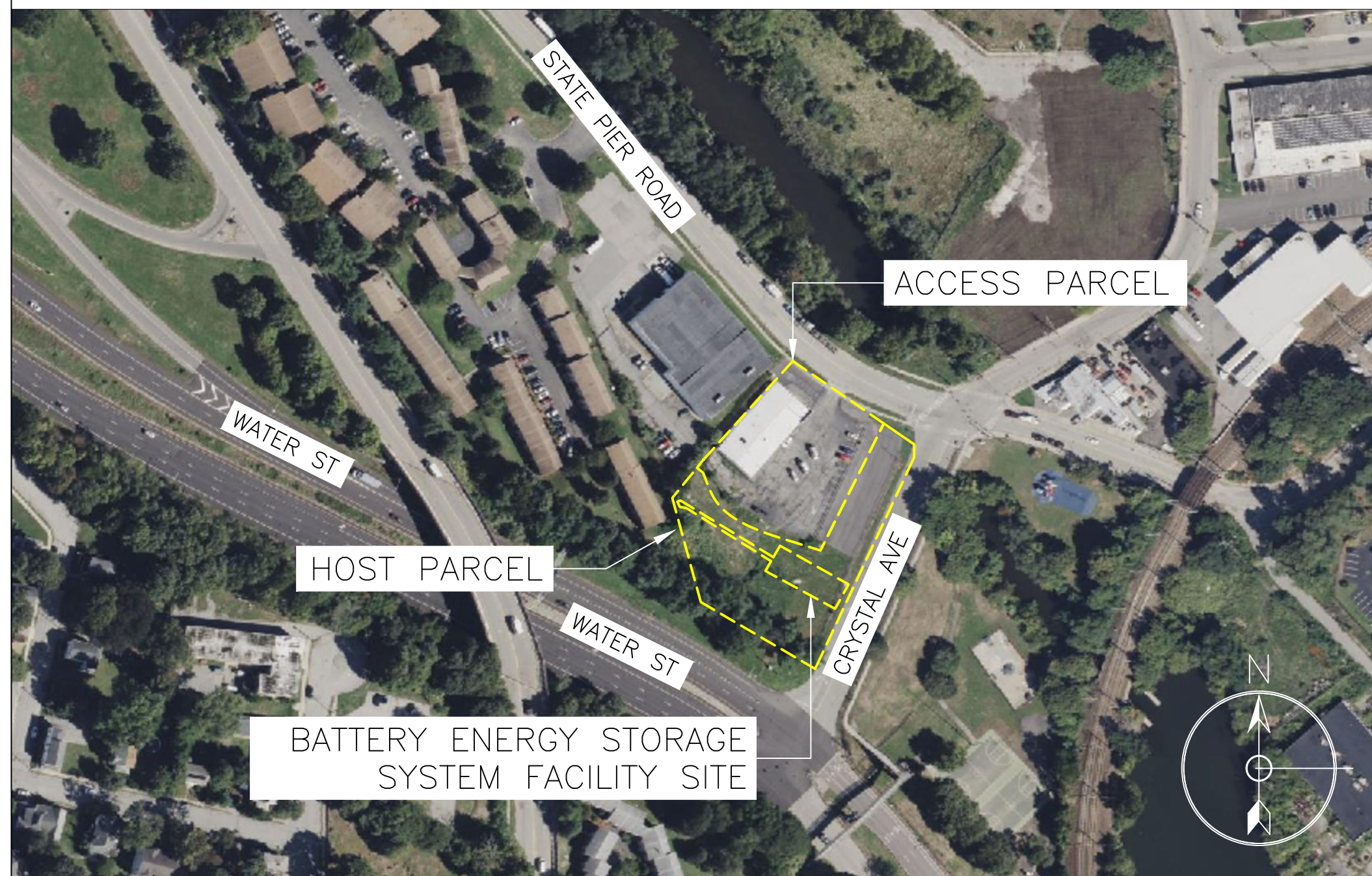


Q CELLS – STATE PIER RD STATE PIER RD, NEW LONDON, CT 06320 4,000KW/11,008KWH BATTERY ENERGY STORAGE SYSTEM



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SITE



SYSTEM SPECIFICATION

BESS CONVERTER

SUNGROW SC4000UD-MV-US
[BESS CONVERTER + MV XFMR]

MAX POWER 4000KVA @ 40°C, 1500VDC, 900VAC
PF=1.0

TOTAL NUMBER OF CONVERTERS-#1

BESS CONTAINER

SUNGROW BATTERY CONTAINERS
ST2752UX-US
LIQUID COOLING ENERGY STORAGE
CAPACITY = 2752KWH

TOTAL NUMBER OF CONTAINERS-#4

| TEMPERATURE CONSIDERATIONS | |
|--|-----|
| STC TEMPERATURE [°C] | 25 |
| ASHRAE 2% HIGH AMBIENT TEMPERATURE [°C] | 30 |
| ASHRAE EXTREME MIN. LOW AMBIENT TEMPERATURE [°C] | -14 |

APPLICABLE CODES:

- 2020 NATIONAL ELECTRIC CODE (NEC)
- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL FIRE CODE (IFC)
- 2023 NFPA 855
- 2022 NFPA 110
- 2022 NFPA 111
- 2023 NESC

SCOPE OF WORK

INSTALLATION OF A NEW BATTERY ENERGY STORAGE SYSTEM AND ASSOCIATED EQUIPMENT. THE SYSTEM WILL BE INTERCONNECTED IN AN EXISTING MEDIUM VOLTAGE UTILITY VAULT.

PROJECT TEAM

ENGINEER:
HENRY HOLBROOK HYDE III
HYDE RENEWABLES, INC.
4735 WALNUT STREET, SUITE #110
BOULDER, CO 80301
WWW.HYDERENEWABLES.COM
P: (720) 900-1009

DRAWING INDEX

| Sheet Number | Sheet Title |
|--------------|---------------------------|
| E.000 | TITLE PAGE |
| E.001 | GENERAL |
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| E.010 | DETAILS 01 |
| E.011 | DETAILS 02 |
| E.100 | SITE PLAN |
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| E.200 | SLD |
| E.210 | GND |
| E.220 | CALCS |
| E.300 | SIGNAGE 01 |
| E.400 | SPECS 01 |
| S.000 | STRUCTURAL |
| E.500 | SITE VICINITY MAP |
| E.501 | ENVIRONMENTAL RESOURCES |
| E.502 | ENVIRONMENTAL RESOURCES 2 |
| E.503 | ENVIRONMENTAL RESOURCES 3 |

SCALE: AS NOTED
(PRINT ON 36"X24")

| BY | REV | ISSUE | DATE |
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FIRM NAME AND ADDRESS

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INFO@HYDERENEWABLES.COM
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STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

PROJECT #: 069-1000

SHEET TITLE
TITLE PAGE

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | E.000 |
| CHECKED BY TRIPP HYDE | |

CONSTRUCTION NOTES

1. DISRUPTION OF ANY BUILDING SYSTEMS, INCLUDING POWER, TELEPHONE, HVAC, ETC., MUST BE COORDINATED AND APPROVED.
2. ALL ENERGY STORAGE COMPONENTS AND ELECTRICAL EQUIPMENT MUST BE ANCHORED AND SEISMICALLY BRACED PER APPLICABLE CODES.
3. PROJECT SITE MUST BE MAINTAINED IN A CLEAN AND ORDERLY FASHION. ALL TRASH AND DEBRIS MUST BE COLLECTED AND REMOVED ON A DAILY BASIS. ALL MUD AND DEBRIS MUST BE KEPT OUT OF PUBLIC RIGHT-OF-WAYS.
4. CONSTRUCTION MATERIALS ON SITE MUST BE PROPERLY STACKED AND PROTECTED IN A SAFE MANNER AS TO PREVENT DAMAGE AND DETERIORATION UNTIL USE.
5. PROVIDE BARRIERS TO PREVENT UNAUTHORIZED ENTRY INTO CONSTRUCTION AREAS WHILE MAINTAINING SITE ACCESS TO EMPLOYEES.
6. ALL FINISHES AND CONSTRUCTION MUST BE PROTECTED BY THE CONTRACTOR FROM POTENTIAL DAMAGE CAUSED BY CONSTRUCTION ACTIVITY. DAMAGE TO FINISHES OR CONSTRUCTION MUST BE REPAIRED OR REPLACED (OWNER'S DECISION) BY THE CONTRACTOR WITH IDENTICAL MATERIAL AND/OR FINISHES. CONTRACTOR MUST MAKE AND MAINTAIN A PHOTOGRAPHIC RECORD NOTEBOOK DATED/INDEXED PHOTOS.
7. ALL TRENCHES AND EXCAVATIONS MUST BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE APPLICABLE SECTIONS OF STATE AND FEDERAL O.S.H.A. REQUIREMENTS AND OTHER APPLICABLE SAFETY ORDINANCES. CONTRACTOR MUST BEAR FULL RESPONSIBILITY FOR TRENCH SHORING DESIGN AND INSTALLATION.
8. PROTECTIVE BARRICADES, FENCING, HANDRAILS, AND BRIDGES, TOGETHER WITH WARNING AND GUIDANCE DEVICES AND SIGNS, MUST BE UTILIZED SO THAT PASSAGEWAY FOR PEDESTRIANS, ESPECIALLY DISABLED PERSONS, IS SAFE AND WELL DEFINED.
9. WALKWAYS IN CONSTRUCTION AREAS MUST BE MAINTAINED AT LEAST 4 FEET IN WIDTH OR EQUAL TO SIDEWALK/ENTRY WAY WIDTH, WHICHEVER IS GREATER, UNLESS EXPRESSLY PERMITTED OTHERWISE BY THE CUSTOMER IN WRITING; AND MUST BE FREE OF ABRUPT CHANGES IN THE GRADE. THESE WALKWAYS MUST BE CLEARLY MARKED AND PROVIDE SAFE PASSAGE FOR PEDESTRIANS. OBSTRUCTIONS WITHIN THE WALKWAYS MUST BE ILLUMINATED DURING HOURS OF DARKNESS. MINIMUM VERTICAL CLEARANCE TO ANY OBSTRUCTION WITHIN THE WALKWAY MUST BE 6'-8'.
10. WHERE WALKWAYS, PATHWAYS, OR ACCESS WAYS ARE CLOSED BY THE WORK, AN ADA COMPLIANT, OR ALTERNATE WALKWAY MUST BE PROVIDED, PREFERABLY WITHIN THE IMMEDIATE LOCATION OF THE PATHWAY OR ACCESS WAY TO BE CLOSED. WHERE IT IS NECESSARY TO DIVERT PEDESTRIANS INTO MAJOR DETOUR AND/OR INTO A PARKING LANE OR TRAFFIC AREA, AT NO TIME SHOULD PEDESTRIANS BE DIVERTED INTO A PORTION OF A STREET USED FOR VEHICULAR TRAFFIC. ANY DEVIATION FROM THE ABOVE MUST HAVE PRIOR APPROVAL OF THE CUSTOMER.
11. AT LOCATIONS WHERE ADJACENT ALTERNATE WALKWAYS CANNOT BE PROVIDED, ADA COMPLIANT DETOURS WILL BE CLEARLY PLANNED, MARKED, AND CONSTRUCTED. APPROPRIATE SIGNS AND BARRICADES MUST BE INSTALLED AT THE LIMITS OF CONSTRUCTION AND IN ADVANCE OF THE CLOSURE (OR DETOUR) IN ORDER TO DIVERT PEDESTRIANS TO THE APPROPRIATE WALKWAY OR DETOUR.
12. ASPHALT AND CONCRETE BARRIERS: ALL ASPHALT TRAFFIC IS RATED. ALL ASPHALT REPAIRS MUST BE REPAIRED TO MATCH ADJACENT BASE COURSE, BINDER COURSE, AND WEARING COURSES. CONTRACTOR MUST COVER ASPHALT TRENCHES WITH HOT MIX ASPHALT, ROLL FOR COMPACTION, AND COVER THE WIDTH OF THE TRENCH WITH A SLURRY SEAL AFTER THE CURE PERIOD. CONCRETE MUST BE REPLACED "JOINT-TO-JOINT" WHEN DISTURBED DURING CONSTRUCTION.
13. UNDERGROUND BUILDUP IN FIRE LANES WILL MEET EXISTING FIRE LANE SPECS AND ROADWAYS WILL MEET EXISTING ROADWAY SPECS. CONTRACTOR MUST SUBMIT CUT SHEETS FOR THESE REPAIRS.
14. ENSURE THAT ALL REMAINING ACTIVE AND NEW DRAINAGE AND UTILITY LINES ARE PROTECTED AND UNDAMAGED FROM TRENCHING AND FOOTING EXCAVATIONS FOR NEW FOOTINGS, PARTICULARLY FOR NEW FENCING AND WALLS.
15. DELIVERIES MUST BE KEPT AWAY FROM EMPLOYEES BY SEPARATING THE DELIVERY AREA OR ESCORTING THE DELIVERIES WHILE ON SITE.
16. ALL SIGNAGE REMOVED DURING THE COURSE OF CONSTRUCTION MUST BE RELOCATED OR REPLACED.
17. ALL LANDSCAPING DAMAGED DURING THE COURSE OF CONSTRUCTION MUST BE REPAIRED BACK TO ITS ORIGINAL CONDITION.
18. ALL EXTERIOR STEEL MUST BE CORROSION RESISTANT, HOT DIPPED GALVANIZED OR GALVANIZED WITH COATED FINISH.
19. OPENINGS AROUND ELECTRICAL PENETRATIONS INTO OR THROUGH FIRE-RESISTANT RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS AND MATERIALS ACCORDING TO MANUFACTURER'S INSTALLATION REQUIREMENTS TO MAINTAIN FIRE RESISTANCE RATINGS PER NEC 300.21 AND IBC 714.4.
20. PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL NOT BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT PER NEC 110.26(E)(1)(A).
21. CONTRACTOR SHALL ADHERE TO 2002 CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL, AS AMENDED.

WIRING AND WIRING METHODS

1. ALL GROUNDED CONDUCTORS MUST BE COLOR-CODED IN COMPLIANCE WITH NEC ARTICLE 200.6.
2. ALL DC EQUIPMENT AND COMPONENTS MUST BE LISTED FOR USE AT 1000VDC UON.
3. ALL CONDUCTORS IN VERTICAL RACEWAYS MUST COMPLY WITH NEC ARTICLE 300.19(A), 300.19(B), 376.30(B), AND TABLE 300.19(A).
4. ALL CONNECTIONS AND CONNECTORS MUST BE TORQUED PER DEVICE LISTING OR MANUFACTURER'S RECOMMENDATIONS.
5. WIRE NUTS MUST NOT BE USED ON ENERGY STORAGE CONDUCTORS. SPLICES AND CONNECTORS MUST BE INSULATED BY APPROVED MEANS. UL LISTED ELECTRICAL TAPE ALONE IS NOT SUITABLE AS THE ONLY INSULATION MEANS.
6. ENERGY STORAGE OUTPUT CIRCUITS, AND INVERTER OUTPUT CIRCUITS MUST BE PROTECTED IN ACCORDANCE WITH NEC ARTICLE 240.
7. PROTECTIVE BUSHINGS MUST BE USED FOR ALL CONDUIT CONNECTIONS.

WIRING AND BONDING METHODS

1. GROUND AND BOND ALL EQUIPMENT, SUPPORTING STRUCTURES, MOUNTS, RACEWAYS, PANELBOARDS, SWITCHBOARDS, ETC., IN ACCORDANCE WITH NEC ARTICLE 250 AND 690.43.
2. THE EQUIPMENT GROUNDING CONNECTION TO ANY MODULE OR COMPONENT OF THIS STORAGE SYSTEM MUST BE ARRANGED SUCH THAT REMOVAL FROM THE SYSTEM DOES NOT INTERRUPT THE GROUND FAULT PATH OF ANY COMPONENT WITHIN THE SYSTEM.
3. ALL GROUNDING AND BONDING EQUIPMENT MUST BE LISTED AND USED IN ACCORDANCE WITH ITS LISTING.

INVERTER NOTES

1. INVERTER MUST HAVE GROUND FAULT DETECTION NOTIFICATION AND INTERRUPTION FOR DC CIRCUITS SUPPLYING POWER TO IT PER NEC 690.41(B).
2. THE INVERTERS MUST AUTOMATICALLY DE-ENERGIZE THEIR OUTPUT TO THE CONNECTED ELECTRICAL SYSTEM UPON LOSS OF VOLTAGE IN THAT SYSTEM, AND MUST REMAIN IN THAT STATE UNTIL THE VOLTAGE HAS BEEN RESTORED IN COMPLIANCE WITH NEC ARTICLE 690.61.
3. ALL SOLAR AND STORAGE INVERTERS MUST BE UL-LISTED OR MUST OBTAIN UL FIELD CERTIFICATION.

EQUIPMENT NOTES

1. ALL EQUIPMENT MUST BE LISTED/LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
2. ALL DEVICES AND EQUIPMENT INSTALLED OUTDOORS OR EXPOSED TO THE WEATHER MUST BE OF WEATHERPROOF CONSTRUCTION AND RATED FOR UV EXPOSURE.
3. ALL FIELD-INSTALLED JUNCTION, PULL, AND OUTLET BOXES LOCATED BEHIND MODULES MUST BE ACCESSIBLE DIRECTLY OR BY DISPLACEMENT OF THE MODULE(S) SECURED BY REMOVABLE FASTENERS.
4. PROVIDE "WARNING: POTENTIAL ARC FLASH HAZARD" LABEL FOR ALL SWITCHBOARDS, PANELBOARDS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS PER NEC ARTICLE 110.16. "FLASH PROTECTION" APPLIES TO DESIGNATED SCOPE OF WORK ONLY.

EQUIPMENT PADS AND CONDUIT ROUTING

1. CONDUIT ROUTING IS DIAGRAMMATIC IN NATURE. EXACT ROUTING AND LOCATIONS WILL BE COORDINATED IN FIELD UON.
2. FOR EXPANSION COUPLING REFER NEC 300.7(B)

CODES

1. ALL COMPONENTS MUST BE DESIGNED, MANUFACTURED, AND TESTED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS OF NEMA, ANSI, NEC, AND UL.
2. SPECIFIC REQUIREMENTS FOR INDIVIDUAL COMPONENTS OF ANY POWER SYSTEMS INCLUDE BUT ARE NOT LIMITED TO THE GUIDELINES SHOWN HEREIN.
3. THE WORK ON THE PROJECT MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH BASED ON THE NATIONAL ELECTRIC CODE AND WITH THE LATEST EDITION OF ALL APPLICABLE CODES, STANDARDS, AND RECOMMENDATIONS OF THE FOLLOWING AGENCIES:

- * ANSI – AMERICAN NATIONAL STANDARDS INSTITUTE
- * ASCE – AMERICAN SOCIETY OF CIVIL ENGINEERS
- * ADA – AMERICAN DISABILITIES ACT
- * ASME – AMERICAN SOCIETY OF MECHANICAL ENGINEERS
- * ASTM – AMERICAN SOCIETY FOR TESTING AND MATERIALS
- * CBMA – CERTIFIED BALLAST MANUFACTURERS ASSOCIATION
- * EIA – ELECTRONIC INDUSTRIES ASSOCIATION
- * ETL – ELECTRICAL TESTING LABORATORIES
- * IBC – INTERNATIONAL BUILDING CODE
- * IEEE – INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
- * IESNA – ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA
- * ICEA – INSULATED CABLE ENGINEERS ASSOCIATION
- * IAEI – INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS
- * IPCEA – INSULATED POWER CABLE ENGINEERS ASSOCIATION
- * IPMVP – INTERNATIONAL PERFORMANCE MEASUREMENTS AND VERIFICATION PROTOCOL
- * NFPA – NATIONAL FIRE PROTECTION ASSOCIATION
- * NEMA – NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- * NESC – NATIONAL ELECTRICAL SAFETY CODE
- * NETA – NATIONAL ELECTRICAL TESTING ASSOCIATION
- * NEC – NATIONAL ELECTRICAL CODE
- * NECA – NATIONAL ELECTRIC CONTRACTORS ASSOCIATION
- * OSHA – OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
- * UL – UNDERWRITERS LABORATORY

INSPECTIONS

ALL THIRD PARTY TESTING, INSPECTIONS, AND LABELING OF SERVICE EQUIPMENT TO BE PERFORMED BY A NRTL SUCH AS INTERTEK.

