DELIVERY STATION EXPANSION

EXTERIOR IMPROVEMENTS 400 ORITANI DR., ORANGETOWN, NY 10913

BID/PERMIT
10/11/2021

THESE DOCUMENTS ARE CONFIDENTIAL

DOCUMENTS WERE PREPARED BY:

ARCHITECTURE:	**CESO ARCHITECTS, INC.**
STRUCTURAL ENGINEERING:	**SMBH, INC.**
MEP AND FP ENGINEERING:	**LBI PROFESSIONAL ENGINEERING, LLC.**
EV CIVIL:	**CIVIL & ENVIRONMENTAL CONSULTANTS**
SITE ELECTRICAL:	**EMANUELSON-PODAS, INC.**

PROJECT TEAM

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SHEET INDEX

DRAWING INDEX

ARCHITECTURAL DRAWINGS

SUPPLEMENTAL DRAWINGS

DESIGN STANDARDS

PROJECT DESCRIPTION

MINOR EXTERIOR WORK, INCLUDING: 1) REPLACEMENT OF TWO DOOK DOORS AND EQUIPMENT; 2) WELD SHUT UNNECESSARY EXTERIOR DOORS; 3) NEW ROOFTOP EQUIPMENT; 4) PARKING LOT RESTRIPING

DESIGN STANDARDS INFORMATION

REFER TO CRITERIA AND WWDS APPENDIX LISTING ALL RELEVANT DESIGN STANDARDS AND CONTROL DOCUMENTS FOR THIS FACILITY

DESIGN STANDARDS

APPLICABLE DESIGN STANDARDS INCORPORATED IN THESE DRAWINGS AND/OR APPLICABLE TO THIS PROJECT ARE LISTED BELOW:

STANDARD OR DATA SHEET	VERSION	DATE
Tenant's GSO - Security Basis of Design - Worldwide Design Standard for ENS Site Builds	5	1/30/2021
Tenant's - Tennisball Externalized Network BoD Complete Set Telecom	3	6/23/2021
FC IT 2021 A.E.M. Infrastructure Global Standards	9.4	4/30/2021
WWDS NA Associate Parking	2	3/26/2020
WWDS NA Circulation Areas Outside (Pedestrians)	2	3/26/2020
WWDS NA Dock Doors	2	3/26/2020
WWDS NA Domestic Water Service	2	3/26/2020
WWDS NA Electrical Room/Switchgear	2	3/26/2020
WWDS NA Fire Pump Room	2	3/26/2020
WWDS NA Hallway/Circulation Areas Indoor	2	3/26/2020
WWDS NA Multi-Faith Room	1	5/29/2020
WWDS NA Security Zoning - Rooms/Areas	1.1	4/14/2020
WWDS NA Site Signage	3	2/25/2022
WWDS NA Traffic & Circulation Principles	2	3/26/2020
WWDS NA Truck Yard	2	3/26/2020

CODE INFORMATION

SITE AREA: 35.5 AC. (1,638,263 S.F.) - NO PROPOSED CHANGE
BUILDING AREA - 400 ORITANI DRIVE: 122,167.1 S.F. - NO PROPOSED CHANGE
OCCUPANCY TYPE: A-2, A-3, B, S-1
CONSTRUCTION TYPE: II-B (FULLY SPRINKLERED)
ALLOWABLE AREA: 2 STORY/ 17,500 S.F./ FLOOR (BASED ON S-1 OCC., CONST.) PER IBC TABLE 503
SPRINKLER INCREASE +60' YARD INCREASE 1 STORY/UNLIMITED S.F. PER IBC SECTION 507.4

CESO

No.	Revisions/Submissions	Date
	PERMIT SET	02.17.2023

DELIVERY STATION EXPANSION
EXTERIOR IMPROVEMENTS
400 ORITANI DRIVE
ORANGETOWN, NY 10913

STATE OF NEW YORK
JEFFREY A TIBBITTS
084298
LICENSED PROFESSIONAL ENGINEER
02/17/2023

Project No.	759025-01
Scale	AS SHOWN
Drawn	JDG
Checked	JAT
Date	02/17/2023
	PHASE 1 SITE

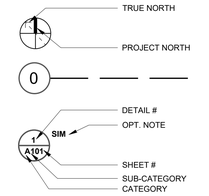
Drawing Title
TITLE SHEET

Drawing No.
G0.01

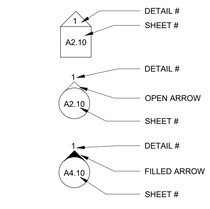
STANDARD ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADA	AMERICANS WITH DISIBILITIES ACT
ADD'L	ADDITIONAL
ADJ	ADJACENT/ ADJUSTABLE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL / ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ATR	ALL-THREAD ROD
B/	BOTTOM OF
BATT	BATTEN INSULATION
BD	BOARD
BLD / BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCHMARK / BEAM
BN	BOUNDARY NAIL
BOT / BOTT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOFING
CAB	CABINET
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CIP	CAST IRON
CJ	CONTROL JOINT
CL / ℄	CENTERLINE
CLNG	CEILING
CLR	CLEAR
CLR ANNO	CLEAR ANNODIZED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRUGAT(ED) (ION)
CPT	CARPET
CRC	CHEMICAL RESISTANT COATING
CSK	COUNTERSINK
CSP	CONCRETE SEWER PIPE
CTOP	COUNTERTOP
CTR / CNTR	CENTER
CW	CONCRETE WALL
d	PENNY(NAILS)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DCW	DEMAND CRITICAL WELD
DET / DTL	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DIA / ø	DIAMETER
DIAPH	DIAPHRAGM
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DEEP
DR	DOOR
DS	DOWN SPOUT
DWG	DRAWING
DWLS	DOWELS
(E) / EXIST	EXISTING
E/	EDGE OF
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELECT	ELECTRICAL
ELEV	ELEVATION
EN	EDGE NAIL
ENGR	ENGINEER
EOP	EDGE OF PANEL
EP	EPOXY PAINT / EDGE OF PAVEMENT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
ES	EACH SIDE
ESFR	EARLY SUPPRESSION, FAST RESPONSE
ETC	EPOXY TRAFFIC COATING / ETCETERA
EW	EACH WAY
EXP	EXPOSED STRUCTURE
EXP JT / EJ	EXPANSION JOINT
EXT	EXTERIOR
F/	FACE OF
F/STUD	FACE OF STUD
FB	FLAT BAR
FC	FACE OF CURB
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FF	FACTORY FINISH / FINISHED FACE
FFE	FINISH FLOOR ELEVATION
FIN	FINISH(ED)
FL	FLUSH
FLR	FLOOR
FM	FACTORY MUTUAL
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER INSTALLED BY OWNER
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FAR SIDE
FT	FEET/FOOT FIRE TREATED
FTG	FOOTING
FTIT	FURNISHED BY TENANT INSTALLED BY TENANT
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GLB	GLULAM BEAM
GLZ	GLAZING
GR	GRADE
GRD	GRID ONLY
GSA	U.S. GENERAL SERVICES ADMINISTRATION
GYP BD	GYPSUM BOARD
HB	HOSE BIB
HC	HOLLOW CORE / HANDICAP
HCM	HOLLOW CLAY MASONRY
HDPE	HIGH DENSITY POLYETHELENE
HDR	HEADER
HDWR	HARDWARE
HGR	HANGER
HL	HALF LITE
HM	HOLLOW METAL
HMK	HOLLOW METAL KNOCKDOWN
HMW	HOLLOW METAL WELDED
HORIZ	HORIZONTAL
HR(S)	HOUR(S)
HS	HEADED STUD
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL STEEL
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWS	HEADED WELD STUD
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IFC	INTERNATIONAL FIRE CODE
IMC	INTERNATIONAL MECHANCIAL CODE
INFO	INFORMATION
INSP	INSPECTION / INSPECTOR
INSUL	INSULATION
INT	INTERIOR
IPC	INTERNATIONAL PLUMBING CODE
JNT	JOINT
JST	JOIST
K	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LAM	LAMINATE
LAV	LAVATORY
LB	LAG BOLT
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LONG / LONGIT	LONGITUDINAL
LP	LOWPOINT
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE
M	MIRROR
M/E/P	MECHANICAL/ ELECTRICAL/ PLUMBING OR PROCESS
MANF	MANUFACTURER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MDF/MDO	MEDIUM DENSITY FIBERBOARD / OVERLAY
MECH	MECHANICAL
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MGR	MANAGER
MH	MAN HOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MLP	METAL LINEAR PANEL
MO	MASONRY OPENING
MOD BIT	MODIFIED BITUMINOUS
MP	METAL PANEL
MTL	METAL
(N)	NEW
NFPA	NATIONAL FIRE PROTECTION AGENCY
NIC	NOT IN CONTRACT
NO. / #	NUMBER
NOM	NOMINAL
NR	NON RATED
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
O/A	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OH	OPPOSITE HAND
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OSF / O/FACE	OUTSIDE FACE
OSSC	OREGON STRUCTURAL SPECIALTY CODE
OTS	OPEN TO STRUCTURE
P	PAINT
P-LAM	PLASTIC LAMINATE
P.E.	PROFFESSIONAL ENGINEER
PB	PARTICLE BOARD
PDA / PAF	POWDER DRIVEN ANCHORS/POWDER ACTUATED FASTENER
PJ	PANEL JOINT
PL / ₽	PLATE
PLB	PARALLAM BEAM
PLMB	PLUMBING
PLY / PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PREFIN	PREFINISHED
PS	POUR STRIP
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED / PORCELAIN TILE
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RAD	RADIAL
RB	RUBBER BASE
RBE	ROOF BASE ELEVATION
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RECEPT	RECEPTION(IST)
REF	REFERENCE / REFRIGERATOR
REINF	REINFORCING
REQ / REQ'D	REQUIRED
REV	REVISION
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	STAIN
SAT	SUSPENDED ACOUSTICAL TILE
SC	SEALED CONCRETE / SOLID CORE WOOD
SCHED	SCHEDULE
SCM	STRUCTURAL CLAY MASONRY
SCWD	SOLID CORE WOOD DOOR
SF	STORE FRONT / SQUARE FEET
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG / SHT'G	SHEATHING
SIM	SIMILAR
SLRS	SEISMIC LOAD RESISTIVE SYSTEM
SLV	SHORT LEG VERTICAL
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SP	SPACE(D)(S)
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL / SOLID SURFACE
ST	STONE
STA PT	STATION POINT
STAGG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
T	TEMPERED
T&B	TOP AND BOTTOM
T/	TOP OF
TC	TOP OF CURB
TEMP	TEMPERATURE / TEMPORARY
THK	THICK / THICKNESS
TL	TOTAL LOAD
TN	TOE NAIL
TO	TOP OF
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPO	THERMOPLASTIC POLYOLEFIN
TRANS / TRANSV	TRANSVERSE
TS	TUBE STEEL
TYP	TYPICAL
U/S	UNDERSIDE
UC	UNDER COUNTER
UL	UNDER WRITERS LABORATORIES
UNO / UON	UNLESS NOTED OTHERWISE
USG	UNITED STATES GYPSUM
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VFY	VERIFY
VIF	VERIFY IN FIELD
VP	VISION PANEL
W/	WITH
W/CRC	COATING WITH CHEMICAL RESISTANCE
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET / WALL COVERING
WD	WOOD
WF	WIDE FLANGE BEAM
WH	WATER HEATER
WP	WATER PROOF / WOOD PANELING / WORK POINT
WR	WATER RESISTANT
WRGB	WATER RESISTANT GYPSUM BOARD
WS	WATER STOP / WELDED STUD
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE MESH

SYMBOLS AND REFERENCES



ANNOTATION SYMBOLS



MISC. SYMBOLS

CLEAN OUT	○ CO
DOWNSPOUT LOCATION	○ DS
FLOOR DRAIN	○ FD
FIRE EXTINGUISHER	◆
DOCK HIGH OVERHEAD DOOR	▲
DRIVE IN OVERHEAD DOOR	△
FUTURE OPENING	△
CONTROL JOINT	CJ
CONSTRUCTION JOINT	CONST JT
POUR STRIP	PS

PROJECT GENERAL NOTES

A. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE LATEST ADOPTED BUILDING CODE EDITION, AND TO CONDITIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES.
B. VERIFY AND CONFIRM ALL CONDITIONS, DIMENSIONS, AND LAYOUT INFORMATION PRIOR TO START OF CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF WORK. ANY CORRECTION WORK REQUIRED AS A RESULT OF NOT REPORTING SUCH DISCREPANCIES SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
C. CONTRACTOR AND SUBCONTRACTORS SHALL CAREFULLY EXAMINE THE SITE AND THE CONSTRUCTION DOCUMENTS OF THE ENTIRE WORK. INCONSISTENCIES IN THE PLANS OR SPECIFICATIONS SHALL BE CALLED TO THE ATTENTION OF TENANT.
D. REFER TO ENLARGED PLANS AND ELEVATIONS WHERE INDICATED FOR ADDITIONAL INFORMATION. ENLARGED PLANS TAKE PRECEDENCE OVER PLANS OF SMALLER SCALE, AND DETAILS TAKE PRECEDENCE OVER PLANS. IN THE CASE OF A CONFLICT, THE HIGHEST COST OPTION SHOULD BE PRICED.
E. DETAIL REFERENCES SHALL BE APPLIED TO ALL INSTANCES WHERE THE SAME CONDITIONS OCCUR, UNLESS NOTED OTHERWISE.
F. DIMENSIONS ARE TO STRUCTURAL GRID, CENTER LINE OF COLUMNS, AND FACE OF STUDS/CONCRETE WALL, UNLESS NOTED OTHERWISE.
G. THE TERMS "ABOVE FINISH FLOOR" (AFF) AND "FINISH FLOOR ELEVATION" (FFE) REFER TO FINAL FINISHED FLOOR ELEVATION, WHETHER BUILT-UP SLAB, COMPOSITE DECK, OR RAISED ACCESS FLOOR.
H. DO NOT SCALE DRAWINGS.
I. CUTTING AND DRILLING OF STRUCTURAL MEMBERS NOT DETAILED REQUIRES THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER OF RECORD.
J. SAVE AND RECYCLE DEMOLITION DEBRIS AS APPLICABLE. ALL DEMOLISHED OR REMOVED EXISTING MATERIAL SHALL BE LEGALLY DISPOSED. COORDINATE WITH AUTHORITY HAVING JURISDICTION FOR REQUIREMENTS FOR RECYCLING/RE-USE OF DEMOLITION DEBRIS.
K. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THEIR WORK. THE CONTRACTOR WILL COORDINATE CLEAN UP OF ALL AREAS AFFECTED BY DUST OR ANY MATERIALS, BOTH DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT, INCLUDING THE INSIDE OF ALL WINDOWS AS NECESSARY SO THAT THE SPACE IS READY FOR OCCUPANCY BY TENANT.
L. THROUGHOUT THESE DOCUMENTS REFERENCES ARE MADE TO FOIO AND FTIT. IN THE EXECUTION OF THIS DESIGN THE OWNER AND TENANT ARE THE SAME ENTITY.

CESO

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EXTERIOR IMPROVEMENTS
400 ORITANI DRIVE
ORANGETOWN, NY 10913

STATE OF NEW YORK
JEFFREY A. TESARTS
084766
LICENSED PROFESSIONAL ENGINEER
02/27/2023

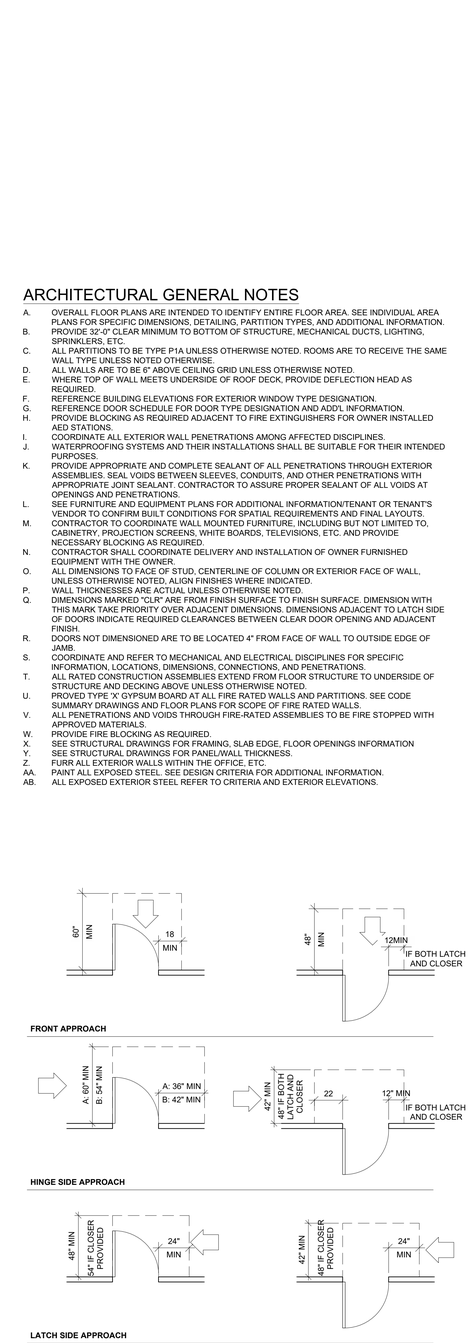
Project No.	759025-01
Scale	AS SHOWN
Drawn	JMJ
Checked	JAT
Date	02/17/2023
	PHASE 1 SITE

Drawing Title
PROJECT GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

Drawing No.
G0.02

ARCHITECTURAL GENERAL NOTES

A. OVERALL FLOOR PLANS ARE INTENDED TO IDENTIFY ENTIRE FLOOR AREA. SEE INDIVIDUAL AREA PLANS FOR SPECIFIC DIMENSIONS, DETAILING, PARTITION TYPES, AND ADDITIONAL INFORMATION.
B. PROVIDE 32'-0" CLEAR MINIMUM TO BOTTOM OF STRUCTURE, MECHANICAL DUCTS, LIGHTING, SPRINKLERS, ETC.
C. ALL PARTITIONS TO BE TYPE P1A UNLESS OTHERWISE NOTED. ROOMS ARE TO RECEIVE THE SAME WALL TYPE UNLESS NOTED OTHERWISE.
D. ALL WALLS ARE TO BE 6" ABOVE CEILING GRID UNLESS OTHERWISE NOTED.
E. WHERE TOP OF WALL MEETS UNDERSIDE OF ROOF DECK, PROVIDE DEFLECTION HEAD AS REQUIRED.
F. REFERENCE BUILDING ELEVATIONS FOR EXTERIOR WINDOW TYPE DESIGNATION.
G. REFERENCE DOOR SCHEDULE FOR DOOR TYPE DESIGNATION AND ADD'L INFORMATION.
H. PROVIDE BLOCKING AS REQUIRED ADJACENT TO FIRE EXTINGUISHERS FOR OWNER INSTALLED AED STATIONS.
I. COORDINATE ALL EXTERIOR WALL PENETRATIONS AMONG AFFECTED DISCIPLINES.
J. WATERPROOFING SYSTEMS AND THEIR INSTALLATIONS SHALL BE SUITABLE FOR THEIR INTENDED PURPOSES.
K. PROVIDE APPROPRIATE AND COMPLETE SEALANT OF ALL PENETRATIONS THROUGH EXTERIOR ASSEMBLIES. SEAL VOIDS BETWEEN SLEEVES, CONDUITS, AND OTHER PENETRATIONS WITH APPROPRIATE JOINT SEALANT. CONTRACTOR TO ASSURE PROPER SEALANT OF ALL VOIDS AT OPENINGS AND PENETRATIONS.
L. SEE FURNITURE AND EQUIPMENT PLANS FOR ADDITIONAL INFORMATION/TENANT OR TENANT'S VENDOR TO CONFIRM BUILT CONDITIONS FOR SPATIAL REQUIREMENTS AND FINAL LAYOUTS.
M. CONTRACTOR TO COORDINATE WALL MOUNTED FURNITURE, INCLUDING BUT NOT LIMITED TO, CABINETRY, PROJECTION SCREENS, WHITE BOARDS, TELEVISIONS, ETC. AND PROVIDE NECESSARY BLOCKING AS REQUIRED.
N. CONTRACTOR SHALL COORDINATE DELIVERY AND INSTALLATION OF OWNER FURNISHED EQUIPMENT WITH THE OWNER.
O. ALL DIMENSIONS TO FACE OF STUD, CENTERLINE OF COLUMN OR EXTERIOR FACE OF WALL, UNLESS OTHERWISE NOTED, ALIGN FINISHES WHERE INDICATED.
P. WALL THICKNESSES ARE ACTUAL UNLESS OTHERWISE NOTED.
Q. DIMENSIONS MARKED "CLR" ARE FROM FINISH SURFACE TO FINISH SURFACE. DIMENSION WITH THIS MARK TAKE PRIORITY OVER ADJACENT DIMENSIONS. DIMENSIONS ADJACENT TO LATCH SIDE OF DOORS INDICATE REQUIRED CLEARANCES BETWEEN CLEAR DOOR OPENING AND ADJACENT FINISH.
R. DOORS NOT DIMENSIONED ARE TO BE LOCATED 4" FROM FACE OF WALL TO OUTSIDE EDGE OF JAMB.
S. COORDINATE AND REFER TO MECHANICAL AND ELECTRICAL DISCIPLINES FOR SPECIFIC INFORMATION, LOCATIONS, DIMENSIONS, CONNECTIONS, AND PENETRATIONS.
T. ALL RATED CONSTRUCTION ASSEMBLIES EXTEND FROM FLOOR STRUCTURE TO UNDERSIDE OF STRUCTURE AND DECKING ABOVE UNLESS OTHERWISE NOTED.
U. PROVED TYPE 'X' GYPSUM BOARD AT ALL FIRE RATED WALLS AND PARTITIONS. SEE CODE SUMMARY DRAWINGS AND FLOOR PLANS FOR SCOPE OF FIRE RATED WALLS.
V. ALL PENETRATIONS AND VOIDS THROUGH FIRE-RATED ASSEMBLIES TO BE FIRE STOPPED WITH APPROVED MATERIALS.
W. PROVIDE FIRE BLOCKING AS REQUIRED.
X. SEE STRUCTURAL DRAWINGS FOR FRAMING, SLAB EDGE, FLOOR OPENINGS INFORMATION
Y. SEE STRUCTURAL DRAWINGS FOR PANEL/WALL THICKNESS.
Z. FURR ALL EXTERIOR WALLS WITHIN THE OFFICE, ETC.
AA PAINT ALL EXPOSED STEEL. SEE DESIGN CRITERIA FOR ADDITIONAL INFORMATION.
AB. ALL EXPOSED EXTERIOR STEEL REFER TO CRITERIA AND EXTERIOR ELEVATIONS.



1 A0.01 ACCESSIBILITY DOOR CLEARANCES
1/4" = 1'-0"

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084755
LICENSED PROFESSIONAL ENGINEER
02/22/2023

Project No.	759025-01
Scale	AS SHOWN
Drawn	JMJ
Checked	JAT
Date	02/17/2023
	PHASE 1 SITE

Drawing Title
ARCH GENERAL NOTES

Drawing No.
A0.01

ORANGETOWN STANDARD NOTES:

- PERFORMANCE STANDARDS REVIEWED BY TOWN OF ORANGETOWN ZONING BOARD: JANUARY 22, 2020 AS ZBA#20-08 AND ZBA#20-09
- TOTAL AREA OF DISTURBANCE (A.O.D.) = 0.00 ACRES
- THE MAXIMUM SOIL EXPOSURE LIMIT IS 14 DAYS
- LOT DRAINAGE SHOWN SHALL CONSTITUTE EASEMENTS RUNNING WITH THE LAND AND ARE NOT TO BE DISTURBED
- ALL UTILITIES, INCLUDING ELECTRIC AND TELEPHONE SERVICE, SHALL BE INSTALLED UNDERGROUND
- THIS PLAN DOES NOT CONFLICT WITH THE COUNTY OFFICIAL MAP AND HAS BEEN APPROVED IN THE MANNER SPECIFIED BY SECTION 239L&M OF THE GENERAL MUNICIPAL LAW OF THE STATE OF NEW YORK
- AT LEAST ONE WEEK PRIOR TO THE COMMENCEMENT OF ANY WORK, INCLUDING THE INSTALLATION OF EROSION CONTROL DEVICES OR THE REMOVAL OF TREES AND VEGETATION, A PRE-CONSTRUCTION MEETING MUST BE HELD WITH THE TOWN OF ORANGETOWN DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND ENGINEERING, SUPERINTENDENT OF HIGHWAYS AND THE OFFICE OF BUILDING, ZONING, AND PLANNING ADMINISTRATION AND ENFORCEMENT. IT IS THE RESPONSIBILITY AND OBLIGATION OF THE PROPERTY OWNER TO ARRANGE SUCH A MEETING.
- ALL OUTDOOR CONSTRUCTION ACTIVITIES, INCLUDING SITE-CLEARING OPERATIONS IF APPLICABLE, SHALL TAKE PLACE BETWEEN THE HOURS OF 7:00 A.M. AND 7:00 P.M., MONDAY THROUGH SATURDAY. NO SUCH ACTIVITIES SHALL TAKE PLACE ON SUNDAY OR A LEGAL HOLIDAY. THE SAME CRITERIA SHALL APPLY TO INDOOR CONSTRUCTION ACTIVITIES, EXCEPT THAT SUCH ACTIVITIES MAY TAKE PLACE BETWEEN THE HOURS OF 7:00 A.M. AND 10:00 P.M.

CODED NOTES:

1) PROPOSED ELECTRIC VEHICLE CHARGER POST WITH BOLLARD PROTECTION. REFER TO ELECTRIC VEHICLE CHARGER INSTALLATION - PHASE 1 PLANS PREPARED BY CEC, INC.

2) PROPOSED ELECTRICAL EQUIPMENT WITH BOLLARD PROTECTION. REFER TO ELECTRIC VEHICLE CHARGER INSTALLATION - PHASE 1 PLANS PREPARED BY CEC, INC.

SITE NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL NEW YORK ONE CALL AND ALL UTILITY COMPANIES TO SCHEDULE ANY UTILITY SERVICE REMOVAL AND/OR ABANDONMENT. ALL UTILITIES SHALL BE REMOVED AND/OR RELOCATED PER THE SPECIFICATIONS OF THE UTILITY COMPANIES. THE CONTRACTOR IS RESPONSIBLE TO PAY ALL FEES AND CHARGES ASSOCIATED WITH THIS WORK.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL TOWN/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
3. ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF RAMPS.
5. ALL DIMENSIONS AND RADII ARE TO THE FACE OF THE CURB OR EDGE OF PAVEMENT, AS APPLICABLE, UNLESS OTHERWISE NOTED.
6. PROVIDE STRIPING AS SHOWN. PARKING STALLS SHALL BE PAINTED WITH 4" WHITE, WIDE LINES. KILL WEEDS, CLEAN, POWER WASH AND REMOVE ANY EXISTING RESTRIPING THAT CONFLICTS WITH PROPOSED STRIPING. COORDINATE ADDITIONAL SITE MAINTENANCE WITH TENANT CM.
7. REFER TO MECHANICAL PLANS FOR EQUIPMENT LAYOUT.
8. REFER TO ELECTRICAL PLANS FOR ELECTRICAL WORK.
9. REFER TO ORIGINAL SURVEY PROVIDED BY BLEW & ASSOCIATES, DATED 10/31/2019.
10. REFER TO CURRENT VERSION OF 'TENANT' SIGNAGE STANDARDS DOCUMENT FOR ALL SIGN AND PAVEMENT GRAPHICS AND DETAILS.

2 / C1.10 VICINITY MAP
NOT TO SCALE
NORTH

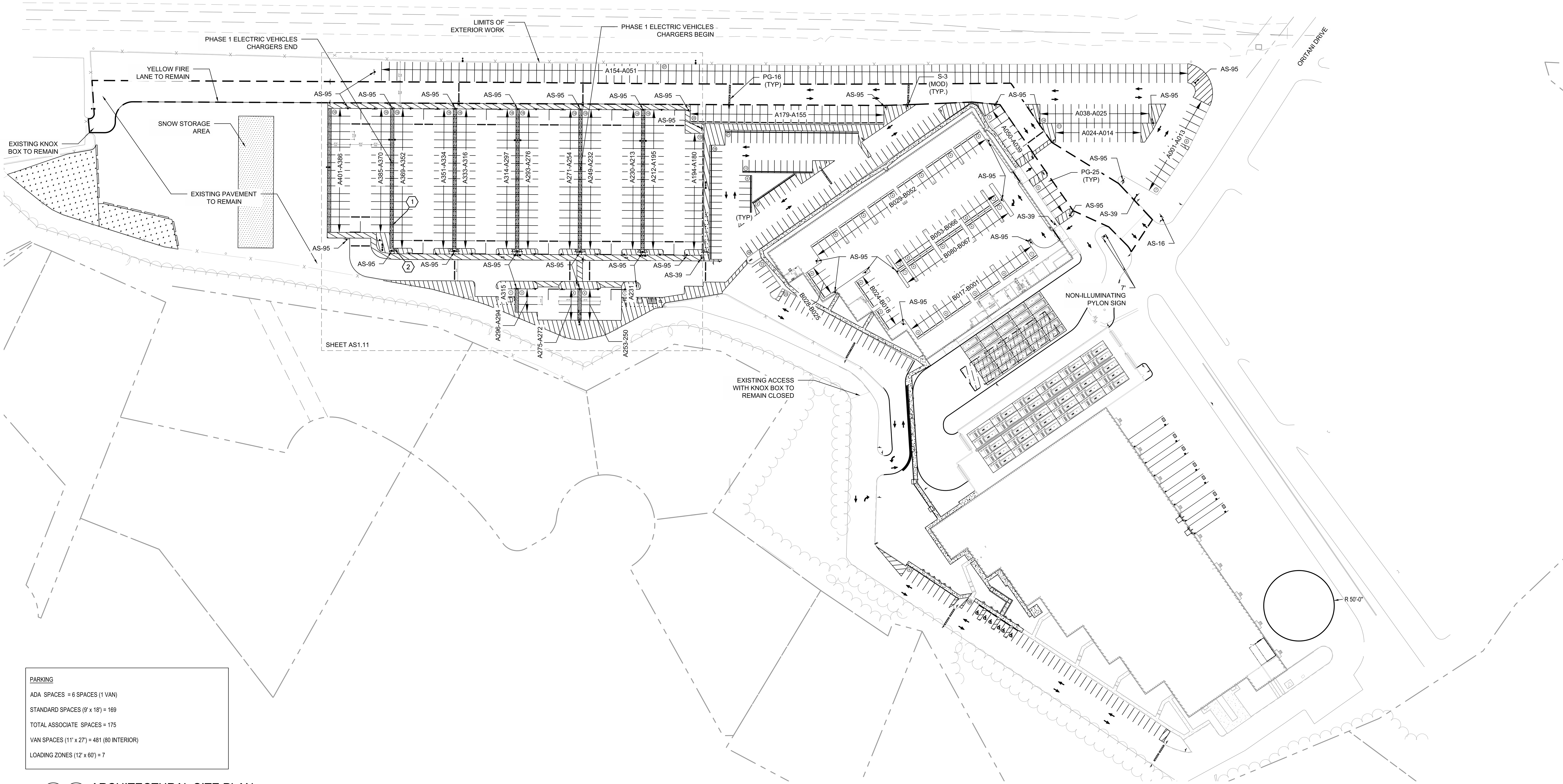
ZONING INFORMATION

LOCATION: 200 & 400 ORITANI DRIVE, BLAUVELT, NY 10913
PARCELS: 65.18-1-1, 65.18-1-22, 70.06-1-1.12
ZONE: (LO) LABORATORY-OFFICE DISTRICT
USE: DISTRIBUTION CENTER
LOT AREA: ± 37.61 ACRES (± 1,638,292 SF)

ADJACENT ZONING:
NORTH: LABORATORY-OFFICE (LO)
SOUTH: LOW DENSITY RESIDENTIAL (R-40), LABORATORY OFFICE (LO)
EAST: LIGHT INDUSTRIAL OFFICE (LIO), LIGHT INDUSTRIAL (LI)
WEST: LOW DENSITY RESIDENTIAL (R-40)

ITEM	REQUIREMENTS	EXISTING	PROPOSED
MINIMUM FRONT BUILDING SETBACK (EAST)	100 FEET	70.7 FEET	NO CHANGE
MINIMUM SIDE BUILDING SETBACK (SOUTH)	100 FEET	102.5 FEET	NO CHANGE
MINIMUM SIDE BUILDING SETBACK (NORTH)	100 FEET	234.7 FEET	NO CHANGE
MINIMUM SIDE BUILDING SETBACK (BOTH)	200 FEET	337.2 FEET	NO CHANGE
MINIMUM REAR BUILDING SETBACK (WEST)	100 FEET	130.7 FEET	NO CHANGE
MAXIMUM FLOOR RATIO	0.4	0.2	NO CHANGE
BUILDING HEIGHT	± 42.5 FEET	± 33 FEET	NO CHANGE
PARKING REQUIREMENTS	ONE SPACE FOR EVERY 2 EMPLOYEES	SEE PARKING TABLE ON THIS SHEET	NO CHANGE
MINIMUM ACCESSIBLE STALLS	6 SPACES FOR 151 - 200 TOTAL PROVIDED SPACES, 1 VAN	6 SPACES (1 VAN)	NO CHANGE
MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 19 FEET	NO CHANGE
MINIMUM AISLE WIDTH	22 FEET	24 FEET	NO CHANGE
MINIMUM PARKING SETBACK	25 FEET	± 87 FEET	NO CHANGE
LAND COVERAGE	MAX 75%	80.30%	NO CHANGE

GENERAL & TENANT SIGN FACE LEGENDS
SEE PAGE AS1.11



PARKING

ADA SPACES = 6 SPACES (1 VAN)

STANDARD SPACES (9' x 18') = 169

TOTAL ASSOCIATE SPACES = 175

VAN SPACES (11' x 27') = 481 (80 INTERIOR)

LOADING ZONES (12' x 60') = 7

1 / C1.10 ARCHITECTURAL SITE PLAN
1/64" = 1'-0"
NORTH

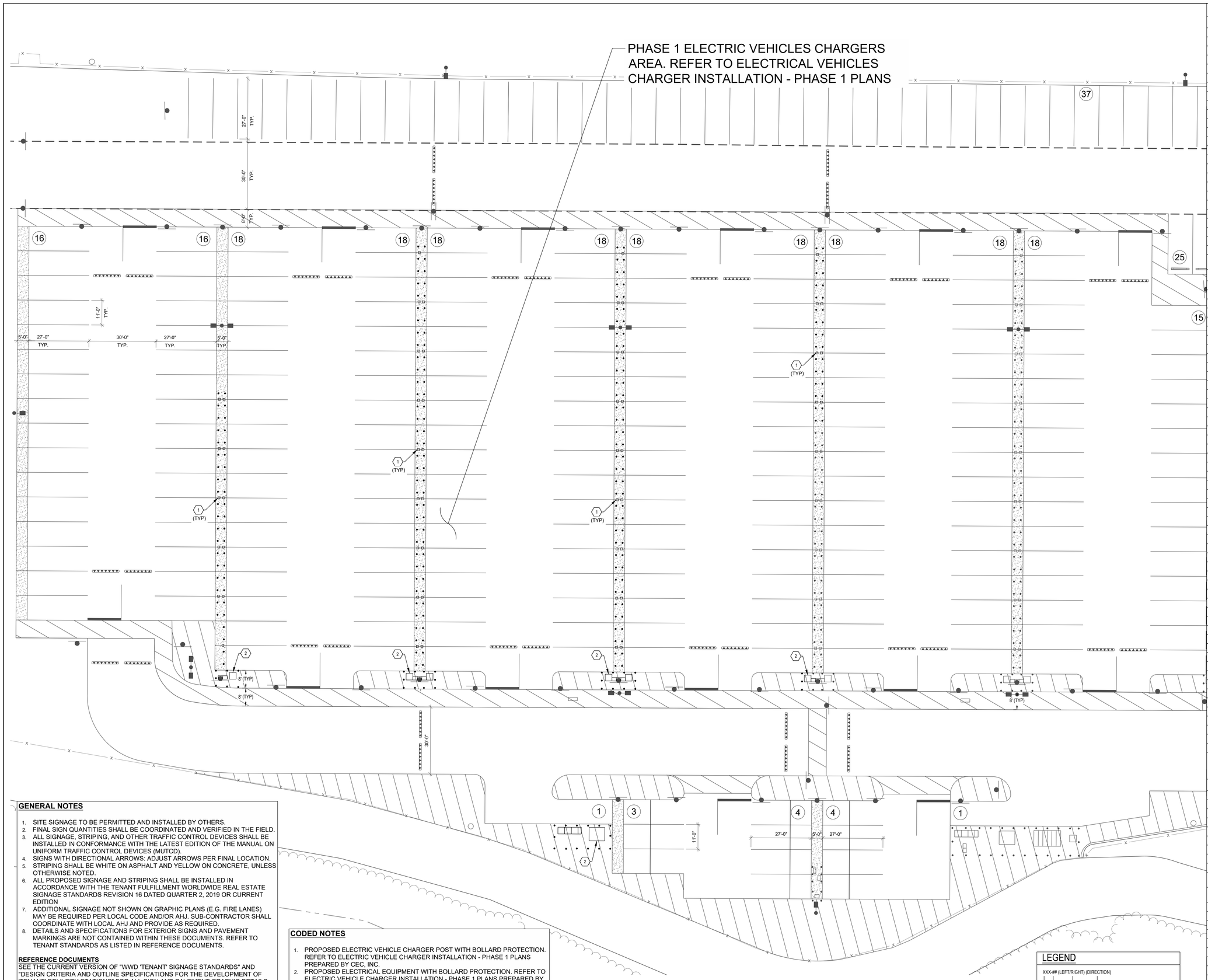
CESO

No.	Revisions/Submissions	Date
	PERMIT SET	02.17.2023

DELIVERY STATION EXPANSION
EXTERIOR IMPROVEMENTS
400 ORITANI DRIVE
ORANGETOWN, NY 10913

STATE OF NEW YORK
JEFFREY A. TIBBITTS
084756
LICENSED PROFESSIONAL ENGINEER
02/17/2023

Project No.	759025-01
Scale	AS SHOWN
Drawn	JMJ
Checked	JAT
Date	02/17/2023
	PHASE 1 SITE
Drawing Title	ARCHITECTURAL SITE PLAN
Drawing No.	AS1.10



GENERAL NOTES

1. SITE SIGNAGE TO BE PERMITTED AND INSTALLED BY OTHERS.
2. FINAL SIGN QUANTITIES SHALL BE COORDINATED AND VERIFIED IN THE FIELD.
3. ALL SIGNAGE, STRIPING, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. SIGNS WITH DIRECTIONAL ARROWS: ADJUST ARROWS PER FINAL LOCATION.
5. STRIPING SHALL BE WHITE ON ASPHALT AND YELLOW ON CONCRETE, UNLESS OTHERWISE NOTED.
6. ALL PROPOSED SIGNAGE AND STRIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE TENANT FULFILLMENT WORLDWIDE REAL ESTATE SIGNAGE STANDARDS REVISION 16 DATED QUARTER 2, 2019 OR CURRENT EDITION
7. ADDITIONAL SIGNAGE NOT SHOWN ON GRAPHIC PLANS (E.G. FIRE LANES) MAY BE REQUIRED PER LOCAL CODE AND/OR AHJ. SUB-CONTRACTOR SHALL COORDINATE WITH LOCAL AHJ AND PROVIDE AS REQUIRED.
8. DETAILS AND SPECIFICATIONS FOR EXTERIOR SIGNS AND PAVEMENT MARKINGS ARE NOT CONTAINED WITHIN THESE DOCUMENTS. REFER TO TENANT STANDARDS AS LISTED IN REFERENCE DOCUMENTS.

REFERENCE DOCUMENTS

SEE THE CURRENT VERSION OF "WWD 'TENANT' SIGNAGE STANDARDS" AND "DESIGN CRITERIA AND OUTLINE SPECIFICATIONS FOR THE DEVELOPMENT OF 'TENANT' DELIVERY STATIONS" FOR ALL SIGN AND PAVEMENT GRAPHIC DETAILS AND SPECIFICATIONS.

CODED NOTES

1. PROPOSED ELECTRIC VEHICLE CHARGER POST WITH BOLLARD PROTECTION. REFER TO ELECTRIC VEHICLE CHARGER INSTALLATION - PHASE 1 PLANS PREPARED BY CEC, INC.
2. PROPOSED ELECTRICAL EQUIPMENT WITH BOLLARD PROTECTION. REFER TO ELECTRIC VEHICLE CHARGER INSTALLATION - PHASE 1 PLANS PREPARED BY CEC, INC.

NORTH

1 / C1.11 ENLARGED STRIPING PLAN

1/16" = 1'-0"

GENERAL SIGN FACE LEGEND

CODE	DESCRIPTION
S-1	"STOP" SIGN
S-2	DO NOT ENTER
S-3	SPEED LIMIT, 5 MPH
S-3 (MOD)	SPEED BUMP WITH 5 MPH PLACARD
S-4	SPEED LIMIT, 10 MPH
S-5(L)	PEDESTRIAN CROSSING, LEFT ARROW
S-5(R)	PEDESTRIAN CROSSING, RIGHT ARROW
S-7(L)	ONE-WAY, LEFT ARROW
S-7(R)	ONE-WAY, RIGHT ARROW
S-9(L)	LEFT TURN ONLY
S-9(R)	RIGHT TURN ONLY
S-11(L)	NO LEFT TURN
S-12	NO U-TURN
S-13	TRUCKS PROHIBITED
S-14	NO PARKING
S-15	"ACCESSIBLE" PARKING SIGN
S-16	"VAN ACCESSIBLE" PARKING SIGN
S-17	NO TRESPASSING
S-18	ELECTRIC VEHICLE PARKING ONLY
S-19	CLEAN AIR VEHICLE
S-20(R)	MEDIAN SIGN (RIGHT DIRECTIONAL ARROW)
S-32(L)	CHEVRON (LEFT ARROW)
S-32(R)	CHEVRON (RIGHT ARROW)
S-51	LAUNCH PAD SIGNAGE
S-97	NOTICE, SUBJECT TO INSPECTION

TENANT SIGN FACE LEGEND

CODE	DESCRIPTION
AG-16	CARBON MON. WARNING
AG-21	DO NOT PROP DOOR OPEN
AG-22	TDR ACCESS
AS-1	ADDRESS SIGN
AS-2	TRUCKS/VISITOR USHER
AS-4	TRAILER INSPECTION
AS-5	YARD RULES
AS-6	TRUCK ENTRANCE
AS-7	DRIVER'S LOUNGE
AS-10	TRACTOR PARKING
AS-12	TRAILERS MUST BE 3FT FROM WALL
AS-13	NO ENTRANCE
AS-14	NO EXIT
AS-15(L)	EXIT, LEFT ARROW
AS-15(R)	EXIT, RIGHT ARROW
AS-16	WAYFINDING
AS-17	ENTRY RULES
AS-18	DROP-OFF/PICK-UP AREA, RIGHT ARROW
AS-19	MIRRORED DOCK NUMBER
AS-22	DROP-OFF AND PICK-UP
AS-23(L)	MAIN ENTRANCE, LEFT ARROW
AS-23(R)	MAIN ENTRANCE, RIGHT ARROW
AS-23(S)	MAIN ENTRANCE, STRAIGHT ARROW
AS-25	VENDOR PARKING
AS-26	MUSTER AREA
AS-27	EGRESS DOOR NOTICE
AS-28	BUILDING SERVICES DOOR
AS-30	NON-SMOKING AREA
AS-32(L)	PICK-UP/DROP-OFF, LEFT ARROW
AS-32(R)	PICK-UP/DROP-OFF, RIGHT ARROW
AS-32(S)	PICK-UP/DROP-OFF, STRAIGHT ARROW
AS-33	NO IDLING
AS-35	TURN OFF ENGINE
AS-38	TRAILER PARKING SIGN
AS-39	PARKING LOT DESIGNATION
AS-41	NO IDLING ZONE
AS-43	DRIVE LANE
AS-44	DRIVE THRU
AS-50	LAUNCH PAD SIGNAGE
AS-60	DOOR DOCK NUMBER
AS-62	ASSOCIATE ENTRANCE
AS-63	TDR ENTRANCE ONLY
AS-C#	PARKING LOCATION
AS-95	VAN STALL WAYFINDING
AS-95(R)	VAN STALL WAYFINDING, RIGHT ARROW
AS-95(L)	VAN STALL WAYFINDING, LEFT ARROW
AS-95(S)	VAN STALL WAYFINDING, STRAIGHT ARROW
AS-96(L)	VAN PROBLEM SOLVE SPACE, LEFT ARROW
AS-96(R)	VAN PROBLEM SOLVE SPACE, RIGHT ARROW
AS-96(R)	VAN PROBLEM SOLVE SPACE, STRAIGHT ARROW
AS-97a	VAN PROBLEM SOLVE SPACE, FIRST SPACE
AS-97b	VAN PROBLEM SOLVE SPACE, ADDITIONAL SPACES

STRIPING (PAVEMENT GRAPHIC) LEGEND

CODE	DESCRIPTION
PG-1	STOP BAR
PG-5	STRAIGHT ARROW
PG-6(L)	LEFT TURN ARROW
PG-6(R)	RIGHT TURN ARROW
PG-7(L)	STRAIGHT OR LEFT TURN ARROW
PG-7(R)	STRAIGHT OR RIGHT TURN ARROW
PG-8	LEFT OR RIGHT TURN ARROW
PG-9	LEFT, STRAIGHT, OR RIGHT TURN ARROW
PG-10	18" STRIPING OUTLINE AND FILL AT 45°/HERBERS
PG-11	12" STRIPING OUTLINE AND HATCH @ 36" O.C. (WHITE)
PG-12	12" STRIPING OUTLINE AND HATCH @ 36" O.C. (YELLOW)
PG-14	TRAILER SPACE NUMBERING
PG-15	SPEED HUMP
PG-16	SPEED BUMP
PG-17	ACCESSIBLE CAR PARKING
PG-18	ACCESSIBLE VAN PARKING
PG-20	PEDESTRIAN TABLE
PG-21	EMPTY TRAILER SLIP
PG-22	TRACTOR DOCK PARKING
PG-23	JACK STAND AREA
PG-24	WARNING LINE
PG-25	VAN STALL NUMBER
PG-26	BYPASS LANE
PG-27	DRIVE LANE

LEGEND

XXX-## (LEFT/RIGHT) (DIRECTION)
- DIRECTION OF SIGN FACE
- INDICATES ARROW DIRECTION, IF APPLICABLE
- SIGN NUMBER (PER LEGENDS)
- SIGN TYPE (S - SIGN, AS - TENANT SIGN)

CESO

No.	Revisions/Submissions	Date
	PERMIT SET	02.17.2023

DELIVERY STATION EXPANSION

EXTERIOR IMPROVEMENTS

400 ORITANI DRIVE
ORANGETOWN, NY 10913

STATE OF NEW YORK
JEFFREY A. TEBBETTS
084756
LICENSED PROFESSIONAL ENGINEER
02/17/2023

Project No.	759025-01
Scale	AS SHOWN
Drawn	JMJ
Checked	JAT
Date	02/17/2023
	PHASE 1 SITE

Drawing Title

SITE PLAN - PHASE 1

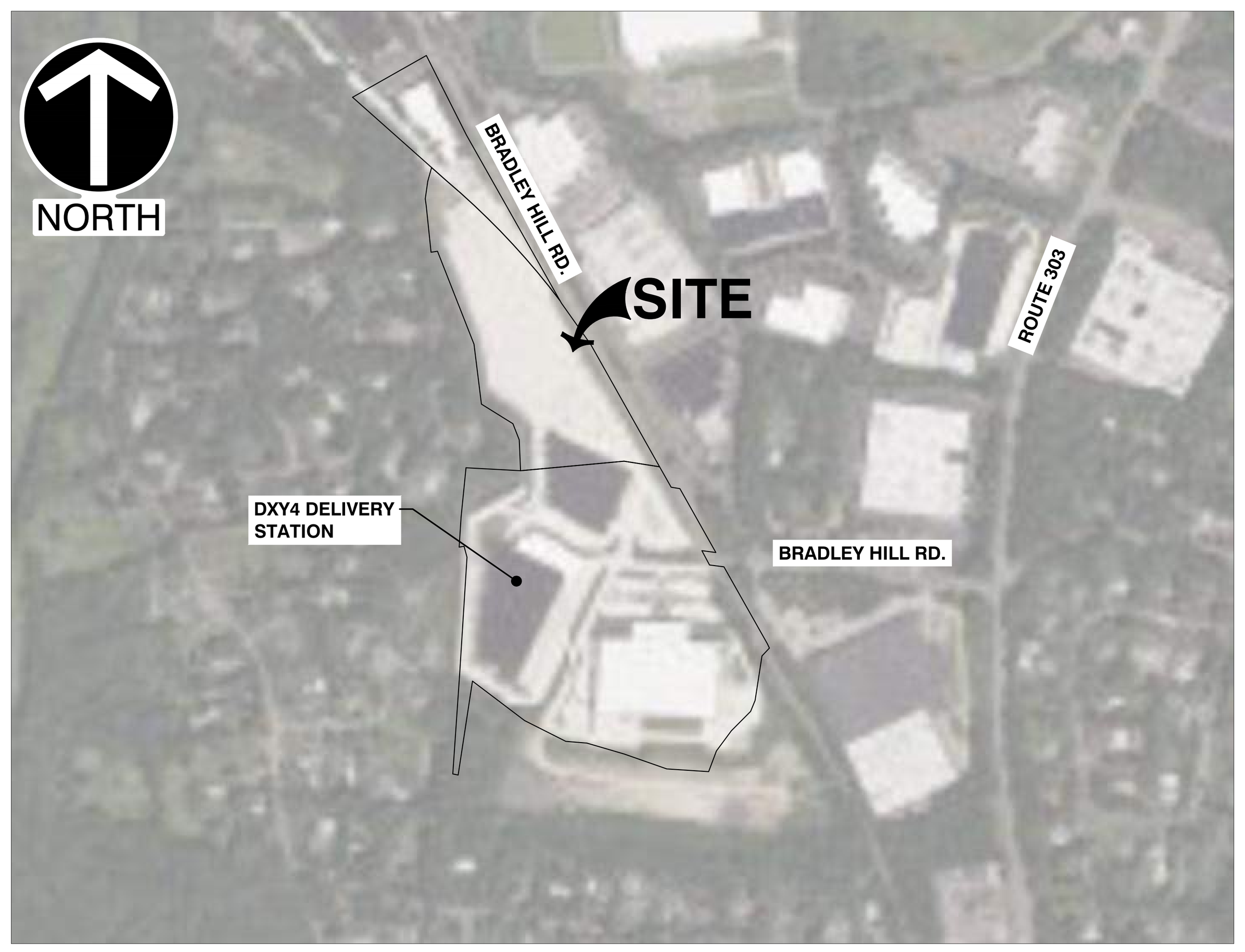
Drawing No.

