PROJECT DESCRIPTION

PEAPACK-GLADSTONE BANK
EV CHARGING STATION INSTALLATION

PROJECT LOCATION:
500 HILLS DR.
BEDMINSTER, NJ 07921

SHEET INDEX

SCOPE OF WORK

INSTALL (4) JUICEBOX PRO 40 CHARGING STATION ATTACHED TO A WALL.

ELECTRICAL NOTES

1. THIS DESIGN MAY BE USED FOR SECURING PERMITS, BID, PLANNING, THE COMPANY'S REVIEW OR SOME OTHER GOAL. THIS DESIGN DOES NOT GUARANTEE THESE APPROVALS, NOR ARE THESE APPROVALS A REQUIREMENT FOR SERVICES OR THE COMPLETION OF THIS WORK.
2. THE ELECTRICAL CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, INSPECTION AND TAXES APPLICABLE TO THE ELECTRICAL WORK. PROVIDE ALL INSTRUMENTS AND PERFORM ALL TESTS REQUIRED BY THE AHJ. CORRECT ALL FAILURES AND REPLACE ANY DAMAGED PORTIONS OF THE WORK RESULTING FROM TESTS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE TESTS.
3. THIS DESIGN IS NOT A COMPLETE SET OF CONSTRUCTION DRAWING OR SHOP DRAWINGS. THIS DESIGN REPRESENTS DIAGRAMMATIC REPRESENTATION OF INTENDENT SCOPE OF WORK.
4. THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
5. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE NATIONAL ELECTRICAL CODE, IECC, LIFE SAFETY CODE, LOCAL BUILDING CODE, OSHA REGULATIONS, OCAL, STATE, FEDERAL AND AUTHORITY HAVING JURISDICTION CODES APPLICABLE AT THE TIME OF THE CONSTRUCTION.
6. GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1 STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION (ANSI)
7. ALL MATERIALS PROVIDED BY THE CONTRACTOR SHALL BE NEW AND FREE OF DEFECTS, LISTED/LABELED FOR THE INTENDED PURPOSE BY UNDERWRITERS (UL) OR OTHER ORGANIZATION THAT IS ACCEPTABLE TO THE AHJ.
8. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, STORING, SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER DURING CONSTRUCTION FOR ALL NEW EQUIPMENT PROVIDED BY THE ELECTRICAL CONTRACTOR OR PROVIDED BY OTHER PARTIES TO THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR.
9. THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS ARE INTENDED TO DESCRIBE AND ILLUSTRATE SYSTEMS WHICH WILL NOT INTERFERE WITH THE STRUCTURE OF THE BUILDING AND WHICH WILL FIT INTO THE AVAILABLE SPACES. THE CONTRACTOR IS RESPONSIBLE FOR CAREFULLY LAYING OUT ALL WORK TO CONFORM TO NATIONAL ELECTRICAL CODE CLEARANCES, ARCHITECTURAL, STRUCTURAL, MECHANICAL AND SITE CONDITIONS, TO AVOID OBSTRUCTIONS AND TO ALLOW THE PROPER INSTALLATION OF EACH ITEM.
10. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT ONLY. COORDINATE WITH DRAWINGS OF OTHER TRADES TO FIT THE ACTUAL SPACE CONDITIONS, HEADROOM AND SPACE CONDITION TO BE MAINTAINED.
11. THE DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND DO NOT NECESSARILY SHOW THE EXACT LOCATION AND DETAILS OF THE WORK TO BE INSTALLED.
12. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF RECEPTACLES, AND LIGHTING FIXTURES, ETC.
13. UPON THE COMPLETION OF THE WORK, THE ENTIRE ELECTRICAL SYSTEM SHALL BE TESTED AND SHALL BE SHOWN TO BE IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND DRAWINGS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL SYSTEM READY FOR OPERATION AND INSPECTION BY AHJ.
14. PREPARE AND FURNISH TO OWNER 'AS-BUILT' PLANS FOR ALL WORK INSTALLED.
15. ELECTRICAL CONTRACTOR SHALL FURNISH RECORD SET OF DRAWINGS WITH ANY DEVIATIONS MARKED IN RED INK.
16. TEST AND INSPECT ALL WIRING AND EQUIPMENT INSTALLED UNDER THIS SECTION OF SPECIFICATIONS. ALL WIRING MUST BE FREE OF SHORTS AND BROKEN WIRE. LEAVE ALL MATERIALS AND APPARATUS IN PROPER AND SATISFACTORY WORKING CONDITIONS.
17. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE CORRECT PHASE SEQUENCE OF ALL THREE-PHASE FEEDERS AND BRANCH CIRCUITS. VERIFY PROPER ROTATION OF ALL MOTORS.
18. ELECTRICAL CONTRACTOR SHALL VERIFY PHASE LOAD BALANCING ON POWER PANELS UPON COMPLETION OF THE ELECTRICAL INSTALLATION.
19. PROVIDE IDENTIFICATION ON ALL PANELBOARDS, SWITCHES, STARTERS, DIMMERS, SWITCHES IN DISTRIBUTION PANELBOARDS AND SWITCHBOARDS.
20. CONDUIT RUNS WHEN SHOWN ARE DIAGRAMMATICAL. FINAL LOCATION AND ROUTING SHALL BE ESTABLISHED BY THE CONTRACTOR BASED ON THE INSTALLATION CONDITIONS AND SHALL BE VERIFIED IN THE FIELD. ALL CONDUIT TYPES AND INSTALLATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
21. CONDUIT RUNS SHALL BE PARALLEL WITH OR AT RIGHT ANGELS TO WALLS AND CEILINGS. CONDUIT SHALL BE SUPPORTED BY APPROVED MEANS. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A DRAG WIRE.
22. ALL SUSPENDED CONDUITS SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE BY MEANS OF APPROVED CONDUIT FASTENERS, HANGERS, STRAPS, SUPPORTS, CLAMPS, ETC., FIRMLY ANCHORED IN PLACE AND SPACED AT INTERVALS NOT TO EXCEED 10'-0".
23. PULLBOXES , JUNCTION BOXES, CONDUIT BODIES, AND EXPANSION JOINTS SHALL BE INSTALLED AS PER NFPA 70.
24. PROVIDE CONDUIT EXPANSION FITTINGS WITH BONDING JUMPERS FOR ALL CONDUITS PASSING THROUGH EXPANSION JOINTS.
25. PROVIDE SLEEVES FOR PENETRATIONS THROUGH BLOCK OR CONCRETE WALLS AND FLOORS.
26. THE USE OF FLEXIBLE CONDUIT FROM LIGHTING FIXTURES TO JUNCTION BOX IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED WITH THE CONDUCTORS INSIDE FLEXIBLE CONDUIT. THE GROUND WIRE MUST BOND THE FIXTURE HOUSING TO THE JUNCTION BOX. MAXIMUM LENGTH SHALL BE 6'-0".
27. FLEXIBLE CONDUIT INSTALLED OUT OF DOORS, IN ANY MECHANICAL EQUIPMENT ROOMS, OR IN NORMALLY WET AREAS SHALL BE LIQUID TIGHT FLEX WITH SUITABLE FITTINGS.
28. PROVIDE CONDUIT, WIRING, CIRCUITING AND REQUIRED CONNECTIONS TO ALL DEVICES, FIXTURES AND EQUIPMENT. CONNECT TO CIRCUITS AS INDICATED. CIRCUIT NUMBERS ARE FOR INFORMATION PURPOSES ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED IN THE PANEL SCHEDULE DIRECTORY AND ON THE AS-BUILT DRAWINGS.
29. CONTRACTOR SHALL VERIFY AND COORDINATE ALL MOUNTING HEIGHTS OF ALL DEVICES MOUNTED IN CASEWORK OR IN ABOVE COUNTERS WITH EXISTING EQUIPMENT.
30. UNLESS SPECIFICALLY DIRECTED OTHERWISE, FURNISH AND INSTALL EACH AND EVERY ITEM CONTAINED IN AND ASSOCIATED WITH, THE WORK INVOLVED AS SHOWN ON THE DRAWINGS AND/OR DESCRIBED IN THE ACCOMPANYING SPECIFICATIONS, TOGETHER WITH ALL APPURTENANCES, COMPONENTS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. CONTRACTOR SHALL PROVIDE CONDUIT, WIRING AND CABLING TO ALL DEVICES, FIXTURES AND ETC. FOR A COMPLETE WORKING SYSTEM BASED ON THE CIRCUITS NOTED.