ABBREVIATIONS

AC – ALTERNATING CURRENT
AFC – AVAILABLE FAULT CURRENT
AFG – ABOVE FINISH GRADE
AFF – ABOVE FINISH FLOOR
AIC – AMPERES INTERRUPT CURRENT
AL – ALUMINUM CONDUCTOR OR BUS
ATS – AUTOMATIC TRANSFER SWITCH
AWG – AMERICAN WIRE GAUGE
BSCW – BARE STRANDED COPPER WIRE
BTCW – BARE TINNED COPPER WIRE
C – CONDUIT
CE – CONCRETE ENCASED
CO – CONDUIT ONLY
COMM – COMMUNICATIONS CIRCUIT OR CONDUIT AS NOTED
COU – CONDITIONS OF USE
CPY – CANOPY
CT – CURRENT TRANSFORMER
CU – COPPER CONDUCTOR OR BUS
DAS – DATA ACQUISITION SYSTEM
DC – DIRECT CURRENT
DB – DIRECT BURIED
DISC – DISCONNECT
(E) – EXISTING
EGC – EQUIPMENT GROUND CONDUCTOR
EQ – EQUAL
EMT – ELECTRICAL METALLIC TUBING
ESS – ENERGY STORAGE SYSTEM
FBO – FURNISHED BY OTHERS
FIBO – FURNISHED AND INSTALLED BY OTHERS
FLA – FULL LOAD AMPS
FMT – FLEXIBLE METALLIC TUBING
GEC – GROUND ELECTRODE CONDUCTOR
GFCL – GROUND FAULT CURRENT INTERRUPTER
GFP – GROUND FAULT PROTECTION
GND – GROUND
GRC – GALVANIZED RIGID CONDUIT
HH – HANDHOLE
IBO – INSTALLED BY OTHERS
IG – ISOLATED GROUND CONDUCTOR
IMC – INTERMEDIATE METAL CONDUIT
ISC – SHORT CIRCUIT CURRENT
ISCW – INSULATED STRANDED COPPER WIRE
KAIC – KILOAMPERES INTERRUPT CURRENT
KVA – KILOVOLT-AMPERES
KW – KILOWATTS
LFMC – LIQUIDTIGHT FLEXIBLE METAL CONDUIT
MCA – MINIMUM CIRCUIT AMPERES
MLO – MAIN LUGS ONLY
MLPE – MODULE LEVEL POWER ELECTRONICS
MT – MONITORING
MVPS – MEDIUM VOLTAGE POWER STATION
(N) – NEW

NC – NORMALLY CLOSED
NIC – NOT IN CONTRACT
NIS – NOT IN SCALE
NTS – NOT TO SCALE
NEC – NATIONAL ELECTRICAL CODE
NO – NORMALLY OPEN
NRTL – NATIONALLY RECOGNIZED TESTING LABORATORY
NS – NO SCALE
NL – NIGHT LIGHT, TIME CLOCK, OR PHOTOCCELL CONTROLLED LUMINAIRE
OAE – OR APPROVED EQUIVALENT
OC – ON CENTER
OCP – OVERCURRENT PROTECTION
OCPD – OVERCURRENT PROTECTION DEVICE
O/H – OVERHEAD
OVP – OVERVOLTAGE PROTECTION
PG&E – PACIFIC GAS & ELECTRIC
PT – POTENTIAL TRANSFORMER
PV – PHOTOVOLTAIC
PVC – POLYVINYL CHLORIDE CONDUIT
PMRS – PERFORMANCE MONITORING AND REPORTING
POCC – POINT OF COMMON COUPLING
POT – PATH OF TRAVEL
RAC – RIGID ALUMINUM CONDUIT
RMT – RIGID METAL CONDUIT
RSD – RAPID SHUTDOWN DEVICE
RSS – RAPID SHUTDOWN SYSTEM
(R) – REMOVE
(RL) – RELOCATE, RELOCATED
SLD – SINGLE LINE DIAGRAM
SPD – SURGE PROTECTIVE DEVICE
S/S – STAINLESS STEEL
STP – SHIELDED TWISTED PAIR
SSBJ – SUPPLY SIDE BONDING JUMPER
STC – STANDARD TEST CONDITIONS
TYP – TYPICAL
TVSS – TRANSIENT VOLTAGE SURGE SUPPRESSOR
U/G – UNDERGROUND
UON – UNLESS OTHERWISE NOTED
UTP – UNSHIELDED TWISTED PAIR
VD – VOLTAGE DROP
VOC – OPEN CIRCUIT VOLTAGE
W – WALL MOUNTED
WP – EQUIPMENT OF WEATHERPROOF CONSTRUCTION OR DESIGN
WW – WIREWAY
XFMR – TRANSFORMER



qcells
Completely Clean Energy

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SHEET TITLE
GENERAL

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SINGLE LINE DIAGRAM

| | |
|---------|--|
| — AC — | AC CABLE |
| — DC — | DC CABLE |
| — GND — | GROUND CABLE |
| — UGE — | UNDERGROUND ELECTRIC LINE |
| — | CONDUIT CAP |
| —) | CONTINUATION |
| — FO — | FIBER OPTIC CABLE |
| | "N" INDICATES NEUTRAL BUS "G" INDICATES GROUND BUS |
| | GENERATOR |
| | 400A AUTOMATIC TRANSFER SWITCH 400A, 3-POLE, SOLID NEUTRAL |
| | 400A AUTOMATIC TRANSFER SWITCH WITH ISOLATION BYPASS, 400A, 4-POLE |
| | PANELBOARD "HA" (2 SECTIONS) 225A MAIN CIRCUIT BREAKER |
| | PANELBOARD "LA" 225A MAIN LUGS ONLY |
| | TRANSFORMER VOLTAGE AND RATING AS NOTED |
| | NEUTRAL GROUNDING RESISTOR |
| | EARTH GROUND |
| | COPPER CLAD GROUND ROD |
| | CABLE TAP BOX |
| | INVERTER/RECTIFIER |
| | DC-DC CONVERTER |
| | BATTERY |
| | CURRENT TRANSFORMER "Y" = PRIMARY CURRENT "Z" = SECONDARY CURRENT X2=X4 = TAP SETTING |
| | POTENTIAL TRANSFORMER "(2)" INDICATES QUANTITY "4:1" INDICATES RATIO |
| | GROUND FAULT CURRENT XFMR |
| | "M" = METER "T" = TEMP PROBE "ST" = SHUNT TRIP |

SINGLE LINE DIAGRAM

| | |
|--|---|
| | MOTOR START WITH OPTIONAL HOA AND OVERLOAD |
| | VARIABLE FREQUENCY DRIVE |
| | 100AF FIXED-MOUNT ENCLOSED CIRCUIT BREAKER, AIC AS NOTED |
| | 100AF FIXED-MOUNT CIRCUIT BREAKER "F" = FRAME RATING "T" = TRIP RATING |
| | 100AS DISCONNECT SWITCH "S" = SWITCH RATING |
| | 100AS FUSED DISCONNECT SWITCH CLASS L OR R FUSES AS NOTED "S" SWITCH, "F" FUSE RATINGS |
| | 800AF DRAWOUT CB - LOW VOLTAGE INSULATED CASE OR AIR TYPE LSIG = ELECTRONIC TRIP DEVICE "L" = LONG TIME TRIP "S" = SHORT TIME TRIP "I" = INSTANTANEOUS TRIP "G" = GROUND FAULT |
| | 100A DRAWOUT FUSE LOW VOLTAGE INSULATED CASE OR AIR TYPE |
| | 2000AF DRAWOUT CIRCUIT BREAKER - MED VOLTAGE VACUUM OR ARC RESISTANT TYPE "F" FRAME, "T" TRIP RATING |
| | TAP CONNECTORS |
| | CABLE LIMITERS |
| | MEDIUM VOLTAGE LOAD/DEAD-BREAK ELBOW OR STRESS CONE |
| | SURGE ARRESTOR AIR GAP |
| | SURGE ARRESTOR MOV |
| | THERMAL OVERLOAD |
| | GROUNDING BAR WITH EARTH CONNECTION |

ANNOTATION SYMBOLS

| | |
|--|---|
| | NOTE REFERENCE SYMBOL |
| | REVISION REFERENCE SYMBOL |
| | RELOCATE EXISTING DEVICE |
| | LIGHT FIXTURE TAG "A" TYPE, "X" QUANTITY |

| PHASE | 240/120V, 1φ | 240/120V, 3φ, HIGH-LEG | 208/120V, 3φ | 480/277V, 3φ |
|---------|--------------|------------------------|--------------|--------------|
| A | BLACK | BLACK | BLACK | BROWN |
| B | RED | RED | RED | PURPLE |
| C | N/A | ORANGE | BLUE | YELLOW |
| NEUTRAL | WHITE | WHITE | WHITE | WHITE |
| GROUND | GREEN | GREEN | GREEN | GREEN |

| PHASE | DC (600V) | DC (1000V) | DC (1500V) | DC (2000V) |
|----------|-----------|------------|------------|------------|
| POSITIVE | RED | RED | RED | RED |
| NEGATIVE | BLACK | BLACK | BLACK | BLACK |
| GROUND | GREEN | GREEN | GREEN | GREEN |



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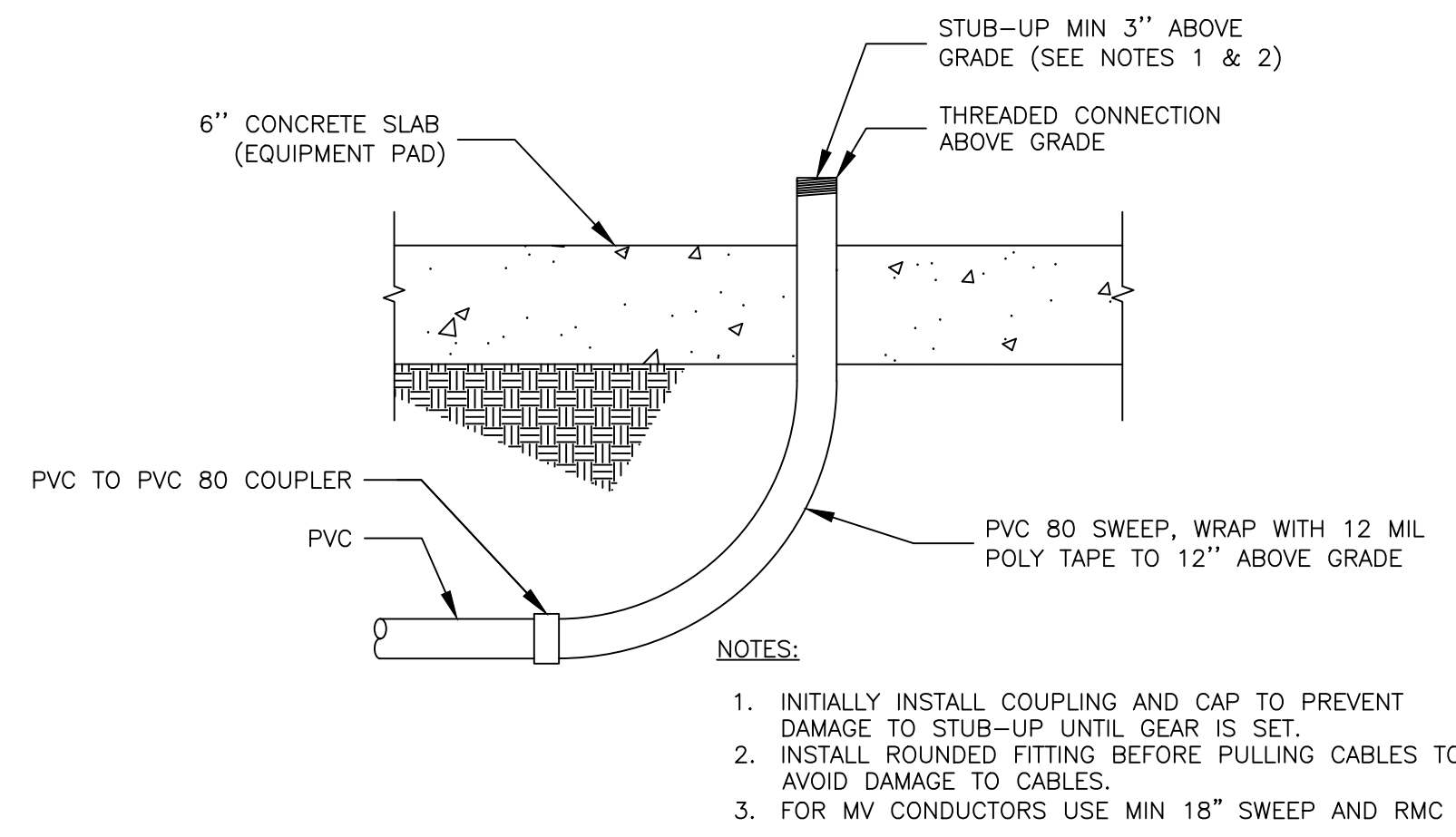
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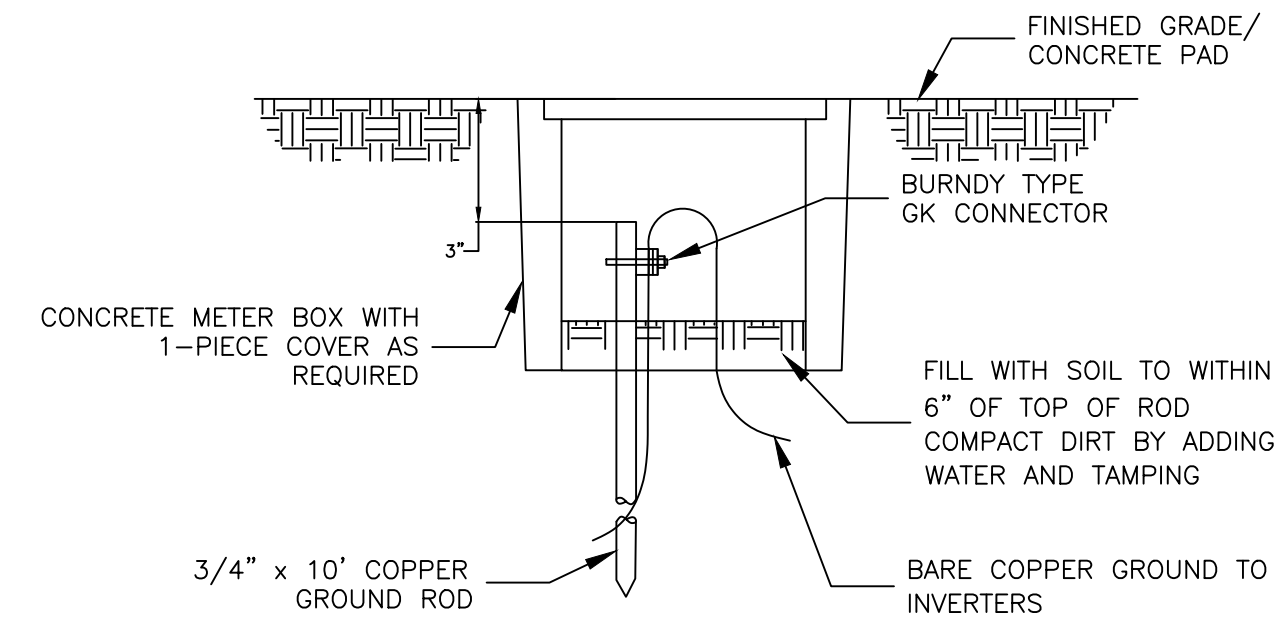
SHEET TITLE
LEGEND

| | |
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| DRAWN BY | SHEET # |
| DATE | E.002 |
| CHECKED BY TRIPP HYDE | |

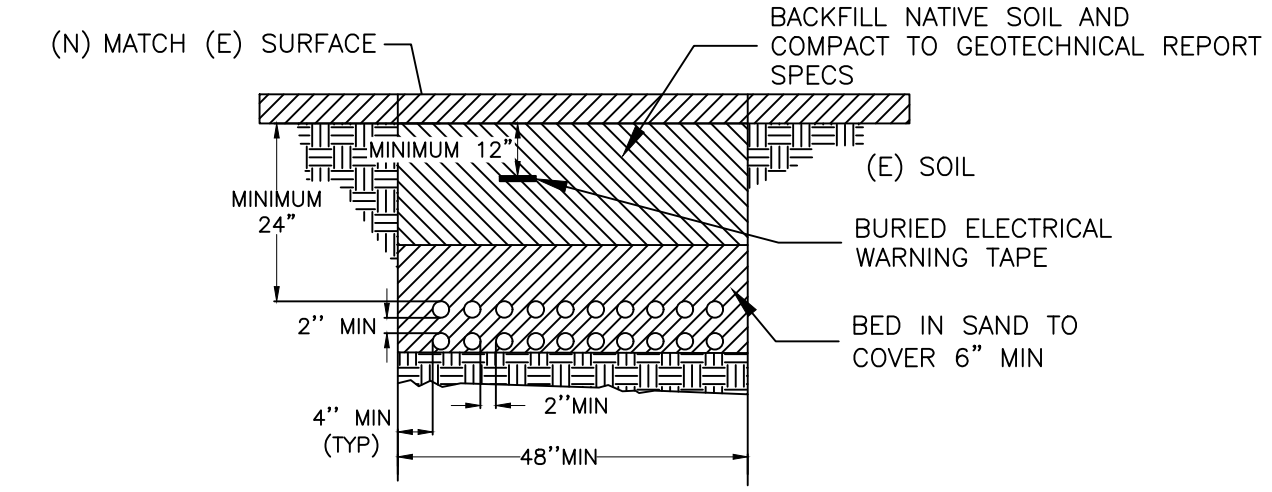
THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED BY HYDE RENEWABLES, INC. FOR THEIR EXCLUSIVE USE IN ACCORD WITH TITLE 20 SEC. 20-300-10 OF THE CONNECTICUT ADMINISTRATIVE CODE.



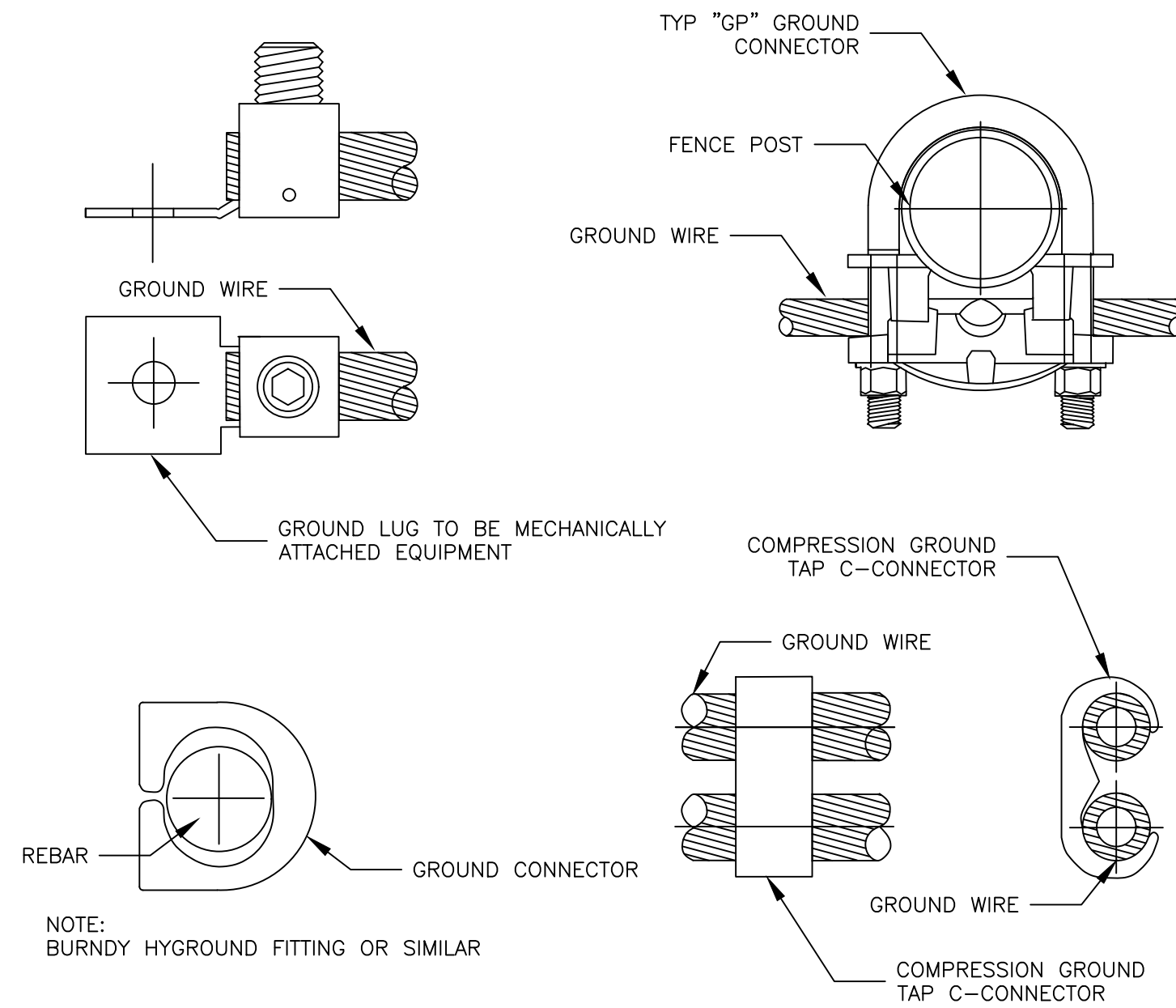
A EQUIPMENT PAD STUB UP DETAIL
SCALE: N.T.S



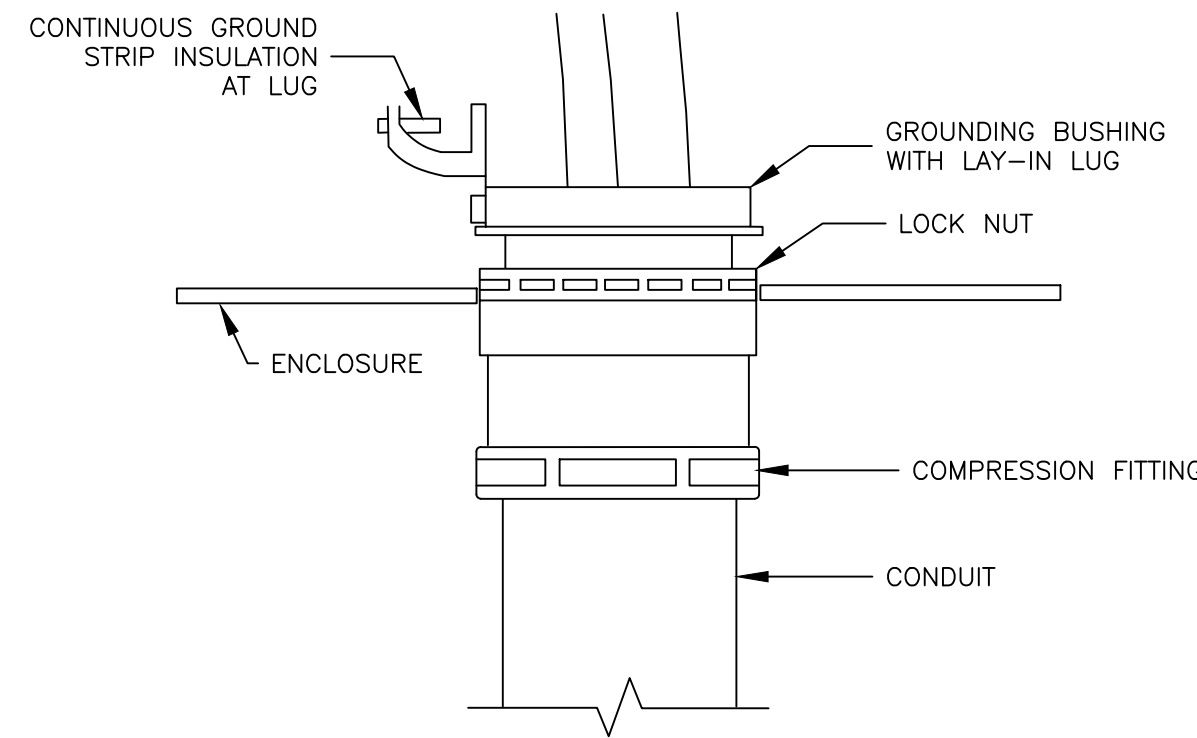
B TYPICAL GROUND WELL DETAIL
SCALE: N.T.S



