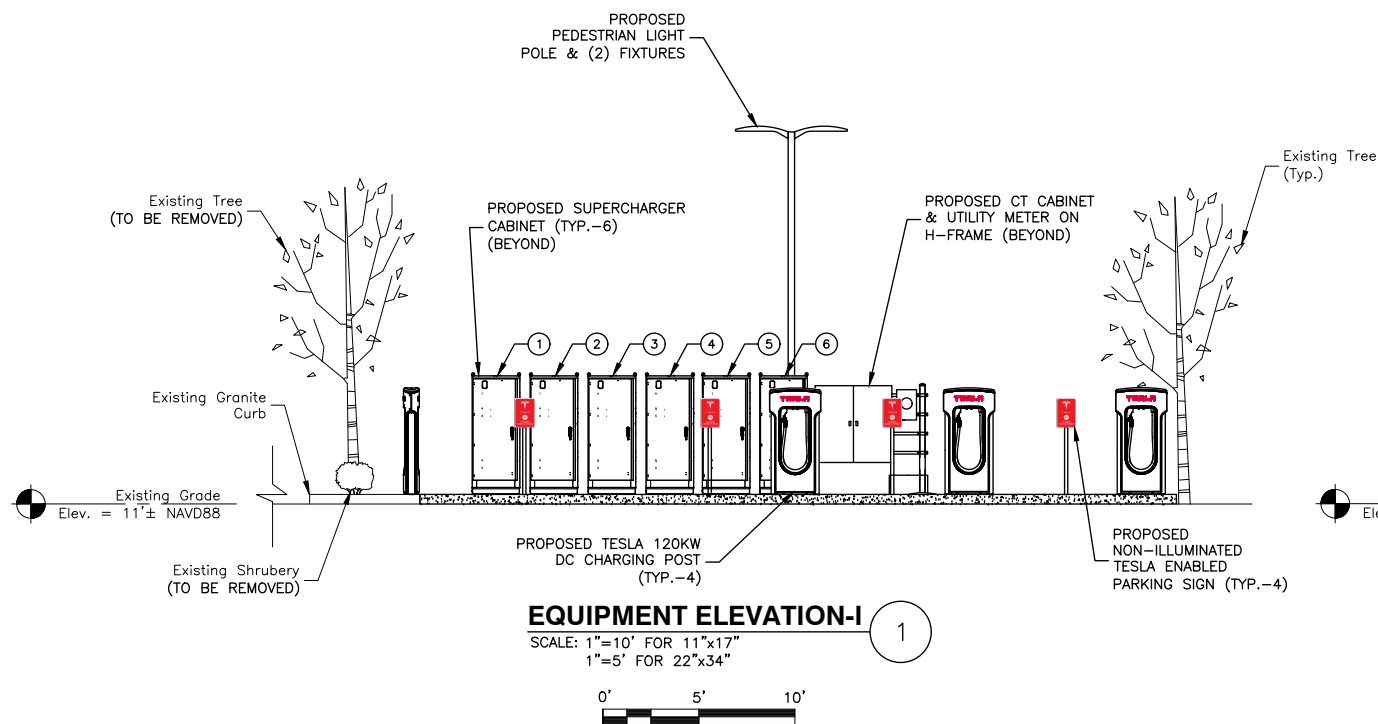
- TOTAL SQUARE FOOTAGE OF ALL CONCRETE PADS, CURBS AND FOUNDATIONS: 290 S.F.
- SITE PLAN BASED ON TOPOGRAPHIC SURVEY FOR A PORTION OF 295 FOREST AVENUE, CITY OF PORTLAND, CUMBERLAND COUNTY, MAINE BY CLARK LAND SURVEYING, INC DATED 04/23/2018.



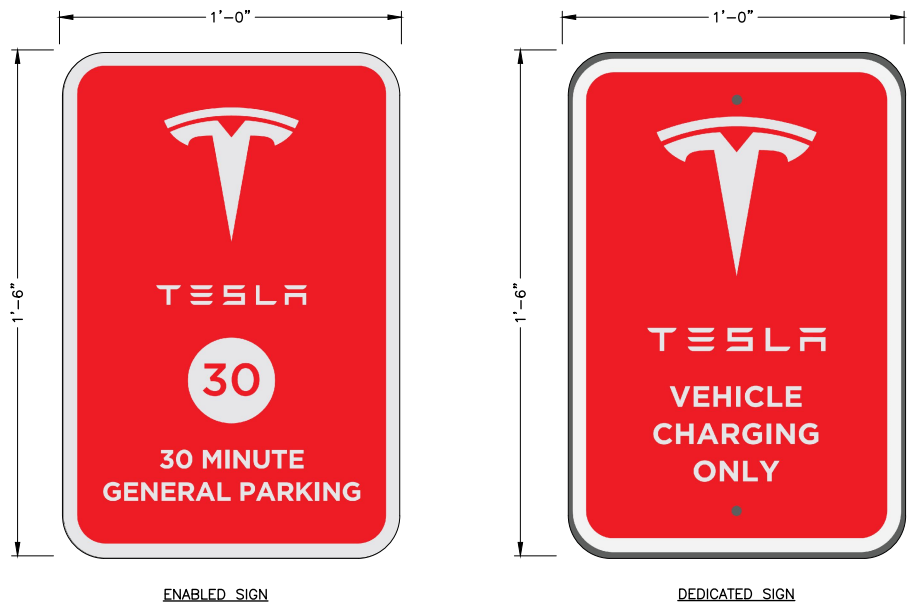
DETAILED SITE PLAN

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"



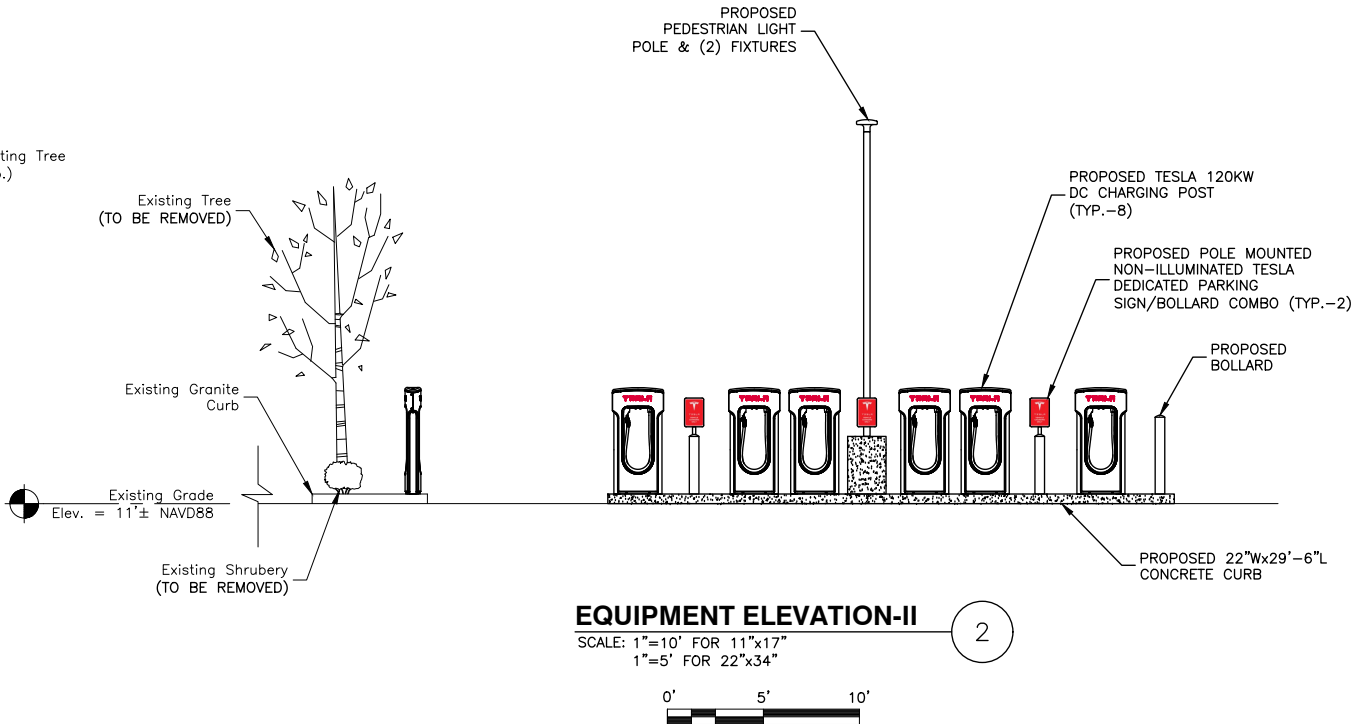


EQUIPMENT ELEVATION-I
SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"



- NOTES:
- NON-ILLUMINATED POLE MOUNT PARKING SIGN FACES AND RETURNS TO BE .090" ALUMINUM PANELS WITH #680-82 RED REFLECTIVE VINYL APPLIED (VERIFY REFLECTIVITY WITH OWNER).
 - LOGO TO BE #280-10 REFLECTIVE WHITE VINYL.

PARKING SIGNAGE
SCALE: N.T.S.



EQUIPMENT ELEVATION-II
SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

TESLA EQUIPMENT SCHEDULE			
TESLA EQUIPMENT	DESCRIPTION	PART NUMBER	QUANTITY
SUPERCHARGER CABINET	GEN 2 L-N SUPERCHRGER	1033026-04-F	6
CHARGE POST BOLLARD	SUNK BOLLARD	1024070-00-E	12
CHARGE POST JUNCTION BOX	DUAL CONDUCTORS	1048082-00-A	12
CHARGE POST DOCK	NORTH AMERICA	1028384-00-C	12

CHARGING POST CIRCUIT SCHEDULE		
SUPERCHARGER	CHARGE POST	DEDICATED/ENABLED
①	1A	DEDICATED
	1B	DEDICATED
②	2A	DEDICATED
	2B	DEDICATED
③	3A	DEDICATED
	3B	DEDICATED
④	4A	ENABLED
	4B	ENABLED
⑤	5A	ENABLED
	5B	ENABLED
⑥	6A	ENABLED
	6B	ENABLED

PARKING STALL SCHEDULE	
DESCRIPTION	QUANTITY
EXISTING STALL COUNT	12
PROPOSED TSLA STALLS	12
NET STALL COUNT	12

EQUIPMENT LEGEND	
①	SUPERCHARGER #
1A	CHARGE POST



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PALO ALTO, CA 94304
(650) 681-5000



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280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NOT FOR
CONSTRUCTION

DRAWN BY: SK

CHECKED BY: MFT

APPROVED BY: BBR

PROJECT #: 50097792

JOB #: 50102492

SUBMITTALS		
REV.	DATE	DESCRIPTION
D	07/03/18	ISSUED FOR 90% REVIEW
C	05/16/18	ISSUED FOR 50% REVIEW
B	05/09/18	ISSUED FOR 50% REVIEW
A	05/08/18	ISSUED FOR 50% REVIEW

SITE NAME:

PORTLAND ME

SITE ADDRESS:

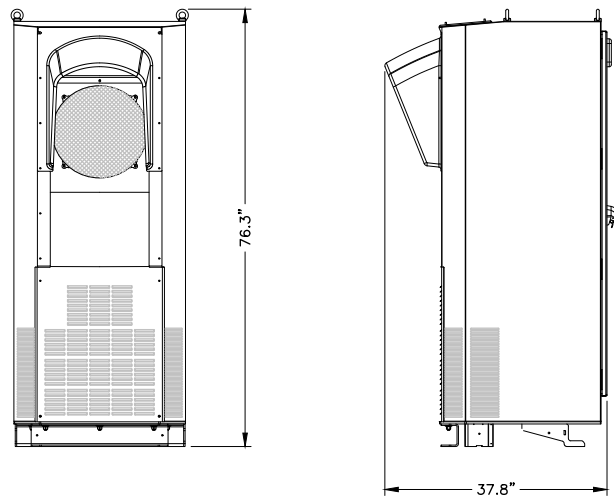
295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE

EQUIPMENT
ELEVATIONS

SHEET NUMBER

C-3



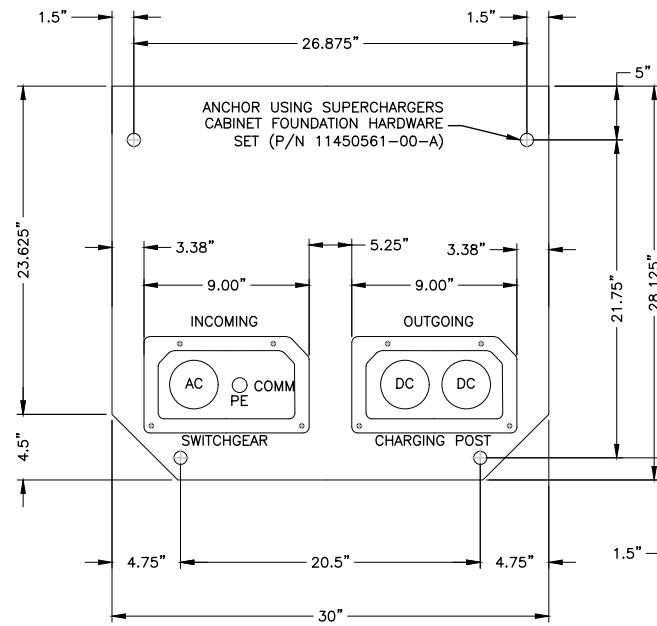
TESLA SUPERCHARGER
ENCLOSURE DATA: IP55

WEIGHT: 600 KG, 1320 LBS.

COMPLIANCE: THE UNIT IS TUV LISTED AS IEC
61851-23, UL 2202, CSA 22.2
NO. 107.1-01 COMPLIANT.

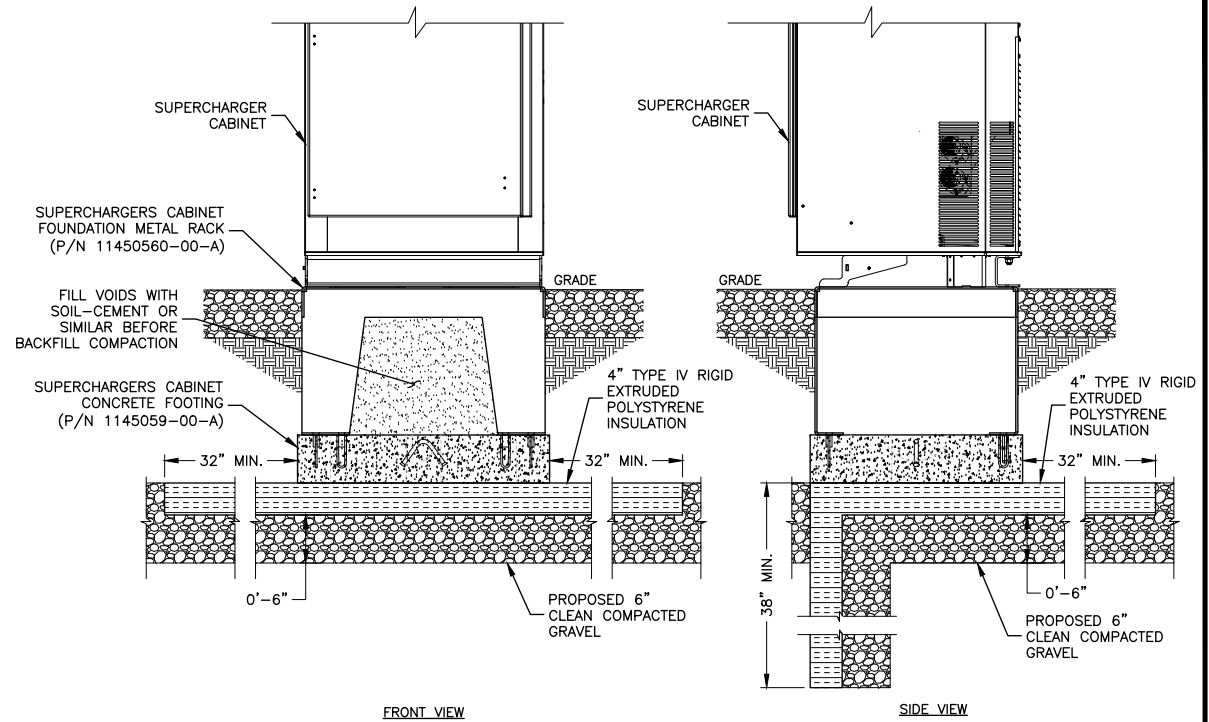
NOTES:

- CABINET SHOULD BE LIFTED USING ROOF MOUNTED EYE HOOKS. A FORKLIFT OR PALLET JACK CAN ALSO BE USED TO MOVE CABINET IF DONE PROPERLY.
- SEE NOTE #31 ON SHEET GN-2 FOR CABINET NOTES.



NOTE:

- TEMPLATE PLATE TO BE USED TO LAYOUT SUPERCHARGER ANCHORING BOLT LOCATIONS AND CONDUIT STUB UP LOCATIONS.



FRONT VIEW

SIDE VIEW

NOTE:

- INSTALL PER LATEST TESLA PRECAST FOUNDATIONS INSTALLATION MANUAL.

TESLA SUPERCHARGER CABINET DETAIL

SCALE: N.T.S.

1

SUPERCHARGER ANCHOR BOLT DETAIL

SCALE: N.T.S.

2

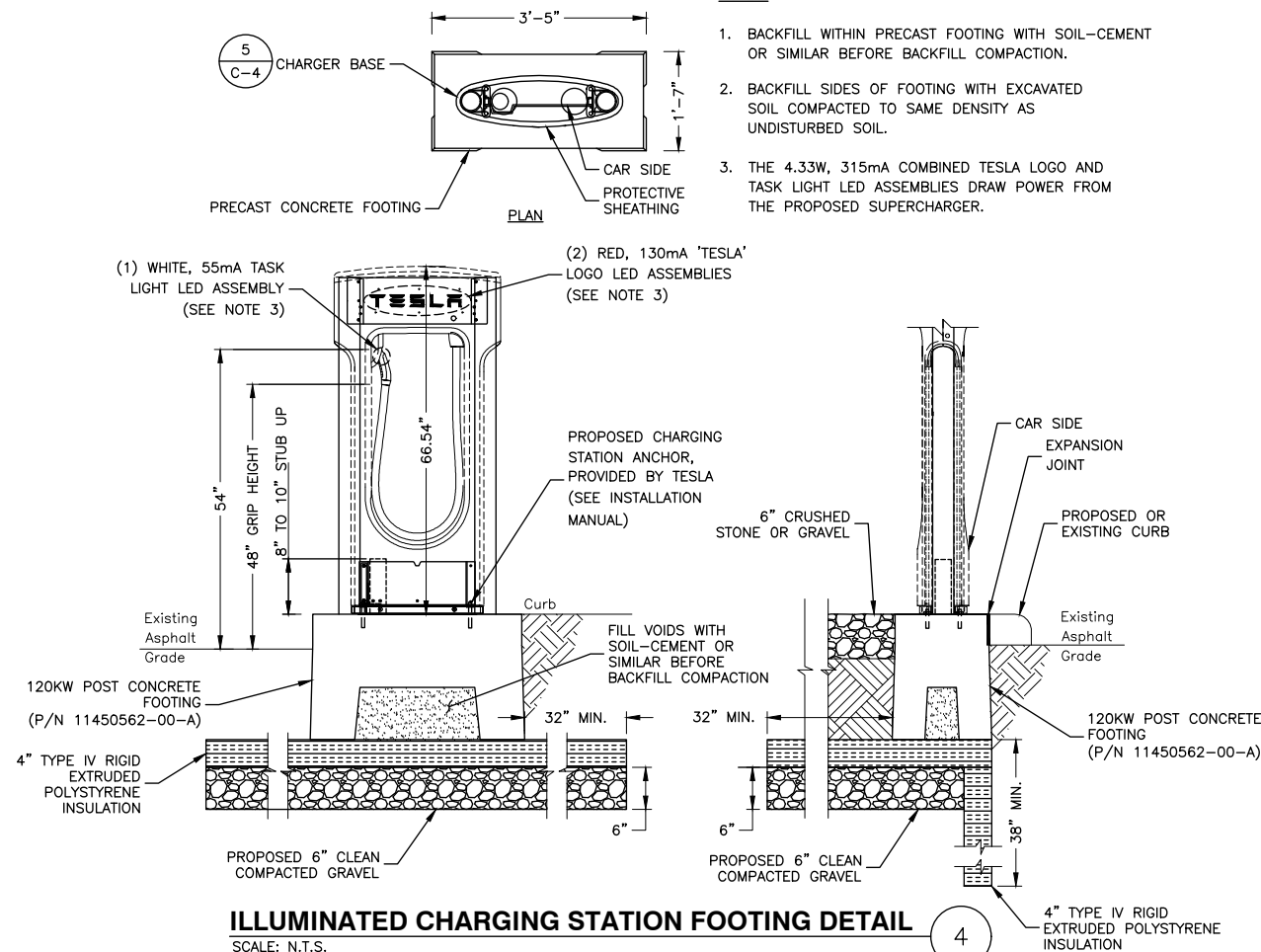
SUPERCHARGER FOOTING DETAIL

SCALE: N.T.S.

3

NOTES:

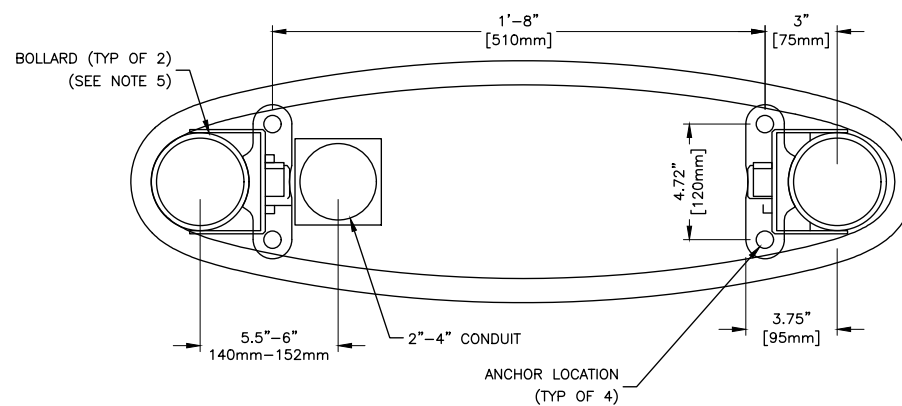
- BACKFILL WITHIN PRECAST FOOTING WITH SOIL-CEMENT OR SIMILAR BEFORE BACKFILL COMPACTION.
- BACKFILL SIDES OF FOOTING WITH EXCAVATED SOIL COMPACTED TO SAME DENSITY AS UNDISTURBED SOIL.
- THE 4.33W, 315mA COMBINED TESLA LOGO AND TASK LIGHT LED ASSEMBLIES DRAW POWER FROM THE PROPOSED SUPERCHARGER.