31. PROVIDE INDEPENDENT SUPPORT FOR DISCONNECT SWITCHES, CONTROL STATIONS, BOXES, PANELS, ETC. WHERE NO WALLS OR OTHER STRUCTURAL SURFACE EXISTS.
32. EQUIPMENT SIZED AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED.
33. PROVIDE BRANCH CIRCUIT WIRING TO ALL ITEMS REQUIRING ELECTRICAL CONNECTIONS. WHERE BRANCH CIRCUIT WIRING IS NOT SHOWN, CONNECT ITEMS TO CIRCUITS INDICATED. THE CONTRACTOR SHALL DETERMINE EXACT ROUTING OF CONDUITS AND WIRING. UNLESS INDICATED OTHERWISE, ALL BRANCH CIRCUITS SHALL BE MINIMUM #12 THHN AWG COPPER.
34. PROVIDE JUNCTION BOX FOR ANY DEVICE WITH PIG TAIL SUCH AS SOLENOID VALVES, L[illegible] SWITCHES, SMOKE DETECTORS AND ETC. FOR PROPER ELECTRICAL CONNECTION. PROV[illegible] ALL HARDWARE FOR MOUNTING OF JUNCTION BOX.
35. ALL FIRE ALARM SYSTEMS RACEWAY, SWITCHES, AND JUNCTION BOXES SHA[illegible] BE [illegible]INTED RED.
36. TIGHTEN SCREWS AND BOLTS FOR CONNECTORS AND TERMINALS AC[illegible] MANUFACTURER'S PUBLISHED TORQUE - TIGHTENING VALUES.
37. EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT TH[illegible]RE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL AND PLUM[illegible] D[illegible]AWI[illegible]S. COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTORS.
38. WHEREVER THE INSTALLATION OF ELECTRICAL EQUIPMENT AS SHOWN ON THE DRAWINGS IS IMPRACTICAL DUE TO LOCAL INTERFERENCE OR UNFORESEEN FIELD CONDITIONS, THE CONTRACTOR SHALL INSTALL THE EQUIPMENT AT NEW LOCATIONS AS DIRECTED BY THE ENGINEER.
39. DESIGN IS BASED ON ALL CONDUCTORS TO BE THHN COPPER AND NO MORE THAN 4 CURRENT CARRYING CONDUCTORS IN THE SAME RACEWAY OR CONDUIT, UNLESS OTHERWISE NOTED.
40. WHEN EQUIPMENT IS BEING REMOVED/DEMO FROM THE FIELD, ALL WIRING ASSOCIATED WITH THE LOAD MUST BE REMOVED FROM THE JUNCTION BOX OR THE CIRCUIT BREAKER. DO NOT LEAVE UNUSED CONDUCTORS IN THE FIELD WITH ENDS TAPED WITH TAPE OR WIRE NUTS.
41. SPARE WIRES INSTALLED SHALL BE NEATLY COILED, BOUND AND PLACED IN SPACE AVAILABLE. LEAVE AT A MINIMUM, 8' OF SLACK AT EACH DESTINATION.
42. WHERE EXISTING CIRCUIT TO REMAIN ARE INTERRUPTED DUE TO NEW CONSTRUCTION, CONDUIT AND WIRE SHALL BE EXTENDED RE-ENERGIZED.
43. PROVIDE DISCONNECT SWITCHES FOR ELECTRICAL HEATER, HVAC EQUIPMENT AND EXHAUST FANS WITHIN EYE SIGHT OF THE EQUIPMENT.
44. PROVIDE SERVICE RECEPTACLE WITHIN 25 FEET OF EACH HVAC EQUIPMENT.
45. ELECTRICAL CONTRACTOR TO VERIFY ACTUAL INSTALLED EQUIPMENT ELECTRICAL NAME PLATE DATA BEFORE ENERGIZING THE CIRCUIT. CONFIRM ELECTRICAL DESIGN VALUES AND ACTUAL EQUIPMENT BEING INSTALLED ARE IN COMPLIANCE WITH ELECTRICAL CODE AND MANUFACTURER INSTALLATION REQUIREMENTS.
46. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY, QUICK-MADE, QUICK-BREAK TYPE, NEMA 1 ENCLOSURE FOR INDOOR LOCATIONS (NEMA 3R FOR OUTDOOR LOCATIONS). SWITCHES SHALL BE AS MANUFACTURED BY SQUARE 'D', GENERAL ELECTRIC, OR SIEMENS (I.T.E.). PROVIDE FUSES AS MANUFACTURED BY BUSSMAN, GOULD-SHAWMUT, OR LITTLE-FUSE. ALL CONDUCTOR TERMINATES TO BE U.L. LISTED FOR A MAXIMUM OF 75°C. SWITCHES USED AS SERVICE ENTRANCE EQUIPMENT TO BE U.L. LISTED AS "SER" RATED EQUIPMENT.
47. PANEL BOARDS SHALL BE MANUFACTURED BY SQUARE-D, EATON, GENERAL ELECTRIC, OR SIMILAR, MEETING U.L. STANDARDS 50 AND 67, WITH U.L. LABEL. PANELS USED AS SERVICE ENTRANCE EQUIPMENT TO BE U.L. LISTED AS "SER" RATED EQUIPMENT.
48. ALL SWITCHBOARDS AND PANELBOARDS SHALL BE MARKED WITH IDENTIFYING NAMEPLATES TO INDICATE THE DESIGNATIONS USED ON THESE DRAWINGS. PROVIDE NEW PANELBOARD SCHEDULES, CORRECTLY FILLED OUT FOR EVERY PANELBOARD.
49. ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE CONDUCTORS SHOWN.
50. BREAKERS: THERMAL, MAGNETIC TYPE, QUICK-MAKE, QUICK-BREAK, PLUG-IN TYPE FOR LOAD CENTERS AND BOLT IN TYPE FOR PANEL BOARDS AND SINGLE UNIT CONSTRUCTION. TWO POLE BREAKERS SHALL BE SINGLE UNIT COMMON TRIP TYPE. BREAKERS USED AS SWITCHES FOR 120V LIGHTING CIRCUITS SHALL BE APPROVED FOR THAT USE AND MARKED "SWD". ALL BREAKERS FOR HVAC AND REFRIGERATION EQUIPMENT SHALL BE "HACR" RATED BREAKERS.
51. GROUNDING SYSTEM: PERMANENTLY AND EFFECTIVELY GROUND ALL METALLIC CONDUIT, SUPPORTS, CABINETS, PANEL BOARDS AND SYSTEM NEUTRAL CONDUCTORS, MAINTAIN CONTINUITY OF EQUIPMENT GROUND THROUGHOUT THE SYSTEM. GROUND CLAMPS SHALL BE APPROVED TYPE, SPECIFICALLY DESIGNED FOR GROUNDING. WHERE GROUNDING CONDUCTOR IS ENCLOSED IN CONDUIT, GROUND CLAMP SHALL BE OF A TYPE WHICH GROUNDS BOTH CONDUCTOR AND CONDUIT. ALL CIRCUITS IN FLEXIBLE METAL OR PLASTIC CONDUIT SHALL INCLUDE A GROUND WIRE SIZED AND INSTALLED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
52. PROVIDE AND INSULATED GREEN GROUNDING WIRE IN THE SAME CONDUIT AS THE BRANCH CIRCUIT OR FEEDER WIRING AND FOR ALL (3) PHASES AND/OR SINGLE PHASE, BRANCH CIRCUITS AND FOR ALL FEEDERS, SHOWN OR NOT SHOWN.
53. ALL WORK SHALL BE PERMANENTLY AND EFFECTUALLY GROUNDED WHETHER OR NOT SUCH CONNECTIONS ARE SPECIFICALLY SHOWN OR SPECIFIED. GROUND RESISTANCE AT ANY POINT SHALL NOT EXCEED 25 OHMS.
54. ALL CONDUITS SHALL BE EMT UNLESS OTHERWISE NOTED.
55. CONDUIT SHALL BE SIZED TO COMPLY WITH NEC FOR NUMBER AND SIZE OF CONDUCTORS INSTALLED PER NEC. PROVIDE SCHEDULE 40 PVC PLASTIC OR RIGID STEEL CONDUIT BELOW GRADE, MINIMUM 3/4". PROVIDE ELECTRICAL METAL TUBING (EMT) MEETING FS W-C563, FLEXIBLE METAL CONDUIT (IN LENGTHS 6' OR LESS) FOR INTERIOR LOCATIONS. EMT CONNECTORS AND COUPLING SHALL BE SET-SCREW TYPE. "MC" & "AC" TYPE CABLES MUST BE INSTALLED IN ACCORDANCE WITH N.E.C. AND CAN NOT BE SUPPORTED FROM CEILING SUPPORT WIRES.
56. ELECTRICAL CONTRACTOR SHALL INSTALL SIZE OF CONDUIT SHOWN ON PLANS.
57. ALL CONDUIT AND RACEWAY SYSTEMS TO BE INSTALLED WITH SEPARATE GROUND CONDUCTOR. CONDUIT SYSTEM IS NOT TO BE USED AS THE SOLE GROUNDING MEANS[illegible]
58. CONDUCTORS: INSULATED SOFT ANNEALED 98% PURE COPPER WITH COLOR CODING[illegible]B A[illegible] GAGE, #10 AND SMALLER TO BE SOLID, #8 AND LARGER TO BE STRANDED, MINIMUM [illegible] UNLE[illegible] OTHERWISE INDICATED. CONDUCTORS MUST BE INSTALLED IN ACCORDANCE WI[illegible] NEC [illegible] CANNOT BE SUPPORTED FROM CEILING SUPPORT WIRES. THHN MAY NOT BE USE[illegible] UNDERGROUND, AT SERVICE ENTRANCE, OUTSIDE, OR IN WET LOCATIONS. A[illegible] IN[illegible]ATI[illegible] BE RATED FOR 600 V AND TYPES AS FOLLOWS:

#10 AND #12:	THWN OR [illegible]
#8 TO 4/0:	THWN O[illegible] TH[illegible]
SERVICE ENTRANCE:	SE-RHW[illegible] SE[illegible]W
OVER #4/0 ORDINARY SERVICE:	TH[illegible] OR X[illegible]HN
OVER #4/0 WET OR HOT SERVICE:	X[illegible]
WIRE THRU FLUORESCENT FIXTURES OR WHITHIN OF HTG EQUIP.:	[illegible]N

59. ALL CONDUIT AND RACEWAY SYSTEMS TO [illegible]E INST[illegible]LED W[illegible]TH [illegible]EPARATE GROUND CONDUCTOR. CONDUIT SYSTEM IS NOT TO [illegible] USE[illegible] AS TH[illegible] SOLE GROUNDING MEANS.
60. ALL WIRING TO BE COLOR-CODED AS FOLLOW[illegible]

120/208 VOLT SYSTEM		277/480 SYSTEM	
NEUTRAL:	WHIT[illegible]	PHASE A:	BROWN
PHASE A OR L1:	BL[illegible]	PHASE B:	ORANGE
PHASE B OR L2:	RE[illegible]	PHASE C:	YELLOW
PHASE C OR L3:	BLUE	NEUTRAL:	GRAY
GROUND:	G[illegible]EN	GROUND:	GREEN

61. WIRE CONNECTORS SHAL[illegible] EQUAL TO "SCOTCH LOCK" FOR #8 AWG WIRE AND SMALLER AND EQUAL TO T & B "[illegible]GH[illegible] OR #6 AWG AND LARGER.
62. LIGHT FIXTURES [illegible]IPS [illegible]RE FURNISHED BY CONTRACTOR EXCEPT AS NOTED ON THE LIGHT FIXTURE S[illegible]E INSTALLATION SHALL BE BY THE ELECTRICAL CONTRACTOR ACCORD[illegible]CODE AUTHORITY.
63. EMERG[illegible] LIG[illegible]ING SHALL HAVE A MINIMUM OF 90 MIN. BATTERY BACK-UP, OR AS REQUIRED [illegible]CAL [illegible] AUTHORITY. PROVIDE LOCK-ON CIRCUIT BREAKERS FOR CIRCUITS SERVING [illegible]XIT [illegible] FI[illegible]RES AND EMERGENCY BATTERY PACK FIXTURES.
[illegible] A[illegible] EMERGENCY LIGHTS SHALL BE CONNECTED AHEAD OF ANY LOCAL SWITCH.
[illegible] ALL EXIT SIGNS SHOWN ARE PER ARCHITECTURAL LAYOUT AND SHALL BE APPROVED BY FIRE [illegible]EPARTMENT AND BUILDING OFFICIAL.
[illegible] LAYOUT BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS FOR MAXIMUM ECONOMY AND EFFICIENCY. INCREASE WIRE SIZE IF 100 FEET OF LENGTH IS EXCEEDED.
67. CONCEAL WIRING SYSTEM ABOVE SUSPENDED CEILINGS OR IN WALL OR FLOOR CONSTRUCTION WHERE POSSIBLE. INSTALL CONDUITS PARALLEL TO BUILDING LINES, AND TO CLEAR ALL OPENING, DEPRESSIONS, PIPES, DUCTS, STRUCTURE, ETC.
68. INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR (4) 90 DEGREE BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED. DO NOT SUPPORT CONDUIT FROM SUSPENDED CEILING GRID OR SUSPENSION WIRES. REAM CONDUIT ENDS BEFORE INSTALLATION AND THOROUGHLY CLEAN BEFORE INSTALLATION. OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN. TERMINALS ON SWITCHES AND OUTLET SHALL NOT BE USED TO "FEED THRU" TO THE NEXT SWITCH OR OUTLET.
69. PROVIDE SINGLE GANG PLASTER RING AND A 1/8" DIAMETER NYLON PULL ROPE TO ACCESSIBLE CEILING SPACE FROM ALL NEW TELEPHONE AND/OR DATA OUTLETS.
70. FOR ALL WIRING DEVICES, VERIFY FINISH COLOR WITH ARCHITECT.

GENERAL NOTES

1. THIS DOCUMENT DOES NOT CONTAIN ALL SPECIFICATIONS AND DETAILS NECESSARY FOR CONSTRUCTION. REFER TO INSTALLATION GUIDES AND OTHER DOCUMENTS PROVIDED BY MANUFACTURER FOR ADDITIONAL INFORMATION.
2. ALL EXISTING CONDITIONS SHOWN ARE APPROXIMATE. EXISTING UTILITY LOCATIONS AND CROSSINGS ARE TO BE LOCATED IN THE FIELD. CONTRACTOR IS TO CONTACT 811 PRIOR TO BEGINNING ANY EXCAVATION WORK.
3. ALL PAVEMENT, LANDSCAPING, UTILITIES, AND OWNER PROPERTY THAT IS DAMAGED OR AFFECTED BY CONSTRUCTION SHALL BE RETURNED TO EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
4. PROPOSED PAVEMENT STRIPING SHALL LINE UP WITH EXISTING STRIPING WHEREVER POSSIBLE. ADDITIONAL PAVEMENT STRIPE IS NOT NECESSARILY PARALLEL TO THE CONSTRUCTED CHARGING ISLAND.
5. ACCESSIBLE EV STALLS WERE DESIGNED BASED ON EXISTING CONDITIONS AND WITHOUT BENEFIT OF SURVEY DATA. ALL ADA AND LOCAL REQUIREMENTS INCLUDING, BUT NOT LIMITED TO SCOPE AND SPACING SHALL BE CONFIRMED BY THE CONTRACTOR AND MET AT THE TIME OF CONSTRUCTION.
6. CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN ACCESSIBILITY PRIOR TO CONSTRUCTION.
7. ANY NOTES ON DRAWING PAGES CONTAINED HEREIN SHALL BE CONSIDERED PART OF THESE NOTES.
8. CONTRACTOR RESPONSIBILITIES INCLUDE CHARGING STATION MOUNTING, OVERHEAD CONDUIT INSTALLATION, AND WIRING.
9. CONTRACTOR TO PAINT PROPOSED EV PARKING SPACES PER JURISDICTIONAL REQUIREMENTS.
10. CONTRACTOR TO FIELD SCAN/XRAY EXISTING CONCRETE SLAB TO ENSURE REINFORCEMENT IS NOT DAMAGED DURING EQUIPMENT OR CONDUIT ANCHORING, ENSURE 1" GAP MIN. BETWEEN REBAR AND ANCHORAGE.
11. EXACT STATION PLACEMENT AND ROTATION ANGLE MAY VARY SLIGHTLY UPON INSTALLATION DEPENDING ON SITE CONDITIONS.
12. JUNCTION BOXES LOCATIONS AND SIZES TO BE DETERMINED BY INSTALLER AND SHALL MEET NEC REQUIREMENTS.
13. EXACT LOCATION OF BOLLARD (IF ANY USED) PLACEMENT TO BE DETERMINED IN FIELD TO MEET LOCAL JURISDICTION REQUIREMENTS AND TO PROVIDE THE BEST PROTECTION OF ELECTRICAL COMPONENTS FROM DAMAGE.

SYMBOL LEGEND

ELECTRICAL EQUIPMENT

TYPICAL FOR ALL RECEPTACLES, OUTLETS, JUNCTION BOXES AND EQUIPMENT: NUMBER DENOTES PANEL CIRCUIT NUMBER.