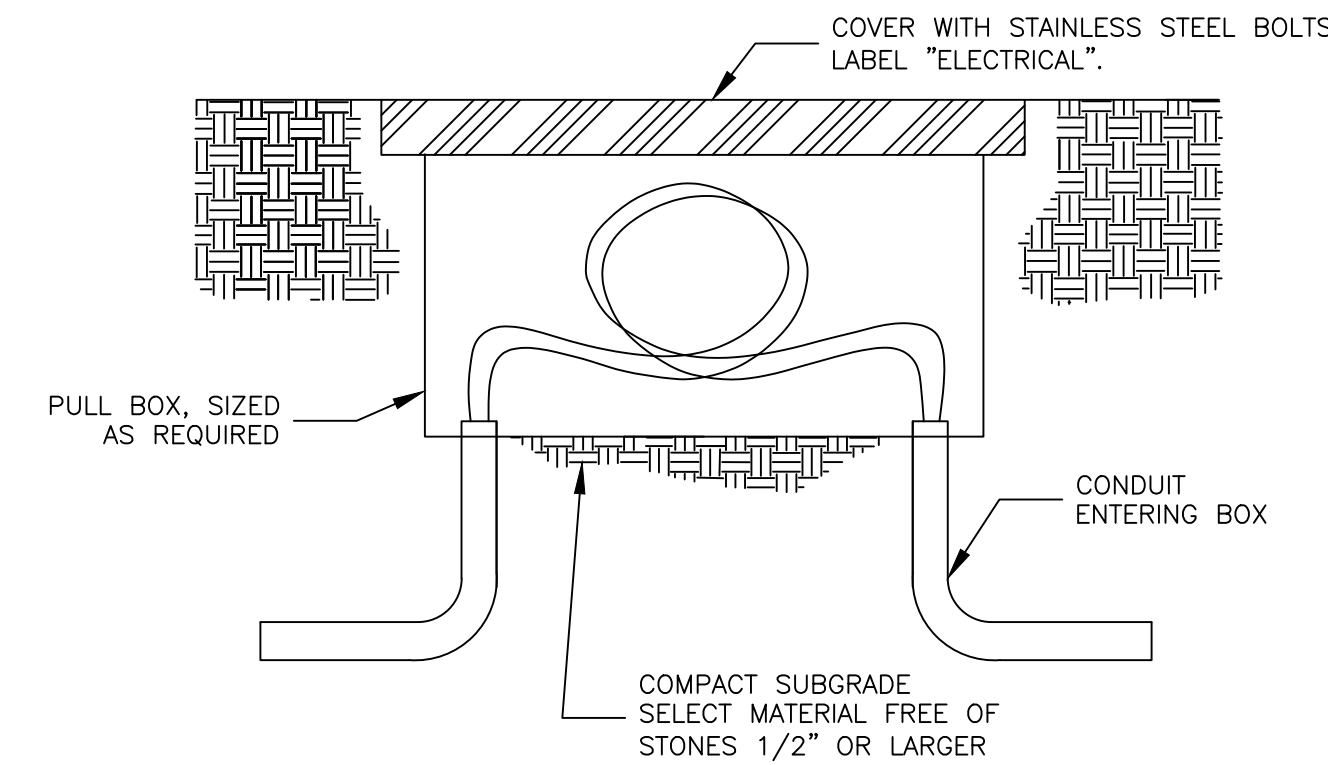
C DC TRENCH DETAIL
SCALE: N.T.S



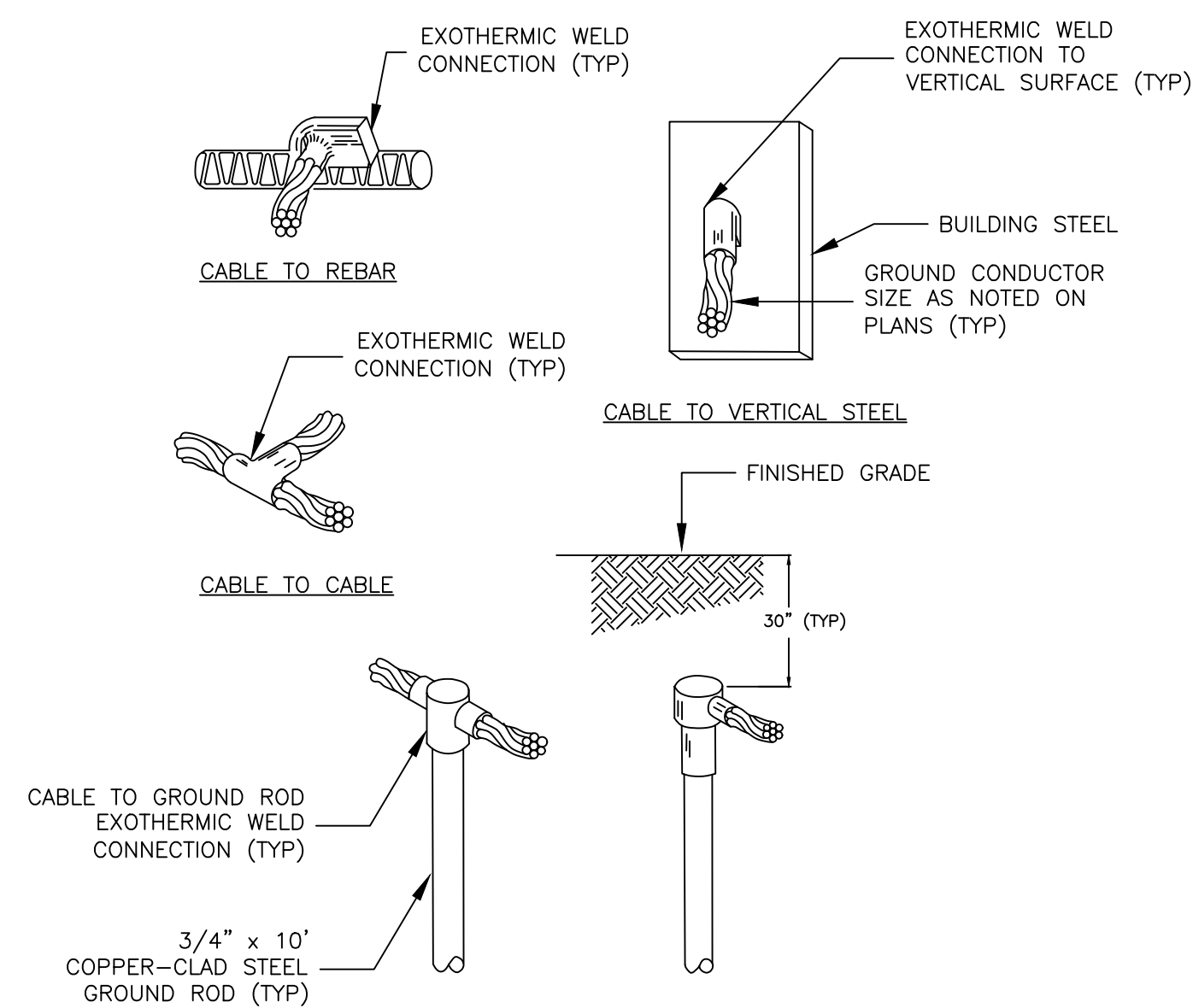
D GROUNDING CONNECTION DETAILS
SCALE: N.T.S



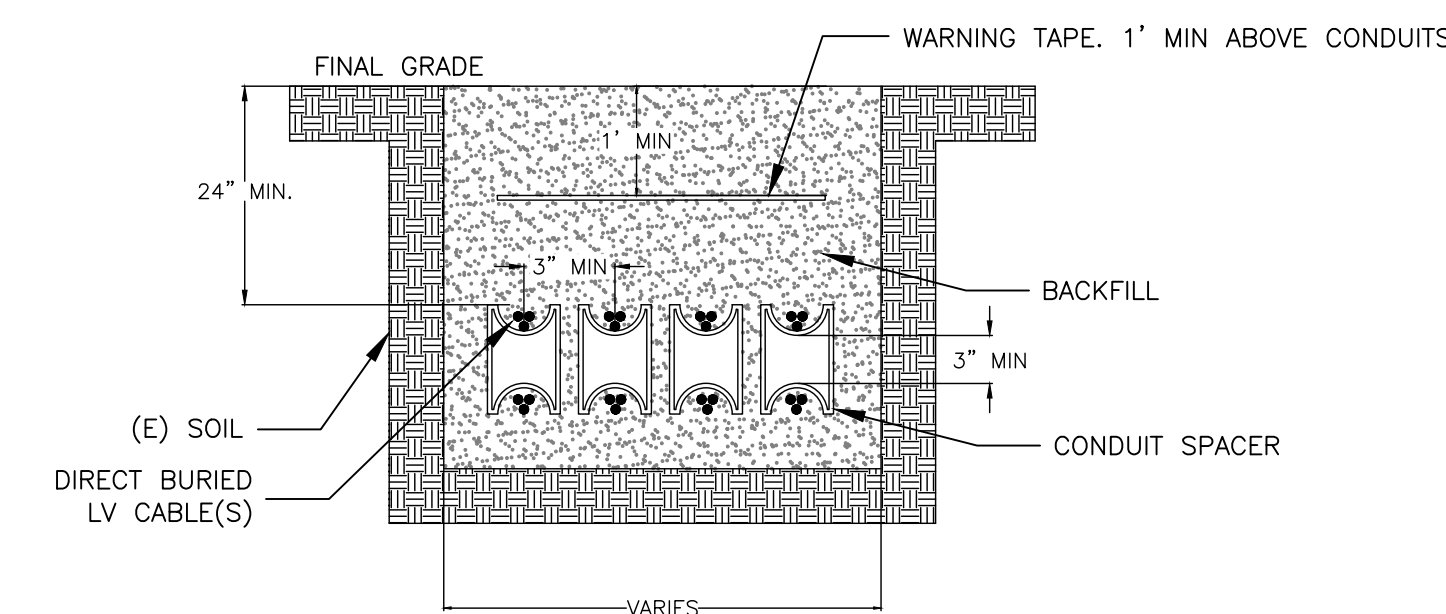
E CONDUIT GROUNDING DETAIL
SCALE: N.T.S



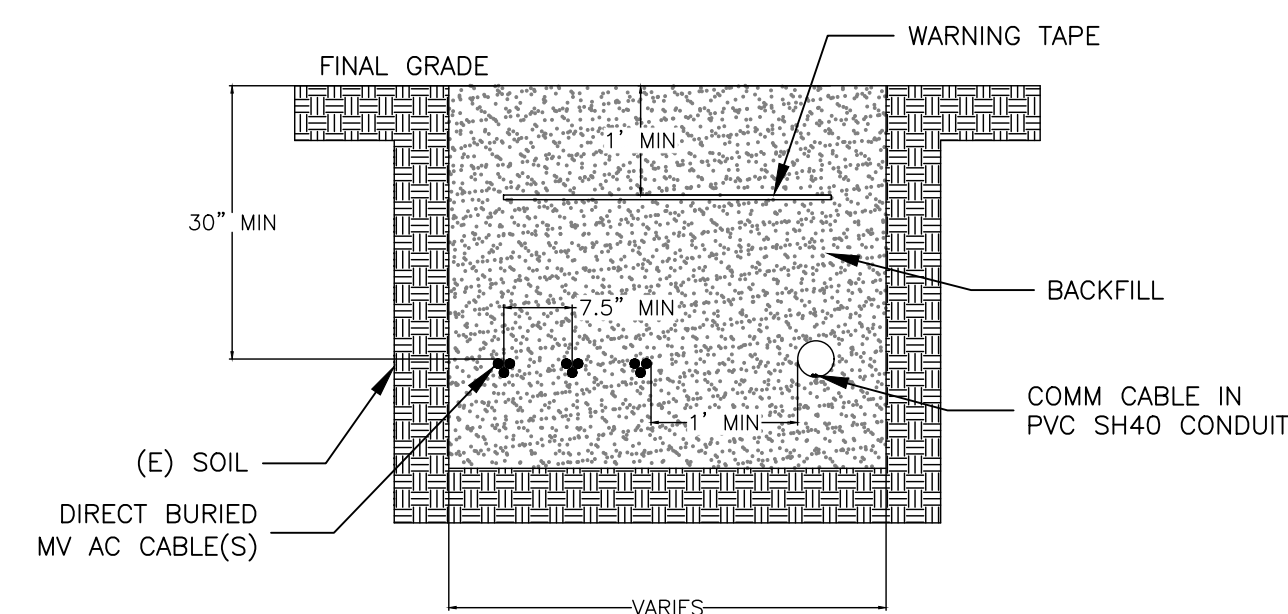
F UNDERGROUND PULLBOX SECTION DETAIL
SCALE: N.T.S



G GROUNDING CONNECTION DETAILS
SCALE: N.T.S



H TWO LAYER DIRECT BURIED LV CABLES
SCALE: N.T.S



I MV CABLES WITH COMM CABLES TRENCH DETAIL
SCALE: N.T.S

SCALE: AS NOTED
(PRINT ON 36"x24")

| BY | REV | ISSUE | DATE |
|----|-----|---------------|----------|
| AR | L | 90% | 01/03/24 |
| RK | K | REDLINES | 12/07/23 |
| RK | J | 60% UPDATE | 10/05/23 |
| RK | H | 60% UPDATE | 7/31/23 |
| RK | G | 60% UPDATE | 07/27/23 |
| ST | F | REDLINES | 06/12/23 |
| ST | E | REDLINES | 05/23/23 |
| CB | D | 60% | 05/11/23 |
| CB | C | 30% | 04/12/23 |
| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |

FIRM NAME AND ADDRESS
HYDE RENEWABLES, INC
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BOULDER, CO 80301
INFO@HYDERENEWABLES.COM
720-900-1009
WWW.HYDERENEWABLES.COM

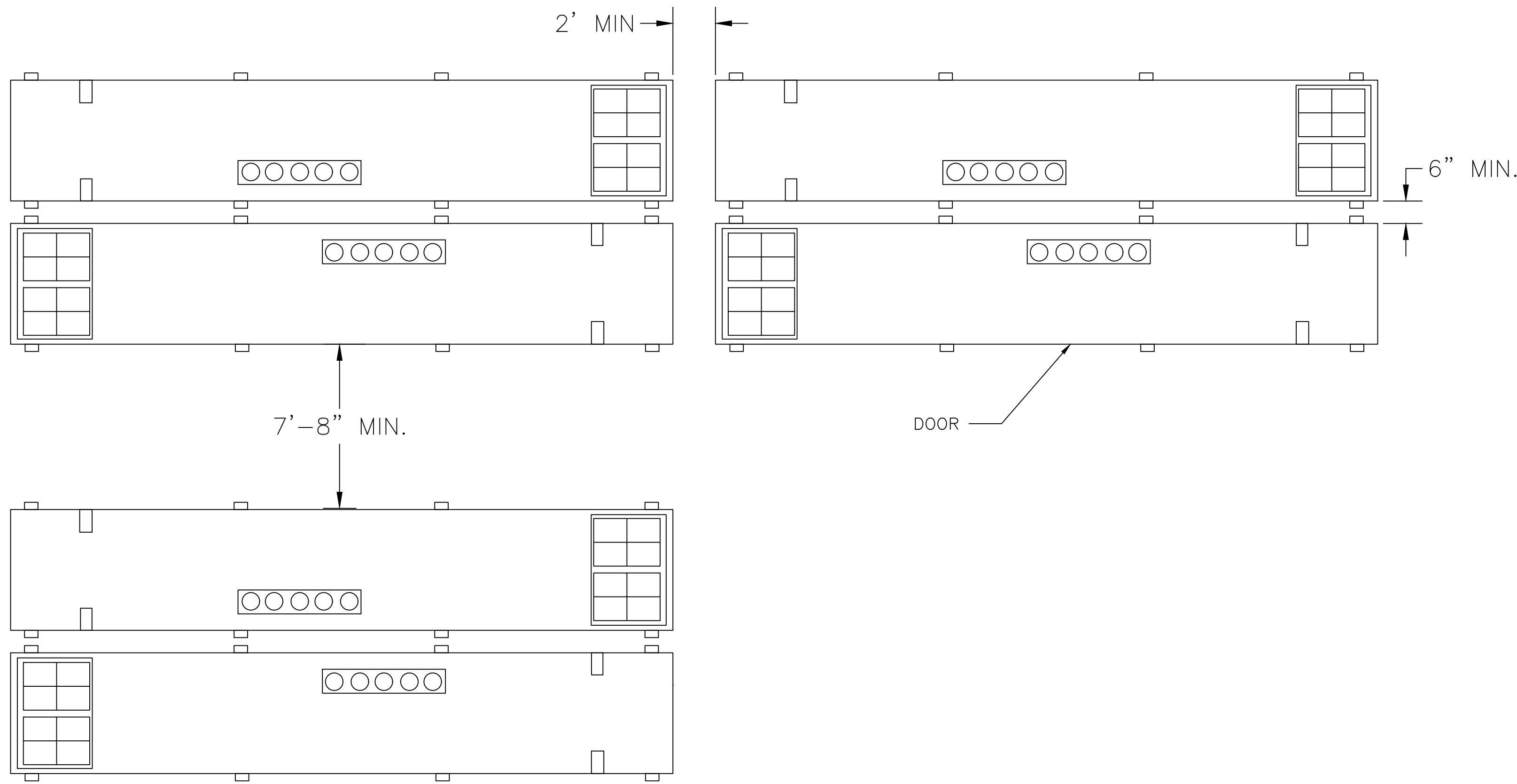
PROJECT NAME AND ADDRESS
Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

PROJECT #: 069-1000

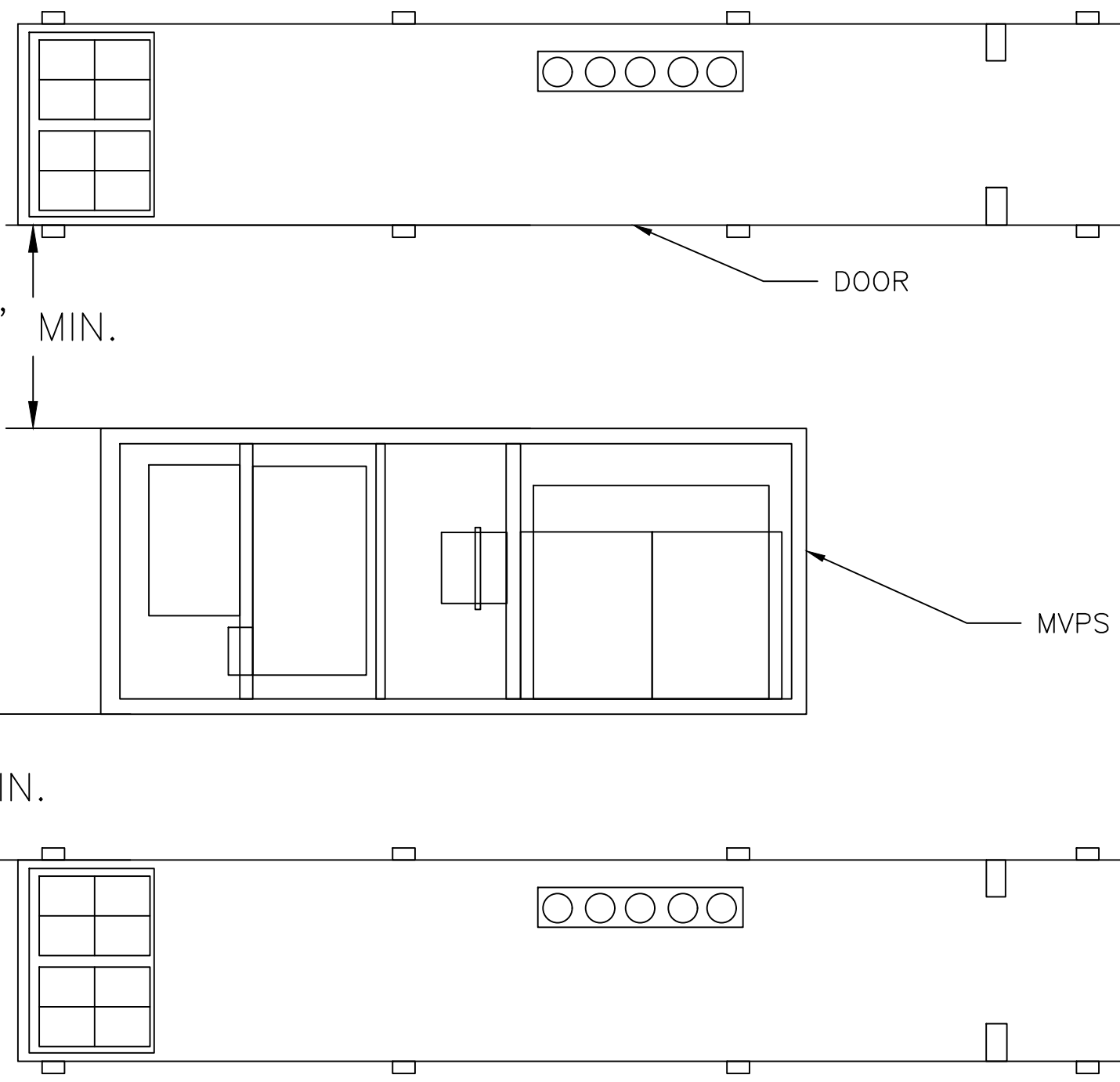
SHEET TITLE
DETAILS 01

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | E.010 |
| CHECKED BY TRIPP HYDE | |

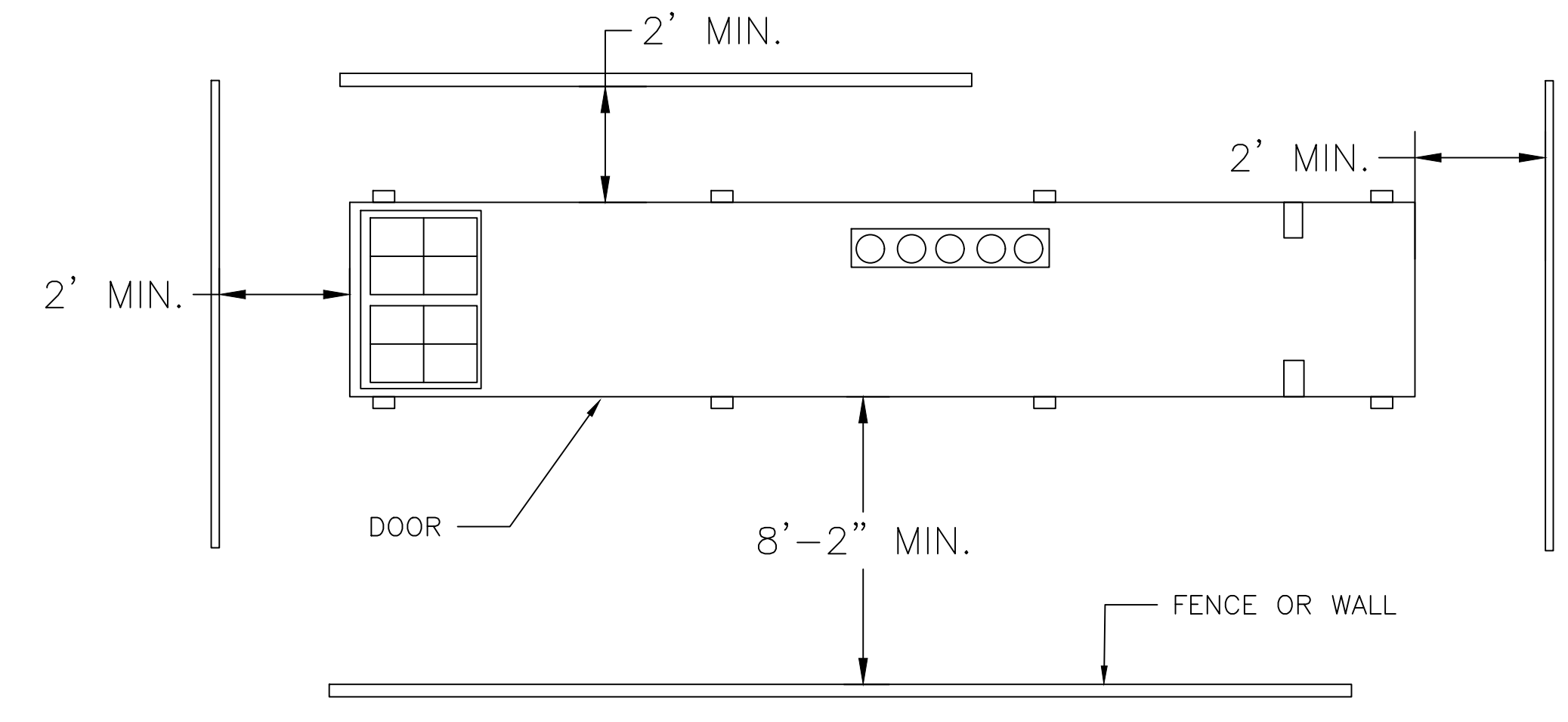
NOTE:
REFER TO MANUFACTURER'S LAYOUT GUIDE FOR MORE DETAILS.