ILLUMINATED CHARGING STATION FOOTING DETAIL

SCALE: N.T.S.

4



NOTES:

- INSTALL PER LATEST TESLA PRECAST FOUNDATIONS INSTALLATION MANUAL.
- ANCHOR TO PRECAST POST FOOTING USING SUPERCHARGER 120KW POST FOOTING UNDERGROUND ONLY HARDWARE, P/N 1145062-00A.

BOLTDOWN DETAIL

SCALE: N.T.S.

5



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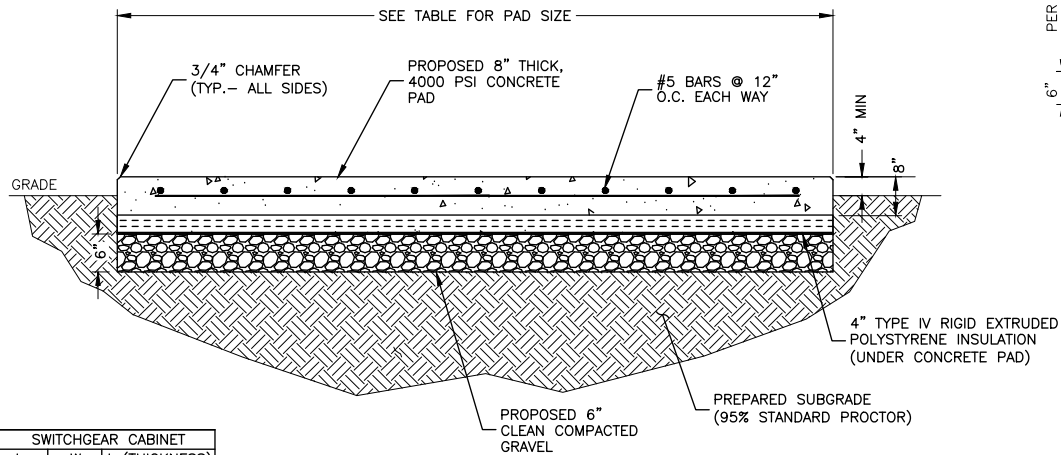
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SHEET TITLE

CONSTRUCTION
DETAILS-I

SHEET NUMBER

C-4



SWITCHGEAR CABINET		
L	W	t (THICKNESS)
2'-6"	4'-6"	8"
AUTO-TRANSFORMER*		
4'-6"	6'-11"	8"

* SEE LAYOUT ON DETAIL 5
SHEET E-5

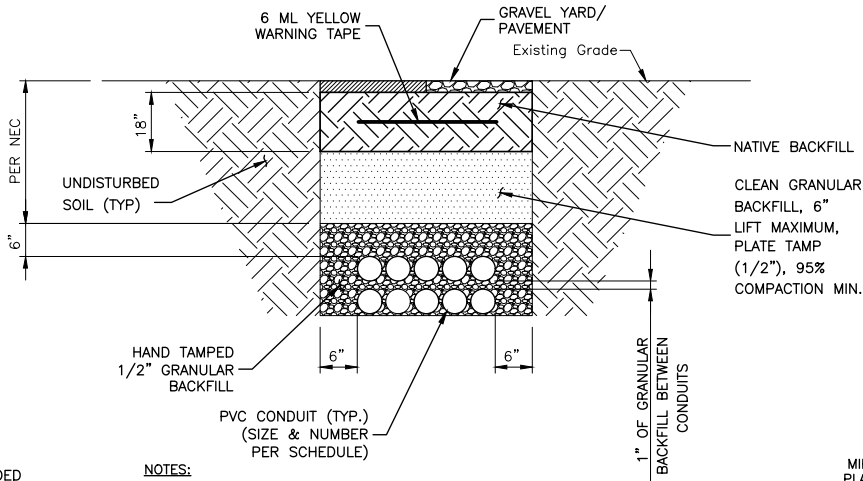
NOTE:

1. SEE CONCRETE NOTES ON SHEET GN-1.

CONCRETE PAD DETAIL

SCALE: N.T.S.

1



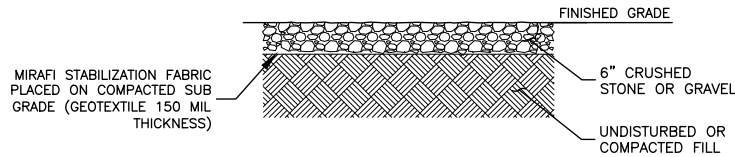
NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER TRAVELED WAY.
4. ANY PAVEMENT DAMAGE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO PRE CONSTRUCTION CONDITIONS OR BETTER.

TYPICAL BURIED CONDUIT TRENCH DETAIL

SCALE: N.T.S.

2

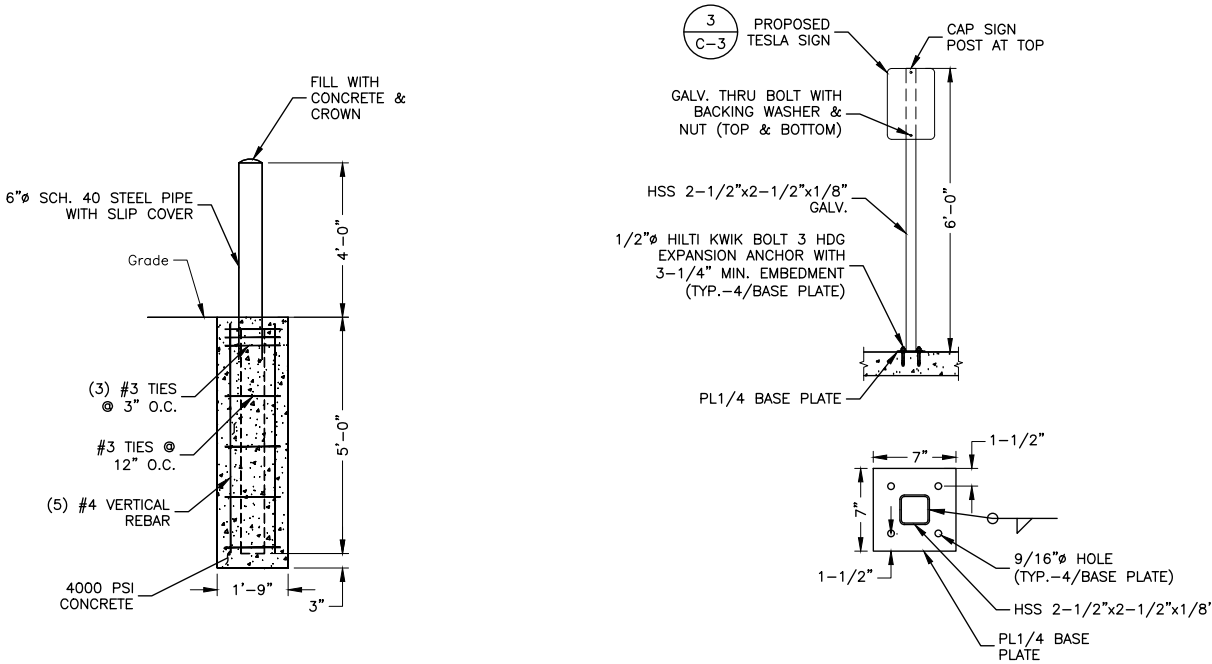


1. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED GRAVEL FILL. 95% COMPACTION.
2. FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.
3. PROVIDE LANDSCAPE EDGING AROUND PERIMETER OF GRAVEL YARD.

GRAVEL YARD DETAIL

SCALE: N.T.S.

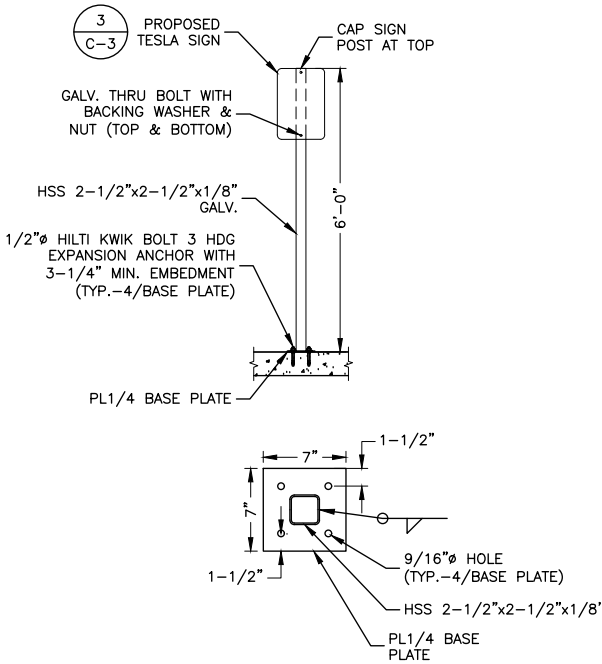
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CONCRETE BOLLARD DETAIL

SCALE: N.T.S.

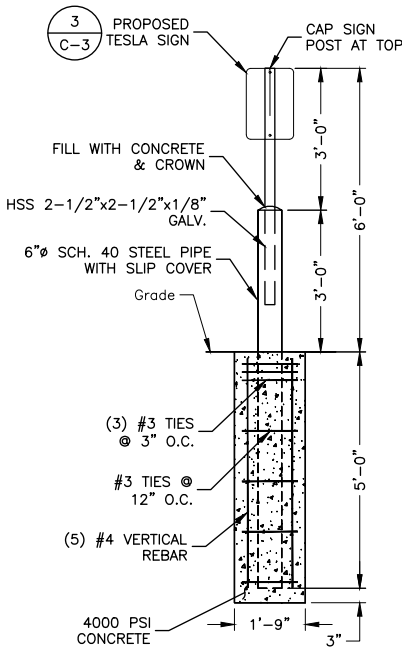
4



SIGN & BASE PLATE DETAIL

SCALE: N.T.S.

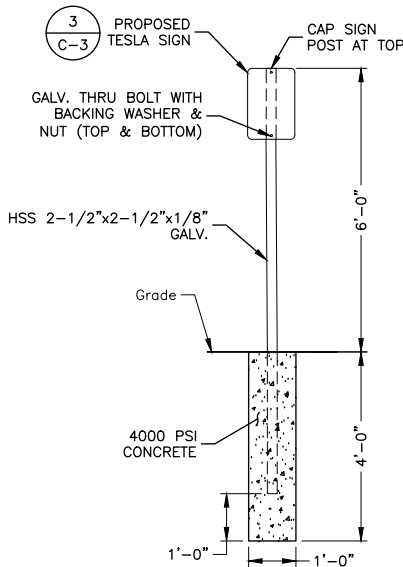
5



CONCRETE BOLLARD & SIGN DETAIL

SCALE: N.T.S.