AS1.11

ELECTRIC VEHICLE CHARGER INSTALLATION

DXY4 DELIVERY STATION

400 ORITANI DRIVE
ORANGETOWN, NY 10913
PERMIT DRAWING SET - PHASE 1



SITE VICINITY MAP

REFERENCE: AUTODESK GEOLOCATION AERIAL IMAGERY, OBTAINED IN 2022.

SCALE IN FEET
0 500 1,000

SHEET INDEX

SHEET NUMBER	SHEET TITLE	PERMIT DRAWING SET PHASE 1 (Issued 2/1/2023
GENERAL		
PREPARED BY: CIVIL & ENVIRONMENTAL CONSULTANTS OF NEW YORK, INC.		
G0.00-BP1	COVER SHEET	●
CIVIL		
PREPARED BY: CIVIL & ENVIRONMENTAL CONSULTANTS OF NEW YORK, INC.		
C1.00-BP1	EXISTING CONDITIONS PLAN	●
C2.00-BP1	EV CHARGER INSTALLATION SITE PLAN	●
C8.00-BP1	DETAIL SHEET (1 OF 3)	●
C8.01-BP1	DETAIL SHEET (2 OF 3)	●
C8.02-BP1	DETAIL SHEET (3 OF 3)	●
C9.00-BP1	EROSION & SEDIMENTATION CONTROL PLAN	●
C9.01-BP1	EROSION & SEDIMENTATION CONTROL NOTES AND DETAILS	●
ELECTRICAL		
PREPARED BY: EMANUELSON-PODAS, INC.		
E0.00-BP1	ELECTRICAL TITLE SHEET	●
E0.10-BP1	ELECTRICAL SITE PLAN	●
E1.11-BP1	ELECTRICAL ENLARGED DISTRIBUTION PLAN	●
E5.00-BP1	ELECTRICAL ONE-LINE DIAGRAM	●
E6.00-BP1	PANEL SCHEDULES	●
E7.01-BP1	ELECTRICAL DETAILS	●
E7.02-BP1	ELECTRICAL DETAILS	●
E8.00-BP1	ELECTRICAL SPECIFICATIONS	●
E8.01-BP1	ELECTRICAL SPECIFICATIONS	●
E8.02-BP1	ELECTRICAL SPECIFICATIONS	●
E8.03-BP1	ELECTRICAL SPECIFICATIONS	●

GENERAL NOTES

1. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE BASED UPON RECORD DRAWINGS PROVIDED BY AMAZON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. EXISTING SITE INFORMATION WAS PREPARED BY CESO AND CONSISTS OF DESIGN INFORMATION FROM THE DXY4 SITE CONSTRUCTION PLANS AND SURVEY (GAS, WATER, STORM SEWER, SANITARY SEWER, ELECTRIC CONDUIT). CEC IS NOT RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. INFORMATION SHOWN IS APPROXIMATE IN SIZE AND LOCATION AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES (INCLUDING THOSE LABELED PER RECORD DATA) PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS. INFORM ENGINEER OF ANY CONFLICTS DETRIMENTAL TO THE DESIGN INTENT.
4. 48 HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES: THE DIG SAFELY NEW YORK CALL BEFORE YOU DIG (DSNY) SERVICES, AND ALL OTHER AGENCIES THAT MAY HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NON–MEMBERS OF THE DSNY.
5. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
6. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND OWNER'S REPRESENTATIVE FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES OCCURRING IN THE COURSE OF THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL CODES, OBTAIN ALL APPLICABLE PERMITS, AND PAY ALL REQUIRED FEES PRIOR TO BEGINNING WORK.
8. ANY WORK PERFORMED IN THE TOWN OF ORANGETOWN OR NEW YORK DEPARTMENT OF TRANSPORTATION RIGHTS OF WAY SHALL BE IN ACCORDANCE WITH THE APPLICABLE LOCAL OR STATE REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY PERMITS FOR THE WORK, SCHEDULE NECESSARY INSPECTIONS, AND PROVIDE THE NECESSARY TRAFFIC CONTROL MEASURES AND DEVICES, ETC., FOR WORK PERFORMED IN THE RIGHT OF WAYS.
9. CONTRACTOR SHALL IMPLEMENT ALL SOIL AND EROSION CONTROL PRACTICES REQUIRED BY THE CITY OF ORANGETOWN AND THE NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
10. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND FINAL GRADING, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH NY GUIDELINES.
11. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT.
12. THE CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
13. SITE SIGNAGE AND STRIPING SHALL BE IN ACCORDANCE WITH THE NEW YORK MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
14. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
15. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, INCLUDING IRRIGATION LINES. THE CONTRACTOR SHALL TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. RELOCATE EXISTING UTILITIES AS INDICATED, OR AS NECESSARY FOR CONSTRUCTION.
16. THE EROSION AND SEDIMENT CONTROL BMPS SHOWN HEREON HAVE BEEN DESIGNED USING BEST AVAILABLE INFORMATION. SOME LIMITATIONS ARE INHERENT, INCLUDING THE INABILITY TO DEPICT LOCALIZED DEVIATIONS. SITE SPECIFIC CONDITIONS SUCH AS ROCK OUTCROPPINGS, TREES, STUMPS, UTILITIES, FENCES, OR FEATURES INSTALLED SUBSEQUENT TO PROCUREMENT OF THE TOPOGRAPHIC MAPPING MAY NOT BE REFLECTED ON THE PLAN. THE INTENT OF THIS PLAN IS TO MINIMIZE EROSION AND PREVENT SEDIMENT – LADEN RUNOFF FROM DISCHARGING BEYOND THE LIMITS OF CONSTRUCTION OR TO SENSITIVE NATURAL RESOURCES. BMPS SHALL BE INSTALLED AS CLOSELY AS POSSIBLE TO THE LOCATIONS INDICATED ON THE PLANS; HOWEVER DEVIATIONS MAY BE REQUIRED TO ADDRESS AFOREMENTIONED LIMITATIONS AND SITE–SPECIFIC CONDITIONS AND PROTECT THE ENVIRONMENT.

PROJECT DESCRIPTION

THIS PROJECT WILL CONSIST OF 2 PHASES OF CONSTRUCTION. AMAZON PLANS TO INSTALL 99 LEVEL 2 ELECTRIC VEHICLE (EV) CHARGERS DURING PHASE 1 OF CONSTRUCTION. ASSOCIATED ELECTRICAL GEAR WITH CONCRETE PADS, CONDUCTORS, AND BOLLARDS WILL BE INSTALLED.

ESTIMATED CONSTRUCTION SCHEDULE – START: TBD

DEVELOPMENT TEAM

TENANT
AMAZON.COM SERVICES, INC.
410 TERRY AVENUE NORTH
SEATTLE, WA 98109

C.M. CONTACT: JOSHUA GATES
PHONE: 520.907.2766
EMAIL: JOSHGATE@AMAZON.COM

CIVIL ENGINEER
CIVIL & ENVIRONMENTAL CONSULTANTS OF NEW YORK, INC.
908 NIAGARA FALLS BOULEVARD, SUITE 203
NORTH TANAWANDA, NY 14120

CONTACT: ETHAN BRICE
PHONE: 412.275.2974
EMAIL: EBRICE@CECINC.COM

ELECTRICAL
EMANUELSON-PODAS, INC.
7705 BUSH LAKE ROAD
EDINA, MN 55439

CONTACT: TOM ROBERTS
PHONE: 952-255-6212
EMAIL: TROBERTS@EPINC.COM

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19–5589–CESO–200 Oritani–Blauvelt NY Preliminary–04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1–Permit Set–Ext Building Permit–Rev0–20220810; CAD FILE NAME: DXY4_E1–Site Concept–Rev3–20221010.DWG, DATED: 8/10/2022.

Dig Safely. New York
Call 811
before you dig

NEW YORK LAW REQUIRES AT LEAST 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE – STOP CALL DIG SAFELY NEW YORK, INC. 1–800–962–7962.

NEW YORK STATE CODE RULE 753 (1997) AS AMENDED IN JULY 2002 AND JANUARY 2012 REQUIRES NO LESS THAN 2 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF NEW YORK, SUBMIT A REQUEST ONLINE VIA DIG SAFELY NEW YORK'S ENTRY PLATFORM EXACTIX OR CALL TOLL FREE 1–800–962–7962.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

PRELIMINARY
NOT FOR CONSTRUCTION

02/01/2023

REVISION RECORD

NO	DATE	DESCRIPTION
0	02/01/2023	PERMIT DRAWING SET

Civil & Environmental Consultants of New York, Inc.
908 Niagara Falls Boulevard · North Tonawanda, NY 14120
Ph: 716.930.6080
www.cecinc.com

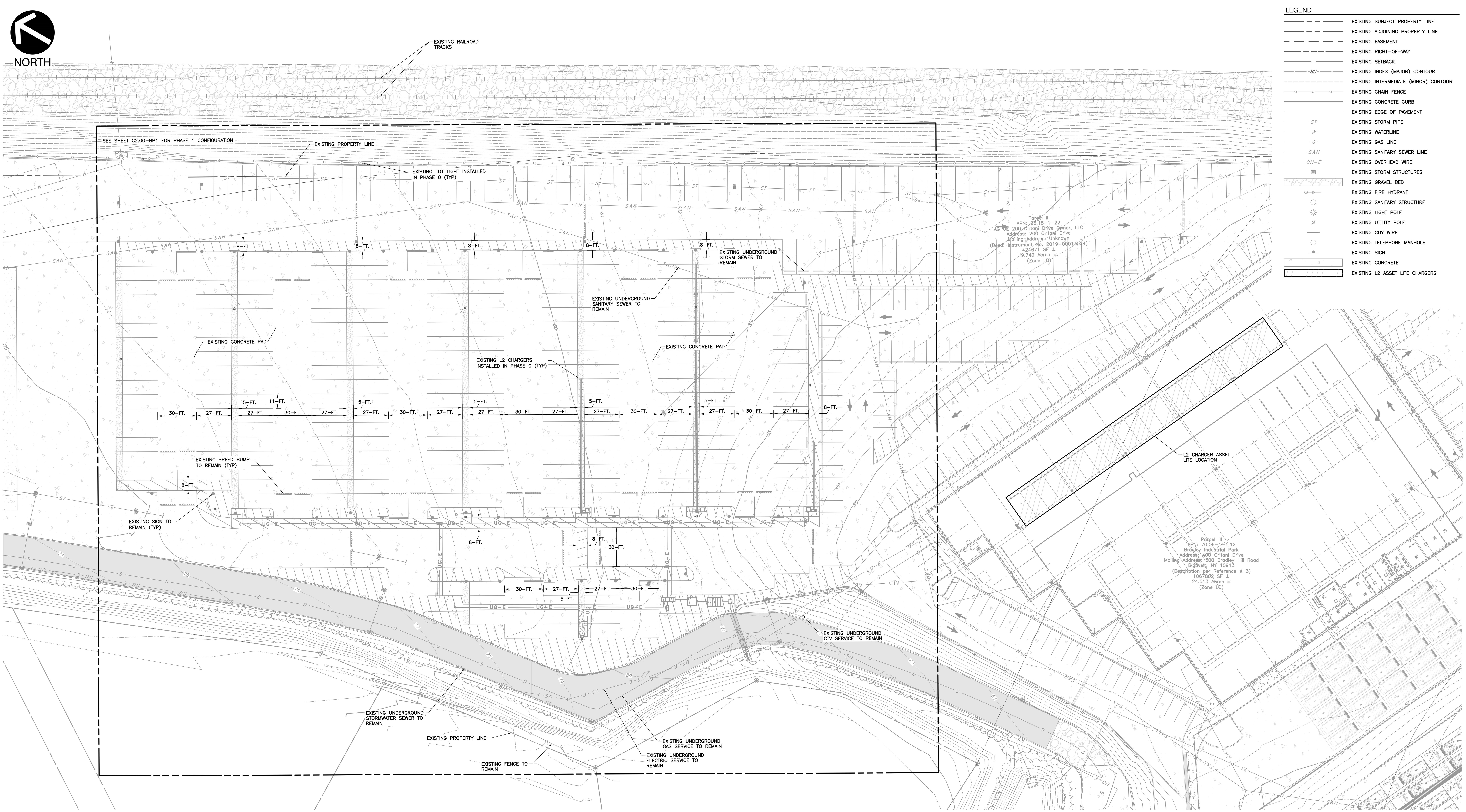
AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

COVER SHEET

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	AS SHOWN	CHECKED BY:	EJB
PROJECT NO:	325-198		
APPROVED BY:	EJI		

DRAWING NO.:
G0.00-BP1

P:\320-000\325-198\-CADD\Dwg\CV02\325198-CV02-G0.0.dwg{G0.0



DEMOLITION GENERAL NOTES

1. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. REPAIR DAMAGE ACCORDING TO THE APPROPRIATE UTILITY COMPANY STANDARDS AND AT THE CONTRACTOR'S EXPENSE.
2. THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR OBTAINS PRIOR WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
3. EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND SHALL FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
4. ASBESTOS OR HAZARDOUS MATERIALS ARE NOT EXPECTED. IF FOUND ON SITE, SUCH MATERIALS SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
5. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
6. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
9. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
10. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITY.
12. CONTRACTOR SHALL COORDINATE SIGNAGE AND SITE LIGHTING WITH PLANS BY OTHERS.

UTILITY GENERAL NOTES

1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE UTILITY COMPANY SPECIFICATIONS. CONTRACTOR SHALL COORDINATE UTILITY DISCONNECTIONS WITH THE APPROPRIATE AGENCY.
2. THE CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. SHOULD UNCHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INSTRUCTIONS. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE EXISTING UTILITIES CONFLICTING WITH IMPROVEMENTS SHOWN HEREON IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED UTILITY WORK PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. ALL TRENCH SPOILS BECOME THE PROPERTY OF THE CONTRACTOR. UNLESS OTHERWISE DESIGNATED, ALL TRENCH SPOILS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
5. THE CONTRACTOR IS TO PROVIDE RECORD DRAWINGS OF ALL IMPROVEMENTS. INCLUDE AT LEAST TWO DIMENSIONS TO EACH VALVE AND MANHOLE FROM KNOWN SITE FEATURES. DRAWINGS SHALL INCLUDE HORIZONTAL AND VERTICAL INFORMATION ON ALL NEW UTILITIES AS WELL AS EXISTING UTILITIES ENCOUNTERED.
6. CONTRACTOR IS TO COORDINATE WITH EACH UTILITY PROVIDER REGARDING INSTALLATION OF UTILITY CONDUITS FOR ELECTRICAL WORK. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR THE TRENCHING AND CONDUIT INSTALLATION. COST FOR INSTALLATION AND MATERIALS SHALL BE INCLUDED IN VARIOUS BID ITEMS.

CONSTRUCTION WASTE RECYCLING/DISPOSAL

CONSTRUCTION WASTES ARE REFUSE MATERIALS THAT ARE EXISTING ON-SITE OR GENERATED DURING THE COURSE OF CONSTRUCTION AND INCLUDE, BUT ARE NOT LIMITED TO, PAPER, PLASTIC, RUBBER, WOOD, TEXTILE, AND METAL PRODUCTS.

INSTALLATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING WASTE RECYCLING/DISPOSAL AREAS ON THE E&S PLAN ONCE THEY HAVE BEEN DETERMINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL WASTE RECYCLING/DISPOSAL PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MAINTENANCE: ALL CONSTRUCTION WASTE SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AT A STATE-APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL/STATE CODES AND PERMIT REQUIREMENTS. THE BURNING OF WASTE MATERIALS WILL NOT BE PERMITTED.

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

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SCALE IN FEET
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NEW YORK LAW REQUIRES AT LEAST 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE – STOP CALL DIG SAFELY NEW YORK, INC. 1-800-962-7962.

NEW YORK STATE CODE RULE 753 (1997) AS AMENDED IN JULY 2002 AND JANUARY 2012 REQUIRES NO LESS THAN 2 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF NEW YORK, SUBMIT A REQUEST ONLINE VIA DIG SAFELY NEW YORK'S ENTRY PLATFORM EXACTIX OR CALL TOLL FREE 1-800-962-7962.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION RECORD

NO	DATE	DESCRIPTION
0	02/01/2023	PERMIT DRAWING SET

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908 Niagara Falls Boulevard · North Tonawanda, NY 14120
Ph: 716.930.6080
www.cecinc.com

AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

EXISTING CONDITIONS PLAN

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	1" = 30'	CHECKED BY:	EJB
PROJECT NO:	325-198	APPROVED BY:	EJI

DRAWING NO.:
C1.00-BP1

02/01/2023

P:\320-000\325-198\-CADD\Dwg\CV02\325198-CV02-C1.0.dwg{C1.00-BP1}

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CHAIN FENCE
- EXISTING CONCRETE CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STORM PIPE
- EXISTING WATERLINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING OVERHEAD WIRE
- EXISTING STORM STRUCTURES
- EXISTING GRAVEL BED
- EXISTING FIRE HYDRANT
- EXISTING SANITARY STRUCTURE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING TELEPHONE MANHOLE
- EXISTING SIGN
- PROPOSED DUAL L2 CHARGER
- PROPOSED SINGLE L2 CHARGER
- PROPOSED SINGLE L3 CHARGER
- PROPOSED CONCRETE ENCASED PIPE BOLLARD
- PROPOSED BOLT-DOWN BOLLARD
- PROPOSED ABOVEGROUND CONDUIT RACK
- SALVAGED FENCE
- PROPOSED ABOVEGROUND ELECTRICAL CONDUIT
- PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- PROPOSED CHARGER INSTALL AREA
- DETAIL NUMBER
- DRAWING DESIGNATION
- CHARGER COUNT

NOTES

1. CONTRACTOR TO FIELD VERIFY AND PROTECT EXISTING UTILITIES DURING INSTALLATION OF EQUIPMENT AND BOLLARDS.
2. INSTALL L2 AND L3 CHARGERS PER MANUFACTURERS RECOMMENDATIONS.
3. REFER TO ELECTRICAL DRAWINGS PREPARED BY EMANUELSON-PODAS FOR ADDITIONAL EV CONDUIT AND ELECTRICAL EQUIPMENT INFORMATION.
4. INSTALL EROSION AND SEDIMENTATION CONTROLS AS NEEDED TO PREVENT SEDIMENT FROM MIGRATING BEYOND THE PROJECT SITE.
5. CONTRACTOR TO COORDINATE SITE SIGNAGE AND STRIPING WITH PLANS PREPARED BY CESO, INC.

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

EV CHARGER INSTALL TABLE

CHARGER TYPE	*AMZL REQUESTED INITIAL OFF-PEAK CHARGER STALL COUNT	PROPOSED PHASE 0 CHARGER STALL COUNT	PROPOSED PHASE 1 CHARGER STALL COUNT	EXISTING ASSET LITE CHARGER STALL COUNT	PROPOSED OFF-PEAK CHARGER STALL COUNT	AMZL PEAK CHARGER STALL COUNT
L2 CHARGERS (INITIAL OFF-PEAK)	189	58	99	20	177	298
L3 CHARGERS (INITIAL OFF-PEAK)	8	4	0	-	4	4

EV CHARGER POST TABLE

PEDESTAL	PHASE 0 COUNT	PHASE 1 COUNT
DUAL-MOUNTED L2	28	47
SINGLE-MOUNTED L2	2	5
DUAL-PORT L3	2	0

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PRELIMINARY
NOT FOR CONSTRUCTION

REVISION RECORD

NO	DATE	DESCRIPTION
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AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

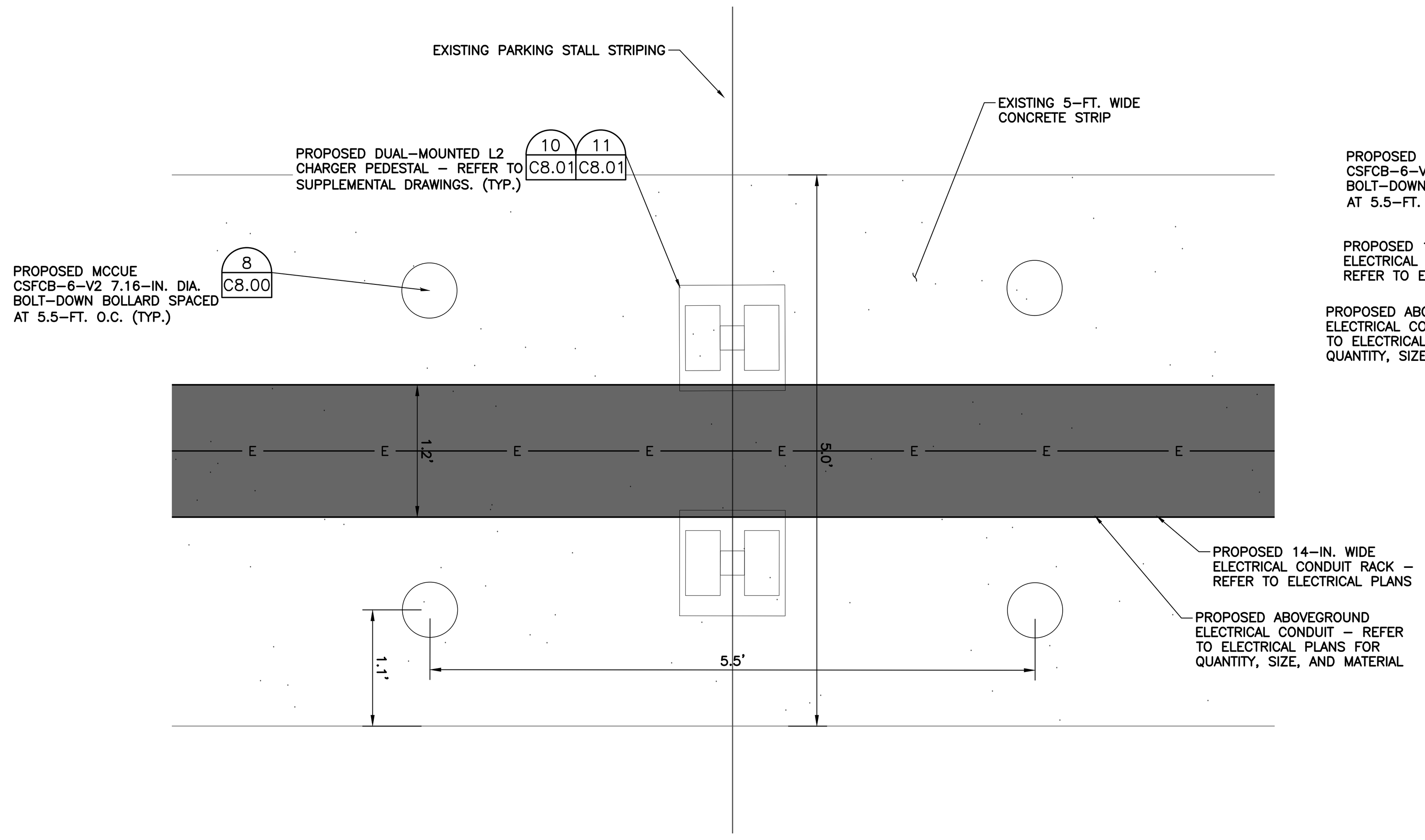
EV CHARGER INSTALLATION SITE PLAN

DATE: NOVEMBER 23, 2022
DWG SCALE: 1" = 20'
PROJECT NO: 325-198
DRAWN BY: RCS
CHECKED BY: EJB
APPROVED BY: EJI

DRAWING NO.: C2.00-BP1

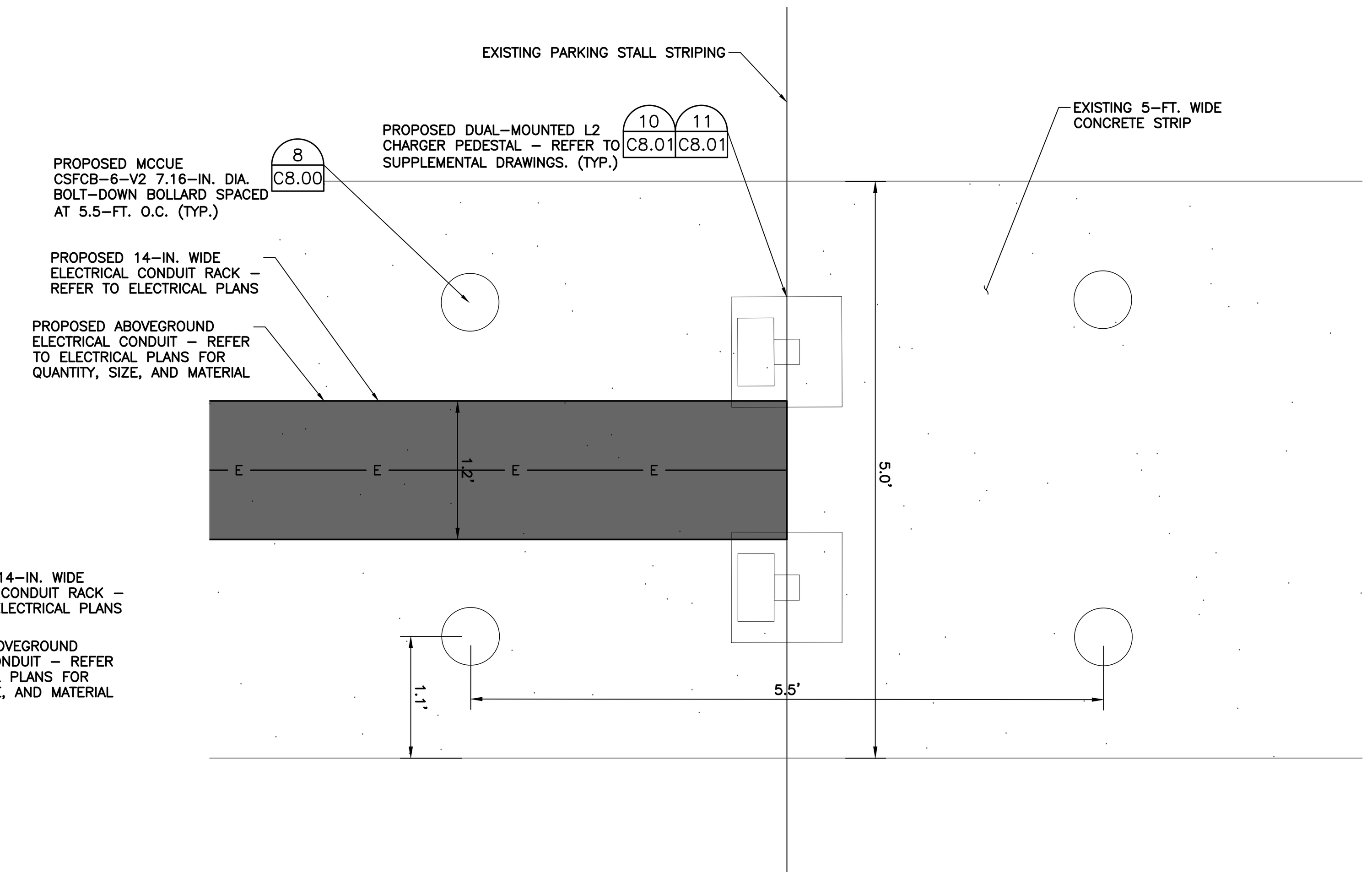
02/01/2023

P:\320-000\325-198\-CADD\Dwg\CV02\325198-CV02-C2.0.dwg{C2.00-BP1} LS:(2/22/2023 - nthrop) - LP: 2/22/2023 9:03 AM



1 C8.00 **TYPICAL LEVEL 2 DUAL-MOUNTED CHARGER WITH BOLT-DOWN BOLLARD PROTECTION**

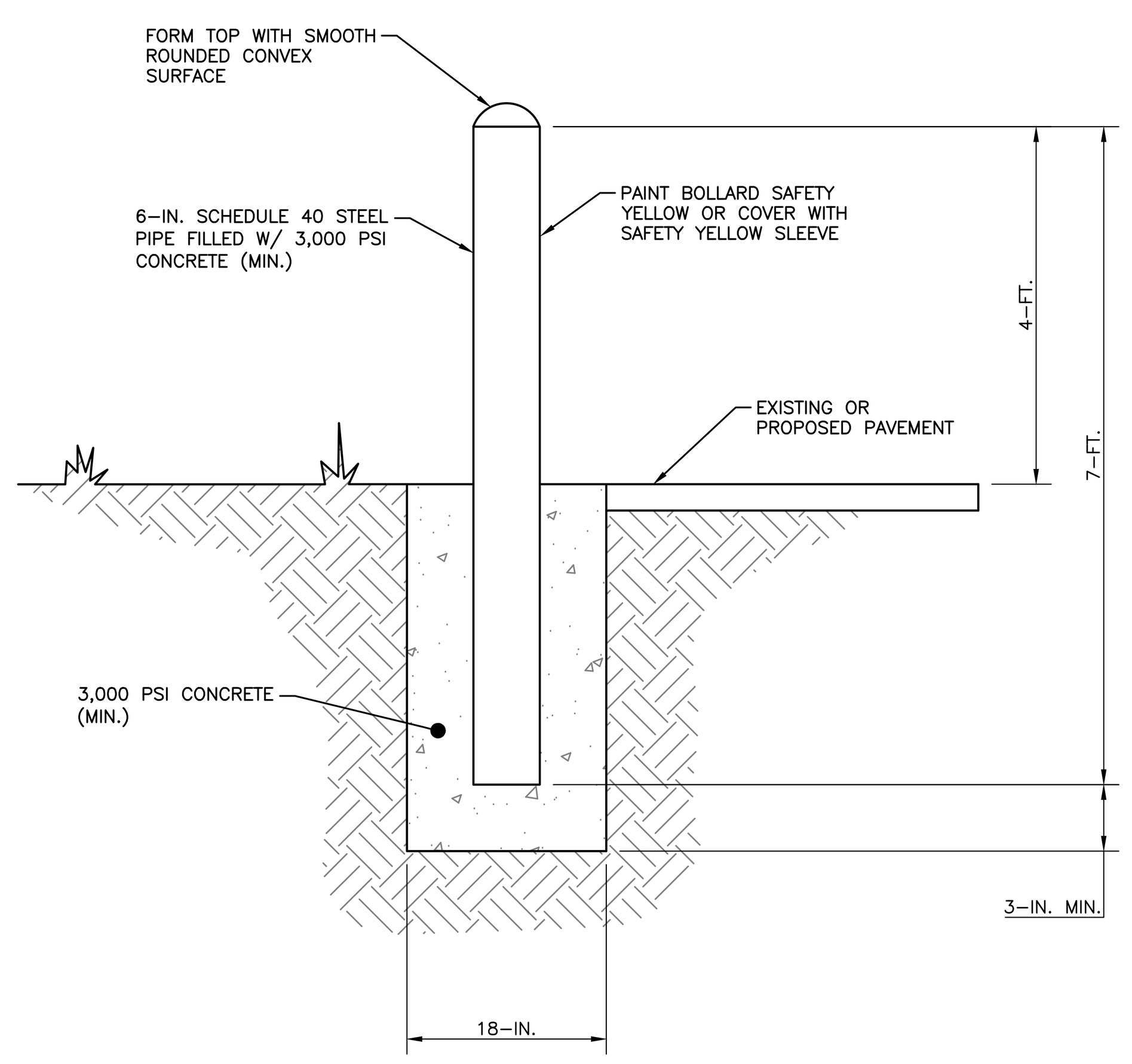
SCALE IN FEET 0 1 2



2 C8.00 **TYPICAL LEVEL 2 SINGLE-MOUNTED CHARGER WITH BOLT-DOWN BOLLARD PROTECTION**

SCALE IN FEET 0 1 2

3 C8.00 **DETAIL NOT USED**



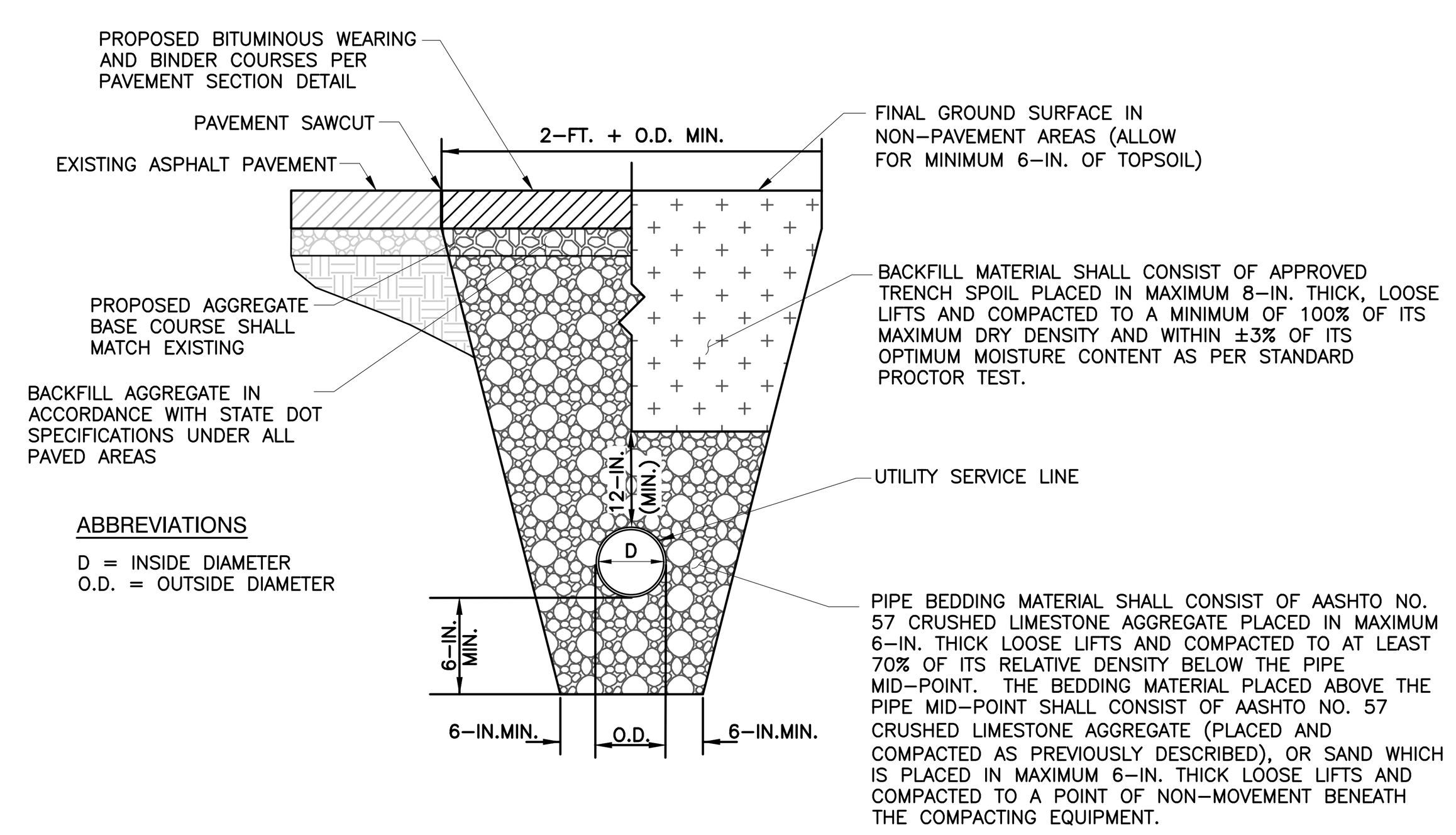
4 C8.00 **6-IN. DIA. PIPE BOLLARD DETAIL**

NOT TO SCALE

COVER REQUIREMENTS

UTILITY	MINIMUM COVER REQUIRED*
ELECTRIC CONDUITS	3.5-FT.

* AS MEASURED FROM TOP OF PIPE TO FINAL GROUND SURFACE



ABBREVIATIONS

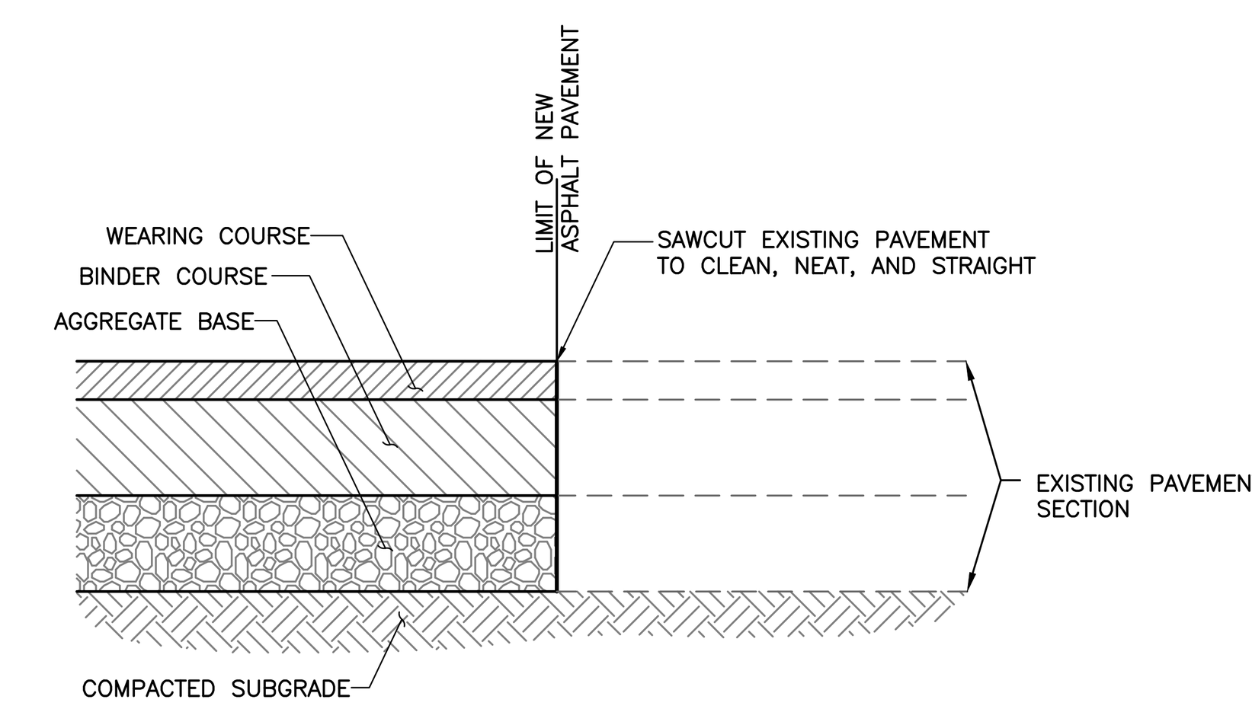
D = INSIDE DIAMETER
O.D. = OUTSIDE DIAMETER

NOTES

1. ALL MATERIALS EXCAVATED FROM THE UTILITY TRENCH SHALL BE STOCKPILED A MINIMUM SUFFICIENT DISTANCE FROM ALL TRENCHES TO PREVENT SLIDES OR CAVE-INS.
2. ALL BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER OR THEIR REPRESENTATIVE BEFORE BEING PLACED.
3. THE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT FOR THE BACKFILL MATERIALS SHALL BE DETERMINED BY ASTM D1557, AND THE RELATIVE DENSITY OF THE AASHTO NO. 57 AGGREGATE SHALL BE DETERMINED BY ASTM D4253 AND ASTM D4254.
4. THE CONTRACTOR SHALL CONSTRUCT THE UTILITY TRENCHES AND PROVIDE ADEQUATE SHORING (WHERE NECESSARY) IN CONFORMANCE WITH THE LATEST REQUIREMENTS FOR CONSTRUCTION STANDARD FOR EXCAVATIONS (29 CFR PART 1926.650-.652 SUBPART P) PROMULGATED BY OSHA.
5. THE CONTRACTOR SHALL VERIFY THAT THE MINIMUM SPECIFIED PIPE COVER IS PROVIDED BETWEEN THE FINAL GROUND SURFACE AND TOP OF PIPE BEFORE LAYING PIPE. PROVIDE A MINIMUM OF 2-FT. OF COVER ABOVE ALL PIPES DURING CONSTRUCTION.
6. INCREASE TRENCH WIDTH AS NECESSARY TO ALLOW FOR PROPER COMPACTION OF BEDDING/BACKFILL.
7. FURNISH AND INSTALL DETECTABLE WARNING TAPE FOR EACH UNDERGROUND UTILITY LINE, PER MANUFACTURER'S SPECIFICATIONS.
8. CONTRACTOR MAY PROPOSE A TRENCHLESS SOLUTION AS A VALUED ENGINEERING ALTERNATIVE TO OPEN CUT TRENCHING.

5 C8.00 **TYPICAL UTILITY TRENCH DETAIL**

NOT TO SCALE

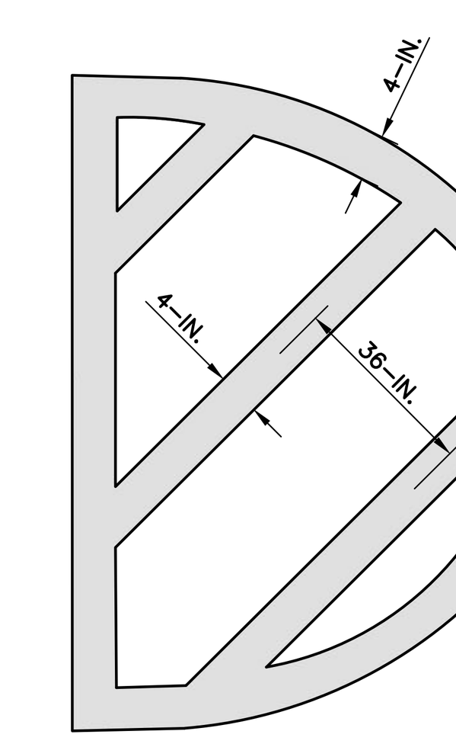


NOTE

1. PROVIDE TACK COAT ALONG SAWCUT TO BIND EXISTING PAVEMENT TO NEW PAVEMENT. FOR AREAS WITH PATCHING AND OVERLAY, PROVIDE TACK COAT TO BIND EXISTING PAVEMENT WITH NEW ASPHALT.