A BESS MINIMUM CLEARANCE DETAIL (BESS TO BESS)
SCALE: N.T.S



C BESS MINIMUM CLEARANCE DETAIL (BESS TO MVPS)
SCALE: N.T.S



B BESS MINIMUM CLEARANCE DETAIL (BESS TO WALL OR FENCE)
SCALE: N.T.S



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| ST | E | REDLINES | 05/23/23 |
| CB | D | 60% | 05/11/23 |
| CB | C | 30% | 04/12/23 |
| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |

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BOULDER, CO 80301

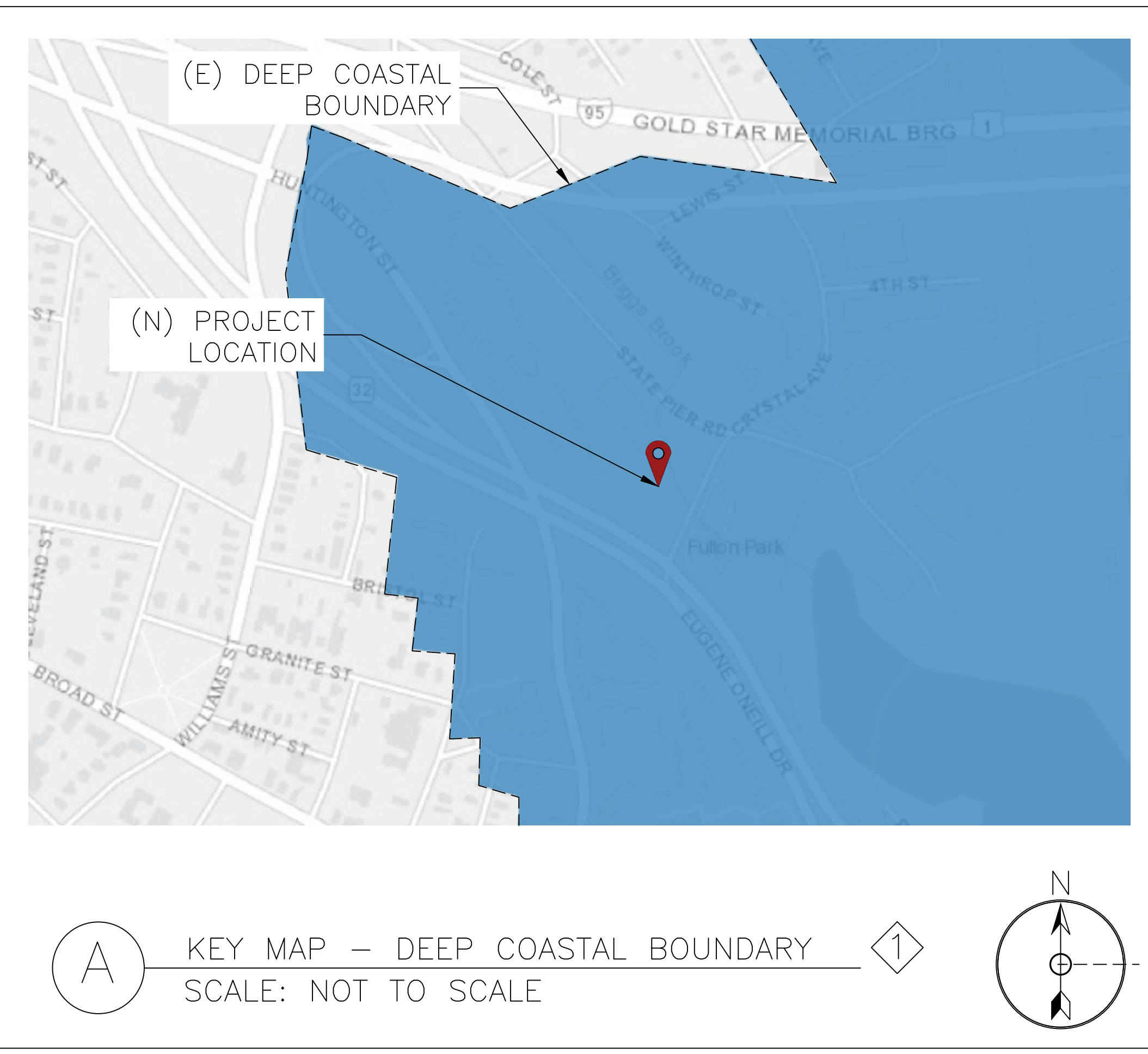
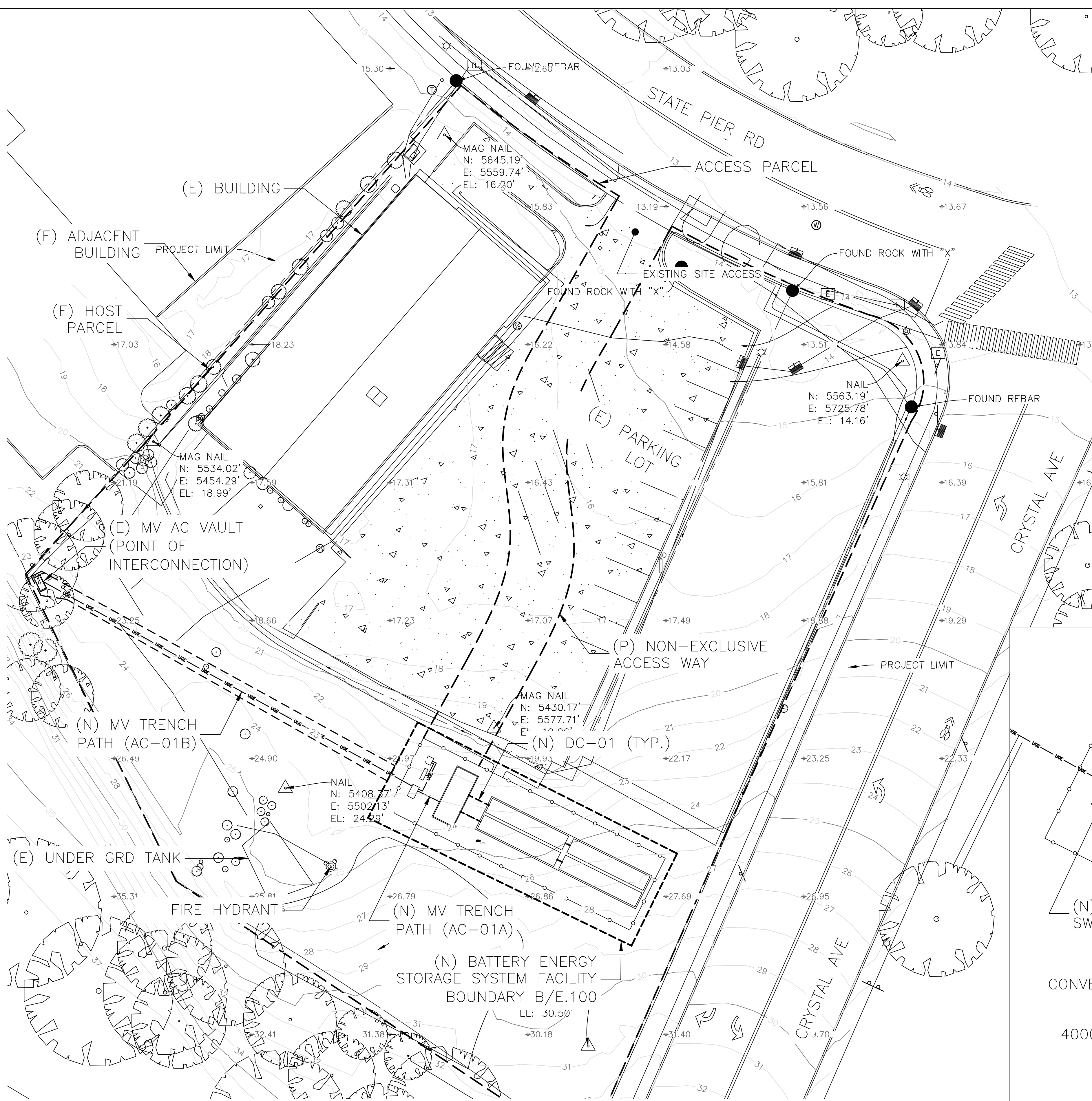
INFO@HYDERENEWABLES.COM
720-900-1009
WWW.HYDERENEWABLES.COM

PROJECT NAME AND ADDRESS
Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

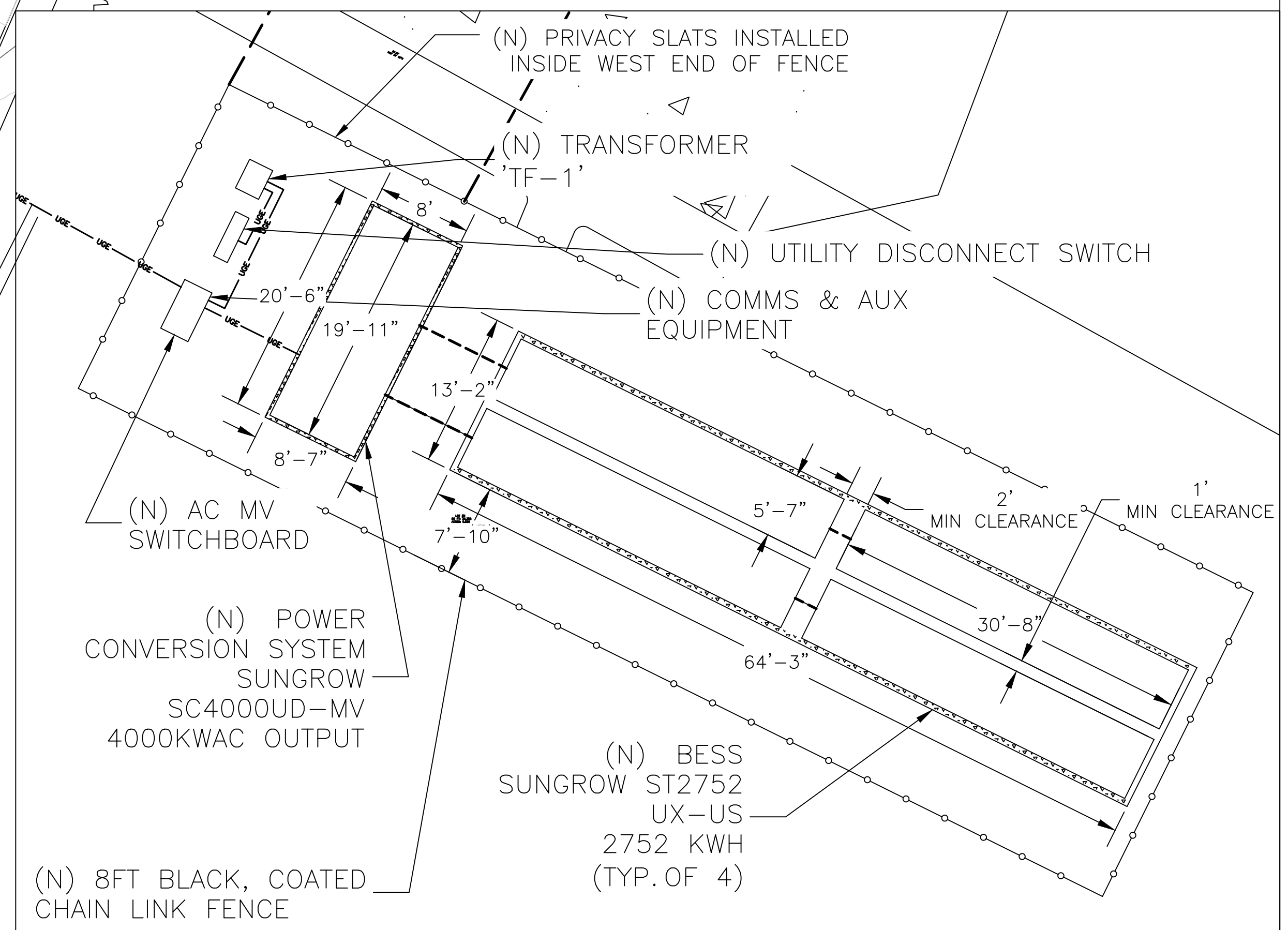
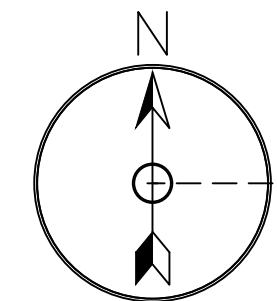
PROJECT #: 069-1000

SHEET TITLE
DETAILS 02

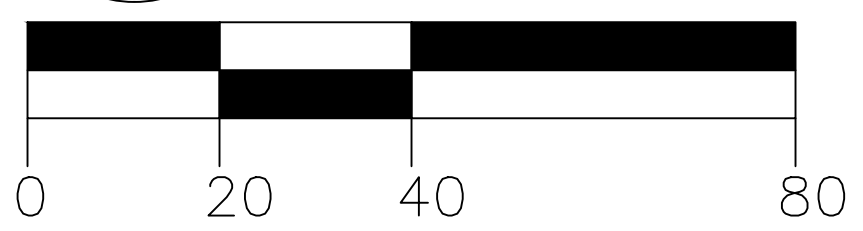
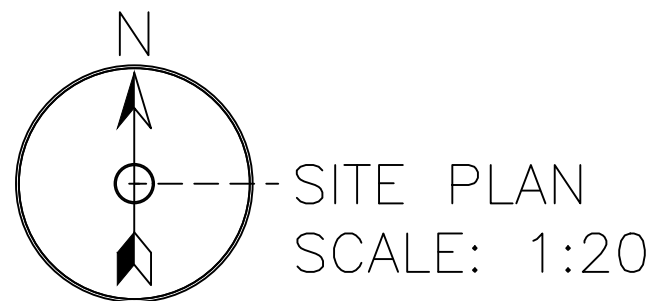
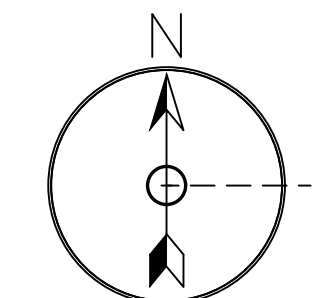
| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.011 |
| CHECKED BY TRIPP HYDE | |



(A) KEY MAP - DEEP COASTAL BOUNDARY
SCALE: NOT TO SCALE



(B) BESS AREA
SCALE: 1/8"=1'-0"



SHEET NOTES:

1 DETAIL A/E.100 SHOWS THE EXTENT OF LANDS AND COASTAL WATERS AS DEFINED BY C.G.S. 22A-93(5) WITHIN CONNECTICUT'S COASTAL AREA (DEFINED BY C.G.S. 22A-94(C)). SOURCE: DEEP (DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION).

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| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |

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Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

PROJECT #: 069-1000

SHEET TITLE
SITE PLAN

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.100 |
| CHECKED BY TRIPP HYDE | |

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| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |

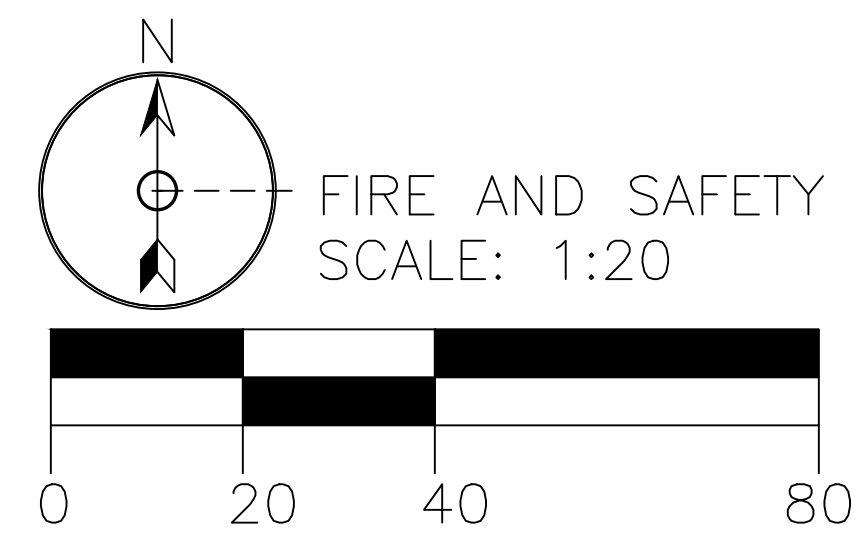
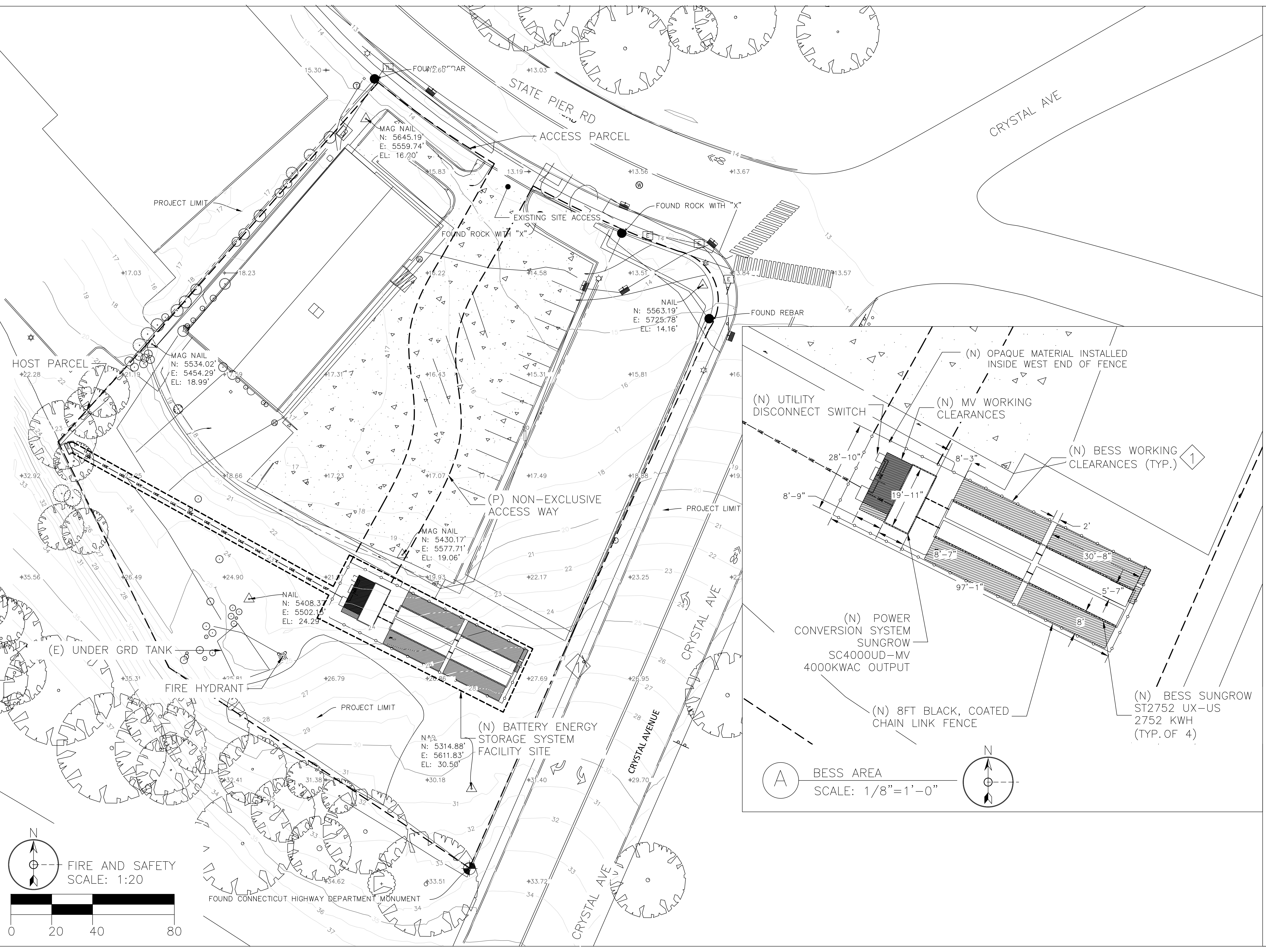
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PROJECT NAME AND ADDRESS
Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

PROJECT #: 069-1000

SHEET TITLE
FIRE & SAFETY

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.110 |
| CHECKED BY TRIPP HYDE | |

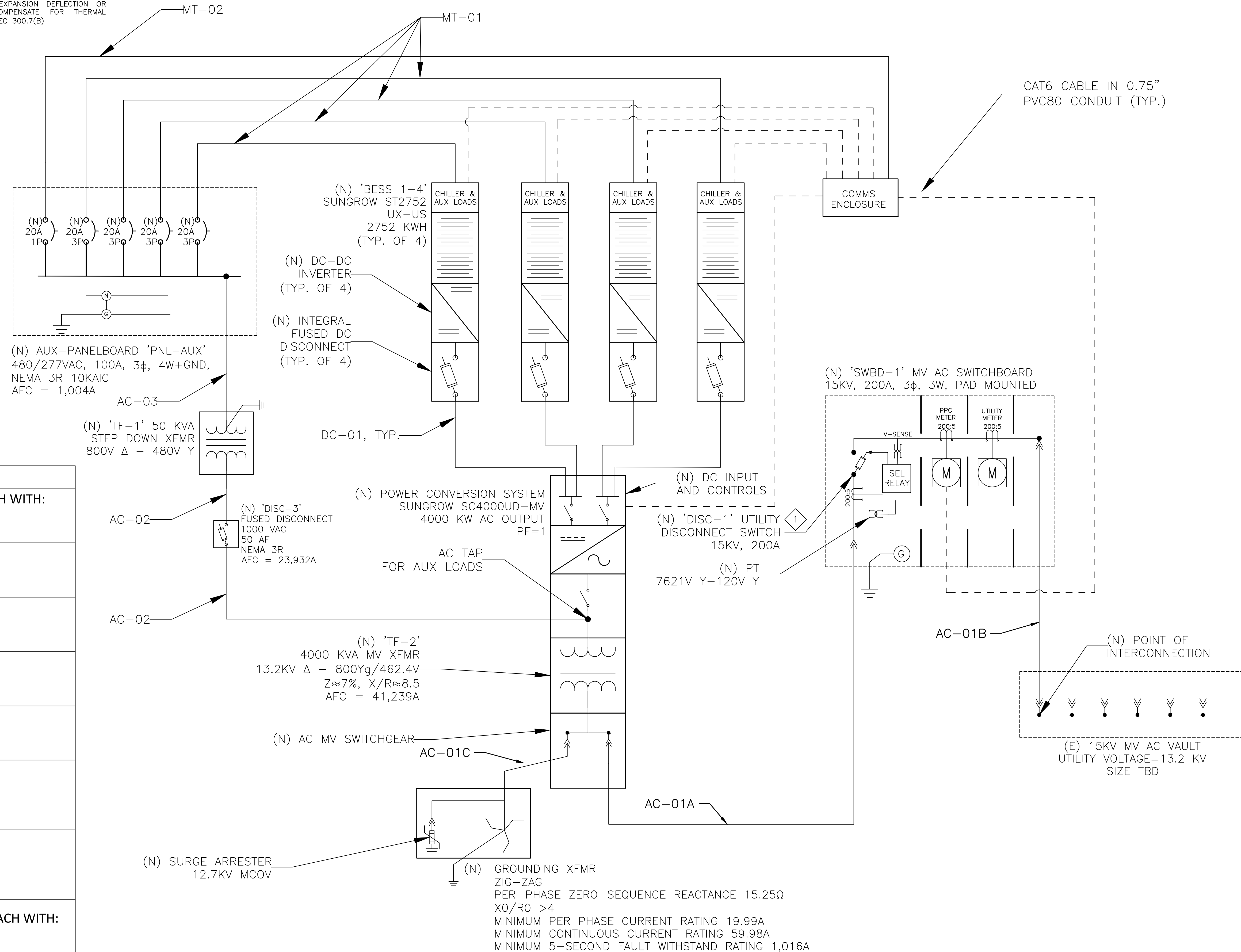


GENERAL NOTES:

1. ALL EQUIPMENT MUST BE UL LISTED BY A RECOGNIZED BY NRTL
2. ALL EQUIPMENT WIRING AND GROUNDING SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDED PRACTICES. REFER TO THE INSTALLATION AND USER MANUALS FOR GUIDANCE.
3. EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, EQUIPMENT, AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136. CONTRACTOR TO REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR APPROVED METHOD OF GROUNDING.
4. ALL EXPOSED RACEWAY OPENINGS SHALL BE SEALED USING A SUITABLE METHOD TO PREVENT ENTRY OF INSECTS.
5. NEW OCPD SHALL HAVE THE SAME INTERRUPTING CURRENT RATING(KAIC) AS THE RATING OF THE PANELBOARD OR SWITCHBOARD IN WHICH THEY ARE LOCATED.
6. THE UTILITY COMPANY MUST BE NOTIFIED PRIOR TO USE.
7. HYDE RENEWABLES IS NOT RESPONSIBLE FOR ENGINEERING ON EXISTING CIRCUITS
8. BONDING SHALL BE PROVIDED WHERE NECESSARY TO ENSURE ELECTRICAL CONTINUITY AND CAPACITY TO CONDUCT SAFETY.
9. SYSTEM INCLUDING CONDUIT AND CONDUCTORS SHALL BE INSTALLED IN A NEAT AND A WORKMANLIKE MANNER IN ACCORDANCE WITH NEC 110.12.
10. ALL ELECTRICAL EQUIPMENT EXPOSED RACEWAYS, CONDUCTORS, AND CONNECTIONS SHALL BE MECHANICALLY SECURED VIA HARDWARE RATED FOR OUTDOOR AND UV LIGHT EXPOSURE AND WITH A DESIGN LIFE GREATER THAN ANTICIPATED LIFE EXPECTANCY OF THE SYSTEM.
11. RACEWAY SHALL BE PROVIDED WITH EXPANSION. EXPANSION DEFLECTION OR DEFLECTION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION, DEFLECTION AND CONTRACTION AS PER NEC 300.7(B)
12. ALL PARALLEL CONDUCTORS MUST BE COLOR CODED.