6



STANDARD SIGN DETAIL

SCALE: N.T.S.

7



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BOSTON, MA 02210
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CHECKED BY: MFT

APPROVED BY: BBR

PROJECT #: 50097792

JOB #: 50102492

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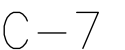
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PORTLAND, ME 04101

SHEET TITLE

CONSTRUCTION
DETAILS-II

SHEET NUMBER

C-5



UTILITY S.O.W. RESPONSIBILITIES		
SCOPE OF WORK	BY UTILITY	BY CONTRACTOR
PROVIDE UTILITY TRANSFORMER	X	
PROVIDE CT'S IN TRANSFORMER	X	
PROVIDE & INSTALL PRIMARY CONDUCTORS	X	
PROVIDE & INSTALL PRIMARY CONDUCTORS	X	
PROVIDE & INSTALL NEW UTILITY POLE	X	
PROVIDE & INSTALL UTILITY TRANSFORMER VAULT		X
PROVIDE & INSTALL (2) 4" RGS RISERS		X
PROVIDE & INSTALL PRIMARY TRENCHING & CONDUITS WITH PULL ROPE		X
PROVIDE & INSTALL SECONDARY TRENCHING & CONDUITS		X
PROVIDE & INSTALL SECONDARY CONDUCTORS		X
PROVIDE & INSTALL UTILITY METER & H-FRAME		

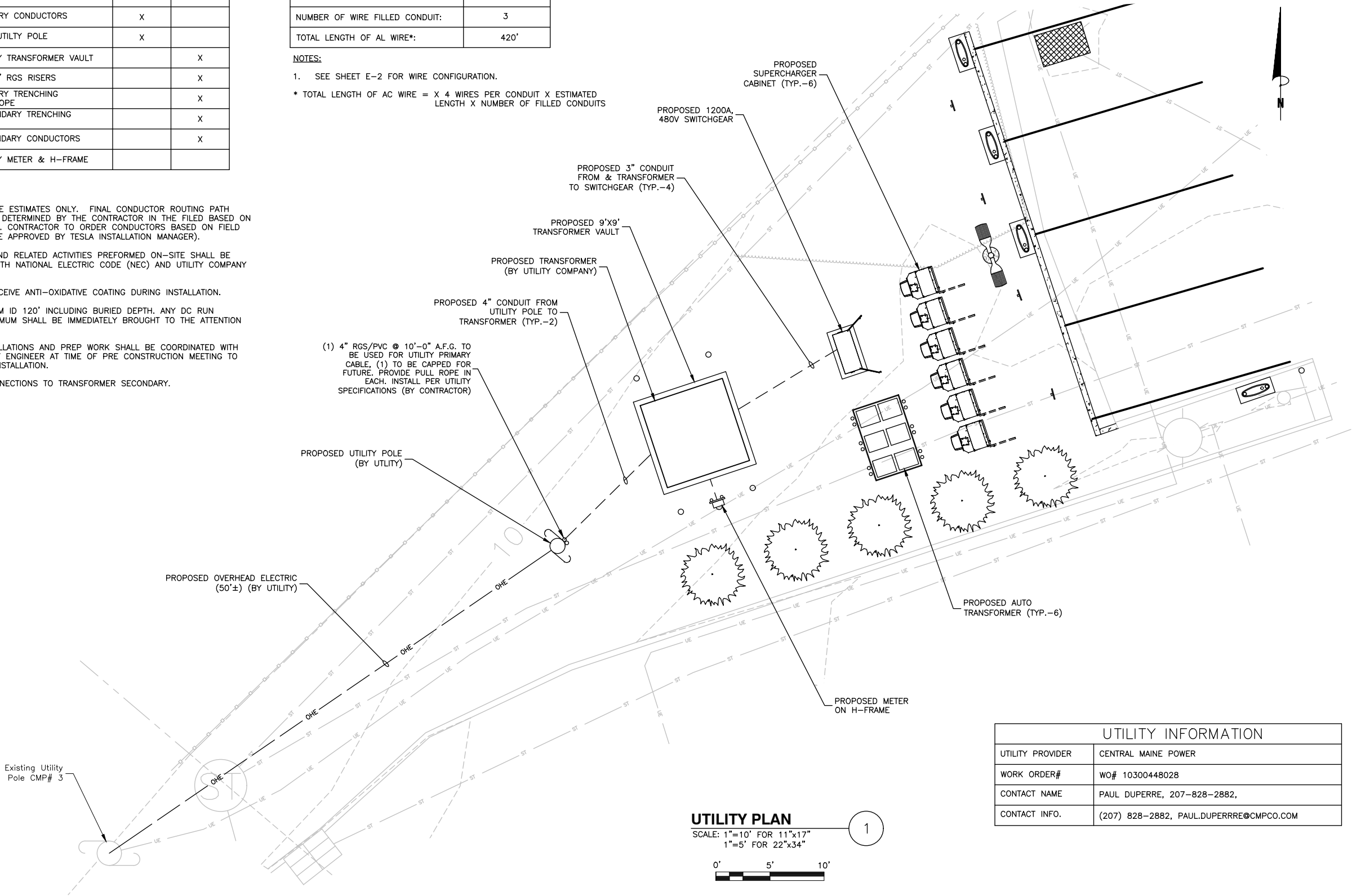
NOTES:

- CONDUCTOR LENGTHS ARE ESTIMATES ONLY. FINAL CONDUCTOR ROUTING PATH AND LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FILED BASED ON PHYSICAL MEASUREMENTS. CONTRACTOR TO ORDER CONDUCTORS 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) AND UTILITY COMPANY STANDARDS.
- ALL CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION.
- DC RUN LENGTH MAXIMUM IS 120' INCLUDING BURIED DEPTH. ANY DC RUN LENGTHS OVER THE MAXIMUM SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF TESLA.
- UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRE CONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATION.
- UTILITY SHALL MAKE CONNECTIONS TO TRANSFORMER SECONDARY.

UTILITY SERVICE LENGTHS		
UTILITY TRANS. TO SWITCHGEAR	LINEAR LENGTH	ESTIMATED LENGTH*
	13'	35'
TOTAL LENGTH OF AC WIRE:		140'
NUMBER OF WIRE FILLED CONDUIT:		3
TOTAL LENGTH OF AL WIRE*:		420'

NOTES:

- SEE SHEET E-2 FOR WIRE CONFIGURATION.
- * TOTAL LENGTH OF AC WIRE = X 4 WIRES PER CONDUIT X ESTIMATED LENGTH X NUMBER OF FILLED CONDUITS



UTILITY INFORMATION	
UTILITY PROVIDER	CENTRAL MAINE POWER
WORK ORDER#	WO# 10300448028
CONTACT NAME	PAUL DUPERRE, 207-828-2882,
CONTACT INFO.	(207) 828-2882, PAUL.DUPERRRE@CMPCO.COM



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SHEET TITLE

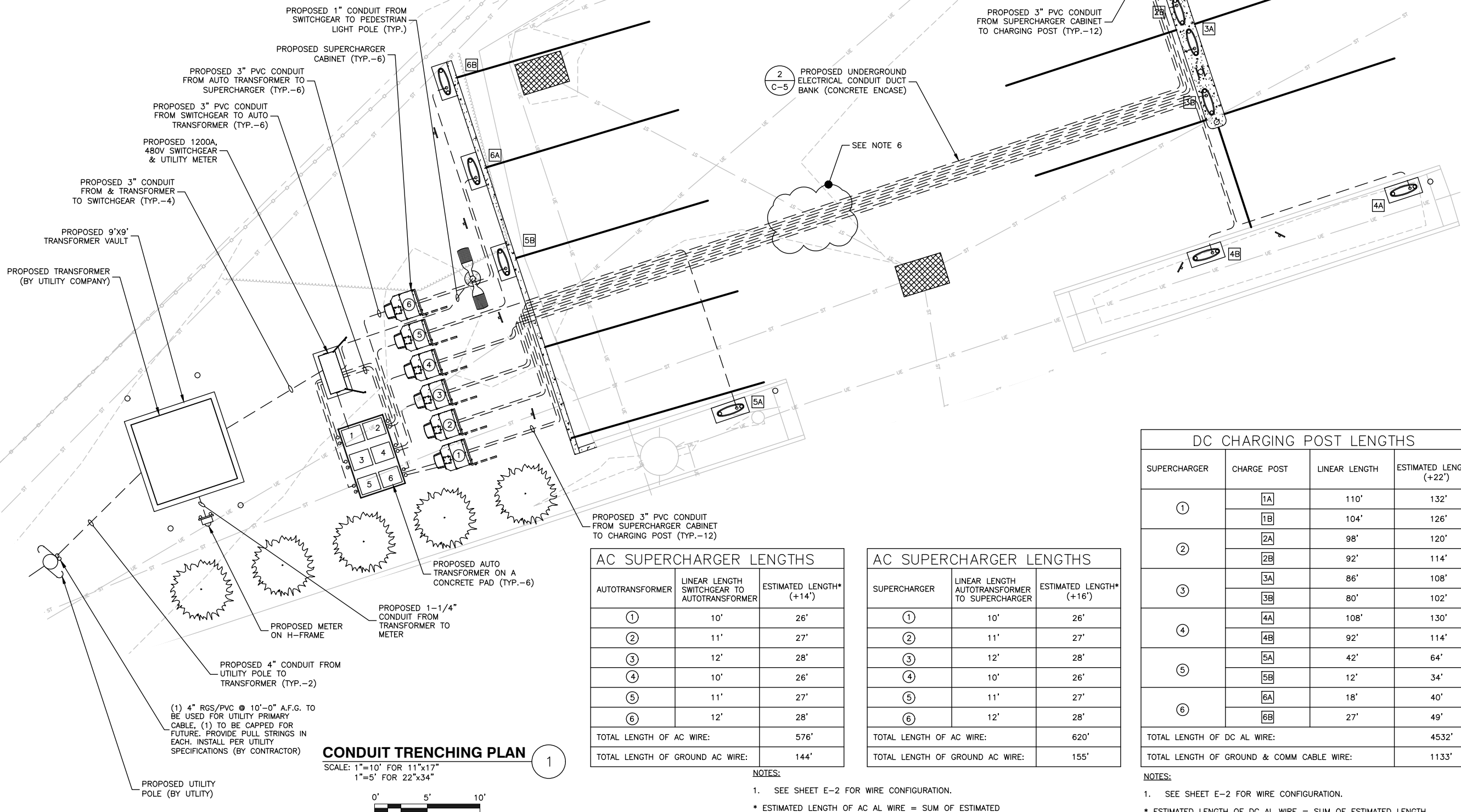
UTILITY PLAN

SHEET NUMBER

E-1

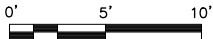
NOTES:

1. CONDUCTOR LENGTHS ARE ESTIMATES ONLY. FINAL CONDUCTOR ROUTING PATH AND LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FILED BASED ON PHYSICAL MEASUREMENTS. CONTRACTOR TO ORDER CONDUCTORS BASED ON FIELD MEASUREMENTS (MUST BE APPROVED BY TESLA INSTALLATION MANAGER).
2. ALL ELECTRICAL WORK AND RELATED ACTIVITIES PREFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) AND UTILITY COMPANY STANDARDS.
3. ALL CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION.
4. DC RUN LENGTH MAXIMUM ID 120' INCLUDING BURIED DEPTH. ANY DC RUN LENGTHS OVER THE MAXIMUM SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF TESLA.
5. UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRE CONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATION.
6. CONTRACTOR TO VERIFY EXISTING UNDERGROUND UTILITY LOCATIONS AND DEPTH PRIOR TO EXCAVATION OF TRENCH.