AFCI - ARC FAULT CIRCUIT INTERRUPTER
GFCI - GROUND FAULT INTERRUPTER
SS - SURGE SUPPRESSION TYPE
IG - ISOLATED GROUND TYPE
WP - WEATHERPROOF

SYMBOL	DESCRIPTION
44 GFCI	DUPLEX RECEPTACLE
44 GFCI	SWITCHED DUPLEX RECEPTACLE - ONE OUTLET SWITCHED LOWER CASE LETTER DENOTES SWITCH CONTROL
44 GFCI	DOUBLE DUPLEX RECEPTACLE
44 GFCI	SINGLE RECEPTACLE
44 GFCI	SPECIAL RECEPTACLE AMPERE AND VOLTAGE RATING AS INDICATED ON DRAWING
44 44	SURFACE RACEWAY WITH RECEPTACLES, AS INDICATED ON DRAWINGS
44	DOUBLE DUPLEX RECEPTACLE - FLOOR MOUNTED
44	DUPLEX RECEPTACLE - FLOOR MOUNTED
44	SPECIAL RECEPTACLE - FLOOR MOUNTED
44 RANGE	CEILING MOUNTED DUPLEX RECEPTACLE
PNL J 22 REC	FLOOR JUNCTION BOX
J 22	WALL MOUNTED JUNCTION BOX
PP22 1.5KVA J 22 REC	JUNCTION BOX, SIZE AND MOUNT AS REQUIRED
EMH 1	ELECTRICAL OR TELEPHONE MANHOLE
EHH 1	ELECTRICAL OR TELEPHONE HANDHOLE
TB	TERMINAL BOX. SIZE IN ACCORDANCE WITH NEC REQUIREMENTS AND TO ACCOMMODATE ALL TERMINAL BLOCKS.
PB	PULL BOX. SIZE IN ACCORDANCE WITH NEC REQUIREMENTS.
PXXX	SURFACE PANELBOARD LETTERS & NUMERALS INDICATE EQUIPMENT TAG
PXXX	RECESSED PANELBOARD LETTERS & NUMERALS INDICATE EQUIPMENT TAG
#33 225A ... ELEC	ELECTRICAL PANEL LETTERS AND NUMBERS INDICATE PANELBOARD IDENTIFICATION TAG SEE PANEL SCHEDULE FOR DETAILS.
P1-5 / P1-5,7 / P1-5,7,9	HOMERUN CIRCUITS TO PANELBOARD. NUMBER OF ARROWS INDICATES NUMBER OF CIRCUIT HOMERUNS. 1 PH 120V
P-1000 2 SETS 3/4" C 3 #12 1 #12 G	FEEDER TAG WITH CONDUIT AND WIRE SIZE AND DATA
	INDICATES NEW OR EXISTING EQUIPMENT/CONDUIT
	INDICATES CONCEALED NEW OR EXISTING EQUIPMENT/CONDUIT
	INDICATES EXISTING EQUIPMENT/CONDUIT TO BE DEMOLISHED AND/OR REMOVED
	BUSS BAR
	FLEXIBLE CONNECTION
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CAPPED CONDUIT
	CABLE TRAY (LADDER STYLE) NUMBER DENOTES WIDTH IN INCHES
	BUS DUCT
	PUSHBUTTON STATION
	INDICATING LIGHT STATION
EV	EV CHARGING STATION
U/G—U/G—U/G	UNDERGROUND CONDUCTORS AND CONDUIT
O/H—O/H—O/H	OVERHEAD CONDUCTORS AND CONDUIT

DISTRIBUTION EQUIPMENT

FOR ALL DISTRIBUTION EQUIPMENT.
GFP - GROUND FAULT PROTECTION
ST - SHUNT TRIP
LSIG - LONG TIME, SHORT TIME INSTANTANEOUS AND GROUND FAULT PROTECTION FUNCTIONS
100% - 100% RATED EQUIPMENT.

SYMBOL	DESCRIPTION
E	ELECTRIC OPERATED DEVICE
ET	ELECTRONIC TRIP TYPE DEVICE
	CIRCUIT BREAKER
3P 100/100	THERMAL MAGNETIC CIRCUIT BREAKER TOP NUMBER DENOTES TRIP AMPERE RATING BOTTOM NUMBER DENOTES FRAME SIZE AMPERE RATING #P - DENOTES NUMBER OF POLES
3P ET 100/100	CIRCUIT BREAKER WITH ELECTRONIC TRIP PROGRAMMER. TOP NUMBER INDICATES FRAME SIZE SIZE, BOTTOM NUMBER INDICATES SENSOR RATING. #P - DENOTES NUMBER OF POLES
3P 100/100	DRAW-OUT TYPE THERMAL MAGNETIC CIRCUIT BREAKER TOP NUMBER DENOTES TRIP AMPERE RATING BOTTOM NUMBER DENOTES FRAME SIZE AMP RATING #P - DENOTES NUMBER OF POLES
100 3P OR 3P 100 OR 3P / 100	UNFUSED DISCONNECT SWITCH. NUMBER DENOTES SWITCH AMPERE RATING #P - DENOTES NUMBER OF POLES
100 / 80 3P OR 3P 100 80 OR 3P / 100 80	FUSED DISCONNECT SWITCH TOP OR FIRST NUMBER DENOTES SWITCH AMPERE RATING BOTTOM OR SECOND NUMBER DENOTES AMPERE FUSE RATING #P - DENOTES NUMBER OF POLES
100/5 (3) OR 100/5 (1)	CURRENT TRANSFORMER (CT) NUMBER RATIO DENOTES CT PRIMARY AND SECONDARY CURRENT RATINGS NUMBER IN PARENTHESIS INDICATES QUANTITY
PT	POTENTIAL TRANSFORMER WITH PRIMARY AND SECONDARY FUSES
#P 1000/3P OR CB	ENCLOSED CIRCUIT BREAKER TOP OR FIRST NUMBER DENOTES SWITCH AMPERE RATING BOTTOM OR SECOND NUMBER DENOTES FUSE AMPERE RATING #P - DENOTES NUMBER OF POLES
3P RATING/MCP N#	ENCLOSED CIRCUIT BREAKER/COMBINATION FVNR STARTER TOP NUMBER DENOTES MOTOR CIRCUIT PROTECTOR CONTINUOUS AMPERE RATING N# DENOTES NEMA STARTER SIZE. #P - DENOTES NUMBER OF POLES
	ENCLOSED CT CABINET
ATS 1 1200A 250 V 4P - 4W	AUTOMATIC TRANSFER SWITCH
Control Panel N E L; ATS 1 W/BY PASS ISOLATION 1200A 250 V 4P - 4W	AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION
XFMR-1 1000 KVA 13,200 V-480Y/277V 3P - 4W %65	TRANSFORMER SIZE AS NOTED WITH PRIMARY AND SECONDARY VOLTAGE AS INDICATED

GENERATION & GROUNDING

SYMBOL	DESCRIPTION
M	UTILITY COMPANY METER AND METER PAN AS REQUIRED
	FUSE
SPD	SURGE PROTECTOR DEVICE
3P 100HP	GENERATOR
	GROUNDED WYE CONNECTION
	UNGROUNDED WYE CONNECTION
	OPEN DELTA CONNECTION
	DELTA CONNECTION
	NODE
	WIRE TERMINAL
	GROUND TEST ELECTRODE
	GROUND ROD
— G —	UNDERGROUND GROUND SYSTEM BARE CABLE. SIZE AS NOTED OR INDICATED.
G —	BUILDING GROUND SYSTEM BARE CABLE SIZE AS NOTED OR INDICATED
	GROUND GRID CABLE CONNECTION
	GROUND CONNECTION

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FLASH INTERRUPTER
AFCI	ARC FLASH CIRCUIT INTERRUPTER
AL	ALUMINUM
ART	ARTICLE
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BLDG STRUCTURE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CONC	CONCRETE
CU	COPPER
D	DEMOLISH
DC	DIRECT CURRENT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DP	DISTRIBUTION PANEL BOARD
DWG	DRAWING
E.C.	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EL	ELEVATION
ELEC	ELECTRICAL
EMT	ELETRIC METALLIC TUBING

EQUIP	EQUIPMENT
EVCS	ELECTRICAL VEHICLE CHARGING STATION
EVSE	ELECTRIC VEHICLE SUPPLY EQUIPMENT
EXIST	EXISTING
FDR	FEEDER
FL	FLOOR
G	GROUND
G.C.	GENERAL CONTRACTOR
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HDG	HOT DIPPED GALVANIZED
HP	HORSE POWER
I	CURRENT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
M	METER
MAX	MAXIMUM
MBJ	MAIN BONDING JUMPER
MCC	MOTOR CONTROL CENTER
MCS	MOLDED CASE SWITCH
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MSB	MAIN SWITCHBOARD
MSG	MAIN SWITCHGEAR
MTS	MANUAL TRANSFER SWITCH