SHEET NOTES:

1. THE UTILITY ISOLATION DEVICE SHALL BE GANGED, MANUALLY-OPERATED & LOCKABLE WITH VISIBLE BLADE SEPARATION, PERMANENT SIGNAGE INDICATING THE OPEN & CLOSED POSITION, AND BE ACCESSIBLE TO UTILITY PERSONNEL 24 HOURS A DAY PER UTILITY REQUIREMENTS.



| CONDUCTOR TAG | |
|---|---|
| DC-01 - 6 SETS OF 3" PVC 40 HDPE EACH WITH: | (2) #600KCMIL ϕ CU THWN-2 (1) #350KCMIL EGC THWN-2 |
| AC-01A - 2" PVC 40 HDPE WITH: | (3) #2/0AWG ϕ CU MV-105 (1) #4AWG EGC THWN-2 |
| AC-01B - 2" PVC 80 WITH: | (3) #2/0AWG ϕ CU MV-105 (1) #4AWG EGC THWN-2 |
| AC-01C - 2" PVC 80 WITH: | (3) #2/0AWG ϕ CU MV-105 (1) #4AWG EGC THWN-2 |
| AC-02 - 1.25" PVC 40 HDPE WITH: | (3) #6AWG ϕ AL THWN-2 (1) #10AWG EGC THWN-2 |
| AC-03 - 1.25" PVC 40 HDPE WITH: | (3) #3AWG ϕ AL THWN-2 (1) #8AWG EGC THWN-2 |
| MT-1 - 0.75" PVC 40 HDPE WITH: | (3) #12AWG ϕ CU THWN-2 (1) #12AWG N CU 600V THWN-2 (1) #10AWG EGC THWN-2 |
| MT-2 - 2 SETS OF 0.75" PVC 40 HDPE EACH WITH: | (3) #12AWG ϕ CU THWN-2 |



Qcells
Completely Clean Energy

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| ST | F | REDLINES | 06/12/23 |
| ST | E | REDLINES | 05/23/23 |
| CB | D | 60% | 05/11/23 |
| CB | C | 30% | 04/12/23 |
| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |
| BY | REV | ISSUE | DATE |

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BOULDER, CO 80301
INFO@HYDERENEWABLES.COM
720-900-1009
WWW.HYDERENEWABLES.COM

PROJECT NAME AND ADDRESS
Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

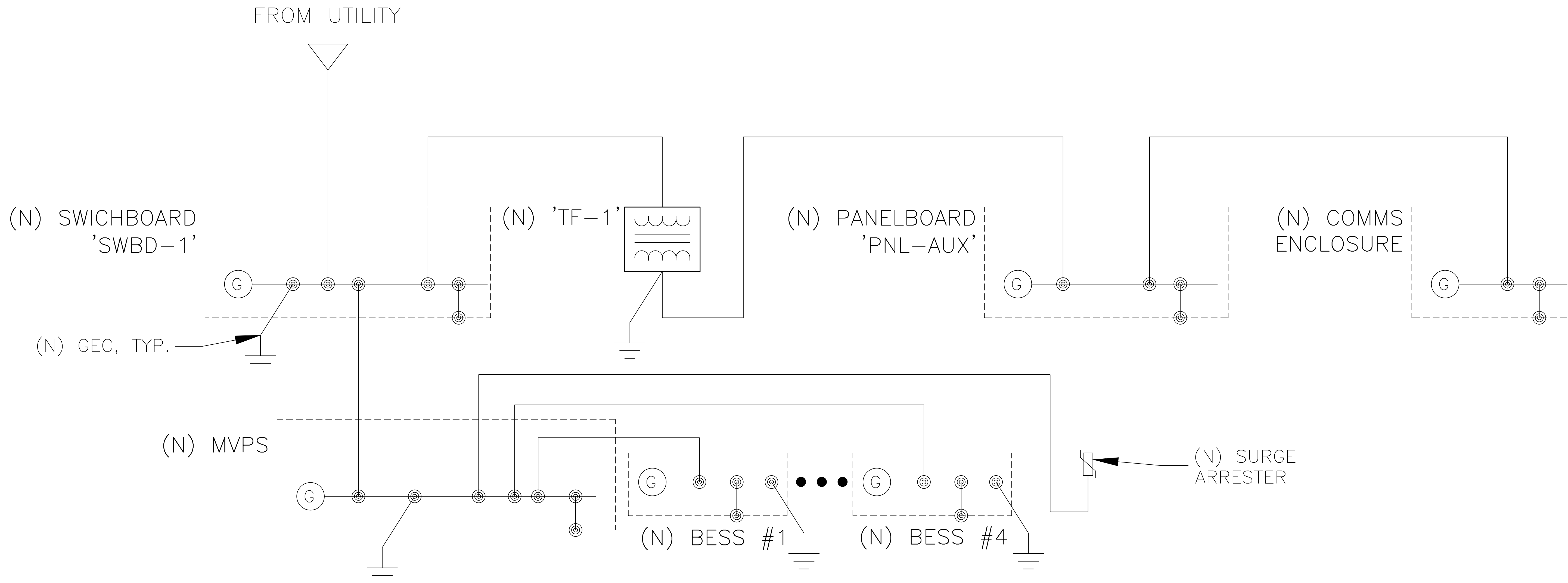
PROJECT #: 069-1000

SHEET TITLE
SLD

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.200 |
| CHECKED BY TRIPP HYDE | |

GENERAL NOTES:

1. SEE SINGLE LINE FOR ADDITIONAL INFORMATION ON E.200.
2. GROUND WIRE TO BE PROTECTED FROM PHYSICAL DAMAGE, PER NEC 250.120(C)
3. GROUNDING EARTH RESISTANCE SHALL NOT EXCEED 25 OHMS. IF A SINGLE ROD, PIPE OR PLATE HAS AN EARTH RESISTANCE IN EXCESS OF 25 OHMS, SUPPLEMENTAL GROUNDING ELECTRODES SHALL BE ADDED AT 6 FEET MAXIMUM INTERVALS TO ACHIEVE EARTH RESISTANCE LESS THAN 25 OHMS.
4. EQUIPMENT BONDING JUMPERS TO BE CU OR EQUIV. TYPE LISTED IN NEC 250.102.
5. GROUNDING CONDUCTORS NOT ROUTED IN RACEWAYS TO BE MIN. #6AWG CU.



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STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
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PROJECT #: 069-1000

SHEET TITLE
GND

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.210 |
| CHECKED BY TRIPP HYDE | |

| CONDUITS | | | | |
|----------|-------|-------------|------------------|--------------|
| # | SIZE | TYPE | CONDUIT FILL [%] | CONDUCTOR ID |
| 6 | 3" | PVC 40 HDPE | 31.10 | DC-01 |
| 1 | 2" | PVC 40 HDPE | 22.73 | AC-01A |
| 1 | 2" | PVC 80 | 26.03 | AC-01B |
| 1 | 2" | PVC 80 | 26.03 | AC-01C |
| 1 | 1.25" | PVC 40 HDPE | 11.98 | AC-02 |
| 1 | 1.25" | PVC 40 HDPE | 29.25 | AC-03 |
| 1 | 0.75" | PVC 40 HDPE | 14.37 | MT-1 |
| 2 | 0.75" | PVC 40 HDPE | 7.68 | MT-2 |

| CONDUCTORS | | | | | | | AMPACITY CHECK | | | | | | |
|----------------|----------------|--------------|-------------|------------|-----------------------|---------------------|--------------------------|-----------------|-------------|---------------|-------------------|----------------------------------|-------------------|
| FROM | TO | CONDUCTOR ID | # OF PHASES | NEUTRAL | OPERATING VOLTAGE [V] | CONTINUOUS LOAD [A] | 125% CONTINUOUS LOAD [A] | OCPD RATING [A] | TEMP DERATE | BUNDLE DERATE | 90°C AMPACITY [A] | 90°C AMP. DERATED FOR C.O.U. [A] | 75°C AMPACITY [A] |
| BESS | SC4000 | DC-01 | 1-PHASE | NO NEUTRAL | 1500 | 1775 | 2218.8 | 2500 | 1 | 1 | 475 | 2850 | 2520 |
| SC4000 | SWB1 | AC-01A | 3-PHASE | NO NEUTRAL | 13200 | 175 | 218.8 | 225 | 1 | 1 | 255 | 255 | #N/A |
| SWB1 | POI | AC-01B | 3-PHASE | MIN. SIZE | 13200 | 175 | 218.8 | 225 | 1 | 1 | 255 | 255 | #N/A |
| SC4000 | GROUNDING XFMR | AC-01C | 3-PHASE | MIN. SIZE | 13200 | 175 | 218.8 | 225 | 1 | 1 | 255 | 255 | #N/A |
| TF1 | TF2 | AC-02 | 3-PHASE | NO NEUTRAL | 800 | 40 | 50.0 | 50 | 1 | 1 | 55 | 55 | 50 |
| TF2 | AUX PANELBOARD | AC-03 | 3-PHASE | FULL SIZE | 480 | 60 | 75.0 | 80 | 1 | 0.8 | 85 | 68 | 75 |
| AUX PANELBOARD | BESS | MT-1 | 3-PHASE | FULL SIZE | 480 | 20 | 25.0 | 25 | 1 | 0.8 | 30 | 24 | 25 |
| AUX PANELBOARD | COMMS | MT-2 | 3-PHASE | FULL SIZE | 277 | 20 | 25.0 | NA | 1 | 1 | 30 | 60 | 50 |

| CONDUCTOR SPECS | | | | | | | | | | | | | | | |
|-----------------|------------------|-----------|--------|----------------|---------------------|-------------------|--------|--------|------------------|-----------|--------|---------|-------------|---------|----|
| CONDUCTOR ID | PHASE CONDUCTORS | | | | PARALLEL CONDUCTORS | NEUTRAL CONDUCTOR | | | GROUND CONDUCTOR | | | | LENGTH (FT) | | |
| | # | SIZE | TYPE | CU 15KV MV-105 | | # | SIZE | TYPE | AL 600V | # | SIZE | TYPE | | CU 600V | |
| DC-01 | 2 | #600KCMIL | THWN-2 | CU 1000/2000V | 6 | | | | 1 | #350KCMIL | THWN-2 | CU 600V | EGC | 10 | |
| AC-01A | 3 | #2/0AWG | MV-105 | CU 15KV MV-105 | 1 | | | | 1 | #4AWG | THWN-2 | CU 600V | EGC | 10 | |
| AC-01B | 3 | #2/0AWG | MV-105 | CU 15KV MV-105 | 1 | | | | 1 | #4AWG | THWN-2 | CU 600V | EGC | 120 | |
| AC-01C | 3 | #2/0AWG | MV-105 | CU 15KV MV-105 | 1 | | | | 1 | #4AWG | THWN-2 | CU 600V | EGC | 120 | |
| AC-02 | 3 | #6AWG | THWN-2 | AL 1000/2000V | 1 | 0 | | | 1 | #10AWG | THWN-2 | CU 600V | EGC | 10 | |
| AC-03 | 3 | #3AWG | THWN-2 | AL 600V | 1 | 1 | #3AWG | THWN-2 | AL 600V | 1 | #8AWG | THWN-2 | CU 600V | EGC | 10 |
| MT-1 | 3 | #12AWG | THWN-2 | CU 600V | 1 | 1 | #12AWG | THWN-2 | CU 600V | 1 | #10AWG | THWN-2 | CU 600V | EGC | 10 |
| MT-2 | 3 | #12AWG | THWN-2 | CU 600V | 2 | | | | | | | | | 10 | |

| AC VOLTAGE DROP AND SHORT CIRCUIT ANALYSIS | | | |
|--|----------------|-------|------------|
| FROM | TO | | V-DROP [%] |
| SC4000 | SWB1 | | 0.002 |
| SWB1 | POI | | 0.028 |
| | | TOTAL | 0.030 |
| TF1 | TF2 | | 0.070 |
| TF2 | AUX PANELBOARD | | 0.087 |
| | | TOTAL | 0.160 |

| TEMPERATURE CONSIDERATIONS | |
|--|--------|
| STC TEMPERATURE [°C] | 25.00 |
| ASHRAE 2% HIGH AMBIENT TEMPERATURE [°C] | 30.00 |
| ASHRAE EXTREME MIN. LOW AMBIENT TEMPERATURE [°C] | -14.00 |
| TEMPERATURE DIFFERENCE LOW TEMP [°C] | 39.00 |
| TEMPERATURE DIFFERENCE HIGH TEMP [°C] | 5.00 |

| AFC CALCULATION | | | | | |
|-----------------|-------------|--------|-------------------------|--------------------|---------------|
| CONDUCTOR ID | VOLTAGE (V) | LENGTH | RESISTANCE (OHM/1000FT) | STARTING POINT AFC | END POINT AFC |
| AC-02 | 800 | 10 | 0.81 | 41239.00 | 23931.51 |
| AC-03 | 480 | 10 | 0.4 | 1019.20 | 1004.42 |



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SCALE: AS NOTED
(PRINT ON 36"x24")

| BY | REV | ISSUE | DATE |
|----|-----|---------------|----------|
| AR | L | 90% | 01/03/24 |
| RK | K | REDLINES | 12/07/23 |
| RK | J | 60% UPDATE | 10/05/23 |
| RK | H | 60% UPDATE | 7/31/23 |
| RK | G | 60% UPDATE | 07/27/23 |
| ST | F | REDLINES | 06/12/23 |
| ST | E | REDLINES | 05/23/23 |
| CB | D | 60% | 05/11/23 |
| CB | C | 30% | 04/12/23 |
| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |

FIRM NAME AND ADDRESS
HYDE RENEWABLES, INC
4735 WALNUT ST, SUITE #110
BOULDER, CO 80301
INFO@HYDERENEWABLES.COM
720-900-1009
WWW.HYDERENEWABLES.COM

PROJECT NAME AND ADDRESS
Q CELLS
STATE PIER RD
STATE PIER RD
NEW LONDON, CT 06320
LAT=N 41° 21'38.4"
LON=W 72° 05'56.0"

PROJECT #: 069-1000

SHEET TITLE
CALCS

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | E.220 |
| CHECKED BY TRIPP HYDE | |

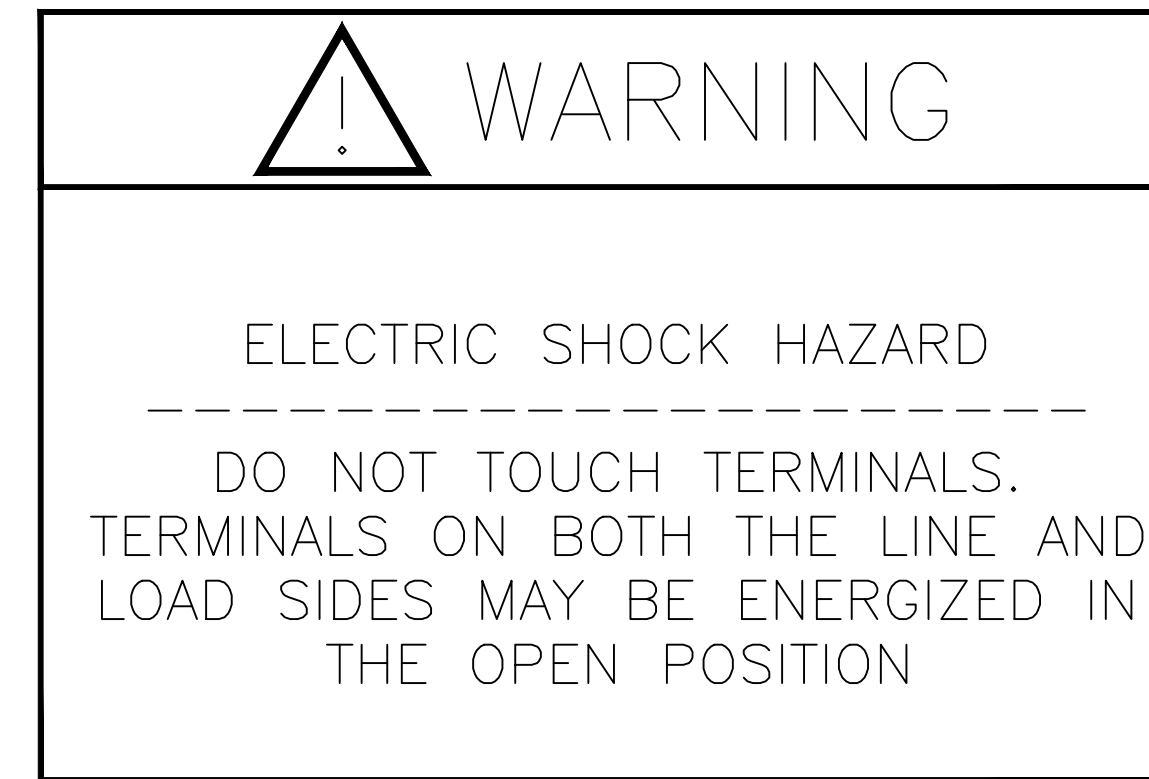
LABELS AND WARNINGS:

NOTE: THE WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH NEC ARTICLE 110.21(B). PLAQUES WILL HAVE LETTER ENGRAVED ON A METAL OR PLASTIC PLAQUE. PLAQUES SHALL HAVE A RED BACKGROUND WITH ENGRAVED LETTERING. ATTACH PLAQUE USING OUTDOOR RATED ADHESIVE OR WITH RIVETS OR SCREWS WHILE MAINTAINING ENCLOSURE RATING. THE LABEL SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN. THE LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED UNLESS OTHERWISE SPECIFIED ALL LETTERING HEIGHT FOR LABELS AND WARNING SHALL BE 1/4". FONT TYPE TO BE AERIAL NARROW. PLAQUES CONTAINING THE WORD "WARNING" LETTERING HEIGHT WILL BE 3/4" AERIAL BOLD.

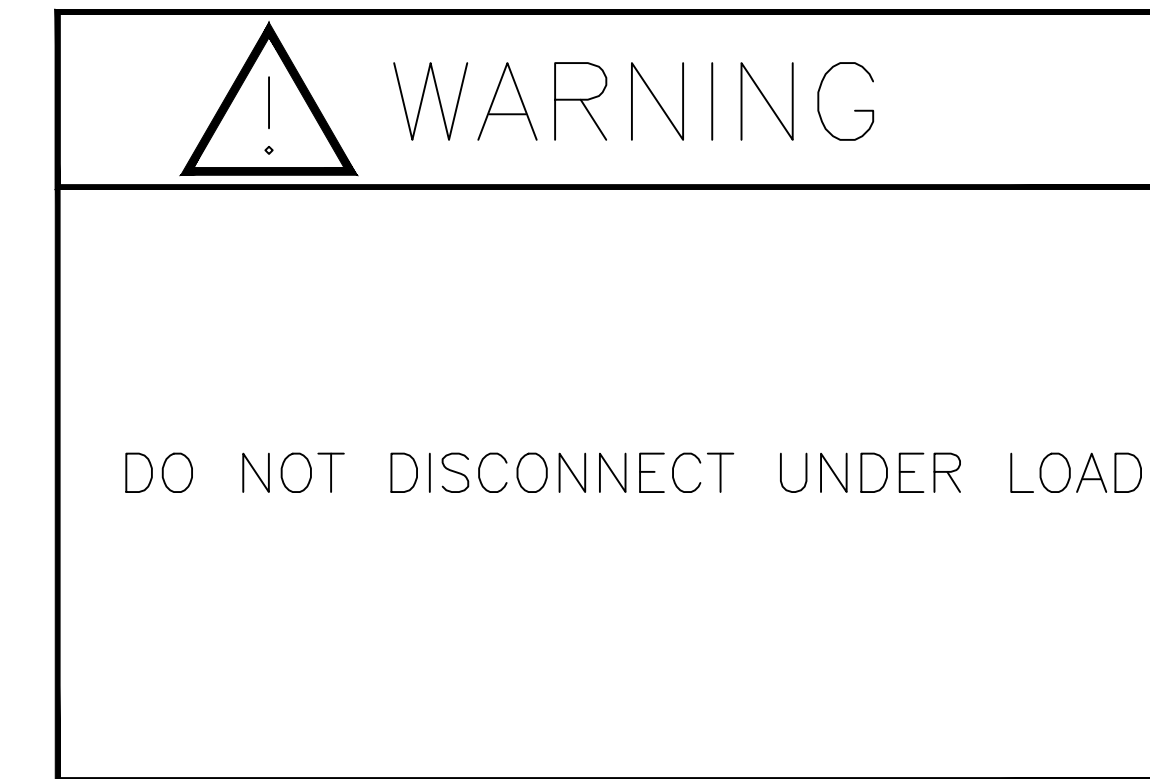
| SCHEDULE OF LABELS | |
|--------------------|--|
| SIGN ID | PLACEMENT LOCATION(S) |
| L01 | DISCONNECT(S), DISTRIBUTION PANEL(S), JUNCTION BOX(ES), COMBINER BOX(ES), SWITCHBOARD(S), MAIN SERVICE |
| L02 | EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS |
| L03 | MAIN SERVICE DISCONNECT |
| L04 | MAIN SERVICE DISCONNECT |
| L05 | MAIN SERVICE BESS / PV DISCONNECTS |
| L06 | TESLA AC DISCONNECT |
| L07 | MAIN SERVICE DISCONNECT |
| L08 | MAIN SERVICE DISCONNECT |
| L09 | TESLA AC DISCONNECT |