6 C8.00 **PAVEMENT SAWCUT DETAIL**

NOT TO SCALE



PG-10
TRAFFIC ISLAND – 4-IN. STRIPING OUTLINE AND HATCH

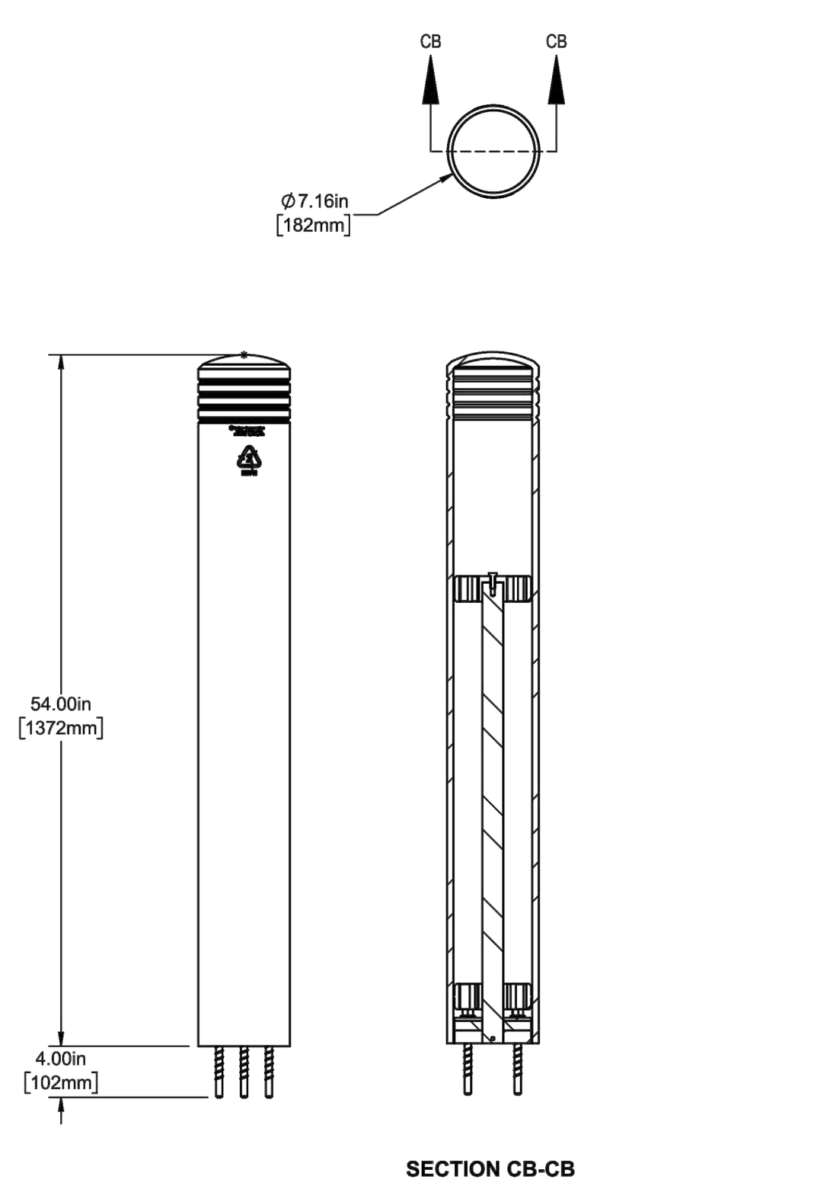
USE WHITE PAINT TO STRIPE PROHIBIT VEHICLE TRAVEL AND PARKING.

NOTES

1. REFER TO SITE PLAN SHEET C2.00-BP1 & C.200-BP2 FOR LOCATIONS OF PAVEMENT MARKINGS.
2. STRIPING SHALL BE INSTALLED IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. ALL STRIPING SHALL BE LONG LIFE EPOXY RESIN AND 4-INCHES WIDE UNLESS OTHERWISE NOTED.

7 C8.00 **PAVEMENT STRIPING DETAIL**

NOT TO SCALE



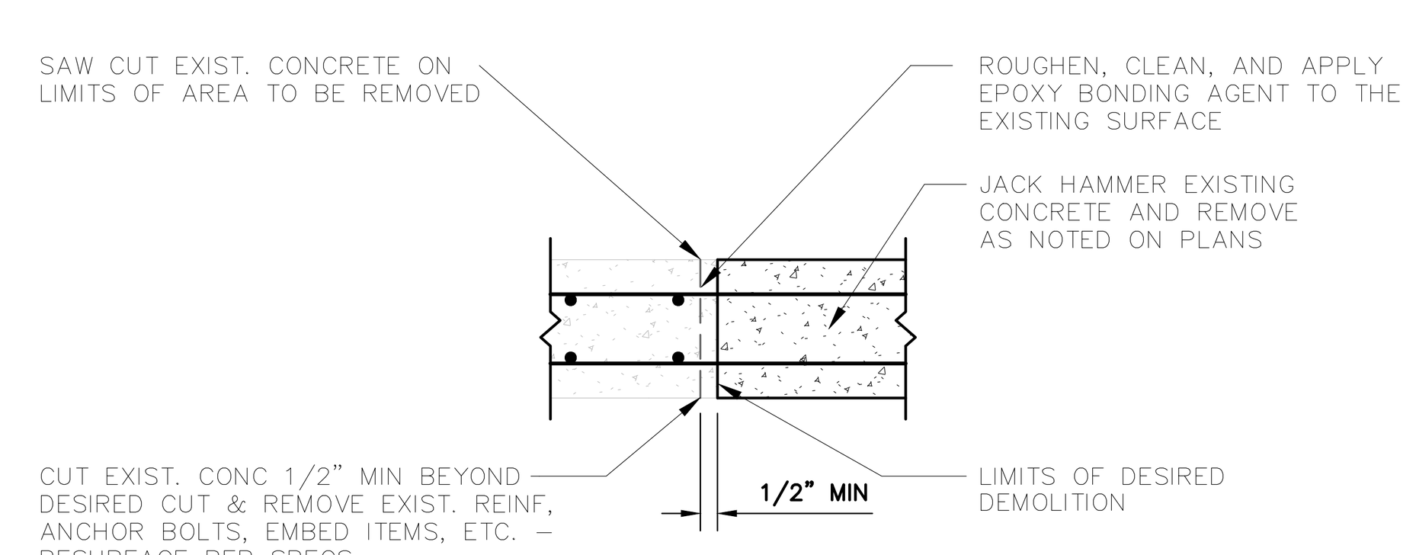
CSFCB-6-V2

NOTE

1. DETAIL PROVIDED BY AMAZON AND PREPARED BY MCCUE CORPORATION.

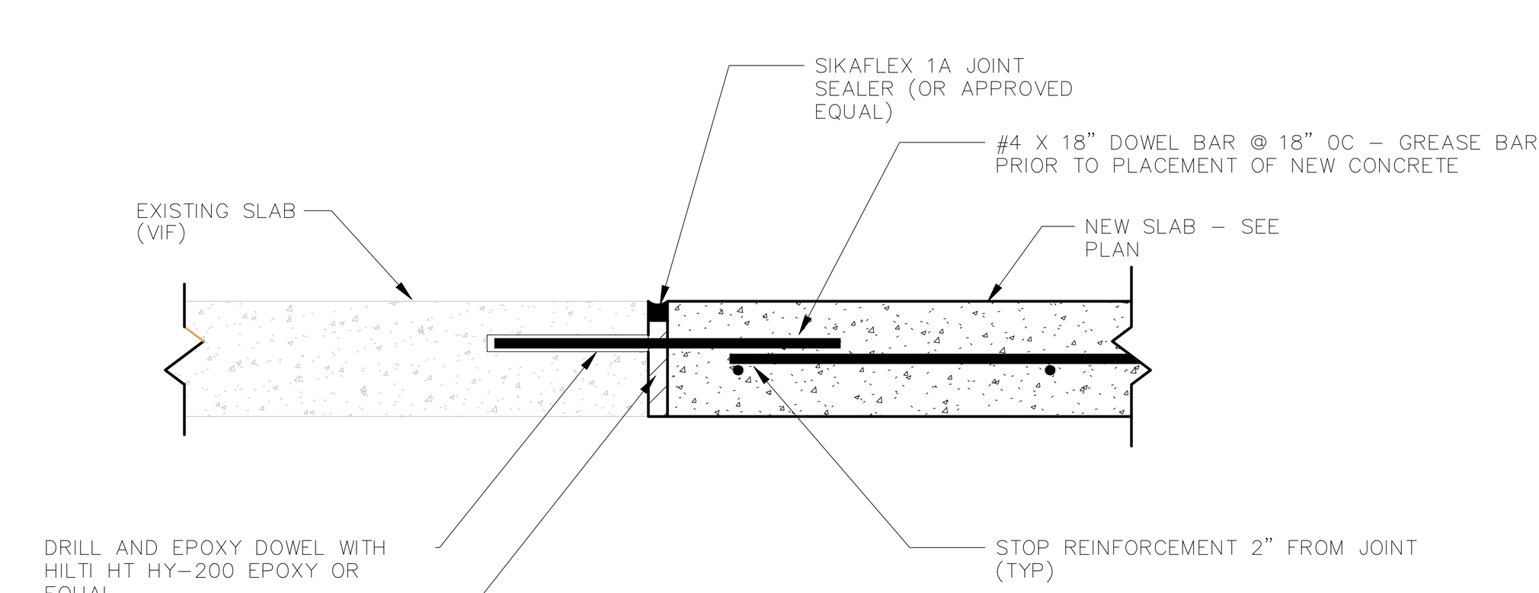
8 C8.00 **FLEXCORE BOLLARD DETAIL**

NOT TO SCALE



9A C8.00 **CONCRETE SAWCUT DETAIL**

NOT TO SCALE



9B C8.00 **NEW SLAB TO EXISTING SLAB**

NOT TO SCALE

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
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REVISION RECORD

NO	DATE	DESCRIPTION
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ORANGETOWN, NY 10913

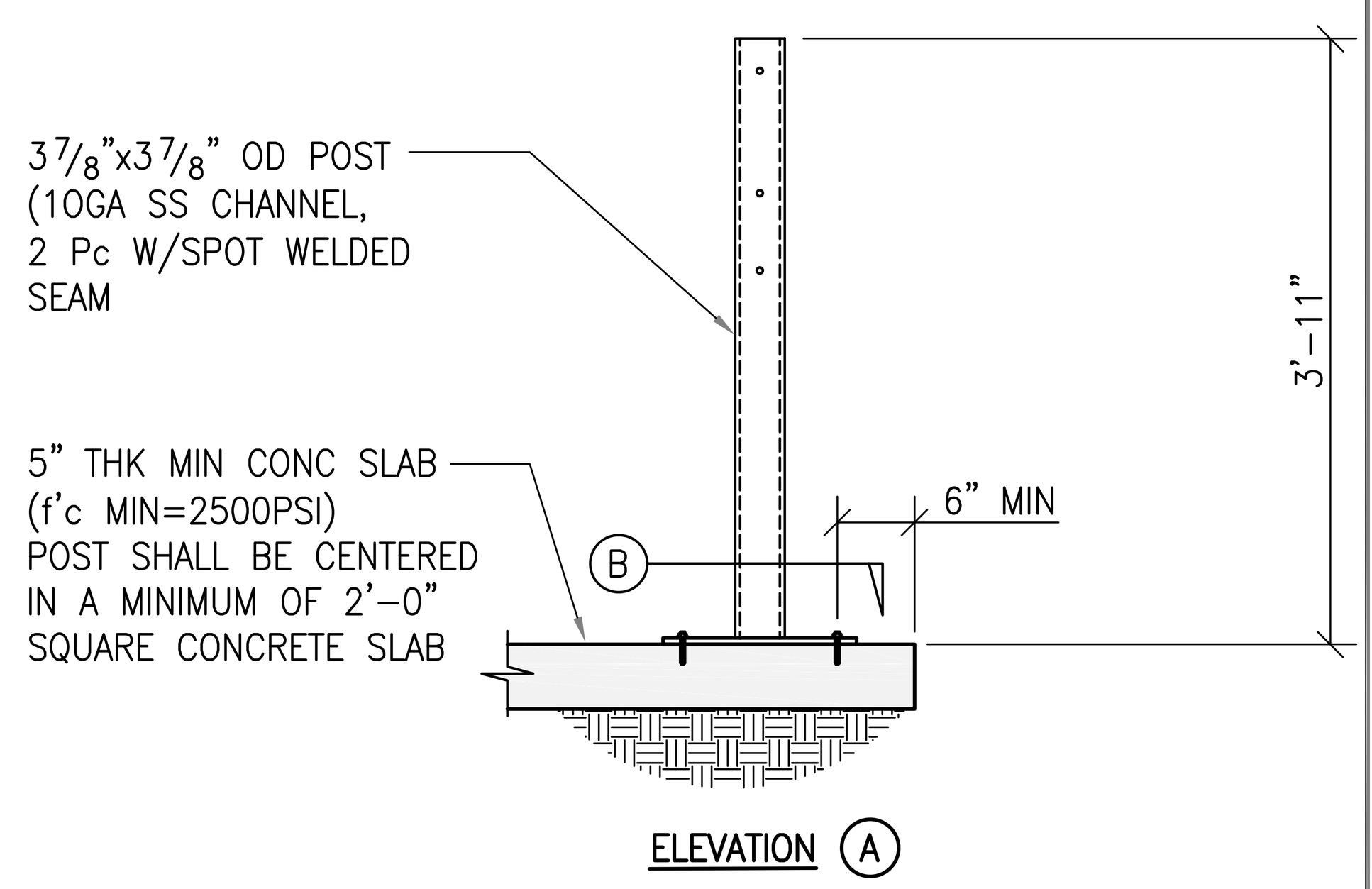
DETAIL SHEET (1 OF 3)

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	1" = 2'	CHECKED BY:	EJB
PROJECT NO:	325-198		
APPROVED BY:			EJI

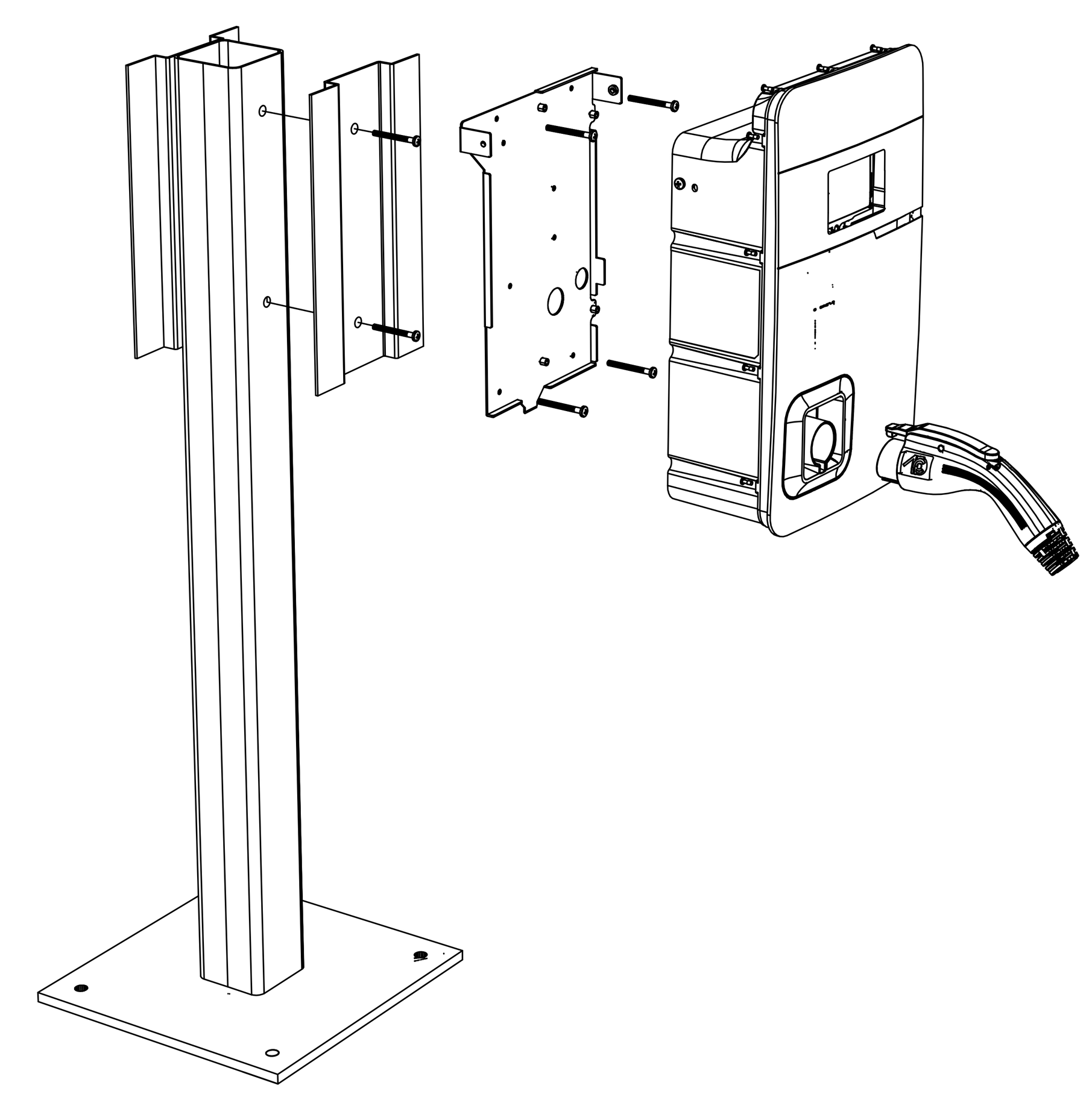
DRAWING NO.: **C8.00-BP1**

02/01/2023

P:\320-000\325-198\-CADD\Dwg\CV02\325198-CV02-C8.0.dwg{C8.00-BP1} LS:(2/2/2023 - rthmp) - LP: 2/2/2023 9:03 AM



PEDESTAL SIDE VIEW	NO SCALE	C



DUAL MOUNT PEDESTAL ISO VIEW	NO SCALE	E

STRUCTURAL STEEL AND MISCELLANEOUS METAL (ALL OTHER STEEL) WELDING

1. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WELD SIZE SHALL BE AISC MINIMUM UNLESS A LARGER SIZE IS NOTED. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE FULL LENGTH OF JOINT.
2. ALL WELDING ELECTRODES AND ELECTRODE FLUX COMBINATIONS (FILLER METAL) SHALL BE 304/304L, 316L (MINIMUM 70 KSI), UNLESS NOTED OTHERWISE, AND SHALL MEET THE REQUIREMENTS FOR H16 PER AISC SEISMIC PROVISIONS.
3. ALL WELDS SHALL HAVE A FILLER METAL WITH CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AVERAGE ZERO DEGREES FAHRENHEIT AND 40FT-LBS AT SEVENTY DEGREES FAHRENHEIT FOR LOWEST ANTICIPATED SERVICE TEMPERATURE (LAST) OF +50°F. FOR LAST LESS THAN +50°F, SEE AWS D1.8 SUBCLAUSE 6.3.6. CERTIFY CONFORMANCE TO CHARPY V-NOTCH TOUGHNESS REQUIREMENTS WITH TESTS BY AN INDEPENDENT TESTING LABORATORY.
4. GMAW AND FCAW-G WELDING PROCESSES SHALL NOT BE PERMITTED WHEN WIND SPEED EXCEEDS 3 MPH.
5. WHERE WELDING IS NOTED, THE DESIGNATION IS GIVEN AS A SUGGESTED CONSTRUCTION PROCEDURE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR IDENTIFYING THE METHOD OF FABRICATION.
6. FACES OF FILLET WELDS EXPOSED TO VIEW SHALL HAVE AS-WELDED SURFACES THAT ARE REASONABLY SMOOTH AND UNIFORM. NO FINISHING OR GRINDING SHALL BE REQUIRED, EXCEPT WHERE CLEARANCES OR FIT OF OTHER ITEMS MAY SO NECESSITATE.
7. WORK MUST BE DONE UNDER THE SUPERVISION OF MACDONALD-MILLER FACILITY SOLUTIONS, LLC.
8. THIS ENGINEERING MAY NOT BE USED WITHOUT THE EXPRESS AUTHORIZATION FROM JOHN A. MARTIN AND ASSOCIATES, INC AND MACDONALD-MILLER FACILITY SOLUTIONS, LLC.
9. PEDESTAL IS NOT DESIGNED TO WITHSTAND STRIKE BY VEHICLE AND MUST BE PROTECTED BY BOLLARDS OR OTHER MEANS.

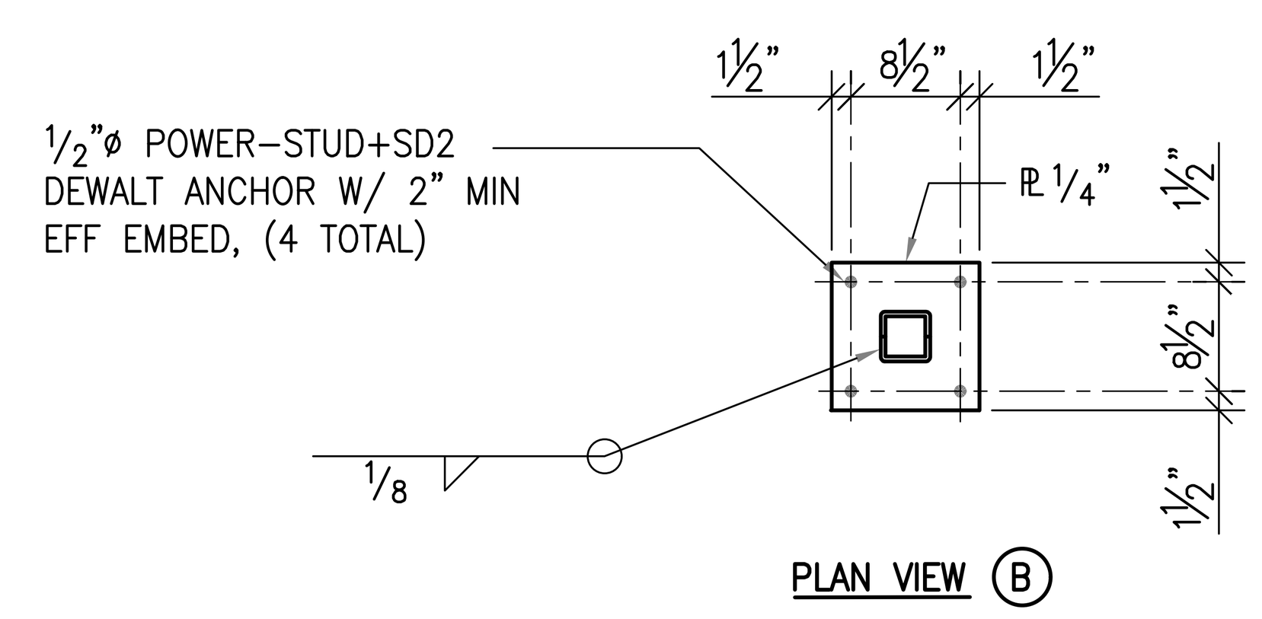
STRUCTURAL STEEL AND MISCELLENEOUS METAL (ALL OTHER STEEL)

1. ALL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND THE LATEST EDITION OF AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS. WHERE THE STRUCTURAL STEEL IS EXPOSED AND INDICATED AS 'AESS' ON PLANS OR DETAILS, FABRICATION AND ERECTION SHALL ALSO BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION AS INDICATED BELOW UNLESS NOTED OTHERWISE:

STEEL ANGLES AND CHANNELS	A36 UNO, STAINLESS STEEL
ALL OTHER STRUCTURAL SECTIONS	A572, GRADE 50
HARDENED (FLAT OR BEVELED) WASHERS	F436
PLAIN, UNHARDENED WASHERS	F844

3. BOLT HOLES IN STEEL SHALL BE STANDARD HOLES, 1/16 INCH LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE. BOLT HOLES IN BASE PLATES MAY BE OVERSIZED PER AISC MANUAL TABLE 14-2 IF WASHERS ARE PROVIDED IN ACCORDANCE WITH THIS TABLE.

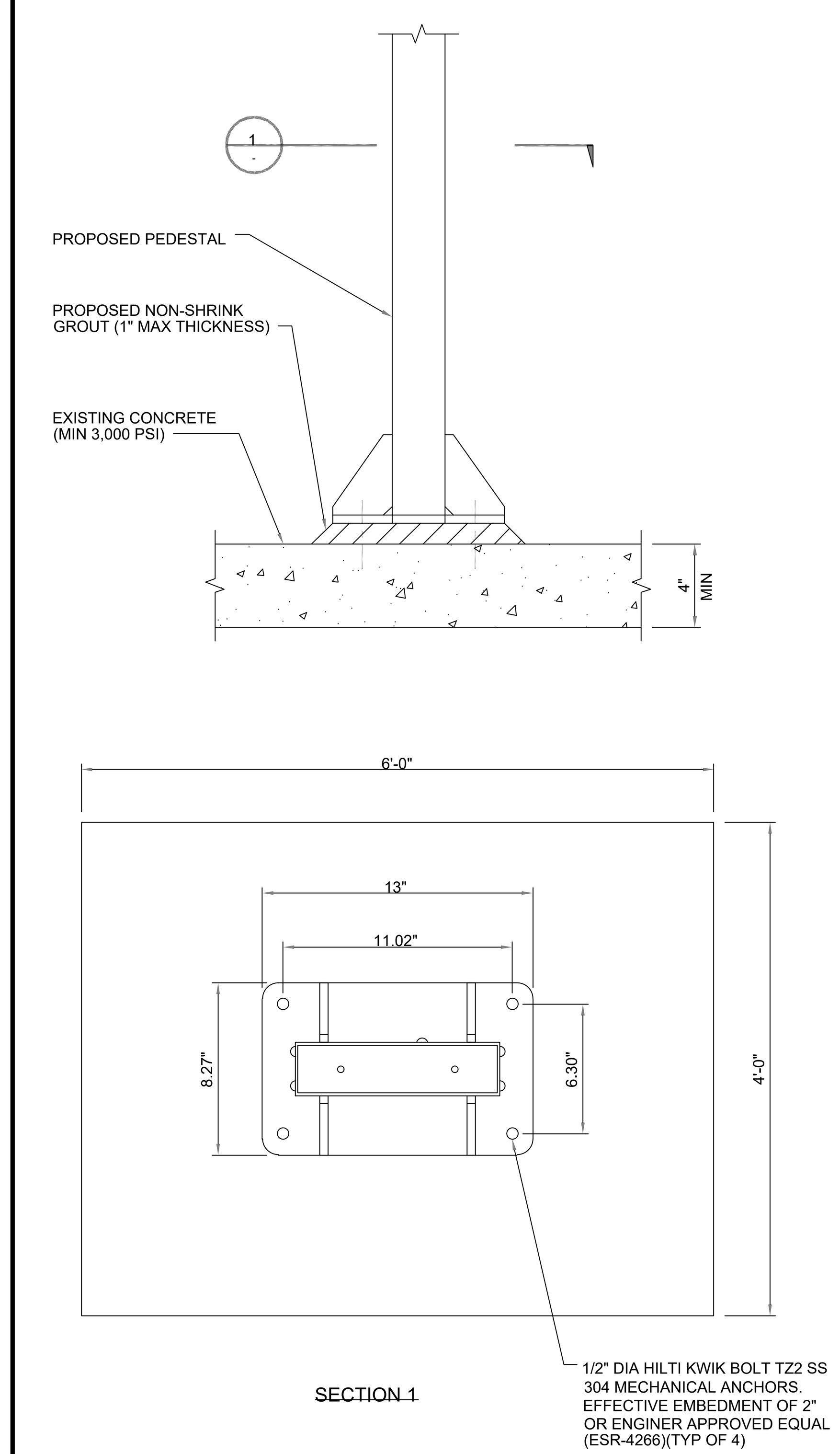
GENERAL NOTES	NO SCALE	B



PEDESTAL TOP VIEW	NO SCALE	D

NOTE
1. DETAIL PROVIDED BY AMAZON AND PREPARED BY OTHERS. AMAZON IS RESPONSIBLE FOR PROCUREMENT OF PEDESTALS.

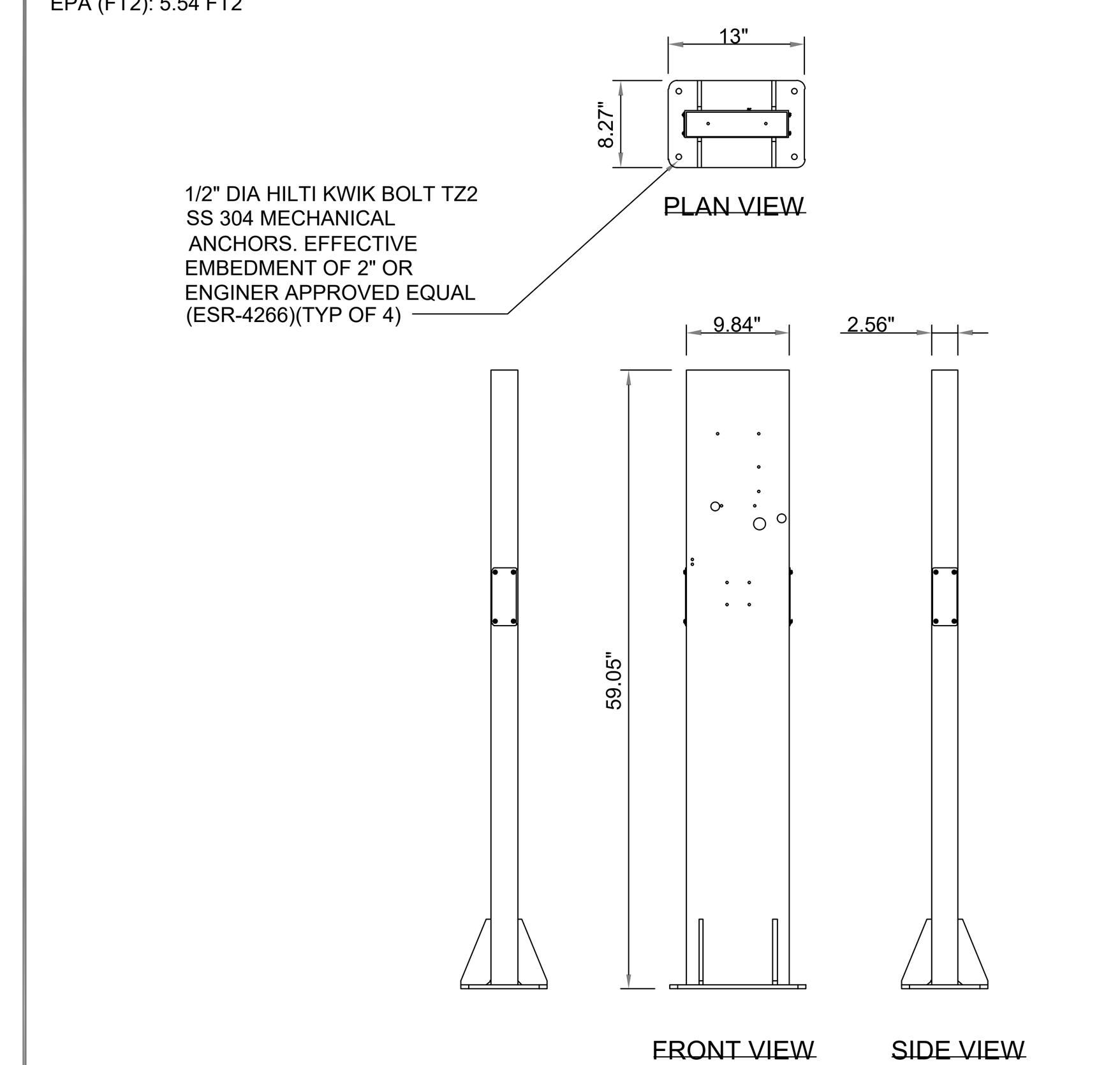
10 / C8.01 **LEVEL 2 CHARGER PEDESTAL BASE DETAILS**
NOT TO SCALE



NOTES
1. MINIMUM 6" CONCRETE EDGE DISTANCE FOR PROPOSED ANCHORAGE.
2. THE EXISTING CONCRETE IS ASSUMED TO MEET MINIMUM STEEL REQUIREMENTS.

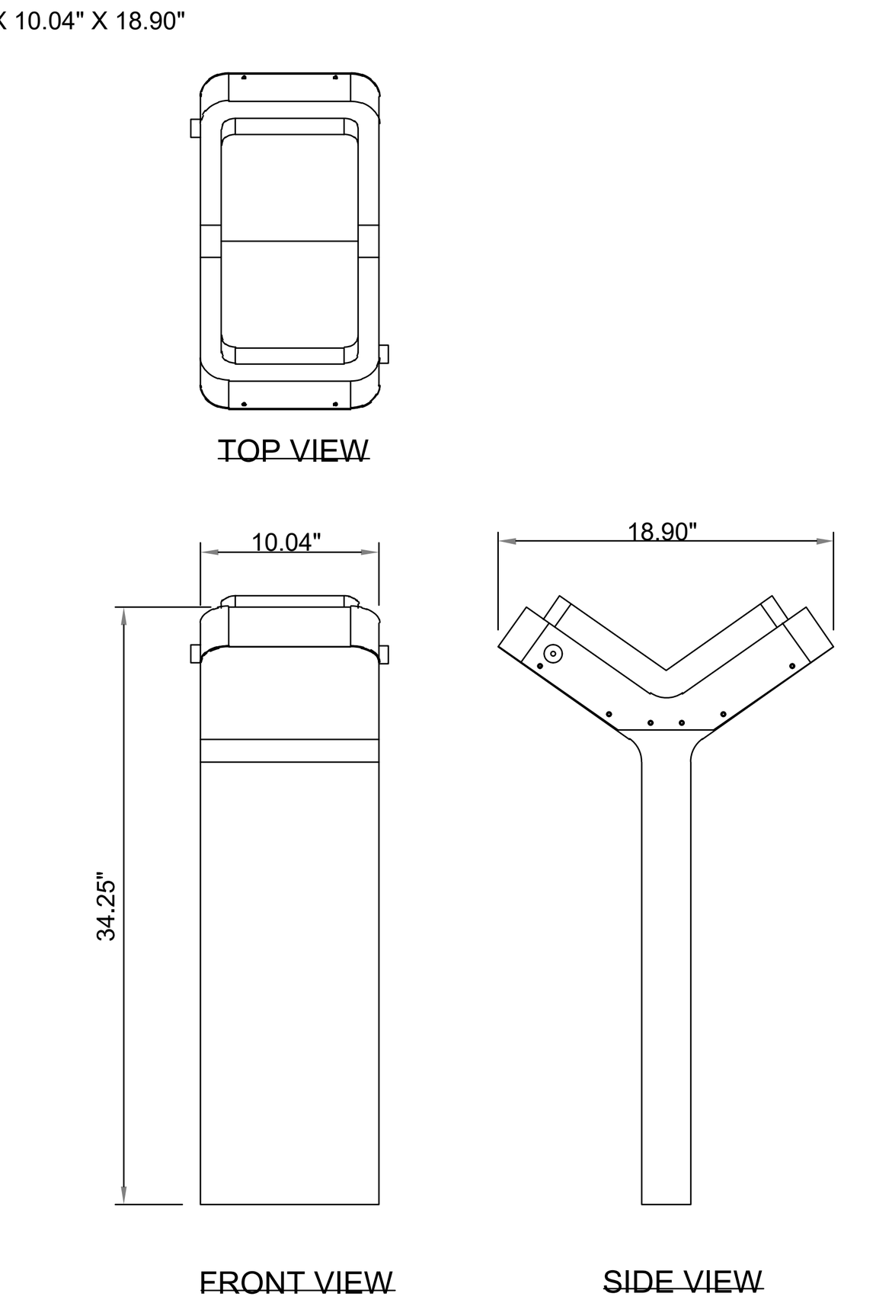
PEDESTAL INSTALLATION DETAIL	NO SCALE	C

WEIGHT: 65 LBS (ASSUMED)
DIMENSIONS (H X W X D): 59.05" X 9.84" X 2.56"
EPA (FT2): 5.54 FT2



DUAL MOUNT PEDESTAL (NO CABLE MANAGEMENT)	NO SCALE	D

WEIGHT: 30.87 LBS
DIMENSIONS (H X W X D): 34.25" X 10.04" X 18.90"
EPA (FT2): 4.5 FT2



DUAL MOUNT PEDESTAL (WITH CABLE MANAGEMENT)	NO SCALE	E

NOTE
1. DETAIL PROVIDED BY AMAZON AND PREPARED BY OTHERS. AMAZON IS RESPONSIBLE FOR PROCUREMENT OF PEDESTALS.

11 / C8.01 **LEVEL 2 CHARGER PEDESTAL BASE ALTERNATIVE DETAILS**
NOT TO SCALE

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritoni-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION RECORD

NO	DATE	DESCRIPTION
0	02/01/2023	PERMIT DRAWING SET

Civil & Environmental Consultants of New York, Inc.
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AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

DETAIL SHEET (2 OF 3)

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	AS SHOWN	CHECKED BY:	EJB
PROJECT NO:			325-198
APPROVED BY:			EJI

DRAWING NO.: **C8.01-BP1**

GENERAL NOTES

1. THESE GENERAL NOTES REPRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING USER'S CONVENIENCE. HOWEVER, ALL CONSTRUCTION DOCUMENTS SHOULD BE REVIEWED FOR FURTHER DETAILS AND REQUIREMENTS.
2. ALL REFERENCES TO REFERENCE STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE IN CONSTRUCTION DOCUMENTS OR ON THE DRAWINGS.
3. ELEVATIONS SHOWN ARE RELATIVE TO THE F.F.E. (i.e., F.F.E. = 0').
4. WORK THESE DRAWINGS WITH THOSE PREPARED BY OTHER DISCIPLINES: CIVIL, MEP, AND MANUFACTURER'S RECOMMENDATIONS.
5. THE LOCATIONS OF THE INSTALLATION OF THIS PRODUCT VARIES. UPON DETERMINATION OF THE SITE LOCATION, THE EOR WILL REVIEW THE DESIGN AND DETAILS IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING PERMITS AND SCHEDULING/ACCOMMODATING ALL REQUIRED INSPECTIONS PERTAINING TO THE BUILDING PERMITS.
6. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED ON CONSTRUCTION DOCUMENTS.
7. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, ETC. THAT MAY BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
8. THIS ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES. THIS INCLUDES SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK AND ACTS OR OMISSIONS OF THE CONTRACTOR, THEIR SUBCONTRACTORS, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF THESE PERSONS TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DESIGN CODES

BUILDING CODE	ICC INTERNATIONAL BUILDING CODE, 2018 EDITION
CONCRETE – STRUCTURAL	ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
LOADING	ASCE 7 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES
REINF PLACEMENT	CRSI PLACING REINFORCING BARS
REINF DETAILING	CRSI REINFORCING BAR DETAILING
REINFORCING	CRSI MSP-2-01 MANUAL OF STANDARD PRACTICE
REINF DETAILING	ACI SP-66 ACI DETAILING MANUAL
STRUCTURAL STEEL	AISC STEEL CONSTRUCTION MANUAL, 14TH EDITION
STEEL WELDING	AWS D1.1 STRUCTURAL WELDING CODE – STEEL

DESIGN CRITERIA

RISK CATEGORY	II
DEAD LOADS	
L2 CHARGER SELF-WEIGHT	60 LBS
L2 (ALTERNATE) SELF-WEIGHT	126 LBS
L3 CHARGER (50 kW) SELF-WEIGHT	364 LBS
SEISMIC LOADS	
SEISMIC DESIGN CATEGORY	C
SITE CLASS	D (ASSUMED)
IMPORTANCE FACTOR	1.0
TOTAL SEISMIC MASS:	
L2 CHARGER	50 LBS
L2 (ALTERNATE) CHARGER	105 LBS
L3 CHARGER (50 kW)	303 LBS
WIND LOADS	
ULTIMATE WIND SPEED	130 MPH
WIND EXPOSURE	C

NOTE: THE DESIGN CRITERIA ABOVE REPRESENTS BASIC LOADING ASSUMPTIONS WHERE THE RISK CATEGORY DOES NOT EXCEED CATEGORY II. WHERE THE DESIGN LOADING IS HIGHER, BASED ON THE LOCATION OF INSTALLATION OR THE AHJ, THE DETAILS HEREIN SHALL BE EVALUATED AND REDESIGNED TO ACCOMMODATE NEW DESIGN LOADS. THIS SYSTEM IS NOT DESIGNED FOR VEHICLE IMPACT SINCE THEY ARE PROTECTED BY BOLLARDS OR OTHER MEANS AS DESIGNATED BY CIVIL.

DEMOLITION NOTES

1. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE IF THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF THE REPORT OF GEOTECHNICAL INVESTIGATION. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD BY THE CONTRACTOR.
3. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
4. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
5. EROSION & SEDIMENT CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE PROPERLY INSTALLED AND FUNCTION PROPERLY PRIOR TO INITIALIZATION OF DEMOLITION ACTIVITIES.
6. CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL AND OSHA REGULATIONS DURING ALL DEMOLITION ACTIVITIES.
7. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
9. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
10. ALL UTILITY AND STRUCTURE REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED AND PROPERLY DOCUMENTED BY A CERTIFIED PROFESSIONAL, WHEN APPLICABLE, WITH THE APPROPRIATE UTILITY COMPANY, MUNICIPALITY AND/OR AGENCY. DEMOLITION OF REGULATED ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO WELLS, ASBESTOS, UNDER GROUND STORAGE TANKS, SEPTIC TANKS AND ELECTRIC TRANSFORMERS. DEMOLITION CONTRACTOR SHALL REFER TO ANY ENVIRONMENTAL STUDIES FOR DEMOLITION RECOMMENDATIONS AND GUIDANCE. AVAILABLE ENVIRONMENTAL STUDIES MAY INCLUDE, BUT ARE NOT LIMITED TO PHASE I ESA, PHASE II, WETLAND AND STREAM DELINEATION AND ASBESTOS SURVEY. ALL APPLICABLE ENVIRONMENTAL STUDIES SHALL BE MADE AVAILABLE UPON REQUEST.
11. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

FOUNDATION NOTES

1. FOUNDATION DESIGN WAS COMPLETED PRIOR TO COMPLETION OF GEOTECHNICAL INVESTIGATIONS. ASSUMPTIONS WERE MADE FOR SOIL PROPERTIES AS NOTED BELOW:
   - BEARING CAPACITY – 1,500 PSF
   - MODULUS OF SUBGRADE REACTION – 100 LB/IN^3
   - DENSITY OF SOIL – 130 PCF
   - FROST DEPTH – 1.0 FT
2. IT IS OUR RECOMMENDATION THAT A GEOTECHNICAL INVESTIGATION OF THE SITE BE PERFORMED, PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ENGAGING A GEOTECHNICAL TESTING AGENCY TO VERIFY ASSUMED GEOTECHNICAL PARAMETERS. IF DETERMINED GEOTECHNICAL PARAMETERS ARE FOUND TO DIFFER FROM THOSE ASSUMED, CONTACT ENGINEER OF RECORD FOR REVISED CONSTRUCTION DRAWINGS PRIOR TO CONSTRUCTION.
3. IT IS ALSO OUR RECOMMENDATION THAT A GEOTECHNICAL ENGINEER BE RETAINED BY THE OWNER TO PROVIDE OBSERVATION AND TESTING SERVICES DURING THE GRADING AND FOUNDATION PHASE OF CONSTRUCTION. INSPECTION AND TESTING REPORTS TO BE SUBMITTED TO THE ENGINEER OF RECORD. PREPARATION OF SUBGRADES SHALL BE AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
4. THERE WILL BE NO BACKFILLING OPERATIONS UNTIL THE CONCRETE WALLS HAVE REACHED THEIR 28-DAY DESIGN STRENGTH, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER OF RECORD.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SHORING OR SLOPING OF EXCAVATIONS TO MEET OSHA REQUIREMENTS. DESIGN OF SHORING IS THE CONTRACTOR'S RESPONSIBILITY. EXCAVATIONS SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
6. PRIOR TO PLACING ENGINEERED FILL, THE SITE SHALL BE STRIPPED AND PROOF ROLLED. ANY SOFT SPOTS ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL. REFER TO EARTHWORK SPECIFICATION/GEOTECHNICAL ENGINEER FOR ADDITIONAL INFORMATION.

STRUCTURAL CONCRETE NOTES

1. ALL CAST-IN-PLACE CONCRETE SHALL FOLLOW SUSTAINABLE DESIGN CRITERIA FOR LOW CARBON CONCRETE PER SECTION 03 3010, AMZL DESIGN CRITERIA v8 DATED AUGUST 9, 2022.
2. ALL CONCRETE AGGREGATE SHALL COMPLY WITH ASTM C33 (NORMAL WEIGHT).
3. USE ADMIXTURES AS NOTED IN THE CONSTRUCTION DOCUMENTS, OR AS APPROVED BY THE ENGINEER OF RECORD. SUBMIT PROPOSED ADMIXTURES AS PART OF CONCRETE MIX DESIGN SUBMITTAL.
4. DESIGN FORMWORK FOR THE LOADS, LATERAL PRESSURE AND ALLOWABLE STRESSES OUTLINED IN ACI 347.
5. FORMWORK SHALL BE SHORED ADEQUATELY TO ENSURE THAT IT WILL NOT MOVE DURING POURING OR CURING OF THE CONCRETE.
6. CURE CONCRETE IN ACCORDANCE WITH THE SPECIFICATION, MEETING THE REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
7. SEE THE MECHANICAL, ELECTRICAL AND SUPPLIERS DRAWINGS FOR THE LOCATION OF SPECIAL ANCHORS, CHAMFERS, SLEEVES, PIPES, CONDUITS AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
8. ALL CONCRETE SHALL CURE A MINIMUM OF 7 DAYS AFTER POURING, AND SHALL REMAIN UNLOADED UNTIL CONCRETE HAS REACHED 80% OF THE 28 DAY DESIGN STRENGTH, UNLESS APPROVED BY THE ENGINEER OF RECORD.

GENERAL CONCRETE MIX REQUIREMENTS

CONCRETE TYPE	28 DAY COMPRESSIVE STRENGTH (f'c, PSI)	AIR CONTENT (+/− 1%) (AE=AIR ENTRAINED)	MAX W/C RATIO	MAX SLUMP AT PLACEMENT (IN)	MIN SLUMP AT PLACEMENT (IN)	MAX NOM AGG SIZE*	CEMENT TYPE	FLYASH % (OF TOTAL CEMENT)
SLAB ON GRADE (EXTERIOR)	5,000	3% (AE)	0.55	5	1	1.5 IN	I/II	15–25

*AGGREGATES SHALL CONFORM TO REQUIREMENTS IN ACI 302.1.

