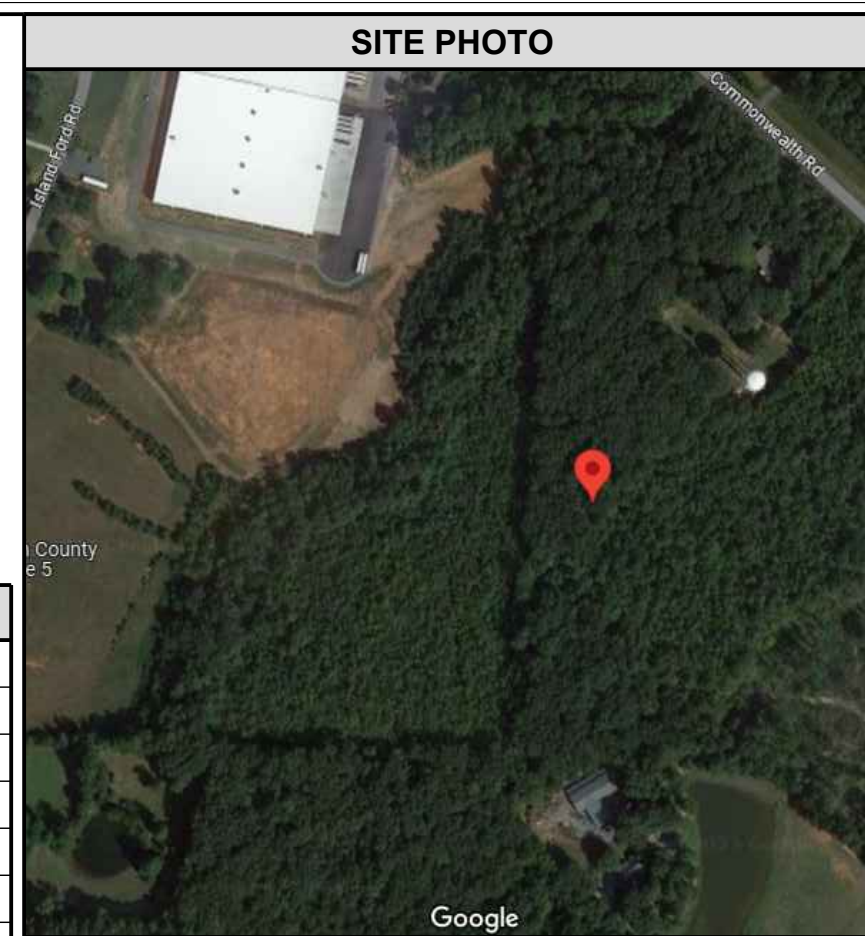



SITE NAME:
RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317

LATITUDE & LONGITUDE:
N 35° 49' 16.73", W 79° 49' 53.86"



PREPARED BY:



3227 WELLINGTON COURT
 RALEIGH, NC 27615
 919-782-2710
 www.ets-pltc.com



SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317

LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

INDEX OF SHEETS

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GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SCOPE OF WORK

PROPOSED SCOPE OF WORK: INSTALL CHAIN-LINK FENCED COMPOUND WITH A 390'± SELF-SUPPORT TOWER, 11'-6"x19'-6" PREFABRICATED EQUIPMENT SHELTER, GENERATOR, UTILITY H-FRAME, METER AND DISCONNECT.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE FOLLOWING CODES:

- 2018 N.C. BUILDING CODE (2015 IBC W/ AMENDMENTS)
- 2018 N.C. EXISTING BUILDING CODE (2015 IEBC W/ AMENDMENTS)
- 2018 N.C. FIRE CODE (2015 IFC W/ AMENDMENTS)
- 2018 N.C. FUEL GAS CODE (2015 IFGC W/ AMENDMENTS)
- 2018 N.C. MECHANICAL CODE (2015 IMC W/ AMENDMENTS)
- 2018 N.C. PLUMBING CODE (2015 IPC W/ AMENDMENTS)
- 2020 N.C. ELECTRICAL CODE (2020 NEC)



SITE SUMMARY

| | |
|-------------------------|------------------------------------|
| SITE TYPE: | NEW CONSTRUCTION |
| STRUCTURE TYPE: | SELF-SUPPORT TOWER |
| STRUCTURE OWNER: | RANDOLPH COUNTY EMERGENCY SERVICES |
| STRUCTURE HEIGHT (AGL): | 390'± |
| OCCUPANCY TYPE: | UTILITY & MISCELLANEOUS (U) |
| STRUCTURE LATITUDE: | N 35° 49' 16.73" (35.821314°) |
| STRUCTURE LONGITUDE: | W 79° 49' 53.86" (-79.831628°) |
| JURISDICTION: | CITY OF RANDLEMAN |
| COUNTY: | RANDOLPH |
| PARCEL ID: | 7755346808 |
| GROUND ELEV. (NAVD 88): | 739.7' |

SEAL: FIRM #: P-1016

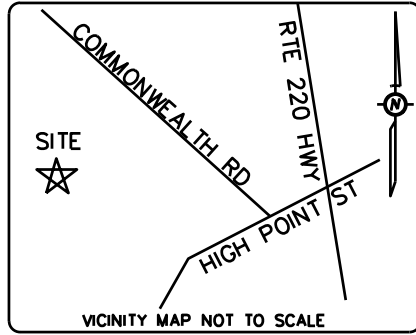


| REV | DATE | DETAILS |
|-----|------------|--------------|
| 0 | 10/14/2024 | CONSTRUCTION |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |

DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
TITLE PAGE

SHEET # **T-1** CURRENT REV # **0**
 ETS #: 23119943



PARENT PARCEL INFORMATION:
 OWNER: CITY OF RANDLEMAN
 931 COMMONWEALTH RD
 RANDLEMAN NC 27317
 PIN 7755356250
 DEED BOOK 1479 PAGE 497

FAA 1-A INFORMATION:

LATITUDE: 35° 49' 16.73" N
 LONGITUDE: 79° 49' 53.86" W

GROUND ELEVATION AT BASE OF
 PROPOSED TOWER 739.7'

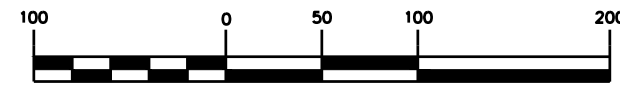
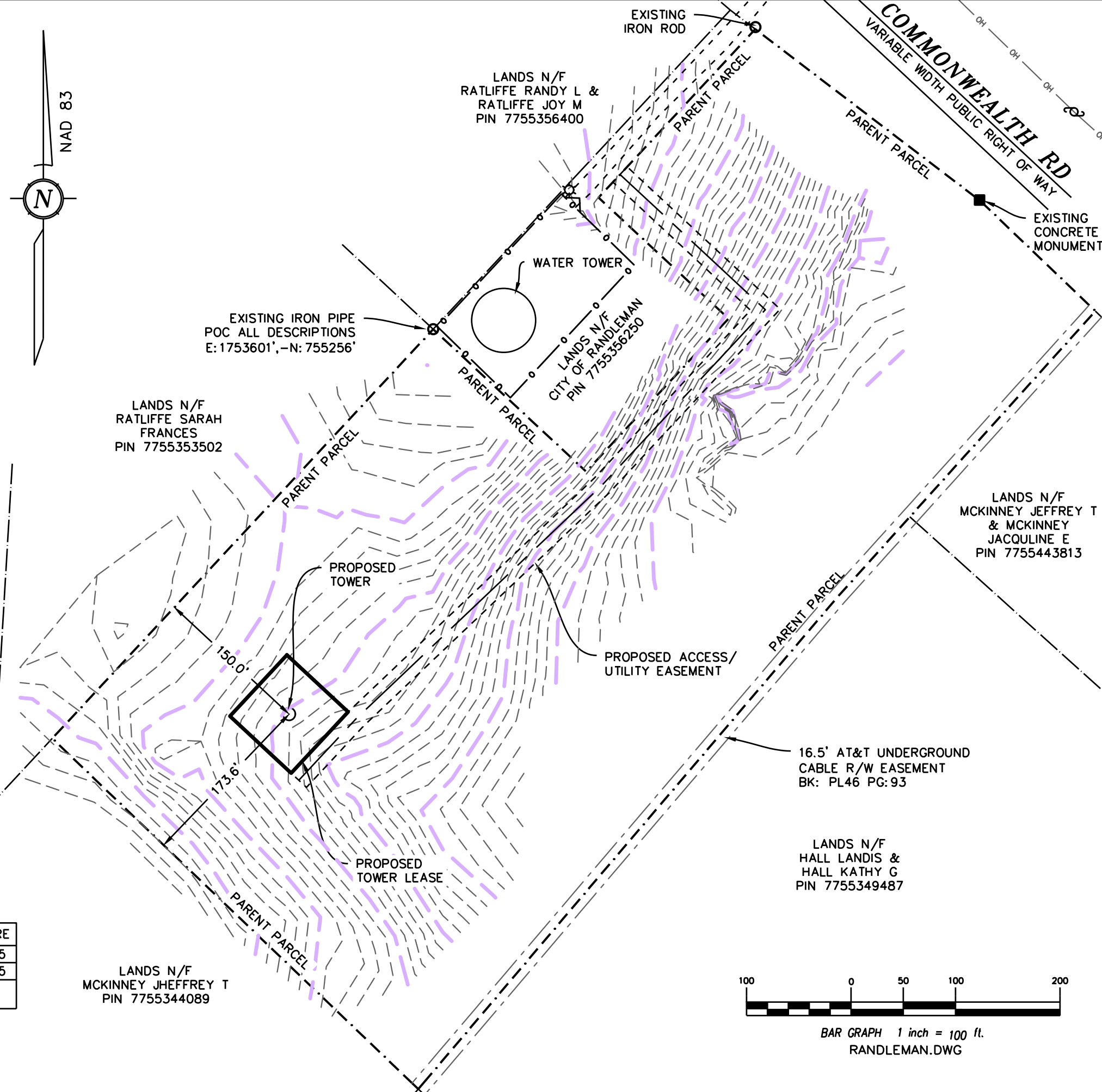
ZONING: R-1

THIS PARCEL OF LAND LIES WITHIN FLOOD
 ZONE X WHICH IS NOT A SPECIAL FLOOD
 HAZARD AREA AS PER F.I.R.M. PANEL
 NUMBER: 3710774400J
 EFFECTIVE DATE: 1/2/2008

LEGEND:

- :SET 5/8" REBAR, OR AS NOTED
- :FOUND 1/2" REBAR, OR AS NOTED
- :FOUND MONUMENT, OR AS NOTED
- (---) :RECORD DESCRIPTION DATA
- P.O.T. :POINT OF TERMINUS
- P.O.B. :POINT OF BEGINNING
- P.O.C. :POINT OF COMMENCEMENT
- :FENCE AS NOTED
- OH— :OVER HEAD UTILITY LINES
- :WOOD UTILITY POLE
- :ELECTRIC TRANSFORMER
- :TELCO PEDESTAL
- ⊕ :HAND HOLE
- N/A :NOT AVAILABLE
- N/F :LANDS NOW/FORMERLY
- ⚡ :FLOOD LIGHT
- ◇ :UNDERGROUND FIBER MARKER

| AREA | SQUARE FEET | ACRE |
|--------------------------------------|-------------|------|
| PARENT PARCEL | 407,206 | 9.35 |
| PROPOSED TOWER LEASE | 6,400 | 0.15 |
| PROPOSED ACCESS /UTILITY EASEMENT | | |



BAR GRAPH 1 inch = 100 ft.
 RANDLEMAN.DWG

**RAW LAND SURVEY
 ENGINEERED
 TOWER
 SOLUTIONS**

SITE: RANDLEMAN
SITE #: TBD
ADDRESS: 931 COMMONWEALTH RD
RANDLEMAN NC 27317
RANDOLPH COUNTY

NATIONAL SURVEY SERVICES COORDINATION BY:

**G E O L I N E
 SURVEYING, INC.**

13430 NW 104th Terrace, Suite A Alachua, FL 32615
 Office:(386) 418-0500 Fax:(386) 462-9986
 WWW.GEOLINEINC.COM

SURVEY WORK PERFORMED BY:

**JONATHAN
 MURPHY**

Professional Land Surveying
 10505 Leafwood Place (919) 280-8189
 Raleigh NC 27613 FAX 995-9616
 E-MAIL : roleigh@murphygeomatics.com FIRM C-2757

SURVEYOR'S NOTES

1. BASIS OF BEARING:
 NC GRID NAD83
2. NO SUBSURFACE INVESTIGATION WAS
 PERFORMED TO LOCATE UNDERGROUND
 UTILITIES. UTILITIES SHOWN HEREON ARE
 LIMITED TO AND ARE PER OBSERVED
 EVIDENCE ONLY.
3. THIS SURVEY DOES NOT REPRESENT A
 BOUNDARY SURVEY OF THE PARENT PARCEL.
4. ALL VISIBLE TELECOM EQUIPMENT AND
 IMPROVEMENTS ARE CONTAINED WITHIN THE
 DESCRIBED AREA.
5. ALL SYMBOLS SHOWN HEREON NOT
 DEPICTED TO SCALE.

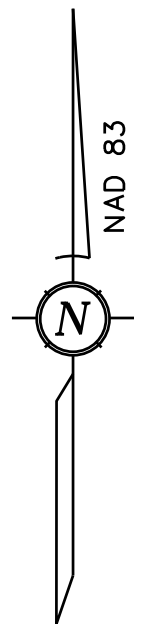
SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY TO:
 XXXXX

MURPHY GEOMATICS

JONATHAN MURPHY
 LAND SURVEYOR -
 DATE:

FIELD DATE: 07/20/2023



RAW LAND SURVEY ENGINEERED TOWER SOLUTIONS

SITE: RANDLEMAN
SITE #: TBD
ADDRESS: 931 COMMONWEALTH RD
RANDLEMAN NC 27317
RANDOLPH COUNTY

NATIONAL SURVEY SERVICES COORDINATION BY:

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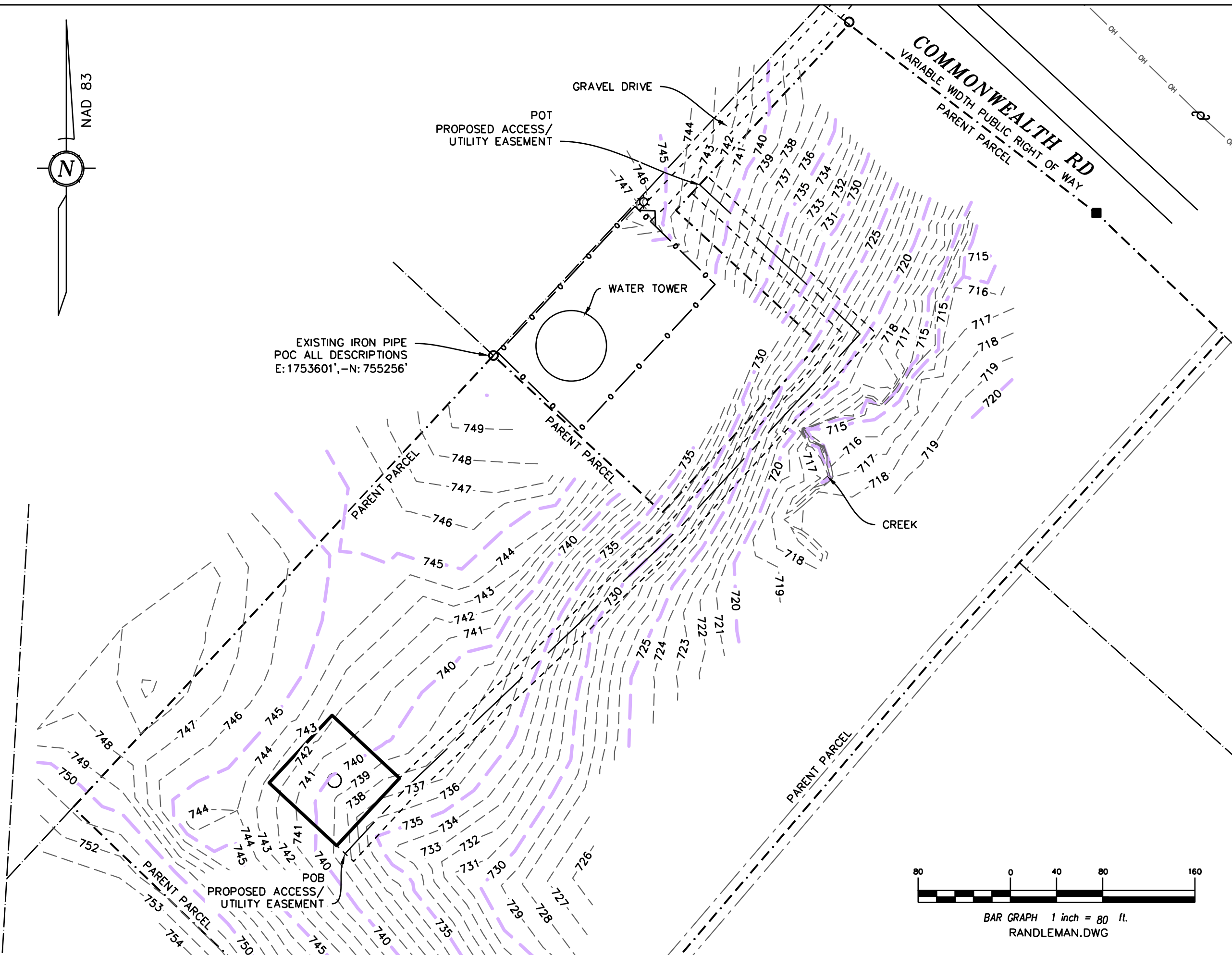
SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY TO:
XXXXX

MURPHY GEOMATICS

JONATHAN MURPHY
LAND SURVEYOR -
DATE:

FIELD DATE: 07/20/2023



BAR GRAPH 1 inch = 80 ft.
RANDLEMAN.DWG

**RAW LAND SURVEY
ENGINEERED
TOWER
SOLUTIONS**

SITE: RANDLEMAN
SITE #: TBD
ADDRESS: 931 COMMONWEALTH RD
RANDLEMAN NC 27317
RANDOLPH COUNTY

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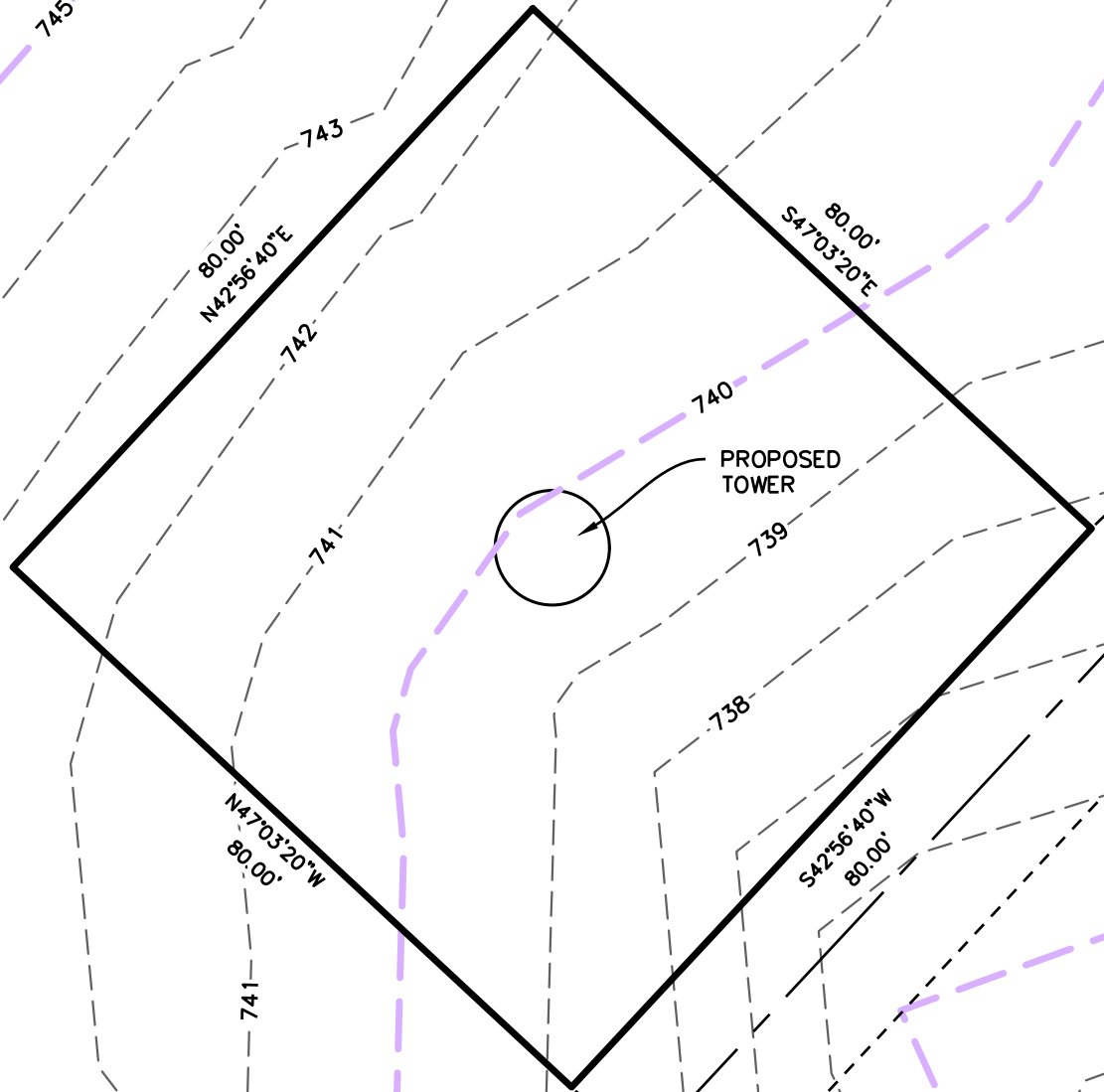
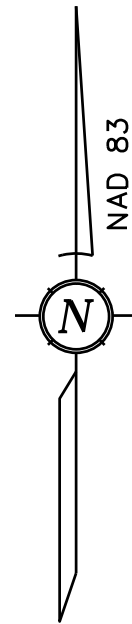
SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY TO:
XXXXX

MURPHY GEOMATICS

JONATHAN MURPHY
 LAND SURVEYOR -
 DATE:

FIELD DATE: 07/20/2023



PROPOSED
TOWER



BAR GRAPH 1 inch = 20 ft.
 RANDLEMAN.DWG

**RAW LAND SURVEY
ENGINEERED
TOWER
SOLUTIONS**

**SITE: RANDLEMAN
SITE #: TBD
ADDRESS: 931 COMMONWEALTH RD
RANDLEMAN NC 27317
RANDOLPH COUNTY**

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SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY TO:
XXXXX

MURPHY GEOMATICS

JONATHAN MURPHY
LAND SURVEYOR –
DATE:

LEGAL DESCRIPTIONS
TO BE WRITTEN UPON
CLIENT ADVISEMENT

TITLE REVIEW
UPON CLIENT
ADVISEMENT

GENERAL NOTES

1. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND CARRIER PROJECT SPECIFICATIONS.
2. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND SHALL CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED IN THESE DRAWINGS.
6. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISHED SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN IN THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
9. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
10. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
11. ERECTION SHALL BE DONE IN WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED IN THE DRAWINGS.
12. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
13. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
14. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
16. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
17. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
19. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
20. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NO LESS THAN 2-A OR 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

GENERAL NOTES

21. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
22. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
23. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
24. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
25. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
26. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
27. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
28. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
29. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
30. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
31. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
32. STRUCTURE IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY CARRIER TECHNICIANS.
33. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
34. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST CARRIER GROUNDING STANDARD. IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
35. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
36. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
37. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
38. ALL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.