N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NTS	NOT TO SCALE
(N)	NEW
OC	ON CENTER
O/H	OVERHEAD
P	POLE
PH	PHASE
PL	PROPERTY LINE
PNL	PANEL
PP	POWER PANEL
PVC	POLYVINYL CHLORIDE
PWR	POWER
RECEP	RECEPTACLE
REV	REVISION
RMC	RIGID METALLIC CONDUIT
SCH	SCHEDULE
SP	SPARE
SS	STAINLESS STEEL
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TYP	TYPICAL
U/G	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLT OR VOLTAGE
VA	VOLT AMPERE
W	WATTS
WP	WEATHERPROOF
WW	WIREWAY
XFMR	TRANSFORMER

PROFESSIONAL ENGINEERING:
AMPER ENGINEERING
ENGINEERING | CONSULTING | ESTIMATING
201-920-2899 info@AmperEngineering.com
SEAL & SIGNATURE: DURAK EVRIM ERCAN, P.E. LICENSE # 24GE54902
STATE OF NEW JERSEY DURAK EVRIM ERCAN No. 24GE54902 03/06/2022 LICENSED PROFESSIONAL ENGINEER
Durak Evrim Ercan
Digitally signed by Durak Evrim Ercan DN: CN=Durak Evrim Ercan + E=info@AmperEngineering.com, O=Durak Evrim Ercan, L=Montclair, S=New Jersey, C=US Reason: I am approving this document. Contact info: Printed copies of this document are not considered signed and sealed and all authentication codes must be verified on any electronic copies. Date: 2022.03.06 14:25:48-05'00'

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REV.	DATE	DESCRIPTION
1	03/06/2022	ISSUED FOR PERMIT APPLICATION
0	03/02/2022	ISSUED FOR APPROVAL

CLIENT:
EV CHARGETEC
ADDRESS:
185 INDUSTRIAL PKWY,
BRANCHGURG, NJ 08876
PHONE:
908-801-6890

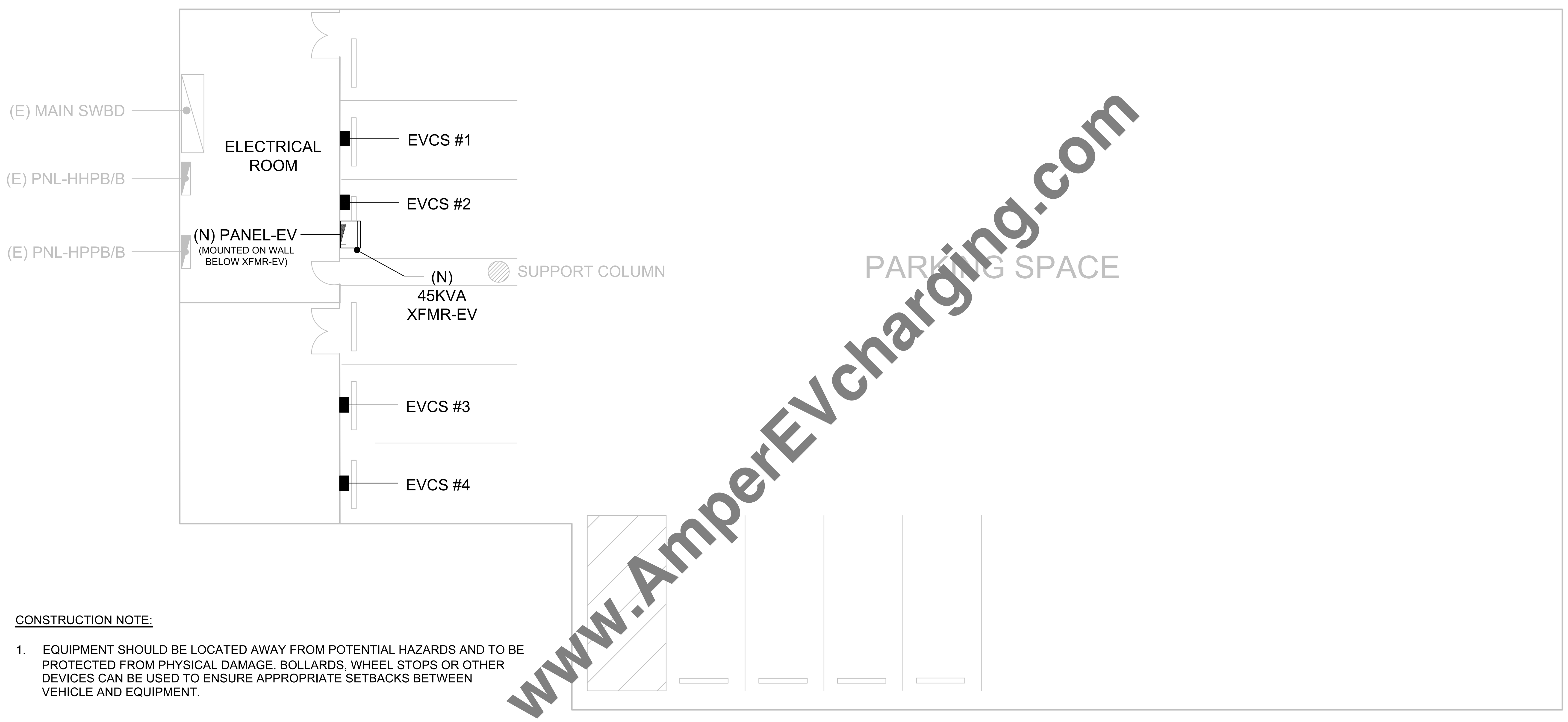
PROJECT:
PEAPACK GLADSTONE BANK EVCS INSTALLATION

ADDRESS:
500 HILLS DR.
BEDMINSTER, NJ
07921

PROJECT NUMBER:	
AE# 1495	
SHEET SIZE: 24X36	DRAWN BY: IB
DESIGNED BY: AC	CHECKED BY: DEE

DRAWING TITLE:
ELECTRICAL COVER SHEET,
GENERAL NOTES &
SYMBOL LEGEND

DRAWING NO:
E001



CONSTRUCTION NOTE:

1. EQUIPMENT SHOULD BE LOCATED AWAY FROM POTENTIAL HAZARDS AND TO BE PROTECTED FROM PHYSICAL DAMAGE. BOLLARDS, WHEEL STOPS OR OTHER DEVICES CAN BE USED TO ENSURE APPROPRIATE SETBACKS BETWEEN VEHICLE AND EQUIPMENT.

PROFESSIONAL ENGINEERING:

AMPER ENGINEERING

ENGINEERING | CONSULTING | ESTIMATING

201-920-2899 info@AmperEngineering.com

SEAL & SIGNATURE:

DURAK EVRIM ERCAN, P.E.
LICENSE # 24GE54902

STATE OF NEW JERSEY
DURAK EVRIM ERCAN
No. 24GE54902
03/06/2022
LICENSED PROFESSIONAL ENGINEER

Durak Evrim Ercan

Digitally signed by Durak Evrim Ercan
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07921

PROJECT NUMBER:
AE# 1495

SHEET SIZE:	DRAWN BY:
24X36	IB
DESIGNED BY:	CHECKED BY:
AC	DEE

DRAWING TITLE:
ELECTRICAL SITE LAYOUT

DRAWING NO:
E100

(E) PANEL HHPB-B

VOLTAGE: 277/ 480
3 PHASE, 4 WIRE

LOCATION: ELECTRICAL ROOM
BUS (A): 225
MAIN (A):