CONDUIT TRENCHING PLAN

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"



AC SUPERCHARGER LENGTHS

AUTOTRANSFORMER	LINEAR LENGTH SWITCHGEAR TO AUTOTRANSFORMER	ESTIMATED LENGTH* (+14')
①	10'	26'
②	11'	27'
③	12'	28'
④	10'	26'
⑤	11'	27'
⑥	12'	28'
TOTAL LENGTH OF AC WIRE:		576'
TOTAL LENGTH OF GROUND AC WIRE:		144'

NOTES:

1. SEE SHEET E-2 FOR WIRE CONFIGURATION.
- * ESTIMATED LENGTH OF AC AL WIRE = SUM OF ESTIMATED LENGTH X 4 WIRES

AC SUPERCHARGER LENGTHS

SUPERCHARGER	LINEAR LENGTH AUTOTRANSFORMER TO SUPERCHARGER	ESTIMATED LENGTH* (+16')
①	10'	26'
②	11'	27'
③	12'	28'
④	10'	26'
⑤	11'	27'
⑥	12'	28'
TOTAL LENGTH OF AC WIRE:		620'
TOTAL LENGTH OF GROUND AC WIRE:		155'

DC CHARGING POST LENGTHS			
SUPERCHARGER	CHARGE POST	LINEAR LENGTH	ESTIMATED LENGTH* (+22')
①	1A	110'	132'
	1B	104'	126'
②	2A	98'	120'
	2B	92'	114'
③	3A	86'	108'
	3B	80'	102'
④	4A	108'	130'
	4B	92'	114'
⑤	5A	42'	64'
	5B	12'	34'
⑥	6A	18'	40'
	6B	27'	49'
TOTAL LENGTH OF DC AL WIRE:			4532'
TOTAL LENGTH OF GROUND & COMM CABLE WIRE:			1133'

NOTES:

1. SEE SHEET E-2 FOR WIRE CONFIGURATION.
- * ESTIMATED LENGTH OF DC AL WIRE = SUM OF ESTIMATED LENGTH X 4 WIRES PER SUPERCHARGER



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SITE NAME:

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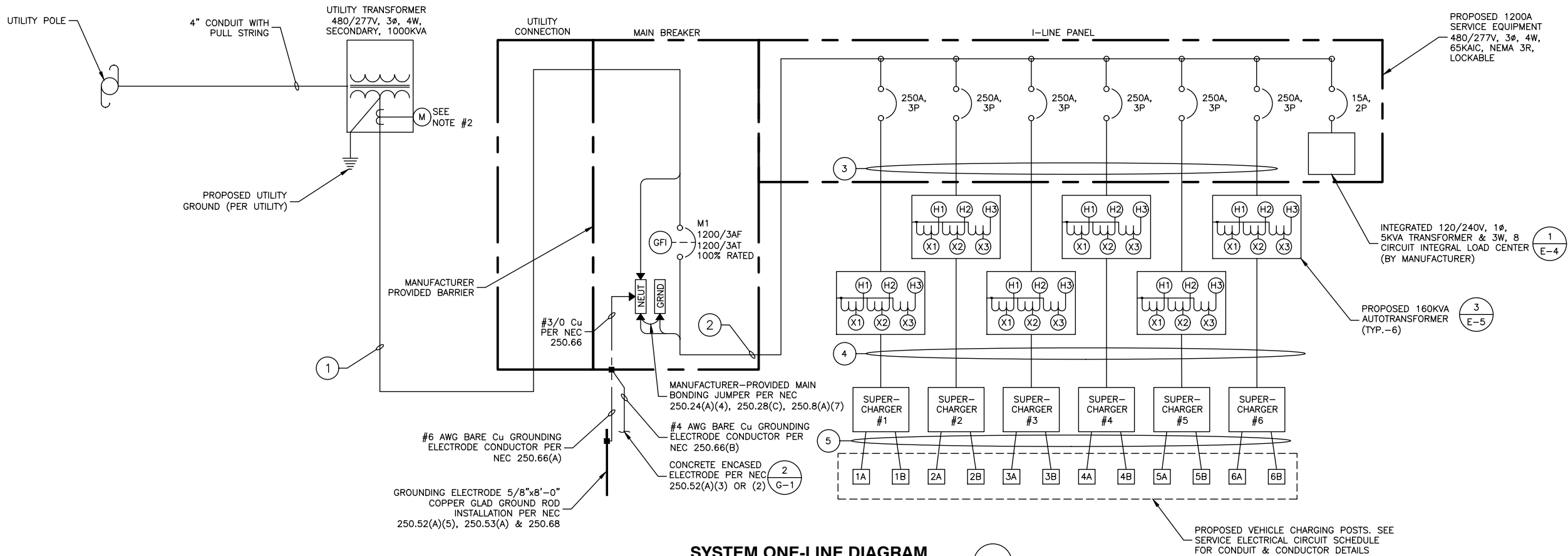
295 FOREST AVENUE
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SHEET TITLE

CONDUIT TRENCHING
PLAN

SHEET NUMBER

E-2



SERVICE ELECTRICAL CIRCUIT SCHEDULE

NO:	FROM	TO	CONFIGURATION
1	UTILITY TRANSFORMER	PROPOSED SERVICE EQUIPMENT: INCOMING	(3) 500MCM AL (THWN-2) & (1) 500MCM AL (THWN-2) NEUT IN EACH OF (4) 3" CONDUIT
2	PROPOSED SERVICE EQUIPMENT: INCOMING	PROPOSED SERVICE EQUIPMENT: 1200A TRIP MAIN BREAKER 100% RATED	FACTORY INSTALLED 1200A BUSS
3	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #1	C1
	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #2	C1
	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #3	C1
	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #4	C1
	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #5	C1
4	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (250A)	PROPOSED AUTOTRANSFORMER #6	C1
	PROPOSED AUTOTRANSFORMER #1	PROPOSED TESLA SUPERCHARGER #1	C1
4	PROPOSED AUTOTRANSFORMER #1	PROPOSED TESLA SUPERCHARGER #2	C1

SERVICE ELECTRICAL CIRCUIT SCHEDULE

NO:	FROM	TO	CONFIGURATION
4	PROPOSED AUTOTRANSFORMER #2	PROPOSED TESLA SUPERCHARGER #3	C1
	PROPOSED AUTOTRANSFORMER #3	PROPOSED TESLA SUPERCHARGER #4	C1
	PROPOSED AUTOTRANSFORMER #4	PROPOSED TESLA SUPERCHARGER #5	C1
	PROPOSED AUTOTRANSFORMER #5	PROPOSED TESLA SUPERCHARGER #6	C1
	PROPOSED TESLA SUPERCHARGER #1	PROPOSED TESLA CHARGING POST	1A C2 1B C2
5	PROPOSED TESLA SUPERCHARGER #2	PROPOSED TESLA CHARGING POST	2A C2 2B C2
	PROPOSED TESLA SUPERCHARGER #3	PROPOSED TESLA CHARGING POST	3A C2 3B C2
	PROPOSED TESLA SUPERCHARGER #4	PROPOSED TESLA CHARGING POST	4A C2 4B C2
	PROPOSED TESLA SUPERCHARGER #5	PROPOSED TESLA CHARGING POST	5A C2 5B C2
	PROPOSED TESLA SUPERCHARGER #6	PROPOSED TESLA CHARGING POST	6A C2 6B C2

NOTES:

- NEUTRAL MUST BE INCLUDED FOR PROPER OPERATION OF TESLA SUPERCHARGERS.
- PROPOSED UTILITY CT METERING SHALL BE BY CT CABINET LOCATED 2' FROM TRANSFORMER PAD.
- CONTRACTOR TO USE 'SIMPULL THWN-2' ALUMINUM WIRING PER TESLA REQUIREMENTS WHEN ALUMINUM IS INDICATED IN THE CIRCUIT SCHEDULE.
- NEUTRAL IS NOT TO BE BONDED TO EQUIPMENT GROUND.
- ALL CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION.

LEGEND:

- C1 (3) 350MCM AL (THWN-2),
(1) 350MCM AL (THWN-2),
(1) #2 AWG AL EGC IN 3" CONDUIT
- C2 (4) 250MCM AL (THWN-2) / PER DC POST,
#2 AWG AL EGC & COMM CABLE (PER TESLA)
IN 3" CONDUIT

SERVICE ELECTRICAL CIRCUIT SCHEDULE

SCALE: N.T.S.



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



Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NOT FOR
CONSTRUCTION

DRAWN BY: SK

CHECKED BY: MFT

APPROVED BY: BBR

PROJECT #: 50097792

JOB #: 50102492

SUBMITTALS

REV.	DATE	DESCRIPTION
D	07/03/18	ISSUED FOR 90% REVIEW
C	05/16/18	ISSUED FOR 50% REVIEW
B	05/09/18	ISSUED FOR 50% REVIEW
A	05/08/18	ISSUED FOR 50% REVIEW

SITE NAME:

PORTLAND ME

SITE ADDRESS:

295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE
ELECTRICAL RISER
DIAGRAM & CIRCUIT
SCHEDULE

SHEET NUMBER

E-3



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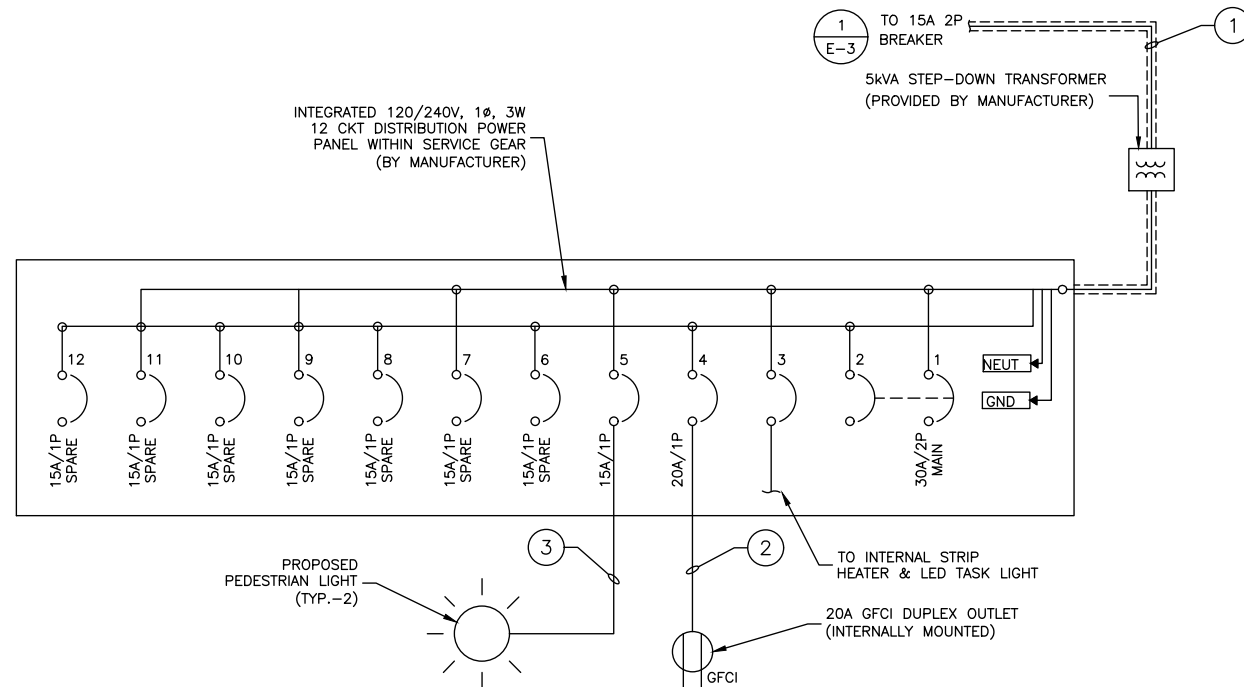
295 FOREST AVENUE
PORTLAND, ME 04101