LABELING REQUIREMENTS

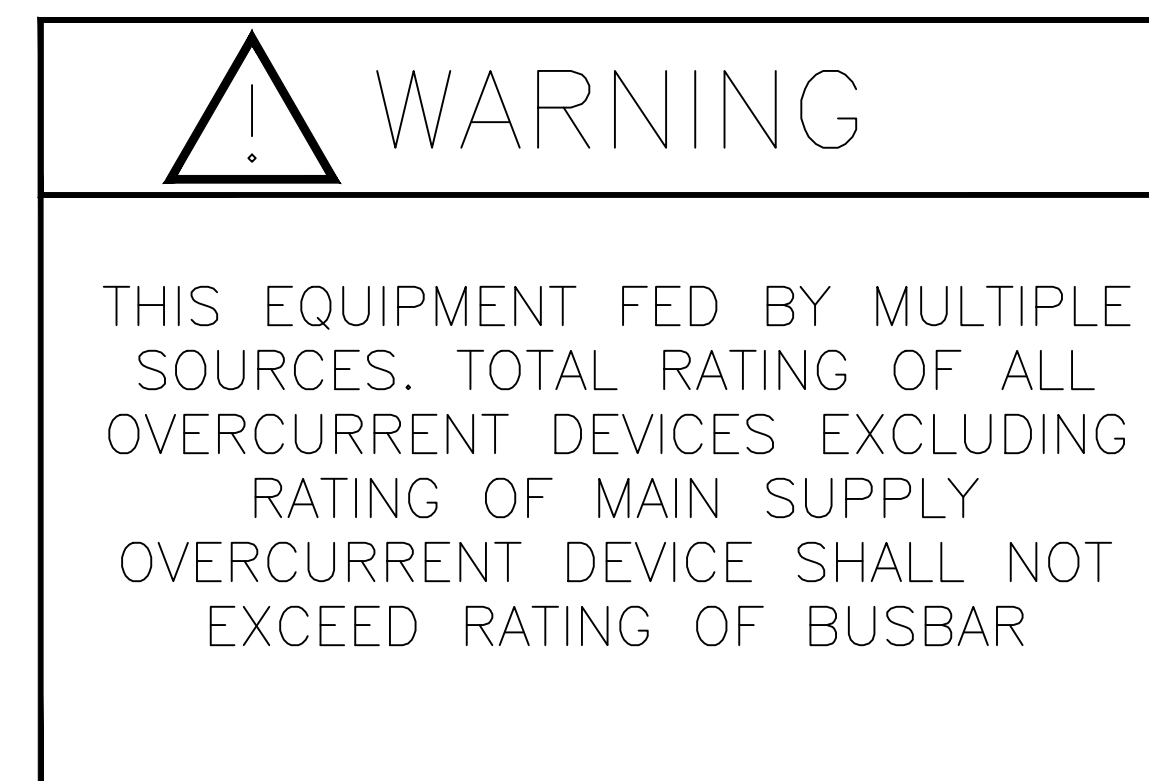
- SIGNS MUST BE WEATHER RESISTANT AND IN ACCORDANCE WITH UL 969. MARKINGS MUST HAVE ALL CAPITALIZED LETTERS WITH AN ARIAL OR SIMILAR FONT, NON-BOLD.
- REFER TO TABLE FOR SIGNAGE LOCATIONS.
- ALL LABELS 6" X 4" UNLESS OTHERWISE NOTED
- ALL SIGNAGE TO BE FURNISHED AND INSTALLED BY CONTRACTOR



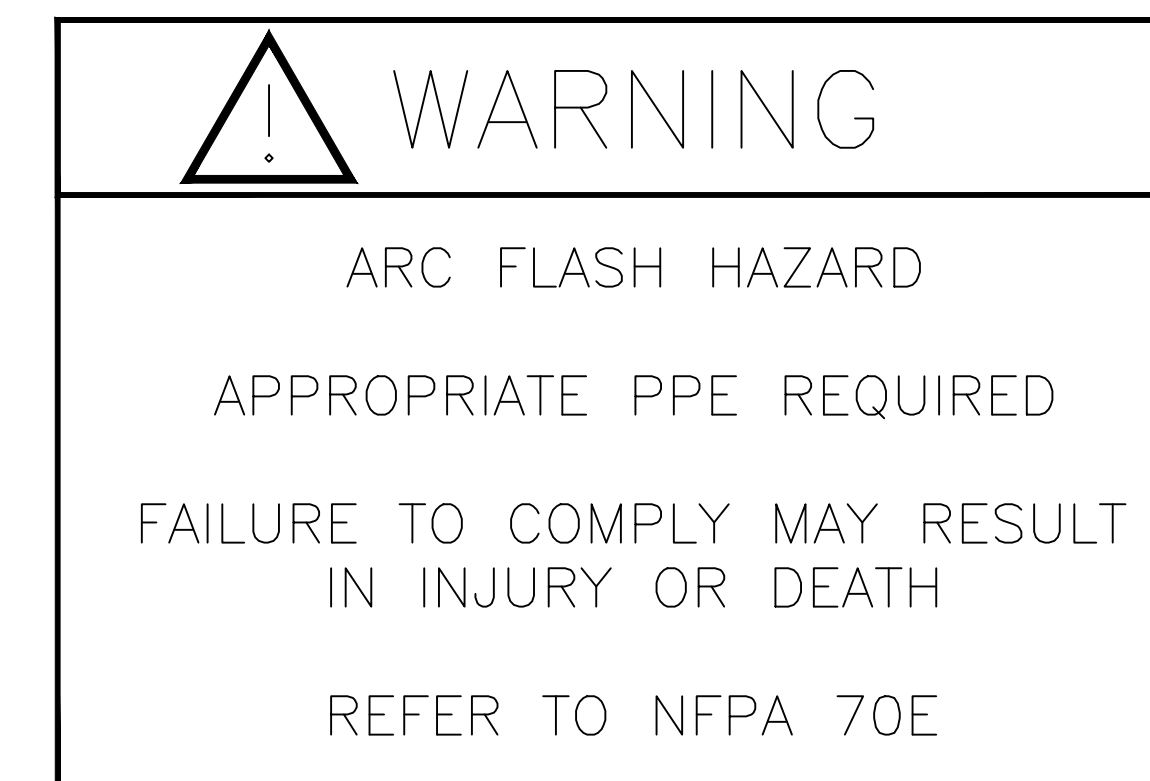
SIGN L01 - REQ'D PER NEC 690.13(B)
APPLY TO: DISCONNECT(S), DISTRIBUTION PANEL(S), JUNCTION BOX(ES), COMBINER BOX(ES), SWITCHBOARD(S), MAIN SERVICE



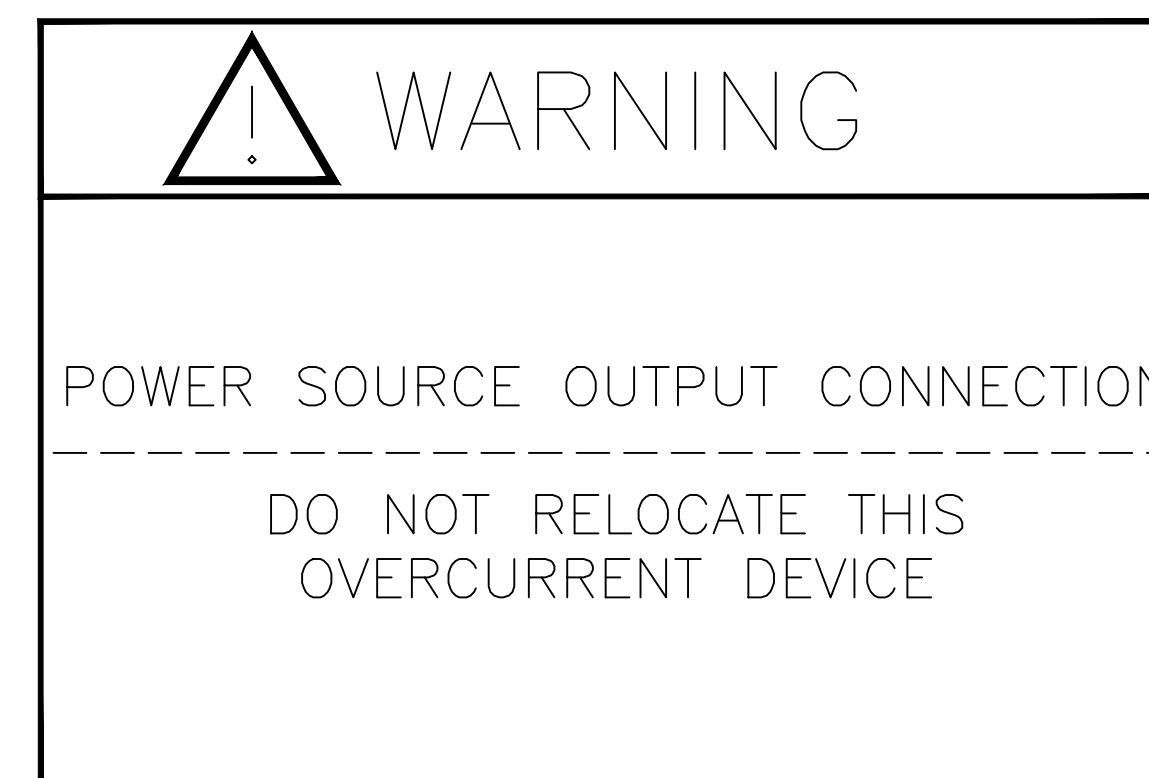
SIGN L02 - LABEL REQUIRED PER NEC 690.15(C)
APPLY TO: CABLES, ISOLATING DEVICES PER NEC 690.33, FUSE HOLDER



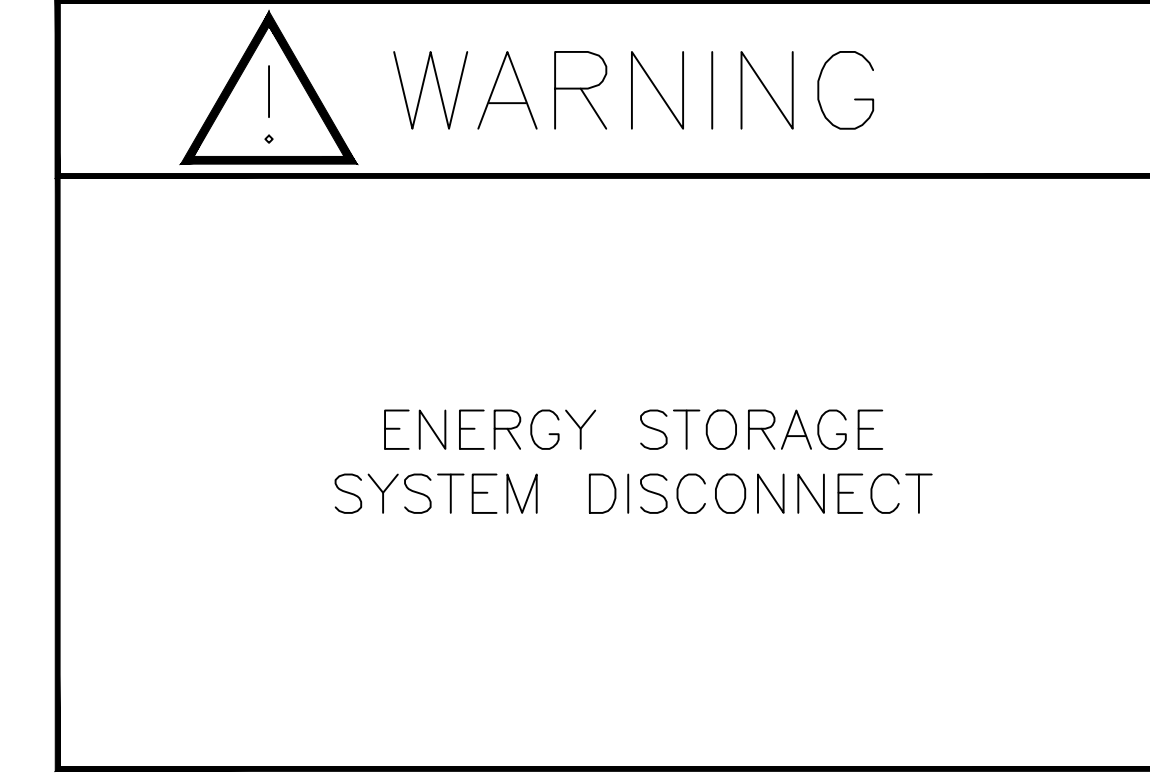
SIGN L03 - LABEL REQUIRED PER NEC 705.12(B)(2)(3)(C)
APPLY TO: MAIN SERVICE



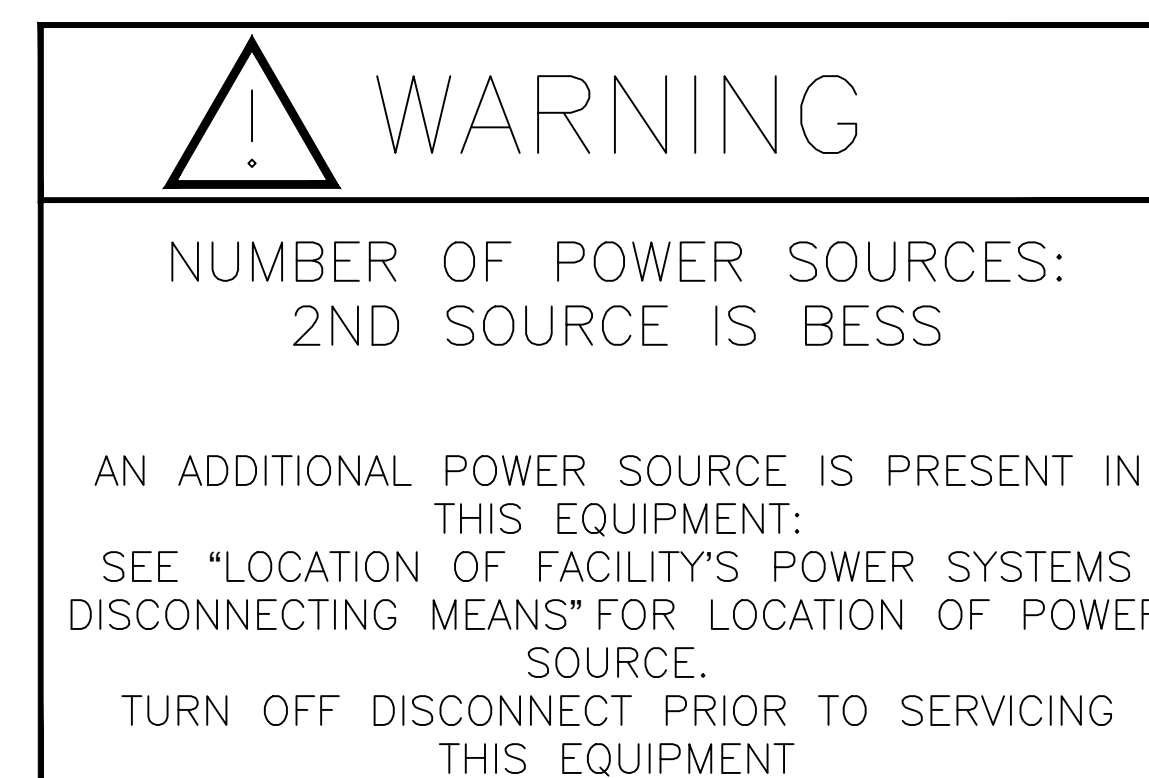
SIGN L04 - REQ'D BY NEC 110.16
APPLY TO: MAIN SERVICE



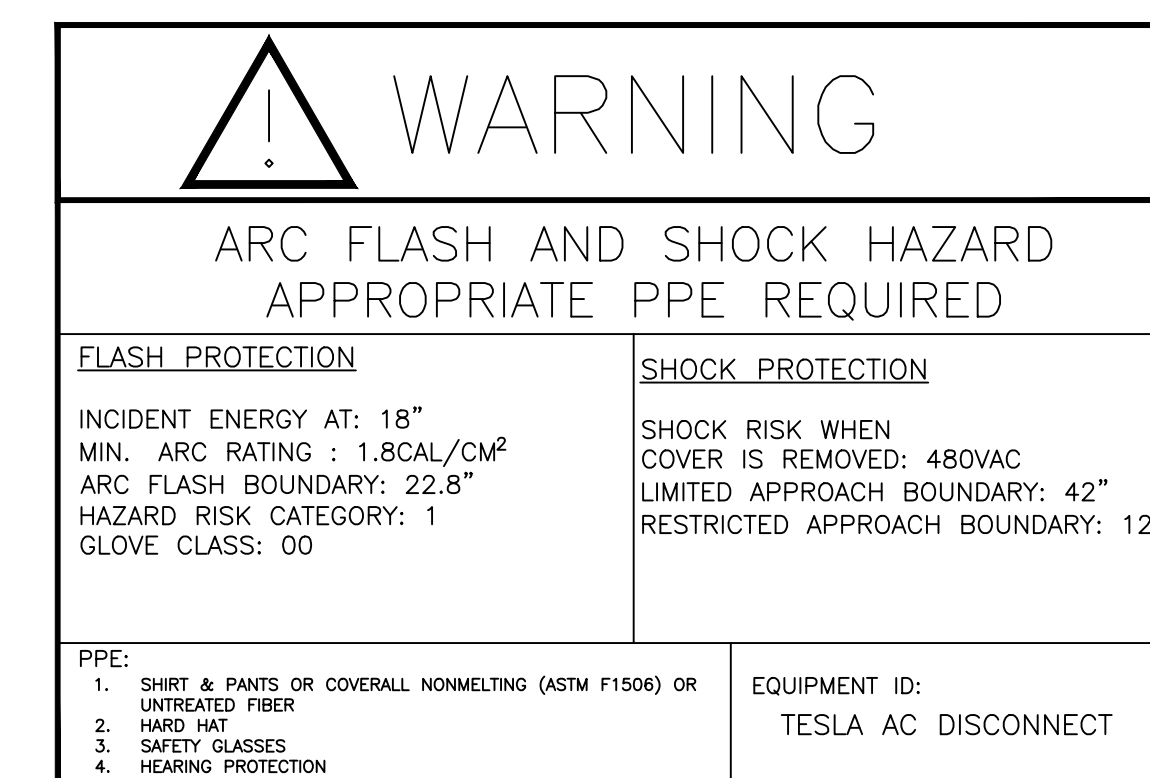
SIGN L05 - LABEL REQUIRED PER NEC 705.12(B)(2)(3)(B)
APPLY TO: MAIN SERVICE



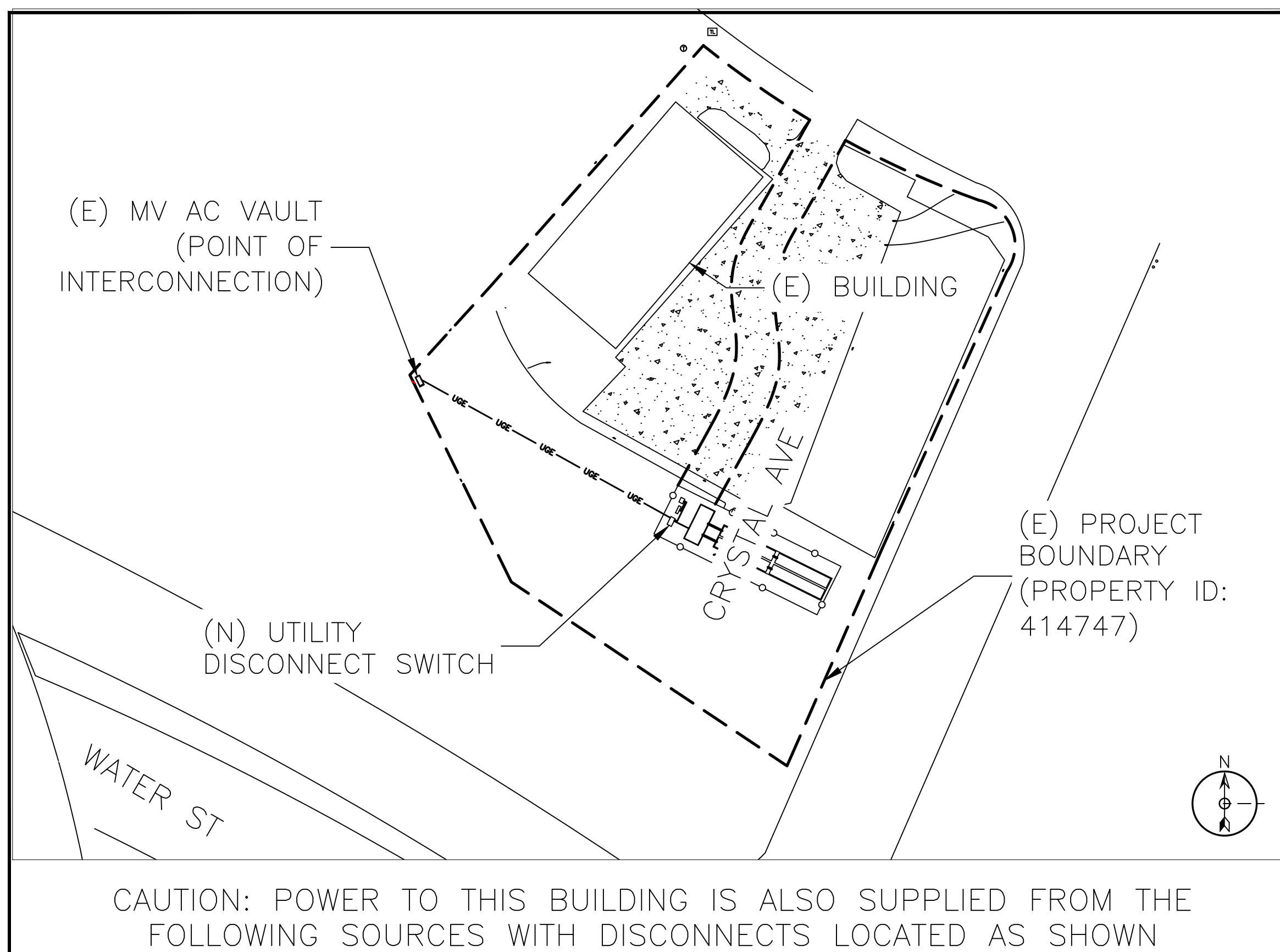
SIGN L06 - LABEL REQUIRED PER NEC 706.15(C)
APPLY TO: TESLA BESS AC DISCONNECT



SIGN L08 - LABEL REQUIRED PER NEC 690.54
PLACED ADJACENT TO MAIN SERVICE DISCONNECT



SIGN L09 - LABEL REQUIRED PER NEC 110.16
APPLY TO: TESLA BESS AC DISCONNECT SWITCH



SIGN L07 - LABEL REQUIRED PER NEC 690.56(B) AND 705.10
NOTE: MAPS SHALL BE LOCATED AT THE MAIN SERVICE. MAPS LOCATED OUTDOORS SHALL BE ENGRAVED LETTERS ON A METAL OR PLASTIC PLAQUE. MAPS LOCATED INDOORS MAY BE LAMINATED PRINTS. MAPS SHALL HAVE A RED BACKGROUND WITH THE WHITE LETTERING AND ATTACHED USING A SUITABLE ADHESIVE OR WITH RIVETS OR SCREWS WHILE MAINTAINING ENCLOSURE RATING



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PROJECT #: 069-1000

SHEET TITLE
SIGNAGE 01

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.300 |
| CHECKED BY TRIPP HYDE | |

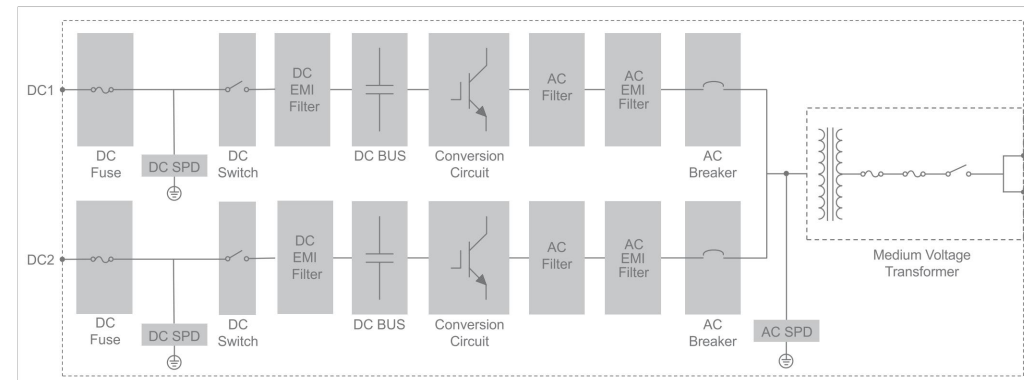
SC4000UD-MV-US

Power Conversion System
Optimized for ST2236 / 2752UX-US



- HIGH YIELD**
 - Advanced three-level technology, max. efficiency 99%
 - Effective forced air cooling, no derating up to 45°C (113°F)
 - Wide DC voltage operation window, full power operation at 1500 V
- SMART O&M**
 - Modular design, easy for maintenance
 - High protection degree, easy for outdoor installation
 - Optional C5 anti-corrosion degree, adjust to applications close to the sea
- FLEXIBLE APPLICATION**
 - Bidirectional power conversion system with full four-quadrant operation
 - Compatible with high voltage battery system, low system cost
 - Battery charge & dis-charge management and black start function integrated
- GRID SUPPORT**
 - Compliant with UL1741, IEEE 1547, UL1741 SA, Rule 21 and HECO 14H
 - Fast active/reactive power response
 - L/HVRT, L/HFRT, soft start/stop, specified power factor control and reactive power support