No.	WIRE SIZE	CIRCUIT DESCRIPTION	LOAD (KVA) CONT	RCPT	MTR	A/C	KITCH	MISC	BREAKER TRIP	POLE	PHASE A	B	C	BREAKER POLE	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	CONT	CIRCUIT DESCRIPTION	WIRE SIZE	No.
1	EXISTING	ELECTRIC UNIT HEATER				2.33			15	3	4.66			3	15			2.33				ELECTRIC UNIT HEATER	EXISTING	2
3	X	X				2.33			X	X		4.66		X	X			2.33				X	X	4
5	X	X				2.33			X	X			4.66	X	X			2.33				X	X	6
7	EXISTING	ELECTRIC UNIT HEATER				2.33			15	3	4.66			3	15			2.33				ELECTRIC UNIT HEATER	EXISTING	8
9	X	X				2.33			X	X		4.66		X	X			2.33				X	X	10
11	X	X				2.33			X	X			4.66	X	X			2.33				X	X	12
13	EXISTING	ELECTRIC UNIT HEATER				2.33			15	3	4.66			3	15			2.33				ELECTRIC UNIT HEATER	EXISTING	14
15	X	X				2.33			X	X		4.66		X	X			2.33				X	X	16
17	X	X				2.33			X	X			4.66	X	X			2.33				X	X	18
19	EXISTING	ELECTRIC UNIT HEATER				2.33			15	3	4.66			3	15			2.33				ELECTRIC UNIT HEATER	EXISTING	20
21	X	X				2.33			X	X		4.66		X	X			2.33				X	X	22
23	X	X				2.33			X	X			4.66	X	X			2.33				X	X	24
25		SPARE							20	X	2.33			3	20			2.33				ELECTRIC UNIT HEATER	EXISTING	26
27		X							X	X		2.33		X	X			2.33				X	X	28
29		X							X	X			2.33	X	X			2.33				X	X	30
31	EXISTING	SNOW MELT	6.65						30	1	11.08			1	20						4.43	SNOW MELT	EXISTING	32
33	EXISTING	ELECTRIC UNIT HEATER				3.10			20	1		7.53		1	20						4.43	STAIR HEATERS	EXISTING	34
35		SPACE											4.43	1	20						4.43	STAIR HEATERS	EXISTING	36
37	**(3)#4**	**XFMR-EV**	**12.45**						**70**	**3**	12.45											SPACE		38
39	**X**	**X**	**8.30**						**X**	**X**		8.30										SPACE		40
41	**X**	**X**	**12.45**						**X**	**X**			12.45									SPACE		42
									TOTAL		**44.51**	**36.81**	**37.86**			0.00	0.00	66.04	0.00	0.00	53.14	**CONNECTED KVA 119.178**		

v6 - 1/22/2022

	LOADS W/ NEC 220 DEMAND FACTORS (KVA) CONT	RCPT	MTR	A/C	KITCH	MISC	TOTAL
A PHASE	29.41	0.00	0.00	20.98	0.00	0.00	50.39
B PHASE	15.91	0.00	0.00	24.08	0.00	0.00	39.99
C PHASE	21.10	0.00	0.00	20.98	0.00	0.00	42.08
DEMAND PER LOAD TYPE (KVA)	66.43	0.00	0.00	66.04	0.00	0.00	132.46
CONNEDTED LOAD LARGEST PHASE (KVA)							50.39
CONNECTED LOAD LARGEST PHASE (AMP)							61
TOTAL DEMAND LOAD FOR PANEL (KVA)							132.46
TOTAL DEMAND LOAD FOR PANEL (AMP)							159
MINIMUM FEEDER AMPACITY SELECTION (AMP)							**159**

PANEL NOTES

CONTINUOUS:125% LOAD
RECEPTACLES:100% 1ST 10 KW + 50% REMAINING
MOTORS:125% LARGEST MOTOR + 100% REMAINING
A/C or HEAT:100% LOAD
KITCHEN:65% LOAD
MISC:100% LOAD

1)IF PANEL EXISTING AND ACTUAL CONNECTED KVA ARE NOT KNOWN, ASSUMPTIONS ARE MADE AS:
CONTINOUS & NON-CONTINUOUS CONNECTED LOADS ASSUMED TO BE %80 OF THE OCPD RATING.
2)DESIGN IS BASED ON NEC TABLE 310.15(B)(16) COPPER THHN CONDUCTORS. EXISTING CONDUCTORS.
AND WIRING MAY NEED TO BE INSPECTED AND VERIFIED BY ELECTRICAL CONTRACTOR.
3)EVCS ARE CONSIDERED CONTINOUS LOADS AND ACTUAL NAME PLATE VALUES ARE USED.
4)A 70% DEMAND FACTOR WAS IMPLEMENTED TO UNIT HEATERS EQUIPMENT.

(N) PANEL EV

VOLTAGE: 120/ 208
3 PHASE, 4 WIRE

LOCATION: PARKING GARAGE
BUS (A): 225
MAIN (A): 175

No.	WIRE SIZE	CIRCUIT DESCRIPTION	LOAD (KVA) CONT	RCPT	MTR	A/C	KITCH	MISC	BREAKER TRIP	POLE	PHASE A	B	C	BREAKER POLE	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	CONT	CIRCUIT DESCRIPTION	WIRE SIZE	No.
1	(2) #4	EVCS #1	4.15						50	2	4.15											SPACE		2
3	X	X	4.15						X	X		4.15										SPACE		4
5	(2) #4	EVCS #2	4.15						50	2			8.30	2	50						4.15	EVCS #3	(2)#4	6
7	X	X	4.15						X	X	8.30			X	X						4.15	X	X	8
9		SPACE										4.15		2	50						4.15	EVCS #4	(2)#4	10
11		SPACE											4.15	X	X						4.15	X	X	12
13		SPACE									0.00											SPACE		14
15		SPACE										0.00										SPACE		16
17		SPACE											0.00									SPACE		18
19		SPACE									0.00											SPACE		20
21		SPACE										0.00										SPACE		22
23		SPACE											0.00									SPACE		24
25		SPACE									0.00											SPACE		26
27		SPACE										0.00										SPACE		28
29		SPACE											0.00									SPACE		30
									TOTAL		**12.45**	**8.30**	**12.45**			0.00	0.00	0.00	0.00	0.00	33.20	**CONNECTED KVA 33.2**		

v6 - 1/22/2022

	LOADS W/ NEC 220 DEMAND FACTORS (KVA) CONT	RCPT	MTR	A/C	KITCH	MISC	TOTAL
A PHASE	15.56	0.00	0.00	0.00	0.00	0.00	15.56
B PHASE	10.38	0.00	0.00	0.00	0.00	0.00	10.38
C PHASE	15.56	0.00	0.00	0.00	0.00	0.00	15.56
DEMAND PER LOAD TYPE (KVA)	41.50	0.00	0.00	0.00	0.00	0.00	41.50
CONNEDTED LOAD LARGEST PHASE (KVA)							15.56
CONNECTED LOAD LARGEST PHASE (AMP)							43
TOTAL DEMAND LOAD FOR PANEL (KVA)							41.50
TOTAL DEMAND LOAD FOR PANEL (AMP)							115
MINIMUM FEEDER AMPACITY SELECTION (AMP)							**115**

PANEL NOTES

CONTINUOUS:125% LOAD
RECEPTACLES:100% 1ST 10 KW + 50% REMAINING
MOTORS:125% LARGEST MOTOR + 100% REMAINING
A/C or HEAT:100% LOAD
KITCHEN:65% LOAD
MISC:100% LOAD

1)IF PANEL EXISTING AND ACTUAL CONNECTED KVA ARE NOT KNOWN, ASSUMPTIONS ARE MADE AS:
CONTINOUS & NON-CONTINUOUS CONNECTED LOADS ASSUMED TO BE %80 OF THE OCPD RATING.
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3)EVCS ARE CONSIDERED CONTINOUS LOADS AND ACTUAL NAME PLATE VALUES ARE USED.

CONDUIT FILL CALCULATOR

Select wire type **THHN**

Wire Size	Enter number of conductors for each size		Total Area sq-inch	Conduit Trade Size	Trough and Conduit ID Sizes	Total area in square inches	20% Fill of trough 40% Fill of Conduit	Current total Area sq. inches	Current fill percent
18				TROUGH	4.000	16.000	3.200	0.3662	2.29%
16					6.000	36.000	7.200	0.3662	1.02%
14			0.0000		8.000	64.000	12.800	0.3662	0.57%
12			0.0000	**PVC**	Select type of conduit				
10			0.0000	0.50	000.562	0.248	0.099	0.3662	
8	**1**		0.0366	0.75	000.722	0.409	0.164	0.3662	
6			0.0000	1	000.936	0.688	0.275	0.3662	
4	**4**		0.3296	1.25	001.255	1.237	0.495	0.3662	29.60%
3			0.0000	1.50	001.476	1.711	0.684	0.3662	21.40%
2			0.0000	2	001.913	2.874	1.150	0.3662	12.74%
1			0.0000	3	002.864	6.442	2.577	0.3662	5.68%
1/O			0.0000	3.5	003.326	8.688	3.475	0.3662	4.21%
2/O			0.0000	4.0	003.786	11.258	4.503	0.3662	3.25%
3/O			0.0000						
4/O			0.0000						
250			0.0000						
300			0.0000						
350			0.0000						