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-4



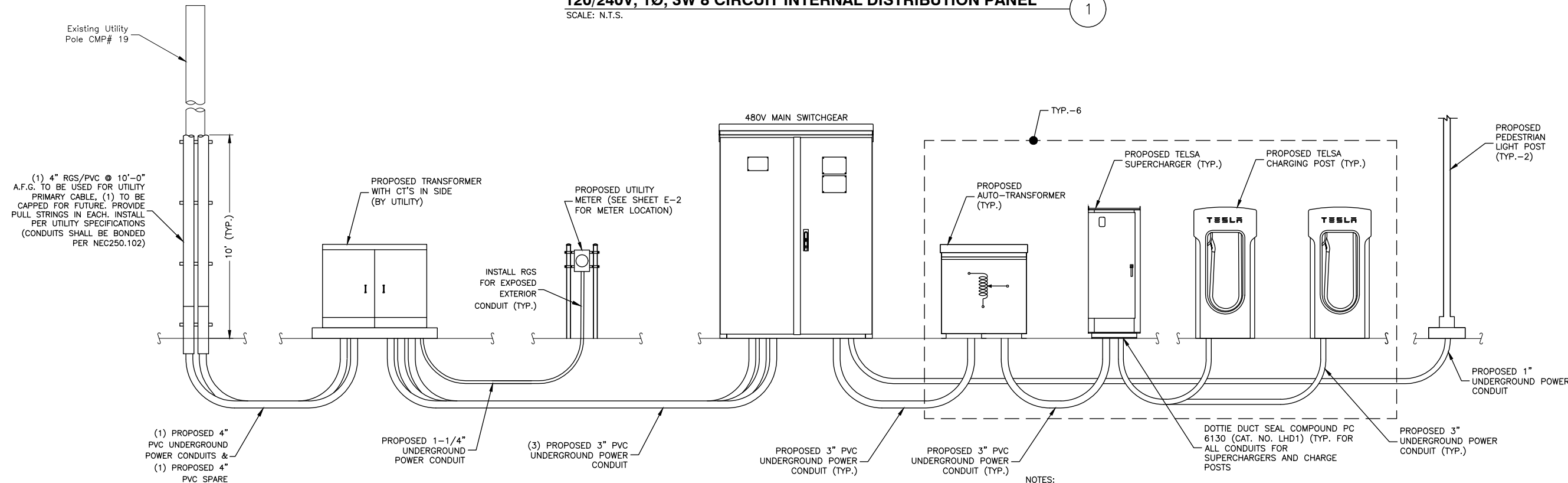
NO:	FROM	TO	CONFIGURATION
1	SERVICE GEAR POWER SUPPLY (BY MANUFACTURER)	8CKT, 120/240V, 1Ø POWER DISTRIBUTION PANEL (BY MANUFACTURER)	FACTORY INSTALLED CABLING (BY MANUFACTURER)
2	12CKT POWER DIST PANEL; 20A, 120V 8CKT	20A GFCI DUPLEX OUTLET (INTERNALLY MOUNTED BY MANUFACTURER)	FACTORY INSTALLED CABLING (BY MANUFACTURER)
3	12CKT POWER DIST PANEL; 15A, 120V 12CKT	PEDESTRIAN LIGHTING 15A, 120V	(2)#10M 1#10G IN 1" CONDUIT

NOTES:

- ALL BUSHING AND WIRING INTERNALS OF PROPOSED SERVICE EQUIPMENT PROVIDED BY MANUFACTURER AND MODIFICATIONS SHALL REQUIRE ENGINEERING APPROVAL PRIOR TO ANY CHANGES BEING MADE.

120/240V, 1Ø, 3W 8 CIRCUIT INTERNAL DISTRIBUTION PANEL

SCALE: N.T.S.



NOTES:

- CONDUITS SHALL BE BURIED BELOW FROST LINE AND IN COMPLIANCE WITH LOCAL AND NATIONAL CODE REQUIREMENTS.
- REFERENCE SHEET E-1 AND E-2 FOR ADDITIONAL DETAIL.
- INSTALL RGS FOR EXTERIOR ABOVE GRADE CONDUIT TO CT CABINETS OR AS SPECIFIED ON PLANS. SEE ELECTRICAL NOTE 24 ON SHEET GN-2.

CAR CHARGER CONDUIT ELEVATION

SCALE: N.T.S.

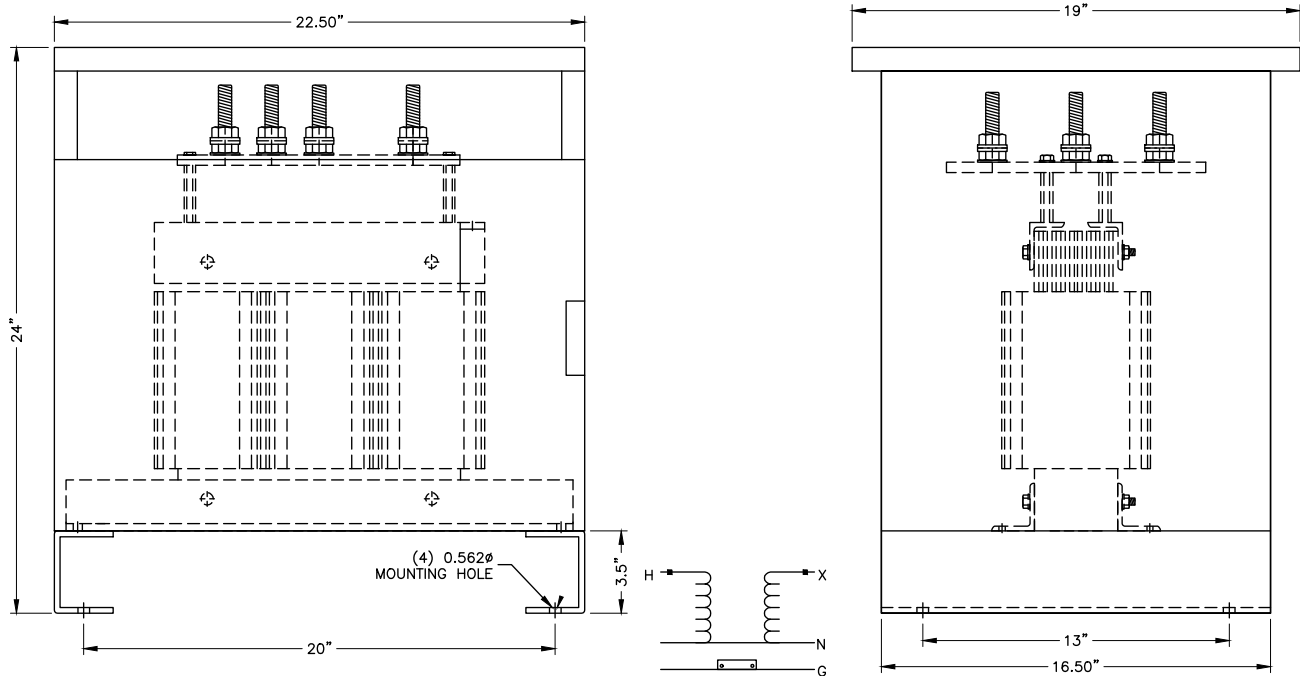
2

MANUFACTURER: QUALITY TRANSFORMER AND ELECTRONICS, INC.
DESCRIPTION: 160 KVA STAND ALONE AUTOTRANSFORMERS
THREE-PHASE, 50/60HZ
INPUT = 504 VRMS
OUTPUT = 480 VRMS@192 ARMS
NEMA3R

THE LISTED TRANSFORMER IS MARKED UNDER THE FOLLOWING LICENSE NUMBERS:

CE
EN 60076-1 - T72140712
EN 61558-1 - T72140712

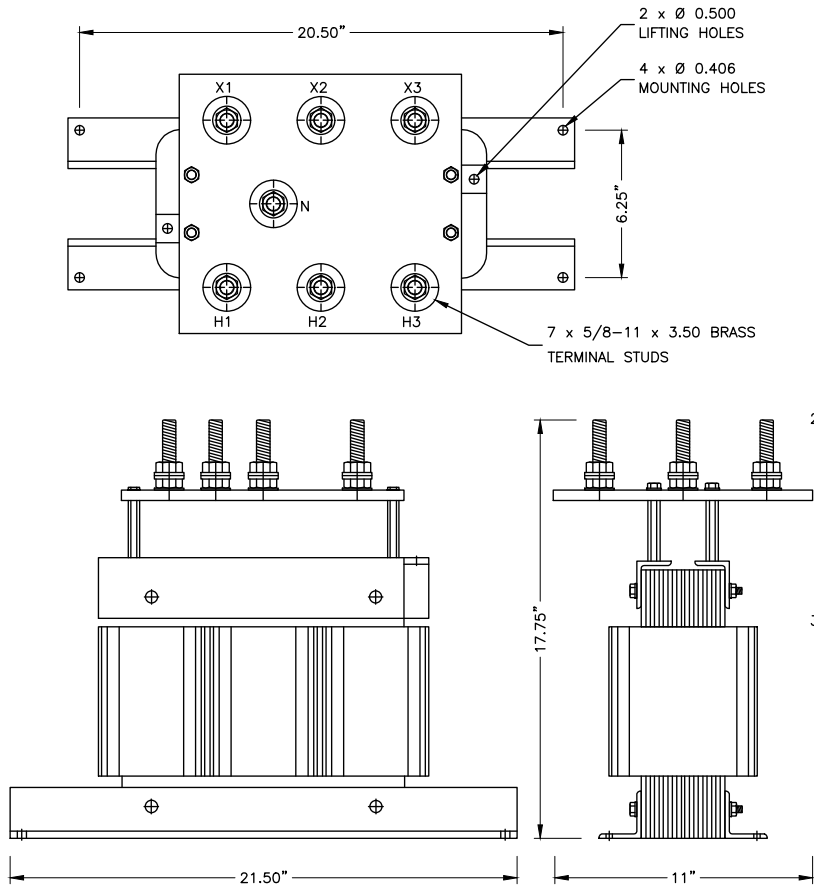
NRTL TO UL
1561- CU 72140835



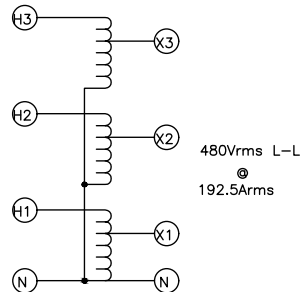
NOTE:
1. NEUTRAL IS NOT TO BE BONDED TO EQUIPMENT GROUND.