CIRCUIT DIAGRAM



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SUNGROW
Clean power for all

| Type Designation | SC4000UD-MV-US |
|---|---|
| DC side | |
| Max. DC voltage | 1500V |
| Min. DC voltage | 1150V |
| DC voltage range | 1150 ~ 1500V |
| Max. DC current | 1775A/2 |
| No. of DC inputs | 2 |
| AC side (Grid) | |
| AC output power | 4000kVA @ 45°C (113°F) |
| Converter port max. AC output current | 1443A/2 |
| Converter port nominal AC voltage | 800V |
| Converter port AC voltage range | 704 ~ 880V |
| Nominal grid frequency / Grid frequency range | 60Hz / 55-65Hz |
| Harmonic (THD) | < 3% (at nominal power) |
| Power factor at nominal power / Adjustable power factor | > 0.99 / leading ~ lagging |
| Adjustable reactive power range | -100% ~ 100% |
| Feed-in phases / AC connection | 3 / 3 |
| AC side (Off-Grid) | |
| Inverter port nominal AC voltage | 800V |
| Inverter port AC voltage range | 704 ~ 880V |
| AC voltage distortion | < 3% (Linear load) |
| DC voltage component | < 0.5% Un (Linear balance load) |
| Unbalance load Capacity | 100% |
| Nominal frequency / Frequency range | 60Hz / 55-65Hz |
| Efficiency | |
| Converter max. efficiency | 99% |
| Transformer | |
| Transformer rated power | 4000kVA |
| Transformer max. power | 4000kVA |
| LV / MV voltage | 0.8kV / 34.5kV |
| Transformer vector | Dy1 or Dy11 |
| Transformer cooling type | ONAN (Optional: KNAN) |
| Oil type | Mineral oil (PCB free) or degradable oil on request. |
| Protection | |
| DC input protection | Load break switch + fuse |
| Converter output protection | Circuit breaker |
| AC output protection | Load break switch + fuse |
| Surge protection | DC Type II / AC Type II |
| Grid monitoring / Ground fault monitoring | Yes / Yes |
| Insulation monitoring | Yes |
| Overheat protection | Yes |
| General Data | |
| Dimensions (W*H*D) | 6058*2896*2438mm, 238.5"*114.0"*96.0" |
| Weight | 17000kg 37479 lbs |
| Degree of protection | IP23, IP30 |
| Operating ambient temperature range | -35 ~ 60°C (> 45°C derating) / -31 ~ 140°F (> 113°F derating) |
| Allowable relative humidity range | 0 ~ 100% |
| Cooling method | Temperature controlled forced air cooling |
| Max. operating altitude | 1000m (standard) / ~ 1000m (optional) |
| 3280.8 ft (standard) / ~ 3280.8 ft (optional) | |
| Display | LED, WEB HMI |
| Communication | RS485, CAN, Ethernet |
| Compliance | UL 1741, UL 1741 SA, IEEE 1547, Rule 21, HECO 14H, CSA C22.2 No.1071-16 |
| Grid support | L/HVRT, FRT, active & reactive power control and power ramp rate control, Volt-var, Volt-watt, Frequency-watt |

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SUNGROW
Clean power for all

| Type designation | ST2752UX-US |
|---|---|
| Battery Data | |
| Cell type | LFP |
| Battery capacity (BOL) | 2752 kWh |
| Battery voltage range | 1160 ~ 1500 V |
| General Data | |
| Dimensions of battery unit (W * H * D) | 9340*2600*1730mm |
| Weight of battery unit | 26,400kg |
| Degree of protection | IP 64/70, IP 30 |
| Operating temperature range | -30 to 50 °C (> 45 °C derating) |
| Relative humidity | 0 ~ 95 % (non-condensing) |
| Max. working altitude | 3000m |
| Cooling concept of battery chamber | Liquid cooling |
| Fire safety | Fused sprinkler heads, NFPA 69 explosion prevention and ventilation (DLH) gases |
| Communication interfaces | RS485, Ethernet |
| Communication protocols | Modbus RTU, Modbus TCP |
| Compliance | UL 9540, UL 9540A/NFPA 855 |
| 2 HOURS APPLICATION-ST2752UX4-5000UD-MV-US | |
| BOL kWh(DC/AC LV Side) | 11,008kWh DC/10,379kWh AC |
| ST2752UX Quantity | 4 |
| PCS Model | SC5000UD-MV-US |
| 4 HOURS APPLICATION-ST2752UX8-5000UD-MV-US | |
| BOL kWh(DC/AC LV Side) | 22,016kWh DC/20,758kWh AC |
| ST2752UX Quantity | 8 |
| PCS Model | SC5000UD-MV-US |
| Grid Connection Data | |
| Max. THD of current | < 3 % (at nominal power) |
| DC component | < 0.5 % (at nominal power) |
| Power factor | > 0.99 (at nominal power) |
| Adjustable power factor | 1.0 leading ~ 1.0 lagging |
| Nominal grid frequency | 60 Hz |
| Grid frequency range | 55 ~ 65 Hz |
| Transformer | |
| Transformer rated power | 5,000 kVA |
| LV/MV voltage | 0.9 kV / 34.5 kV |
| Transformer cooling type | ONAN (Oil Natural Air Natural) |
| Oil type | Mineral oil (PCB free) or degradable oil on request |

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ST2752UX-US

Liquid Cooling Energy Storage System
2 - 8 hour application

Preliminary



- LOW COSTS**
 - Highly integrated ESS for easy transportation and O&M
 - All pre-assembled, no battery module handling on site
 - 8 hour installation to commission, drop on a pad and make electrical connections
- SAFE AND RELIABLE**
 - Integrated DC/DC converters actively limit fault current
 - DC electric circuit safety management includes fast breaking and anti-arc protection
 - Multi level battery protection layers formed by discreet standalone systems offer impeccable safety
- EFFICIENT AND FLEXIBLE**
 - Intelligent liquid cooling ensures higher efficiency and longer battery cycle life
 - Modular design supports parallel connection and easy system expansion
 - IP54 outdoor cabinet and optional C5 anti-corrosion
- SMART AND ROBUST**
 - Fast state monitoring and faults record enables pre-alarm and faults location
 - Integrated battery performance monitoring and logging

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Aluminum Uniblend® PVC High Speed

EPR/Copper Tape Shield/PVC, Medium-Voltage Power, Shielded
25 kV and 35 kV, UL Type MV-105, 133%/100% Ins. Levels, 345 Mils

SPEC 6560
September, 2016



Product Construction:
Conductor:
 • 1/0 AWG thru 1000 kcmil 1350 aluminum compact Class B strand
Extruded Strand Shield (ESS):
 • Extruded thickest semi-conducting stress-control layer over conductor
Insulation:
 • Lead-free Ethylene Propylene Rubber (EPR) insulation, contrasting in color to the black semi-conducting shield layers
Extruded Insulation Shield (EIS):
 • Thickest semi-conducting polymeric layer free stripping from insulation
Metallic Shield:
 • 5 mil annealed copper tape with an overlap of 25%
Jacket:
 • Low-friction, lead-free, flame-retardant, moisture- and sunlight-resistant Polyvinyl Chloride (PVC)
Options:
 • STRANFILL™ - blocked conductor. Tested in accordance with IEEE T-31-610
Applications:
 • Superior performance in petrochemical plants, pulp and paper mills, sewage and water treatment plants, environmental protection systems, railroads, mines, utility power generating stations, steel mills, textile plants and other industrial three-phase applications
Applications (cont'd.):
 • For use in wet or dry locations when installed in accordance with NEC
 • For use in aerial, conduit, open tray and underground duct installations
 • For use in direct burial if installed in a system with a ground conductor that is in close proximity, and conforms with NEC 250.4(A)(5)
Compliances:
 • National Electrical Code (NEC) • UL 1077
 • IEC 60332-33/NEMA WC74
 • IEC 60332-33-2
 • AIEC CS8
 • UL listed as Type MV-105 for use in accordance with NEC, UL File # E80501
 • UL 1685 UL Flame Exposure Test
 • IEEE 1002 (10.000 BTU/lb)/CSA FT4
 • EPA 40 CFR, Part 261 for leachable lead content per TCLP method
 • CSHA Acceptable
 • RoHS Compliant
Packaging:
 • Material cut to length and shipped on returnable wood reels. Lengths in excess of 10,000 lbs. are provided on returnable steel reels that require a deposit
 • Extra charges apply for cuts less than 1000 ft., lagging, pulling eyes, paralleling and tripling
Features:
 • Rated at 105°C
 • High Speed low friction technology for easy cable pulling
 • Excellent heat, moisture and sunlight resistance
 • Excellent flame resistance
 • Outstanding corona resistance
 • Flexibility for easy handling
 • High dielectric strength
 • Low moisture absorption
 • Electrical stability under stress
 • Low dielectric loss
 • Chemical resistant
 • Meets cold bend test at -35°C
 • 105°C rating for continuous operation
 • 140°C rating for emergency overload conditions
 • 250°C rating for short circuit conditions

| CATALOG NUMBER | CONDUCTOR SIZE (AWG/kcmil) | NOMINAL CONDUCTOR DIAMETER (INCHES) | INSULATION THICKNESS (INCHES) | NOMINAL JACKET THICKNESS (INCHES) | NOMINAL CABLE DIAMETER (INCHES) | | WEIGHT (lb/1000 FT) | ALUMINUM WEIGHT (lb/1000 FT) | COPPER WEIGHT (lb/1000 FT) | CONDUIT IN AMPACITY | | | TRAY (3) (INCHES) | CONDUIT SIZING (4) (INCHES) | | | | | | | |
|----------------|----------------------------|-------------------------------------|-------------------------------|-----------------------------------|---------------------------------|-------|---------------------|------------------------------|----------------------------|--|------|-------|-------------------|-----------------------------|-------|-----|-----|-----|-----|-----|---|
| | | | | | 25 kV | 35 kV | | | | UL TYPE MV-105, 133%/100% INS. LEVEL, 345 MILS | 90°C | 105°C | | | 125°C | | | | | | |
| 17061.13310P | 1/0 | 0.34 | 1.020 | 0.080 | 2.03 | 1.31 | 33.27 | 853 | 1263 | 99 | 147 | 150 | 170 | 155 | 165 | 150 | 170 | 5 | | | |
| 17061.13320P | 2/0 | 0.38 | 1.060 | 1.060 | 2.03 | 1.35 | 34.20 | 895 | 1371 | 125 | 186 | 183 | 175 | 200 | 175 | 190 | 175 | 195 | 5 | | |
| 17061.13330P | 3/0 | 0.43 | 1.100 | 1.060 | 2.03 | 1.40 | 35.50 | 1000 | 1488 | 158 | 235 | 197 | 199 | 220 | 200 | 215 | 195 | 225 | 5 | | |
| 17061.13340P | 4/0 | 0.48 | 1.160 | 1.060 | 2.03 | 1.45 | 36.83 | 1093 | 1608 | 199 | 296 | 192 | 187 | 230 | 260 | 230 | 245 | 235 | 260 | 5 | |
| 17061.13600P | 250 | 0.53 | 1.210 | 1.315 | 0.080 | 2.03 | 1.50 | 38.35 | 1174 | 1747 | 234 | 348 | 196 | 173 | 255 | 290 | 250 | 270 | 280 | 285 | 5 |
| 17061.13620P | 300 | 0.62 | 1.310 | 1.410 | 0.080 | 2.03 | 1.60 | 42.64 | 1256 | 2213 | 320 | 490 | 195 | 189 | 310 | 350 | 320 | 330 | 355 | 5 | |
| 17061.13650P | 500 | 0.74 | 1.430 | 1.530 | 0.080 | 2.03 | 1.72 | 45.21 | 1707 | 2540 | 468 | 696 | 135 | 201 | 385 | 430 | 370 | 400 | 400 | 445 | 6 |
| 17061.13700P | 750 | 0.91 | 1.610 | 1.710 | 0.110 | 2.79 | 1.96 | 49.78 | 2120 | 3155 | 703 | 1046 | 151 | 225 | 485 | 540 | 455 | 490 | 515 | 575 | 6 |
| 17061.13750P | 1000 | 1.08 | 1.780 | 1.860 | 0.110 | 3.10 | 2.30 | 53.95 | 2640 | 3720 | 937 | 1394 | 162 | 241 | 565 | 640 | 525 | 565 | 600 | 690 | 6 |

Dimensions and weights are nominal. Subject to industry tolerances.
 * Non-stock items - minimum runs apply. Please consult Customer Service for price and delivery.
 (1) Ampacity is in accordance with Table 310.60(C)(7) of the NEC for three or more single conductor aluminum cables in insulated conduit in air based on a conductor temperature of 90°C (194°F) or 105°C (221°F), temperature denoted in column header, and an ambient air temperature of 40°C (104°F).
 (2) Ampacity is in accordance with Table 310.60(C)(7) of the NEC for three or more single conductor aluminum cables in underground ducts (three conductors per duct), based on a conductor temperature of 90°C (194°F) or 105°C (221°F), temperature denoted in column header, and an ambient earth temperature of 20°C (68°F), electrical duct arrangement per Figure 310.60 Detail 1, 100% load factor, and earth thermal resistance (m) of 95.
 (3) Ampacity is based on single conductor Type MV-105 sizes #1/0 AWG and larger in an uncovered tray in accordance with Section 392.80(B)(2) of the NEC at an ambient air temperature of 40°C (104°F). The ampacity is based on 75% of the values per Table 310.60(C)(7), operating temperature denoted in column header. For cable trays with ventilated covers for more than 6 feet, the ampacity shall not exceed 75% of the values per Table 310.60(C)(7).
 (4) Based on nominal cable diameter, three single conductors in the duct PVC Schedule 40 with no ground wire and a maximum of 40% fill. Jam ratio has been considered but should be checked for individual installations.
 * 100% insulation level is available upon request.
 ** 133% insulation level is available upon request.
 Note: #1 Size smaller than 1/0 AWG do not include "FOR CT USE".
 † The NEC Lightning bolt symbol is on all Uniblend® constructions.

General Cable
Phone: 888-693-3355
www.generalcable.com



HYDE RENEWABLES
ADVANCED ENGINEERING SOLUTIONS

Qcells
Completely Clean Energy

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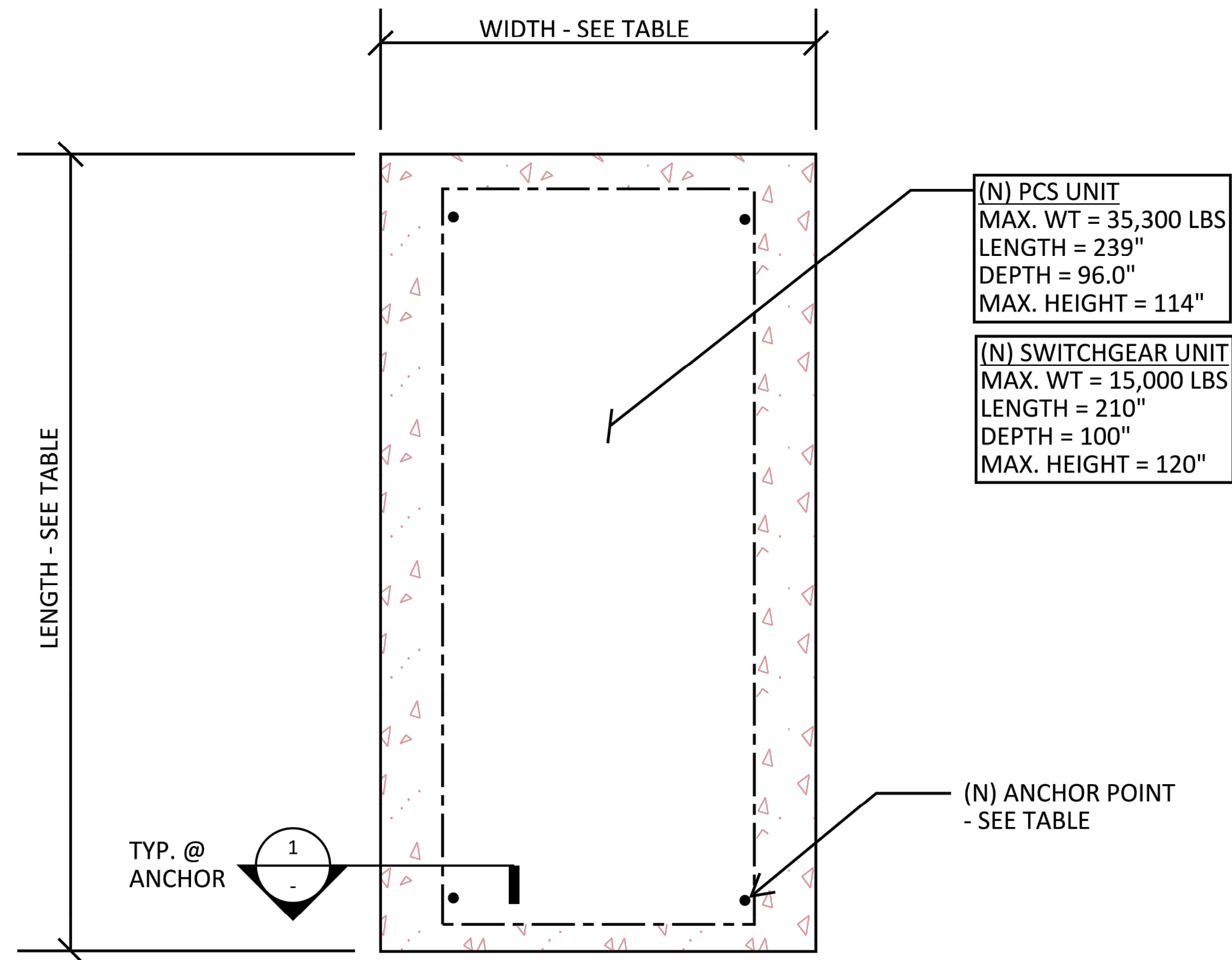
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 SPECS 01

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- NOTES:
 1. CONCRETE PAD SHALL ACHIEVE MIN. 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI
 2. ALIGN CENTER OF THE UNIT TO THAT OF THE CONCRETE PAD



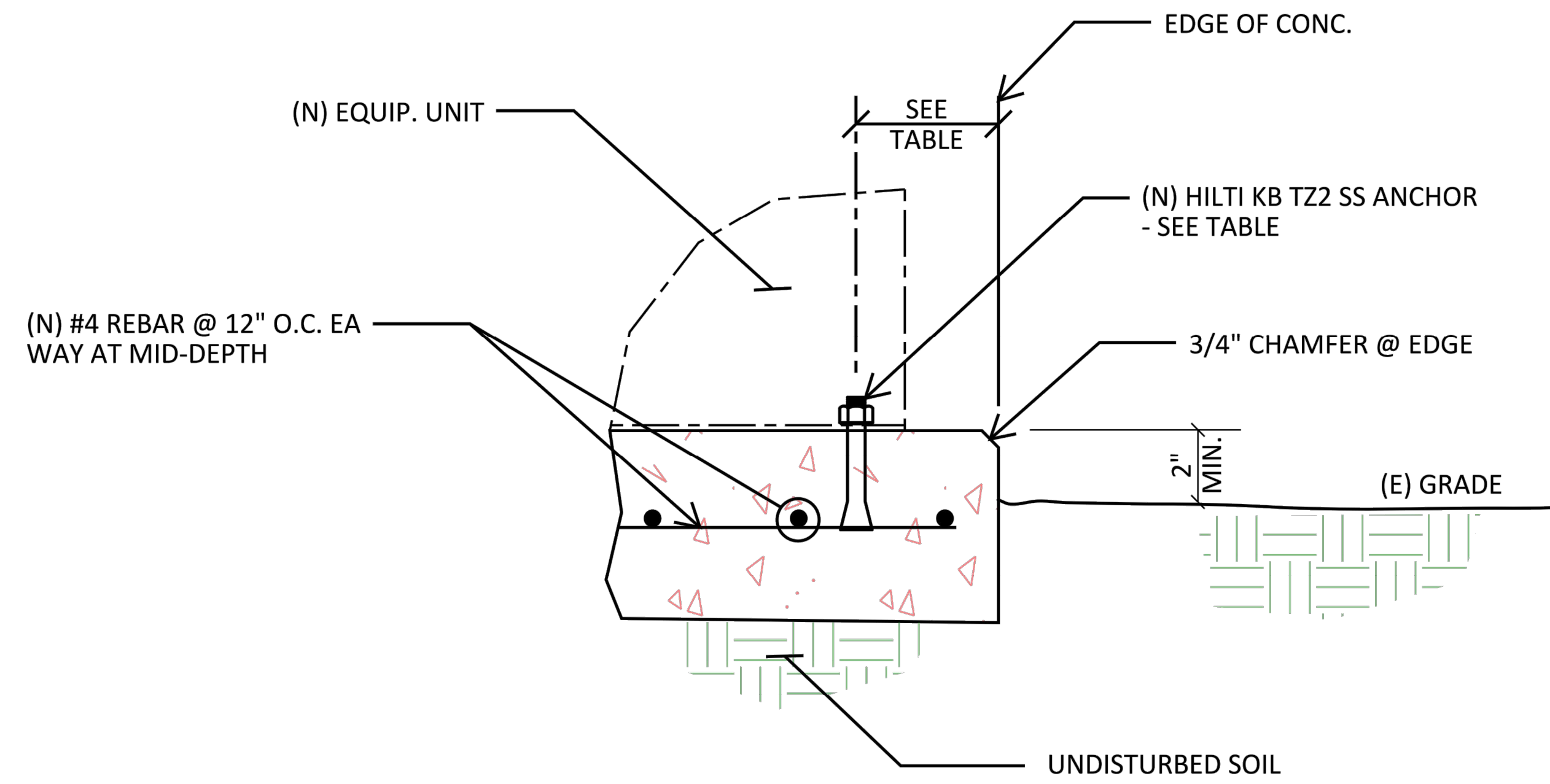
PCS & SWITCHGEAR UNIT LAYOUT
 N.T.S.

| EQUIPMENT PAD TABLE | | | |
|---------------------|--------|--------|-----------|
| CONCRETE PAD | LENGTH | WIDTH | THICKNESS |
| 1 BESS UNIT | 64'-0" | 13'-4" | 8" |
| PCS UNIT | 20'-6" | 8'-8" | |
| SWITCHGEAR | 18'-2" | 9'-0" | |