ANTENNA MOUNTING NOTES

40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANS/TIA-222 OR APPLICABLE LOCAL CODES.
41. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
42. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
46. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
47. CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.

TORQUE REQUIREMENTS

48. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
49. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
 - A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
 - B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
50. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
51. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
52. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
53. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4-29.8 NM).
54. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7-2.3 NM).

PREPARED BY:



3227 WELLINGTON COURT
RALEIGH, NC 27615
919-782-2710
www.ets-pltc.com

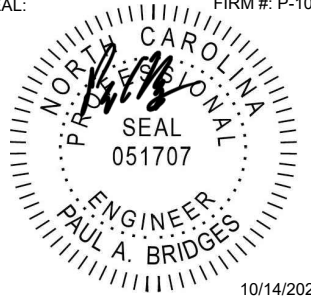
PREPARED FOR:



SITE NAME:
RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL: FIRM #: P-1016



10/14/2024

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SHEET TITLE:
GENERAL NOTES I

SHEET # **GN-1** CURRENT REV #: 0
ETS #: 23119943

COAXIAL CABLE NOTES

- 54. TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- 55. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.
- 56. ALL JUMPERS TO THE ANTENNAS SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".
- 57. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
- 58. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
- 59. CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH INDUSTRY STANDARDS.

GENERAL CABLE AND EQUIPMENT NOTES

- 60. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- 61. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- 62. CONTRACTOR SHALL REFERENCE THE STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- 63. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- 64. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
 - A. TEMPERATURE SHALL BE ABOVE 50° F.
 - B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
 - C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
 - D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
- 65. ALL PROPOSED GROUND BAR DOWNLOADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLOADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- 66. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2" [0.38M].
- 67. 90 SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST ONLY TRANSITION ON THE INSIDE OR BOTTOM OF ARMS (NO CABLE ON TOP OF ARMS).
- 68. USE 90 CONNECTOR AT CABLE CONNECTION TO ANTENNAS.
- 69. PLACE GPS ON ARM WITH SOUTHERN SKY EXPOSURE AT MINIMUM 6' [1.83] FROM TRANSMIT ANTENNA, WHICH IS 24" [.61M] AWAY FROM CENTER OF POLE.
- 70. USE 1/2" [0.13M] CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
- 71. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

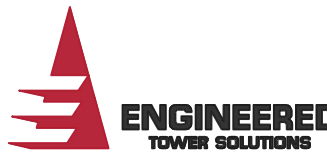
FIBER & POWER CABLE MOUNTING

- 73. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- 74. THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- 75. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

ABBREVIATIONS

| | | | |
|----------|---|------|--|
| A/C | AIR CONDITIONING | MCR | MANAGER |
| AFF | ABOVE FINISHED FLOOR | MIN | MINIMUM |
| AGL | ABOVE GROUND LEVEL, | MISC | MISCELLANEOUS |
| | ABOVE GRADE LEVEL | NA | NOT APPLICABLE |
| AWS | ADVANCED WIRELESS SERVICE | NIC | NOT IN CONTRACT |
| BBU | BATTERY BACKUP UNIT | NO | NUMBER |
| BLDG | BUILDING | NTS | NOT TO SCALE |
| BLK | BLOCKING | OC | ON CENTER |
| CLG | CEILING | OD | OUTSIDE DIAMETER |
| CLR | CLEAR | PCS | PERSONAL COMMUNICATION SERVICE |
| CONC | CONCRETE | PDS | POWER DISTRIBUTION UNIT |
| CONT | CONTINUOUS | PROJ | PROJECT |
| D | DEPTH | PROP | PROPERTY |
| DBL | DOUBLE | PT | PRESSURE TREATED |
| DEG | DEGREE | PVC | POLYVINYL CHLORIDE |
| Φ, DIA | DIAMETER | REQ | REQUIRED |
| DIAG | DIAGONAL | RF | RADIO FREQUENCY |
| DN | DOWN | RM | ROOM |
| DET | DETAIL | RO | ROUGH OPENING |
| DWG | DRAWING | RRJ | REMOTE RADIO HEAD |
| E | EXISTING | SHT | SHEET |
| EA | EACH | SIM | SIMILAR |
| ELEV, EL | ELEVATION | SPEC | SPECIFICATION |
| ELEC | ELECTRICAL | SF | STAINLESS STEEL |
| EQ | EQUAL | SS | STAINLESS STEEL |
| EQUIP | EQUIPMENT | STL | STEEL |
| EXT | EXTERIOR | SUSP | SUSPENDED |
| FIF | FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME | TMA | TOWER MOUNTED AMPLIFIER |
| FIN | FINISH | TND | TINNED |
| FLOUR | FLUORESCENT | TYP | TYPICAL |
| FLR | FLOOR | UMTS | UNIVERSAL MOBILE TELECOMMUNICATION SERVICE |
| FT | FOOT, FEET | UNO | UNLESS NOTED OTHERWISE |
| GA | GAUGE | VERT | VERTICAL |
| GALV | GALVANIZED | W/ | WITH |
| GC | GENERAL CONTRACTOR | W/O | WITHOUT |
| GRND | GROUND | WCS | WIRELESS COMMUNICATION SERVICE |
| GSM | GLOBAL SYSTEM MOBILE | WP | WATERPROOF |
| GYP | GYPSON BOARD | | |
| HORZ | HORIZONTAL | | |
| HR | HOOR | | |
| HT | HEIGHT | | |
| ID | INSIDE DIAMETER | | |
| IN | INCH, INCHES | | |
| INSUL | INSULATION | | |
| INT | INTERIOR | | |
| L | LENGTH | | |
| LBS | POUNDS | | |
| LTE | LONG TERM EVOLUTION | | |
| MAX | MAXIMUM | | |
| MECH | MECHANICAL | | |
| MTL | METAL | | |
| MFR | MANUFACTURER | | |

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RALEIGH, NC 27615
919-782-2710
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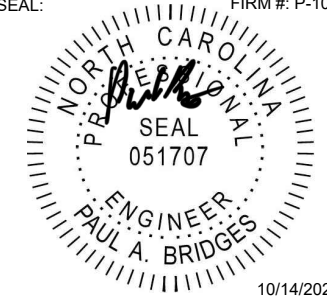
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SHEET TITLE:
GENERAL NOTES II

SHEET # **GN-2** CURRENT REV #: 0
ETS #: 23119943

STRUCTURAL STEEL NOTES

- THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 15TH EDITION.
- UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 STRUCTURAL STEEL:
 - ANGLE: ASTM A36
 - PIPE/TUBE: ASTM A500-50
 - PLATE: ASTM A36
 A. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
 B. ALL U-BOLTS, ASTM A193 GRADE B7
 C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
 D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
- ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 15TH EDITION.
- HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
- HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
- REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
- A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

BOLT TIGHTENING PROCEDURE

- CONNECTION BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2 OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:
 8.2.1 TURN-OF-THE-NUT TIGHTENING
 BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT IN A MANNER THAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS.
- TIGHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.

| BOLT LENGTHS UP TO AND INCLUDING FOUR DIA. | | |
|--|---|-----------------------------|
| 1/2" | BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 5/8" | BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH | +2/3 TURN BEYOND SNUG TIGHT |
| 3/4" | BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 7/8" | BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1" | BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING EIGHT DIA. | | |
| 1/2" | BOLTS 2.25 TO 4.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 5/8" | BOLTS 2.75 TO 5.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 3/4" | BOLTS 3.25 TO 6.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 7/8" | BOLTS 3.75 TO 7.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1" | BOLTS 4.25 TO 8.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

FOUNDATION NOTES

- FOUNDATION GENERAL NOTES**
- FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICES AND IN A GOOD WORKMANLIKE MANNER.
 - CONTRACTOR TO VERIFY DIMENSIONS WITH ORIGINAL TOWER DRAWINGS. ETS SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN FIELD MEASURED DIMENSIONS AND ORIGINAL TOWER DRAWINGS.
 - FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT THE DESIGN PARAMETERS ARE NOT APPLICABLE FOR THE SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
 - FOR FOUNDATION TOLERANCES, SEE ORIGINAL TOWER DRAWINGS.
 - THE FOUNDATION MODIFICATION DESIGN IS IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRINCIPLES AND PRACTICES WITHIN THE LIMITS OF SUBSURFACE DATA PROVIDED.
 - THE FOUNDATION DEPTH INDICATED IS BASED ON THE GRADE LINE DESCRIBED IN THE REFERENCE GEOTECHNICAL REPORT. FOUNDATION MODIFICATION MAY BE REQUIRED IN THE EVENT CUT OR FILL OPERATIONS HAVE TAKEN PLACE SUBSEQUENT TO THE GEOTECHNICAL INVESTIGATION.
 - THE FOUNDATION DESIGN ASSUMES THAT INSTALLATION METHODS WILL INCORPORATE THE PROCEDURES RECOMMENDED IN THIS REPORT.
 - THE FOUNDATION DESIGN ASSUMES FIELD INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS, AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS AT THE SITE.
 - THE FOUNDATION DESIGN ASSUMES NO CONSTRUCTION JOINTS, HOWEVER, CONSTRUCTION JOINTS SHALL BE PERMITTED UPON APPROVAL BY THE OWNER/ENGINEER.
- EXCAVATION**
- WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED PRIOR TO BEGINNING WORK.
 - THE SIDES OF THE EXCAVATION SHALL BE ROUGH AND FREE OF CUTTINGS.
 - LOOSE MATERIAL TO BE REMOVED FROM THE BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT.
- REINFORCING STEEL**
- THE REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615, GRADE 60. IT SHALL BE DEFORMED AND SPLICES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
 - WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
 - REINFORCING CAGES SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING AND THROUGHOUT PLACEMENT OF CONCRETE. WHEN TEMPORARY CASING IS UTILIZED, BRACING SHALL BE ADEQUATE TO RESIST FORCES OCCURRING FROM FLOWING CONCRETE DURING CASING EXCAVATION.
 - SPACERS SHALL BE ATTACHED INTERMITTENTLY THROUGHOUT THE ENTIRE LENGTH OF TIEBACK REINFORCING TO INSURE CONCENTRIC PLACEMENT OF CASING IN EXCAVATIONS.
 - MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3" UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3" MINIMUM COVER FOR REINFORCEMENT.
 - THE CONCRETE COVER FROM THE TOP OF THE FOUNDATION TO THE ENDS OF THE VERTICAL REINFORCEMENT SHALL NOT BE LESS THAN 3".
- CONCRETE**
- WORK SHALL BE IN ACCORDANCE WITH THE ACI 318-14, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY".
 - THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000-PSI IN 28 DAYS.
 - ANY CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED AS REQUIRED BY ACI 318-14.
 - PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318-14 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE.
 - CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
 - FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING THE SIDES OF THE EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING, OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
 - THE MAXIMUM SIZE OF THE AGGREGATE SHALL NOT EXCEED A SIZE SUITABLE FOR THE INSTALLATION METHODS UTILIZED OR 2/3-CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. THE MAXIMUM SIZE MAY BE INCREASED TO 2/3-CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS AND VOIDS.
- FINISHING**
- THE TOP OF THE FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH.
 - THE EXPOSED EDGES OF THE CONCRETE SHALL BE CHAMFERED 1" X 1".


FOUNDATION NOTES

- EPOXY NOTES**
- EPOXY AGENTS SHOULD BE ALLOWED TO CURE ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
 - ALL HARDWARE ASSEMBLY AND MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED; ANY CONTRADICTION BETWEEN THE MANUFACTURER'S RECOMMENDATIONS AND THESE DRAWINGS ARE TO BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER AND OWNER.
 - ANY CONTRACTOR INSTALLING ADHESIVE ANCHORING SYSTEMS SHALL BE TRAINED, IN PERSON BY A MANUFACTURER'S REPRESENTATIVE, ON THE PROPER INSTALLATION TECHNIQUES. THIS TRAINING SHALL INCLUDE PROPER DRILLING, HOLE CLEANING, AND INSTALLATION METHODS FOR THE ADHESIVE ANCHORING SYSTEM AND CONSTRUCTION CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCTED PRIOR TO CREWS STEPPING ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT MANUFACTURER REPRESENTATIVE TO SET UP TRAINING. ETS IS NOT RESPONSIBLE FOR ANY COST OCCURRED FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING.
- SOIL COMPACTION**
- SUBGRADE PREPARATION
 - SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
 - MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.
 - DO NOT STOCKPILE MATERIALS ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.
 - FOR SUBGRADES CONSISTING OF IN-PLACE NATIVE SOILS, SOILS SHALL BE FREE OF CUTTING AND OTHER LOOSE MATERIAL AND SHALL MEET THE MINIMUM BEARING CAPACITY REQUIREMENTS NOTES UNDER SOIL STRENGTH
 - FOR SUBGRADES CONSISTING OF PLACED STRUCTURAL FILL, STRUCTURAL FILL SHOULD BE PLACED IN 6 INCH LIFTS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS OBTAINED BY THE STANDARD PROCTOR METHOD
 - CONSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF ESTABLISHED GRADE AND CROSS-SECTION.
- SOIL STRENGTH**
- FOUNDATION DESIGN IS BASED ON A 2000 PSF SOIL BEARING CAPACITY. IF OTHER CONDITIONS EXIST, FOUNDATION SHALL BE REDESIGNED. CONTRACTOR SHALL HAVE SOIL BEARING CAPACITY VERIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES.

WELDING NOTES

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2015 "STRUCTURAL WELDING CODE-STEEL".
- ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
- CONTRACTOR SHALL RETAIN AN AWS CERTIFIED WELD INSPECTOR TO PERFORM VISUAL INSPECTIONS ON FIELD WELDS. A LETTER AND REPORT SHALL BE ISSUED TO THE CONTRACTOR. CONTRACTOR SHALL SUBMIT LETTER AND REPORT TO TOWER OWNER.
- GRIND THE SURFACE ADJACENT TO THE WELD FOR A DISTANCE OF 2" MINIMUM ALL AROUND. GRIND THE SURFACE OF THE ROD TO BE INSTALLED FOR A DISTANCE OF 2" MINIMUM ALL AROUND THE AREA TO BE WELDED. ENSURE BOTH AREAS ARE 100% FREE OF ALL GALVANIZING. SURFACES TO BE WELDED SHALL BE FREE FROM SCALE, SLAG, RUST, MOISTURE, GREASE OR ANY OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.
- DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW 0°F. WHEN THE TEMPERATURE IS BETWEEN 0°F AND 32°F, PREHEAT AND MAINTAIN THE STEEL IN THE VICINITY OF THE WELD AREA AT 70°F DURING THE WELDING PROCESS.
- DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
- FOR ALL WELDING, USE E70XX ELECTRODES.
- AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OR GRINDING SHALL RECEIVE A COLD-GALVANIZED COATING. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 3 MILS.

PREPARED BY:



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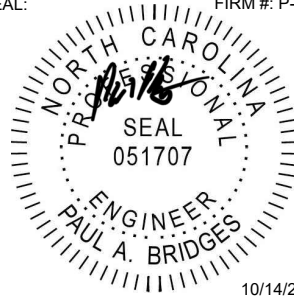
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SHEET TITLE: GENERAL NOTES III

SHEET # **GN-3** CURRENT REV #: 0
 ETS #: 23119943

**2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)**
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: RANDLEMAN
 Address: 931 COMMONWEALTH ROAD, RANDLEMAN, NC Zip Code 27317
 Owner/Authorized Agent: RANDOLPH COUNTY Phone # () - E-Mail
 Owned By: City/County Private State
 Code Enforcement Jurisdiction: City County RANDOLPH State

CONTACT:

| DESIGNER | FIRM | NAME | LICENSE # | TELEPHONE # | E-MAIL |
|--------------------------|----------------------------------|--------------|-----------|------------------|--------------------------|
| Architectural | Engineered Tower Solutions, PLLC | Paul Bridges | 0517075 | (336) 830-1660 | Paul.Bridges@ets-pll.com |
| Civil | | | | | |
| Electrical | | | | | |
| Fire Alarm | | | | | |
| Plumbing | | | | | |
| Mechanical | | | | | |
| Sprinkler-Standpipe | | | | | |
| Structural | | | | | |
| Retaining Walls >5' High | | | | | |
| Other | | | | | |

("Others" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC CODE FOR: New Construction Addition Renovation
 1st Time Interior Completion
 Shell/Core
 Phased Construction – Shell/Core
 Renovation

2018 NC EXISTING BUILDING CODE: Prescriptive Repair Chapter 14
 Alteration: Level I Level II Level III
 Historic Property Change of Use

CONSTRUCTED: (date) _____ ORIGINAL OCCUPANCY(S) (Ch. 3): _____
 RENOVATED: (date) _____ CURRENT OCCUPANCY(S) (Ch. 3): _____

RISK CATEGORY (table 1604.5) Current: I II III IV
 Proposed: I II III IV

BASIC BUILDING DATA
 Construction Type: I-A II-A III-A IV V-A
 (check all that apply) I-B II-B III-B V-B
 Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 13D
 Standpipes: No Yes Class I II III Wet Dry
 Fire District: No Yes (Primary) **Flood Hazard Area:** No Yes
 Special Inspections Required: No Yes

2018 NC Administrative Code and Policies

Appendix B for Building

Gross Building Area:

| FLOOR | EXISTING (SQ FT) | NEW (SQ FT) | RENO/ALTER (SQ.FT) | SUB-TOTAL |
|-----------|------------------|-------------|--------------------|-----------|
| 6th Floor | | | | |
| 5th Floor | | | | |
| 4th Floor | | | | |
| 3rd Floor | | | | |
| 2nd Floor | | | | |
| Mezzanine | | | | |
| 1st Floor | 0 | 219 | 0 | 219 |
| Basement | | | | |
| TOTAL | 0 | 219 | 0 | 219 |

ALLOWABLE AREA

Primary Occupancy Classification: SELECT ONE

Assembly A-1 A-2 A-3 A-4 A-5
 Business
 Educational
 Factory F-1 Moderate F-2 Low
 Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
 Institutional I-1 Condition 1 2
 I-2 Condition 1 2 3 4 5
 I-3 Condition 1 2 3 4 5
 I-4
 Mercantile
 Residential R-1 R-2 R-3 R-4
 Storage S-1 Moderate S-2 Low High-piled
 Parking Garage Open Enclosed Repair Garage
 Utility and Miscellaneous

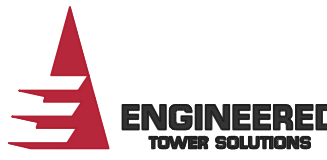
Accessory Occupancy Classification(s): _____
 Incidental Uses (Table 509): _____
 Special Uses (Chapter 4 – List Code Sections) _____
 Special Provisions: (Chapter 5 – List Code Sections): _____

Mixed Occupancy: No Yes Separation: _____ Hr. Exception: _____
 Non-Separated Use (508.3)
 The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
 Separated Use (508.4) -
 See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

$$\text{_____} + \text{_____} + \dots = \text{_____} \leq 1.00$$

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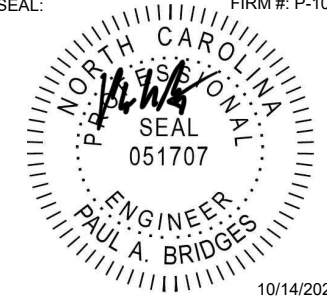
PREPARED FOR:



SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

SEAL: FIRM #: P-1016



10/14/2024

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SHEET TITLE:
NC APPENDIX B I

SHEET # **GN-4** CURRENT REV #: 0
 ETS #: 23119943

| STORY NO. | DESCRIPTION AND USE | (A) BLDG AREA PER STORY (ACTUAL) | (B) TABLE 506.24 AREA | (C) AREA FOR FRONTAGE INCREASE ^{1,5} | (D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3} |
|-----------|---------------------|-------------------------------------|--------------------------|--|---|
| 1 | Equip. Shelter | 219 | 5,500 | N/A | 5,500 |
| | | | | | |
| | | | | | |
| | | | | | |

- 1 Frontage area increases from Section 506.3 are computed thus:
- Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
 - Total Building Perimeter = _____ (P)
 - Ratio (F/P) = _____ (F/P)
 - W = Minimum width of public way = _____ (W)
 - Percent of frontage increase $I_f = 100 [F/P - 0.25] \times W/30 =$ _____ (%)
- 2 Unlimited area applicable under conditions of Section 507.
- 3 Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
- 4 The maximum area of open parking garages must comply with Table 406.5.4
- 5 Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

| | ALLOWABLE (TABLE 503) | SHOWN ON PLANS | CODE REFERENCE |
|--|-----------------------|----------------|----------------|
| Building Height in Feet (Table 504.3) | 40 | 9'-2" | |
| Building Height in Stories (Table 504.4) | 1 | 1 | |

- Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.
- The maximum height of air traffic control towers must comply with Table 412.3.1
- The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

| BUILDING ELEMENT | FIRE SEPARATION DISTANCE (FEET) | RATING | | DETAIL # AND SHEET # | DESIGN # FOR RATED ASSEMBLY | DESIGN # FOR RATED PENETRATION | DESIGN # FOR RATED JOINTS |
|--|---------------------------------|--------|-------------------------|----------------------|-----------------------------|--------------------------------|---------------------------|
| | | REQ'D | PROVIDED (W/REDUCTION)* | | | | |
| Structural Frame, including columns, girders, trusses | | N/A | | | | | |
| Bearing Walls | | | | | | | |
| Exterior | | | | VFP 207382 | | | |
| North | 10 | 1 | 2 | | | | |
| East | 10 | 1 | 2 | | | | |
| West | 10 | 1 | 2 | | | | |
| South | 10 | 1 | 2 | | | | |
| Interior | | N/A | | | | | |
| Nonbearing Walls and Partitions | | N/A | | | | | |
| Exterior walls | | N/A | | | | | |
| North | | N/A | | | | | |
| East | | N/A | | | | | |
| West | | N/A | | | | | |
| South | | N/A | | | | | |
| Interior walls and partitions | | N/A | | | | | |
| Floor Construction Including supporting beams and joists | 10 | 0 | 2 | VFP 207382 | | | |
| Floor Ceiling Assembly | | N/A | | | | | |
| Column Supporting Floors | | N/A | | | | | |
| Roof Construction, including supporting beams and joists | | N/A | | | | | |
| Roof Ceiling Assembly | | N/A | | | | | |
| Column Supporting Roof | | N/A | | | | | |
| Shaft Enclosures - Exit | | N/A | | | | | |
| Shaft Enclosures - Other | | N/A | | | | | |
| Corridor Separation | | N/A | | | | | |
| Occupancy/Fire Barrier Separation | | N/A | | | | | |
| Party/Fire Wall Separation | | N/A | | | | | |
| Smoke Barrier Separation | | N/A | | | | | |
| Smoke Partition | | N/A | | | | | |
| Tenant/Dwelling Unit/ Sleeping Unit Separation | | N/A | | | | | |
| Incidental Use Separation | | N/A | | | | | |

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

| FIRE SEPARATION DISTANCE (FEET FROM PERPROPERTY LINES) | DEGREES OF OPENINGS PROTECTION (TABLE 705.8) | ALLOWABLE AREA (%) | ACTUAL SHOWN ON PLANS (%) |
|--|--|--------------------|---------------------------|
| | | | |
| | | | |
| | | | |

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SHEET TITLE:

NC APPENDIX B II

SHEET # **GN-5** CURRENT REV #: 0
ETS #: 23119943

LIFE SAFETY SYSTEM REQUIREMENTS

- Emergency Lighting: No Yes
 Exit Signs: No Yes
 Fire Alarm: No Yes
 Smoke Detection Systems: No Yes Partial _____
 Carbon Monoxide Detection: No Yes

LIFE SAFETY PLAN REQUIREMENTS

- Life Safety Plan Sheet #: _____
- Fire and/or smoke rated wall locations (Chapter 7)
 - Assumed and real property line locations (if not on the site plan)
 - Exterior wall opening area with respect to distance to assumed property lines (705.8)
 - Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
 - Occupant loads for each area
 - Exit access travel distances (1017)
 - Common path of travel distances (1006.2.1 & 2006.3.2(1))
 - Dead end lengths (1020.4)
 - Clear exit widths for each exit door
 - Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
 - Actual occupant load for each exit door
 - A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
 - Location of doors with panic hardware (1010.1.10)
 - Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
 - Location of doors with electromagnetic egress locks (1010.1.9.9)
 - Location of doors equipped with hold-open devices
 - Location of emergency escape windows (1030)
 - The square footage of each fire area (202)
 - The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
 - Note any code exceptions or table notes that may have been utilized regarding the items above

| Section/Table/Note | Title |
|--------------------|-------|
| | |
| | |

ACCESSIBLE DWELLING UNITS (SECTION 1107)

| TOTAL UNITS | ACCESSIBLE UNITS REQUIRED | ACCESSIBLE UNITS PROVIDED | TYPE A UNITS REQUIRED | TYPE A UNITS PROVIDED | TYPE B UNITS REQUIRED | TYPE B UNITS PROVIDED | TOTAL ACCESSIBLE UNITS PROVIDED |
|-------------|---------------------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| | | | | | | | |

PREFABRICATED SHELTER SECTION NOT APPLICABLE

ACCESSIBLE PARKING (SECTION 1106)

| LOT OR PARKING AREA | TOTAL # OF PARKING SPACES | | # OF ACCESSIBLE SPACES PROVIDED | | | TOTAL # ACCESSIBLE PROVIDED |
|---------------------|---------------------------|----------|---------------------------------|-------------------|-----------------|-----------------------------|
| | REQUIRED | PROVIDED | REGULAR WITH 5' ACCESS AISLE | 132" ACCESS AISLE | 8' ACCESS AISLE | |
| | | | | | | |
| | | | | | | |
| TOTAL | | | | | | |

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

| USE | SPACE | WATERCLOSETS | | | URINALS | LAVATORIES | | | SHOWERS / TUBS | DRINKING FOUNTAINS | |
|---------|-------|--------------|--------|--------|---------|------------|--------|--------|----------------|--------------------|------------|
| | | MALE | FEMALE | UNISEX | | MALE | FEMALE | UNISEX | | REGULAR | ACCESSIBLE |
| EXIST'G | | | | | | | | | | | |
| NEW | | | | | | | | | | | |
| REQ'D | | | | | | | | | | | |

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

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SHEET TITLE:

NC APPENDIX B III

SHEET # **GN-6** CURRENT REV #: 0
 ETS #: 23119943

ENERGY SUMMARY

ENERGY REQUIREMENTS:
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: No Yes (The remainder of this section is not applicable)

Exempt Building: No Yes (Provide Code or Statutory reference): _____

Climate Zone: 3A 4A 5A

Method of Compliance: Energy Code Performance Prescriptive
 ASHRAE 90.1 Performance Prescriptive
 (If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
 Description of assembly: CONCRETE ROOF + (2) LAYERS OF 1-1/2" RIGID INSULATION + 3/4" PLYWOOD
 U-Value of total assembly: 0.10
 R-Value of insulation: 9.8
 Skylights in each assembly: _____
 U-Value of skylight: _____
 Total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
 Description of assembly: 4" CONCRETE + 1-1/2" RIGID INSULATION + 3/4" PLYWOOD
 U-Value of total assembly: _____
 R-Value of insulation: 9.8
 Openings (windows or doors with glazing)
 U-Value of assembly: _____
 Solar heat gain coefficient: _____
 Projection factor: _____
 Door R-Values: _____

Walls below grade (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors over unconditioned space (each assembly)
 Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors slab on grade
 Description of assembly: POLYSTYRENE INSULATION, CONCRETE AND VINYL TILE
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Horizontal/Vertical requirement: _____
 Slab Heated: NO

**2018 APPENDIX B
 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
 STRUCTURAL DESIGN
 (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)**

DESIGN LOADS: SHELTER

Importance Factors: Snow (I_s) 1.2
 Seismic (I_e) 1.5

Live Loads: Roof 100 psf
 Mezzanine N/A psf
 Floor 200 psf

Ground Snow Load: 100 psf

Wind Load: Ultimate Wind Speed 155 mph (ASCE-7)
 Exposure Category C

SEISMIC DESIGN CATEGORY: A B C D

Provide the following Seismic Design Parameters:
 Risk Category (Table 1604.5) I II III IV
 Spectral Response Acceleration S_S 1.85 %g S₁ 1.24 %g
 Site Classification (ASCE 7) A B C D E F
 Data Source: Field Test Presumptive Historical Data

Basic structural system
 Bearing Wall Dual w/Special Moment Frame
 Building Frame Dual w/Intermediate R/C or Special Steel
 Moment Frame Inverted Pendulum


Analysis Procedure: Simplified Equivalent Lateral Force Dynamic

Architectural, Mechanical, Components anchored? Yes No N/A

LATERAL DESIGN CONTROL: Earthquake Wind

SOIL BEARING CAPACITIES:
 Field Test (provide copy of test report) 8,500 psf
 Presumptive Bearing capacity N/A psf
 Pile size, type, and capacity N/A

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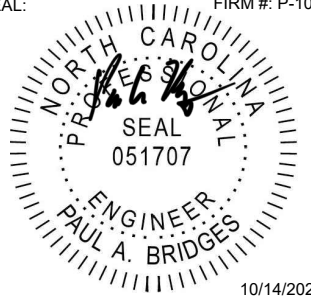
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10/14/2024

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SHEET TITLE:
NC APPENDIX B IV

SHEET # **GN-7** CURRENT REV #: 0
 ETS #: 23119943

**2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS**
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb: _____
summer dry bulb: _____

Interior design conditions

winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System

Unitary
description of unit: _____ BARD: W24A*-A05XWXXXJ
heating efficiency: _____ 9.00 EER
cooling efficiency: _____ 9.00 EER
size category of unit: _____ 24,000 BTUH

Boiler
Size category. If oversized, state reason.: _____

Chiller
Size category. If oversized, state reason.: _____

List equipment efficiencies: _____

**2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS**
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code: Performance Prescriptive
ASHRAE 90.1: Performance Prescriptive

Lighting schedule (each fixture type)

| | |
|----------------------------------|---------|
| lamp type required in fixture | 28W LED |
| number of lamps in fixture | 2 |
| ballast type used in the fixture | N/A |
| number of ballasts in fixture | N/A |
| total wattage per fixture | 56 |

total interior wattage specified vs. allowed (whole building or space by space)
600 vs 448 (ONLY LIT WHEN OCCUPIED)

total exterior wattage specified vs. allowed

Additional Efficiency Package Options

(When using the 2018 NCECC; not required for ASHRAE 90.1)

- C406.2 More Efficient HVAC Equipment Performance
- C406.3 Reduced Lighting Power Density
- C406.4 Enhanced Digital Lighting Controls
- C406.5 On-Site Renewable Energy
- C406.6 Dedicated Outdoor Air System
- C406.7 Reduced Energy Use in Service Water Heating

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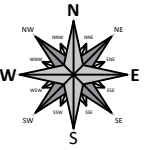
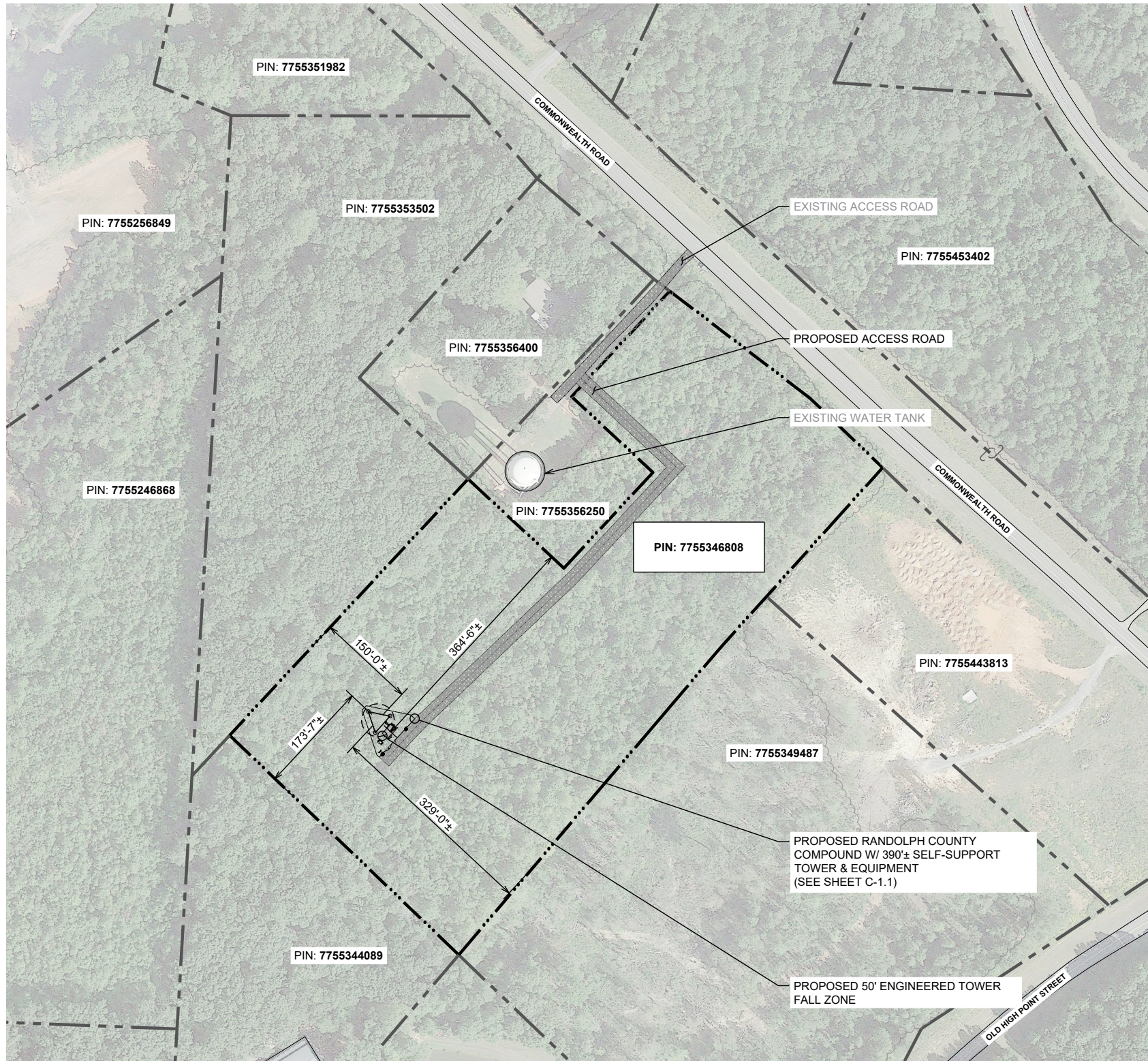
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SHEET TITLE:

NC APPENDIX B V

SHEET # **GN-8** CURRENT REV #: 0
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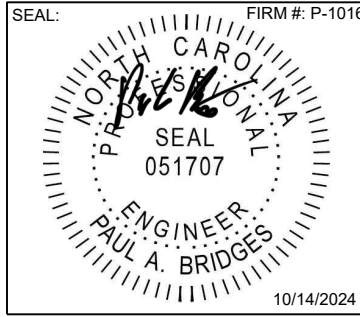


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SHEET TITLE:
OVERALL SITE PLAN

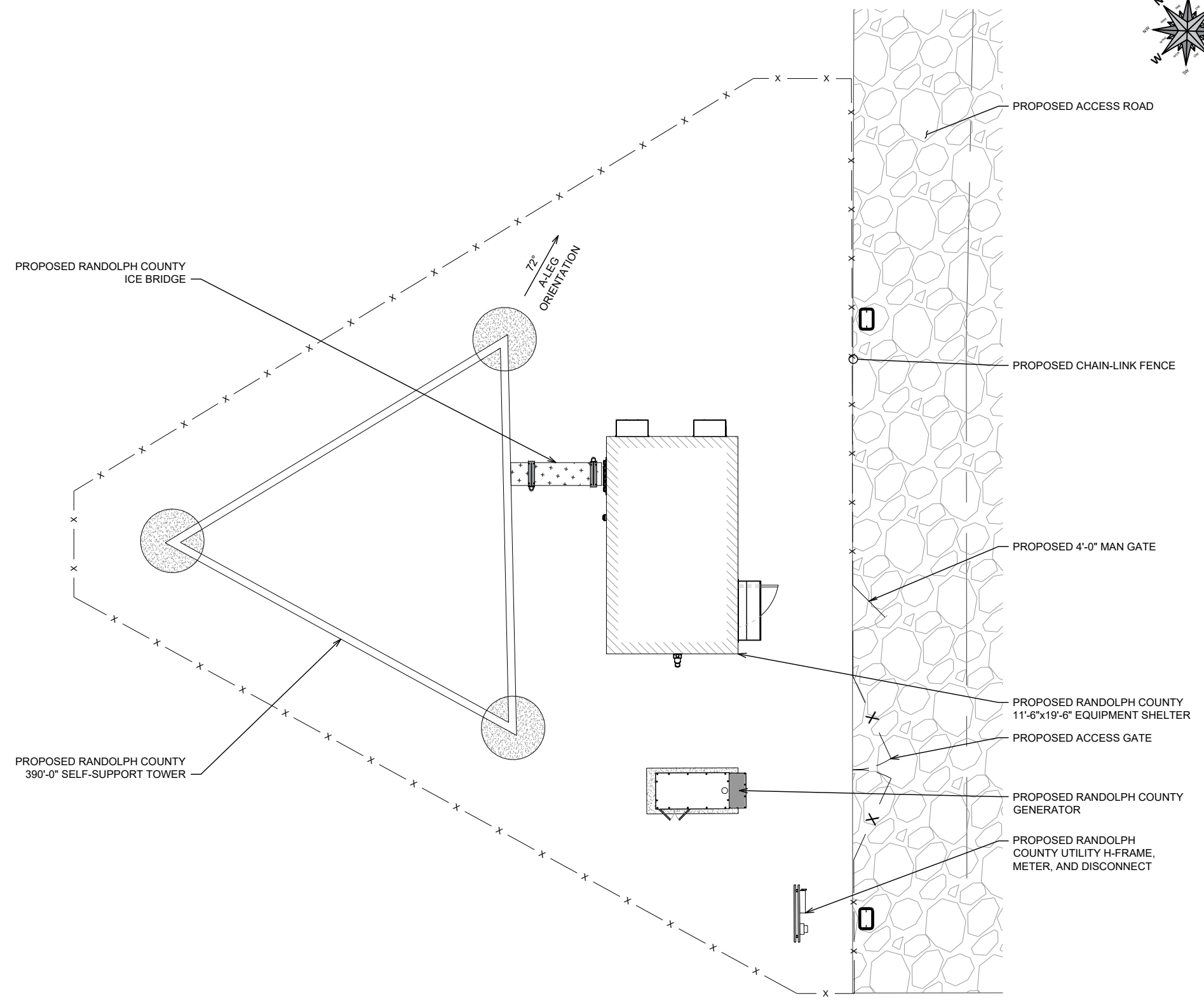
SHEET # **C-1.1** CURRENT REV # 0
 ETS #: 23119943

| TOWER SETBACKS | |
|------------------------|----------|
| PROPERTY BOUNDARY LINE | DISTANCE |
| NORTHEAST | 364'-6"± |
| SOUTHEAST | 329'-0"± |
| SOUTHWEST | 173'-7"± |
| NORTHWEST | 150'-0"± |


NOTES

- SITE PLAN BASED ON SURVEY COMPLETED BY GEOLINE SURVEYING, INC.
- ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON THE SITE PLAN, AND NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES. ALL PERTINENT ITEMS AND DIMENSIONS ARE RECOMMENDED TO BE VERIFIED IN THE FIELD. ENGINEERED TOWER SOLUTIONS, PLLC IS NOT LIABLE AND DOES NOT ASSUME RESPONSIBILITY FOR THIS CONTENT.

OVERALL SITE PLAN
 1" = 200'-0"



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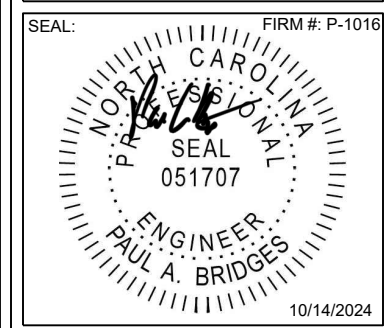


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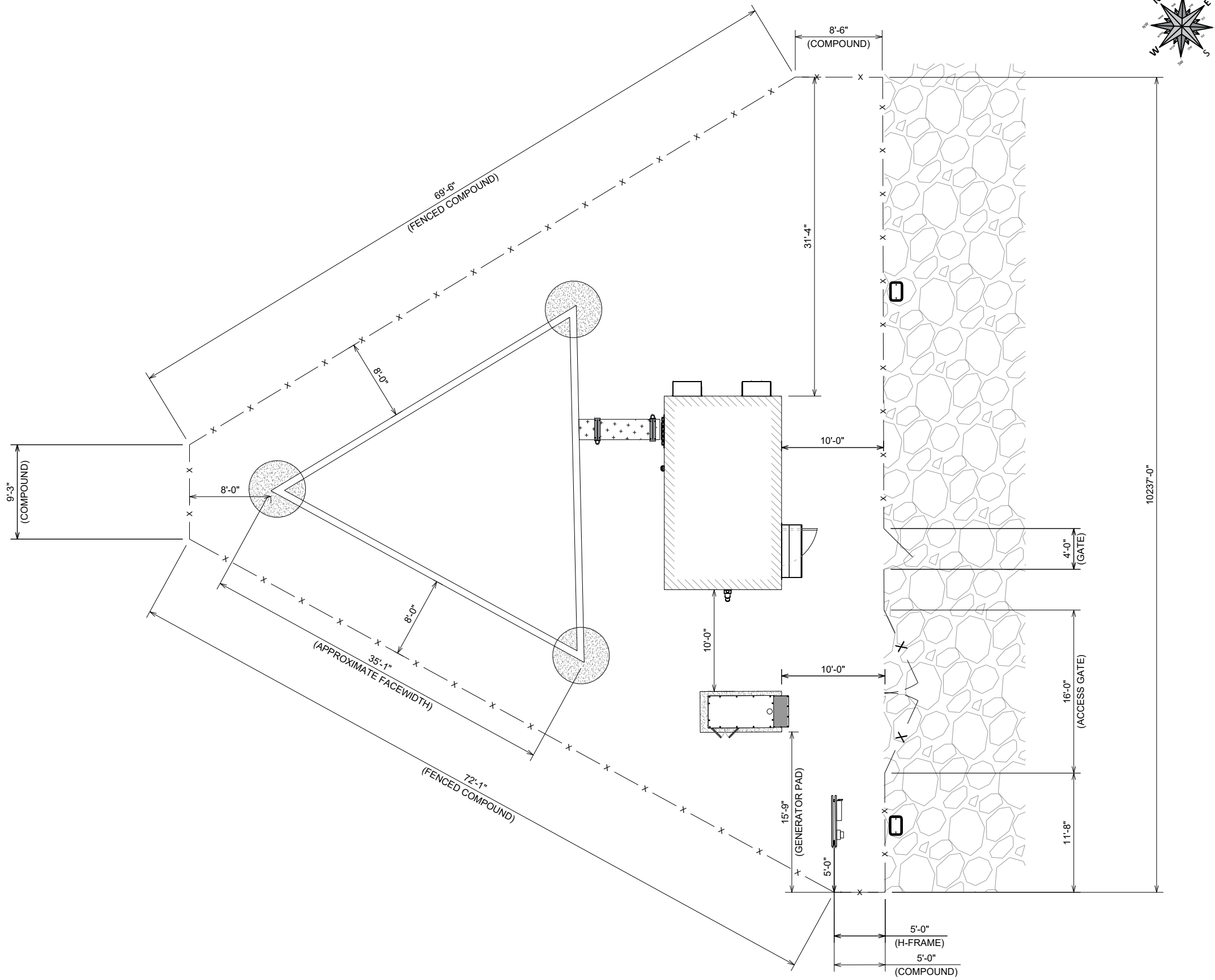
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DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
PROPOSED SITE PLAN


SHEET # **C-1.2** CURRENT REV # 0
ETS #: 23119943

PROPOSED SITE PLAN
3/32" = 1'-0"