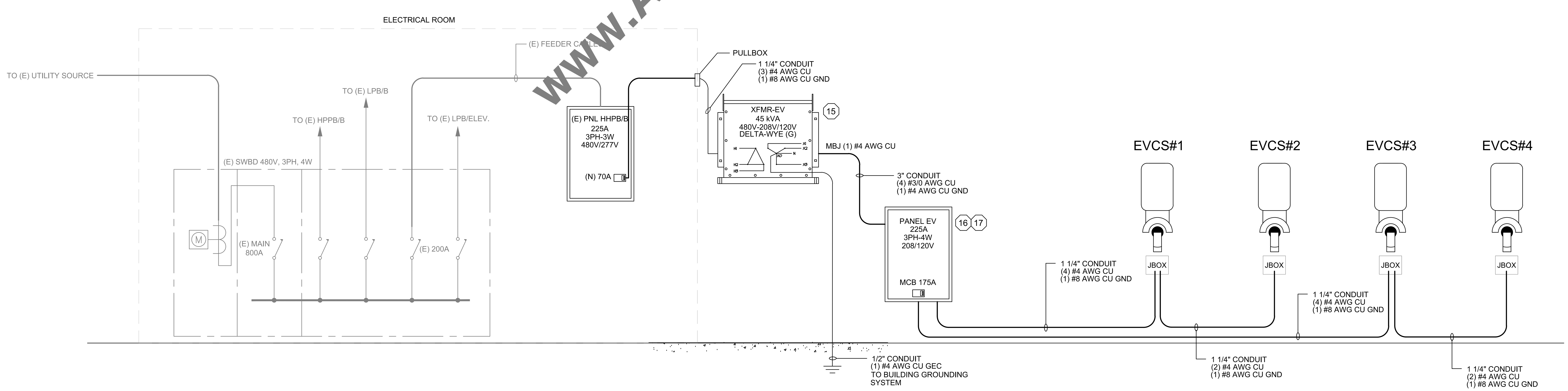
NOTE:
1) All dimensions are from manufacturers specifications.
2) Dimensions are based on 2017 NEC.
3) ID area based on NEC 2017 Table 4 Chapter 9.

VOLTAGE DROP CALCULATIONS

STATION	CONDUIT	LENGTH (FT)	VOLTAGE	CURRENT	COND. SIZE	V.D %	V.D (V)
EVCS 1	1 1/4"	11	208	40	4	0.1	0.2
EVCS 2	1 1/4"	4	208	40	4	0	0.1
EVCS 3	1 1/4"	20	208	40	4	0.2	0.4
EVCS 4	1 1/4"	28	208	40	4	0.3	0.6

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK AND RELATED ACTIVITIES PERFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) STANDARDS BEING ENFORCED BY ALL APPLICABLE JURISDICTIONAL REQUIREMENTS AT THE TIME OF CONSTRUCTION.
2. UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRECONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATIONS.
3. CONDUIT PATHS ARE REPRESENTATIVE ONLY. EXACT CONDUIT PLACEMENT TO BE DETERMINED ON SITE BASED ON FIELD CONDITIONS.
4. A NATIONALLY RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH NEC ARTICLE 110.3
5. ALL EXTERIOR EQUIPMENT SHALL BE RAIN TIGHT AND APPROVED FOR USE IN WET CONDITIONS.
6. ALL CONDUCTORS TO BE THHN COPPER
7. ALL CONDUCTORS AND CABLES SHALL BE PROVIDED WITH STRAIN RELIEF UPON ENTRY INTO ENCLOSURES
8. EACH UNGROUNDED CONDUCTOR SHALL BE IDENTIFIED BY PHASE AND SYSTEM PER NEC 210.5
9. ALL METALLIC COMPONENTS SHALL BE GROUNDED VIA ELECTRIC GROUNDING CONDUCTORS.
10. ALL UNDERGROUND CONDUIT TO BE UL RATED, MINIMUM 24" DEEP.
11. WIRING FOR ELECTRICAL VEHICLE CHARGING STATIONS TO BE INSTALLED PER MANUFACTURER'S DIRECTIONS AND SPECIFICATIONS.
12. CONTRACTOR TO ENSURE THAT ALL FEEDERS, CONDUITS, CONDUCTORS, OCPD, TRANSFORMERS, ELECTRICAL PANELS AND OTHER ELECTRICAL EQUIPMENT IS SIZED TO COMPLY WITH CURRENT NEC AND LOCAL AHJ CODES.
13. CONTRACTOR IS RESPONSIBLE TO VERIFY DESIGN, ENGINEERING ASSUMPTIONS AND EXISTING FIELD CONDITIONS. REPORT ANY INSUFFICIENCIES TO ENGINEER OF RECORD PRIOR TO ANY WORK BEING PERFORMED.
14. ELECTRICAL PANEL PROVIDING POWER TO EVCS MUST BE IN COMPLIANCE WITH NEC 625.43, READILY ACCESSIBLE LOCATION. THE DISCONNECTING MEANS SHALL BE LOCKABLE OPEN IN ACCORDANCE WITH 110.25.
15. IF DISTANCE BETWEEN TRANSFORMER XFMR-EV SECONDARY TERMINALS TO PANEL EV IS MORE THAN 25 FEET, ADDITIONAL OCPD MUST BE INSTALLED WITHIN 25 FEET OF THE XFMR-EV SECONDARY TERMINALS.
16. PANEL-EV KAIC RATING: 10kAIC IF XFMR-EV %Z>1.3 OR 22kAIC IF XFMR-EV %Z<1.3.
17. PANEL-EV CAN BE BOTTOM OR TOP FED. DESIGN IS DIAGRAMMATIC PURPOSES ONLY.



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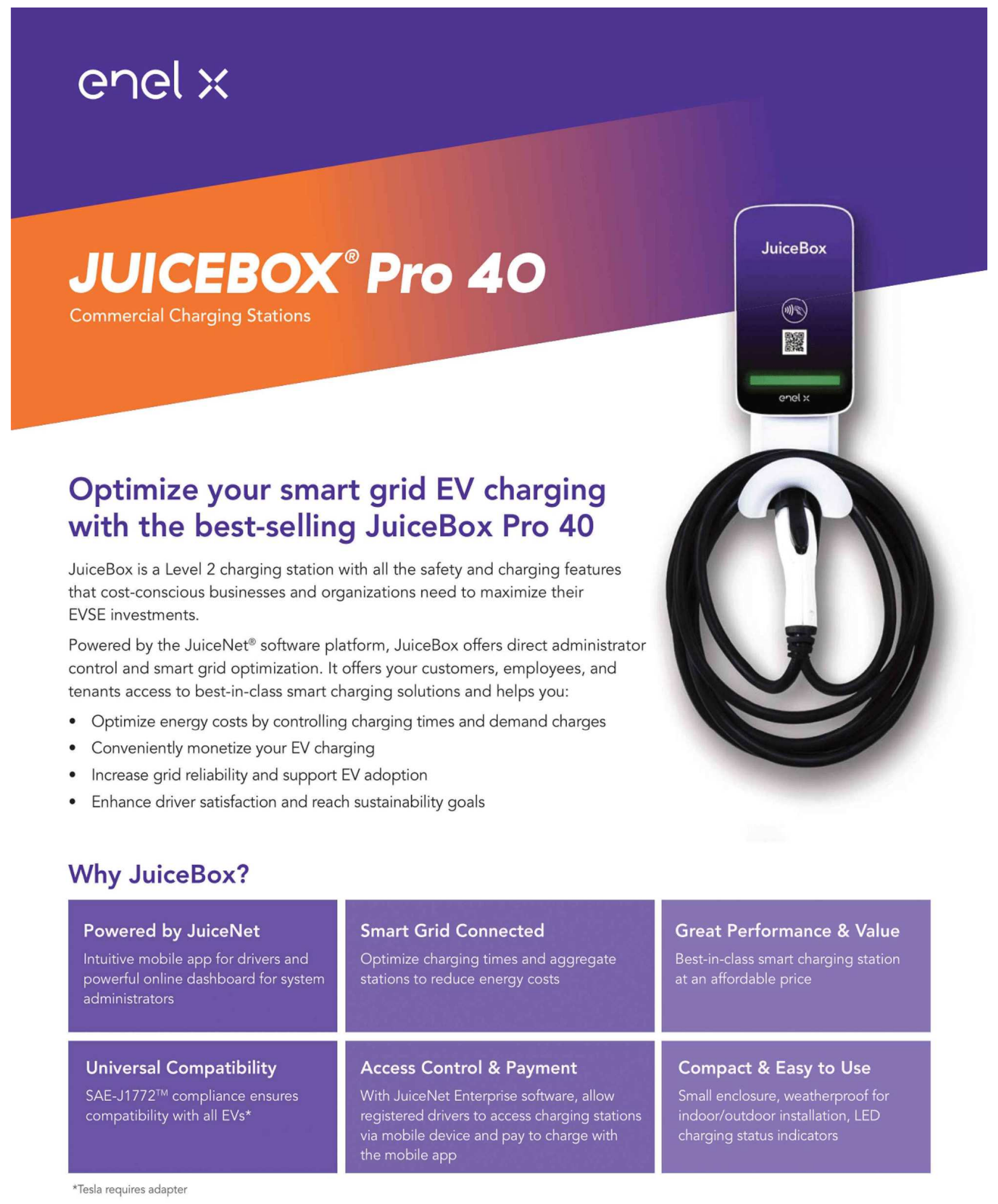
ONE LINE DIAGRAM & CALCULATIONS

DRAWING NO:
E200



enel x

JUICEBOX® Pro 40

Commercial Charging Stations

Optimize your smart grid EV charging with the best-selling JuiceBox Pro 40

JuiceBox is a Level 2 charging station with all the safety and charging features that cost-conscious businesses and organizations need to maximize their EVSE investments.