MAXIMUM GWP LIMITS FOR CONCRETE MIX DESIGNS

CONCRETE TYPE	MIN DESIGN STRENGTH (PSI)	AMAZON MAXIMUM ALLOWED GWP FOR CONCRETE MIX (kg CO2e per cubic yd)	AMAZON PREFERRED GWP** (kg CO2e per cubic yard)
WALKS & CURBS (SIM TO EXTERIOR SLAB ON GRADE)	4,500	245	217

**BASED ON FEDERAL GOVERNMENT RECOMMENDATIONS TO LOWER CONCRETE EMBODIED CARBON 20% FROM CURRENT INDUSTRY AVERAGE, AVAILABLE AT *HTTPS://WWW.GSA.GOV/ABOUT-US/NEWSROOM/NEWS-RELEASES/GSA-ANNOUNCES-ACTIONS-TO-REDUCE-EMISSIONS-FROM-BUILDING-MATERIALS-02152022*, WITH THE EXCEPTION OF THE LIMIT FOR FOUNDATIONS.

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

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REINFORCING STEEL NOTES

1. REINFORCING BARS: ASTM A615, GRADE 60
2. BAR SUPPORTS CLASS 1, MAXIMUM PROTECTION (CRSI MANUAL OF STANDARD PRACTICE) FOR ALL SLABS AND BEAMS WITH SOFFITS EXPOSED TO VIEW.
3. ALL REINFORCING STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE ACI CODE REQUIREMENTS (ACI 318 EDITION SPECIFIED IN THESE DRAWINGS).
4. REINFORCING STEEL PLACING DRAWINGS AND BAR LISTS SHALL CONFORM TO THE ACI OR CRSI DETAILING MANUALS. ALL BAR SUPPORTS MUST BE CLEARLY DETAILED.
5. HOOKS AND BENDS SHALL BE ACI STANDARD UNLESS OTHERWISE INDICATED.
6. CONTINUOUS REINFORCING BARS SHALL BE PROVIDED WITH TENSION LAPS AT ALL SPLICES, UNLESS NOTED OTHERWISE. ALL STEEL REINFORCING LAPS SHALL BE TENSION B LAPS TYPICAL, UNLESS NOTED OTHERWISE.
7. MECHANICAL SPLICES SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER OF RECORD.
8. REINFORCING STEEL FABRICATION AND PLACEMENT SHALL BE IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND CRSI PLACING REINFORCING BARS (EDITION SPECIFIED IN THESE DRAWINGS).
9. REINFORCING STEEL IN FOOTINGS SHALL BE ASSEMBLED IN MAT GRILLES EQUALLY SPACED AND SECURELY WIRED TOGETHER BEFORE THE CONCRETE IS POURED.
10. WALL FOOTING DOWELS ARE TO HAVE A FULL TENSION LAP SPLICE WITH THE WALL STEEL UNLESS NOTED OTHERWISE.
11. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONCRETE.
12. NO REINFORCING STEEL SHALL BE FIELD BENT WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD. FIELD BENDING OF PLAIN REINFORCEMENT, IF PERMITTED, SHALL BE PERFORMED USING AN APPROVED AND APPROPRIATE SIZED PORTABLE HYDRAULIC DEVICE THAT MAKES ACI STANDARD RADIUS BENDS. NO OTHER FIELD BENDING METHOD SHALL BE PERMITTED.
13. WELDING, INCLUDING TACK WELDING, FOR REINFORCING STEEL IS PROHIBITED. WELDING OF REINFORCING STEEL AND HIGH STRENGTH BOLTS (A325, A490) WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
14. PER SECTION 03 2010, AMZL DESIGN CRITERIA v8 DATED AUGUST 9, 2022, TO REDUCE THE EMBODIED CARBON EMISSIONS FOR REINFORCING STEEL BARS AT THE PREVIOUSLY STATED ASTM STANDARDS AND GRADES, PROVIDE REINFORCING STEEL BARS THAT SHALL NOT EXCEED THE ACHIEVABLE GWP VALUES, PER STATE (CONTIGUOUS UNITED STATES) IN THE FOLLOWING TABLE:

REGIONAL SUMMARY FOR REBAR

STATE/ TERRITORY	ACHIEVABLE GWP (KgCO2e/Kg)	NEARBY STATE WITH LOWEST ACHIEVABLE GWP	STATE/ TERRITORY	ACHIEVABLE GWP (KgCO2e/Kg)	NEARBY STATE WITH LOWEST ACHIEVABLE GWP
ALABAMA	0.825	AL	MONTANA	0.499	WA
ALASKA	N/A	NO MIN REQT	NEBRASKA	0.650	CO
ARIZONA	0.598	AZ	NEVADA	0.598	AZ
ARKANSAS	0.686	**	NEW HAMPSHIRE	0.694	NY
CALIFORNIA	0.860	CA	NEW JERSEY	0.694	NY
COLORADO	0.650	CO	NEW MEXICO	0.598	AZ
CONNECTICUT	0.694	NY	NEW YORK	0.694	NY
DELAWARE	0.694	NY	NORTH CAROLINA	0.614	SC
FLORIDA	0.789	FL	NORTH DAKOTA	0.650	CO *
GEORGIA	0.614	SC	OHIO	0.694	NY
HAWAII	N/A	NO MIN REQT	OKLAHOMA	0.725	OK
IDAHO	0.499	WA	OREGON	0.499	WA
ILLINOIS	0.898	IL	PENNSYLVANIA	0.694	NY
INDIANA	0.686	TN	RHODE ISLAND	0.694	NY
IOWA	0.898	IL	SOUTH CAROLINA	0.614	SC
KANSAS	0.650	CO	SOUTH DAKOTA	0.650	CO
KENTUCKY	0.686	TN	TENNESSEE	0.686	TN
LOUISIANA	0.734	TX	TEXAS	0.734	TX
MAINE	0.694	NY *	UTAH	0.650	CO
MARYLAND	0.694	NY	VERMONT	0.694	NY
MASSACHUSETTS	0.694	NY	VIRGINIA	0.686	TN
MICHIGAN	0.898	IL	WASHINGTON	0.499	WA
MINNESOTA	0.898	IL	WEST VIRGINIA	0.686	TN
MISSISSIPPI	0.825	AL	WISCONSIN	0.898	IL
MISSOURI	0.686	TN	WYOMING	0.650	CO

* MAY COST EXTRA FOR SHIPPING
** LIKELY SOURCED FROM TN (CMC)

CONCRETE DEVELOPMENT/LAP SPLICE SCHEDULE (f'c = 5 KSI)

BAR SIZE	DEVELOPMENT LENGTH (IN) +		LAP SPLICE LENGTH, CLASS B (IN) +	
	BAR TYPE 1*	BAR TYPE 2*	BAR TYPE 1*	BAR TYPE 2*
4	17	26	23	34
5	22	32	28	42
6	26	39	34	50
7	38	56	49	73
8	43	64	56	83
9	48	72	63	94

*BAR TYPE 1 – CLEAR SPACING OF BARS BEING DEVELOPED OR LAP SPLICED NOT LESS THAN Db, CONCRETE COVER NOT LESS THAN Db, AND STIRRUPS OR TIES THROUGHOUT Ld NOT LESS THAN THE CODE MINIMUM.
BAR TYPE 2 – OTHER CASES
+WHERE REINFORCEMENT IS PLACED SUCH THAT AT LEAST 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE DEVELOPMENT LENGTH OR SPLICE LOCATION(S), INCREASE THE VALUES IN THIS TABLE BY A FACTOR OF 1.3.

REINFORCING CLEAR COVER TABLE

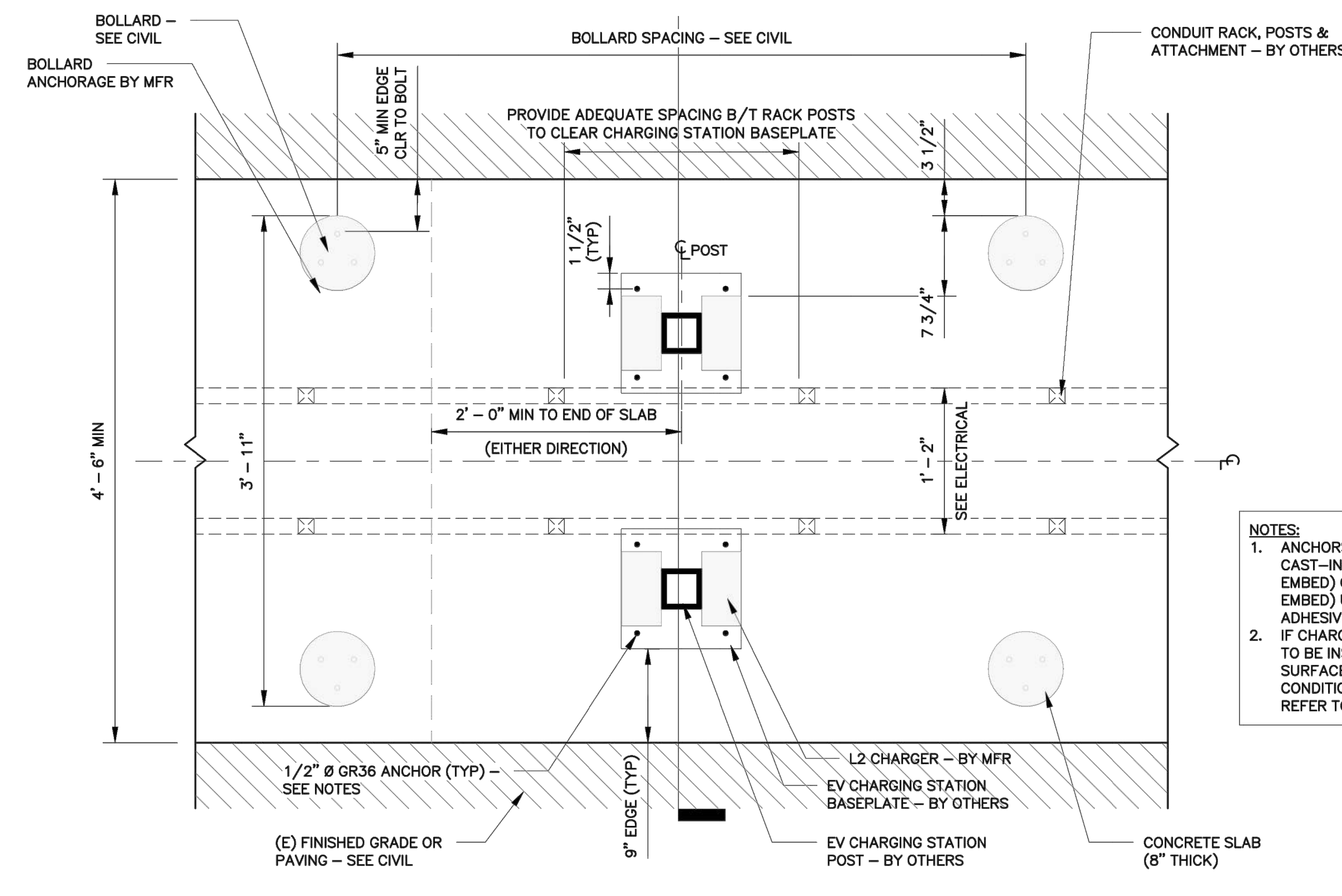
TYPE	MINIMUM CLEAR COVER (IN)
PERMANENTLY EXPOSED TO OR CAST AGAINST EARTH	3
EXPOSED TO EARTH OR WEATHER (#5 OR SMALLER)	1 1/2
EXPOSED TO EARTH OR WEATHER (#6 OR LARGER)	2
NOT EXPOSED TO EARTH OR WEATHER (#11 OR SMALLER)	1
NOT EXPOSED TO EARTH OR WEATHER (#12 OR LARGER)	1 1/2

POST-INSTALLED ANCHOR NOTES

1. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY MANUFACTURER OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
2. ANCHORS HAVE BEEN DESIGNED ASSUMING HAMMER DRILLED HOLES, DRY CONCRETE, AND CRACKED CONCRETE CONDITIONS. CONTRACTOR IS REPONSIBLE FOR UTILIZING APPROPRIATE METHODOLOGY TO MEET THESE DESIGN ASSUMPTIONS.
3. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING CURED FOR A MINIMUM OF 21 DAYS.
4. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
5. INSTALL ANCHORS PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL ANCHORS ARE INSTALLED BY PERSONNEL TRAINED TO INSTALL POST-INSTALLED ANCHORAGE.
7. IT IS RECOMMENDED FOR THE CONTRACTOR TO ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD SHALL RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
8. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY NON-DESTRUCTIVE MEANS (FERROSCAN, GPR, X-RAY, ETC.).
10. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFIS SYSTEM.
11. CONTACT THE MANUFACTURER FOR PRODUCT RELATED QUESTIONS.

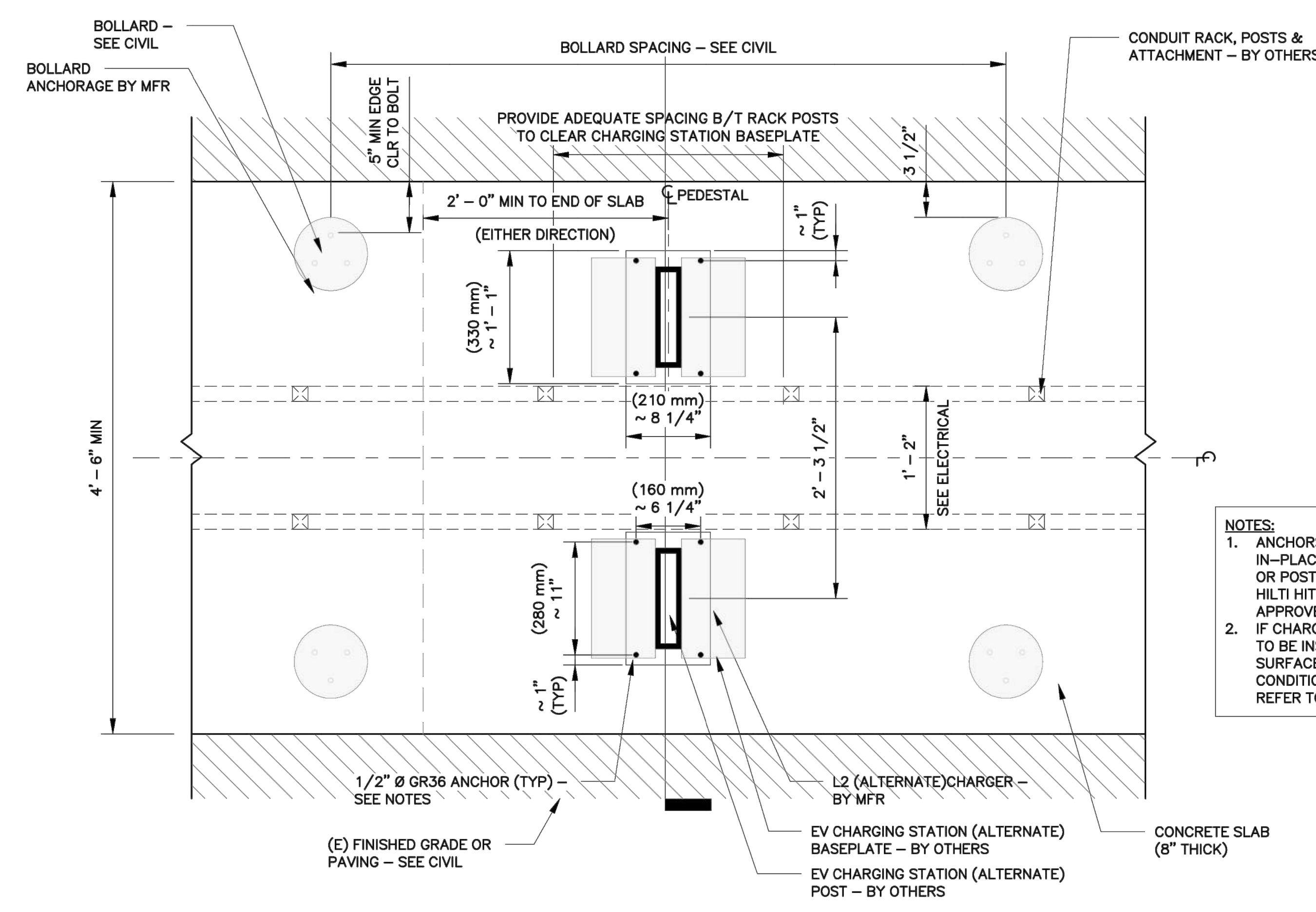
ABBREVIATIONS

A/E	ARCHITECT & ENGINEER
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL/ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CALC	CALCULATION(S)
CHKD	CHECKED
CIP	CAST-IN-PLACE CONCRETE
CJ	CONSTRUCTION/CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR/CLEARANCE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CTR	CENTER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DEG	DEGREES
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIR	DIRECTION
DL	DEAD LOAD
DWG	DRAWING
(E)	EXISTING
EA	EACH
EJ	EXPASION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH
FLG	FLANGE
FLR	FLOOR
FND	FOUNDATION
FRMG	FRAMING
FS	FAR SIDE
FT	FOOT
FTG	FOOTING
GA	GAGE, GAUGE
GALV	GALVANIZED (HOT DIP)
GWP	GLOBAL WARMING POTENTIAL
HCA	HEADED CONCRETE ANCHOR
HORIZ	HORIZONTAL
HP	HIGH POINT
HSB	HIGH STRENGTH BOLT
IF	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
ICF	INSULATED CONCRETE FORM
ID	INSIDE DIAMETER
IN	INCH
INT	INTERIOR
JT	JOINT
K	KIP(S)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LLH	LONG LEG HORIZONTAL (ANGLE)
LLV	LONG LEG VERTICAL (ANGLE)
LSH	LONG SIDE HORIZONTAL (HSS)
LSV	LONG SIDE VERTICAL (HSS)
LB	POUND
LF	LINEAR FEET
LL	LIVE LOAD
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW POINT
LSH	LONG SLOTTED HOLE
M	MOMENT
MATL	MATERIAL
MAX	MAXIMUM
MC	MOMENT CONNECTION
MECH	MECHANICAL
MFD	MANUFACTURED
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MTL	METAL
N&F	NEAR AND FAR
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSH	OVERSIZED HOLE
OWJ	OPEN WEB JOIST
PCF	POUNDS PER CUBIC FOOT
PE	PROFESSIONAL ENGINEER
PENE	PENETRATION
PERIM	PERIMETER
PL	PLATE
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
REQT	REQUIREMENT
RET	RETURN
REV	REVISION
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPCS	SPACES
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STIF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SYM	SYMMETRICAL
T/	TOP OF
TBV	TO BE VERIFIED
T&B	TOP AND BOTTOM
THRU	THROUGH
TRANS	TRANSVERSE
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WWR	WELDED WIRE REINFORCEMENT



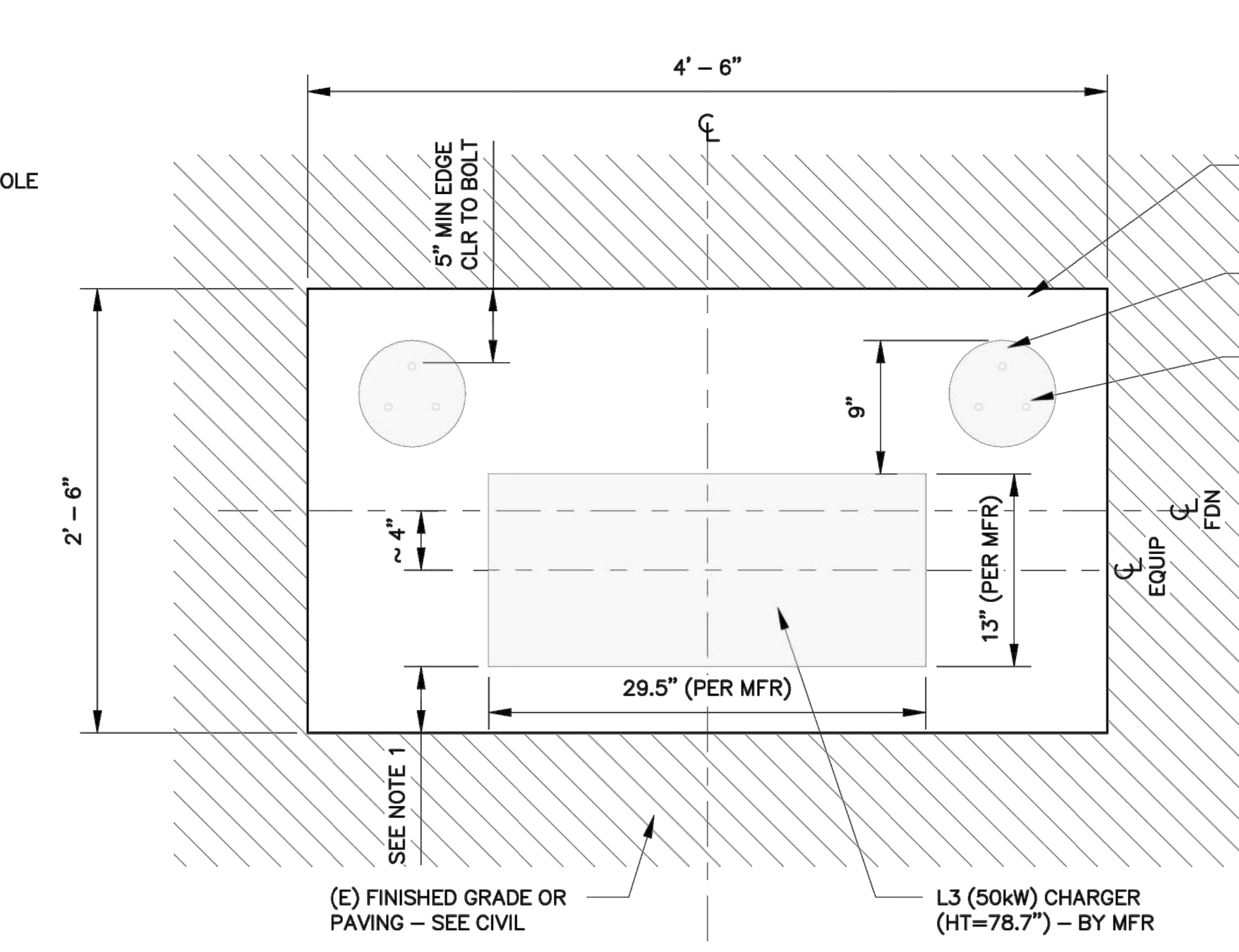
NOTES:
1. ANCHORS CAN BE INSTALLED AS CAST-IN-PLACE HEADED ANCHOR (3" EMBED) OR POST-INSTALLED (3" EMBED) USING HILTI HIT-HY 200 ADHESIVE (OR APPROVED ALTERNATE)
2. IF CHARGING STATIONS ARE REQUIRED TO BE INSTALLED ON A SLOPED SURFACE BASED ON EXISTING CONDITIONS OF ADJACENT GRADE, REFER TO 8/ (TBD).

EXTERIOR SLAB PLAN - LEVEL 2 CHARGER (SINGLE- OR DUAL-MOUNT)
1" = 1'-0"



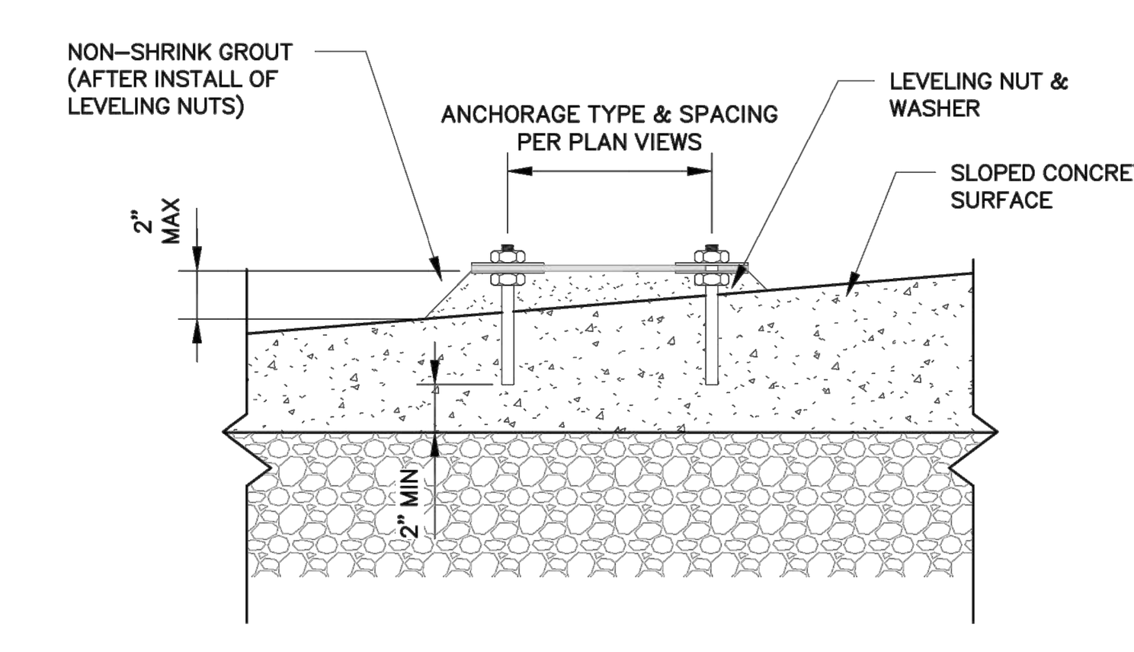
NOTES:
1. ANCHORS CAN BE INSTALLED AS CAST-IN-PLACE HEADED ANCHOR (3" EMBED) OR POST-INSTALLED (3" EMBED) USING HILTI HIT-HY 200 ADHESIVE (OR APPROVED ALTERNATE)
2. IF CHARGING STATIONS ARE REQUIRED TO BE INSTALLED ON A SLOPED SURFACE BASED ON EXISTING CONDITIONS OF ADJACENT GRADE, REFER TO 8/ (TBD).

EXTERIOR SLAB PLAN - LEVEL 2 (ALTERNATE) CHARGER (SINGLE- OR DUAL-MOUNT)
1" = 1'-0"



NOTES:
1. EQUIPMENT ANCHORAGE TYPE, LOCATIONS, AND EMBEDMENT UNKNOWN. CONTRACTOR TO COORDINATE WITH MANUFACTURER FOR APPROPRIATE EDGE DISTANCE AND ANCHOR EMBED REQUIREMENTS.
2. REINF NOT SHOWN FOR CLARITY.

EXTERIOR SINGLE PAD PLAN - LEVEL 3 (50kW) CHARGER
1" = 1'-0"



NOTES:
1. BASEPLATE AND ANCHORS SHOWN IN THIS DETAIL ARE FOR REFERENCE ONLY. EV CHARGING STATIONS, POSTS, CONDUIT RACKS, AND BOLLARDS NOT SHOWN FOR CLARITY. SEE PLAN VIEWS FOR MORE INFORMATION.
2. REINF NOT SHOWN FOR CLARITY.
3. FLUSH-MOUNT ANCHORS WHEREVER POSSIBLE.
4. IN SLOPED AREAS, CONTRACTOR SHALL MOCK UP ONE (1) CHARGER PEDESTAL FLUSH WITH THE GROUND SURFACE AND REVIEW THE INSTALL WITH THE AMAZON CONSTRUCTION MANAGER. THE AMAZON CONSTRUCTION MANAGER HAS THE DISCRETION TO CHOOSE TO IMPLEMENT THE LEVELING SOLUTION ACROSS THE PARKING FIELD.

ANCHORAGE TO CONCRETE ON SLOPED SURFACE - LEVEL 2 AND LEVEL 2 (ALTERNATE) CHARGER
1" = NTS

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION RECORD

NO	DATE	DESCRIPTION
0	02/01/2023	PERMIT DRAWING SET

Civil & Environmental Consultants of New York, Inc.
908 Niagara Falls Boulevard · North Tonawanda, NY 14120
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AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

DETAIL SHEET (3 OF 3)

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	AS SHOWN	CHECKED BY:	EJB
PROJECT NO:			325-198
APPROVED BY:			EJI

STATE OF NEW YORK · EDUARDO J. INTRIAGO · No. 095628 · LICENSED PROFESSIONAL ENGINEER
02/01/2023

DRAWING NO.: **C8.02-BP1**

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING CHAIN FENCE
- EXISTING CONCRETE CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STORM PIPE
- EXISTING WATERLINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING OVERHEAD WIRE
- EXISTING STORM STRUCTURES
- EXISTING GRAVEL BED
- EXISTING FIRE HYDRANT
- EXISTING SANITARY STRUCTURE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING TELEPHONE MANHOLE
- EXISTING SIGN
- AREA OF WORK
- PROPOSED DUAL L2 CHARGER
- PROPOSED SINGLE L2 CHARGER
- PROPOSED SINGLE L3 CHARGER
- PROPOSED CONCRETE ENCASED PIPE BOLLARD
- PROPOSED BOLT-DOWN BOLLARD
- PROPOSED STRIPING
- PROPOSED ASPHALT PAVEMENT
- PROPOSED ABOVEGROUND CONDUIT RACK
- ASSET LITE CHARGER LOCATION
- PROPOSED ABOVEGROUND ELECTRICAL CONDUIT
- PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- DETAIL NUMBER
- DRAWING DESIGNATION
- INLET PROTECTION
- PROPOSED EROSION EEL

NEW YORK LAW REQUIRES AT LEAST 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE – STOP CALL DIG SAFELY NEW YORK, INC. 1-800-962-7962.

NEW YORK STATE CODE RULE 753 (1997) AS AMENDED IN JULY 2002 AND JANUARY 2012 REQUIRES NO LESS THAN 2 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF NEW YORK, SUBMIT A REQUEST ONLINE VIA DIG SAFELY NEW YORK'S ENTRY PLATFORM EXACTIX OR CALL TOLL FREE 1-800-962-7962.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

Dig Safely. New York
Call 811 before you dig

SCALE IN FEET
0 30 60

PRELIMINARY
NOT FOR CONSTRUCTION

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

P:\320-000\325-198\-CADD\Dwg\CV02\325198-CV02-C9.0.dwg{C9.00-BP1}

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants of New York, Inc.
908 Niagara Falls Boulevard · North Tonawanda, NY 14120
Ph: 716.930.6080
www.cecinc.com

AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

EROSION & SEDIMENTATION CONTROL PLAN

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	1" = 30'	CHECKED BY:	EJB
PROJECT NO:	325-198	APPROVED BY:	EJI

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER

02/01/2023

DRAWING NO.: C9.00-BP1

BMP MAINTENANCE EROSION NOTES

ALL E&S CONTROLS SHALL BE MAINTAINED IN GOOD WORKING ORDER (CLEANED, REPAIRED, ETC.) UNTIL ALL DISTURBED TRIBUTARY AREAS ARE STABILIZED. ALL TEMPORARY E&S CONTROLS WILL REMAIN IN PLACE UNTIL A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE, THE OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL PERMANENT FACILITIES.

1. IN ORDER TO ENSURE EFFECTIVE AND EFFICIENT OPERATION OF BMPS, ALL TEMPORARY RUNOFF E&S CONTROLS SHALL BE INSPECTED AT LEAST AT THE BEGINNING AND END OF EACH DAY AND AFTER EACH STORMWATER EVENT. ANY DAMAGED CONTROLS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF IDENTIFICATION OF THE DEFICIENCY. THE CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND INSPECTIONS, AND SHALL MAINTAIN RECORDS OF ALL SUCH ACTIVITIES. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR OR REPLACEMENT AND MAINTENANCE ACTIVITIES SHALL BE LOGGED ONTO PADEP FORM 3150-FM-BWEW0083, DATED 2/2012 AND BE KEPT ONSITE AT ALL TIMES.
2. COMPOST FILTER SOCK: INSPECT BEFORE AND AFTER EVERY RAIN EVENT. ACCUMULATED SEDIMENTS SHALL BE REMOVED, AS REQUIRED, IN ALL CASES WHERE ACCUMULATIONS HAVE REACHED HALF THE ABOVE-GROUND HEIGHT OF THE COMPOST FILTER SOCK. ACCUMULATED SEDIMENTS SHALL BE DISPOSED OF IT IN ACCORDANCE WITH THE PADEP. COMPOST FILTER SOCK MATERIALS SHALL BE REPLACED PROMPTLY, IF TORN, SPLIT, SLUMPED OR IS SHOWING SIGNS OF EXCESSIVE WEATHERING. ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR THE REPAIR OR REPLACEMENT OF COMPOST FILTER SOCK.
3. PUMPED WATER FILTER BAG: FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE UNTIL THE PROBLEM IS CORRECTED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. SPARE BAGS SHALL BE KEPT AVAILABLE ONSITE.
4. INLET PROTECTION: ALL INLET PROTECTION FILTER BAGS SHALL BE CLEANED AND / OR REPLACED WHEN THE BAG IS HALF-FULL, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL DAMAGED BAGS SHALL BE REPLACED. THE ACCUMULATED SEDIMENT SHALL BE DISTRIBUTED EVENLY ON-SITE AND STABILIZED.
5. ALL DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN THE EFFECTIVENESS OF THE CONTROLS. ADDITIONAL CONTROL MEASURES SHALL BE IMPLEMENTED AS NEEDED.
6. DURING CONSTRUCTION, SEDIMENT REMOVED FROM THE EROSION CONTROL DEVICES SHALL BE DISPOSED OF BY SPREADING IT ONSITE. ONCE A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED AND THE TEMPORARY E&S CONTROLS ARE REMOVED, ALL ACCUMULATED SEDIMENT WILL BE DISPOSED OF AT A PADEP APPROVED FACILITY.
7. ALL SITE ENTRANCE AND EXIT POINTS SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE TRACKING OF MUD. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN STREETS OF MUD AND KEEP THE STREETS IN A CLEAN AND DUST-FREE CONDITION.
8. AREAS WHICH WILL BE EXPOSED FOR LONGER THAN 4 DAYS WITHOUT SIGNIFICANT ACTIVITY OR DISTURBANCE WILL BE SEEDED WITH A TEMPORARY COVER. IF, AT THE END OF A 12-WEEK MONITORING AND MAINTENANCE PERIOD, A SATISFACTORY STAND OF VEGETATION HAS NOT BEEN PRODUCED, THE CONTRACTOR SHALL PROMPTLY RENOVATE AND RESEED THE UNSATISFACTORY AREAS. RENOVATION AND RESEEDING SHALL CONTINUE UNTIL A SATISFACTORY STAND OF VEGETATION HAS BEEN PRODUCED. A SATISFACTORY STAND IS DEFINED AS:
   - 90 PERCENT GROUND COVER WITH PERENNIAL VEGETATION OR NATURALLY PRODUCED LITTER.
   - NOT MORE THAN 1 PERCENT OF TOTAL AREA WITH LESS THAN 50 PERCENT GROUND COVER WITH PERENNIAL VEGETATION OR NATURALLY PRODUCED LITTER (LITTER PRODUCED IN PLACE BY THE SPECIES SHOWN).
   - NO SINGLE OR CONTIGUOUS AREAS EXCEEDING 100 SQUARE FEET MAY HAVE LESS THAN 50 PERCENT GROUND COVER.
10. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL REMAIN IN PLACE UNTIL A UNIFORM 70% PERENNIAL UPLAND VEGETATIVE COVER IS ESTABLISHED.

SEEDING SPECIFICATIONS

1. SEEDING DATES
   A. SEEDING SHALL OCCUR BETWEEN MARCH 1ST AND MAY 15TH OR BETWEEN AUGUST 15TH AND NO LATER THAN OCTOBER 15TH.
   B. IF SEEDING CANNOT BE CONDUCTED DURING THE TIMEFRAMES NOTED ABOVE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL CONSERVATION DISTRICT AND ALL APPROPRIATE AGENCIES TO DETERMINE AN ACCEPTABLE MEANS IN WHICH TO STABILIZE THE SITE THROUGH THE NEXT GROWING SEASON.
2. SEED MIXTURES: SEED MIXTURE TO BE USED ON THIS SITE SHALL CONSIST OF THE FOLLOWING UNLESS OTHERWISE NOTED ON THE PLANS. RATES ARE IN THE FORM OF POUNDS PER ACRE (LBS / A) PER PURE LIVE SEED (LBS / A PLS). CONTRACTOR WILL NEED TO ADJUST ACCORDINGLY BASED ON THE SEED GERMINATION AND PURITY RATING (SEE ITEM #3 BELOW).
   A. TEMPORARY SEED MIXTURES: DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE DISTURBED AGAIN WITHIN TWELVE (12) MONTHS MUST BE SEEDED WITH A TEMPORARY SEED MIXTURE AS FOLLOWS:
   ANNUAL RYE (40 LBS / A PLS)
   OR SPRING OATS (96 LBS / A PLS)
   OR WINTER RYE (168 LBS / A PLS)
   (REFERENCE: PENN STATE "EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND", TABLE 5)
   B. PERMANENT SEEDING SHALL CONSIST OF A NURSE CROP PLUS A PERMANENT SEED MIXTURE, AS FOLLOWS:
   - NURSE CROP (SELECT ONE):
     ANNUAL RYE (10 LBS / A PLS)
     OR SPRING OATS (64 LBS / A PLS)
     OR WINTER RYE (56 LBS / A PLS)
     (REFERENCE: PA DEP EROSION AND SEDIMENT CONTROL PROGRAM MANUAL, LATEST EDITION, TABLE 11.4, SEED MIX #1)
   - PERMANENT SEED MIX:
     TALL FESCUE (60 LBS / A PLS)
     OR FINE FESCUE (35 LBS / A PLS)
     OR KENTUCKY BLUEGRASS (25 LBS / A PLS) PLUS REDTOP (3 LBS / A PLS)
     (REFERENCE: PA DEP EROSION AND SEDIMENT CONTROL PROGRAM MANUAL, LATEST EDITION, TABLE 11.4, SEED MIX #2)
3. PURE LIVE SEED: MINIMUM PLS RATING ACCEPTED SHALL BE 85% PLS. SEED RATE MAY NEED TO BE ADJUSTED BASED ON THE PLS RATING OF THE SEED.
   A. SEED USED FOR THE PURPOSE OF PERMANENT STABILIZATION SHALL BE LABELED WITH GERMINATION AND PURITY PERCENTAGES. UNLABELED SEED WILL BE REJECTED. SEED SHALL NOT BE USED MORE THAN ONE (1) YEAR BEYOND THE LABEL DATE.
   B. DETERMINING THE PERCENT PURE LIVE SEED (PERCENT PLS) OF A LABELED SEED: MULTIPLY BY THE PERCENTAGE OF PURE SEED BY THE PERCENTAGE OF GERMINATION AND DIVIDE THE RESULT BY 100 [(%PURE X %GERMINATION) / 100]
   C. DETERMINING THE ACTUAL SEED RATE: SIMPLY DIVIDE THE PERCENT PLS RATING OF THE SEED INTO THE PLS REQUIRED, AS NOTED ABOVE. THE RESULT IS THE POUNDS OF SEED REQUIRED. FOR EXAMPLE: IF THE REQUIRED RATE IS 64 POUNDS PLS, AND THE SEED IS RATED AT 35% PLS, DIVIDE 64 BY 0.35 TO GET 182.9 POUNDS, WHICH IS THE AMOUNT OF THAT SEED REQUIRED PER ACRE.
4. APPLICATION OF SEED: SEEDING SHALL BE APPLIED AND ESTABLISHED IN ACCORDANCE WITH THE "EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL" AS PUBLISHED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WATER QUALITY PROTECTION (MOST RECENT EDITION).
   A. SEEDING SHALL TAKE PLACE BETWEEN MARCH 15 – OCTOBER 15.
   B. SEED SHALL BE APPLIED IN A NON-COMPACTED, ROUGHENED TOPSOIL.
   C. SEED MAY BE APPLIED THROUGH ANY OF THE FOLLOWING MEANS AND METHODS, OR OTHER ACCEPTED INDUSTRY PRACTICES, UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE PLANS:

   ACCEPTED INDUSTRY PRACTICES, UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE PLANS:
   - DRILL SEEDING
   - BROADCAST SEEDING (TWO DIRECTIONS)
   - HYDROSEEDING (TWO DIRECTIONS)

   D. ALL SEED SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED UNTIL A 70% PERENNIAL COVER IS ACHIEVED:
   - TEMPORARY STABILIZATION WITH STRAW:
     - •• STRAW MULCH SHALL BE APPLIED ON TOP OF THE FRESHLY SEEDED AREAS AT A RATE OF 3 TONS PER ACRE (4 TONS PER ACRE BETWEEN NOVEMBER 1ST AND MARCH 1ST).
     - •• STRAW SHALL BE STABILIZED WITH A WOOD OR PAPER FIBER MULCH AND TACKIFIER SOLUTION IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S SPECIFICATIONS.
   - TEMPORARY / PERMANENT STABILIZATION WITH EROSION CONTROL MATTING / BLANKETS (WHERE SPECIFIED):
     - •• MATTING / BLANKETS SHALL BE INSTALLED IN AREAS AS NOTED ON THE EROSION & SEDIMENT CONTROL PLAN OR WITHIN 50 FEET OF PONDS, STREAMS OR WETLANDS. THE PRODUCT SHALL BE INSTALLED AND STAPLED ON TOP OF THE SEEDING IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
     - •• AREAS WITH MATTING / BLANKETS SHALL NOT BE TRACKED (CATWALKED) AFTER INSTALLATION.
     - •• MATTING / BLANKETS SHALL BE VISUALLY INSPECTED DAILY TO ENSURE THAT THE PRODUCT IS FUNCTIONING PROPERLY, IS HELD FAST TO THE SOIL SURFACE AND IS IN GOOD CONDITION.

   E. ONCE SEED HAS BEEN SET, VEHICULAR TRAFFIC OR OTHER SOURCES OF COMPACTION SHALL BE AVOIDED.
5. IRRIGATION: NEW SEED APPLICATIONS SHOULD BE SUPPLIED WITH ADEQUATE WATER, A MINIMUM OF 1/4-IN. TWICE A DAY, UNTIL VEGETATION IS WELL ESTABLISHED (A MINIMUM OF 75% COVER).

CONSTRUCTION SEQUENCE

THE CONSTRUCTION OF THE PROJECT CONSISTS OF ONE GENERAL PHASE OF CONSTRUCTION. ALL E&S CONTROL FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE E&S CONTROL PLAN AND THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL DATED NOVEMBER 2016.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. THE CONTRACTOR IS TO MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. THE CONTRACTOR IS TO MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE. ANY DEVIATION FROM THE FOLLOWING SEQUENCE MUST BE APPROVED IN WRITING FROM THE ALLEGHENY COUNTY CONSERVATION DISTRICT.

1. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM, INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. LAYOUT THE LIMITS OF THE CONSTRUCTION SITE AND ESTABLISH BENCHMARKS AND REFERENCE POINTS.
3. INSTALL INLET PROTECTION AND SILT SOCK IN THE LOCATIONS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE SIZE SPECIFICATIONS SHOWN ON THE STANDARD DETAILS. PERIMETER E&S CONTROLS SHALL BE INSTALLED PARALLEL TO THE CONTOURS.
4. STRIP TOPSOIL FROM EXCAVATION AREAS AND STOCKPILE NEXT TO EXCAVATIONS FOR REUSE.
5. BEGIN EXCAVATIONS FOR CONDUIT REWORK AND INSTALLATION OF CONCRETE PADS FOR ELECTRICAL EQUIPMENT. ALL WASTE MATERIALS SHALL BE DISPOSED OF AT A PADEP-APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS (VERIFICATION OF PERMITS TO BE PROVIDED BY THE CONTRACTOR).
6. UTILIZE A PUMPED WATER FILTER BAG AS NECESSARY TO DEWATER EXCAVATIONS. WATER FROM PUMPED WATER FILTER BAGS MUST BE TREATED FOR SEDIMENT REMOVAL PRIOR TO BEING DISCHARGED TO SURFACE WATERS OR STORMWATER INLETS.
7. ALL UNPAVED DISTURBED AREAS SHALL BE STABILIZED IMMEDIATELY WITH SEED AND MULCH ONCE GRADING IS COMPLETE OR WITHIN FOUR (4) DAYS ONCE THE CONSTRUCTION HAS BEEN COMPLETED. ANY PLANTINGS OR TREES REMOVED OR DAMAGED SHALL BE REPLACED IN-KIND.
8. COMPLETE CONSTRUCTION OF ALL PROPOSED CONCRETE PADS, ELECTRICAL EQUIPMENT, BOLLARDS, AND EV CHARGERS.
9. ONCE ALL AREAS HAVE BEEN PERMANENTLY STABILIZED, AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL GRASSED AREAS, REMOVE ALL EROSION AND SEDIMENTATION CONTROL FACILITIES.

REFERENCES

1. EXISTING BACKGROUND AND UTILITY INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/13/2022. EXISTING SURVEY COMPLETED BY BLEW & ASSOCIATES, PA. CAD FILE NAME: 19-5589-CESO-200 Oritani-Blauvelt NY Preliminary-04.20.2020_CAD.DWG, DATED: 4/20/2020.
2. SITE DESIGN INFORMATION OBTAINED FROM AMAZON.COM LLC ON 10/12/2022. RECORD DRAWINGS COMPLETED BY CESO ARCHITECTS, INC. PDF FILE NAME: DYX4_E1-Permit Set-Ext Building Permit-Rev0-20220810; CAD FILE NAME: DXY4_E1-Site Concept-Rev3-20221010.DWG, DATED: 8/10/2022.