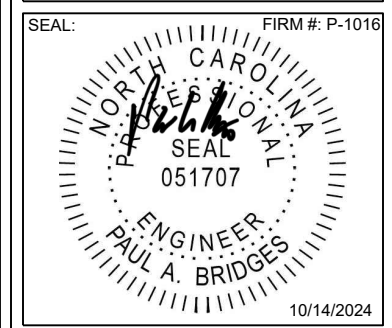
DIMENSIONED SITE PLAN

3/32" = 1'-0"

PREPARED BY:

 3227 WELLINGTON COURT
 RALEIGH, NC 27615
 919-782-2710
 www.ets-pllc.com



SITE NAME:
RANDLEMAN
 SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

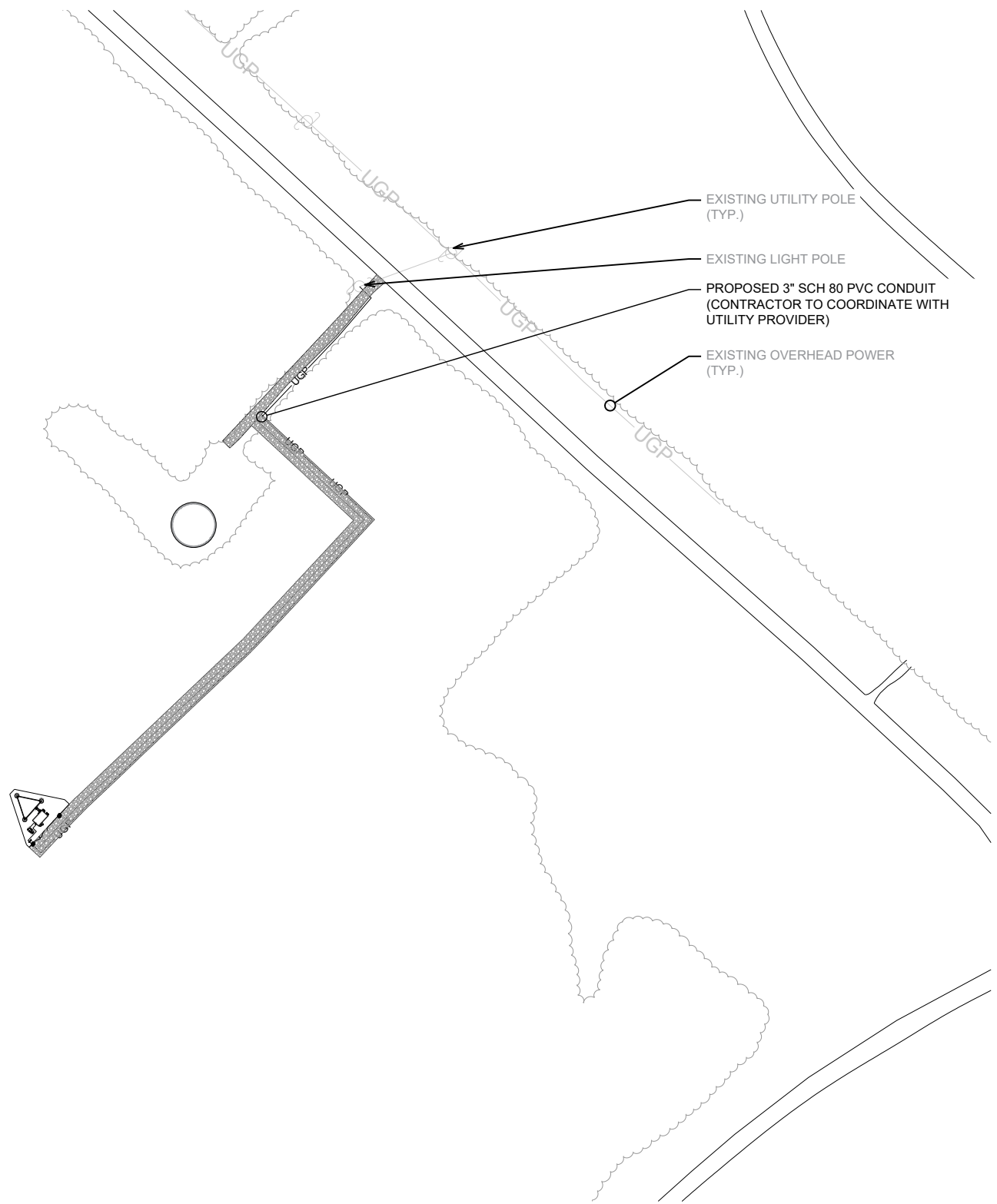
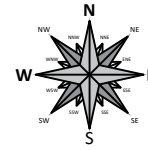


| REV | DATE | DETAILS |
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| 0 | 10/14/2024 | CONSTRUCTION |
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DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
DIMENSIONED SITE PLAN

SHEET # **C-1.3** CURRENT REV #: 0
 ETS #: 23119943



- EXISTING UTILITY POLE (TYP.)
- EXISTING LIGHT POLE
- PROPOSED 3" SCH 80 PVC CONDUIT (CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER)
- EXISTING OVERHEAD POWER (TYP.)

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PREPARED FOR:



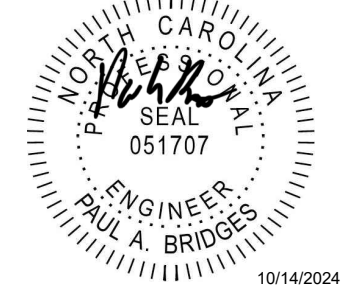
SITE NAME:

RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



| REV | DATE | DETAILS |
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DRAWN BY: YB CHECKED BY: AS

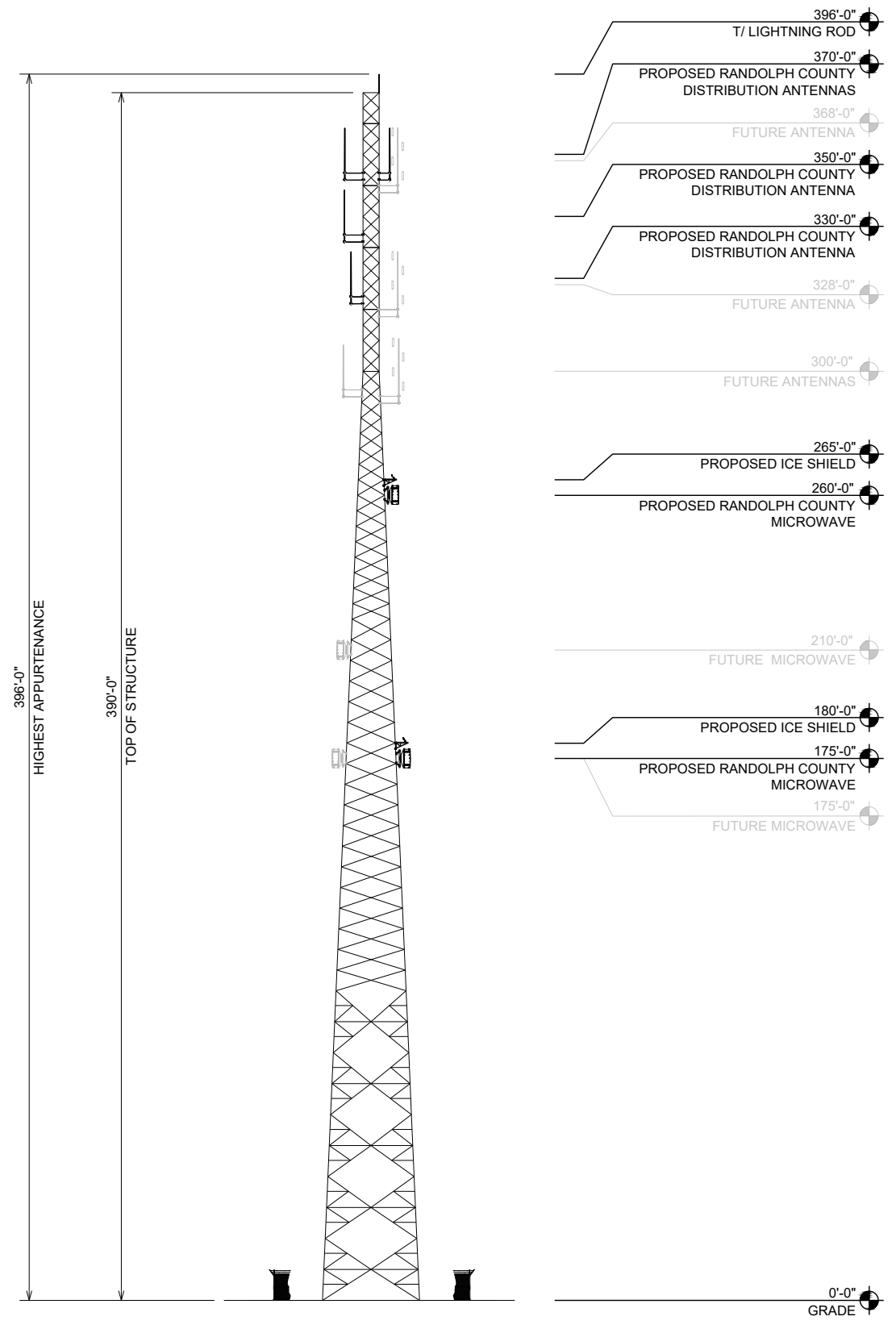
SHEET TITLE:

UTILITY LOCATION PLAN


SHEET # **C-1.4** CURRENT REV # 0
 ETS #: 23119943

UTILITY LOCATION PLAN

3/32" = 1'-0"



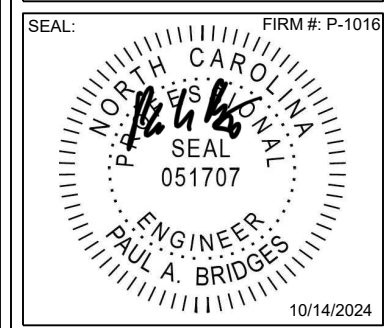
TOWER ELEVATION
1" = 50'

PREPARED BY:

 3227 WELLINGTON COURT
 RALEIGH, NC 27615
 919-782-2710
 www.ets-pllc.com



SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°



| REV | DATE | DETAILS |
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DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
TOWER ELEVATION

SHEET # **C-2** CURRENT REV #: 0
 ETS #: 23119943

PROPOSED ANTENNA SCHEDULE

| TAG # | OWNER | SYSTEM | SIZE | TYPE | MANUFACTURER | PART # | BASE ELEV. | CL ELEV. | TIP ELEV. | LOC | AZ | FREQ. | MOUNT |
|-------|-----------------|-------------------------|--------|------------|-------------------|------------|-------------|----------|-------------|-----|---------|---------|-----------------------|
| -- | RANDOLPH COUNTY | AIR TERMINAL | 6'-0" | -- | -- | -- | 390'-0" | 393'-0" | 396'-0" | -- | -- | -- | DIRECT TO TOWER MOUNT |
| 1 | RANDOLPH COUNTY | P25 (RX) | 17'-1" | OMNI | RFI | CC807-11-P | 361'-5 1/2" | 370'-0" | 378'-6 1/2" | A | 72° | 746-870 | 6' SIDE ARM |
| 2 | RANDOLPH COUNTY | P25 (RX) | 17'-1" | OMNI | RFI | CC807-11-P | 361'-5 1/2" | 370'-0" | 378'-6 1/2" | B | 192° | 746-870 | 6' SIDE ARM |
| -- | RANDOLPH COUNTY | P25 (TTA) | -- | TTA | BIRD TECHNOLOGIES | -- | 367'-0" | 368'-0" | 369'-0" | AB | -- | 746-870 | DIRECT TO TOWER MOUNT |
| -- | RANDOLPH COUNTY | P25 (TTA) | -- | TTA | BIRD TECHNOLOGIES | -- | 367'-0" | 368'-0" | 369'-0" | BC | -- | 746-870 | DIRECT TO TOWER MOUNT |
| -- | (FUTURE) | (FUTURE) | 21'-3" | DIPOLE | COMMSCOPE | DB224-B | 357'-4 1/2" | 368'-0" | 387'-7 1/2" | C | 312° | 138-150 | 6' SIDE ARM |
| 3 | RANDOLPH COUNTY | P25 (TX) | 17'-1" | OMNI | RFI | CC807-11-P | 341'-5 1/2" | 350'-0" | 358'-6 1/2" | B | 192° | 746-870 | 6' SIDE ARM |
| 4 | RANDOLPH COUNTY | P25 (TX) | 17'-1" | OMNI | RFI | CC807-11-P | 321'-5 1/2" | 330'-0" | 338'-6 1/2" | A | 72° | 746-870 | 6' SIDE ARM |
| -- | (FUTURE) | (FUTURE) | 21'-3" | DIPOLE | COMMSCOPE | DB224-B | 317'-4 1/2" | 328'-0" | 338'-7 1/2" | B | 192° | 155-165 | 6' SIDE ARM |
| -- | (FUTURE) | (FUTURE) | 21'-3" | DIPOLE | COMMSCOPE | DB224-B | 289'-4 1/2" | 300'-0" | 310'-7 1/2" | A | 72° | 155-165 | 6' SIDE ARM |
| -- | (FUTURE) | (FUTURE) | 17'-1" | OMNI | RFI | CC807-11-P | 291'-5 1/2" | 300'-0" | 308'-6 1/2" | B | 192° | 796-824 | 6' SIDE ARM |
| -- | RANDOLPH COUNTY | MICROWAVE (STALEY) | -- | ICE SHIELD | SITE PRO 1 | ISMD6 | -- | 265'-0" | -- | C | 270° | -- | 4.5" PIPE MOUNT |
| 5 | RANDOLPH COUNTY | MICROWAVE (STALEY) | 6'-0" | DISH | COMMSCOPE | HX6-6W-6WH | 257'-0" | 260'-0" | 263'-0" | C | 270° | 6 GHZ | 4.5" PIPE MOUNT |
| -- | (FUTURE) | (FUTURE) | 6'-0" | DISH | COMMSCOPE | HX6-6W-6WH | 180'-0" | 210'-0" | 240'-0" | B | 180° | 6 GHZ | PIPE MOUNT-R5-LL |
| -- | RANDOLPH COUNTY | MICROWAVE (SHEPHERD MT) | -- | ICE SHIELD | SITE PRO 1 | ISMD6 | -- | 265'-0" | -- | C | 235.97° | -- | 4.5" PIPE MOUNT |
| 6 | RANDOLPH COUNTY | MICROWAVE (SHEPHERD MT) | 6'-0" | DISH | COMMSCOPE | HX6-6W-6WH | 172'-0" | 175'-0" | 178'-0" | C | 235.97° | 6 GHZ | 4.5" PIPE MOUNT |
| -- | (FUTURE) | (FUTURE) | 6'-0" | DISH | COMMSCOPE | HX6-6W-6WH | 172'-0" | 175'-0" | 178'-0" | B | 90° | 6 GHZ | PIPE MOUNT-R5-LL |

- NOTES:
- VERIFY FINAL DESIGN AND LOADING WITH RANDOLPH COUNTY PRIOR TO CONSTRUCTION
 - VERIFY FINAL DESIGN AND LOADING WITH STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION
 - GRAY TEXT = FUTURE LOADING

PREPARED BY:



3227 WELLINGTON COURT
 RALEIGH, NC 27615
 919-782-2710
 www.ets-pllc.com

PREPARED FOR:



SITE NAME:

RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

SEAL: FIRM #: P-1016



| REV | DATE | DETAILS |
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| 0 | 10/14/2024 | CONSTRUCTION |
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DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
PROPOSED ANTENNA SCHEDULE

SHEET # **C-3.1** CURRENT REV #: 0
 ETS #: 23119943

PROPOSED TRANSMISSION LINE SCHEDULE

| OWNER | LOCATION | SYSTEM | SIZE | DIELECTRIC | MANUFACTURE | PART # |
|-----------------|-----------|-------------------------|------------------------|------------|-------------|----------------------|
| RANDOLPH COUNTY | WAVEGUIDE | AIR TERMINAL | -- | -- | -- | -- |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (RX) | 1/2" (JUMPER FROM TTA) | FOAM | COMMSCOPE | LDF4-50A |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (RX) | 1/2" (JUMPER FROM TTA) | FOAM | COMMSCOPE | LDF4-50A |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (TTA) | 1/2" 7/8" | FOAM | COMMSCOPE | LDF4-50A LDF5-50A |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (TTA) | 1/2" 7/8" | FOAM | COMMSCOPE | LDF4-50A LDF5-50A |
| (FUTURE) | (FUTURE) | (FUTURE) | 1-1/4" | FOAM | COMMSCOPE | AVA6-50 |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (TX) | 1-5/8" | FOAM | COMMSCOPE | AVA7-50 |
| RANDOLPH COUNTY | WAVEGUIDE | P25 (TX) | 1-5/8" | FOAM | COMMSCOPE | AVA7-50 |
| (FUTURE) | (FUTURE) | (FUTURE) | 1-1/4" | FOAM | COMMSCOPE | AVA6-50 |
| (FUTURE) | (FUTURE) | (FUTURE) | 7/8" | FOAM | COMMSCOPE | LDF5-50A |
| (FUTURE) | (FUTURE) | (FUTURE) | 1-5/8" | FOAM | COMMSCOPE | AVA7-50 |
| RANDOLPH COUNTY | WAVEGUIDE | MICROWAVE (STALEY) | -- | -- | -- | -- |
| RANDOLPH COUNTY | WAVEGUIDE | MICROWAVE (STALEY) | EW63 | AIR | COMMSCOPE | EWP63-59W |
| (FUTURE) | (FUTURE) | (FUTURE) | EW63 | AIR | COMMSCOPE | EWP63-59W |
| RANDOLPH COUNTY | WAVEGUIDE | MICROWAVE (SHEPHERD MT) | -- | -- | -- | -- |
| RANDOLPH COUNTY | WAVEGUIDE | MICROWAVE (SHEPHERD MT) | EW63 | AIR | COMMSCOPE | EWP63-59W |
| (FUTURE) | (FUTURE) | (FUTURE) | EW63 | AIR | COMMSCOPE | EWP63-59W |

PREPARED BY:



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RALEIGH, NC 27615
919-782-2710
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PREPARED FOR:

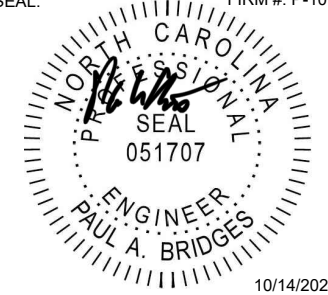


SITE NAME:

RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL: FIRM #: P-1016



| REV | DATE | DETAILS |
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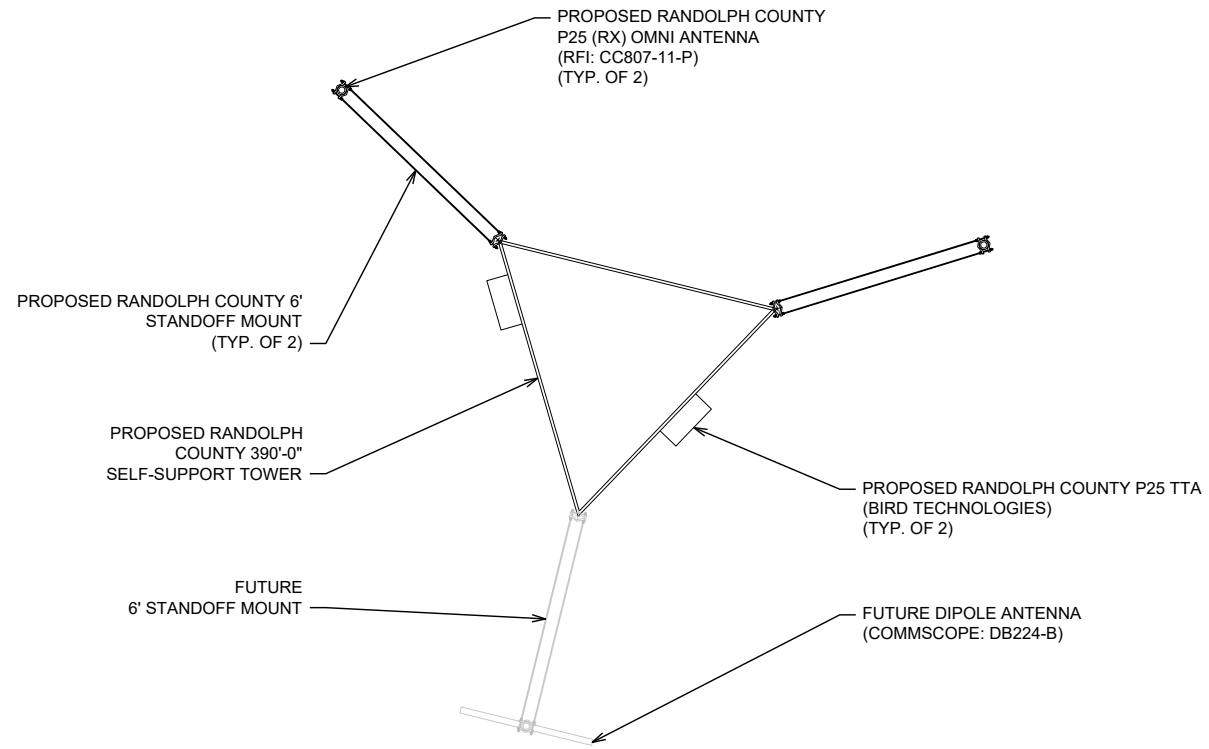
DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
PROPOSED TRANSMISSION LINE SCHEDULE

SHEET # **C-3.2** CURRENT REV #: 0
ETS #: 23119943

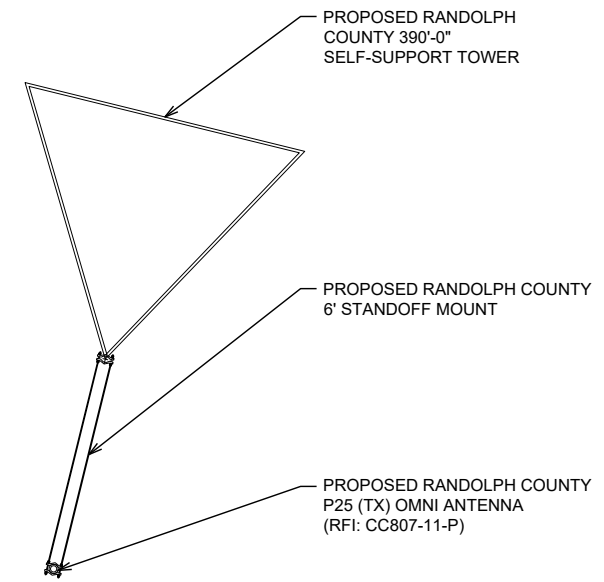
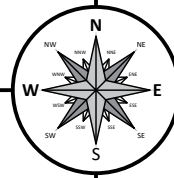
NOTES:
• VERIFY FINAL DESIGN AND LOADING WITH RANDOLPH COUNTY PRIOR TO CONSTRUCTION