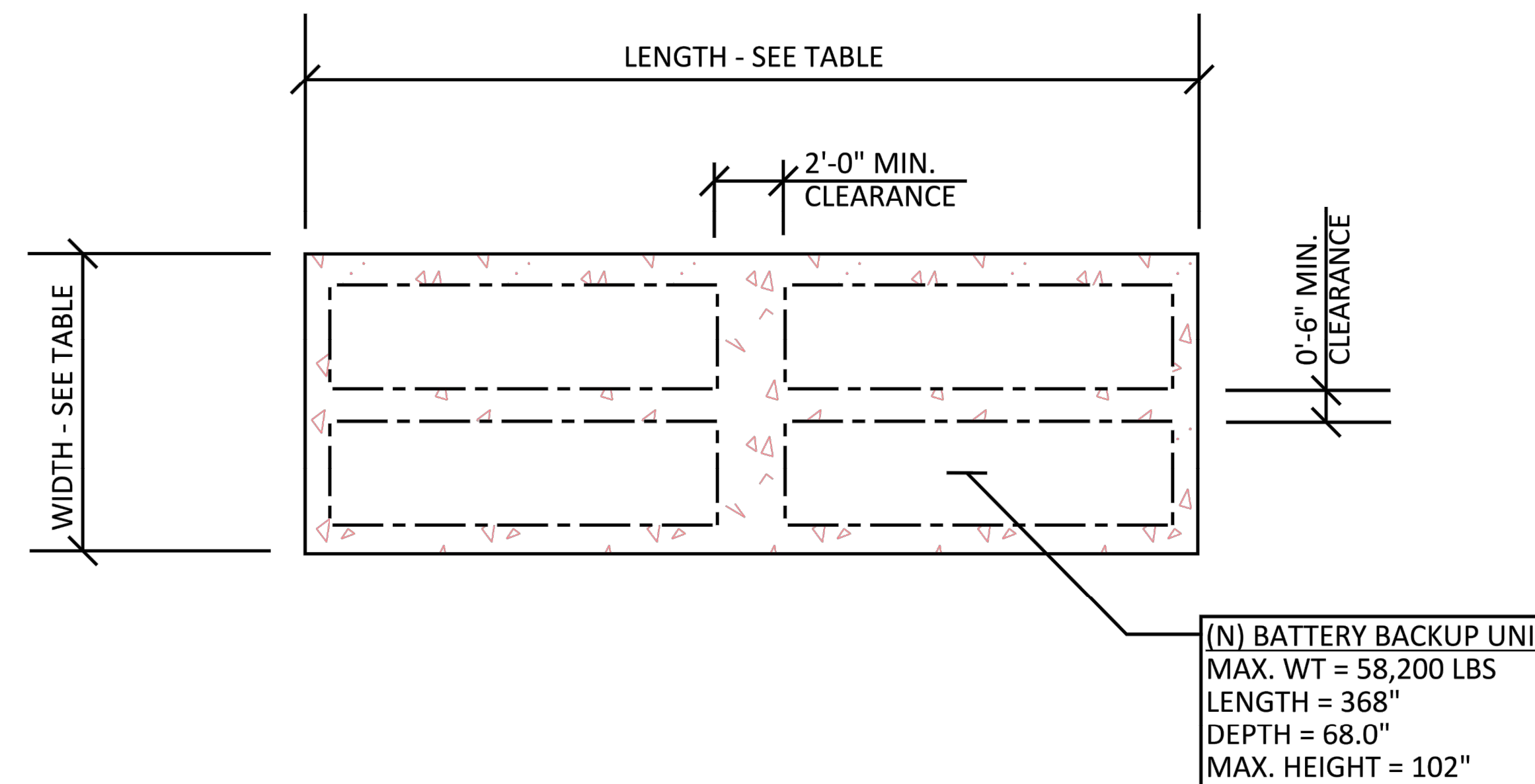
| EQUIPMENT ANCHORAGE TABLE | | | | |
|---------------------------|------|--------------|-----------------|------|
| ANCHORAGE | DIA. | NOMINAL EMB. | MIN. EDGE DIST. | QTY. |
| 2 BESS UNIT | 5/8" | 4 1/2" | 4" | 8 |
| PCS UNIT | | 3 1/4" | | 6 |
| SWITCHGEAR | | 2 1/2" | | |

1 PAD ACCOUNTS FOR (4) BESS UNITS IN 2 BY 2 LAYOUT AS SHOWN
 2 ANCHORAGE ACCOUNTS FOR (1) BESS UNIT EACH

2
 -



1 SECTION
 - N.T.S.



2 BESS LAYOUT
 - N.T.S.

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SCALE: AS NOTED
 (PRINT ON 36"X24")

| AR | L | 90% | 01/03/24 |
|----|-----|---------------|----------|
| RK | K | REDLINES | 12/07/23 |
| RK | J | 60% UPDATE | 10/05/23 |
| RK | H | 60% UPDATE | 7/31/23 |
| RK | G | 60% UPDATE | 07/27/23 |
| ST | F | REDLINES | 06/12/23 |
| ST | E | REDLINES | 05/23/23 |
| CB | D | 60% | 05/11/23 |
| CB | C | 30% | 04/12/23 |
| CB | B | INTXN DRAFT 2 | 02/09/23 |
| CB | A | INTXN DRAFT 1 | 02/08/23 |
| BY | REV | ISSUE | DATE |

FIRM NAME AND ADDRESS
 HYDE RENEWABLES, INC
 4735 WALNUT ST, SUITE #110
 BOULDER, CO 80301
 INFO@HYDERENEWABLES.COM
 720-900-1009
 WWW.HYDERENEWABLES.COM

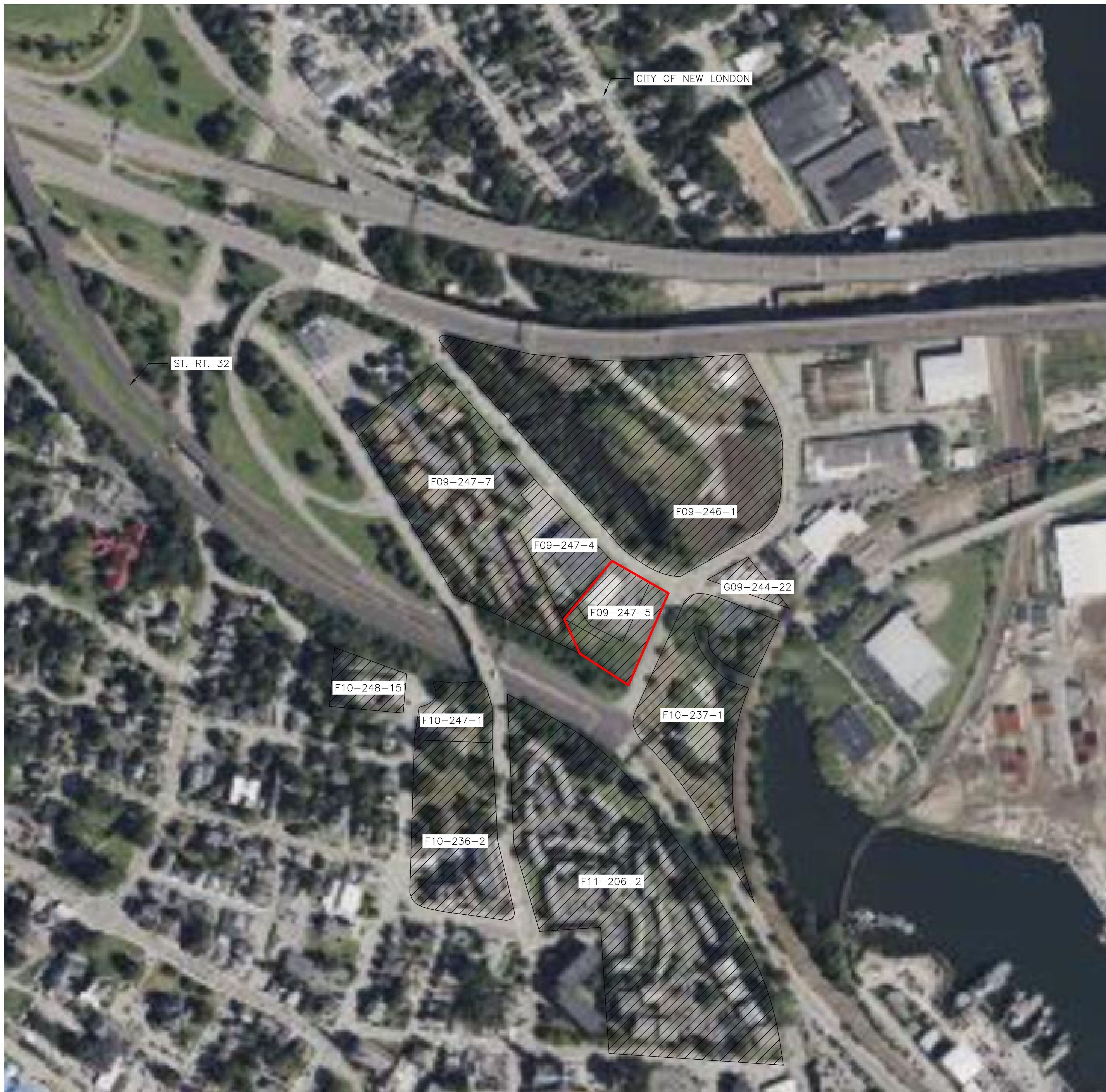
PROJECT NAME AND ADDRESS
 Q CELLS
 STATE PIER RD
 STATE PIER RD
 NEW LONDON, CT 06320
 LAT=N 41° 21'38.4"
 LON=W 72° 05'56.0"

PROJECT #: 069-1000

SHEET TITLE
 STRUCTURAL

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | S.000 |
| CHECKED BY TRIPP HYDE | |

ABUTTER MAP



ABUTTER LIST

| SITE VICINITY MAP | | |
|--|----------------------------|-------------|
| BUSINESS NAME | ADDRESS | PROPERTY ID |
| CEFALU NEW LONDON LLC | 163 STATE PIER ROAD | F10-247-5 |
| CITY OF NEW LONDON | 40 CRYSTAL AVENUE | F09-246-1 |
| KERNOZEK HOLDING COMPANY LLC | 6 STATE PIER ROAD | G09-244-22 |
| CITY OF LONDON | CRYSTAL AVENUE | F10-237-1 |
| STATE OF CONNECTICUT | CONNECTICUT STATE ROUTE 32 | STATE ROUTE |
| VESTA WINTHROP | 59 FEDERAL STREET | F11-206-2 |
| CHILD AND FAMILY AGENCY OF SOUTHEASTERN CT | 255 HEMPSTEAD STREET | F10-247-1 |
| STATE OF CONNECTICUT | 264 HEMPSTEAD STREET | F10-248-15 |
| VESTA WINTHROP GROUP LLC | HUNTINGTON STREET | F09-247-07 |
| ERIC FILARDI REALTY LLC | 145 STATE PIER ROAD | F09-247-4 |



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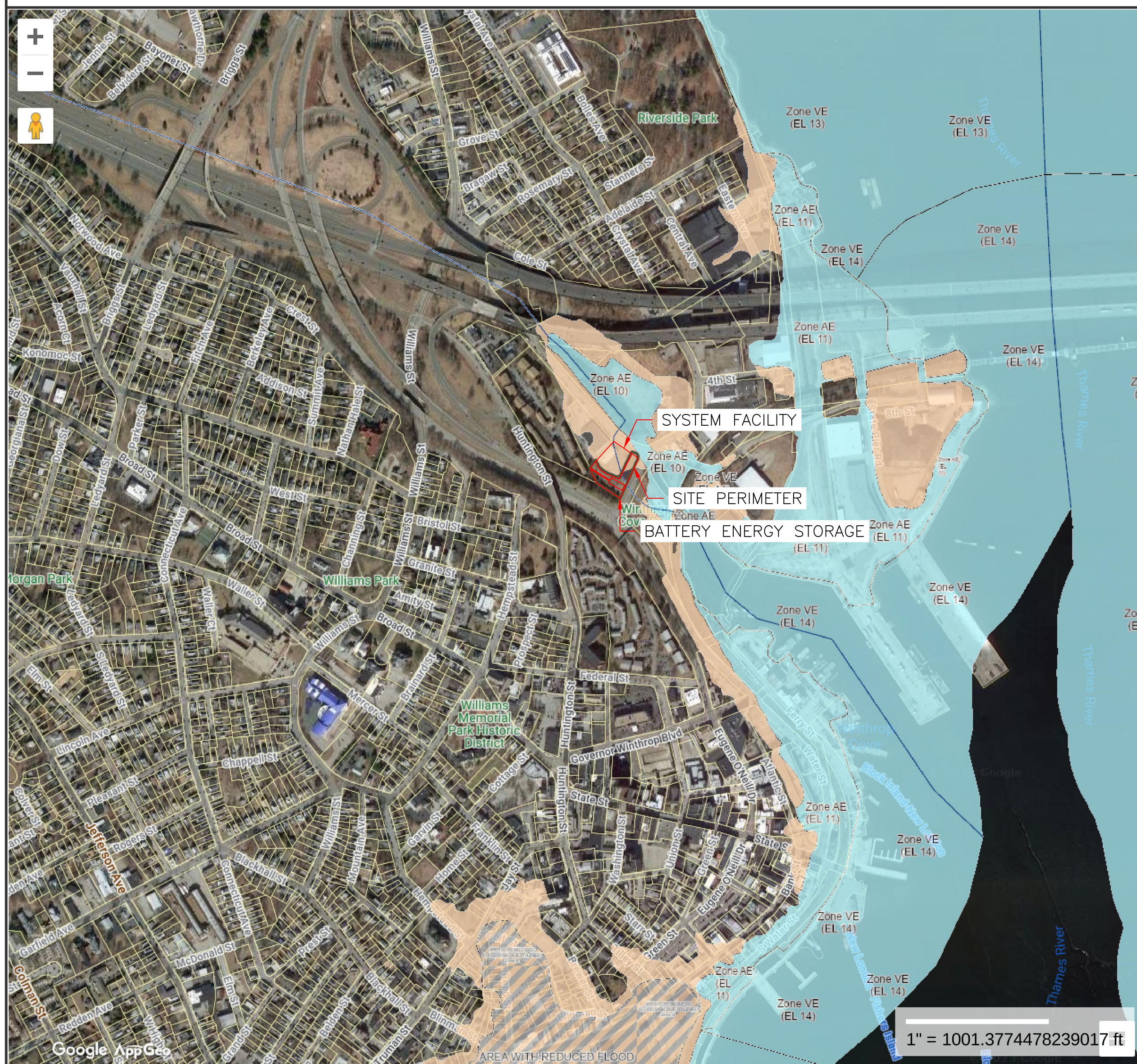
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SHEET TITLE
 SITE VICINITY MAP

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.500 |
| CHECKED BY TRIPP HYDE | |

FEMA Flood Zones



Property Information
Property ID 95-F10-247-5A
Location STATE PIER RD
Owner CEFALU NEW LONDON LLC



**MAP FOR REFERENCE ONLY
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Geometry updated 05/31/2017
 Data updated 09/21/2023

Print map scale is approximate.
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Map Theme Legends

FEMA Flood Zones

- Cross-Sections
- Coastal Transects
- Limit of Moderate Wave Action
- ☐ Coastal Barrier Resources System Area
- ~ Base Flood Elevations
- Flood Hazard Zones**
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood
- Area with Reduced Risk Due to Levee

FEMA Map Service Center



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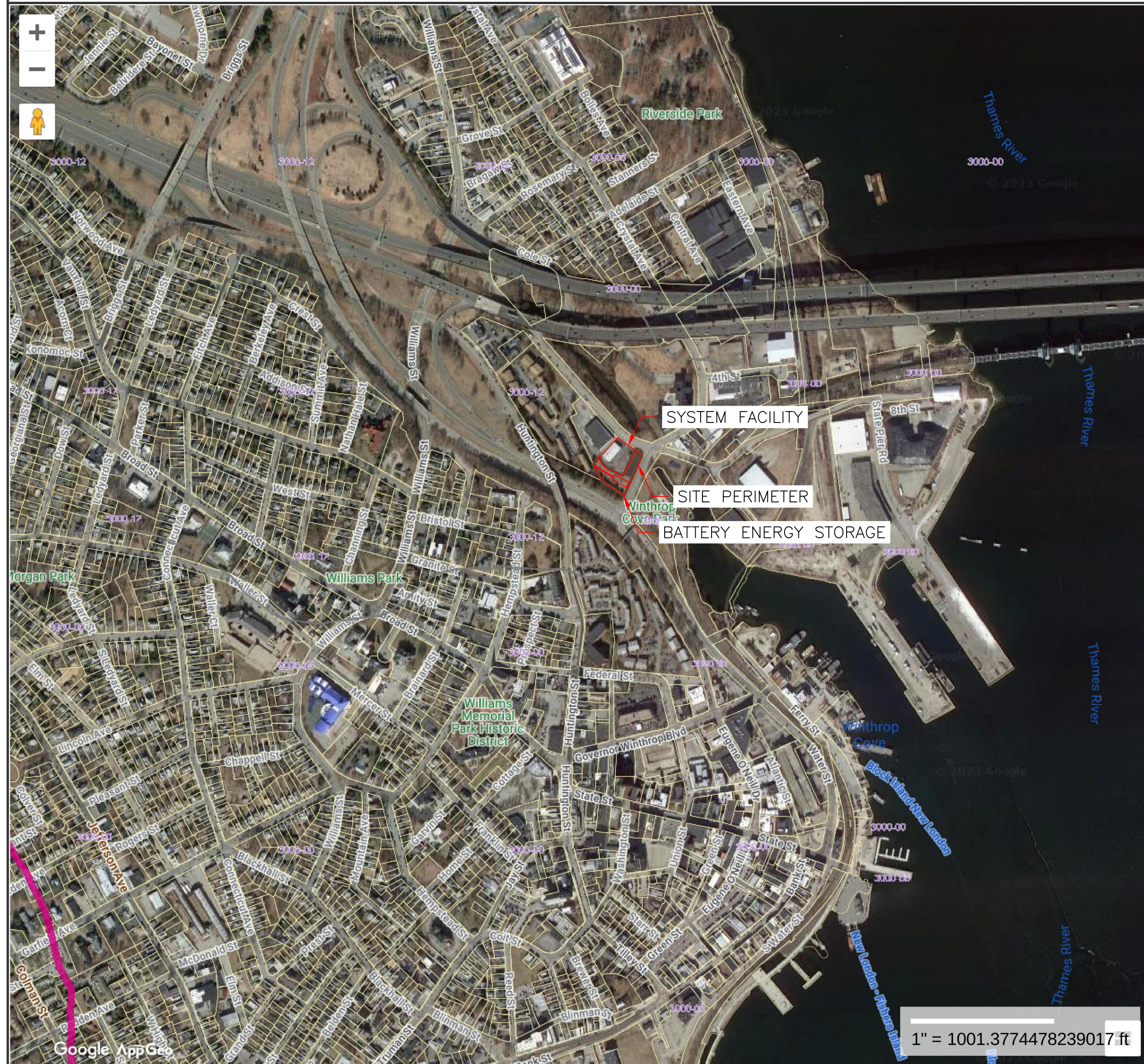
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 NEW LONDON, CT 06320
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PROJECT #: 069-1000

SHEET TITLE
 ENVIRONMENTAL
 RESOURCES

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | E.501 |
| CHECKED BY TRIPP HYDE | |

Watersheds



Map Theme Legends

Watersheds

- Major Basin
- Regional Basin
- Subregional Basin
- Local Basin

[Local Drainage Basins Line](#)

Property Information
Property ID 95-F10-247-5A
Location STATE PIER RD
Owner CEFALU NEW LONDON LLC



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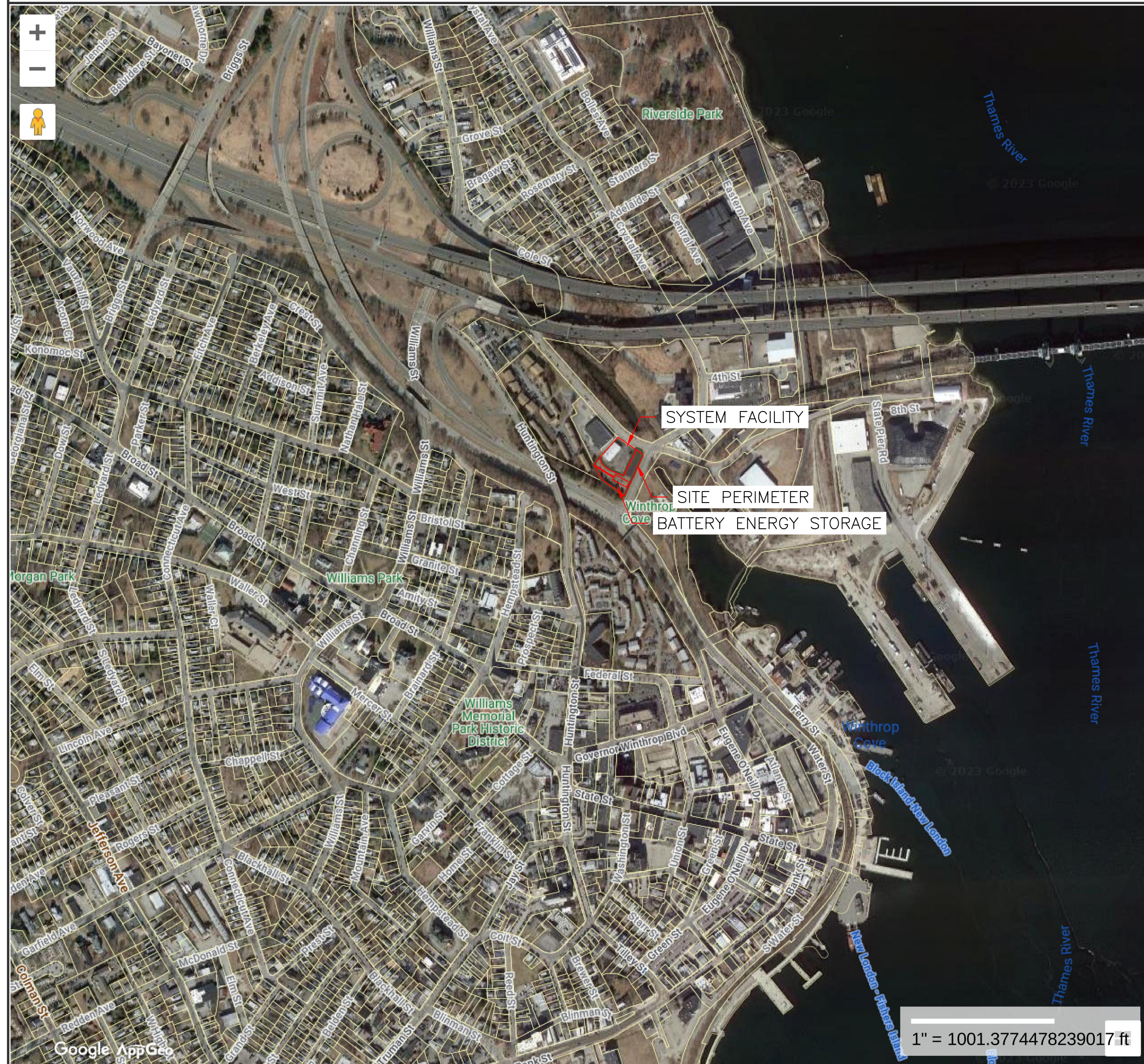
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PROJECT #: 069-1000

SHEET TITLE
 ENVIRONMENTAL
 RESOURCES 2

| | |
|--------------------------|---------|
| DRAWN BY | SHEET # |
| DATE | E.502 |
| CHECKED BY TRIPP HYDE | |

State Wetlands



Property Information
Property ID 95-F10-247-5A
Location STATE PIER RD
Owner CEFALU NEW LONDON LLC



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Map Theme Legends

State Wetlands

- Poorly Drained and Very Poorly Drained Soils
- Alluvial and Floodplain Soils

CT DEEP



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PROJECT #: 069-1000

SHEET TITLE
 ENVIRONMENTAL
 RESOURCES 3

| DRAWN BY | SHEET # |
|--------------------------|---------|
| DATE | E.503 |
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