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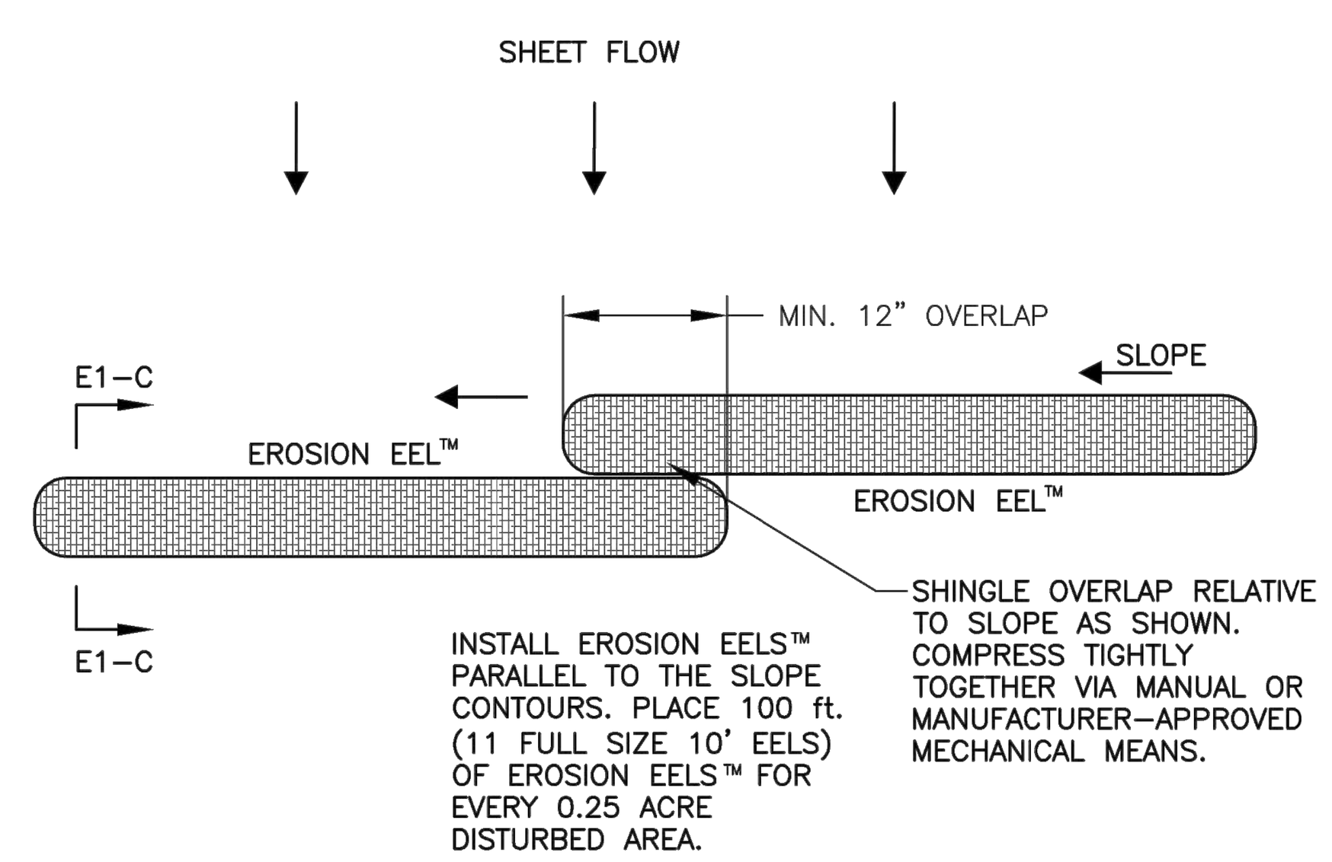
TOPSOIL REPLACEMENT SPECIFICATIONS

1. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN THE SLOP.
2. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM, 2 INCHES ON FILL OUTSLOPES.
3. SPREADING SHOULD BE DONE THAT SODDING / SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
4. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
5. TOPSOIL SHALL NOT BE PLACED IF TOPSOIL OR SUBSOIL IS FROZEN OR MUDDY, EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

TABLE 11.1 TOPSOIL REPLACEMENT SPECIFICATIONS
CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

DEPTH (in)	PER 1,000 SQUARE FEET	PER ACRE
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074



Spacing Recommendations for the Erosion Eel™ for Perimeter Controls and Intercepting Sheet Flow on Slopes

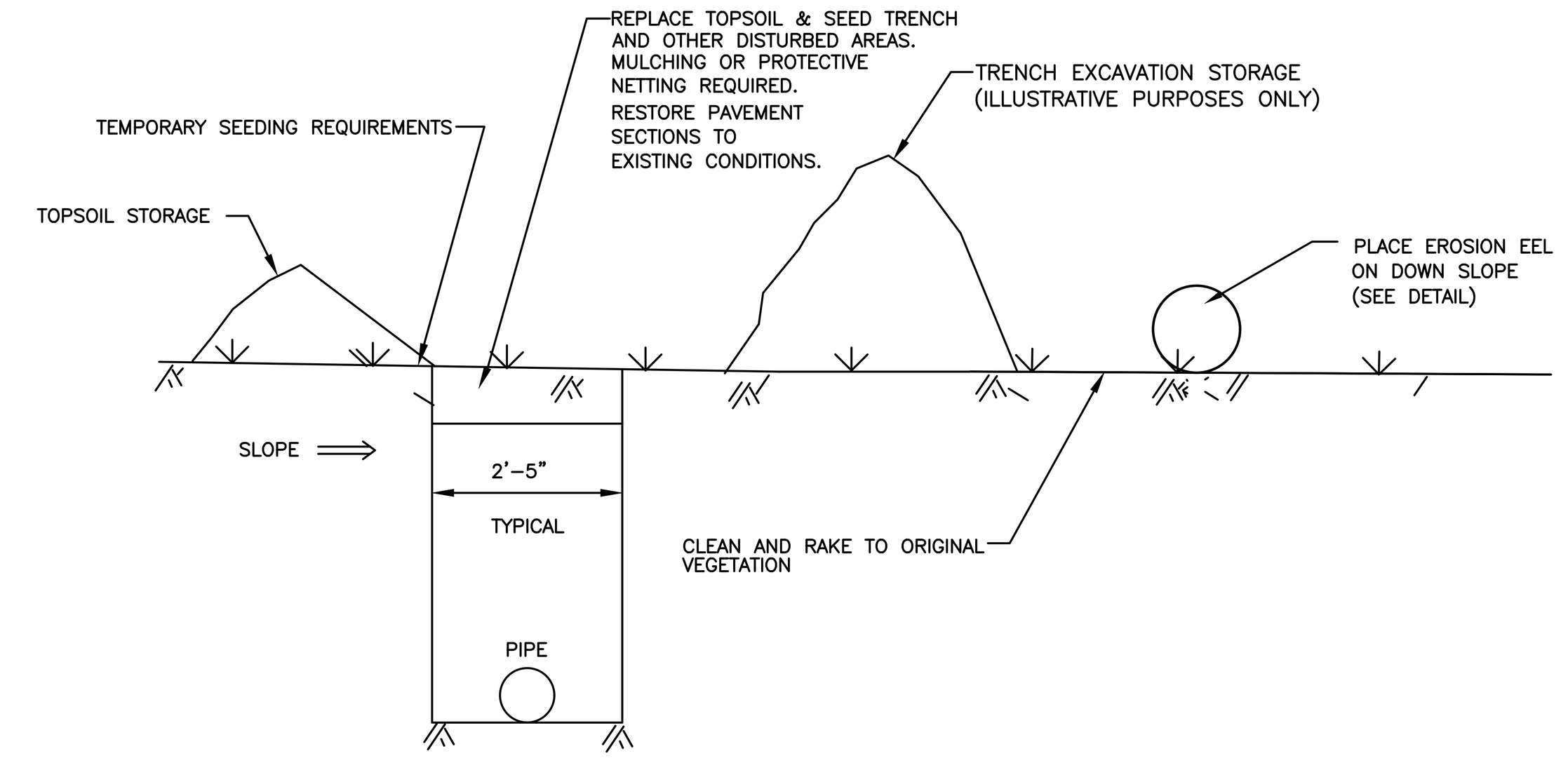
slope(%)	single eel spacing (ft)	*Stacked Dual eel spacing (ft)
0.5	300	N/A
1	200	N/A
2	160	N/A
3	80	N/A
4	50	N/A
5	40	N/A
6	35	N/A
8	30	N/A
10	25	N/A
15	17	N/A
20	12	25
25	7	15
33	N/A	10
50	N/A	6

* DUAL STACK REFERS TO TWO EELS STACKED ATOP ONE ANOTHER AND STABILIZED WITH T-POSTS. SEE DETAIL E2-E ON SHEET E-2.

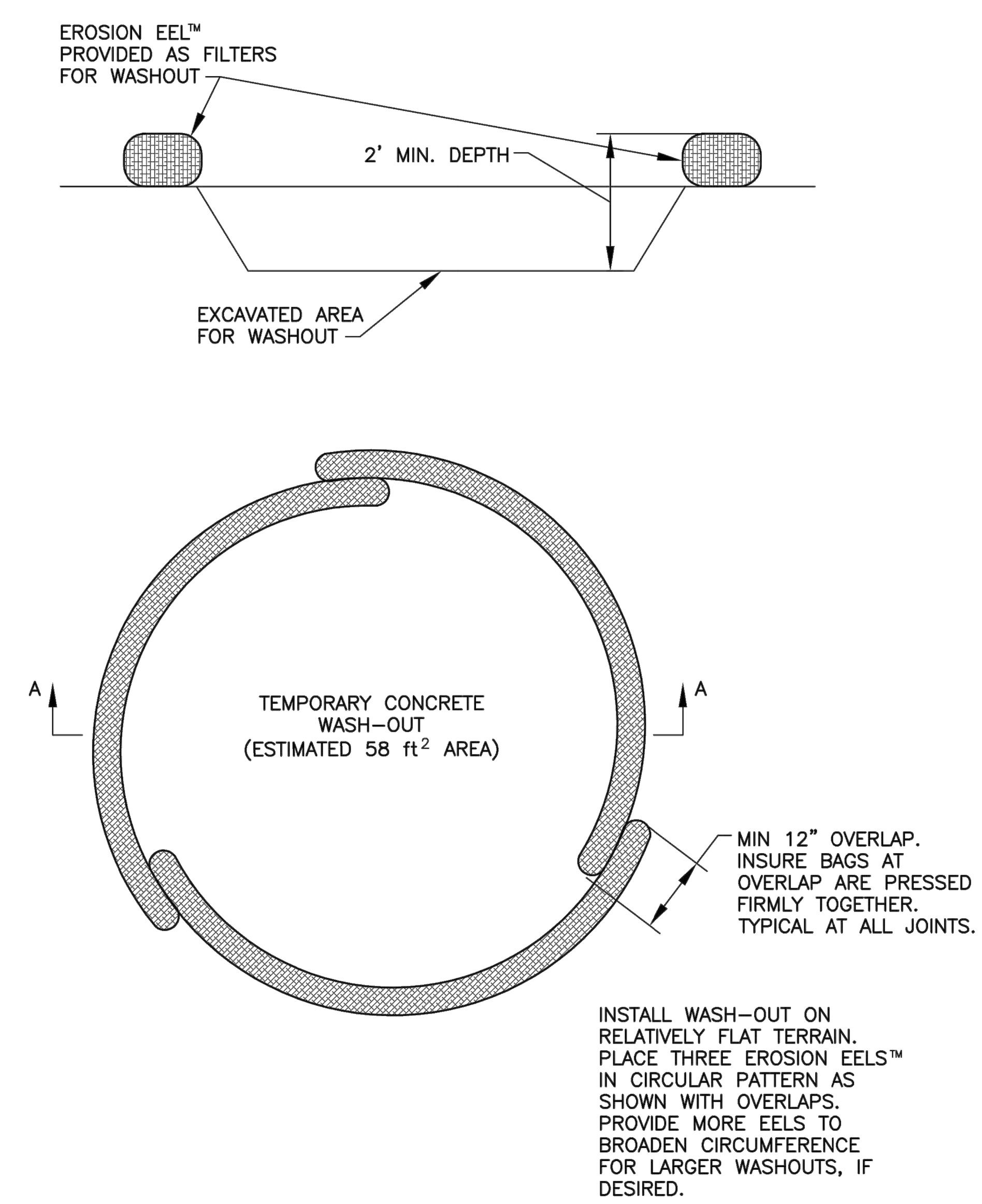
GENERAL NOTES:

1. EROSION EELS™ USED IN PERIMETER CONTROL APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.1 OR 1.2.
   a. MIXTURE SPECIFICATION 1.1. A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFIRM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03.
   b. MIXTURE SPECIFICATION 1.2. A FILTER MIXTURE COMPRISED OF 1/3 SHREDDED RUBBER, 1/3 WOOD CHIPS, AND 1/3 RECYCLED SYNTHETIC FIBERS. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFIRM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03. THE SYNTHETIC FIBERS SHALL BE PRODUCED FROM RECYCLED, MANUFACTURED MATERIALS, SUCH AS, BUT NOT LIMITED TO, PRE-CONSUMER SCRAP CARPET, TIRE CHORD, AND TIRE FIBER MATERIALS.
2. EROSION EELS™ SHALL BE MANUFACTURED FROM A WOVEN GEOTEXTILE COVERING WITH INTERIOR FILTER MATERIALS SUCH AS 100% SHREDDED RUBBER (MIXTURE SPECIFICATION 1.0, 50% SHREDDED RUBBER/50% AASHTO-CERTIFIED WOOD CHIPS (MIXTURE SPECIFICATION 1.1), OR 1/3 SHREDDED RUBBER:1/3 AASHTO-CERTIFIED WOOD CHIPS:1/3 RECYCLED SYNTHETIC FIBERS (MIXTURE SPECIFICATION 1.2).
3. LENGTHS OF EROSION EELS™ SHALL BE EITHER A NOMINAL +/-10 FT. OR +/- 4.5 FT. NOMINAL DIAMETER SHALL BE +/-9.5 INCHES.
4. EROSION EELS™ CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES TO INTERCEPT RUNOFF, REDUCE FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
5. EROSION EELS™ SHALL BE INSTALLED ALONG THE GROUND CONTOUR, AT THE TOE OF SLOPES, AT AN ANGLE TO THE CONTOUR TO DIRECT FLOW AS A DIVERSION BERM, AROUND INLET STRUCTURES, IN A DITCH AS A CHECK DAM TO HELP REDUCE SUSPENDED SOLIDS LOADING AND RETAIN SEDIMENT, OR AS A GENERAL FILTER FOR ANY DISTURBED SOIL AREA.
6. NO TRENCHING IS REQUIRED FOR INSTALLATION OF EROSION EELS™
7. PREPARE BED FOR EEL INSTALLATION BY REMOVING ANY LARGE DEBRIS INCLUDING ROCKS, SOIL CLODS, AND WOODY VEGETATION. EROSION EELS™ CAN ALSO BE PLACED OVER PAVED SURFACES INCLUDING CONCRETE AND ASPHALT WITH NO SURFACE PREPARATION REQUIRED.
8. RAKE BED AREA WITH A HAND RAKE OR BY DRAG HARROW.
9. DO NOT PLACE EEL DIRECTLY OVER RILL AND GULLIES UNTIL AREA HAS BEEN HAND-EXCAVATED AND RAKED TO PROVIDE A LEVEL BEDDING SURFACE. ALL SURFACES SHALL BE UNIFORMLY COMPACTED FOR MAXIMUM SEATING OF EELS IN PLACE.
10. FOR LOCATIONS WHERE EELS WILL BE PLACED IN CONCENTRATED FLOWS (SUCH AS CHECK DAMS, INLET PROTECTION) AND FOR PERIMETER CONTROLS AT PRIMARY DISCHARGE LOCATIONS, BED THE EELS IN A JUTE MESH CRADLE PER THE DETAILED DRAWINGS.
11. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES.
12. IF MORE THAN ONE EROSION EEL™ IS PLACED IN A ROW, THE EELS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. COMPRESS THE TWO EELS OF THE OVERLAP TIGHTLY TOGETHER EITHER BY HAND OR MANUFACTURER-APPROVED MECHANIZED MEANS.
13. WHEN USED IN DITCHES AS A CHECK DAM, EROSION EELS™ SHALL BE INSTALLED PER MANUFACTURER'S DETAILS.
14. FOR CHECK DAM APPLICATIONS, EROSION EELS™ SHALL BE PLACED PERPENDICULAR TO THE FLOW OF THE WATER. EROSION EELS™ SHALL CONTINUE UP THE SIDES SLOPES A MINIMUM OF 3 FEET ABOVE THE DESIGN FLOW DEPTH.
15. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED OR UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).
16. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T-POSTS (5 TO 7 FT. LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT-DIP GALVANIZED OR COATED WITH A WEATHER-RESISTANT PAINT FOR STEEL APPLICATION. POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHEET.
17. PLACE T-POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T-POSTS ARE TO BE EMBEDDED A MINIMUM OF 2 FT INTO GROUND.

1 / C9.01 EROSION EEL
NOT TO SCALE



5 / C9.01 EROSION CONTROL MEASURES FOR UTILITY TRENCHES
NOT TO SCALE



GENERAL NOTES

1. EROSION EELS™ USED IN INLET PROTECTION AND CONCRETE WASHOUT APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.0 (FOR HIGH FLOW APPLICATIONS WHERE MINIMAL PONDNG IS DESIRED) OR 1.1.
   a. MIXTURE SPECIFICATION 1.0. A FILTER MIXTURE COMPRISED OF 100% SHREDDED RUBBER THAT HAS BEEN WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE MATERIAL SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- ? INCH.
   b. MIXTURE SPECIFICATION 1.1. A FILTER MIXTURE COMPRISED OF 50% SHREDDED RUBBER AND 50% WOOD CHIP PARTICLES BY VOLUME. THE SHREDDED RUBBER SHALL BE WASHED AND PROCESSED TO REMOVE MOST, IF NOT ALL, METAL COMPONENTS. THE RUBBER SHALL BE DERIVED FROM RECYCLED TIRES AND SHALL BE SHREDDED TO PRODUCE A MAXIMUM PARTICLE SIZE OF +/- 3/4 INCH. THE WOOD CHIPS SHALL BE PRODUCED FROM HARDWOOD TREES AND SHALL CONFIRM TO AASHTO CERTIFICATION SPECIFICATION MP 9-03.
2. EROSION EELS™ USED IN DIVERSION BERM APPLICATIONS SHALL HAVE A SPECIFICATION MIXTURE 1.0.
3. CONSULT WITH THE MANUFACTURER'S REPRESENTATIVE FOR EEL MIXTURE TYPES REQUIRED FOR SPECIFIC POND APPLICATIONS.
4. EROSION EELS™ SHALL BE MANUFACTURED FROM A WOVEN GEOTEXTILE COVERING WITH INTERIOR FILTER MATERIALS SUCH AS 100% SHREDDED RUBBER (MIXTURE SPECIFICATION 1.0, 50% SHREDDED RUBBER/50% AASHTO-CERTIFIED WOOD CHIPS (MIXTURE SPECIFICATION 1.1), OR 1/3 SHREDDED RUBBER:1/3 AASHTO-CERTIFIED WOOD CHIPS:1/3 RECYCLED SYNTHETIC FIBERS (MIXTURE SPECIFICATION 1.2).
2. LENGTHS OF EROSION EELS™ SHALL BE EITHER A NOMINAL +/-10 FT. OR +/- 4.5 FT. NOMINAL DIAMETER SHALL BE +/-9.5 INCHES.
3. EROSION EELS™ CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES TO INTERCEPT RUNOFF, REDUCE FLOW VELOCITY, RELEASE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
4. EROSION EELS™ SHALL BE INSTALLED ALONG THE GROUND CONTOUR, AT THE TOE OF SLOPES, AT AN ANGLE TO THE CONTOUR TO DIRECT FLOW AS A DIVERSION BERM, AROUND INLET STRUCTURES, IN A DITCH AS A CHECK DAM TO HELP REDUCE SUSPENDED SOLIDS LOADING AND RETAIN SEDIMENT, OR AS A GENERAL FILTER FOR ANY DISTURBED SOIL AREA.
5. NO TRENCHING IS REQUIRED FOR INSTALLATION OF EROSION EELS™
6. PREPARE BED FOR EEL INSTALLATION BY REMOVING ANY LARGE DEBRIS INCLUDING ROCKS, SOIL CLODS, AND WOODY VEGETATION. EROSION EELS™ CAN ALSO BE PLACED OVER PAVED SURFACES INCLUDING CONCRETE AND ASPHALT WITH NO SURFACE PREPARATION REQUIRED.
7. RAKE BED AREA WITH A HAND RAKE OR BY DRAG HARROW.
8. DO NOT PLACE EEL DIRECTLY OVER RILL AND GULLIES UNTIL AREA HAS BEEN HAND-EXCAVATED AND RAKED TO PROVIDE A LEVEL BEDDING SURFACE. ALL SURFACES SHALL BE UNIFORMLY COMPACTED FOR MAXIMUM SEATING OF EELS IN PLACE.
9. FOR LOCATIONS WHERE EELS WILL BE PLACED IN CONCENTRATED FLOWS (SUCH AS CHECK DAMS, INLET PROTECTION) AND FOR PERIMETER CONTROLS AT PRIMARY DISCHARGE LOCATIONS, BED THE EELS IN A JUTE MESH CRADLE PER THE DETAILED DRAWINGS.
10. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES.
11. IF MORE THAN ONE EROSION EEL™ IS PLACED IN A ROW, THE EELS SHALL BE OVERLAPPED A MINIMUM OF 12 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. COMPRESS THE TWO EELS OF THE OVERLAP TIGHTLY TOGETHER EITHER BY HAND OR MANUFACTURER-APPROVED MECHANIZED MEANS.
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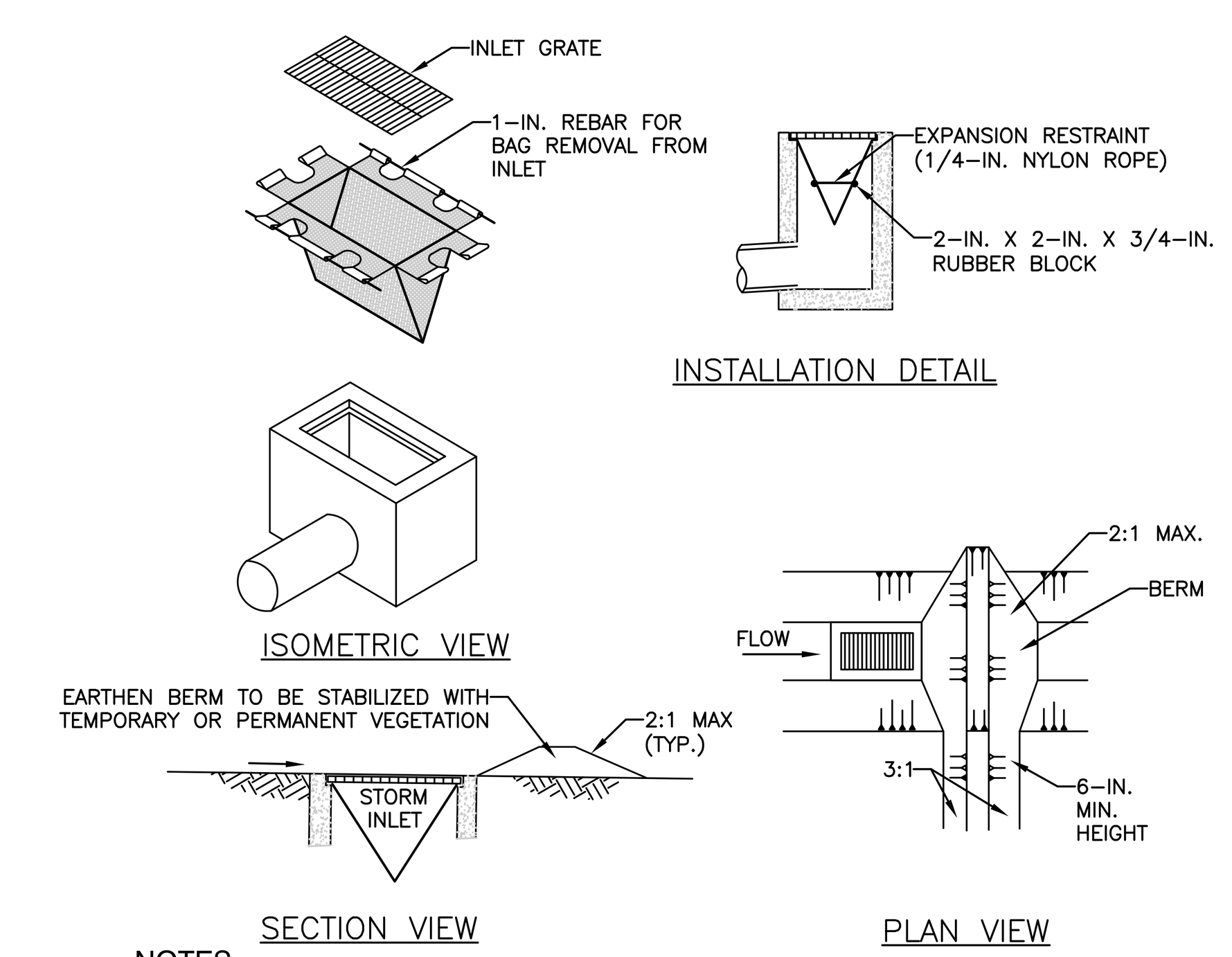
14. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED OR UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).
15. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T-POSTS (5 TO 7 FT. LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT-DIP GALVANIZED OR COATED WITH A WEATHER-RESISTANT PAINT FOR STEEL APPLICATION. POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHEET.
16. PLACE T-POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T-POSTS ARE TO BE EMBEDDED A MINIMUM OF 2 FT INTO GROUND.

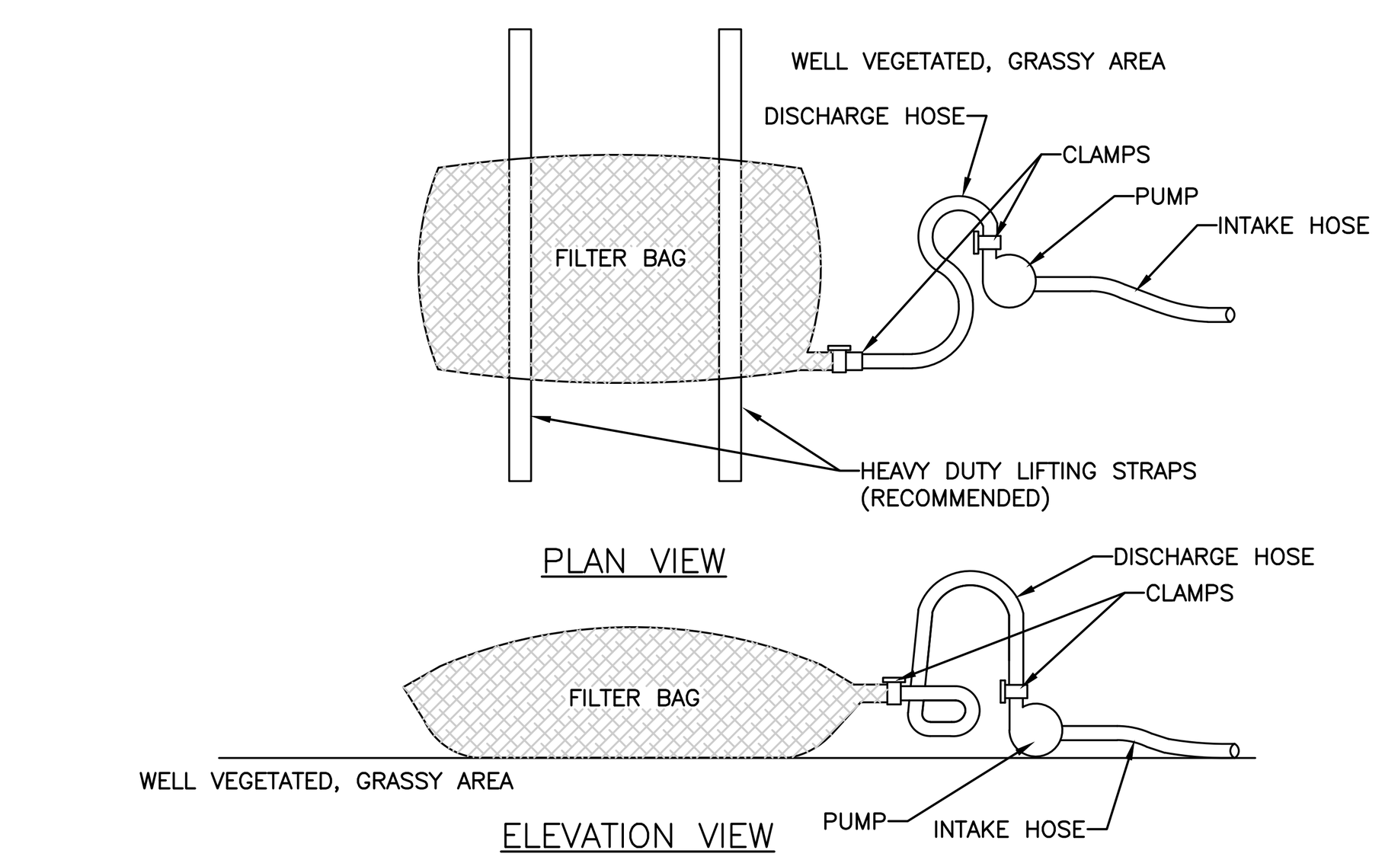
3 / C9.01 TEMPORARY EROSION EEL CONCRETE WASHOUT FACILITY
NOT TO SCALE



NOTES

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
3. ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.
4. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 POUNDS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 POUNDS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
5. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
6. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

2 / C9.01 STANDARD CONSTRUCTION FILTER BAG INLET PROTECTION
NOT TO SCALE



NOTES

1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB / IN.
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

4 / C9.01 STANDARD CONSTRUCTION PUMPED WATER FILTER BAG
NOT TO SCALE

Dig Safely. New York
Call 811 before you dig

NEW YORK LAW REQUIRES AT LEAST 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE – STOP CALL DIG SAFELY NEW YORK, INC. 1-800-962-7962.

NEW YORK STATE CODE RULE 753 (1997) AS AMENDED IN JULY 2002 AND JANUARY 2012 REQUIRES NO LESS THAN 2 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST, AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF NEW YORK, SUBMIT A REQUEST ONLINE VIA DIG SAFELY NEW YORK'S ENTRY PLATFORM EXACTIX OR CALL TOLL FREE 1-800-962-7962.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE. OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

PRELIMINARY
NOT FOR CONSTRUCTION

STATE OF NEW YORK · EDUARDO J. INTRIAGO · No. 095628 · LICENSED PROFESSIONAL ENGINEER
02/01/2023

REVISION RECORD

NO	DATE	DESCRIPTION
0	02/01/2023	PERMIT DRAWING SET

Civil & Environmental Consultants of New York, Inc.
908 Niagara Falls Boulevard · North Tonawanda, NY 14120
Ph: 716.930.6080
www.cecinc.com

AMAZON.COM SERVICES LLC
EV CHARGER INSTALLATION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

EROSION & SEDIMENTATION CONTROL NOTES AND DETAILS

DATE:	NOVEMBER 23, 2022	DRAWN BY:	RCS
DWG SCALE:	AS SHOWN	CHECKED BY:	EJB
PROJECT NO:	325-198		
APPROVED BY:	EJI		

DRAWING NO.: **C9.01-BP1**

ELECTRICAL GENERAL NOTES

1 DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.

2 ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A PULLWIRE OR EQUAL AND TRACER CABLE.

3 IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.

4 CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL INCLUDE IN HIS BID, COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.

5 WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES.

6 PROVIDE PERMITS AND INSPECTIONS REQUIRED.

7 GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.

8 SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.

9 PROVIDE EXTERIOR PULL BOXES AND HANDHOLES AS REQUIRED TO COMPLETE WORK INDICATED. SPLICES IN EXTERIOR PULL BOXES AND HANDHOLES SHALL BE MADE WATERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.

10 VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRANCHES TO AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS. CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO WORK.

11 CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING OR FACTORY WIRING IN EQUIPMENT PROVIDED BY THIS CONTRACTOR.

12 CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR INSTALLATION METHODS.

13 SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION

14 ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY.

POWER GENERAL NOTES

1 INTERRUPTING RATINGS NOTED IN SCHEDULES SHALL APPLY TO ENTIRE PANELBOARD AND/OR SWITCHBOARD. ALL EQUIPMENT COMPRISING PANELS AND/OR SWITCHBOARDS SHALL BE FULLY RATED FOR SHORT CIRCUIT CURRENT NOTED.

2 PROVIDE ENGRAVED NAMEPLATES ON SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, MOTOR CONTROL CENTERS, TRANSFORMERS, ETC., INDICATING EQUIPMENT DESIGNATION (OR DESIGNATION OF EQUIPMENT SERVED) AND VOLTAGE.

3 FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.

4 PANEL DIRECTORIES SHALL BE REMOVABLE. SUBMIT PROPOSED SCHEDULE OF DIRECTORIES TO OWNER FOR APPROVAL. ROOM NAMES AND NUMBERS SHALL BE AS DIRECTED BY OWNER. DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.

5 ALL BRANCH CIRCUIT AND FEEDER CONDUITS SHALL HAVE A CODE SIZED COPPER GROUNDING CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.

6 PULLBOXES, CABINETS, ETC. MOUNTED ON THE EXTERIOR AT GRADE LEVEL, SHALL BE WEATHERPROOF TYPE WITH HINGED LOCKABLE COVERS SECURED WITH TAMPERPROOF SCREWS.

7 UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, UNLESS NOTED OTHERWISE.

8 PROVIDE SELF ADHESIVE IDENTIFICATION INSIDE COVER OF EACH FUSIBLE SWITCH, INDICATING SIZE AND TYPE OF FUSES PROVIDED.

9 PROVIDE ONE (1) SET OF THREE (3) SPARE FUSES FOR EACH SIZE AND TYPE PROVIDED ON THIS PROJECT. INSTALL FUSES IN A HINGED DOOR, SHEET METAL STORAGE CABINET EQUIPPED WITH CLIPS OR CUBICLES, EACH MARKED WITH THE SIZE AND TYPE FUSE STORED THEREIN. PROVIDE NAMEPLATE "SPARE FUSES". INSTALL IN LOCATION(S) AS DIRECTED BY OWNER.

ELECTRICAL SCOPE COORDINATION

SCOPE ITEM	RESPONSIBILITY				COMMENTS
	OWNER		ELECTRICAL CONTRACTOR		
	FURNISH	INSTALL	FURNISH	INSTALL	
MV TO 480/277V TRANSFORMER(S)	X			X	
480V-208/120V TRANSFORMER(S)	X			X	
480/277V SWITCHBOARD	X			X	
480/277V PANELBOARD(S)	X			X	
208/120V PANELBOARD(S)	X			X	
LEVEL 3 EV CHARGERS(S)	X			X	
LEVEL 2 EV CHARGERS(S)	X			X	
NEW CONDUIT(S)			X	X	
NEW FEEDER(S)			X	X	

GENERAL NOTES:
1. IF NOT LISTED, ITEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

ELECTRICAL ABBREVIATIONS

A	AMPERE
AF	AMP FRAME
AFC	AVAILABLE FAULT CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AT	AMP TRIP
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CONT	CONTINU(E) (OUS) (UED) (ATION)
CONTR	CONTRACTOR
CT	CURRENT TRANSFORMER
CU	COPPER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE
ERMS	ENERGY REDUCTION MAINTENANCE SWITCH
EXIST	EXISTING
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METALLIC CONDUIT
FUSW	FUSE/SWITCH RATINGS (AMPS)
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION EQUIPMENT
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HZ	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
LFMC	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
LSI	LONG TIME, SHORT TIME, INSTANTANEOUS
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
#	NUMBER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PB	PULL BOX
PNL	PANEL
PRCLF	PARTIAL RANGE CURRENT LIMITING FUSE
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE CONDUIT
REQ	REQUIRED
RSC	RIGID STEEL CONDUIT
SCCR	SHORT CIRCUIT CURRENT RATING
SEC	SECONDARY
SW	SWITCH
SWBD	SWITCHBOARD
UG	UNDERGROUND
V	VOLT
VCB	VACUUM CIRCUIT BREAKER
VFI	VACUUM FAULT INTERRUPTER
W	WATT
XFMR	TRANSFORMER

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	RECEPTACLE
J XX	RECESSED JUNCTION BOX - LETTER INDICATES TYPE
J XX	SURFACE MOUNTED JUNCTION BOX - LETTER INDICATES TYPE
J XX	RECESSED JUNCTION BOX, WAL - LETTER INDICATES TYPE
J XX	SURFACE MOUNTED JUNCTION BOX, WALL - LETTER INDICATES TYPE
	LEVEL 2 EV VEHICLE CHARGER
	LEVEL 3 EV VEHICLE CHARGER
	GENERATOR - SIZE VARIES
	TRANSFORMER - SIZE VARIES
	PANELBOARD
	SWITCHBOARD/DISTRIBUTION PANELBOARD
	GROUND
K	ELECTRICAL INTERLOCK
M	METER
MH	MANHOLE
HH	HANDHOLE
ATS	AUTOMATIC TRANSFER SWITCH
M R	METER & RELAY
	DRAW-OUT POTENTIAL TRANSFORMER
SPD	SURGE PROTECTION DEVICE
	DISCONNECT SWITCH
50/51 50G	INSTANTANEOUS / TIME-DELAY / GROUND INSTANTANEOUS RELAY
	EXTERIOR POLE MOUNTED LIGHT FIXTURE

ELECTRICAL SHEET INDEX

Discipline	Sheet Number	Sheet Name
Electrical-BP1	E0.00-BP1	ELECTRICAL TITLE SHEET
Electrical-BP1	E0.10-BP1	ELECTRICAL SITE PLAN
Electrical-BP1	E1.11-BP1	ELECTRICAL ENLARGED DISTRIBUTION PLAN
Electrical-BP1	E5.00-BP1	ELECTRICAL ONE-LINE DIAGRAM
Electrical-BP1	E6.00-BP1	PANEL SCHEDULES
Electrical-BP1	E7.01-BP1	ELECTRICAL DETAILS
Electrical-BP1	E7.02-BP1	ELECTRICAL DETAILS
Electrical-BP1	E8.00-BP1	ELECTRICAL SPECIFICATIONS
Electrical-BP1	E8.01-BP1	ELECTRICAL SPECIFICATIONS
Electrical-BP1	E8.02-BP1	ELECTRICAL SPECIFICATIONS
Electrical-BP1	E8.03-BP1	ELECTRICAL SPECIFICATIONS

REVISION RECORD

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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DELIVERY STATION EXPANSION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

ELECTRICAL TITLE SHEET

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063		
APPROVED BY:	KBA		

E0.00-BP1

CHARGER QUANTITIES (PHASE-1)

(99)	LEVEL 2 CHARGER STALLS (PHASE-1)
(5) (47)	SINGLE MOUNTED LEVEL 2 CHARGERS (PHASE-1) DUAL MOUNTED LEVEL 2 CHARGERS (PHASE-1)

LINE STYLE KEY

- - - - - - - - - -	UNDERGROUND POWER CONDUIT
————————	ABOVE GROUND POWER CONDUIT

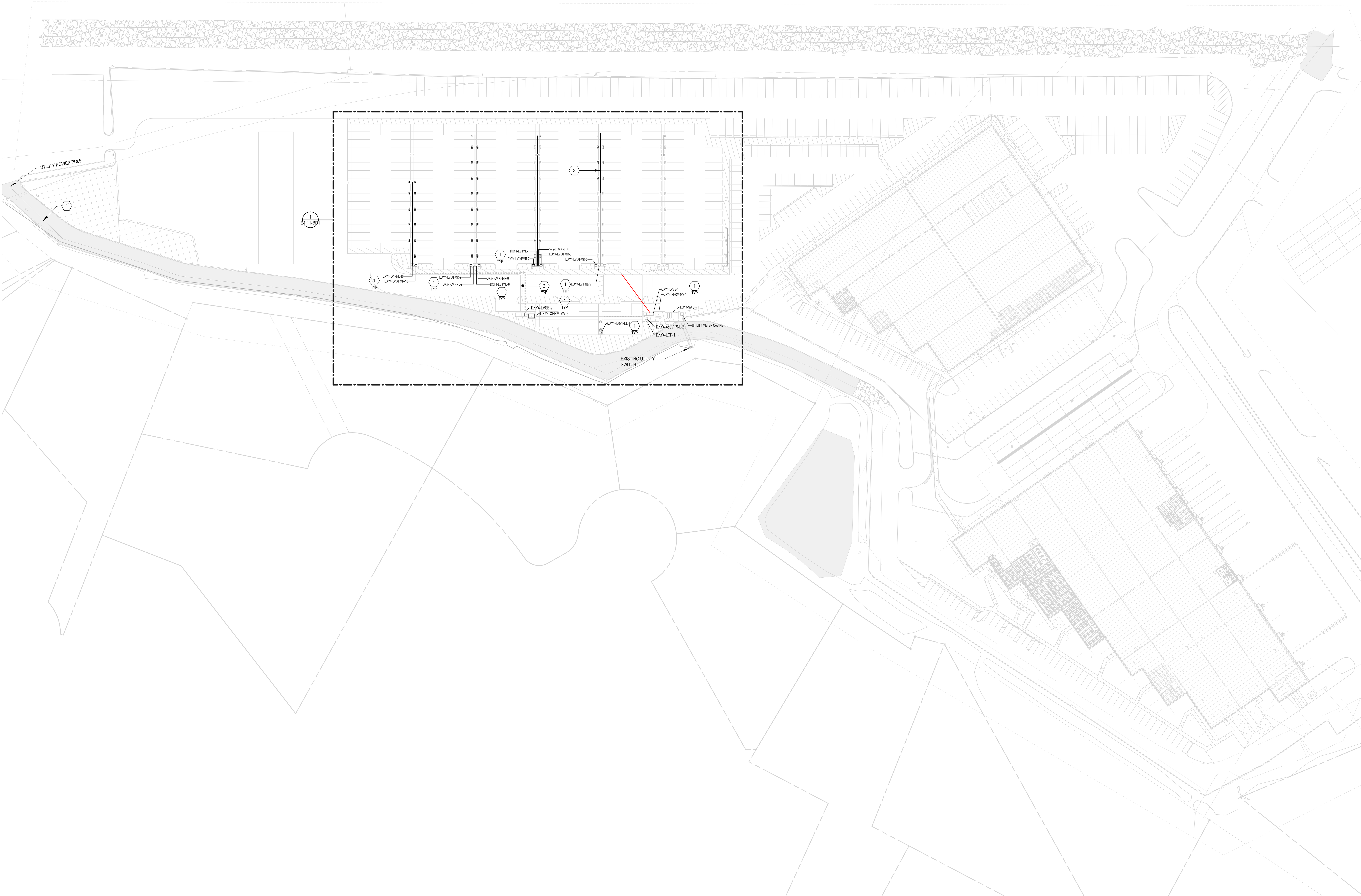
GENERAL NOTES:

A. SEE SHEET E0.00-BP1 FOR PROJECT NOTES.

B. COORDINATE CONDUIT ROUTING WITH ALL UNDERGROUND UTILITIES.

KEY NOTES:

1. PROVIDE CONCRETE PAD FOR ALL PAD MOUNTED ELECTRICAL EQUIPMENT. NEW PAD SHALL BE MINIMUM 6" ABOVE GRADE, EDGE OF PAD SHALL EXTEND 6" BEYOND EQUIPMENT FRAME. CHAMFER ALL OUTSIDE CORNERS.
2. ROUTE CONDUIT BELOW GRADE AT PEDESTRIAN. PROVIDE JUNCTION BOXES AS REQUIRED.
3. UTILIZE (4) 2" SPARE CONDUITS INSTALLED AS PART OF BID PACKAGE 0. EXTEND CONDUITS ABOVE GROUND. REFER TO ABOVE GROUND CONDUIT DETAILS FOR ADDITIONAL INFORMATION.



1 ELECTRICAL SITE PLAN
SCALE: 1" = 60'-0"

REVISION RECORD

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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ELECTRICAL SITE PLAN

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063		
APPROVED BY:	KBA		

E0.10-BP1

MINIMUM BRANCH CIRCUIT LENGTH - PANELBOARD TO CHARGER TO MEET L2 CHARGER 5KA SCCR RATING	
NOTES: 1. IF CONDUCTOR LENGTH IS LESS THAN THE REQUIRED LENGTH TO BE BELOW 5kA SCCR, PROVIDE ADDITIONAL CONDUCTOR LENGTH COILED WITH PULLBOX.	
LV MODULE TYPE	MINIMUM BRANCH CABLE LENGTH TO CHARGER FROM PANELBOARD – CU 4AWG
TYPE 1- 75KVA MODULE	10 FEET
TYPE 2- 150KVA MODULE	40 FEET
TYPE 3- 225KVA MODULE	50 FEET
TYPE 4- 300KVA MODULE	55 FEET

208V BRANCH CIRCUIT CABLE SIZING STANDARDS - SIEMENS L2 CHARGER

NOTES:
1. PROVIDE ABOVE GROUND JUNCTION BOX AND SPLICE CONDUCTORS DOWN TO #6AWG CONDUCTORS TO LAND ON THE TERMINALS OF THE L2 CHARGER (#6AWG IS THE LARGEST CONDUCTOR ALLOWED BY MANUFACTURER TO LAND ON TERMINALS).

208V L2 CHARGER BRANCH CIRCUIT - COPPER CABLE STANDARDS

	EV CHARGER DISTANCE	CABLE SIZE - COPPER (90C)	MAX LENGTH (FEET)	CONDUIT SIZE (INCHES)	CIRCUITS PER CONDUIT (DUAL OR QUAD)	CABLES PER CONDUIT (DUAL OR QUAD)	AMPACITY WITH DERATION (80% FOR DUAL CONDUIT AND 70% FOR QUAD CONDUIT) - TEMPERATURE ADJUSTMENT NOT INCLUDED	AMPACITY FOR 60C CONDUCTOR - NO DERATE AT 60 C	MAX CHARGER LOAD (SIEMENS L2 CHARGER)	MAXIMUM VOLTAGE DROP (3%)
1	SHORT	2#4AWG+4G	220 ft	2	2 or 4	(4+2G) OR (8+4G)	76A or 66A	70A	48A	2.99%
2	MEDIUM	2#2AWG+2G	390 ft	2 1/2	2 or 4	(4+2G) OR (8+4G)	104A or 91A	95A	48A	2.96%

480V BRANCH CIRCUIT CABLE SIZING - SIEMENS L3 CHARGER

480V L3 CHARGER BRANCH CIRCUIT - COPPER CABLE

	CABLE SIZE - COPPER (90C)	CONDUIT SIZE (INCHES)	AMPACITY FOR 60C CONDUCTOR - NO DERATE AT 60 C	MAX CHARGER LOAD (SIEMENS L3 CHARGER)
3	3#2AWG+4G	1 1/4	95A	66A

GENERAL NOTES:

A. SEE SHEET E0.00-BP1 FOR PROJECT GENERAL NOTES.

B. ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT SHALL CONFORM TO NEC ARTICLE 110. CONSULT ENGINEER WHERE SPACE APPEARS INADEQUATE DUE TO CIVIL CHANGES, EQUIPMENT LAYOUT CHANGES, OR FIELD CONDITIONS. DO NOT COVER, OBSCURE OR BLOCK ACCESS TO EQUIPMENT, DATA PLATES, ACCESS PANELS OR MAINTENANCE AREAS WITH ELECTRICAL WORK.