NOTES
 • OMNI'S ARE ORIENTED VERTICALLY



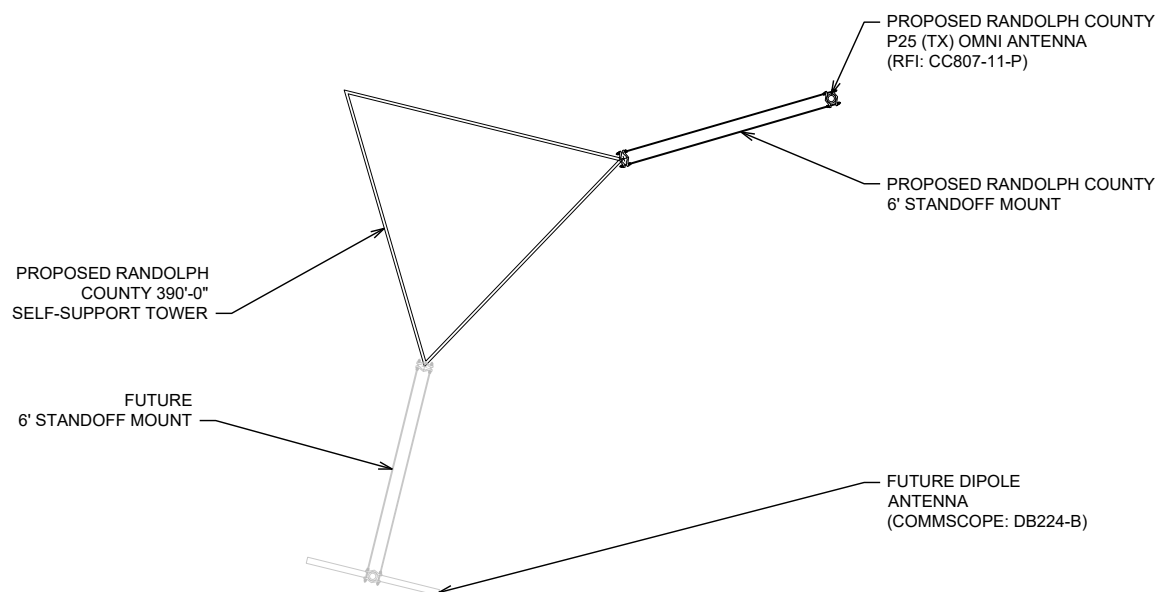
ANTENNA LAYOUT @ 370'-0" / @ 368'-0"

3/16" = 1'-0"



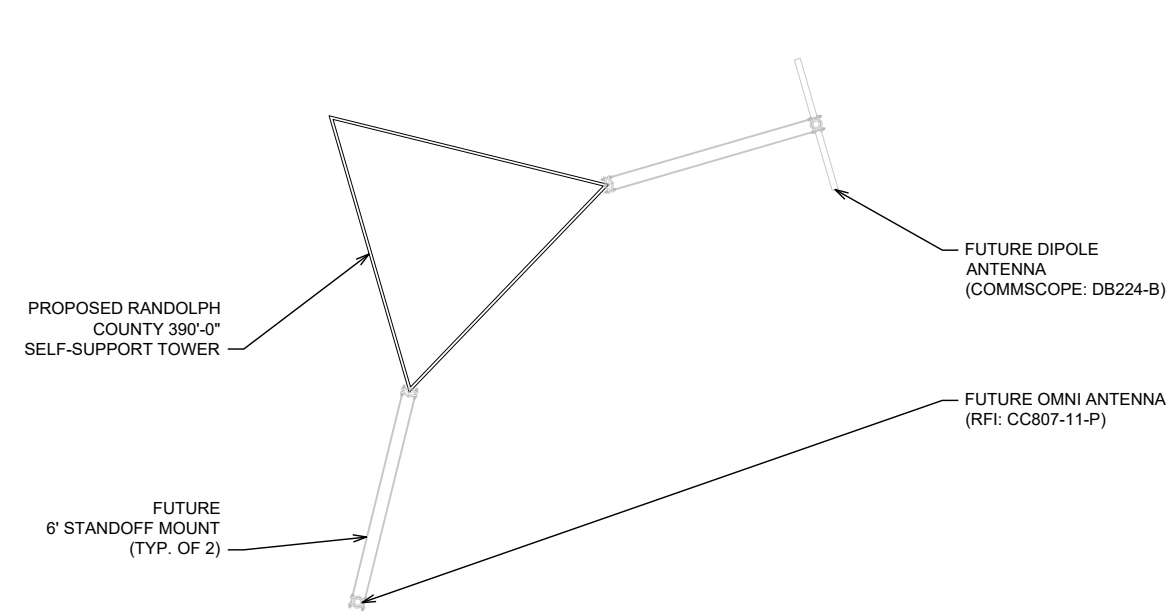
ANTENNA LAYOUT @ 350'-0"

3/16" = 1'-0"



ANTENNA LAYOUT @ 330'-0" / @ 328'-0"

3/16" = 1'-0"



ANTENNA LAYOUT @ 300'-0"

3/16" = 1'-0"

PREPARED BY:

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 RALEIGH, NC 27615
 919-782-2710
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PREPARED FOR:

SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

SEAL: FIRM #: P-1016

10/14/2024

| REV | DATE | DETAILS |
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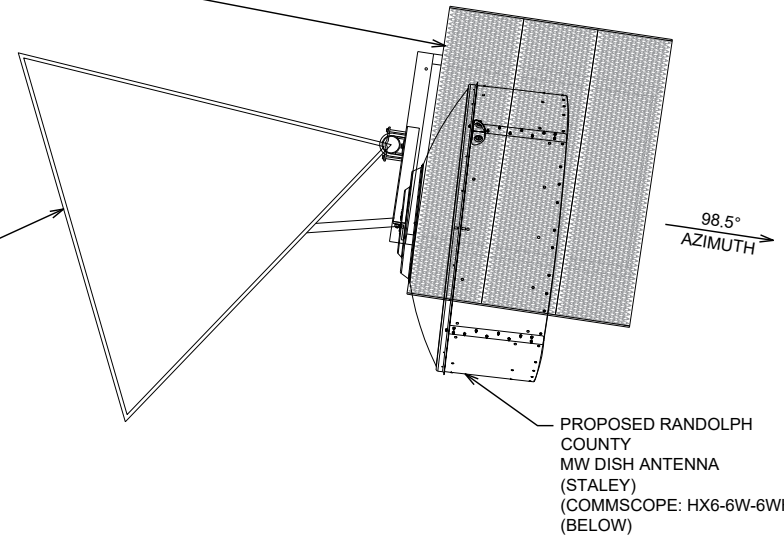
DRAWN BY: YB | CHECKED BY: AS

SHEET TITLE:
PROPOSED ANTENNA LAYOUTS

SHEET # **C-3.3** | CURRENT REV #: 0
 ETS #: 23119943

PROPOSED RANDOLPH COUNTY
PRO 1 ISMD6 ICE SHEILD
(ABOVE)

PROPOSED RANDOLPH
COUNTY 390'-0"
SELF-SUPPORT TOWER

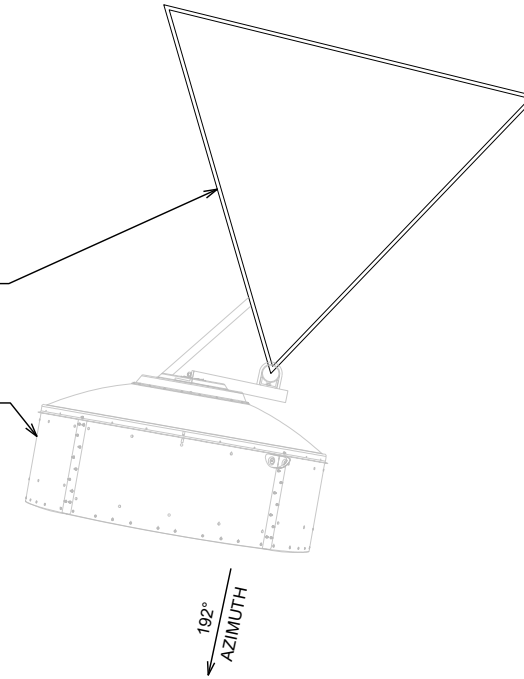


ANTENNA LAYOUT @ 260'-0"

1/4" = 1'-0"

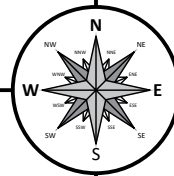
PROPOSED RANDOLPH
COUNTY 390'-0"
SELF-SUPPORT TOWER

FUTURE RANDOLPH COUNTY
MW DISH ANTENNA
(COMMSCOPE: HX6-6W-6WH)



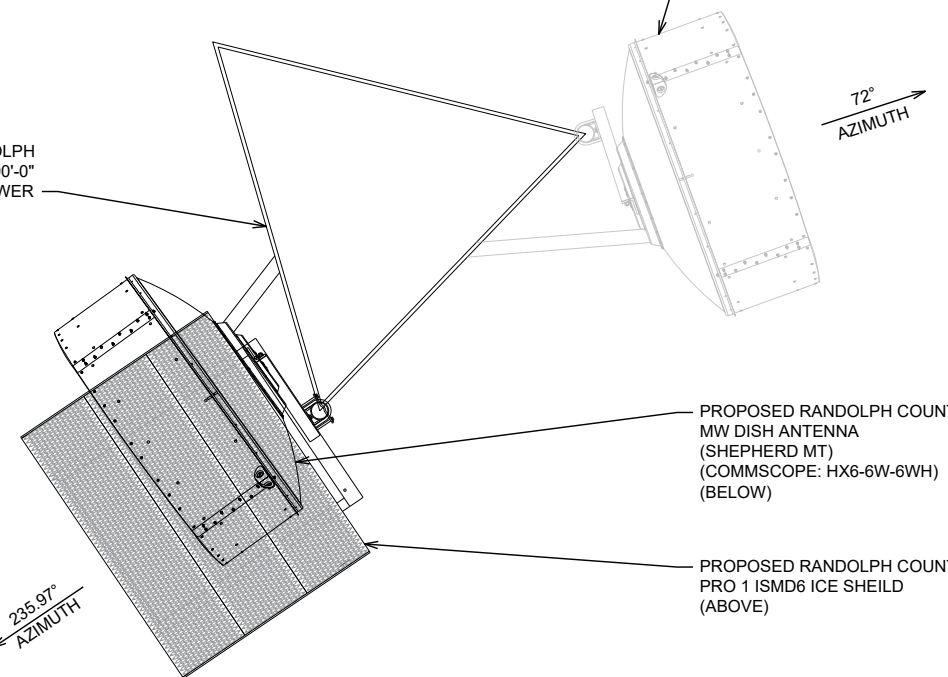
ANTENNA LAYOUT @ 210'-0"

1/4" = 1'-0"



PROPOSED RANDOLPH
COUNTY 390'-0"
SELF-SUPPORT TOWER

FUTURE RANDOLPH COUNTY
MW DISH ANTENNA
(COMMSCOPE: HX6-6W-6WH)



ANTENNA LAYOUT @ 175'-0"

1/4" = 1'-0"

NOT USED

N.T.S.

PREPARED BY:



3227 WELLINGTON COURT
RALEIGH, NC 27615
919-782-2710
www.ets-pllc.com

PREPARED FOR:



SITE NAME:

RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



| REV | DATE | DETAILS |
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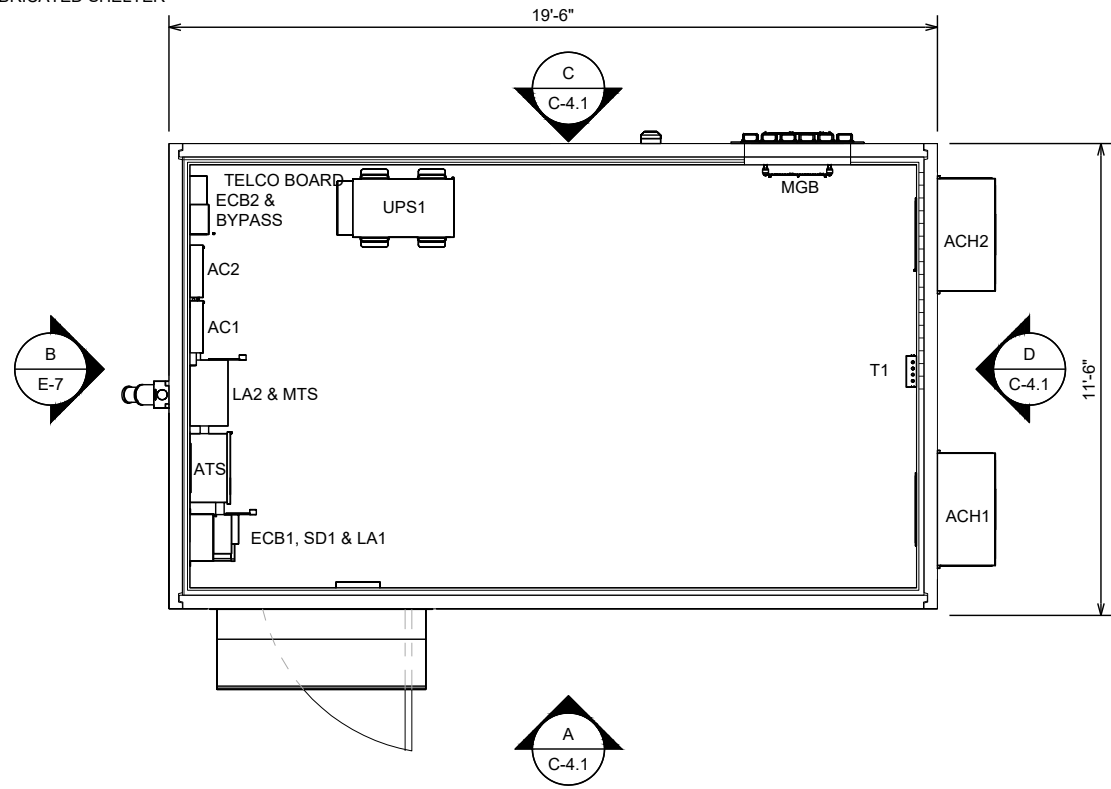
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SHEET TITLE:

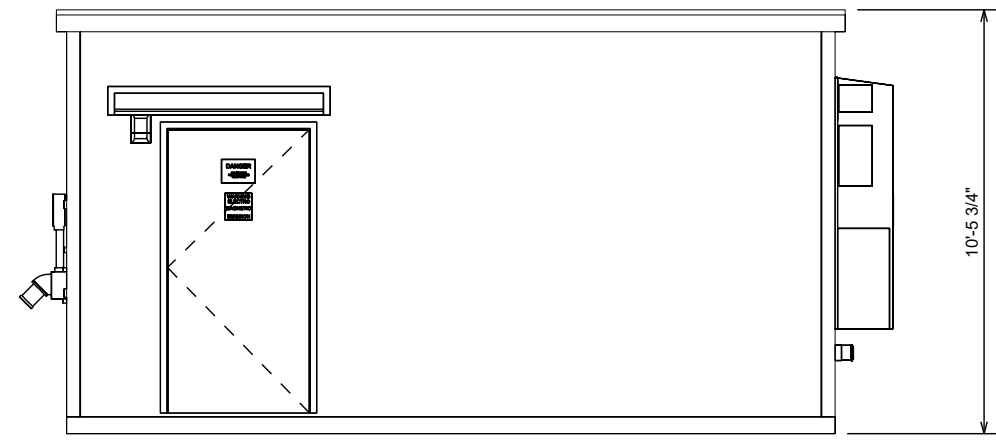
**PROPOSED
ANTENNA
LAYOUTS**

SHEET # **C-3.4** | CURRENT REV # 0
ETS #: 23119943

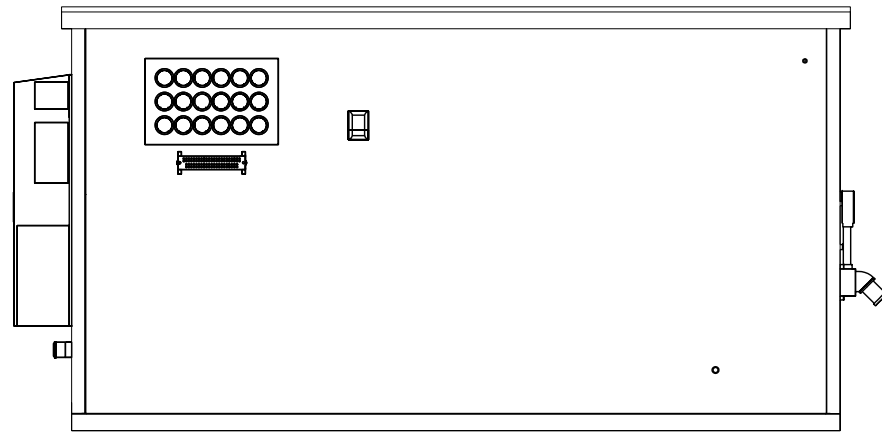
VFP, INC. - SHELTER MODEL 7382
 • PREFABRICATED SHELTER



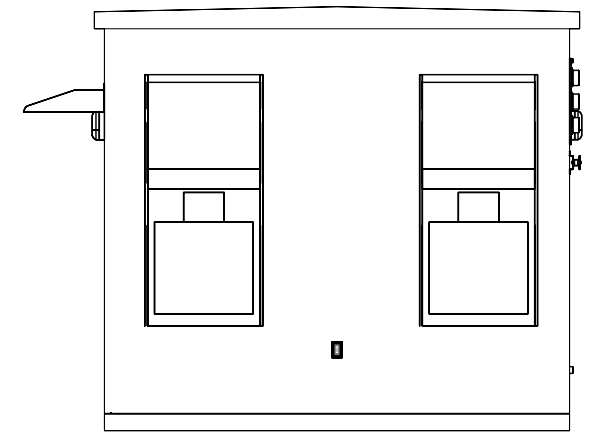
PLAN VIEW
 N.T.S.




ELEVATION A
 N.T.S.



ELEVATION C
 N.T.S.



ELEVATION D
 N.T.S.

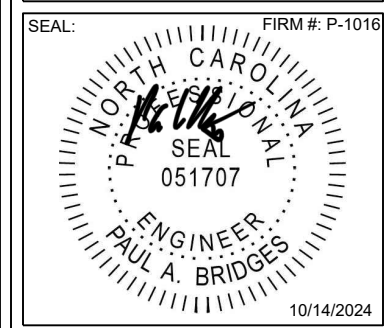
PREPARED BY:

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SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317

LATITUDE/LONGITUDE:
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| REV | DATE | DETAILS |
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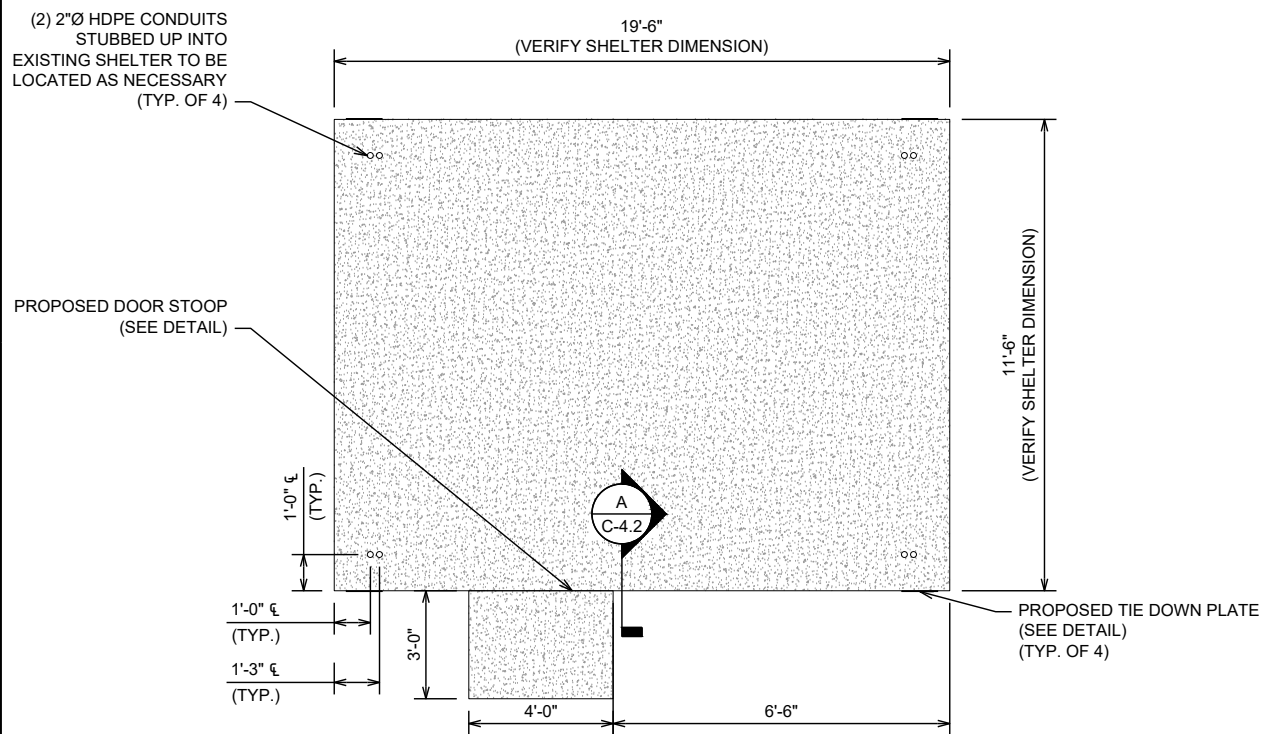
DRAWN BY: YB CHECKED BY: AS

SHEET TITLE:
SHELTER DETAILS

SHEET # **C-4.1** CURRENT REV # 0
 ETS #: 23119943

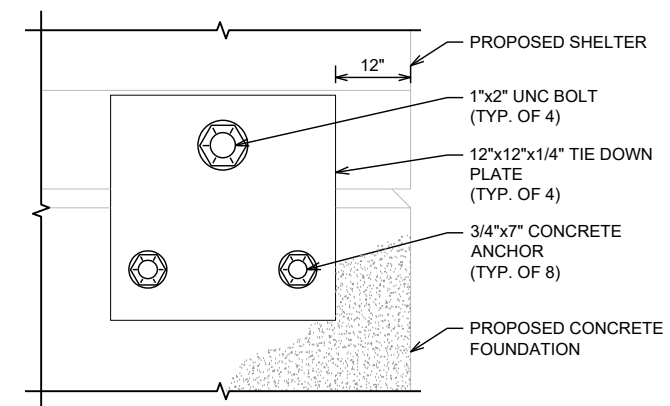
NOTES

- SURFACE OF FINISHED SLAB SHALL BE LEVEL AND FLAT WITHIN 1/4"
- CONTRACTOR TO VERIFY WITH MANUFACTURER ACTUAL DIMENSIONS OF SHELTER PRIOR TO LAYING FOUNDATION
- SEE SHEET GN-3 FOR CONCRETE AND FOUNDATION NOTES



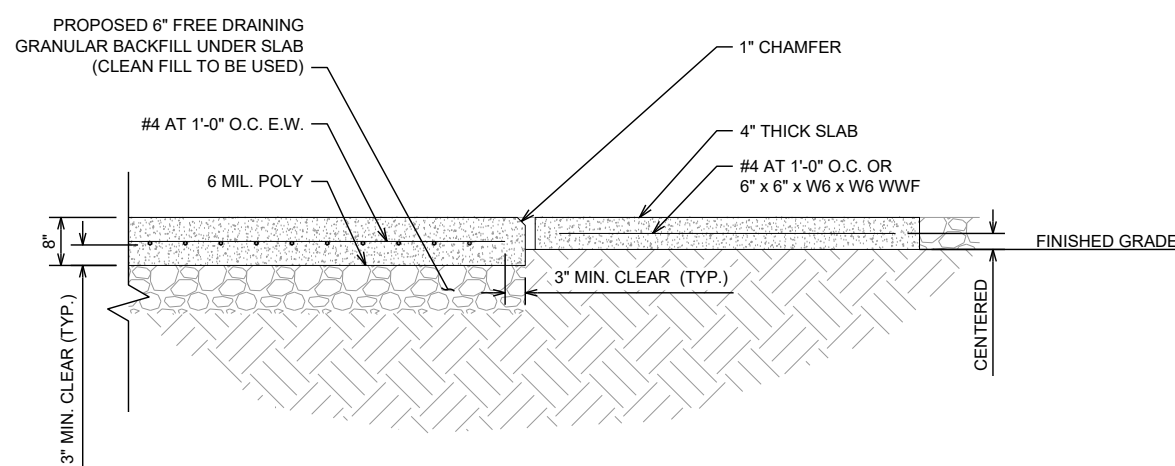
SHELTER CONCRETE FOUNDATION PLAN

N.T.S.