AUTOTRANSFORMER
SCALE: N.T.S.

1



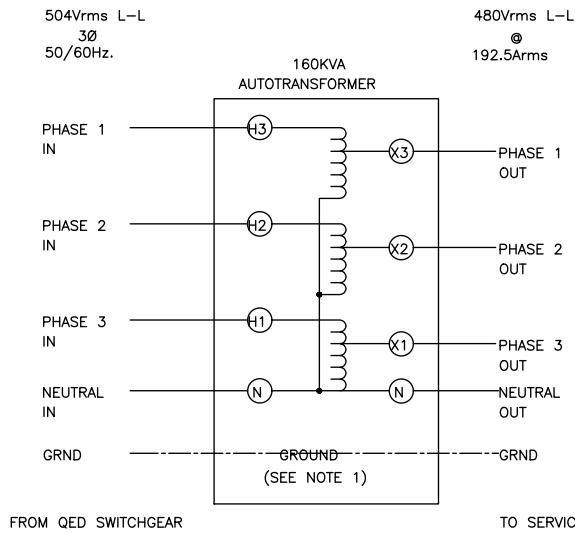
- 1.0 - ELECTRICAL:
1.1 - RATED POWER = 160 KVA.
1.2 - NUMBER OF PHASES = THREE.
1.3 - FREQUENCY = 50/60 Hz.
1.4 - ELECTRIC WITHSTANDING VOLTAGE = 4.0 kVrms.
1.5 - SCHEDULE DIAGRAM:



- 2.0 - MECHANICAL
2.1 - ESTIMATED WEIGHT = 200 LBS.
2.2 - TRANSFORMER SHALL BE VACUUM IMPREGNATED IN PROXY RESIN AND BAKED AFTER ASSEMBLY.
2.3 - FINISH:
2.4.1 - AUTOFORMER = BLACK PAINT.
2.4.2 - ENCLOSURE = ANSI #61 GRAY PAINT.
2.4 - MARKING:
2.4.1 - TERMINAL DESIGNATIONS IN WHITE INK PER 9852-800.
2.4.2 - ENCLOSURE SILKSCREEN PER 9852-850.
3.0 - ADDITIONAL:
3.1 - SUGGESTED SOURCE OF SUPPLY:
QUALITY TRANSFORMER AND ELECTRONICS P/N 9852.
3.2 - TRANSFORMER SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH TUV RHEINLAND LICENSE NUMBER US 7214071102.
3.3 - NRTL LISTED TO UL 1561.

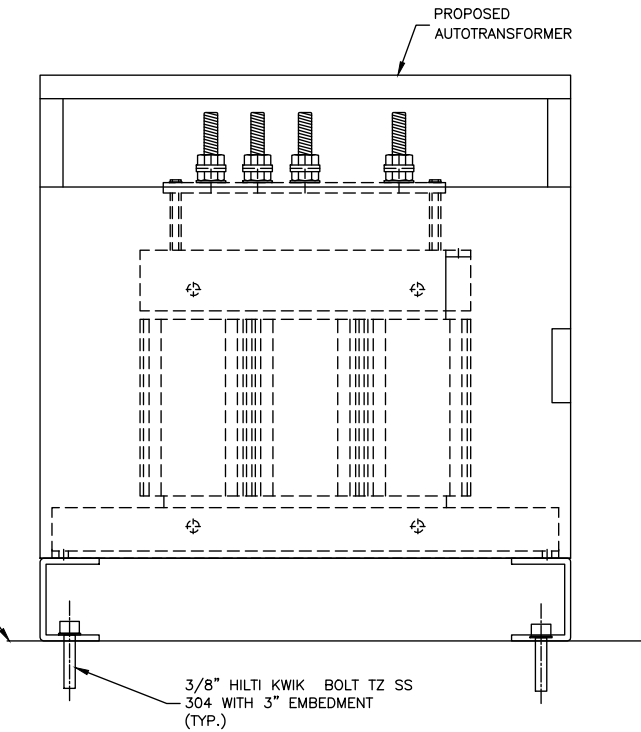
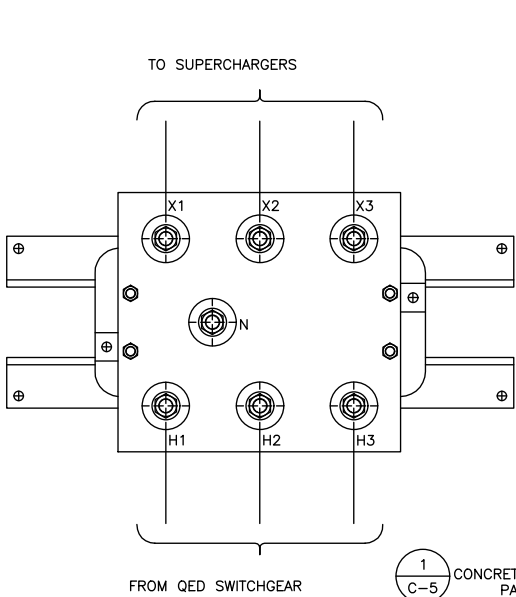
160KVA AUTOTRANSFORMER
SCALE: N.T.S.

2



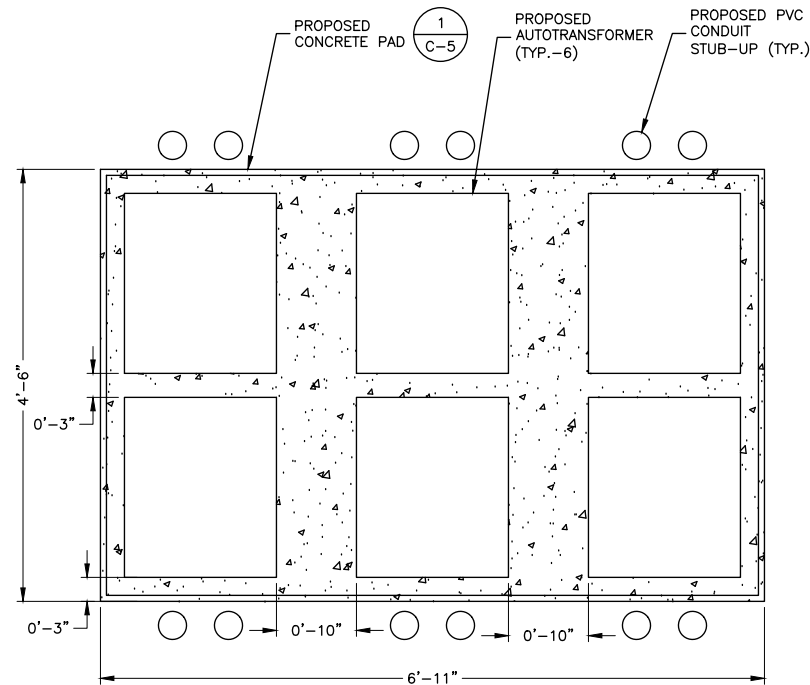
CONNECTION DIAGRAM FOR AUTOTRANSFORMER
SCALE: N.T.S.

3



AUTOTRANSFORMER ANCHORAGE DETAIL
SCALE: N.T.S.

4



CONCRETE PAD LAYOUT
SCALE: 1/2"=1' FOR 11"x17"
1"=1' FOR 22"x34"

5



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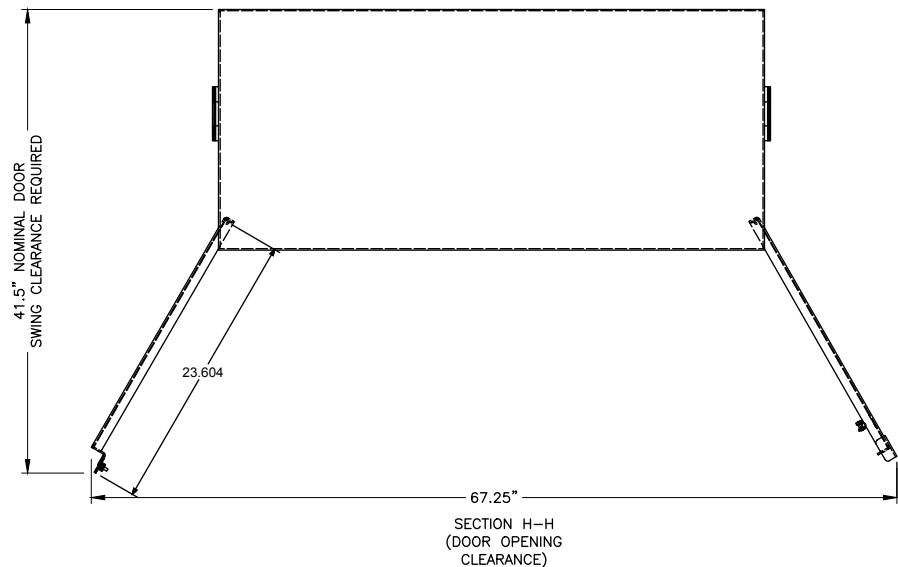
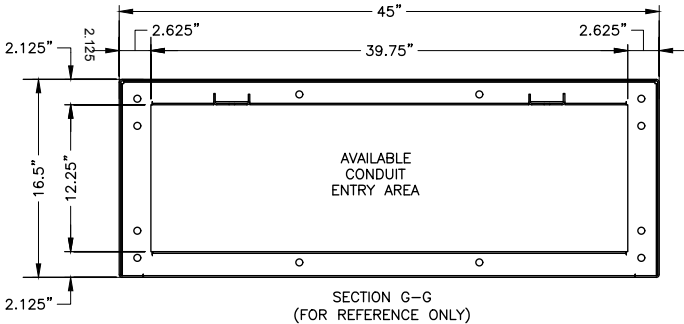
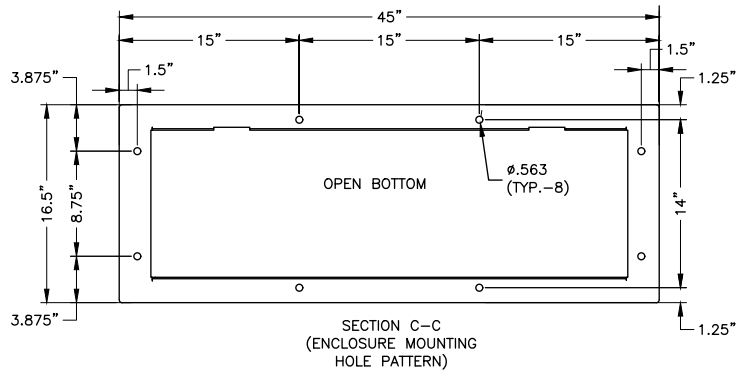
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SHEET TITLE