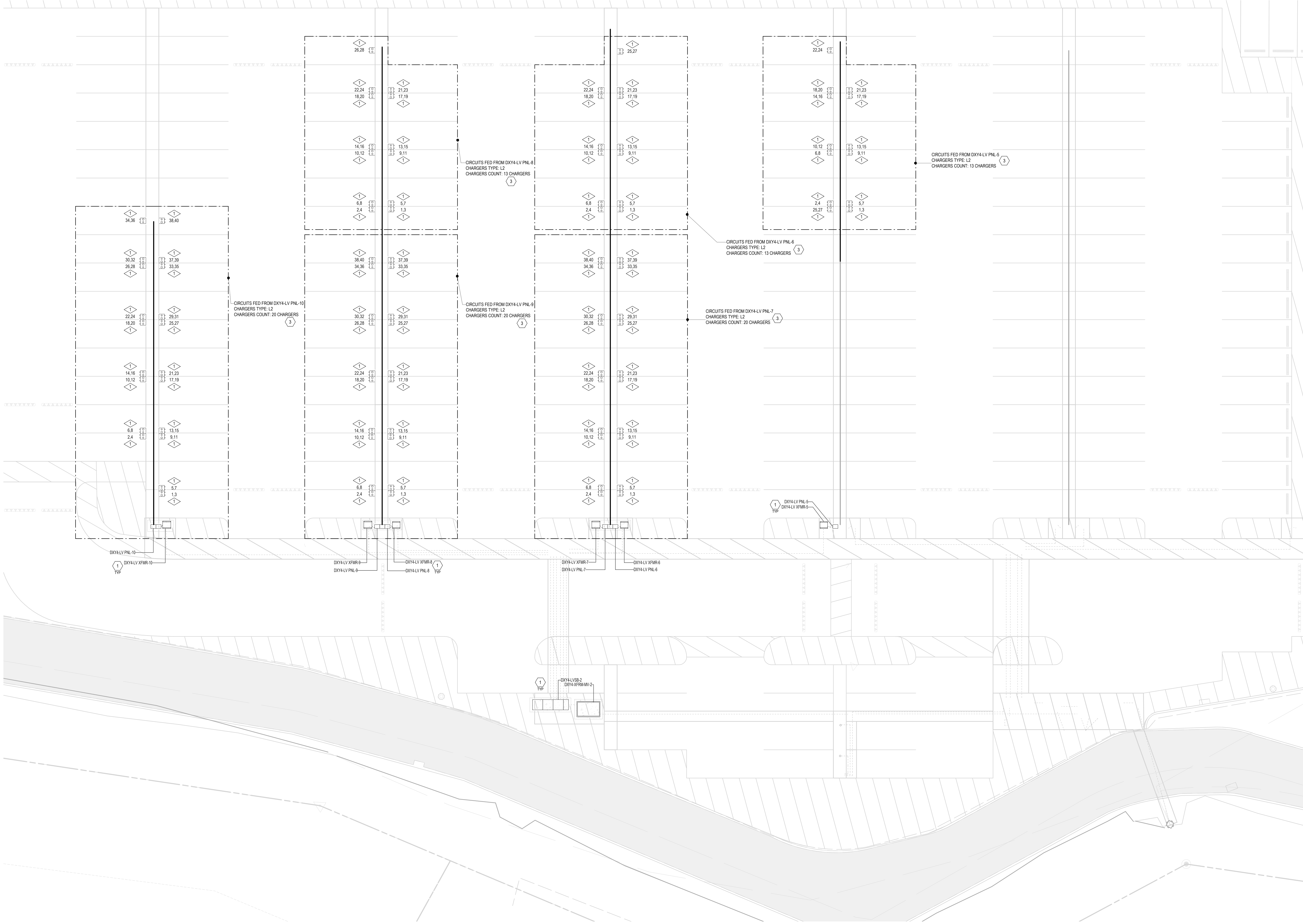
C. COORDINATE CONDUIT ROUTING WITH ALL UNDERGROUND UTILITIES.

D. PRIMARY DISCONNECT NOT LOCATED WITHIN SIGHT OF TRANSFORMER MUST HAVE LOCKING MEANS AT REMOTE DISCONNECT AND A LABEL AT TRANSFORMER DENOTING DISCONNECT LOCATION PER NEC 450.14.

KEY NOTES:

(NOT ALL NOTES MAY BE USED ON THIS SHEET)

1. PROVIDE CONCRETE PAD AND UNISTRUT FRAMING AS REQUIRED FOR ALL GRADE MOUNTED ELECTRICAL EQUIPMENT. NEW PAD SHALL BE MINIMUM 6" HIGH, EDGE OF PAD SHALL EXTEND 6" BEYOND EQUIPMENT FRAME. CHAMFER ALL OUTSIDE CORNERS.
2. PROVIDE SINGLE POINT CONNECTION FOR DUAL OUTPUT LEVEL 3 DC FAST CHARGER. PROVIDE CONCRETE PAD FOR EV CHARGER. REFER TO MANUFACTURER CUT SHEET FOR EQUIPMENT DIMENSIONS. EXTEND PAD 4" BEYOND EDGE OF EQUIPMENT, CHAMFER CORNERS.
3. PROVIDE CONNECTION TO OWNER SUPPLIED ELECTRIC VEHICLE CHARGER. PROVIDE CONDUIT FROM SOURCE PANEL TO EACH GROUPING OF CHARGERS. A SINGLE CONDUIT SHALL FEED UP TO 4 CHARGERS. ROUTE CONDUIT ABOVE GROUND. REFER TO ABOVE GROUND CONDUIT DETAILS FOR MORE INFORMATION.



1 ENLARGED DISTRIBUTION AREA
SCALE: 1/16" = 1'-0"

REVISION RECORD

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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ELECTRICAL ENLARGED DISTRIBUTION PLAN

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063		
APPROVED BY:	KBA		

STATE OF NEW YORK · MATTHEW W. FULTS · 087346-1 · LICENSED PROFESSIONAL ENGINEER

E1.11-BP1

TRANSFORMER SCHEDULE

NOTES:

1. REFER TO DETAIL 7/E7.01-BP1
2. REFER TO DETAIL 6/E7.01-BP1

ITEM	PRIMARY (DELTA)	SECONDARY (WYE)	TRANSFORMER GROUND ELECTRODE CONDUCTOR (CU)	SIZE	CONSTRUCTION	ENCLOSURE	MOUNTING	WEIGHT (LBS)	NOTES
DXY4-LV XFMR-5	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#1/0 AWG	150 kVA	DRY TYPE	NEMA-3R	PAD	1239	1
DXY4-LV XFMR-6	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#1/0 AWG	150 kVA	DRY TYPE	NEMA-3R	PAD	1239	1
DXY4-LV XFMR-7	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#2/0 AWG	225 kVA	DRY TYPE	NEMA-3R	PAD	1624	1
DXY4-LV XFMR-8	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#1/0 AWG	150 kVA	DRY TYPE	NEMA-3R	PAD	1239	1
DXY4-LV XFMR-9	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#2/0 AWG	225 kVA	DRY TYPE	NEMA-3R	PAD	1624	1
DXY4-LV XFMR-10	480V, 3-PHASE, 3-WIRE	120/208V, 3-PHASE, 4-WIRE	#2/0 AWG	225 kVA	DRY TYPE	NEMA-3R	PAD	1624	1
DXY4-XFRM-MV-2	13.2kV, 3-PHASE, 3-WIRE	480 V, 3-PHASE, 4-WIRE	#3/0 AWG	1500 kVA	OIL TYPE	NEMA 3R	PAD	10300	2

3Ø FEEDER SCHEDULE

GENERAL NOTES:

A. APPROVED CONDUCTOR INSULATIONS: THHN/THWN, THHN/THWN-2, XHHW-2. REFER TO PROJECT SPECIFICATIONS FOR INSULATION TYPE REQUIRED WITH VARYING CONDUCTOR SIZES AND APPLICATIONS.
B. CONDUIT TYPE REQUIREMENTS VARY DEPENDING ON APPLICATION AND LOCATION OF FEEDER. REFER TO PROJECT SPECIFICATIONS FOR REQUIREMENTS.
C. NEUTRAL SHALL BE THE SAME SIZE AS THE PHASE CONDUCTOR UNLESS OTHERWISE NOTED.

MARK (AMPACITY)	COPPER FEEDER 3W (NO NEUTRAL) PH-GND-C	COPPER FEEDER 4W (W/ NEUTRAL) PH-GND-C	COMPACT STRAND ALUMINUM ALLOY FEEDER 3W (NO NEUTRAL) PH-GND-C	COMPACT STRAND ALUMINUM ALLOY FEEDER 4W (W/ NEUTRAL) PH-GND-C	MARK (AMPACITY)
20	12-12-3/4"	12-12-3/4"	NOT ALLOWED	NOT ALLOWED	20
30	10-10-3/4"	10-10-3/4"	NOT ALLOWED	NOT ALLOWED	30
40	8-10-3/4"	8-10-3/4"	NOT ALLOWED	NOT ALLOWED	40
50	6-10-1"	6-10-1"	NOT ALLOWED	NOT ALLOWED	50
50T	---	6-8-1"	NOT ALLOWED	NOT ALLOWED	50T
60	4-10-1"	4-10-1 1/4"	NOT ALLOWED	NOT ALLOWED	60
70	4-8-1 1/4"	4-8-1 1/4"	NOT ALLOWED	NOT ALLOWED	70
80	3-8-1 1/4"	3-8-1 1/4"	NOT ALLOWED	NOT ALLOWED	80
90	2-4-1 1/4"	2-8-1 1/2"	NOT ALLOWED	NOT ALLOWED	90
100	3-8-1 1/4"	3-8-1 1/4"	1/0-6-1 1/2"	1/0-6-2"	100
100T	---	3-8-1 1/4"	---	1/0-6-2"	100T
125	1-6-1 1/2"	1-6-1 1/2"	2/0-4-1 2"	2/0-4-2"	125
150	1/0-6-1 1/2"	1/0-6-2"	3/0-4-2"	3/0-4-2 1/2"	150
150T	---	1/0-6-2"	---	3/0-4-2 1/2"	150T
175	2/0-6-2"	2/0-6-2"	4/0-4-2"	4/0-4-2 1/2"	175
200	3/0-6-2"	3/0-6-2"	250KCMIL-4-2 1/2"	250KCMIL-4-3"	200
200T	---	3/0-4-2 1/2"	---	250KCMIL-2-3"	200T
225	4/0-4-2"	4/0-4-2 1/2"	300KCMIL-2-2 1/2"	300KCMIL-2-3"	225
225T	---	4/0-2-2 1/2"	---	300KCMIL-1/0-3"	225T
250	250KCMIL-4-2 1/2"	250KCMIL-4-3"	350KCMIL-2-3"	350KCMIL-2-3"	250
250T	---	250KCMIL-2-3"	---	350KCMIL-1/0-3"	250T
300	350KCMIL-4-3"	350KCMIL-4-3"	500KCMIL-2-3"	500KCMIL-2-3 1/2"	300
350	(2) 2/0-3-2"	(2) 2/0-3-2"	(2) 4/0-1-2"	(2) 4/0-1-2 1/2"	350
400	---	500KCMIL-3-4"	---	(2) 250 KCMIL -1 - 3"	400
400T	---	(2) 3/0-2-4"	---	(2) 250 KCMIL - 1/0 - 3"	400T
450	(2) 4/0-2-2"	(2) 4/0-2-2 1/2"	(2) 300KCMIL-1/0-2 1/2"	(2) 300KCMIL-1/0-3"	450
500	(2) 250KCMIL-2-2 1/2"	(2) 250KCMIL-2-3"	(2) 350KCMIL-1/0-3"	(2) 350KCMIL-1/0-3"	500
500T	---	(2) 250KCMIL-1/0-3"	---	(2) 350KCMIL-3/0-3"	500T
600	(2) 350KCMIL-1-3"	(2) 350KCMIL-1-3"	(2) 500KCMIL-2/0-3"	(2) 500KCMIL-2/0-3 1/2"	600
600T		(2) 350KCMIL-2/0-3"	---	(2) 500KCMIL-4/0-3"	600T
800	(2) 500KCMIL-1/0-3"	(2) 500KCMIL-1/0-3 1/2"	(3) 400KCMIL-3/0-3 1/2"	(3) 400 KCMIL - 3/0 - 3 1/2"	800
800T	---	(3) 300 - 1#2/0 GND - 3"	---	(3) 400 - 1#4/0 GND - 3-1/2"	800T
1000	(3) 400KCMIL-2/0-3"	(3) 400KCMIL-2/0-3"	(4) 500KCMIL-4/0-3 1/2"	(4) 400 KCMIL - 4/0 - 3 1/2"	1000
1000T	---	(4) 250KCMIL-2/0-2 1/2"	---	(4) 400 KCMIL - 4/0 - 3 1/2"	1000T
1200T	---	(4) 350KCMIL-4/0-4"	---	(4) 500KCMIL-250KCMIL-4"	1200T
1600T	---	(5) 400KCMIL-25KCMIL0-4"	---	(5) 500KCMIL - 400KCMIL - 4"	1600T
2000T	---	(6) 400KCMIL-300KCMIL-4"	---	(7) 500KCMIL - 500KCMIL - 4"	2000T
2500T	---	(7) 500KCMIL-500KCMIL-4"	---	(9) 500KCMIL-500KCMIL-4"	2500T
3000T	---	(8) 500KCMIL-400KCMIL-4"	---	(10) 500KCMIL-500KCMIL-4"	3000T
MV165	---	---	#1/0 AL MV-105 - 1/3 CONCENTRIC NEUTRAL IN 6" CONDUIT	---	MV165
MV245	---	---	#4/0 AL MV-105 - 1/3 CONCENTRIC NEUTRAL IN 6" CONDUIT	---	MV245
MV400	---	---	#500 AL MV-105 - 1/3 CONCENTRIC NEUTRAL IN 6" CONDUIT	---	MV400

GENERAL NOTES:

A. SEE SHEET E0.00 FOR PROJECT GENERAL NOTES.

B. PROVIDE SELECTIVE COORDINATION STUDY AND ARC FLASH ANALYSIS USING SUPPLIED COMPONENTS. ADJUST TRIP SETTINGS ON CIRCUIT BREAKERS FOR OPTIMAL COORDINATION. OVERCURRENT PROTECTIVE DEVICES SHALL BE SELECTIVELY COORDINATED FOR DISTRIBUTION SERVICE LOADS TO 0.1 SECONDS.

C. REFER TO PANEL SCHEDULES ON ELECTRICAL E6.00 SERIES SHEETS FOR ADDITIONAL INFORMATION.

D. ALL GRADE MOUNTED EQUIPMENT SHALL BE INSTALLED ON A CONCRETE PAD, NO LESS THAN 6" ABOVE SURROUNDING GRADE.

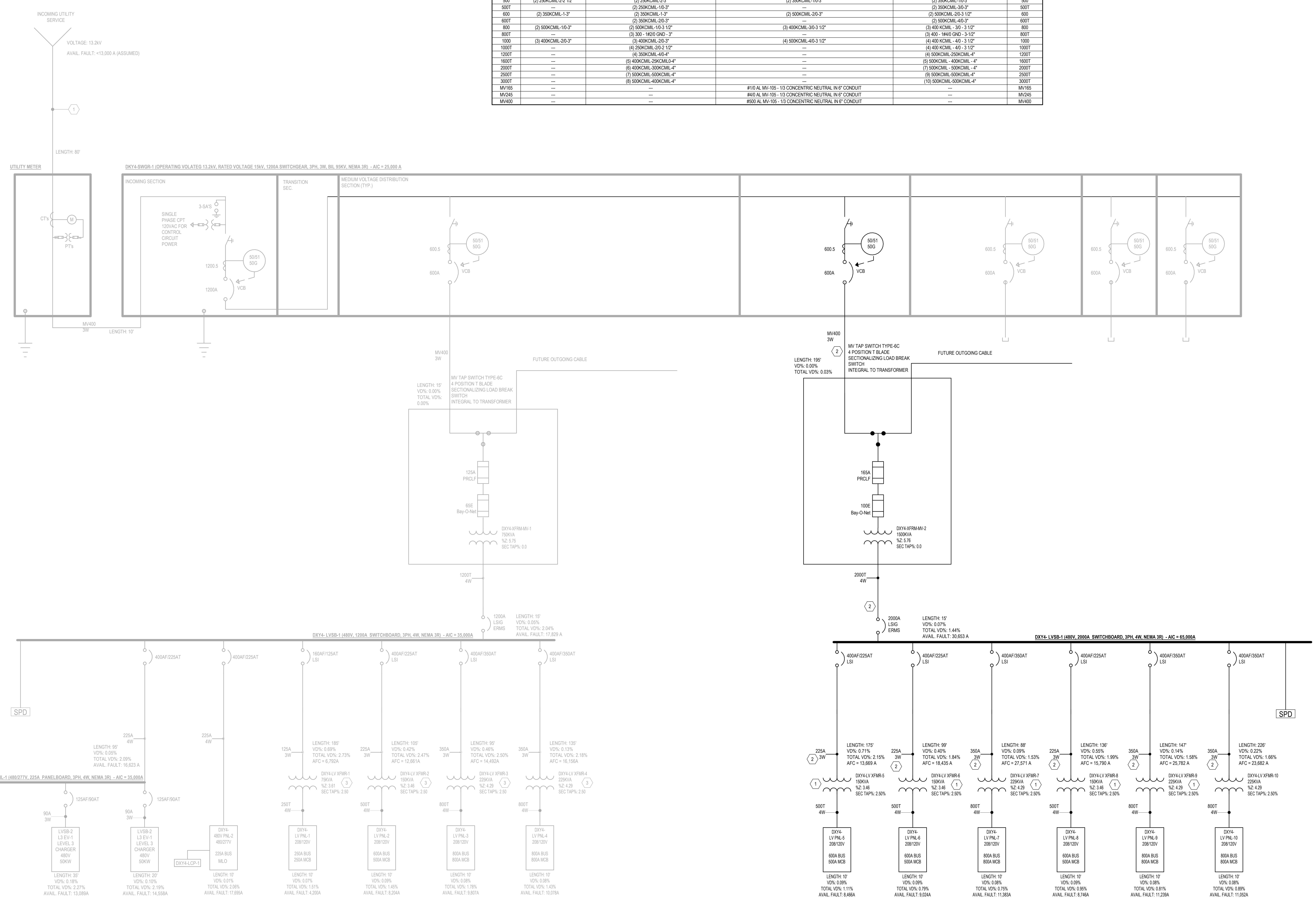
E. ALL TRANSFORMERS MUST BE GROUNDED PER NEC 250.30(A)(4) AND BONDED PER NEC 250.104(D). SEE DETAIL 2/E7.01-BP1 FOR TRANSFORMER PAD DETAIL.

F. PRE-ENERGIZATION AND OPERATING TESTS SHALL BE PERFORMED AND TEST REPORTS SHALL BE AVAILABLE TO THE AUTHORITY HAVING JURISDICTION PRIOR TO ENERGIZATION PER NEC 110.41.

G. LENGTHS SHOWN ARE FOR DESIGN CALCULATIONS AND NOT FOR BIDDING PURPOSES.

KEY NOTES:

1. ADJUST TRANSFORMER SECONDARY TAP VALUES AS INDICATED.
2. UTILIZE EXISTING CONDUIT IN PARKING LOT. PROVIDE CONDUCTORS AS INDICATED.



1 ELECTRICAL ONE-LINE DIAGRAM
SCALE: 12" = 1'-0"

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

REVISION RECORD

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ELECTRICAL ONE-LINE DIAGRAM

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:			4383.0063
APPROVED BY:			KBA

E5.00-BP1

SWITCHGEAR: DXY4-SWGR-1

BUS RATING: 1200 A **MAIN BREAKER:** 1200 A
VOLTS: 13.2kV **PHASES:** 3 **WIRES:** 3 **A.I.C RATINGS:** 25,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE VACUUM CIRCUIT BREAKER. ADJUST OVERLOAD RELAY SETTINGS TO VALUES SHOWN IN THIS PANEL SCHEDULE.

CKT	CIRCUIT DESCRIPTION	POLES	FRAME SIZE	RELAY TRIP SETTING	LOAD	REMARKS
1	DXY4-XFMR-MV-1 (INSTALLED AS PART OF BID PACK 0)	3	600 A	324 A	688840 VA	
2	DXY4-XFMR-MV-2 (INSTALLED AS PART OF BID PACK 1)	3	600 A	348 A	988020 VA	
3						
4						
5						
6						
				TOTAL LOAD:	1676860 VA	
				TOTAL AMPS:	73 A	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	SWITCHBOARD TOTALS	
Electric Vehicle	1676860 VA	125.00%	2096075 VA		
				CONNECTED LOAD:	1676860 VA
				ESTIMATED DEMAND:	2096075 VA
				CONNECTED CURRENT:	73 A
				EMD CURRENT:	92 A

SWITCHGEAR: DXY4-LVSB-2

BUS RATING: 1200 A **MAIN BREAKER:** 2000 A
VOLTS: 480/277 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 65,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE 100% RATED MAIN CIRCUIT BREAKER SIZED OFF OF CONNECTED LOAD PER THE EXCEPTION TO NEC 210.20 (A).
2. PROVIDE INTEGRAL SURGE PROTECTION DEVICE.
3. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS FOR ALL CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	POLES	FRAME SIZE	RELAY TRIP SETTING	LOAD	REMARKS
1	DXY4-LV PNL-5 (FED VIA DXY4-LV XFMR-5)	3	400 A	225 A	129740 VA	
2	DXY4-LV PNL-6 (FED VIA DXY4-LV XFMR-6)	3	400 A	225 A	129740 VA	
3	DXY4-LV PNL-7 (FED VIA DXY4-LV XFMR-7)	3	400 A	350 A	199600 VA	
4	DXY4-LV PNL-8 (FED VIA DXY4-LV XFMR-8)	3	400 A	225 A	129740 VA	
5	DXY4-LV PNL-9 (FED VIA DXY4-LV XFMR-9)	3	400 A	350 A	199600 VA	
6	DXY4-LV PNL-10 (FED VIA DXY4-LV XFMR-10)	3	400 A	350 A	199600 VA	
7						
8						
9						
10						
11						
12						
13						
14						
				TOTAL LOAD:	988020 VA	
				TOTAL AMPS:	1188 A	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	SWITCHBOARD TOTALS	
Electric Vehicle	988020 VA	125.00%	1235025 VA		
				CONNECTED LOAD:	988020 VA
				ESTIMATED DEMAND:	1235025 VA
				CONNECTED CURRENT:	1188 A
				EMD CURRENT:	1486 A

PANEL: DXY4-LV PNL-5

BUS RATING: 600 A **MAIN BREAKER:** 500 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-4/1,3	60	2	4990	4990					2	60	L2 EV-PNL-4/6,8	2
3						4990	4990						4
5	L2 EV-PNL-4/5,7	60	2					4990	4990	2	60	L2 EV-PNL-4/10,12	6
7				4990	4990								8
9	L2 EV-PNL-4/9,11	60	2			4990	4990			2	60	L2 EV-PNL-4/14,16	10
11								4990	4990				12
13	L2 EV-PNL-4/13,15	60	2	4990	4990					2	60	L2 EV-PNL-4/18,20	14
15						4990	4990						16
17	L2 EV-PNL-4/17,19	60	2					4990	4990	2	60	L2 EV-PNL-4/22,24	18
19				4990	4990								20
21	L2 EV-PNL-4/21,23	60	2			4990	4990			2	60	L2 EV-PNL-4/26,28	22
23								4990	4990				24
25	L2 EV-PNL-4/2,4	60	2	4990									26
27						4990							28
			TOTAL LOAD:	44910 VA		44910 VA		39920 VA					
			TOTAL AMPS:	381 A		381 A		333 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	129740 VA	125.00%	162175 VA		
				CONNECTED LOAD:	129740 VA
				ESTIMATED DEMAND:	162175 VA
				CONNECTED CURRENT:	360 A
				EMD CURRENT:	450 A

PANEL: DXY4-LV PNL-6

BUS RATING: 600 A **MAIN BREAKER:** 500 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-6/1,3	60	2	4990	4990					2	60	L2 EV-PNL-6/2,4	2
3						4990	4990						4
5	L2 EV-PNL-6/5,7	60	2					4990	4990	2	60	L2 EV-PNL-6/6,8	6
7				4990	4990								8
9	L2 EV-PNL-6/9,11	60	2			4990	4990			2	60	L2 EV-PNL-6/10,12	10
11								4990	4990				12
13	L2 EV-PNL-6/13,15	60	2	4990	4990					2	60	L2 EV-PNL-6/14,16	14
15						4990	4990						16
17	L2 EV-PNL-6/17,19	60	2					4990	4990	2	60	L2 EV-PNL-6/18,20	18
19				4990	4990								20
21	L2 EV-PNL-6/21,23	60	2			4990	4990			2	60	L2 EV-PNL-6/22,24	22
23								4990	4990				24
25	L2 EV-PNL-6/25,27	60	2	4990									26
27						4990							28
			TOTAL LOAD:	44910 VA		44910 VA		39920 VA					
			TOTAL AMPS:	381 A		381 A		333 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	129740 VA	125.00%	162175 VA		
				CONNECTED LOAD:	129740 VA
				ESTIMATED DEMAND:	162175 VA
				CONNECTED CURRENT:	360 A
				EMD CURRENT:	450 A

PANEL: DXY4-LV PNL-7

BUS RATING: 800 A **MAIN BREAKER:** 800 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-7/1,3	60	2	4990	4990					2	60	L2 EV-PNL-7/2,4	2
3						4990	4990						4
5	L2 EV-PNL-7/5,7	60	2					4990	4990	2	60	L2 EV-PNL-7/6,8	6
7				4990	4990								8
9	L2 EV-PNL-7/9,11	60	2			4990	4990			2	60	L2 EV-PNL-7/10,12	10
11								4990	4990				12
13	L2 EV-PNL-7/13,15	60	2	4990	4990					2	60	L2 EV-PNL-7/14,16	14
15						4990	4990						16
17	L2 EV-PNL-7/17,19	60	2					4990	4990	2	60	L2 EV-PNL-7/18,20	18
19				4990	4990								20
21	L2 EV-PNL-7/21,23	60	2			4990	4990			2	60	L2 EV-PNL-7/22,24	22
23								4990	4990				24
25	L2 EV-PNL-7/25,27	60	2	4990	4990					2	60	L2 EV-PNL-7/26,28	26
27						4990	4990						28
29	L2 EV-PNL-7/29,31	60	2					4990	4990	2	60	L2 EV-PNL-7/30,32	30
31				4990	4990								32
33	L2 EV-PNL-7/33,35	60	2			4990	4990			2	60	L2 EV-PNL-7/34,36	34
35								4990	4990				36
37	L2 EV-PNL-7/37,39	60	2	4990	4990					2	60	L2 EV-PNL-7/38,40	38
39						4990	4990						40
			TOTAL LOAD:	69860 VA		69860 VA		59880 VA					
			TOTAL AMPS:	595 A		595 A		499 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	199600 VA	125.00%	249500 VA		
				CONNECTED LOAD:	199600 VA
				ESTIMATED DEMAND:	249500 VA
				CONNECTED CURRENT:	554 A
				EMD CURRENT:	693 A

PANEL: DXY4-LV PNL-8

BUS RATING: 600 A **MAIN BREAKER:** 500 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-8/1,3	60	2	4990	4990					2	60	L2 EV-PNL-8/2,4	2
3						4990	4990						4
5	L2 EV-PNL-8/5,7	60	2					4990	4990	2	60	L2 EV-PNL-8/6,8	6
7				4990	4990								8
9	L2 EV-PNL-8/9,11	60	2			4990	4990			2	60	L2 EV-PNL-8/10,12	10
11								4990	4990				12
13	L2 EV-PNL-8/13,15	60	2	4990	4990					2	60	L2 EV-PNL-8/14,16	14
15						4990	4990						16
17	L2 EV-PNL-8/17,19	60	2					4990	4990	2	60	L2 EV-PNL-8/18,20	18
19				4990	4990								20
21	L2 EV-PNL-8/21,23	60	2			4990	4990			2	60	L2 EV-PNL-8/22,24	22
23								4990	4990				24
25					4990					2	60	L2 EV-PNL-8/26,28	26
27							4990						28
			TOTAL LOAD:	44910 VA		44910 VA		39920 VA					
			TOTAL AMPS:	381 A		381 A		333 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	129740 VA	125.00%	162175 VA		
				CONNECTED LOAD:	129740 VA
				ESTIMATED DEMAND:	162175 VA
				CONNECTED CURRENT:	360 A
				EMD CURRENT:	450 A

PANEL: DXY4-LV PNL-9

BUS RATING: 800 A **MAIN BREAKER:** 800 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-9/1,3	60	2	4990	4990					2	60	L2 EV-PNL-9/2,4	2
3						4990	4990						4
5	L2 EV-PNL-9/5,7	60	2					4990	4990	2	60	L2 EV-PNL-9/6,8	6
7				4990	4990								8
9	L2 EV-PNL-9/9,11	60	2			4990	4990			2	60	L2 EV-PNL-9/10,12	10
11								4990	4990				12
13	L2 EV-PNL-9/13,15	60	2	4990	4990					2	60	L2 EV-PNL-9/14,16	14
15						4990	4990						16
17	L2 EV-PNL-9/17,19	60	2					4990	4990	2	60	L2 EV-PNL-9/18,20	18
19				4990	4990								20
21	L2 EV-PNL-9/21,23	60	2			4990	4990			2	60	L2 EV-PNL-9/22,24	22
23								4990	4990				24
25	L2 EV-PNL-9/25,27	60	2	4990	4990					2	60	L2 EV-PNL-9/26,28	26
27						4990	4990						28
29	L2 EV-PNL-9/29,31	60	2					4990	4990	2	60	L2 EV-PNL-9/30,32	30
31				4990	4990								32
33	L2 EV-PNL-9/33,35	60	2			4990	4990			2	60	L2 EV-PNL-9/34,36	34
35								4990	4990				36
37	L2 EV-PNL-9/37,39	60	2	4990	4990					2	60	L2 EV-PNL-9/38,40	38
39						4990	4990						40
			TOTAL LOAD:	69860 VA		69860 VA		59880 VA					
			TOTAL AMPS:	595 A		595 A		499 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	199600 VA	125.00%	249500 VA		
				CONNECTED LOAD:	199600 VA
				ESTIMATED DEMAND:	249500 VA
				CONNECTED CURRENT:	554 A
				EMD CURRENT:	693 A

PANEL: DXY4-LV PNL-10

BUS RATING: 800 A **MAIN BREAKER:** 800 A
VOLTS: 120/208 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 22,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1	L2 EV-PNL-10/1,3	60	2	4990	4990					2	60	L2 EV-PNL-10/2,4	2
3						4990	4990						4
5	L2 EV-PNL-10/5,7	60	2					4990	4990	2	60	L2 EV-PNL-10/6,8	6
7				4990	4990								8
9	L2 EV-PNL-10/9,11	60	2			4990	4990			2	60	L2 EV-PNL-10/10,12	10
11								4990	4990				12
13	L2 EV-PNL-10/13,15	60	2	4990	4990					2	60	L2 EV-PNL-10/14,16	14
15						4990	4990						16
17	L2 EV-PNL-10/17,19	60	2					4990	4990	2	60	L2 EV-PNL-10/18,20	18
19				4990	4990								20
21	L2 EV-PNL-10/21,23	60	2			4990	4990			2	60	L2 EV-PNL-10/22,24	22
23								4990	4990				24
25	L2 EV-PNL-10/25,27	60	2	4990	4990					2	60	L2 EV-PNL-10/26,28	26
27						4990	4990						28
29	L2 EV-PNL-10/29,31	60	2					4990	4990	2	60	L2 EV-PNL-10/30,32	30
31				4990	4990								32
33	L2 EV-PNL-10/33,35	60	2			4990	4990			2	60	L2 EV-PNL-10/34,36	34
35								4990	4990				36
37	L2 EV-PNL-10/37,39	60	2	4990	4990					2	60	L2 EV-PNL-10/38,40	38
39						4990	4990						40
			TOTAL LOAD:	69860 VA		69860 VA		59880 VA					
			TOTAL AMPS:	595 A		595 A		499 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	199600 VA	125.00%	249500 VA		
				CONNECTED LOAD:	199600 VA
				ESTIMATED DEMAND:	249500 VA
				CONNECTED CURRENT:	554 A
				EMD CURRENT:	693 A

PANEL: DXY4-480V PNL-1

BUS RATING: 200 A **MAIN BREAKER:** 200 A
VOLTS: 480/277 Wye **PHASES:** 3 **WIRES:** 4 **A.I.C RATINGS:** 35,000 A
MOUNTING: PAD **FED FROM:** SEE ONE-LINE DIAGRAM **ENCLOSURE:** NEMA-3R

NOTES:
1. PROVIDE LOCKABLE OPEN DISCONNECTING MEANS IN ACCORDANCE WITH NEC 625.43 AND 110.25 FOR ALL EV CHARGER CIRCUIT BREAKERS.

CKT	CIRCUIT DESCRIPTION	CB	P	A		B		C		P	CB	CIRCUIT DESCRIPTION	CKT
1				18333	18333								2
3	L3 EV-PNL-1/1,3,5	90	3			18333	18333			3	90	L3 EV-PNL-1/2,4,6	4
5								18333	18333				6
7													8
9													10
11													12
			TOTAL LOAD:	36667 VA		36667 VA		36667 VA					
			TOTAL AMPS:	132 A		132 A		132 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
Electric Vehicle	110000 VA	125.00%	137500 VA		
				CONNECTED LOAD:	110000 VA
				ESTIMATED DEMAND:	137500 VA
				CONNECTED CURRENT:	132 A
				EMD CURRENT:	165 A

REVISION RECORD

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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AMAZON.COM SERVICES LLC
DELIVERY STATION EXPANSION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

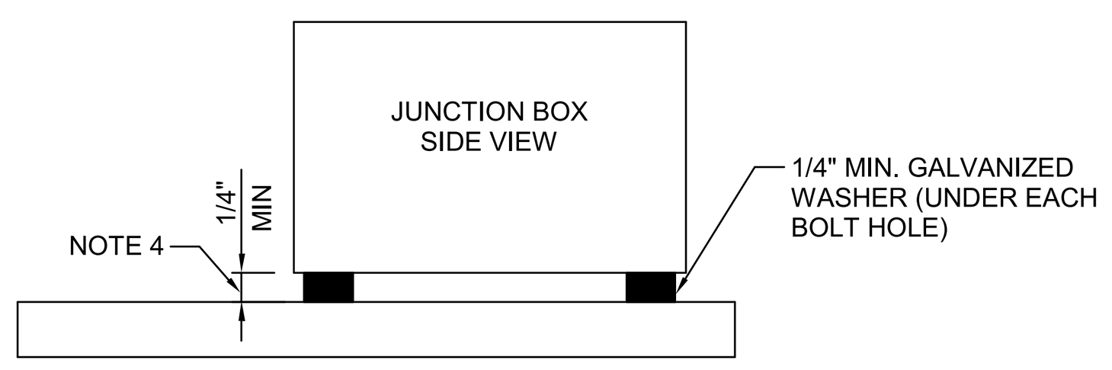
PANEL SCHEDULES

DATE:	02/01/23	DRAWN BY:	Author
DWG SCALE:	AS INDICATED	CHECKED BY:	Checker
PROJECT NO:	4383.0063		
APPROVED BY:	Approver		

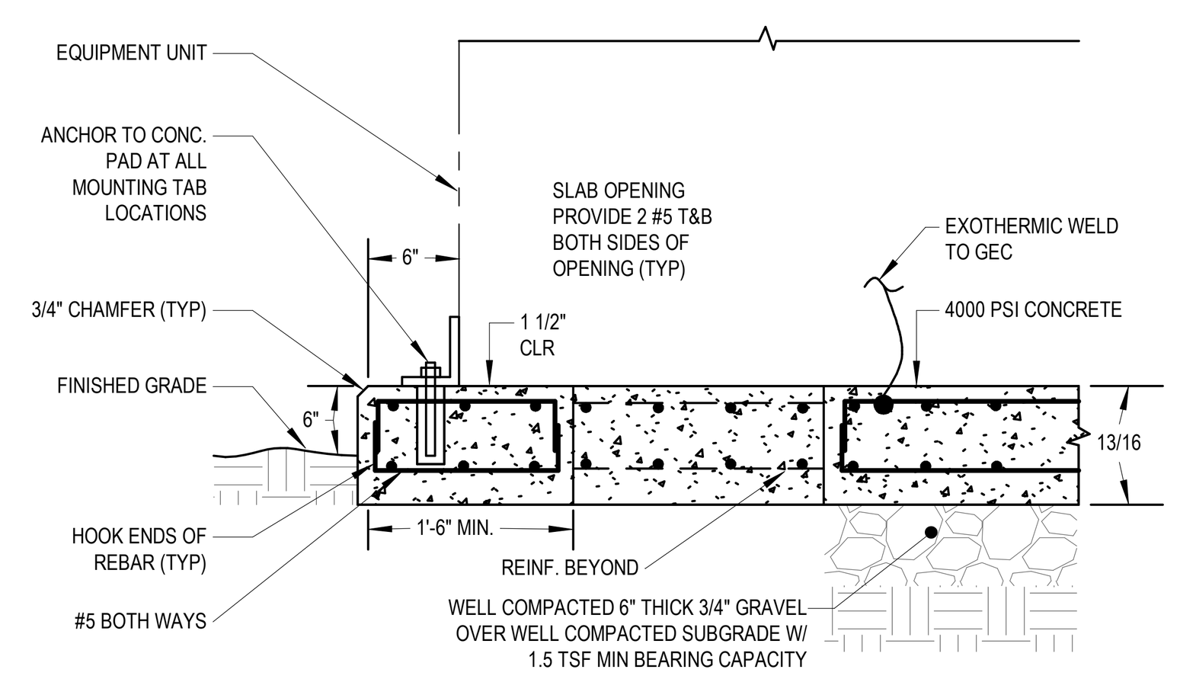
E6.00-BP1

NOTE

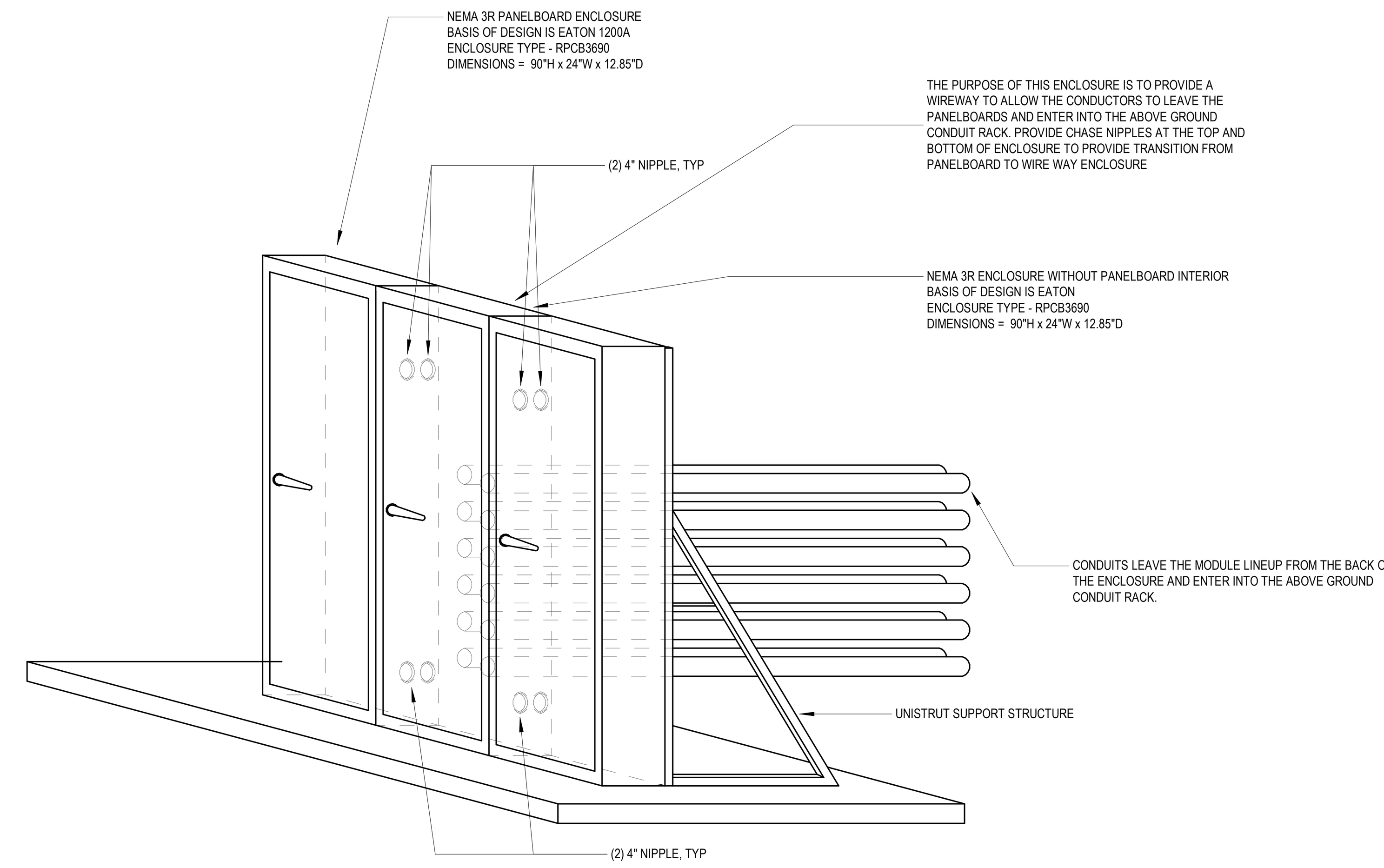
1. JUNCTION BOX FOR L2 AND L3 CHARGERS
2. MINIMUM RECOMMENDED DIMENSIONS LxWxH = 2'-0"x8"x1'-0"
3. MINIMUM NEMA 4X RATED RECOMMENDED POLYCARBONATE
4. IF METALLIC JUNCTION BOX IS USED IN WET OR DAMP ENVIRONMENT PROVIDE 1/4" AIRSPACE BETWEEN BASE OF JUNCTION BOX AND GROUND. RECOMMENDED 1/4" MIN. GALVANIZED SQUARE WASHER. IF ALTERNATIVE SOLUTION CONTACT ENGINEERING FOR APPROVAL.
5. SPLICES AND SPLICING DEVICES MUST BE WET RATED (NEC 314.30(C))
6. ENCLOSURES MUST REQUIRE A TOOL TO OPEN (NEC 314.30(D))