TIE DOWN PLATE DETAIL

N.T.S.



SECTION A DETAIL

N.T.S.

NOT USED

N.T.S.

PREPARED BY:



3227 WELLINGTON COURT
RALEIGH, NC 27615
919-782-2710
www.ets-pltc.com

PREPARED FOR:



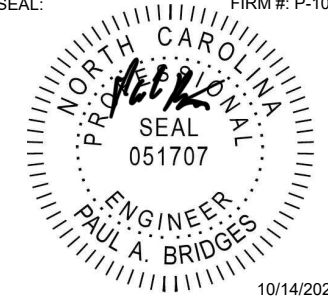
SITE NAME:

RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



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DRAWN BY: YB CHECKED BY: AS

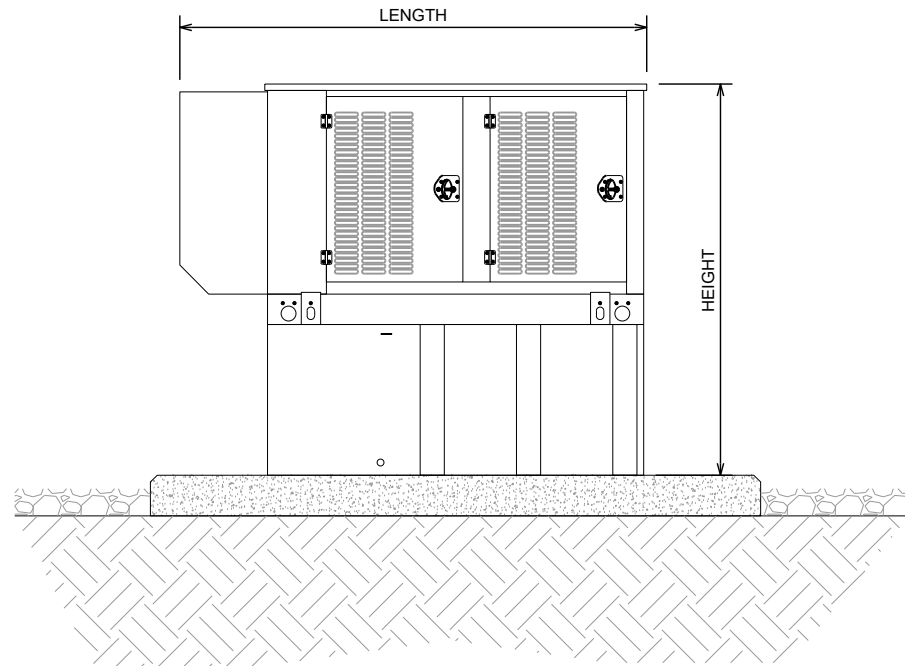
SHEET TITLE:

**FOUNDATION
DETAILS**

SHEET # **C-4.2** CURRENT REV #: 0
ETS #: 23119943

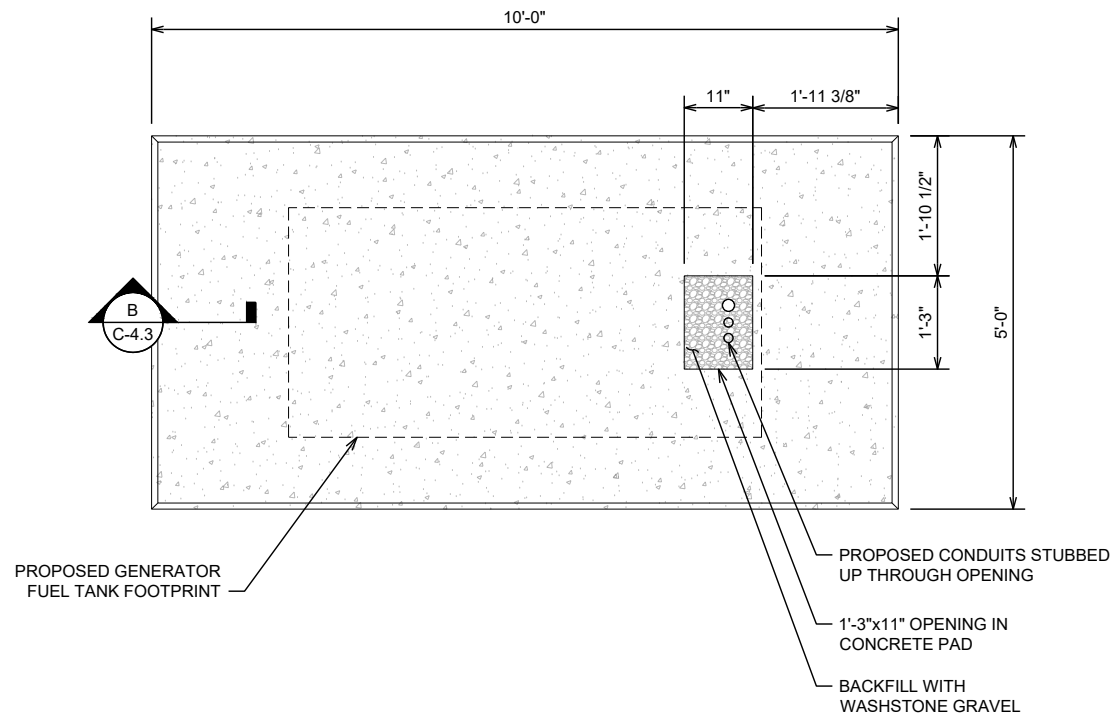
- GENERAC - SD040
- DIESEL GENERATOR
 - STANDARD ENCLOSURE
 - 40 kW, 50kVA, 60 Hz, 3.4L
 - 300 GALLON TANK

| HEIGHT | WIDTH | LENGTH | WEIGHT |
|--------|--------|--------|-------------|
| 90.00" | 38.00" | 94.84" | ± 3,057 LBS |



GENERATOR PAD ELEVATION

N.T.S.



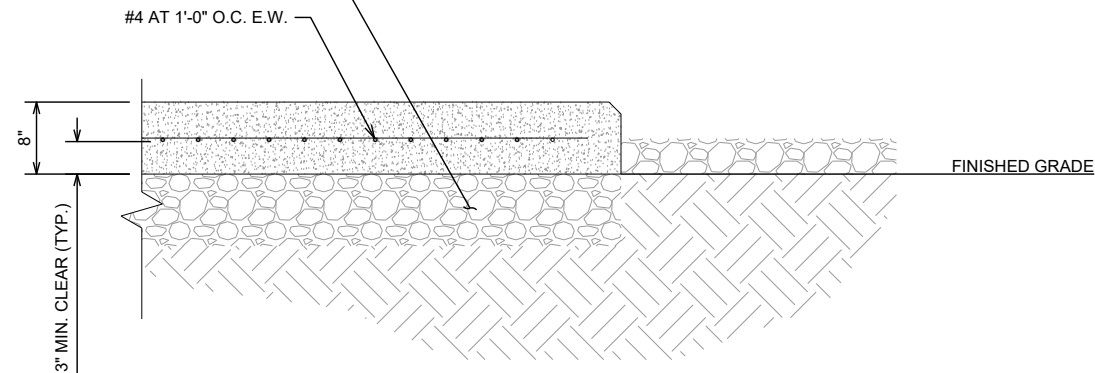
GENERATOR PAD PLAN

N.T.S.

NOTES

- USE CONCRETE WITH A MINIMUM $f_c = 4500$ PSI AT 28 DAYS.
- ALL REINFORCING SHALL BE GRADE 60 PER ASTM A615.
- THE MATERIAL USED FOR STRUCTURAL FILL SHALL CONFORM WITH ASTM C33 SIZE NO. 57 AND BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES. STRUCTURAL FILL SHALL BE MOISTURE CONDITIONED AS NECESSARY TO BRING MOISTURE CONTENT TO WITHIN 3 PERCENT OF OPTIMUM AND COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 OR 85% OF RELATED DENSITY AS DETERMINED BY ASTM D4254.

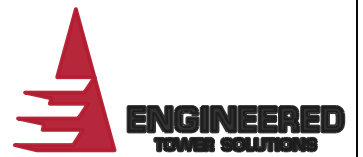
PROPOSED 6" FREE DRAINING
GRANULAR BACKFILL UNDER SLAB
(CLEAN FILL TO BE USED)



SECTION B DETAIL

N.T.S.

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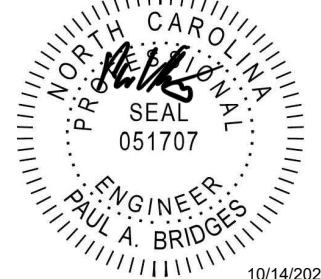
SITE NAME:

RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



| REV | DATE | DETAILS |
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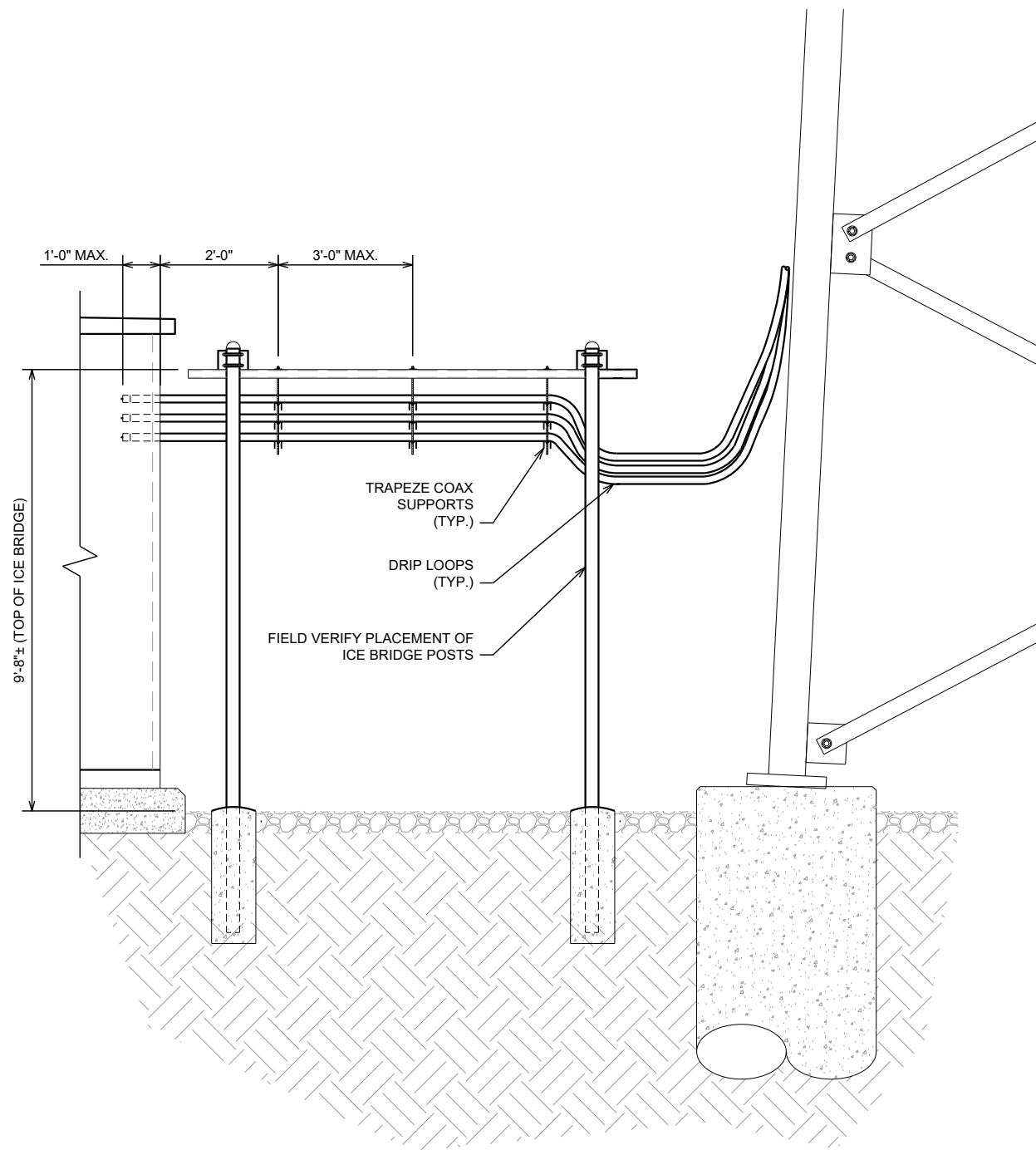
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**GENERATOR
DETAILS**

SHEET # **C-4.3** CURRENT REV #: 0
ETS #: 23119943

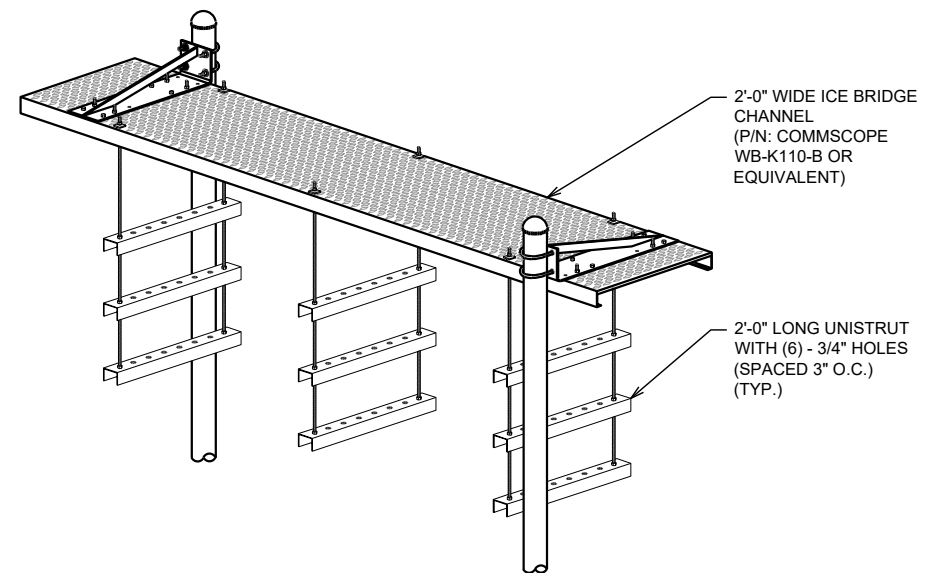
NOTES:

- COAX MUST COME OFF TOWER AT AN ELEVATION LOWER THAN RF ENTRY PORT TO PREVENT WATER MIGRATING TOWARDS SHELTER
- ZIP TIES ARE NOT TO BE PERMANENT BUT MAY BE USED FOR TEMPORARY CONSTRUCTION



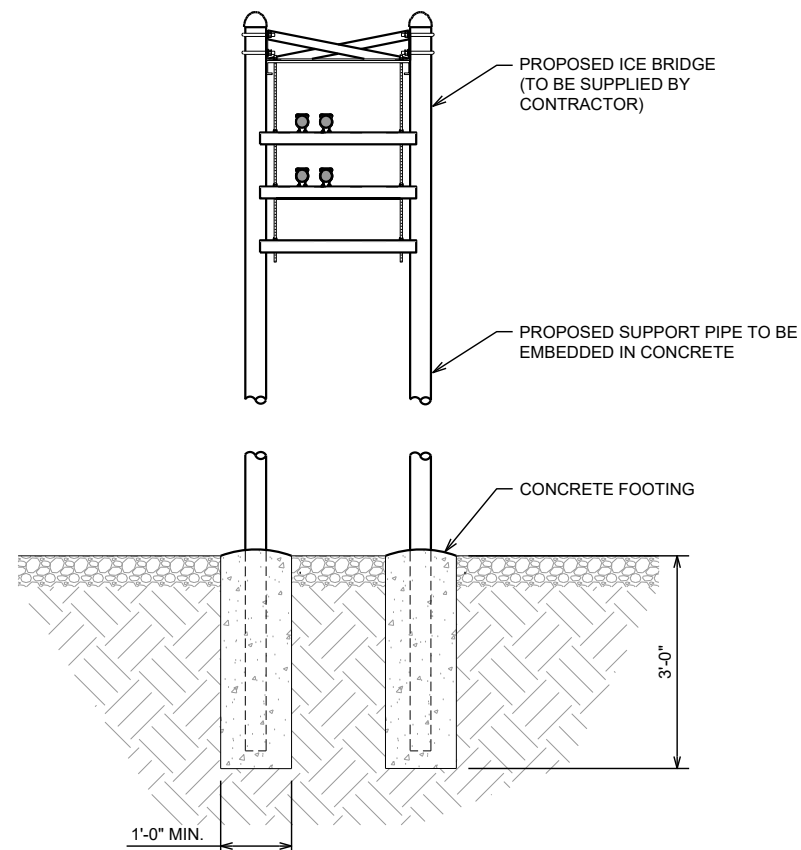
ICE BRIDGE DETAIL

N.T.S.



ISOMETRIC VIEW

N.T.S.



SIDE VIEW

N.T.S.

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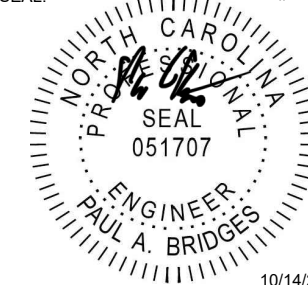
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 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
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10/14/2024

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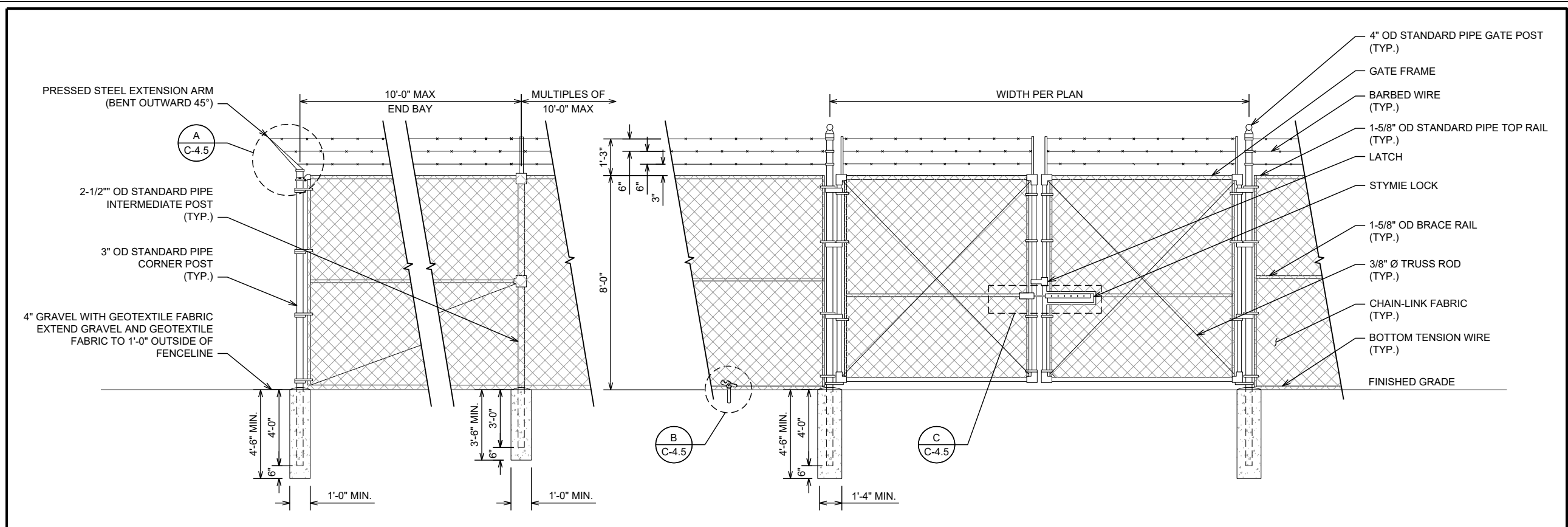
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**ICE BRIDGE
 DETAILS**

SHEET # **C-4.4**

CURRENT REV #: 0
 ETS #: 23119943

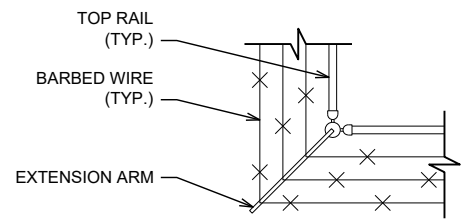


FENCE & DOUBLE SWING GATE DETAIL

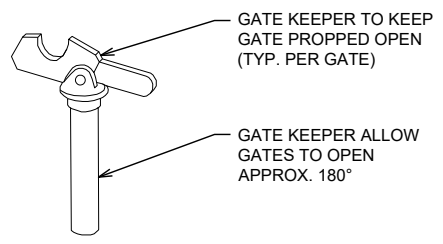
N.T.S.