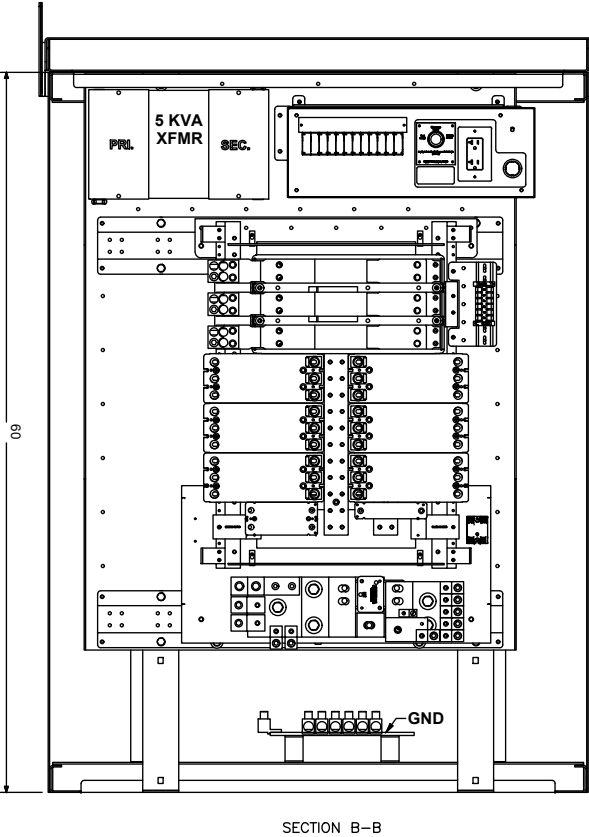
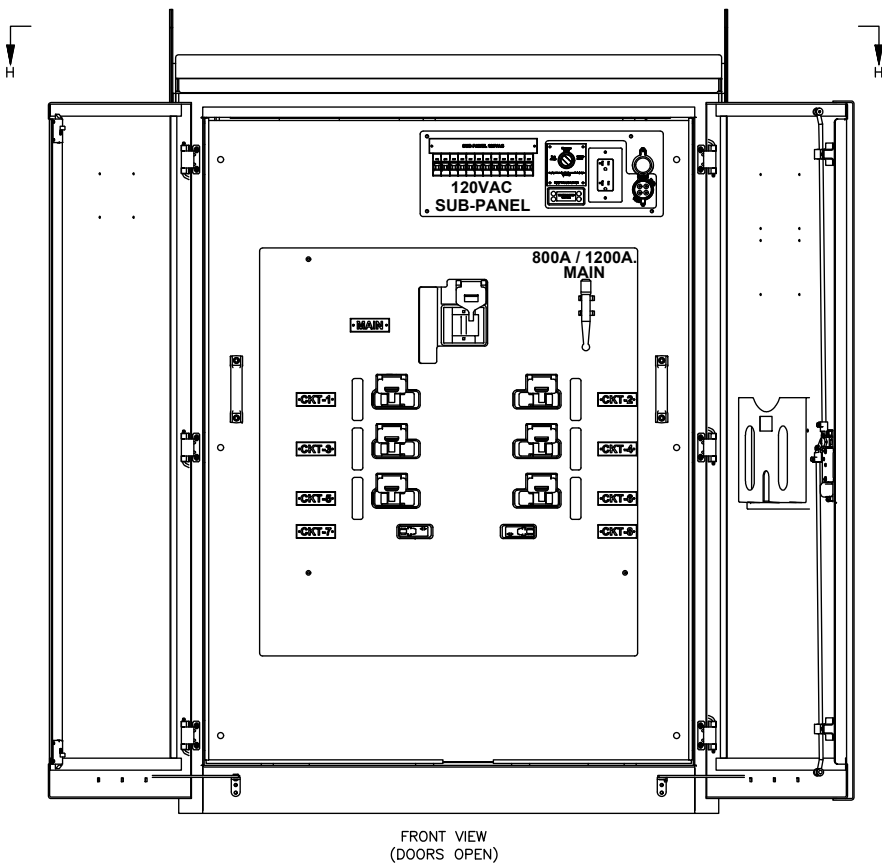
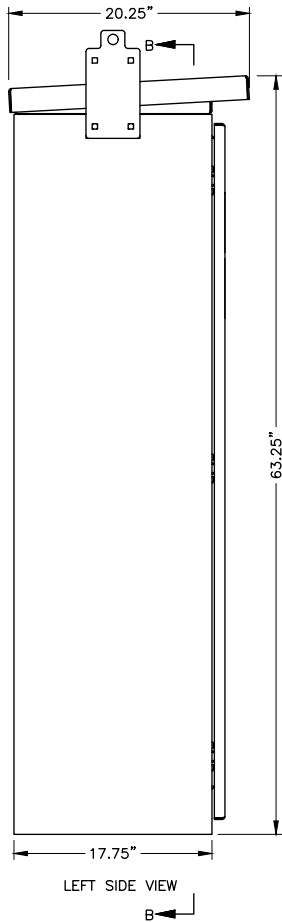
AUTOTRANSFORMER
DETAILS

SHEET NUMBER

E-5

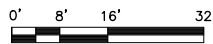


- NOTES:
1. SWITCHGEAR DETAILS BASED ON DRAWING FOR P/N OIE-GL-12-100-L-480-3P4W-65_3R DATED 3-14-2018 FOR REFERENCE ONLY. PROVIDED BY TESLA. VERIFY FINAL SWITCHGEAR INFORMATION WITH TESLA INSTALLATION MANAGER PRIOR TO CONSTRUCTION.
 2. PANEL FEATURES: EATON TYPE 'PRLC' PANEL.
 3. SHIPPING INFORMATION: WEIGHT - 800 LBS.



SWITCHGEAR DETAIL

SCALE: 1/32"=1' FOR 11"x17"
1/16"=1' FOR 22"x34"



1



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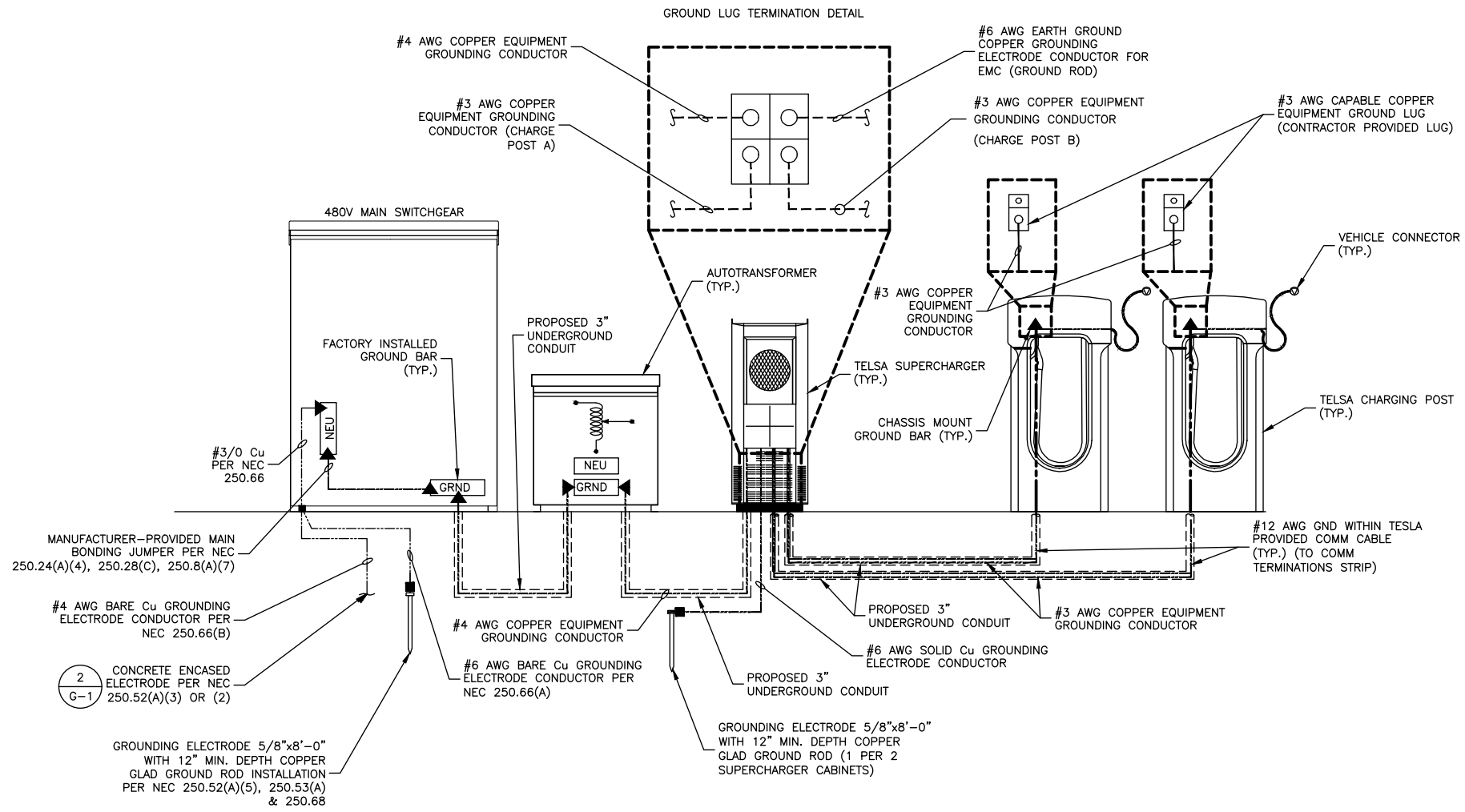
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SHEET TITLE

SWITCHGEAR DETAILS

SHEET NUMBER

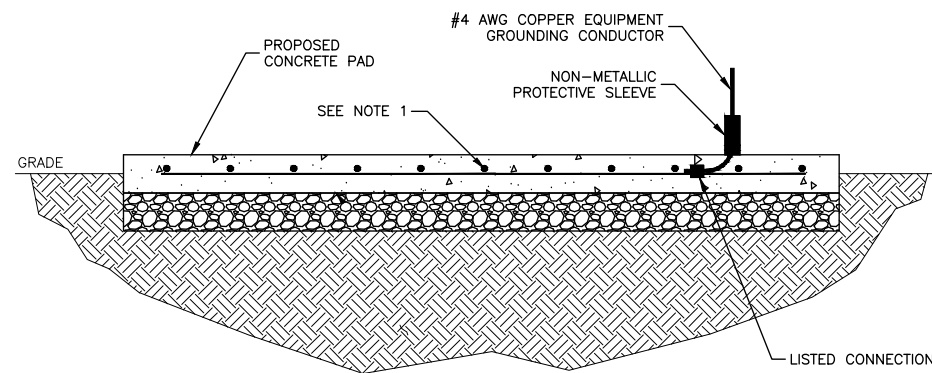
E-6



GROUNDING SCHEMATIC

SCALE: N.T.S.

1



NOTE:

1. REBAR BONDED TOGETHER WITH STEEL TIE WIRES.

CONCRETE ENCASED ELECTRODE DETAIL

SCALE: N.T.S.

2



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SHEET TITLE

GROUNDING
DETAILS

SHEET NUMBER

G-1