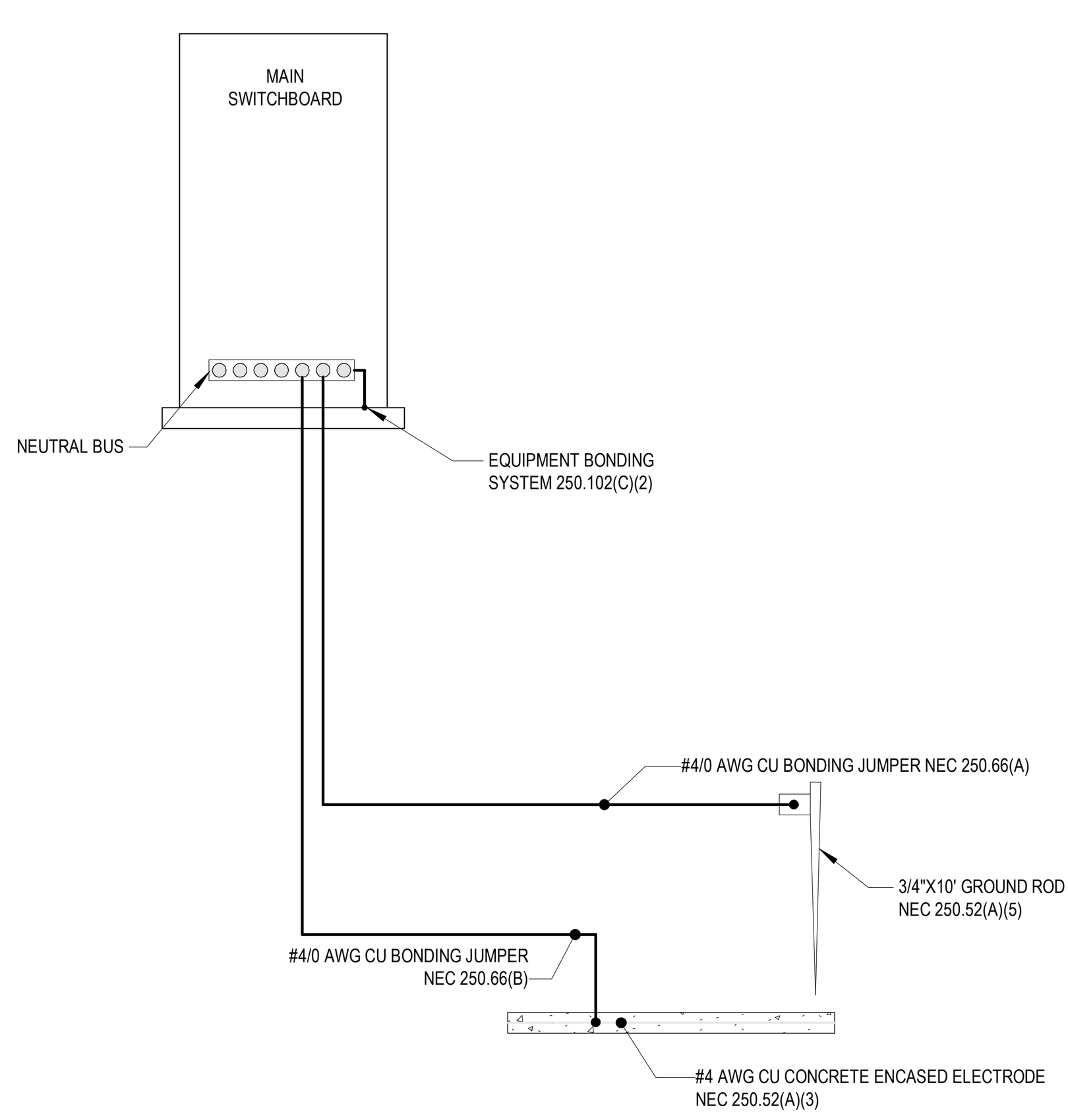
1 HANDHOLE/JUNCTION BOX DETAIL
NO SCALE



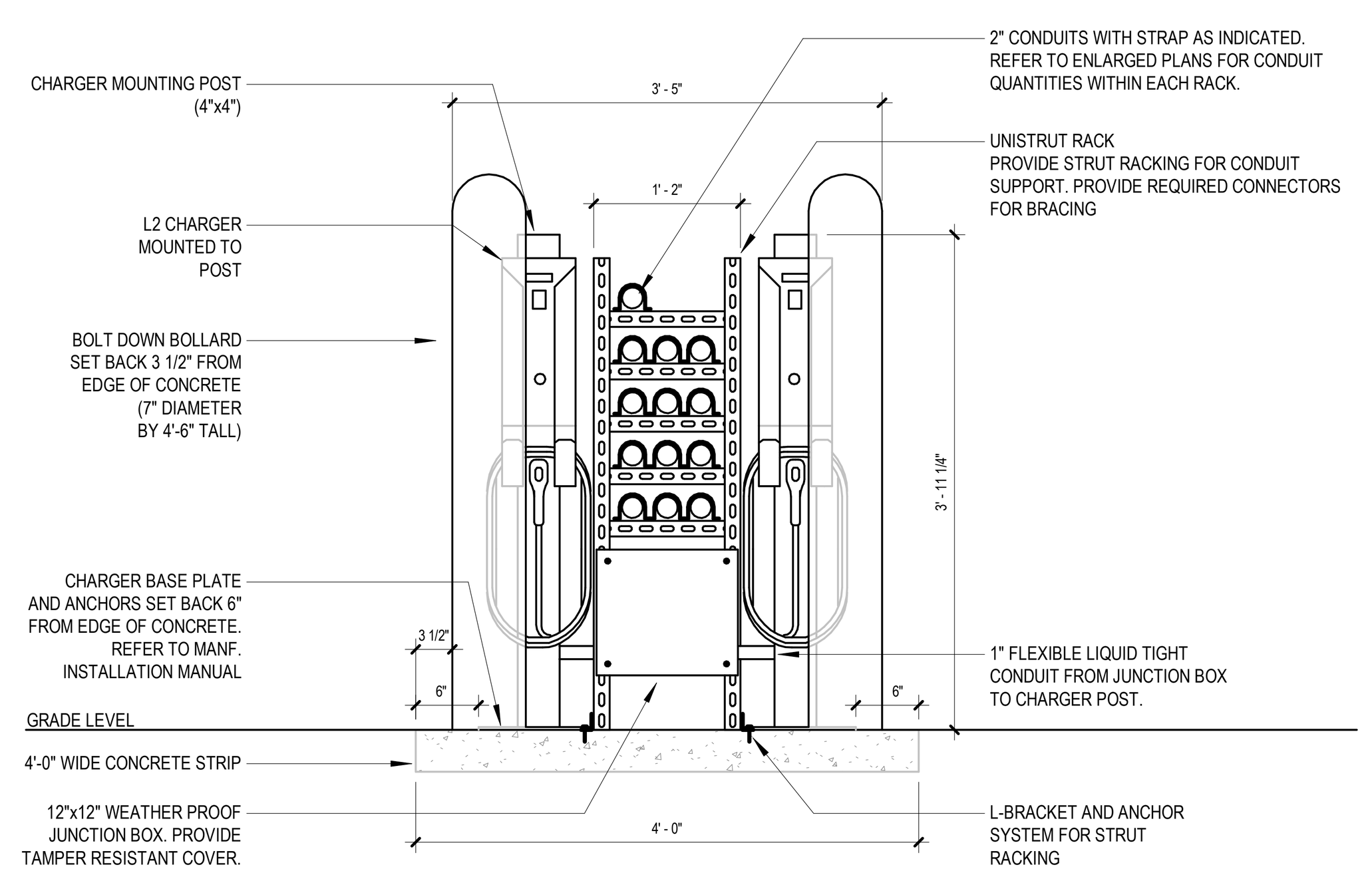
2 TYPICAL EXTERIOR CONCRETE PAD
NO SCALE



3 ABOVE GROUND CONDUIT DETAIL- PANELBOARD CONNECTION
NO SCALE



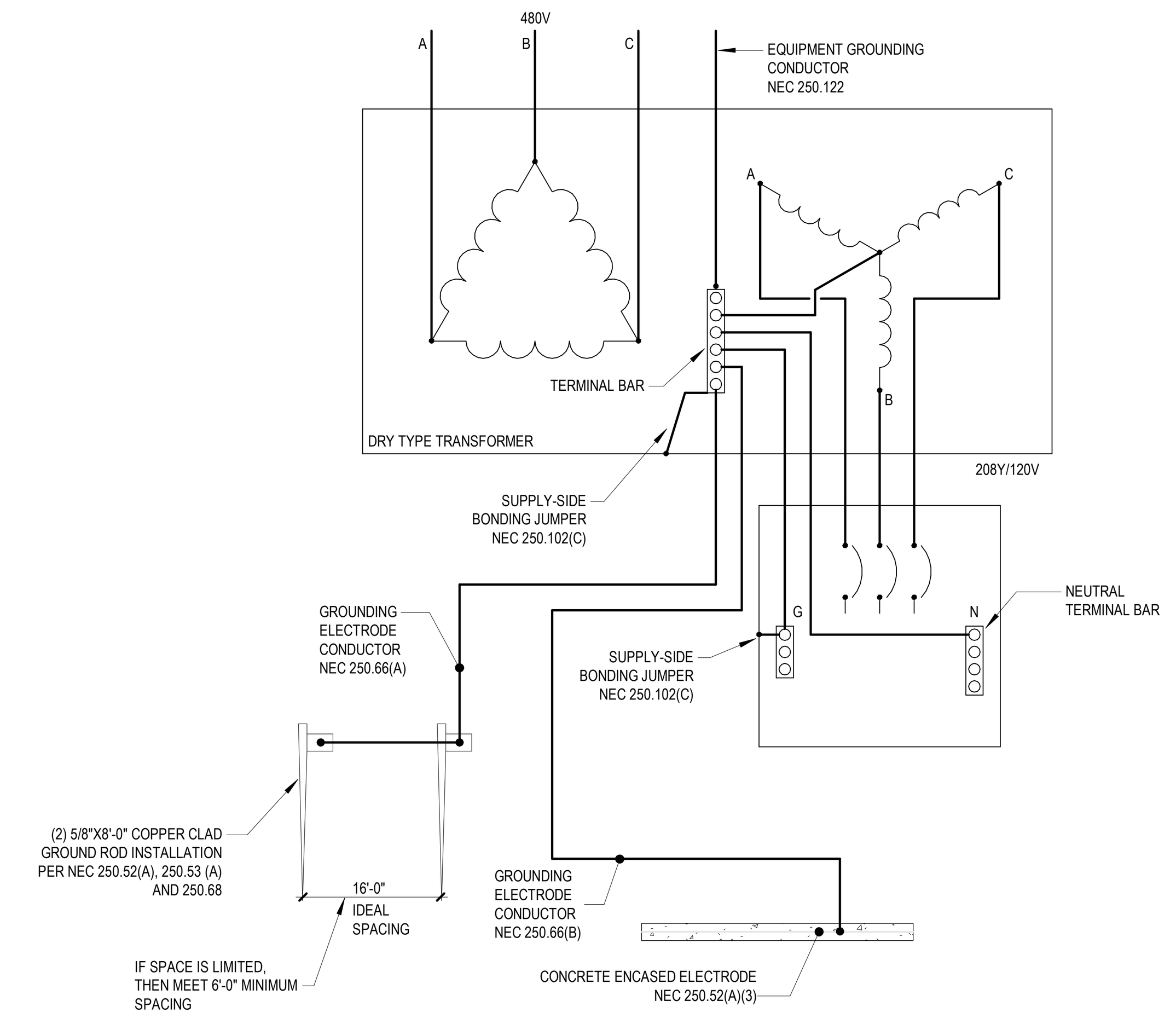
4 EXTERIOR LV SWITCHBOARD GROUDING DIAGRAM
NO SCALE



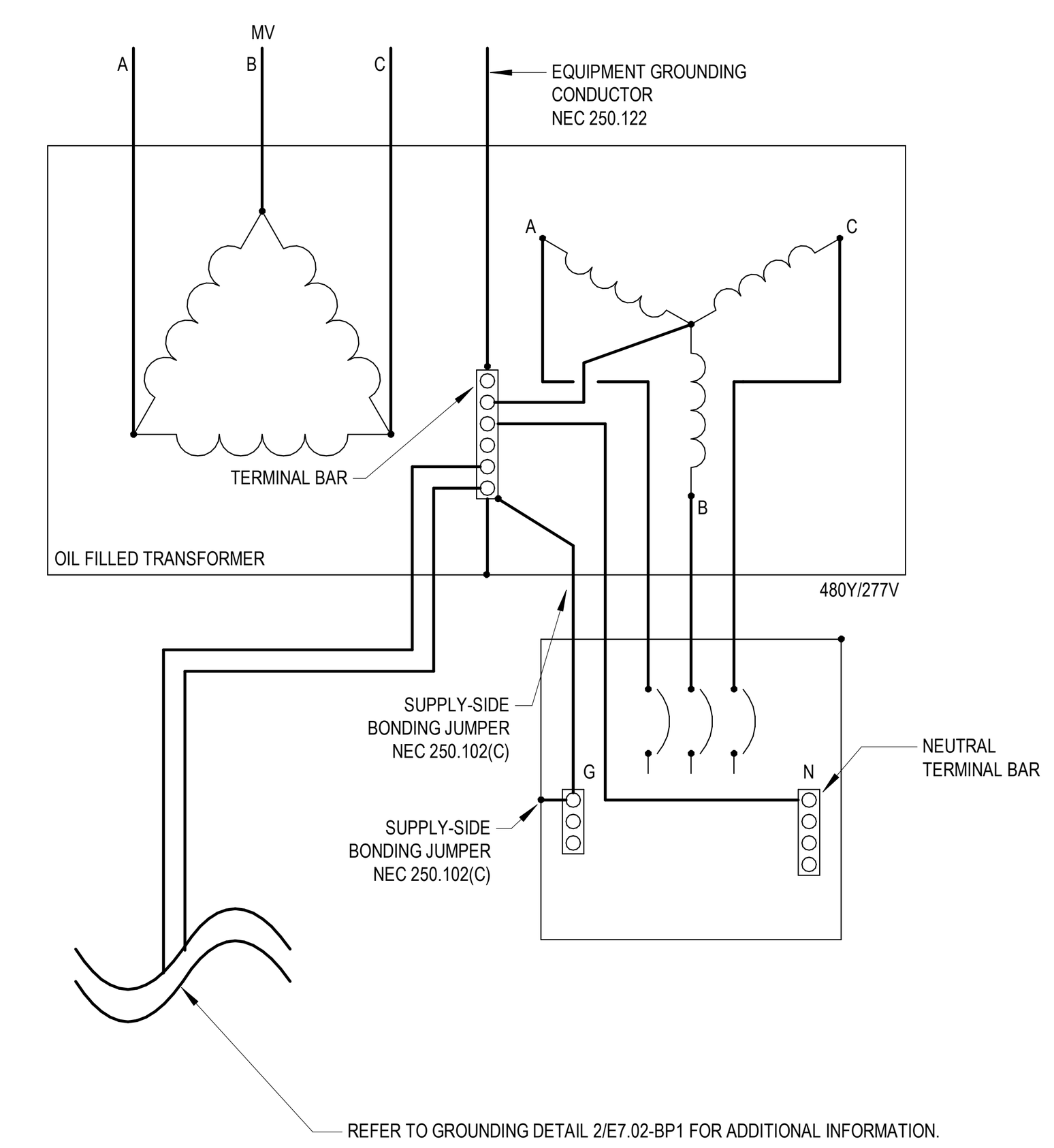
5 ABOVE GROUND 2" CONDUIT RACK DETAIL
NO SCALE

Notes:

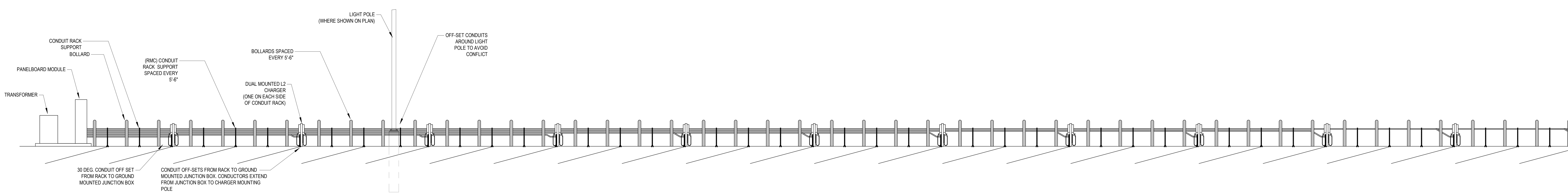
1 .PROVIDE TWO (2) GROUND RODS FOR GROUNDING EACH TRANSFORMER. ALTERNATIVELY, PROVIDE A SINGLE GROUND ROD HAVING AN EARTH CONTACT RESISTANCE OF 25 OHMS OR LESS.



6 GROUNDING ARRANGEMENT FOR SEPARATELY DERIVED SYSTEM – LOW VOLTAGE, EXTERIOR
NO SCALE



7 GROUNDING ARRANGEMENT FOR SEPARATELY DERIVED SYSTEM – MEDIUM VOLTAGE, EXTERIOR APPLICATIONS
NO SCALE



8 ABOVE GROUND CONDUIT DETAIL - HORIZONTAL ELEVATION - 2" CONDUIT
NO SCALE

REVISION RECORD

NO.	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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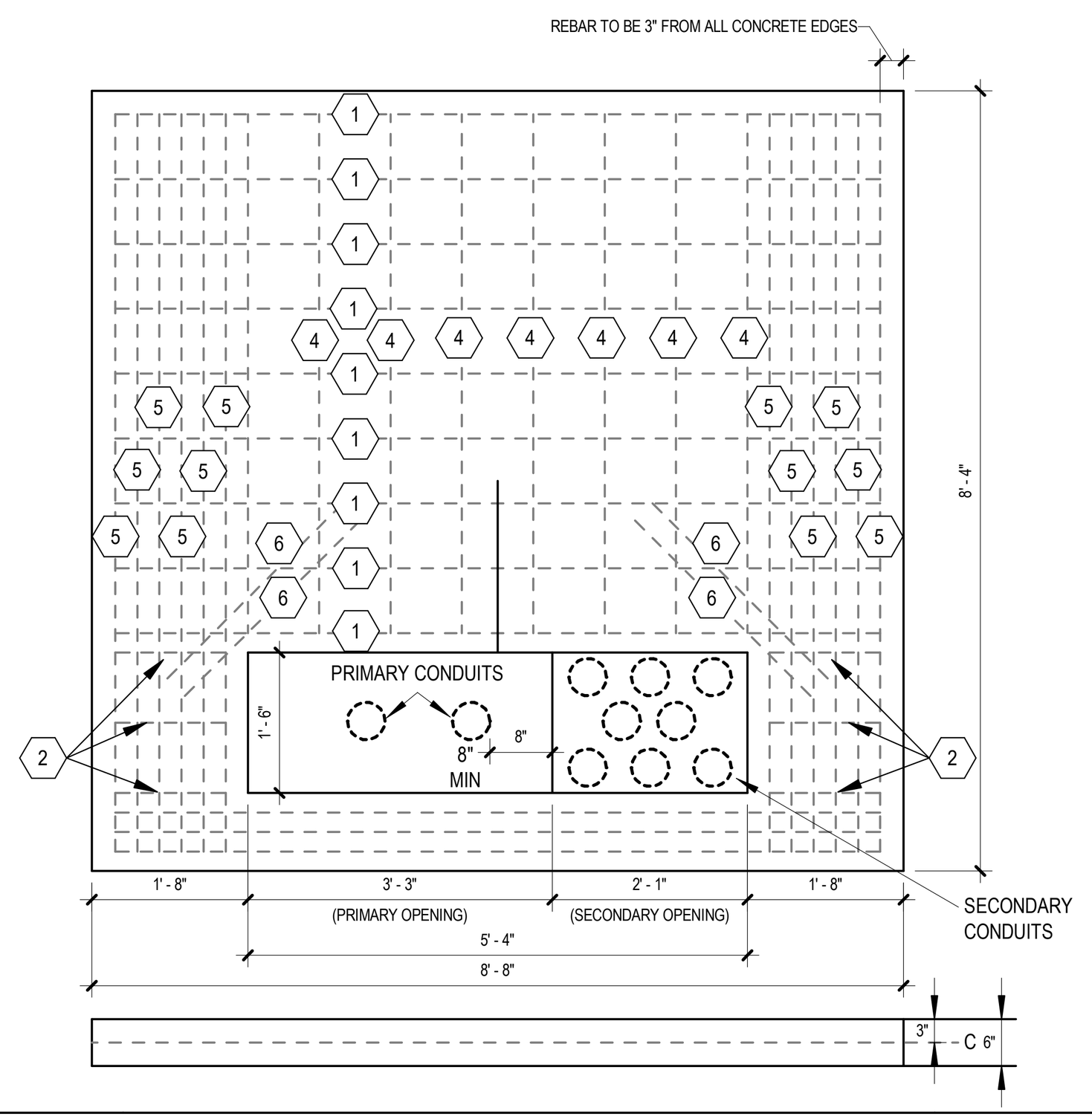
consulting engineers

AMAZON.COM SERVICES LLC
DELIVERY STATION EXPANSION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

ELECTRICAL DETAILS

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063		
APPROVED BY:	KBA		

E7.01-BP1

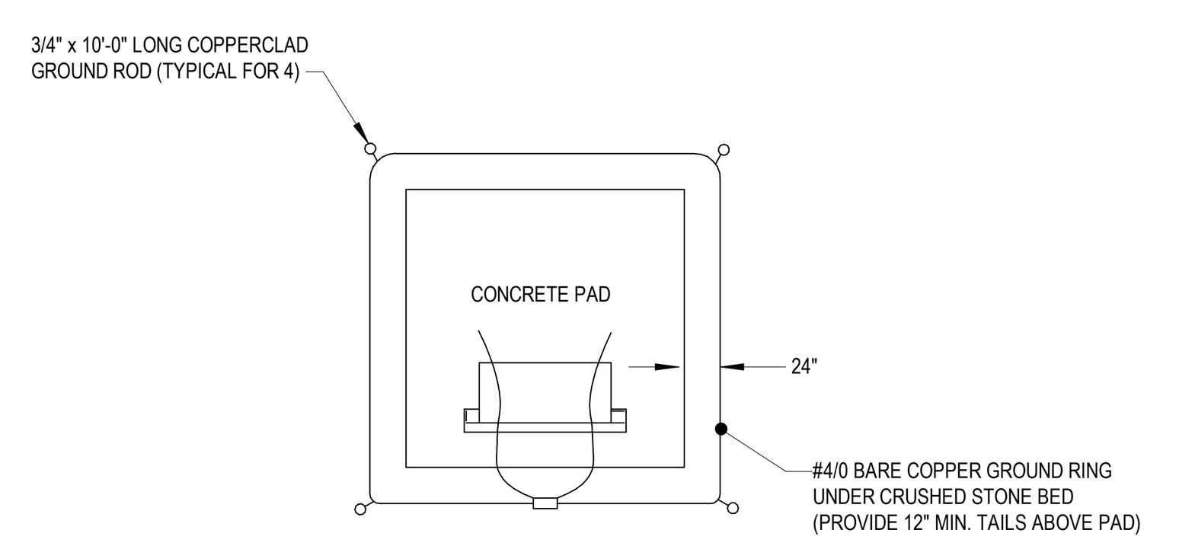


REINFORCING STEEL SCHEDULE

1	2	3	4	5	6	APPROX. WEIGHT	
(9) #4 X 8'2"	(9) #4 X 8'2"	(9) #4 X 8'2"	(9) #4 X 8'2"	(9) #4 X 8'2"	(9) #4 X 8'2"	(9) #4 X 8'2"	6500 LBS.

NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. ALL CONCRETE SHALL BE AIR ENTRAINED (4% TO 6% BY VOLUME) WITH A MAXIMUM WATER CONTENT RATIO OF 0.45.
2. REINFORCING STEEL SHALL BE FURNISHED IN ACCORDANCE WITH ASTM A615 GRADE 60. PLACE PER SCHEDULE WITHIN THE LIMITS SHOWN. ALL REINFORCING STEEL SHALL BE UNIFORMLY TIED TO REINFORCING STEEL TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
3. TOP SURFACE FINISH SHALL BE LEVEL. WOOD FLOAT TOP; DO NOT LEAVE ANY DEPRESSIONS.
4. SOIL COMPACTION UNDER PAD (FOR BOTH POURINPLACE AND SEPARATE STANDARD PADS) TO BE AT 95% STANDARD PROCTOR.
5. TWO 6" 36" RADIUS CONDUIT ELBOWS FOR PRIMARY CABLE TO EXTEND 3' BEYOND THE FRONT EDGE OF TRANSFORMER PAD.

1 MV PAD MOUNT TRANSFORMER DETAIL
SCALE: 1/2" = 1'-0"



NOTES:
1. EXTEND #4/0 GROUNDING CONDUCTOR FROM TRANSFORMER GROUND LUGS TO TRANSFORMER TERMINAL BAR
2. ENTIRE INSTALLATION TO BE IN ACCORDANCE WITH N.E.C REQUIREMENTS.

2 MV TRANSFORMER GROUNDING DETAIL
SCALE: N.T.S

REVISION RECORD

NO.	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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ELECTRICAL DETAILS

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:			4383.0063
APPROVED BY:			KBA

STATE OF NEW YORK · MATTHEW W. FOLTZ · LICENSED PROFESSIONAL ENGINEER · 087346

E7.02-BP1

DIVISION 26 - ELECTRICAL

SECTION 26 0051 - GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. State and local codes, laws, ordinances, rules and regulations.
B. American national standards institute (ANSI).
C. American society for testing and materials (ASTM)
D. Institute of electrical and electronic engineers (IEEE).
E. National electrical manufacturer's association (NEMA).
F. National fire protection association (NFPA).
G. Occupational, safety and health administration (OSHA).
H. Underwriters laboratories (UL)
I. Where a conflict or disagreement exists between codes and standards, the more stringent condition shall govern.
J. Bidder shall comply with all applicable codes and standards, whether or not identified in this listing. The specification refers to these publications by the basis of designation only. These references shall govern the work except where they conflict with the engineer's specifications. In case of conflict, the more stringent requirement, as interpreted by the engineer, shall govern.
K. Requirements of regulatory agencies: the requirements and recommendations of the agency having local authority for the enforcement of nations, state, and local codes shall be applied as necessary for certification, interpretation, or variance as required.
L. Comply with NECA 1.
M. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
N. Equipment: install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

1.02 INTERPRETATIONS OF DRAWINGS

A. Coordinate field routed electrical raceway installation with other trades and the actual supplied equipment.
B. Install each 3-phase power circuit in a separate conduit unless note shown on the drawings.
C. All dimensions shall be field verified at the job site and coordinated with the work of all other trades.
D. Except where dimensions are shown, the locations of equipment, fixtures, outlets and similar devices shown on the drawings are approximate only.

1.03 INTERFERENCES

A. Because electrical drawings are generally diagrammatic in nature, minor adjustments to illustrated requirements may be required to avoid interferences between electrical work and construction furnished by other trades and existing construction.
B. Plan and coordinate work; furnish raceway offsets, fittings and boxes; adjust equipment locations; and provide associated supports, all as needed to avoid interferences.
C. Take field measurements to verify dimensions provided on drawings.
D. If interferences cannot be avoided, notify the engineer before proceeding with affected work.

1.04 RECORD DRAWINGS

A. As the work progresses, legibly record all field changes on a set of project contract drawings, hereinafter called the "record drawings".
B. Record drawings shall accurately show the field changes for the following items:
1. One-line diagram(s)
2. Conductor sizes
3. Panel schedule(s)
4. Wiring diagram(s)
5. Underground conduit routing
6. Cabling routing
7. Grounding plan drawing
8. Overcurrent protective device settings
9. Plan view, sizes and locations of panel boards
10. Individual system electrical and control schematic diagrams

END OF SECTION

SECTION 26 0513 - MEDIUM-VOLTAGE CABLES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. IEEE 48 - IEEE Standard for Test Procedures and Requirements for Alternating-Current Cable Terminations Used on Shielded Cables Having Laminated Insulation Rated 2.5 kV through 765 kV or Extruded Insulation Rated 2.5 kV through 500 kV 2020.
B. NEMA WC 74 - 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy 2017.
C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.02 ACTION SUBMITTALS

A. Product Data: Provide for cable, terminations, and accessories.
B. Manufacturer's product literature illustrating the following:
1. Cable characteristics (Electrical/Mechanical).
2. Cable terminations including all deadbreak modules and matching deadbreak elbows.
3. Description of materials to be used for circuit labeling.

1.03 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each cable and accessory type, signed by manufacturers.
B. Cable pulling tension calculations and recorded values.
C. Manufacturer's Documentation: After approval by the Engineer of cable & cable terminations to be used, the cable manufacturer shall furnish the following information:
1. Source quality-control test reports. This includes proof that cable has been manufactured within twelve (12) months of its installation.
D. Copy of the manufacturer's splicing and termination procedures for approval.
E. Certifications and specs of cable splicer(s) and terminator(s).

1.04 QUALITY ASSURANCE

A. Comply with NFPA 70 and IEEE C2 (NESC)
B. All conductors and cable shall conform to ICEA standards. Cable warranty shall begin upon the date of cable installation acceptance. Each length of cable delivered to the job shall have a certified test report from the factory stating that the cable meets the minimum standards for cables of this type as established by ICEA. The test report shall also include month and year of manufacture which shall not exceed twelve (12) months prior to the delivery to the site. Copies of this report shall be delivered to the Owner's representative before the cable is installed.
C. Comply with ASTM B-609, and class B stranded per B-231 for Aluminum wiring, conductors, and cables.
D. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience and with service facilities within 100 miles of Project.
E. NRTL (Nationally Recognized Testing Laboratory) Listing: Products shall be listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for electrical and fire safety.

PART 2 PRODUCTS

2.01 MEDIUM-VOLTAGE CABLE

A. Manufacturers:
1. Okonite: www.okonite.com
2. General Cable Technologies Corporation: www.generalcable.com
3. Southwire Company: www.southwire.com.
B. Medium Voltage Cable: NEMA WC 8 ethylene propylene rubber insulated cable.
1. Voltage: 15 kV, grounded.
2. Conductor: Aluminum, stranded Aluminum with filled strand.
3. Construction: Single conductor with Concentric Neutral Conductor-Bare Copper Wires.
4. Conductor Strand Screen: A semi-conducting Conductor Strand Screen Extruded semiconducting ethylene-propylene rubber shall be applied by extrusion directly to the surface of the stranded conductor and shall meet or exceed the requirements of ICEA S-94-649 and AEIC CS8
5. Conductor Insulation Temperature Rating: 221 deg F (105 deg C) normal operation, 284 deg F (140 deg C) emergency overload operation, and 482 deg F (250 deg C) for short circuit conditions.
6. Insulation Thickness: 133 percent insulation level and insulated with a high quality, heat, moisture, impact, ozone, and corona resistant thermosetting EPR that is suitable for use in wet or dry locations, in underground conduit and duct systems, and direct buried applications. The average insulation thickness shall be not less than 220 mils.
7. Insulation Screen: The extruded covering shall be at least 30 mils thick and shall be in intimate contact with the insulation.
8. Concentric Neutral Conductor Material:
a. The concentric neutral conductor shall be composed of a serving of either round annealed copper wires.
b. The wires shall meet the chemical requirements of ASTM B5 and the resistivity, tensile, and elongation requirements of ASTM B3 for uncoated neutrals or ASTM B33 for tin-coated neutrals.
c. The wires shall be applied helically over and in contact with the insulation.
9. Insulation Jacket: encapsulating jacket-okolene , 30 mils minimum thickness

2.02 CABLE ACCESSORIES

A. Manufacturers:
1. Cable termination - 3M: www.3m.com
2. Cooper: www.eaton.com
B. Cable Terminations: IEEE 48, Cold shrink silicone rubber stress cone, used at outdoor metal enclosed switchgear apparatus. .
1. Product: 3M 7640-S SERIES.
2. Outdoor installation for single conductor 15kV aluminum conductor with jacketed concentric neutral
3. BIL shall equal or exceed distribution equipment BIL ratings
C. Loadbreak elbows (200)A, used at the transformer bushing wells
1. Product: [LEJ215 SERIES] for Aluminum conductor.
2. Qualified per IEEE 386.
D. Deadbreak elbows (600)A, used at the MV tap switches
1. Product: [BT625 SERIES] for Aluminum conductor.
2. Qualified per IEEE 386.

2.03 CABLE SPLICES

A. Cable splices are not allowed. Run underground cables continuous between end termination points.

2.04 CIRCUIT LABELS

A. Manufacturers:
1. Almetek Industries, Type E-Z -Tag or equal.
2. Substitutions: Under provisions of Division 01 Section "General Requirements".
B. Description: Cable circuit labels shall be 1-1/2 (38 mm) high, polyethylene, with black on yellow characters, in a polyethylene holder, attached to the cable by two nylon self locking ties.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conduit, duct, trench, or manholes are ready to receive cable.
B. Verify that field measurements are as indicated.
C. Verify routing and termination locations of cable bank prior to rough-in.
D. Cable routing is shown in approximate locations unless dimensioned. Route as required to complete wiring system.

3.02 PREPARATION

A. Use swab to clean conduits before pulling cables.

3.03 INSTALLATION

A. Avoid abrasion and other damage to cables during installation.
B. Use suitable lubricants and pulling equipment.
C. Sustain cable pulling tensions and bending radii below recommended limits.
D. Ground cable concentric neutral at each termination and splice.

3.04 FIELD QUALITY CONTROL

A. Inspect exposed cable sections for physical damage.
B. Inspect cable for proper connections as indicated.
C. Inspect concentric neutral grounding, cable supports, and terminations for proper installation.

3.05 PROTECTION

A. Protect installed cables from entrance of moisture.

END OF SECTION

SECTION 26 0519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.02 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.
B. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
C. Conductor Material:
1. Provide copper conductors except where aluminum conductors are specifically indicated or permitted for substitution. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
a. Substitution of aluminum conductors for copper is permitted for service and panelboard feeder conductor sizes 1/0 AWG and larger. Aluminimum conductors shall not be permitted for connection to mechanical equiment.
b. Where aluminum conductors are substituted for copper, comply with the following:
1) Size aluminum conductors to provide, when compared to copper sizes indicated, equivalent or greater ampacity and equivalent or less voltage drop.
2) Increase size of raceways, boxes, wiring gutters, enclosures, etc. as required to accommodate aluminum conductors.
2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Aluminum Conductors (only where specifically indicated or permitted for substitution): AA-8000 series aluminum alloy conductors recognized by ASTM B800 and compact stranded in accordance with ASTM B801 unless otherwise indicated.
D. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
3. Color Code:
a. 480Y/277 V, 3 Phase, 4 Wire System:
1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.
4) Neutral/Grounded: Gray.
b. 208Y/120 V, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral/Grounded: White.
c. Equipment Ground, All Systems: Green.

2.03 SINGLE CONDUCTOR BUILDING WIRE

A. Description: Single conductor insulated wire.
B. Conductor Stranding:
1. Feeders and Branch Circuits:
a. Size 12 AWG and Smaller: Solid.
b. Size 10 AWG and Larger: Stranded.
C. Insulation Voltage Rating: 600 V.
D. Insulation:
1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
a. Size 4 AWG and Larger: Type XHHW-2.
2. Aluminum Building Wire (only where specifically indicated or permitted for substitution): Type XHHW-2.

2.04 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
B. Wiring Connectors for Splices and Taps:
1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
3. Connectors for Aluminum Conductors: Use compression connectors or mechanical connectors.
C. Wiring Connectors for Terminations:
1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
4. Aluminum Conductors: Use compression connectors for all connections.
D. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
E. Mechanical Connectors: Provide bolted type or set-screw type.
F. Compression Connectors: Provide circumferential type or hex type crimp configuration.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that interior of building has been protected from weather.
B. Verify that work likely to damage wire and cable has been completed.
C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
D. Verify that field measurements are as indicated.
E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

A. Circuiting Requirements:
1. Unless dimensioned, circuit routing indicated is diagrammatic.
2. When circuit destination is indicated without specific routing, determine exact routing required.
3. Arrange circuiting to minimize splices.
B. Install products in accordance with manufacturer's instructions.
C. Perform work in accordance with NECA 1 (general workmanship).
D. Installation in Raceway:
1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
2. Pull all conductors and cables together into raceway at same time.
3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
E. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
F. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
G. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
H. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
I. Make wiring connections using specified wiring connectors.
1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
2. Do not remove conductor strands to facilitate insertion into connector.
3. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
4. Connections for Aluminum Conductors: Fill connectors with oxide inhibiting compound where not pre-filled by manufacturer.
5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
J. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
K. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
L. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

END OF SECTION

SECTION 26 0526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Sequencing:
1. Do not install ground rod electrodes until final backfill and compaction is complete.

1.02 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
D. Grounding System Resistance:
1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
E. Grounding Electrode System:
1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
a. Provide continuous grounding electrode conductors without splice or joint.
b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
2. Metal In-Ground Support Structure:
a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
3. Concrete-Encased Electrode:
a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
4. Ground Rod Electrode(s):
a. Provide three electrodes in an equilateral triangle configuration unless otherwise indicated or required.
b. Space electrodes not less than 10 feet from each other and any other ground electrode.
5. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
F. Service-Supplied System Grounding:
1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.
G. Separately Derived System Grounding:
1. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in first disconnecting means, except for the 480V panel feeding the L3 chargers.
2. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
3. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.
H. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.
B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
1. Use insulated copper conductors unless otherwise indicated.
a. Exceptions:
1) Use bare copper conductors where installed underground in direct contact with earth.
2) Use bare copper conductors where directly encased in concrete (not in raceway).
C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
D. Ground Rod Electrodes:
1. Comply with NEMA GR 1.
2. Material: Copper-bonded (copper-clad) steel.
3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.
B. Verify that field measurements are as indicated.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Perform work in accordance with NECA 1 (general workmanship).
C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches below finished grade.
D. Make grounding and bonding connections using specified connectors.
1. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
2. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
3. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
4. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
E. Identify grounding and bonding system components in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

A. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
B. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

SECTION 26 0529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

1.02 QUALITY ASSURANCE

A. Comply with NFPA 70.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 1.25. Include consideration for vibration, equipment operation, and shock loads where applicable.
4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
a. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.
C. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
1. Comply with MFMA-4.
2. Channel Material:
a. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
D. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Plastic and lead anchors are not permitted.
4. Hammer-driven anchors and fasteners are not permitted.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive support and attachment components.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Perform work in accordance with NECA 1 (general workmanship).
C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
D. Equipment Support and Attachment:
1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
2. Securely fasten pad-mounted equipment. Do not install equipment such that it relies on its own weight for support.
E. Secure fasteners according to manufacturer's recommended torque settings.
F. Identify independent electrical component support wires above accessible ceilings (only where specifically indicated or permitted) with color distinguishable from ceiling support wires in accordance with NFPA 70.

END OF SECTION

SECTION 26 0533.13 - CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
C. Underground:
1. Under Slab on Grade: Use rigid PVC conduit.
2. Exterior, Direct-Buried: Use rigid PVC conduit.
3. Where rigid polyvinyl chloride (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC) where emerging from underground.
D. Exposed, Exterior: Use galvanized steel rigid metal conduit (RMC).
E. Flexible Connections to Vibrating Equipment:
1. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit (LFMC).
2. Maximum Length: 6 feet unless otherwise indicated.
3. Vibrating equipment includes, but is not limited to:
a. Transformers.

2.02 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70.

REVISION RECORD
NO. | DATE | DESCRIPTION
02/01/2023 | 100% PERMIT SET

emanuelson-podas
consulting engineers

AMAZON.COM SERVICES LLC
DELIVERY STATION EXPANSION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

ELECTRICAL SPECIFICATIONS

DATE: 02/01/23 | DRAWN BY: AE/TRR
DWG SCALE: AS INDICATED | CHECKED BY: KBA
PROJECT NO: 4383.0063 | APPROVED BY: KBA

E8.00-BP1

B. Provide conduit, fittings, supports, and accessories required for complete raceway system.

C. Provide products listed, classified, and labeled as suitable for purpose intended.

D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

B. Fittings:
1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
2. Material: Use steel or malleable iron.
3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.

B. Fittings:
1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.

2.05 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.

B. Fittings:
1. Manufacturer: Same as manufacturer of conduit to be connected.
2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.06 HIGH-DENSITY POLYETHYLENE (HDPE) CONDUIT

A. Description: NFPA 70, Type HDPE high-density polyethylene solid-wall conduit complying with ASTM F2160 and NEMA TC 7; list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.

B. Joining Methods: Approved by HDPE conduit manufacturer.

C. Mechanical Fittings: Comply with ASTM F2176; list and label as complying with UL 651A.

2.07 ACCESSORIES

A. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.

B. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.

C. Adhesive for HDPE Conduit:
1. Specifically designed for bonding dissimilar materials in lieu of transition fittings, including but not limited to polyethylene, fiberglass, PVC, aluminum, and steel; UL 746C recognized.
2. Approved by adhesive manufacturer for use with materials to be joined.

D. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf.

E. Duct Bank Spacers: Nonmetallic; designed for maintaining conduit/duct spacing for concrete encasement in open trench installation; suitable for conduit/duct arrangement to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive conduits.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install conduit in accordance with NECA 1.

C. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
2. When conduit destination is indicated without specific routing, determine exact routing required.
3. Conduits installed underground may be routed in the shortest possible manner unless otherwise indicated.
a. Conduits installed underground shall have a warning strip with tracer wire installed above the conduit within trench.
4. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
5. Arrange conduit to provide no more than 300 feet between pull boxes for low voltage circuits and 500' between manholes for medium voltage cables.
6. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
7. Group parallel conduits in same area on common rack.

D. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 0529.
2. Use conduit strap to support single surface-mounted conduit.
a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
3. Use metal channel/strut with accessory conduit clamps to support multiple parallel surface-mounted conduits.
4. Use of spring steel conduit clips for support of conduits is not permitted.
5. Use of wire for support of conduits is not permitted.

E. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
6. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
7. Secure joints and connections to provide mechanical strength and electrical continuity.

F. Underground Installation:
1. Minimum Cover, Unless Otherwise Indicated or Required:
a. Underground, Exterior: 24 inches.
2. Provide underground warning tape along entire conduit length installed 12" below finished grade; see Section 26 0553.

G. Concrete Encasement: medium voltage conduits shall be protected by a 2" concrete cap 6" above top of conduit or installed in a concrete duct bank with a minimum concrete cover of 3 inches on all sides unless otherwise indicated.

H. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
2. Where conduits are subject to earth movement by settlement or frost.

I. Provide pull string in each empty conduit and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.

J. Provide grounding and bonding; see Section 26 0526.

3.03 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.04 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

SECTION 26 0533.16 - BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

PART 2 PRODUCTS

2.01 BOXES

A. General Requirements:
1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Cabinets and Enclosures, Including Junction and Pull Boxes:
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
a. Indoor Clean, Dry Locations: Type 1, painted steel.
b. Outdoor Locations: Type 3R, painted steel.
3. Junction and Pull Boxes Larger Than 100 cubic inches:
a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
4. Hardware: provide stainless steel. When installed outdoors, provide tamper proof torx head with center pin reject screws.

C. Underground Boxes/Enclosures:
1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
2. Size: As indicated on drawings.
3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
4. Applications:
a. Parking Lots, in Areas Subject Only To Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77 Tier 22 load rating.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive boxes.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Box Locations:
1. Unless dimensioned, box locations indicated are approximate.
2. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 0533.13.

E. Box Supports:
1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.

F. Underground Boxes/Enclosures:
1. Install enclosure on gravel base, minimum 6 inches deep.
2. Flush-mount enclosures located in concrete or paved areas.
3. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
4. Provide cast-in-place concrete collar constructed in accordance with structural requirements, minimum 10 inches wide by 12 inches deep, around enclosures that are not located in concrete areas.
5. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.

3.03 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

SECTION 26 0548 - SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Seismic control requirements.
1. Includes requirements for seismic qualification of equipment not specified in this section.

B. Seismic restraint systems.

1.02 SUBMITTALS

A. Design Documents: Prepare and submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, details, and calculations.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for products, including materials, fabrication details, dimensions, and finishes.
1. Seismic Controls: Include seismic load capacities.

C. Shop Drawings - Seismic Controls:
1. Include dimensioned plan views and sections indicating proposed electrical component locations and distributed system routing, with locations and details of gravity supports and seismic restraints and associated attachments.
2. Identify anchor manufacturer, type, minimum embedment, minimum spacing, minimum member thickness, and minimum edge distance requirements.
3. Indicate proposed arrangement of distributed system trapeze support groupings.
4. Indicate proposed locations for distributed system flexible fittings and/or connections.
5. Indicate locations of seismic separations where applicable.

PART 2 PRODUCTS

2.01 SEISMIC CONTROL REQUIREMENTS

A. Design and provide electrical component restraints, supports, and attachments suitable for seismic loads determined in accordance with applicable codes, as well as gravity and operating loads and other structural design considerations of the installed location. Consider wind loads for outdoor electrical components.

B. Seismic Design Criteria: Comply with IBC requirements for the site location..

C. Seismic Restraints:
1. Provide seismic restraints for electrical components except where exempt according to applicable codes and specified seismic design criteria, as approved by authorities having jurisdiction.
2. Comply with applicable general recommendations of the following, where not in conflict with applicable codes, seismic design criteria, or other specified requirements:
a. ASHRAE (HVACA).
b. FEMA 413.
c. FEMA E-74.
d. SMACNA (SRM).

D. Seismic Attachments:
1. Attachments to be bolted, welded, or otherwise positively fastened without consideration of frictional resistance produced by the effects of gravity.
2. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) or qualified evaluation service acceptable to authorities having jurisdiction for compliance with applicable building code, and qualified for seismic applications; concrete anchors to be qualified for installation in both cracked and uncracked concrete.
3. Do not use power-actuated fasteners.
4. Do not use friction clips (devices that rely on mechanically applied friction to resist loads). Beam clamps may be used for supporting sustained loads where provided with restraining straps.
5. Comply with anchor minimum embedment, minimum spacing, minimum member thickness, and minimum edge distance requirements.
6. Concrete Housekeeping Pads:
a. Increase size of pad as required to comply with anchor requirements.
b. Provide pad reinforcement and doweling to ensure integrity of pad and connection and to provide adequate load path from pad to supporting structure.

E. Seismic Interactions:
1. Include provisions to prevent seismic impact between electrical components and other structural or nonstructural components.
2. Include provisions such that failure of a component, either essential or nonessential, does not cause the failure of an essential component.

F. Seismic Relative Displacement Provisions:
1. Use suitable fittings or flexible connections to accommodate:
a. Relative displacements between component supports attached to dissimilar parts of structure that may move differently during an earthquake.
b. Design displacements at seismic separations.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install products in accordance with applicable requirements of NECA 1 (general workmanship).

C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.

D. Secure fasteners according to manufacturer's recommended torque settings.

E. Seismic Controls:
1. Provide specified snubbing element air gap; remove any factory-installed spacers, debris or other obstructions.
2. Use only specified components, anchorage, and hardware evaluated by seismic design. Comply with conditions of seismic certification where applicable.
3. Where mounting hole diameter exceeds bolt diameter by more than 0.125 inch, use epoxy grout, elastomeric grommet, or welded washer to reduce clearance to 0.125 inch or less.
4. Equipment with Sheet Metal Housings:
a. Use Belleville washers to distribute stress over a larger surface area of the sheet metal connection interface as approved by manufacturer.
b. Attach additional steel as approved by manufacturer where required to transfer loads to structure.
c. Where mounting surface is irregular, do not shim housing; reinforce housing with additional steel as approved by manufacturer.
5. Concrete Housekeeping Pads:
a. Size in accordance with seismic design to meet anchor requirements.
b. Install pad reinforcement and doweling in accordance with seismic design to ensure integrity of pad and associated connection to slab.

END OF SECTION

SECTION 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

A. Identification for Equipment:
1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
a. Switchboards:
1) Identify power source and circuit number. Include location when not within sight of equipment.
2) Use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
b. Panelboards:
1) Identify power source and circuit number. Include location when not within sight of equipment.
2) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
c. Transformers:
1) Identify kVA rating.
2) Identify voltage and phase for primary and secondary.
d. Enclosed switches and circuit breakers:
1) Identify load(s) served. Include location when not within sight of equipment.
2. Service Equipment:
a. Use identification nameplate to identify each service disconnecting means.
3. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
a. Service equipment.
4. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards and panelboards, that are likely to require examination, adjustment, servicing, or maintenance while energized.
a. Service Equipment: Include the following information in accordance with NFPA 70.
1) Nominal system voltage.
2) Available fault current.
3) Date label applied.

B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
2. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
a. Within boxes when more than one circuit is present.
b. Within equipment enclosures when conductors and cables enter or leave the enclosure.
3. Use underground warning tape to identify direct buried cables.

C. Identification for Raceways:
1. Use handwritten text using indelible marker to identify spare conduits at each end. Identify purpose and termination location.
2. Use underground warning tape to identify underground raceways.

D. Identification for Boxes:
1. Use handwritten text using indelible marker to identify circuits enclosed.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:
1. Materials:
a. Outdoor Locations: Use stainless steel or aluminum nameplates suitable for exterior use.
2. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
3. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
4. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.

B. Format for Equipment Identification:
1. Minimum Size: 1 inch by 2.5 inches.
2. Legend:
a. Equipment designation or other approved description.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height:
a. Equipment Designation: 1/2 inch.
5. Color:
a. Normal Power System: White text on black background.

2.03 WIRE AND CABLE MARKERS

A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl self-laminating type markers suitable for the conductor or cable to be identified.

B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.

C. Legend: Power source and circuit number or other designation indicated.

D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.

E. Minimum Text Height: 1/8 inch.

F. Color: Black text on white background unless otherwise indicated.

2.04 UNDERGROUND WARNING TAPE

A. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.

B. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.

C. Legend: Type of service, continuously repeated over full length of tape.

2.05 WARNING SIGNS AND LABELS

A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.

B. Warning Signs:
1. Materials:
a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
3. Minimum Size: 7 by 10 inches unless otherwise indicated.

C. Warning Labels:
1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
3. Minimum Size: 2 by 4 inches unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
1. Surface-Mounted Equipment: Enclosure front.
2. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
3. Boxes: Inside face of cover.
4. Conductors and Cables: Legible from the point of access.

C. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.

D. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.

E. Secure rigid signs using stainless steel screws.

F. Mark all handwritten text, where permitted, to be neat and legible.

G. For non metallic conduit, under roads and parking lots, burial depth to be 24 inches.

END OF SECTION

SECTION 26 1219 - MEDIUM-VOLTAGE LIQUID-FILLED TRANSFORMERS

PART 1 GENERAL

1.01 SCOPE

A. Medium voltage transformers specified in this section are suppplied by Amazon. The contractor shall receive, inspect, install and test equipment as required within the plans and specifications.

1.02 SECTION INCLUDES

A. Liquid-Filled pad-mounted distribution transformers.

1.03 REFERENCE STANDARDS

A. IEEE Std C57.12.00™-2015 – IEEE Standard for Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers

B. IEEE Std C57.12.28™ - 2014 standard – Pad-Mounted Equipment - Enclosure Integrity.

C. IEEE Std C57.12.29™ - 2014 standard - IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments – applicable when stainless steel construction is specified.

D. IEEE Std C57.12.34™-2015 standard – Standard Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers (2500 kVA and Smaller) - High Voltage: 34500GrdY/19920 Volts and Below; Low-Voltage: 480 Volt 2500 kVA and Smaller (issued in March 2005 - combines IEEE Std C57.12.22 and IEEE Std C57.12.26 standards).