NOTES

1. ALL MATERIAL AND HARDWARE FOR THE CHAIN-LINK FENCE SHALL BE A HOT DIP GALVANIZED FINISH.
2. CHAIN-LINK FABRIC TO BE 8'-0" HIGH, 9 GA. WIRE, 2" MESH WITH TWISTED SELVAGE TOP AND BOTTOM (PER ASTM A392).
3. BARBED WIRE TO CONSIST OF 3 NO. 12-1/2" GA. GALVANIZED STEEL WIRE WITH 4-POINT BARBS OF NO. 14 GA. GALVANIZED STEEL.
4. POST, RAIL AND GATE FITTINGS TO BE PRESSED STEEL OR MALLEABLE CASTING (PER ASTM A153).
5. ALL POSTS SHALL HAVE WEATHER CAPS INSTALLED.
6. POSTS TO SET IN 3,000 PSI CONCRETE. BOTTOM OF CONCRETE TO BE 6" MIN. FROM BOTTOM OF POST.
7. TIE WIRES TO BE 9 GA. ALUMINUM SPACES AT 12" OC POSTS/GATES AND 24" OC RAILS/WIRE.
8. TENSION BARS TO BE 3/16" x 3/4" CARBON STEEL ATTACHED TO TERMINAL POSTS BY MEANS OF BEVELED EDGE BANDS.
9. PROVIDE (2) GATE KEEPER HOLD OPEN DEVICES FOR SWING GATES. GATE KEEPERS TO ALLOW GATES TO OPEN APPROXIMATELY 180 DEGREES.
10. CONTRACTOR TO SUPPLY AND INSTALL A STYMIELOCK CAPABLE OF SUPPORTING (6) LOCKS AND PROVIDE A RE-ENFORCED OPENING IN THE CHAIN-LINK FENCE AREA FABRIC OF 4" BELOW THE STYMIE LOCK MECHANISM TO ALLOW ACCESS FROM BOTH SIDES OF THE GATE.
11. SITE OWNER / CARRIER TO PROVIDE A STANDARD LOCK FOR THE GATE.
12. ALL FENCE POST FOUNDATIONS SHALL BE ROUNDED AT TOP AS SHOWN TO DIVERT WATER AWAY FROM THE POSTS.
13. THE FABRIC SHALL BE SET SO THERE IS NO GAP BETWEEN THE CHAIN-LINK FENCE FABRIC AND THE FINISHED GRADE.
15. 4" OD STANDARD PIPE FOR GATE POSTS.
16. 3" OD STANDARD PIPE FOR ALL CORNER AND END POSTS.
17. 2-1/2" OD STANDARD PIPE FOR ALL INTERMEDIATE POSTS.

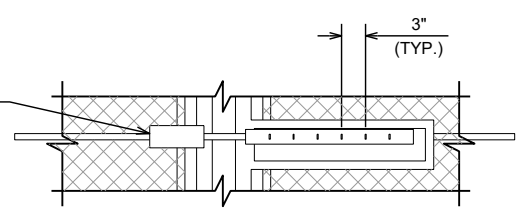


**DETAIL A
TYPICAL FENCE CORNER**



**DETAIL B
GATE KEEPER**

CONTRACTOR TO SUPPLY & INSTALL A STYMIE LOCK CAPABLE OF SUPPORTING (6) LOCKS & PROVIDE A RE-ENFORCED OPENING IN THE FENCE AREA CHAIN-LINK FABRIC 4" BELOW THE STYMIE LOCK MECHANISM TO ALLOW ACCESS FROM BOTH SIDES OF THE GATE



**DETAIL C
STYMIE LOCK**

FENCE & STYMIE LOCK DETAILS

N.T.S.

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**ENGINEERED
TOWER SOLUTIONS**

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EMERGENCY SERVICES
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RANDLEMAN, NC 27317
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SHEET TITLE:
FENCE DETAILS

SHEET # **C-4.5** CURRENT REV #: 0
ETS #: 23119943

ELECTRICAL NOTES

1. SCOPE
 - A. SHALL INCLUDE ALL LABOR, MATERIALS AND APPLIANCES REQUIRED FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR OPERATION OF ALL WORK SHOWN ON THE DRAWING AS SPECIFIED HEREIN:
 - A.a. ELECTRIC SERVICE
 - A.b. CONDUIT AND RACEWAY
 - A.c. CONDUCTORS
 - A.d. MISCELLANEOUS MATERIALS
 - A.e. TELEPHONE CONDUITS
 - A.f. LIGHTNING ARRESTING SYSTEM
2. CODES
 - A. THE INSTALLATION SHALL COMPLY WITH ALL LAWS APPLYING TO ELECTRICAL INSTALLATION IN EFFECT WITH THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE AND THE ICC, ADMINISTRATIVE RULES WITH THE NATIONAL ELECTRIC CODE, AND ANY LOCAL CODES AND ORDINANCES WITH THE REGULATION OF THE SERVING UTILITY COMPANY. ALL PERMITS REQUIRED SHALL BE OBTAINED AND, AFTER COMPLETION OF WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF FINAL INSPECTION AND APPROVAL.
3. TESTING
 - A. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST ALL EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. ALL TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.
4. GUARANTEE
 - A. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER. WITHOUT EXPENSE TO THE OWNER ALL WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.
5. COORDINATION
 - A. TOWER SUBCONTRACTOR SHALL COORDINATE ALL WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH ALL SERVICE REQUIREMENTS OF EACH UTILITY COMPANY, IF REQUIRED.
6. EXAMINATION OF SITE
 - A. PRIOR TO BEGINNING WORK, THE TOWER SUBCONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS PARAGRAPH WILL IN NO WAY RELIEVE THE TOWER SUBCONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.
7. CUTTING, PATCHING AND EXCAVATION
 - A. COORDINATION OF ALL SLEEVES, CHASES, ETC., WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. ALL CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
 - B. ALL NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE WORK UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING SHALL BE PROVIDED BY THIS CONTRACTOR.
 - C. SEAL ALL PENETRATION THROUGH WALL AND FLOORS WITH APPROVED GROUT.
8. RACEWAYS
 - A. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT. ALL CONDUIT SHALL BE GALVANIZED RIGID CONDUIT OR SCH40 PVC. AS INDICATED ON THE DRAWINGS.
 - B. WHERE INSTALLED ON EXTERIORS AND EXPOSED TO DAMAGE, ALL CONDUIT SHALL BE GALVANIZED RIGID CONDUIT. ALUMINUM CONDUIT SHALL NOT BE ALLOWED.
 - C. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
 - D. UNDERGROUND CONDUITS SHALL BE GALVANIZED RIGID CONDUIT OR SCHEDULE 40 PVC AS INDICATED ON THE DRAWINGS.
 - E. ALL CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. ALL CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
 - F. PROVIDE SUPPORTS FOR ALL CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. ALL CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.
 - G. BURIAL DEPTH OF ALL CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION.
 - H. CONDUIT ROUTES ARE SCHEMATIC. TOWER SUBCONTRACTOR SHALL FIELD VERIFY BEFORE

ELECTRICAL NOTES

- BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND BUILDING OWNER.
9. EXTERIOR CONDUIT
 - A. ALL EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL
 - B. SCHEDULE 40 ELECTRICAL CONDUIT WILL BE BURIED TO A DEPTH OF AT LEAST 3 FEET. METALLIC CAUTION TAPE, OR NONMETALLIC CAUTION TAPE WITH 12 AWG TRACING WIRE, WILL BE BURIED TO A DEPTH OF 2 FEET. TRENCHES WILL BE TAMPED AT 12 INCH INTERVALS TO PRECLUDE FUTURE SINKING. TOPSOIL WILL BE PRESERVED AND REPLACED. ALL DISTURBED AREAS SHALL BE RE-SEEDED AND STRAWED PER THE FORT BRAGG SEEDING SPECIFICATION. PULL CORDS WILL BE TIED OFF ON BOTH ENDS OF THE CONDUIT RUNS.
 10. EQUIPMENT
 - A. ALL DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
 - B. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY. TOWER SUBCONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT, AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK.
 11. CONDUCTORS
 - A. FURNISH AND INSTALL CONDUCTORS CALLED FOR IN THE DRAWINGS. ALL CONDUCTORS SHALL HAVE TYPE THWN (MIN) (75 DEGREE) INSULATION, RATED FOR 600 VOLTS.
 - B. ALL CONDUCTORS SHALL BE UL LISTED AND SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
 - B.a. MINIMUM WIRE SIZE SHALL BE #12 AWG.
 - B.b. ALL CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND SMALLER MAY BE SOLID OR STRANDED.
 - B.c. CONNECTION FOR #10 AWG AND SMALLER SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
 - B.d. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.
 - C. ALL CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.
 - D. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
 12. PENETRATIONS
 - E. TOWER SUBCONTRACTOR SHALL COMPLY WITH UL PENETRATION DETAILS FOR PENETRATIONS OF ALL RATED WALLS, ROOF, ETC.



















GROUNDING NOTES

1. ALL ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED BY ONE POINT ONLY.
2. PROVIDE GROUND CONDUCTOR IN ALL RACEWAYS.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 - LIGHTNING PROTECTION AS A MINIMUM.
4. ALL GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH MOTOROLA R-56 GUIDELINES, SECTION 4.

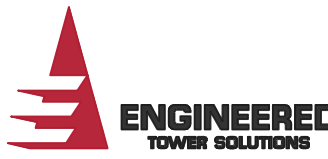
ABBREVIATIONS

- | | |
|-------|------------------------------|
| A | AMPERE |
| AFG | ABOVE FINISHED GRADE |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AWG | AMERICAN WIRE GAUGE |
| BCW | BARE COPPER WIRE |
| BFG | BELOW FINISHED GRADE |
| BKR | BREAKER |
| C | CONDUIT |
| CKT | CIRCUIT |
| DISC | DISCONNECT |
| EMT | ELECTRIC METALLIC TUBING |
| FSC | FLEXIBLE STEEL CONDUIT |
| GEN | GENERATOR |
| GPS | GLOBAL POSITIONING SYSTEM |
| GRC | GALVANIZED RIGID CONDUIT |
| KA | KILO AMP |
| KW | KILOWATTS |
| NEC | NATIONAL ELECTRIC CODE |
| PH | PHASE |
| PNL | PANEL |
| PNLBD | PANELBOARD |
| PVC | POLYVINYL CHLORIDE |
| RGS | RIGID GALVANIZED STEEL |
| SCCR | SHORT CIRCUIT CURRENT RATING |
| SW | SWITCH |
| UL | UNDERWRITERS LABORATORIES |
| V | VOLTAGE |
| VA | VOLTAGE AMP |
| W | WATTS |
| XFMR | TRANSFORMER |
| XMTR | TRANSMITTER |

LEGEND

- | | | | |
|---|-----------------------|---|---------------------------------|
|  | EXISTING UTILITY POLE |  | LIGHTNING ARRESTOR |
|  | LIGHT |  | GENERATOR |
|  | RECEPTACLE |  | GROUND |
|  | BREAKER |  | GROUND TO NEUTRAL BOND |
|  | TRANSFORMER |  | GROUND ROD |
|  | METER |  | GROUND ROD WITH INSPECTION WELL |
|  | PANEL |  | CADWELD BOND |
|  | DISCONNECT |  | MECHANICAL BOND |
|  | FUSED DISCONNECT |  | COMPRESSION BOND |

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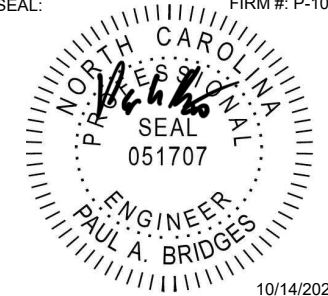


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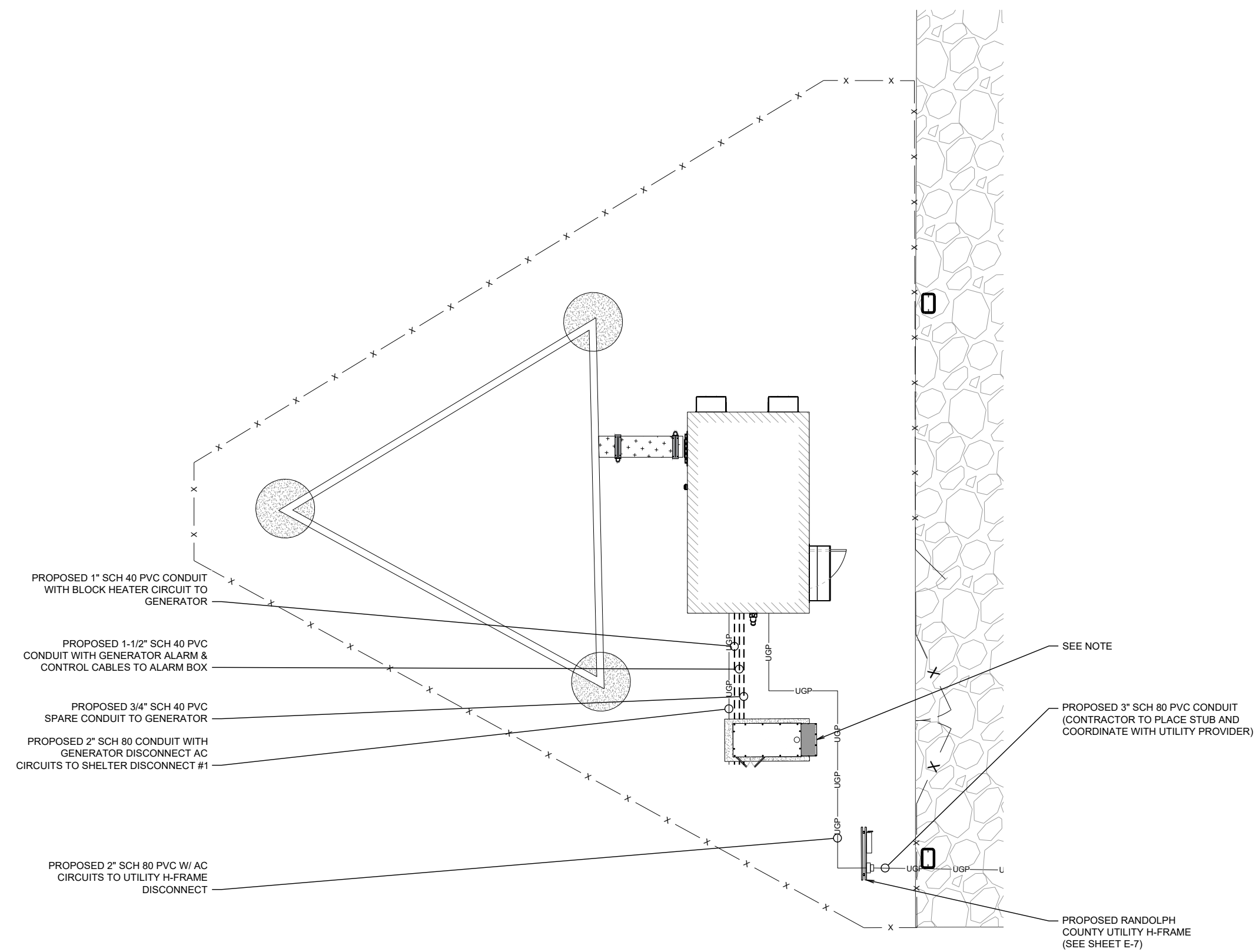
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SHEET TITLE:

ELECTRICAL NOTES

SHEET # **E-1** CURRENT REV #: 0
ETS #: 23119943



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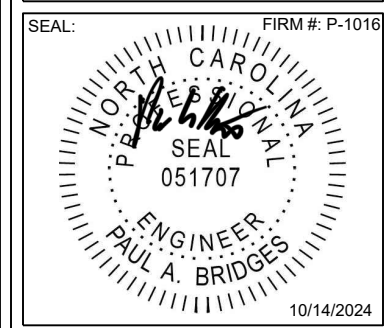
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SHEET TITLE:
ELECTRICAL PLAN

SHEET # **E-2** CURRENT REV #: 0
 ETS #: 23119943

NOTE

STUB CONDUITS 6" ABOVE FINISHED GRADE. FINISH CONNECTION PER GENERATOR MANUFACTURER'S SPECIFICATIONS. ONLY STRANDED CONDUCTOR SHALL BE USED FOR ALL CONNECTIONS TO GENERATOR.

ELECTRICAL PLAN
 3/32" = 1'-0"

AC1 LOAD SCHEDULE

120/240V, 200A MCB, 1-PHASE, 3-WIRE, NEMA 3R, 10,000 AIC, SURFACE MOUNTED, ON SHELTER WALL

| NOTES | CIR # | DESCRIPTION | AMPS | POLES | DEMAND LOAD | A | B | DEMAND LOAD | POLES | AMPS | DESCRIPTION | CIR # | NOTES | |
|-------|-------|--|------|-------|-------------|------|-------|-----------------------|---------------------------------------|------|----------------------|-------|-------|--|
| (P) | 1 | LA2 | 60 | 2 | 0.06 | 3.8 | | 3.72 | 2 | 40 | ACH2 | 2 | (P) | |
| | 3 | | | | 0.06 | | 3.8 | 3.72 | | | | 4 | | |
| (P) | 5 | ACH1 | 40 | 2 | 3.72 | 4.3 | | 0.54 | 1 | 20 | INTERIOR RECEPTACLES | 6 | (P) | |
| | 7 | | | | 3.72 | | 3.8 | 0.12 | | | | 8 | | |
| (P) | 9 | INTERIOR RECEPTACLES | 20 | 1 | 0.72 | 5.7 | | 4.95 | 2 | 125 | UPS BYPASS | 10 | (P) | |
| (P) | 11 | LIGHTS | 20 | 1 | 0.27 | | 5.2 | 4.95 | | | | 12 | | |
| (P) | 13 | EXTERIOR RECEPTACLE | 20 | 1 | 0.18 | 0.4 | | 0.18 | 2 | 30 | TWIST LOCK (14) | 14 | (P) | |
| (P) | 15 | EXTERIOR LIGHTS | 20 | 1 | 0.10 | | 0.3 | 0.18 | | | | 16 | | |
| (P) | 17 | GENERATOR WTR JKT HTR/BATTERY CHARGER | 20 | 2 | 1.50 | 1.7 | | 0.18 | 2 | 30 | TWIST LOCK (18) | 18 | (P) | |
| | 19 | | | | 0.18 | | 0.4 | 0.18 | | | | 20 | | |
| | 21 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 22 | | |
| | 23 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 24 | | |
| | 25 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 26 | | |
| | 27 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 28 | | |
| | 29 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 30 | | |
| | 31 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 32 | | |
| | 33 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 34 | | |
| | 35 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 36 | | |
| | 37 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 38 | | |
| (P) | 39 | BATTERY CHARGER | 20 | 1 | 2.50 | | 2.5 | 0.00 | | | BLANK | 40 | | |
| (P) | 41 | BATTERY CHARGER | 20 | 1 | 2.50 | | 2.5 | 0.00 | | | BLANK | 42 | | |
| | | | | | A | B | TOTAL | | | | | | | |
| | | | | | 18.3 | 16.0 | 34.2 | Total Panel Load (kW) | | | | | | |
| | | | | | | | | 38.4 | Total Panel Rated Capacity (kW) | | | | | |
| | | | | | | | | 4.2 | Total Panel Rated Spare Capacity (kW) | | | | | |
| | | | | | | | | 152 | Panel Amps | | | | | |

NOTES:

(1) FURNISH AND INSTALL TYPE WRITTEN PANEL SCHEDULE AS APPROPRIATE PER NEC.

(P) PROPOSED EQUIPMENT; INSTALL PER NEC

AC1 PANEL SCHEDULE

N.T.S.

AC2 LOAD SCHEDULE

120/240V, 200A MCB, 1-PHASE, 3-WIRE, NEMA 3R, 10,000 AIC, SURFACE MOUNTED, ON SHELTER WALL

| NOTES | CIR # | DESCRIPTION | AMPS | POLES | DEMAND LOAD | A | B | DEMAND LOAD | POLES | AMPS | DESCRIPTION | CIR # | NOTES | |
|-------|-------|---------------------|------|-------|-------------|-----|-------|-----------------------|---------------------------------------|------|---------------------|-------|-------|--|
| (P) | 1 | EQUIPMENT, RCPT #1 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | EQUIPMENT, RCPT #2 | 2 | (P) | |
| (P) | 3 | EQUIPMENT, RCPT #3 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | EQUIPMENT, RCPT #4 | 4 | (P) | |
| (P) | 5 | EQUIPMENT, RCPT #5 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | EQUIPMENT, RCPT #6 | 6 | (P) | |
| (P) | 7 | EQUIPMENT, RCPT #7 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | EQUIPMENT, RCPT #8 | 8 | (P) | |
| (P) | 9 | EQUIPMENT, RCPT #9 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | EQUIPMENT, RCPT #10 | 10 | (P) | |
| (P) | 11 | EQUIPMENT, RCPT #11 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | EQUIPMENT, RCPT #12 | 12 | (P) | |
| (P) | 13 | EQUIPMENT, RCPT #13 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | EQUIPMENT, RCPT #14 | 14 | (P) | |
| (P) | 15 | EQUIPMENT, RCPT #15 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | EQUIPMENT, RCPT #16 | 16 | (P) | |
| (P) | 17 | TRANS, CKT #17 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | TRANS, CKT #18 | 18 | (P) | |
| (P) | 19 | TRANS, CKT #19 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | TRANS, CKT #20 | 20 | (P) | |
| (P) | 21 | TRANS, CKT #21 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | TRANS, CKT #22 | 22 | (P) | |
| (P) | 23 | TRANS, CKT #23 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | TRANS, CKT #24 | 24 | (P) | |
| (P) | 25 | EQUIPMENT, RCPT #25 | 20 | 1 | 0.36 | 0.7 | | 0.36 | 1 | 20 | EQUIPMENT, RCPT #26 | 26 | (P) | |
| (P) | 27 | EQUIPMENT, RCPT #27 | 20 | 1 | 0.36 | | 0.7 | 0.36 | 1 | 20 | EQUIPMENT, RCPT #28 | 28 | (P) | |
| | 29 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 30 | | |
| | 31 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 32 | | |
| | 33 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 34 | | |
| | 35 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 36 | | |
| | 37 | BLANK | | | 0.00 | 0.0 | | 0.00 | | | BLANK | 38 | | |
| | 39 | BLANK | | | 0.00 | | 0.0 | 0.00 | | | BLANK | 40 | | |
| | | | | | A | B | TOTAL | | | | | | | |
| | | | | | 5.0 | 5.0 | 10.1 | Total Panel Load (kW) | | | | | | |
| | | | | | | | | 38.4 | Total Panel Rated Capacity (kW) | | | | | |
| | | | | | | | | 28.3 | Total Panel Rated Spare Capacity (kW) | | | | | |
| | | | | | | | | 42 | Panel Amps | | | | | |

NOTES:

(1) FURNISH AND INSTALL TYPE WRITTEN PANEL SCHEDULE AS APPROPRIATE PER NEC.