Powered by the JuiceNet® software platform, JuiceBox offers direct administrator control and smart grid optimization. It offers your customers, employees, and tenants access to best-in-class smart charging solutions and helps you:

- Optimize energy costs by controlling charging times and demand charges
- Conveniently monetize your EV charging
- Increase grid reliability and support EV adoption
- Enhance driver satisfaction and reach sustainability goals

Why JuiceBox?

Powered by JuiceNet Intuitive mobile app for drivers and powerful online dashboard for system administrators	**Smart Grid Connected** Optimize charging times and aggregate stations to reduce energy costs	**Great Performance & Value** Best-in-class smart charging station at an affordable price
Universal Compatibility SAE-J1772™ compliance ensures compatibility with all EVs*	**Access Control & Payment** With JuiceNet Enterprise software, allow registered drivers to access charging stations via mobile device and pay to charge with the mobile app	**Compact & Easy to Use** Small enclosure, weatherproof for indoor/outdoor installation, LED charging status indicators

*Tesla requires adapter

EVCS OVERVIEW | SCALE N.T.S. | 1

enel x

6.8 in/17.3 cm
18.5 in/47 cm

JuiceBox® Pro 40 Specifications

Electrical Characteristics	› Safety Rated: 40A Max › Single phase input: nominal voltage 208-240 VAC ~60 Hz › Power: 8.3 kW at 208 VAC; 9.6 kW at 240 VAC
Input Cable & Plug	› 2 ft/0.6 m with NEMA 14-50 or 6-50 plug › 2.5 ft/0.8 m hardwire pigtail
Output Cable & Connector	› 25 ft/7.6 m cable › J1772 standard compliant
JuiceNet® Smart Charging Platform	› Precision measurement of power, energy, voltage & current › Web-based portal: set payment rates and charging hours; monitor charging status and consumption data for individual or groups of devices; control station access; manage EV load › Driver app to monitor and pay for charging (iOS & Android) › Refer to the JuiceNet Business and JuiceNet Enterprise data sheets for more on the capabilities of each dashboard
Connectivity & Authentication	› WiFi-enabled: 802.11 b/g/n 2.4 GHz › Integrated Cellular: LTE (optional) › JuiceRouter: Connect up to 16 chargers with WiFi-to-LTE router (optional) › RFID enabled and QR Code authenticated with JuicePass Enterprise Mobile App
Firmware	› End-to-end AES-256-based encrypted protocols › 90-day, 15-minute interval data storage › Over-the-air (OTA) upgradeable firmware › Persistent data storage upon power interruption
Enclosure	› Dynamic LED lights show charging status: network connectivity, charging in progress, delayed charging, standby, charge complete/EV not drawing power › IP66: Weatherproof, dust-tight, polycarbonate enclosure › IK10: Resistant polycarbonate case › Quick-release wall mounting bracket included › Built-in security lock and integrated cable management › Operating Temperature: -40°F to 140°F (-40°C to 60°C)
Weight & Dimensions	› Main enclosure: H: 18.5 in/469 mm x W: 6.8 in/173 mm x D: 5.8 in/147 mm › 15 lbs/6.8 kg
Codes & Standards	› FCC Part 15 Class B, NEC 625 compliant, ENERGY STAR® › OCPP 1.6J and Open ADR2.0b compliant › ISO 15118 support (optional)
Safety	› UL and cUL Listed
Warranty	› 3-year limited parts warranty for commercial use. 2-year warranty extension available
Made in North America	› From domestic & imported parts

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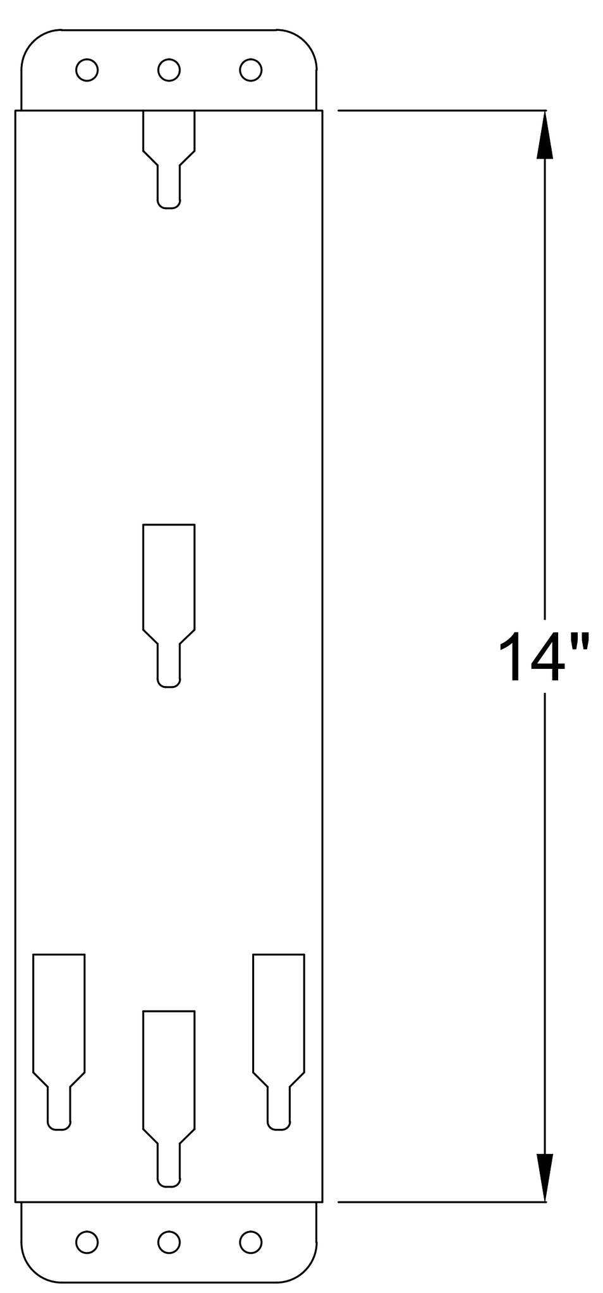
EnelXChargingNA

PRODUCT SPECIFICATION | SCALE N.T.S. | 3

NOT USED | SCALE N.T.S. | 5



14" MOUNTING BRACKET | SCALE NTS | 2

NOT USED | SCALE N.T.S. | 4

NOT USED | SCALE N.T.S. | 6

PROFESSIONAL ENGINEERING:
AMPER ENGINEERING
ENGINEERING | CONSULTING | ESTIMATING
201-920-2899 info@AmperEngineering.com
DURAK EVRIM ERCAN, P.E.
LICENSE # 24GE54902

SEAL & SIGNATURE:
STATE OF NEW JERSEY
DURAK EVRIM ERCAN
No. 24GE54902
03/06/2022
LICENSED PROFESSIONAL ENGINEER

Durak Evrim Ercan

Digitally signed by Durak Evrim Ercan
DN: CN=Durak Evrim Ercan + E=info@AmperEngineering.com, O=Durak Evrim Ercan, L=Montclair, S=New Jersey, C=US
Reason: I am approving this document.
Contact Info: Printed copies of this document are not considered signed and sealed and all authentication codes must be verified on any electronic copies.
Date: 2022.03.06 14:55:53-05'00'

[illegible]

THIS DESIGN IS NOT TO BE USED FOR CONSTRUCTION UNLESS P.E. STAMPED, SIGNED, DATED AND ONE OF THE REVISION STATES "ISSUED FOR CONSTRUCTION", "IFC" OR "IFC UPDATED".

REV.	DATE	DESCRIPTION
1	03/06/2022	ISSUED FOR PERMIT APPLICATION
0	03/02/2022	ISSUED FOR APPROVAL

CLIENT:
EV CHARGETEC
ADDRESS:
185 INDUSTRIAL PKWY,
BRANCHGURG, NJ 08876
PHONE:
908-801-6890

PROJECT:
PEAPACK GLADSTONE BANK EVCS INSTALLATION
ADDRESS:
500 HILLS DR.
BEDMINSTER, NJ
07921

PROJECT NUMBER:
AE# 1495

SHEET SIZE: 24X36	DRAWN BY: IB
DESIGNED BY: AC	CHECKED BY: DEE

DRAWING TITLE:
INSTALLATION DETAILS
SHEET 3

DRAWING NO:
E302