E. IEEE Std C57.12.90™-2010 – IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers and IEEE Guide for Short-Circuit Testing of Distribution and Power Transformers

F. IEEE Std C57.12.91™-2011 standard – Guide for Loading Mineral-Oil-Immersed Transformers.

G. IEEE Std C57.154™ -2012 – IEEE Standard for the Design, Testing, and Application of Liquid-Immersed Distribution, Power, and Regulating Transformers Using High-Temperature Insulation Systems and Operating at Elevated Temperatures.

H. NEMA® TR 1-1993 (R2000) – Transformers, Regulators and Reactors, Table 0-2 Audible Sound Levels.

I. NEMA 260-1996 (2004) – Safety Labels for Pad-Mounted Switchgear and Transformers Sited in Public Areas.

J. 10 CFR Part 431 – Department of Energy–Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule

K. IEEE Std 386™-2016 – IEEE Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V

L. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

A. The following information shall be submitted by the manufacturer to the Engineer:
1. Front view elevation and weight.
2. Plan view.
3. Schematic diagrams.
4. Nameplate diagram.
5. Component list.
6. Conduit entry/exit locations.
7. Ratings including:
a. kVA.
b. Primary and secondary voltage.
c. Taps.
d. Primary and secondary continuous current.
e. Basic Impulse Level.
f. Impedance.
g. Insulation class and temperature rise.
8. Cable terminal sizes.
9. Product data sheets.

B. SUBMITTALS FOR CONSTRUCTION
1. The following information shall be submitted by the contractor for record purposes:
a. Final as-built drawings and information for items listed in Section 1.04, and shall incorporate all changes made during the manufacturing process.
b. Wiring diagrams.
c. Certified production test reports.
d. Installation information.
e. Seismic certification as specified

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Testing Agency Qualifications: Company member of International Electrical Testing Association and specializing in testing products specified in this section with minimum three years documented experience.

C. Products: Listed, classified, and labeled as suitable for the purpose intended.

D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Transformers, 1000 kVA and below, shall be palletized. Transformers, 1500 kVA and larger, shall be loaded and unloaded with overhead cranes, so a pallet is not to be provided for these transformers.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eaton.

B. Schneider Electric USA.

C. Siemens energy.

2.02 SERVICE CONDITIONS

A. Meet requirements for usual service conditions described in IEEE C57.12.01 and for the project location service conditions.

2.03 RATINGS

A. Type: ONAN, Impedance: 5.75% , Tolerance +/- 7-1/2%, HV: 13.8kV , HV BIL:95kV , LV: 480V, LV BIL: 30 kV, De-energized Taps +/- 2-1/2 full capacity

2.04 CONSTRUCTION

A. The core shall be manufactured from grain-oriented silicon steel and shall be precisely stacked to eliminate gaps in the corner joints. Coils shall be aluminum conductors.

B. For optimum dielectric and mechanical strength, epoxy coated insulation shall be placed between each layer in the winding.

C. The transformer shall be designed and constructed to withstand the external short-circuits, as defined by IEEE C57. 12.00.T

D. The transformer design shall be capable of operating above rated voltage or below rated frequency in accordance with IEEE C57.12.00.

E. The transformer will be supplied with Envirotemp FR3 or other environmentally friendly oil as the dielectric coolant. The transformer insulating fluid shall meet or exceed the requirements of the appropriate IEEE and ASTM fluid Standards. The transformer fluid shall be tested for dielectric breakdown and moisture content during manufacturing.

F. The padmounted tamper-resistant transformer shall be designed and constructed to minimize the audible noise generated with the transformer energized at rated voltage.

G. Tank and Cabinet Enclosure
1. The transformer shall be of sealed -tank construction. The transformer shall remain effectively sealed for a top-oil temperature of −5 °C to +105 °C continuous and under operating conditions as described in IEEE Std C57.91.
2. The transformer tank and compartment shall conform to IEEE Std C 57.12.28 or C57.12.29, as appropriate, and be so constructed as to limit disassembly, breakage, and prying open of any doors, panels, and sills when the doors are in the closed and locked position.
3. The high-voltage and low-voltage compartments, separated by a metal barrier, shall be located side-by-side on one side of the transformer tank.
4. The compartment depth shall be in accordance with IEEE Std C57.12.34™-2009 standard unless additional depth is specified.
5. The tank base must be designed to allow skidding or rolling in any direction. Lifting provisions shall consist of four lifting lugs welded to the tank.
6. The tank shall be constructed to withstand 7 psi without permanent deformation, and 15 psi without rupture. The tank shall include a 15 psig pressure relief valve with a flow rate of a minimum of 35 SCFM.
7. The tank shall be complete with an stainless steel nameplate. This nameplate shall meet Nameplate B per IEEE Std C57.12.00™-2015 standard.

H. GROUNDING PROVISIONS
1. All non-energized metallic components of the transformer shall be grounded.
2. Ground pads and grounding provision design shall be per IEEE-C57.12.34-2015 standards.
3. Neutral Terminal: The neutral terminal shall be either a blade connected directly to the tank or a fully insulated terminal. If a fully insulated terminal is used, a ground pad shall be provided on the outer surface of the tank. One or more removable ground straps suitably sized for the short-circuit rating of the transformer as defined in IEEE Std C57.12.00 shall be provided and connected between the neutral terminal and the ground pad.

I. BUSHINGS
1. High Voltage Bushings and Terminals
a. High voltage bushings will be installed in the high voltage termination compartment.
b. The high voltage bushings shall be Deadfront type rated per C57.12.34-2015 Table 4. Bushing wells with bushing well inserts shall be installed. The bushings shall be externally removable and be supplied with a removable stud. Current rating for the high voltage bushing is typically 200A. Bushing rating above 200A should be evaluated as an exception on a site basis.
c. The transformer shall be provided with six (6) high voltage bushings in accordance with IEEE Std C57.12.34™-2015 standard for loop feed configurations. The bushing heights shall be in accordance to IEEE Std C57.12.34™-2015 standard.
2. Low Voltage Bushings and Terminals
a. Voltages less than 700 Volts: The transformer shall be provided with tin-plated spade-type bushings. The quantity of connection holes shall be 6 per phase (<1.5MVA) or 12 per phase (>2MVA).
b. The transformer shall be provided with bushings in a staggered arrangement in accordance with applicable dimensions from IEEE Std C57.12.34™-2015 standard.

J. SWITCHING AND PROTECTION
1. Provide one four position T blade load break sectionalizing switch for these transformers.
2. Bay-o-net with back-up current limiting fuses: (available up to 34.5 kV delta applications where fuse sizes are available). The high-voltage overcurrent protection scheme provided with the transformer shall be an externally removable loadbreak expulsion Bay-O-Net fuse assembly with a flapper valve to minimize oil spillage. The bayonet fuses shall be in series with ELSP under-oil partial-range current-limiting back-up fuses with an interrupting rating of 50,000 A.
3. The transformer shall be provided with an Externally Visible Disconnect On/Off switch. The external visible switch allows customers to visibly confirm that the transformer is de-energized without having to expose themselves to dangerous arc flash in the transformer compartment. Disconnect Switch shall be externally operable by either using a manual handle or a distribution hot stick.

REVISION RECORD

NO.	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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consulting engineers
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AMAZON.COM SERVICES LLC
DELIVERY STATION EXPANSION
DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

ELECTRICAL SPECIFICATIONS

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063	APPROVED BY:	KBA

E8.01-BP1

4. An interlock shall be required between the disconnect switch scheme specified and the bayonet fuses, such that the fuses may not be removed unless the transformer has been de-energized via the disconnect switch scheme.

K. Overvoltage Protection
   1. Deadfront bushings: (maximum 150 kV BIL, for voltages up to 18 kV delta and 35 kV grounded wye). Externally mounted, Distribution Class surge arrester recommended by manufacturer to be provided.
   2. Manufacturer recommended surge protection for low voltage bushing.

L. FINISH PERFORMANCE REQUIREMENTS
   1. The tank coating shall meet all requirements in IEEE Std C57.12.28™-2014 standard including:
      a. Salt Spray
      b. Crosshatch adhesion
      c. Humidity
      d. Impact
      e. Oil resistance
      f. Ultraviolet accelerated weathering
      g. Abrasion resistance – taber abraser
      h. The enclosure integrity of the tank and cabinet shall meet the requirements for tamper resistance set forth in IEEE Std C57.12.28™-2014 standard including but not limited to the pry test, pull test, and wire probe test.

M. ACCESORIES
   1. The following standard accessories and options shall be provided:
      a. 1.0" Upper Fill Plug with Filter Press Connection
      b. 1.0" Drain/Sampling Valve
      c. Bolted Cover
      d. Lifting Lugs (4)
      e. Liquid Level Gauge
      f. Dial Type Thermometer
      g. Pressure/Vacuum Gauge
   2. Optional Accessories –Refer to X mark for Typical Accessories – Modified if required
      a. [x] 1.0" upper fill plug
      b. [x] Automatic pressure relief valve
      c. [x] Metal drip shield (when bayonets specified)
      d. [x] Ground provisions per IEEE Std C57.12.34™-2009 standard section 9.11.
      e. [x] 1.0" drain valve w/ sampling device in (HV) compartment (500 kVA & below)
      f. [x] Upper fill valve
      g. [x] Ground connectors
      h. [x] Mr. Ouch warning & danger signs
      i. [x] Danger high voltage warning signs
      j. [x] Rapid rise relay

PART 3 EXECUTION

3.01 INSTALLATION

A. Install plumb and level.
B. Install safety labels to NEMA 260.
C. The Contractor shall install all equipment per the manufacturer's recommendations and the contract drawings.
D. All necessary hardware to secure the assembly in place shall be provided by the Contractor.

3.02 FACTORY TESTING

A. The following standard factory tests shall be performed on all equipment provided under this section. All tests shall be in accordance with the latest version of ANSI and NEMA standards. All units shall be tested for the following:
   1. No-Load (85 °C or 20 °C) losses at rated current
   2. Total (85 °C) losses at rated current
   3. Percent Impedance (85 °C) at rated current
   4. No-load loss at rated voltage on the rated voltage connection.
   5. Excitation current (100% voltage) test
   6. Winding resistance measurement tests
   7. Ratio tests using all tap settings
   8. Polarity and phase relation tests
   9. Induced potential tests
   10. Full wave and reduced wave impulse test
B. Transformers shall conform to efficiency levels for liquid immersed distribution transformers, as specified in the Department of Energy ruling "10 CFR Part 431 Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule; April 18, 2013." Manufacturer shall comply with the intent of all regulations set forth in noted ruling.
C. In addition, the manufacturer shall provide certification upon request for all design and other tests listed in IEEE Std C57.12.00™-2010 standard, including verification that the design has passed short circuit criteria per IEEE Std C57.12.00™-2010 standard and IEEE Std C57.12.90™-2010 standard.
D. In the event of proposal bid evaluated with guaranteed losses due to a loss evaluation (see section 10.0), manufacturer shall conform to guaranteed average losses as specified in IEEE Std C57.12.00™-2010 standard. The no-load losses of a transformer shall not exceed the specified no-load losses by more than 10%, and the total losses of a transformer shall not exceed the specified total losses by more than 6%.

3.03 MANUFACTURER'S CERTIFICATION

A. A qualified factory-trained manufacturer's representative shall certify in writing that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.
B. The Contractor shall provide a copy of the manufacturer's representative's certification.

3.04 FIELD ADJUSTMENTS

A. Adjust taps to deliver appropriate secondary voltage.

3.05 FIELD TESTING

A. Measure primary and secondary voltages for proper tap settings.
B. Megger primary and secondary windings.

END OF SECTION

SECTION 26 1300 - MEDIUM-VOLTAGE SWITCHGEAR

PART 1 GENERAL

1.01 SCOPE

A. Medium voltage switchgear specified in this section is suppplied by Amazon. The contractor shall receive, inspect, install and test equipment as required within the plans and specifications.

1.02 SECTION INCLUDES

A. Load-interrupter switchgear with vacuum circuit breaker.

1.03 REFERENCE STANDARDS

A. IEEE Std C37.74™-2003 standard – IEEE Standard Requirements for Subsurface, Vault, and Pad-Mounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems Up to 38 kV
B. IEEE Std C57.12.28™-2005 standard – Standard for Pad-Mounted Equipment - Enclosure Integrity.

1.04 SUBMITTALS

A. The manufacturer shall furnish a detailed list of ratings and accessories and set of drawings defined as follows:
   1. Detailed front elevation.
   2. Single Line.
   3. Base Plan.
   4. Schematics.
B. The manufacturer shall furnish instruction manuals covering the installation of the switchgear and the operation of its various components.
C. Manufacturer's equipment seismic qualification certification.
D. Manufacturer's Installation Instructions.
E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
F. Manufacturer's Field Reports: Indicate activities on site, final adjustments and overcurrent protective device coordination curves, adverse findings, and recommendations.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.
B. Testing Agency: Company member of International Electrical Testing Association and specializing in testing products specified in this section with minimum 15 years documented experience.
C. Products: Listed, classified, and labeled as suitable for the purpose intended.
D. WARRANTY
   1. The underground distribution switchgear shall be provided with a one-year warranty in-service/18 months maximum from date of shipment.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. S&C Vista Underground Distribution Switchgear.
B. Eaton Type VFI Underground Distribution Switchgear.
C. Siemens Siebreak Metal Enclosed Interrupter Switchgear (<15kV)
D. Schneider Electric Premset Metal Enclosed Switchgear (<15kV)
E. ABB/GE Relia Load Interrupter Switchgear (<15kV)

2.02 DESCRIPTION

A. Three-phase, 6 - way, 1 -source, 5 -tap, 60 Hz, fully dead front, sectionalizing underground distribution switchgear; with maximum main bus rating of 1200 amperes continuous current and maximum tap rating of 600 amperes. Source switching shall be accomplished with vacuum switches. Tap overcurrent protection shall be accomplished utilizing a resettable vacuum circuit breaker which shall be provided with three-pole ganged.

2.03 RATINGS

A. The nominal voltage of the switchgear shall be 15kV with a frequency rating of 60Hz.
B. The maximum design voltage of the switchgear shall 15.5kV be respectively.
C. The Basic Insulation Level shall be 95kV respectively.
D. Main Bus Continuous Current: 1200A.
E. The main bus switchgear assembly Short Circuit RMS (Sym.) shall be 25kA for all rated switchgear.
F. The Way Load Interrupter Continuous Current (A): 1200A.
G. The Way Fault Interrupter Continuous Current (A): 600A.
H. The Way 2-4/6 FI, Fault Closing Current, RMS Symmetrical (A): 25kA.
I. Way 1 Load Interrupter, Interrupting Current, RMS Symmetrical (A): 1200A.
J. Way 1 Load Interrupter, Fault Closing Current, RMS Symmetrical (A): 25kA.

2.04 CONSTRUCTION

A. The underground distribution switchgear shall consist of a 2-sided, sealed insulation tank, and separate front and rear cable compartments. Overall height, width, depth and layout shall conform to the manufacturer's standard construction practices for the configuration, ratings, and voltage class specified. Standard construction shall be of mild steel with stainless steel hardware.
B. The sealed tank shall be capable of withstanding flood immersion while energized, and shall be impervious to contaminants and animals, so as not to compromise the main insulation structure.
C. Include distribution class surge arresters with ratings in accordance to manufacturer recommendation.
D. The design and construction of the main switchgear are standardized into two types across the EV sites. The switchgear shall comprise of either 4 ways or 6 ways. MV switchgear should be sized to meet the EV charging site final load.
E. The switchgear shall consist of fault interrupters and disconnect switches along with visible open gaps and integral visible grounds, motor perators and controls, a low-voltage compartment/enclosure, and a microprocessor- based overcurrent protective relay provided for each way.
F. Bus and interconnections shall withstand the stresses associated with short circuit currents up through the maximum rating of the switchgear.
G. A 1/2-13 UNC stainless steel ground nut shall be provided that is welded to the switchgear tank and mounted beneath each way.
H. A non-corrosive operating diagram (one-line schematic of the unit) shall be affixed to the inside of the right hand, first opening door, on both sides of the unit, if two (2) sided. When visible break switches are specified (liquid insulation only), the one-line schematic will also show the electrical connection and mechanical interlock of these switches. A single nameplate shall be provided that is mounted on the source side tank front plate in the upper right hand corner. The nameplate shall contain the following information:
   1. Catalog Number/Model Number/Manufacturer's Name.
   2. Serial Number.
   3. Nominal voltage class, kV.
   4. Rated maximum voltage, kV.
   5. BIL, kV.
   6. Manufacturing Date: MM/YYYY.
   7. Rated continuous current, A.
   8. Rated load interrupting rating, A.
   9. Momentary current rating, kA asym.
   10. Close & latch rating, kA asym.
   11. Fault-interrupter ratings including interrupting and duty-cycle fault-closing.
   12. Load-interrupter switch ratings including duty-cycle fault-closing and short-time.
   13. Total weight, lbs.
   14. Liquid dielectric volume (gallons).

2.05 BUSHINGS

A. Bushings and bushing wells shall be conforming to IEEE Std 386™-2006 standard and ANSI Standard C119.2.

2.06 FAULT INTERRUPTER AND LOAD-INTERRUPTER SWITCHES

A. Fault interrupters (FI) shall have a fault-closing and fault interrupting rating as specified for the site design. This rating defines the fault interrupter's ability to close the designated number of times against a three-phase fault with asymmetrical (peak) current in at least one phase equal to the rated value and clear the resulting fault current, , with the interrupter remaining operable and able to carry and interrupt rated current.The interrupter shall be manually resettable, with no consumable parts (i.e. fuses). The maximum interrupting time from issuance of a trip signal from the electronic control shall be 5 cycles.
B. The fault interrupter shall be provided with a disconnect with an integral Ground position readily visible through the viewing window to eliminate the need for cable handling and exposure to high voltage to ground the equipment.
C. Each fault interrupter switch shall be provided with a large viewing window to allow visual verification of the disconnect blade position (open-closed or grounded).
D. The Ground position shall have a fault-closing rating similar to the fault interrupter switch, fault closing rating.
E. Load-interrupter switches and fault interrupters shall be operated by means of a quick-make, quick-break mechanism. The speed of opening and closing the switch shall be independent of the operator, and it shall be impossible to tease the switch into any intermediate position.
F. The manual handle shall be provided for operation of load interrupter and fault interrupter switches. The manual handle shall charge the operating mechanism for closing, opening, and grounding of the switches and fault interrupters.
G. The operating mechanism shall indicate the switch position. LED lights may also be used to indicate the switch position.
H. All load interrupter and fault interrupter switches shall be three phase gang operated. Single phase switching is not allowed. Fault interrupter switches are operated by an external microprocessor relay or electronic trip unit. The fault interrupter should have an operator resettable trip position indicator.
I. The fault interrupter shall be manually resettable, with no consumable parts (i.e. fuses). The maximum interrupting time from issuance of a trip signal from the electronic control shall be 5 cycles.
J. Switches on all ways shall be motor operated or have provisions for future motor operator installation, capable of remote supervisory control.

2.07 PROTECTIVE RELAYS AND CONTROLS

A. The control voltage shall be derived from a control power transformer (CPT) mounted in the switchgear. The 120V AC secondary control voltage can be used to power motor operated switches, metering, space heaters, and other control circuits. 8 hour battery backup shall be provided for the main switchgear for control power. Battery DC voltage shall be used to power protective relays, controls, and trip circuits for fault interrupters. Alternately, CT powered relays are also acceptable.
B. A microprocessor-based overcurrent protective relay shall be provided to initiate fault interruption on each way.
C. The overcurrent protective relays shall be mounted on a separate enclosure or in a separate low voltage compartment. Overcurrent relay shall be field programmable and accessible from the exterior of the enclosure.
D. Overcurrent relay shall include field programmable instantaneous, definite time and inverse time phase and ground overcurrent elements. The phase and ground overcurrent elements are set independently and the ground overcurrent element should operate based on measured or calculated zero sequence fault currents.
E. Overcurrent relay should provide event report capture feature.
F. Protection of feeder circuits (radial architecture) should be provided by electronic trip units or microprocessor relays using phase and ground overcurrent elements (definite time/inverse time overcurrent). Overcurrent elements should be set to coordinate with downstream protection for MV transformers and LV switchboards with a coordination time interval (CTI) of 0.2 seconds (FI downstream) or 0.1 seconds (downstream fuse total clearing time). Sensitive ground overcurrent element should be enabled with time coordination with downstream protective devices (fuses/overcurrent elements).

2.08 PRODUCTION TESTING

A. Provide the following tests:
   1. Continuity test to assure correct internal connections.
   2. Hi-pot test to determine dielectric strength of the unit.
   3. Leak test to assure tank is completely sealed.
   4. Electrical TCC trip test.

2.09 FINISH PERFORMANCE REQUIREMENTS

A. The switchgear shall be constructed of mild steel with stainless steel details and painted green conforming to Munsell 7GY 3.29/1.5 unless otherwise specified. The coating system employed shall meet or exceed IEEE Std C57.12.28™-2005 standard coating system requirements for underground distribution equipment, including the following performance tests:
   1. 24-hour 5% salt spray corrosion test per ASTM B117 / D1654.
   2. 1000-hour humidity test per ASTM D2247 / D1654.
   3. 500-hour ultraviolet accelerated weathering test per ASTM G53 / D523.
   4. Direct impact test with 160 in. lb. falling dart per ASTM D2794.
   5. Tabor abrasion test 3,000 cycles per ASTM D4060.
   6. Crosshatch adhesion per ASTM D3359.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated on shop drawings.

3.02 INSTALLATION

A. Install in accordance with IEEE C37.20.1.
B. Provide required seismic controls in accordance with Section 26 0548.
C. Install switchgear plumb and level and with each section aligned properly.
D. Make electrical connections between equipment sections using connectors furnished by manufacturer.
E. DELIVERY, STORAGE, AND HANDLING
   1. Protect products from weather and moisture by covering with heavy plastic or canvas and by maintaining heating within enclosure in accordance with manufacturer's instructions.

3.03 CERTIFIED DESIGN TEST DATA.

A. Certified design test data shall be furnished upon request. The test data shall bear the seal of a Registered Professional Engineer and shall be available for the following:
   1. Switch ratings per IEEE Std C37.74™-2003 standard.
   2. Interrupter ratings per IEEE Std C37.60™-2003 standard.
   3. Coatings per IEEE Std C57.12.28™-2005.

3.04 FIELD QUALITY CONTROL

A. Perform inspections and tests listed in NETA ATS, Section 7.1.

END OF SECTION

SECTION 26 2200 - LOW-VOLTAGE TRANSFORMERS

PART 1 GENERAL

1.01 SCOPE

A. General purpose, low voltage transformers specified in this section are suppplied by Amazon, except for the 1kVA transformer for the L3 charger control circuit. The contractor shall receive, inspect, install and test equipment as required within the plans and specifications.

1.02 SUBMITTALS

A. Manufacturer's Product Data: Include voltage, kVA, impedance, tap configurations, insulation system class and rated temperature rise, efficiency, sound level, enclosure ratings, outline and support point dimensions, weight, required clearances, service condition requirements, and installed features.
B. Manufacturer's equipment seismic qualification certification.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. ABB/GE: www.geindustrial.com.
B. Eaton Corporation: www.eaton.com.
C. Schneider Electric; Square D Products: www.schneider-electric.us.
D. Siemens Industry, Inc: www.usa.siemens.com.

2.02 TRANSFORMERS - GENERAL REQUIREMENTS

A. Description: Factory-assembled, dry type transformers for 60 Hz operation designed and manufactured in accordance with NEMA ST 20 and listed, classified, and labeled as suitable for the purpose intended.
B. Transformers shall be designed to withstand Seismic Forces
   1. Supplier shall upon request provide self-certification of seismic conformance for transformers installed at a specific cite (zip code, latitude/longitude, street address) per the following building codes
      a. International Building Code
      b. Uniform Building Code
      c. California Building Code
      d. NFPA 5000 Building Construction
      e. National Building Code of Canada
C. Unless noted otherwise, transformer ratings indicated are for continuous loading according to IEEE C57.96 under the service conditions at the project location.
D. Core: High grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Keep magnetic flux densities substantially below saturation point, even at 10 percent primary overvoltage. Tightly clamp core laminations to prevent plate movement and maintain consistent pressure throughout core length.
E. Impregnate core and coil assembly with non-hydroscopic thermo-setting varnish to effectively seal out moisture and other contaminants.
F. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.
G. Isolate core and coil from enclosure using vibration-absorbing mounts. There shall be no metal-to-metal contact between the core and coil and the enclosure except for a flexible safety ground strap.
   1. Sound isolation systems requiring the complete removal of all fastening devices will not be acceptable.
H. Nameplate: Include transformer connection data, ratings, wiring diagrams, and overload capacity based on rated winding temperature rise.

2.03 GENERAL PURPOSE TRANSFORMERS

A. Description: Self-cooled, two winding transformers listed and labeled as complying with UL 506 or UL 1561; ratings as indicated on the drawings.
B. Primary Voltage: 480 volts delta, 3 phase.
C. Secondary Voltage: 208Y/120 volts, 3 phase.
D. Insulation System and Allowable Average Winding Temperature Rise:
   1. Class 220 degrees C insulation system with 150 degrees C average winding temperature rise.
E. Coil Conductors: Continuous aluminum or copper windings with terminations brazed or welded.
F. Winding Taps:
   1. All transformer sizes: Two 2.5 percent full capacity primary taps above and two 2.5 percent full capacity primary taps below rated voltage.
G. Energy Efficiency: Comply with 10 CFR 431, Subpart K.
H. Sound Levels: Standard sound levels complying with NEMA ST 20
I. Mounting Provisions:
   1. 15 kVA through 75 kVA: Suitable for wall, floor, or trapeze mounting.
   2. Larger than 75 kVA: Suitable for floor mounting.
J. Transformer Enclosure: Comply with NEMA ST 20.
   1. Maximum Enclosure Temperature shall note exceed 50°C above 40°C Ambient
      a. Transformers shall give minimum distance on nameplate from ventilated openings. Distance shall not be greater than 3.0"
   2. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Outdoor locations: Type 3R.
   3. Construction: Steel.
      a. 15 kVA and Larger: Ventilated.
         1) Finish: Manufacturer's standard grey, suitable for outdoor installations. 600-hour UL Salt Spray Test minimum.
   4. Provide lifting eyes or brackets.
K. Terminals
   1. Must have NEMA two-hole configurations
   2. Primary terminals must be clearly separate from the secondary terminals
   3. Primary terminals must accommodate wire sized for 250% of nameplate current
   4. Secondary terminals must accommodate wire sized for 125% of nameplate current
   5. XO or HO terminals shall be designed to accommodate wire sized for up to 200% of rated line current.
   6. Terminals shall allow for parallel conductors once wire range exceed 350kcmil
   7. Terminals shall be located in enclosure to allow for either bottom or side entry. Wiring compartment shall meet NEC bending radius for conductors sized at 125% of nameplate current. When primary wire is sized for 250% terminals shall comply with ONE BEND access point
L. Accessories:
   1. Mounting Brackets: Provide manufacturer's standard brackets.
   2. Weathershield Kits: Provide for ventilated transformers installed outdoors to provide a listed NEMA 250, type 3R assembly.

PART 3 EXECUTION

3.01 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).
B. Install products in accordance with manufacturer's instructions.
C. Install transformers in accordance with NECA 409 and IEEE C57.94.
D. Use flexible conduit, under the provisions of Section 26 0533.13, 2 feet minimum length, for connections to transformer case. Make conduit connections to side panel of enclosure.
E. Arrange equipment to provide minimum clearances as specified on transformer nameplate and in accordance with manufacturer's instructions and NFPA 70.
F. Install transformers plumb and level.
G. Transformer Support:
   1. Provide required support and attachment in accordance with Section 26 0529, where not furnished by transformer manufacturer.
   2. Provide required vibration isolation and/or seismic controls in accordance with Section 26 0548.
H. Provide grounding and bonding in accordance with Section 26 0526.
I. Remove shipping braces and adjust bolts that attach the core and coil mounting bracket to the enclosure according to manufacturer's recommendations in order to reduce audible noise transmission.
J. Where not factory-installed, install lugs sized as required for termination of conductors as indicated.
K. Where furnished as a separate accessory, install transformer weathershield per manufacturer's instructions.

3.02 TESTING

A. Established safety procedures shall be followed including but not limited to proper Personal Protective Equipment, accordance with incident energy levels
B. Megger Transformer to verify all connections are cleared from ground
C. Take Measurements of Primary Voltages – match nameplate
D. Take Measurements of Secondary Voltages – match nameplate
E. With front cover installed verify that the transformer when energized is not emitting excess if noise – contact manufacture if noise is not 120 hertz constant hum

3.03 ADJUSTING

A. Measure primary and secondary voltages and make appropriate tap adjustments.
B. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

END OF SECTION

SECTION 26 2413 - SWITCHBOARDS

PART 1 GENERAL

1.01 SCOPE

A. Low-voltage (600 V and less) switchboards and associated accessories for service and distribution applications specified in this section are suppplied by Amazon. The contractor shall receive, inspect, install and test equipment as required within the plans and specifications.

1.02 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for switchboards, enclosures, overcurrent protective devices, and other installed components and accessories.
   1. Include characteristic trip curves for each type and rating of overcurrent protective device upon request.
B. Shop Drawings: Indicate dimensions, voltage, bus ampacities, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
   1. Clearly indicate whether proposed short circuit current ratings are fully rated or, where acceptable, series rated systems.
   2. Include documentation demonstrating selective coordination.
   3. Identify mounting conditions required for equipment seismic qualification.
C. Manufacturer's equipment seismic qualification certification.
D. Field Quality Control Test Reports.
E. Project Record Documents: Record actual installed locations of switchboards and final equipment settings.
F. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store switchboards in accordance with manufacturer's instructions, NECA 400, and NEMA PB 2.1.
B. Store in a clean, dry space having a uniform temperature to prevent condensation (including outdoor switchboards, which are not weatherproof until completely and properly installed). Where necessary, provide temporary enclosure space heaters or temporary power for permanent factory-installed space heaters.
C. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
D. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Switchboards:
   1. ABB/GE: www.geindustrial.com.
   2. Eaton Corporation: www.eaton.com.
   3. Schneider Electric; Square D Products: www.schneider-electric.us.
   4. Siemens Industry, Inc: www.usa.siemens.com.
B. Source Limitations: Furnish switchboards and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.02 SWITCHBOARDS

A. Provide switchboards consisting of all required components, control power transformers, instrumentation and control wiring, accessories, etc. as necessary for a complete operating system.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Description: Dead-front switchboard assemblies complying with NEMA PB 2, and listed and labeled as complying with UL 891; ratings, configurations and features as indicated on the drawings.
D. Front-Connected Switchboards:
   1. Main Device(s): Individually-mounted.
   2. Feeder Devices: Panel/group-mounted.
   3. Arrangement: Front accessible only (not rear accessible), rear aligned.
   4. Gutter Access: Bolted covers.
E. Seismic Qualification: Provide switchboards and associated components suitable for application under the seismic design criteria specified in Section 26 0548 where required. Include certification of compliance with submittals.
F. Service Conditions:
   1. Provide switchboards and associated components suitable for operation under the service conditions at the project location without derating.
G. Short Circuit Current Rating:
   1. Provide switchboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
   2. Listed series ratings are not acceptable.
   3. Label equipment utilizing series ratings as required by NFPA 70.
H. Selectivity: Where the requirement for selectivity is indicated, furnish products as required to achieve selective coordination.
I. Main Devices: Configure for top or bottom incoming feed as indicated or as required for the installation. Provide separate pull section and/or top-mounted pullbox as indicated or as required to facilitate installation of incoming feed.
J. Bussing: Sized in accordance with UL 891 temperature rise requirements.
   1. Through bus (horizontal cross bus) to be fully rated through full length of switchboard (non-tapered). Tapered bus is not permitted.
   2. Provide solidly bonded equipment ground bus through full length of switchboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
   3. Phase and Neutral Bus Material: Aluminum.
   4. Ground Bus Material: Aluminum.
K. Conductor Terminations: Suitable for use with the conductors to be installed.
   1. Line Conductor Terminations:
      a. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
   2. Load Conductor Terminations:
      a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
L. Enclosures:
   1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Outdoor Locations: Type 3R.
   2. Finish: Manufacturer's standard unless otherwise indicated.
   3. Outdoor Enclosures:
      a. Enclosure Type: Non-walk-in type unless otherwise indicated.
      b. Color: Manufacturer's standard.
      c. Access Doors: Lockable, with all locks keyed alike.
M. Future Provisions:
   1. Prepare designated spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
N. Arc Flash Energy-Reducing Maintenance Switching: Where indicated, provide a local accessory switch with status indicator light that permits selection of a maintenance mode with alternate electronic trip unit settings for reduced fault clearing time.
O. Owner Metering:
   1. Provide microprocessor-based digital electrical metering system including all instrument transformers, wiring, and connections necessary for measurements specified.
   2. Basis of Design: Square D PM8000.
   3. Measured Parameters:
      a. Voltage (Volts AC): Line-to-line, line-to-neutral for each phase.
      b. Current (Amps): For each phase and neutral.
      c. Frequency (Hz).
      d. Real power (kW): For each phase, 3-phase total.
      e. Reactive power (kVAR): For each phase, 3-phase total.
      f. Apparent power (kVA): For each phase, 3-phase total.
      g. Power factor.
   4. Meter Accuracy: Plus/minus 1.0 percent.
P. Instrument Transformers:
   1. Comply with IEEE C57.13.
   2. Select suitable ratio, burden, and accuracy as required for connected devices.
   3. Current Transformers: Connect secondaries to shorting terminal blocks.
   4. Potential Transformers: Include primary and secondary fuses with disconnecting means.

2.03 OVERCURRENT PROTECTIVE DEVICES

A. Circuit Breakers:
   1. Interrupting Capacity:
      a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than specified minimum requirements.
      b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
   2. Molded Case Circuit Breakers:
      a. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers; listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
         1) Provide thermal magnetic circuit breakersunless otherwise indicated.
         2) Provide electronic trip circuit breakerswhere indicated and for all breakers serving emergnecy systems and elevators.
      b. Minimum Interrupting Capacity:
         1) 10,000 rms symmetrical amperes at 240 VAC or 208 VAC.
         2) 14,000 rms symmetrical amperes at 480 VAC.
      c. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
         1) Provide field-adjustable magnetic instantaneous trip setting for circuit breaker frame sizes 225 amperes and larger.
         2) Provide interchangeable trip units where indicated.
      d. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units.
         1) Provide the following field-adjustable trip response settings:
            a) Long time pickup, adjustable by replacing interchangeable trip unit or by setting dial.
            b) Long time delay.
            c) Short time pickup and delay.
            d) Instantaneous pickup.
            e) Ground fault pickup and delay where ground fault protection is indicated.
      e. Provide the following features and accessories where indicated or where required to complete installation:
         1) Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.

REVISION RECORD

NO.	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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AMAZON.COM SERVICES LLC
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DXY4 DELIVERY STATION
400 ORITANI DRIVE
ORANGETOWN, NY 10913

ELECTRICAL SPECIFICATIONS

DATE:	02/01/23	DRAWN BY:	AE/TRR
DWG SCALE:	AS INDICATED	CHECKED BY:	KBA
PROJECT NO:	4383.0063	APPROVED BY:	KBA

E8.02-BP1

2) Auxiliary Switch: SPDT switch suitable for connection to system indicated for indicating when circuit breaker has tripped or been turned off.
3) Feeder protection relay: At main circuit breaker, generator circuit breakers, and PV circuit breaker, provide Schweitzer Engineering Laboratories SEL-751A with arc-flash protection option (SEL751A51ACAC74850210). Relay shall be switchboard mounted and installed at the factory.

2.04 Generator Docking Switchboard

A. Description: Service entrance rated NEMA 3R exterior mounted generator docking switchboard with main circuit breaker and cam-locks. Sizing as indicated on drawings. Basis of design:
  1. ESL Power System Inc: Temptap.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install switchboards in accordance with NECA 1 (general workmanship), NECA 400, and NEMA PB 2.1.
C. Arrange equipment to provide required clearances and maintenance access, including accommodations for any drawout devices.
D. Where switchboard is indicated to be mounted with inaccessible side against wall, provide minimum clearance of 1/2 inch between switchboard and wall.
E. Provide required support and attachment in accordance with Section 26 0529.
F. Provide required seismic controls in accordance with Section 26 0548.
G. Install switchboards plumb and level.
H. Unless otherwise indicated, mount switchboards on properly sized 4 inch high concrete pad constructed in accordance with Section 03 3000.
I. Provide grounding and bonding in accordance with Section 26 0526.
J. Install all field-installed devices, components, and accessories.
K. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.
L. Set field-adjustable circuit breaker tripping function settings as determined by overcurrent protective device coordination study performed in accordance with Section 26 0573.
M. Provide filler plates to cover unused spaces in switchboards.

3.02 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
B. Adjust alignment of switchboard covers and doors.

3.03 CLEANING

A. Clean dirt and debris from switchboard enclosures and components according to manufacturer's instructions.
B. Repair scratched or marred surfaces to match original factory finish.

3.04 PROTECTION

A. Protect installed switchboards from subsequent construction operations.

END OF SECTION

SECTION 26 2416 - PANELBOARDS

PART 1 GENERAL

1.01 SCOPE

A. Panelboards specified in this section are suppplied by Amazon. The contractor shall receive, inspect, install and test equipment as required within the plans and specifications.

1.02 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.
B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.

1.03 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store panelboards in accordance with manufacturer's instructions and NECA 407.
B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
C. Handle carefully in accordance with manufacturer's written instructions to avoid damage to panelboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. ABB/GE: www.geindustrial.com.
B. Eaton Corporation: www.eaton.com.
C. Schneider Electric; Square D Products: www.schneider-electric.us.
D. Siemens Industry, Inc: www.usa.siemens.com.
E. Source Limitations: Furnish panelboards and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.02 PANELBOARDS - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.
B. Unless otherwise indicated, provide products suitable for continuous operation under the service conditions at the project location.
C. Short Circuit Current Rating:
  1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
D. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.
E. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
F. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
G. Bussing: Sized in accordance with UL 67 temperature rise requirements.
  1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
  2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
H. Conductor Terminations: Suitable for use with the conductors to be installed.
I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
  1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    a. Outdoor Locations: Type 3R.
  2. Boxes: Galvanized steel unless otherwise indicated.
    a. Provide wiring gutters sized to accommodate the conductors to be installed.
  3. Fronts:
    a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
  4. Lockable Doors: All locks keyed alike unless otherwise indicated.
J. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
K. Selectivity: Where the requirement for selectivity is indicated, furnish products as required to achieve selective coordination.

2.03 POWER DISTRIBUTION PANELBOARDS

A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
B. Conductor Terminations:
  1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
C. Bussing:
  1. Phase and Neutral Bus Material: Aluminum.
  2. Ground Bus Material: Aluminum.
D. Circuit Breakers:
  1. Provide bolt-on type.
  2. Provide thermal magnetic circuit breakers unless otherwise indicated.
  3. Provide electronic trip circuit breakers where indicated.
E. Enclosures:
  1. Provide surface-mounted enclosures unless otherwise indicated.

2.04 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:
  1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
  2. Interrupting Capacity:
    a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
    b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
  3. Conductor Terminations:
    a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
  4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
    a. Provide electric trip circuit breakerswhere indicated.
  5. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units.
    a. Provide the following field-adjustable trip response settings:
      1) Long time pickup, adjustable by replacing interchangeable trip unit or by setting dial.
      2) Long time delay.
      3) Short time pickup and delay.
      4) Instantaneous pickup.
      5) Ground fault pickup and delay where ground fault protection is indicated.
  6. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
  7. Provide the following circuit breaker types where indicated:
    a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
    b. Ground Fault Equipment Protection Circuit Breakers: Designed to trip at 30 mA for protection of equipment.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.
C. Verify that mounting surfaces are ready to receive panelboards.
D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).
B. Install products in accordance with manufacturer's instructions.
C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
D. Provide required support and attachment in accordance with Section 26 0529.
E. Provide required seismic controls in accordance with Section 26 0548.
F. Install panelboards plumb.
G. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.
H. Install all field-installed branch devices, components, and accessories.

3.03 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.
B. Test GFCI circuit breakers to verify proper operation.
C. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.04 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
B. Adjust alignment of panelboard fronts.
C. Load Balancing: For each panelboard, rearrange circuits such that the difference between each measured steady state phase load does not exceed 20 percent and adjust circuit directories accordingly. Maintain proper phasing for multi-wire branch circuits.

3.05 CLEANING

A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.
B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

SECTION 26 2813 - FUSES

PART 1 GENERAL

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Bussmann, a division of Eaton Corporation: www.cooperindustries.com.
B. Littelfuse, Inc: www.littelfuse.com.
C. Mersen: ep-us.mersen.com.

2.02 FUSES

A. Provide products listed, classified, and labeled as suitable for the purpose intended.
B. Unless specifically indicated to be excluded, provide fuses for all fusible equipment as required for a complete operating system.
C. Provide fuses of the same type, rating, and manufacturer within the same switch.
D. Comply with UL 248-1.
E. Unless otherwise indicated, provide cartridge type fuses complying with NEMA FU 1, Class and ratings as indicated.
F. Voltage Rating: Suitable for circuit voltage.

PART 3 EXECUTION

3.01 INSTALLATION

A. Do not install fuses until circuits are ready to be energized.
B. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION

SECTION 26 2816.16 - ENCLOSED SWITCHES

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for enclosed switches and other installed components and accessories.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. ABB/GE: www.geindustrial.com.
B. Eaton Corporation: www.eaton.com.
C. Schneider Electric; Square D Products: www.schneider-electric.us.
D. Siemens Industry, Inc: www.usa.siemens.com.
E. Source Limitations: Furnish enclosed switches and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.02 ENCLOSED SAFETY SWITCHES

A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Short Circuit Current Rating:
  1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
D. Provide with switch blade contact position that is visible when the cover is open.
E. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.
F. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
  1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    a. Outdoor Locations: Type 3R.
G. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.
H. Heavy Duty Switches:
  1. Comply with NEMA KS 1.
  2. Conductor Terminations:
    a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
  3. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Perform work in accordance with NECA 1 (general workmanship).
C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
D. Provide required support and attachment in accordance with Section 26 0529.
E. Install enclosed switches plumb.
F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.
G. Provide grounding and bonding in accordance with Section 26 0526.

END OF SECTION

SECTION 26 5600 - EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior luminaires.
B. Poles and accessories.

1.02 REFERENCE STANDARDS

A. AASHTO LTS - Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 2013, with Editorial Revision (2022).
B. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products 2019.
C. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources 2021.
D. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
E. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems 2000 (Reaffirmed 2006).
F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
G. UL 1598 - Luminaires Current Edition, Including All Revisions.
H. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
  1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.
  2. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.04 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
  1. LED Luminaires:
    a. Include estimated useful life, calculated based on IES LM-80 test data.
  2. Poles: Include information on maximum supported effective projected area (EPA) and weight for the design wind speed.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.07 WARRANTY

A. Provide 2-year manufacturer warranty for all LED luminaires, including drivers.

PART 2 PRODUCTS

2.01 LUMINAIRES

A. Provide products that comply with requirements of NFPA 70.
B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
C. Provide products listed, classified, and labeled as suitable for the purpose intended.
D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
G. Provide luminaires listed and labeled as suitable for wet locations unless otherwise indicated.
H. SSL/LED Luminaires:
  1. Components: UL 8750 recognized or listed as applicable.
  2. Tested in accordance with IES LM-79 and IES LM-80.
  3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.
  4. References to SSL and/or LED sources shall include the entire solid-state lighting system, including circuitry, LEDs, power supplies, drivers, etc.
  5. CRI and color temperature as scheduled in accordance with ANSI C78.377.
  6. NEMA.SSL-1 compliant for operational characteristics and electrical safety of SSL power supplies and drivers. ANSI/NEMA C82.77 compliant for maximum allowable harmonic distortion produced by SSL power supplies.
I. Exposed Hardware: Stainless steel.

2.02 POLES

A. All Poles:
  1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
  2. Structural Design Criteria:
    a. Comply with AASHTO LTS.
    b. Wind Load: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
      1) Design Wind Speed: 120 miles per hour, with gust factor of 1.3.
    c. Dead Load: Include weight of proposed luminaire(s) and associated supports and accessories.
    d. Fatigue Design and Vortex Shedding: Nontapered lighting structures shall be designed to resist vortex shedding-induced loads for critical wind velocities less than approximately 65 fps; 45 mph. Except for round tapered poles, for all poles 20 feet in height or higher, provide a factory installed internal vibration dampener designed to resist fatigue caused by vortex shedding induced loads and natural wind gusts in the pole indefinitely without failure. Apply an importance factor of 0.3 for vortex shedding and 0.44 for natural wind gusts.
  3. Material: Steel, unless otherwise indicated.
  4. Shape: Square straight, unless otherwise indicated.
  5. Finish: Match luminaire finish, unless otherwise indicated.
  6. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.
  7. Unless otherwise indicated, provide with the following features/accessories:
    a. Top cap.
    b. Handholeminimum 2-1/2 X 5 inches in size.
    c. Anchor bolts with leveling nuts or leveling shims.
    d. Anchor base cover.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
C. Verify that suitable support frames are installed where required.
D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.
B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
B. Install products in accordance with manufacturer's instructions.
C. Install luminaires in accordance with NECA/IESNA 501.
D. Provide required support and attachment in accordance with Section 26 0529.
E. Pole-Mounted Luminaires:
  1. Foundation-Mounted Poles:
    a. Provide cast-in-place concrete foundations for poles as indicated.
      1) Install anchor bolts plumb per template furnished by pole manufacturer.
      2) Position conduits to enter pole shaft.
    b. Install foundations plumb.
    c. Install poles plumb, using leveling nuts or shims as required to adjust to plumb.
    d. Tighten anchor bolt nuts to manufacturer's recommended torque.
    e. Install non-shrink grout between pole anchor base and concrete foundation, leaving small channel for condensation drainage.
    f. Install anchor base covers or anchor bolt covers as indicated.
  2. Grounding:
    a. Bond luminaires, metal accessories, metal poles, and foundation reinforcement to branch circuit equipment grounding conductor.
    b. Provide supplementary ground rod electrode as specified in Section 26 0526 at each pole bonded to grounding system as indicated.
  3. Install separate service conductors, 12 AWG copper, from each luminaire down to handhole for connection to branch circuit conductors.
F. Install accessories furnished with each luminaire.
G. Bond products and metal accessories to branch circuit equipment grounding conductor.

3.04 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. Secure locking fittings in place.
B. Luminaires with Field-Rotatable Optics: Position optics according to manufacturer's instructions to achieve lighting distribution as indicated or as directed by Engineer.

END OF SECTION

REVISION RECORD

NO	DATE	DESCRIPTION
	02/01/2023	100% PERMIT SET

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