(P) PROPOSED EQUIPMENT; INSTALL PER NEC

AC2 PANEL SCHEDULE

N.T.S.

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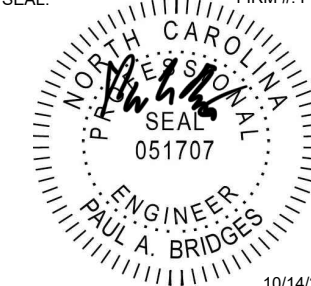
SITE NAME:

RANDLEMAN

SITE ADDRESS:
931 COMMONWEALTH ROAD
RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



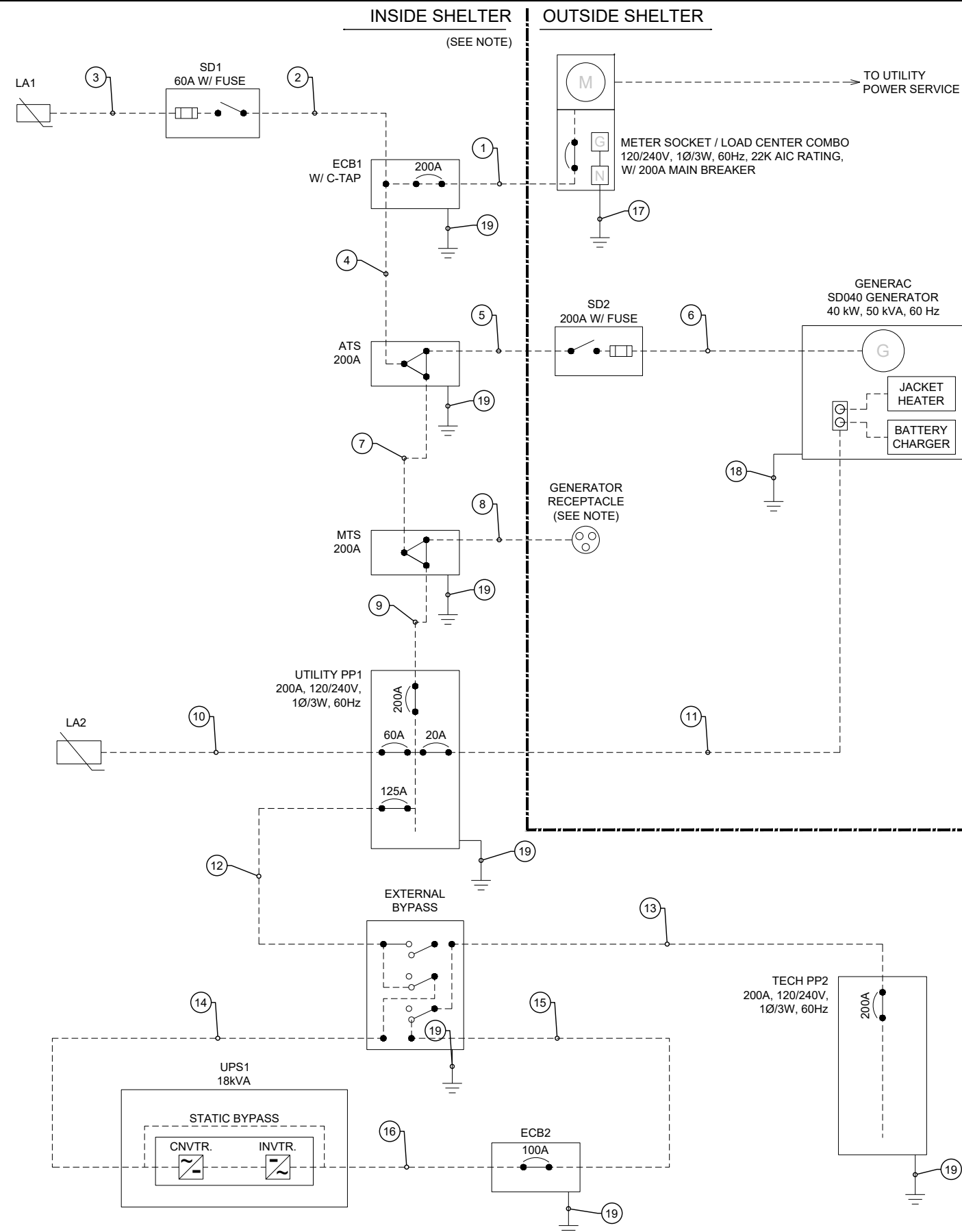
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SHEET TITLE:

**ELECTRICAL PANEL
SCHEDULES**


SHEET # **E-3** CURRENT REV #: 0
ETS #: 23119943



| CIRCUIT SCHEDULE | | | |
|------------------|---|---|----------------------------|
| | FROM | TO | CONDUCTOR |
| 1 | METER / LOAD CENTER | ENCLOSURE W/ CIRCUIT BREAKER (ECB1) | (3) #3/0 + (1) #6 G |
| 2 | ENCLOSURE W/ CIRCUIT BREAKER (ECB1) | SERVICE DISCONNECT (SD1) | (3) #4 AWG + (1) #10 G |
| 3 | SERVICE DISCONNECT (SD1) | LIGHTNING ARRESTOR (LA1) | (3) #4 AWG + (1) #10 G |
| 4 | ENCLOSURE W/ CIRCUIT BREAKER (ECB1) | AUTOMATIC TRANSFER SWITCH | (3) #3/0 + (1) #6 G |
| 5 | AUTOMATIC TRANSFER SWITCH | SERVICE DISCONNECT (SD2) | (3) #3/0 + (1) #6 G |
| 6 | SERVICE DISCONNECT (SD2) | GENERATOR | (3) 300 kcmil + (1) #4 G |
| 7 | AUTOMATIC TRANSFER SWITCH | MANUAL TRANSFER SWITCH | (3) #3/0 + (1) #6 G |
| 8 | MANUAL TRANSFER SWITCH | GENERATOR RECEPTACLE | (3) #3/0 + (1) #6 G + #2 G |
| 9 | MANUAL TRANSFER SWITCH | LOAD CENTER "UTILITY PP1" | (3) #3/0 + (1) #6 G |
| 10 | LOAD CENTER "UTILITY PP1" | LIGHTNING ARRESTOR (LA2) | (3) #4 AWG + (1) #6 G |
| 11 | LOAD CENTER "UTILITY PP1" | GENERATOR JACKET HEATER & BATTERY CHARGER RECEPTACLE | (2) #12 AWG + (1) #6 G |
| 12 | LOAD CENTER "UTILITY PP1" | EXTERNAL BYPASS | (3) #1 AWG + (1) #6 G |
| 13 | EXTERNAL BYPASS | LOAD CENTER "TECH PP2" | (3) #1 AWG + (1) #6 G |
| 14 | EXTERNAL BYPASS | UNINTERRUPTED POWER SYSTEM (UPS1) | (3) #1 AWG + (1) #6 G |
| 15 | EXTERNAL BYPASS | ENCLOSURE W/ CIRCUIT BREAKER (ECB2) | (3) #1 AWG + (1) #6 G |
| 16 | ENCLOSURE W/ CIRCUIT BREAKER (ECB2) | UNINTERRUPTED POWER SYSTEM (UPS1) | (3) #1 AWG + (1) #6 G |
| 17 | METER / LOAD CENTER (NEUTRAL & GROUND BOND) | SERVICE ENTRANCE GROUND ROD (BONDED TO SHELTER GROUND RING) | #2 AWG BTSC |
| 18 | GENERATOR | GROUND RING | #2 AWG BTSC |
| 19 | INTERNAL EQUIPMENT | ISOLATED PHASE GROUND RING | #6 AWG GREEN |

| NOTES | | |
|-------|--|--|
| 1. | ONE-LINE DIAGRAM & WIRE SIZING PER VFP, INC. SHELTER DRAWING NO. 207382. | |
| 2. | ALL EQUIPMENT INSIDE SHELTER, INCLUDING ALL GROUNDING IS PRE-INSTALLED AND WIRED BY VFP, INC. CONTACT VFP, INC. ENGINEER OF RECORD IF THERE ARE ANY DISCREPANCIES. | |
| 3. | THE SHORT-CIRCUIT RATING OF THE TRANSFER EQUIPMENT, BASED ON THE SPECIFIC OVERCURRENT PROTECTIVE DEVICE TYPE AND SETTING PROTECTING THE TRANSFER EQUIPMENT (CAN VARY BETWEEN THE UTILITY AND GENERATOR CONNECTIONS) MUST BE FIELD MARKED ON THE EXTERIOR OF THE TRANSFER EQUIPMENT PER NEC ARTICLE 701.5(D). | |
| 4. | SERVICE EQUIPMENT MUST BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER NEC ARTICLE 110.24(A). THE FIELD MARKING MUST INCLUDE THE DATE OF WHEN THE FAULT CURRENT CALCULATION WAS PERFORMED AND MUST BE ABLE TO WITHSTAND THE SURROUNDING ENVIRONMENT. | |
| 5. | ENSURE ALL REQUIRED SIGNS PER NEC ARTICLE 701.7 ARE INSTALLED. | |
| 6. | LEGALLY REQUIRED STANDBY SYSTEM OVERCURRENT DEVICES MUST BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES PER NEC ARTICLE ARTICLE 701.27. | |
| 7. | SERVICE ENTRANCE RATED METER / LOAD CENTER MUST HAVE GROUND BOND BETWEEN NEUTRAL AND GROUND, AND BE CODE COMPLIANT CONTAINING UNDERWRITERS LABORATORIES UL-891 AND UL-1008 LABELS, AND MEET NEC AND LOCAL CODES. | |
| 8. | GENERATOR RECEPTACLE: PROVIDE WARNING SIGN TO BE PLACED BY THE GENERATOR INLET THAT STATES: "WARNING: FOR CONNECTION OF A NONSEPARATELY DERIVED (FLOATING NEUTRAL) SYSTEM ONLY." DO NOT BOND NEUTRAL TO GROUND IN GENERATOR. | |
| 9. | REFER TO VFP, INC. SHELTER DRAWINGS NO. 207382 FOR ALL ALARM CABLE SCHEMATICS AND CONNECTION DETAILS. | |
| 10. | LOAD IS NOT TO EXCEED 200A. ELECTRICAL CONTRACTOR TO VERIFY LOAD. IF LOAD DOES EXCEED 200A, CONTRACTOR TO CONTACT VFP, INC. ENGINEER OF RECORD. | |
| 11. | ALL EXTERIOR ENCLOSURES TO BE NEMA 3 RATED. | |
| 12. | ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE. | |
| 13. | ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR A NORTH CAROLINA APPROVED THIRD PARTY TESTING AGENCY. | |
| 14. | SUBCONTRACTOR TO LEAVE EXTRA PULL TAPE FOR FUTURE CABLE INSTALL BY OTHERS. | |
| 15. | SEE SHEETS E-3 FOR PANEL SCHEDULES. | |
| 16. | SEE SHEET E-2 FOR ROUTES. | |

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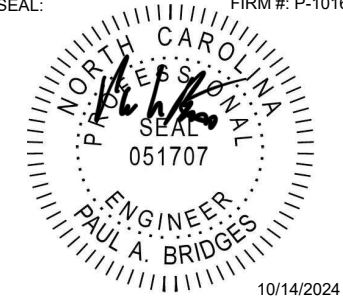
PREPARED FOR:



SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
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SEAL: FIRM #: P-1016



10/14/2024

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SHEET TITLE:
ELECTRICAL ONE-LINE DIAGRAM

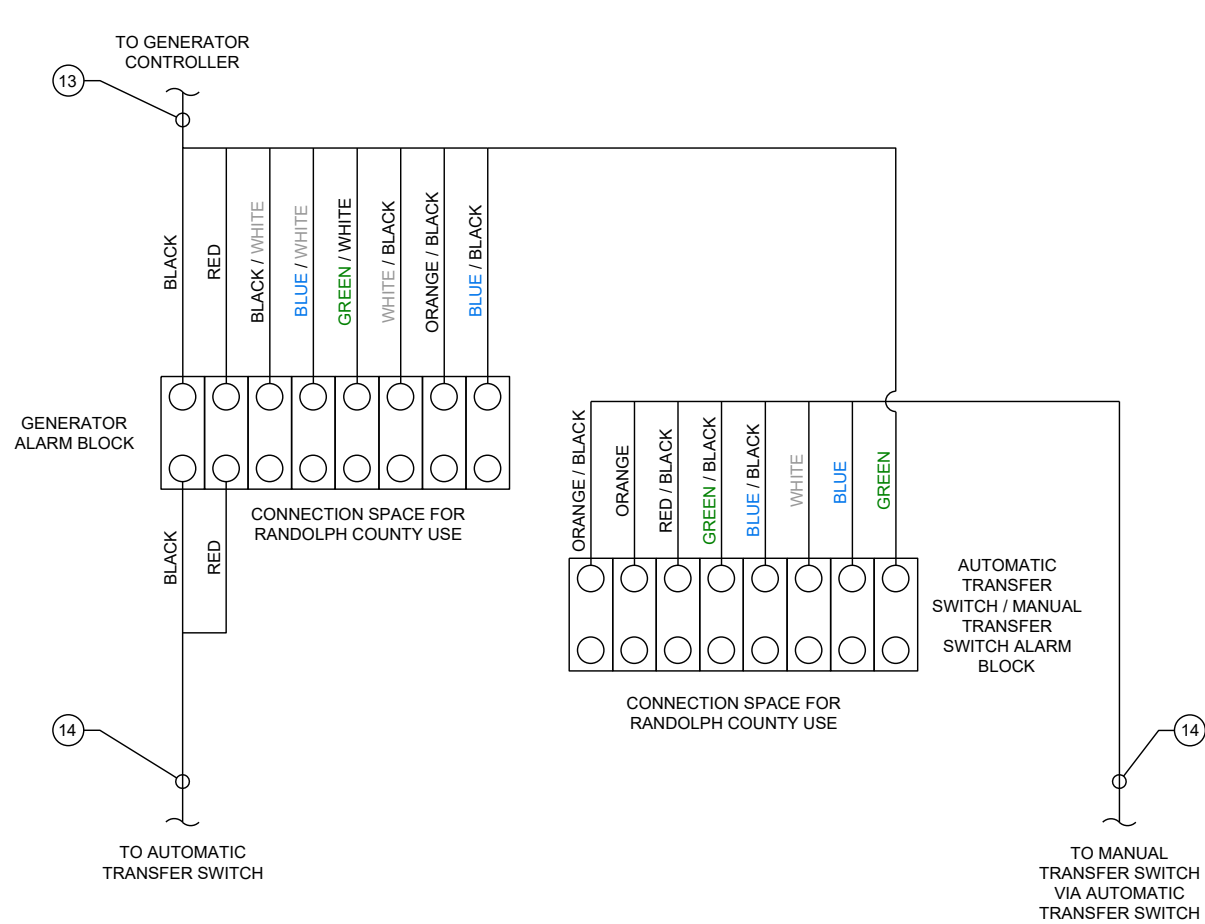
SHEET # **E-4** CURRENT REV #: 0
 ETS #: 23119943

AUTOMATIC TRANSFER SWITCH AND MANUAL TRANSFER SWITCH BLOCK ALARM ASSIGNMENT (CABLE COLOR)

1. START (BLACK)
2. STOP (RED)
3. ENGN (BLACK / WHITE)
4. ENGJ (BLUE / WHITE)
5. EETA / COMMON (GREEN / WHITE)
6. NOT IN AUTO (WHITE / BLACK)
7. FAIL TO START (ORANGE / BLACK)
8. COMMON FAULT (BLUE / BLACK)

GENERATOR ALARM TERMINAL BLOCK ALARM ASSIGNMENT (CABLE COLOR)

9. ACPF (ORANGE / BLACK)
10. ENGR (ORANGE)
11. PRE HIGH ENGINE TEMP (RED / BLACK)
12. TVSJ (GREEN / BLACK)
13. EPOT (BLUE / BLACK)
14. MTSN (WHITE)
15. LOW ENGINE TEMP (BLUE)
16. GROUND (GREEN)

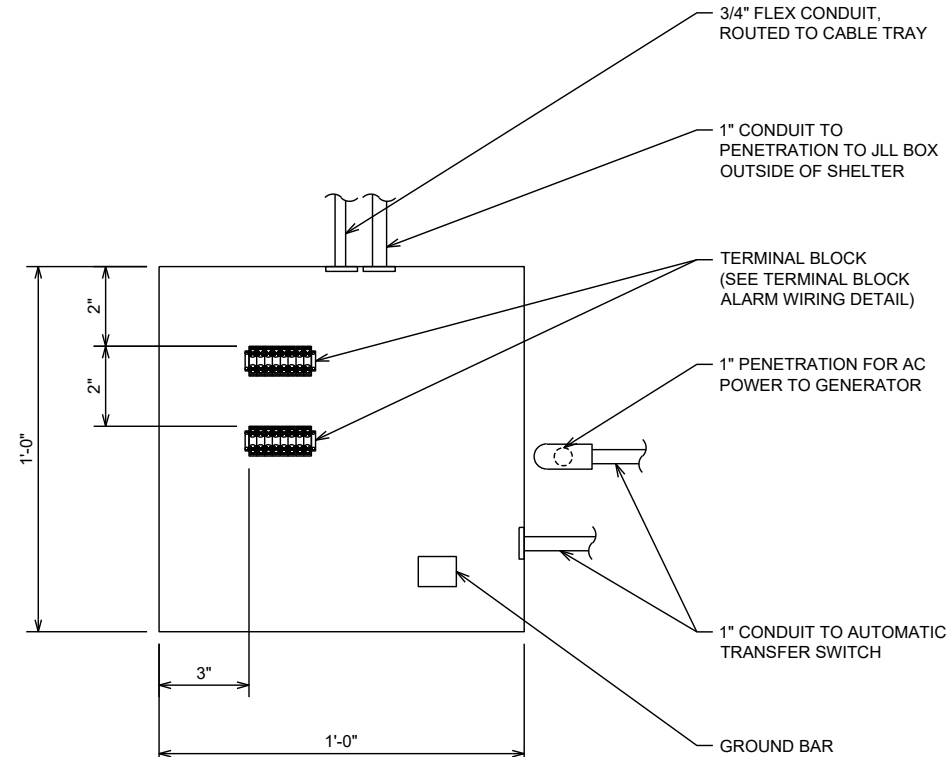


NOTES

1. SEE REFERENCE DOCUMENT (ENGINE CONTROL & ALARM DIAGRAMS) FOR EQUIPMENT SIDE TERMINATIONS
2. NUMBERING TO FOLLOW WHAT IS DEPICTED IN TERMINAL BLOCK ALARM WIRING DETAIL. SUBCONTRACTOR TO LABEL BLOCK POSITIONS FOR EACH TERMINAL BLOCK (P/N: UTILITECH GTB-408-UT)
3. SEE SHEET E-4 FOR CABLE TYPE AND DESTINATION ROUTING
4. ITEM 13 (P/N: BELDEN 8874MN) 15 CONDUCTOR #18 AWG SHIELDED. SUBCONTRACTOR TO CUT TO LENGTH AND COIL EXTRA CONDUCTORS. THIS CABLE WILL TERMINATE ON THE GENERATOR ALARM BLOCK AND LAND INSIDE THE GENERATOR.
5. ITEM 14 (P/N: BELDEN 8448) 8 CONDUCTOR #18 AWG. SUBCONTRACTOR TO CUT TO LENGTH AND COIL EXTRA CONDUCTORS. THIS CABLE WILL TERMINATE ON THE AUTOMATIC TRANSFER SWITCH/MANUAL TRANSFER SWITCH ALARM BLOCK AND LAND INSIDE THE AUTOMATIC TRANSFER SWITCH. SUBCONTRACTOR TO FOLLOW RANDOLPH COUNTY ALARM WIRING DIAGRAM TO TERMINATE ALARM WIRING WITHIN THE AUTOMATIC TRANSFER SWITCH.

TERMINAL BLOCK ALARM WIRING

N.T.S.



NOTES

1. DETAIL SHOWING JUNCTION BOX WITH COVER REMOVED (P/N: EATON 12126HC)
2. SUBCONTRACTOR TO GROUND JUNCTION BOX TO SHELTER GROUND

RANDOLPH COUNTY ALARM BOX INSTALLATION

N.T.S.

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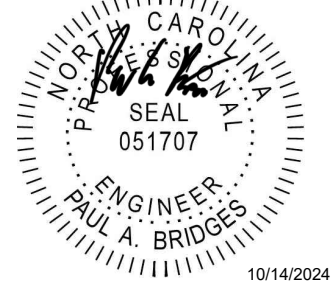
SITE NAME:

RANDLEMAN

SITE ADDRESS:
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RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
35.821314°, -79.831628°

SEAL:

FIRM #: P-1016



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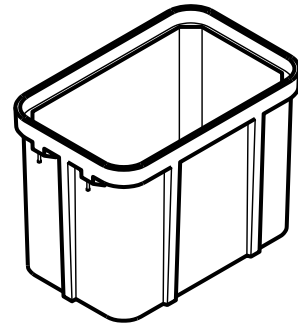
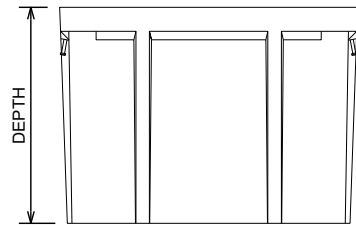
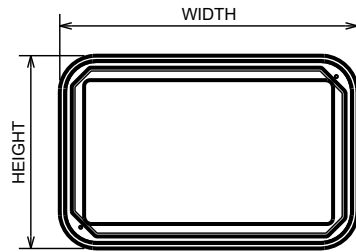
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SHEET TITLE:

**ALARM WIRING
DETAILS**

SHEET # **E-5** CURRENT REV #: 0
ETS #: 23119943

| HEIGHT | WIDTH | DEPTH | WEIGHT |
|---------|---------|---------|------------|
| 34.125" | 49.625" | 36.000" | 376.95 LBS |

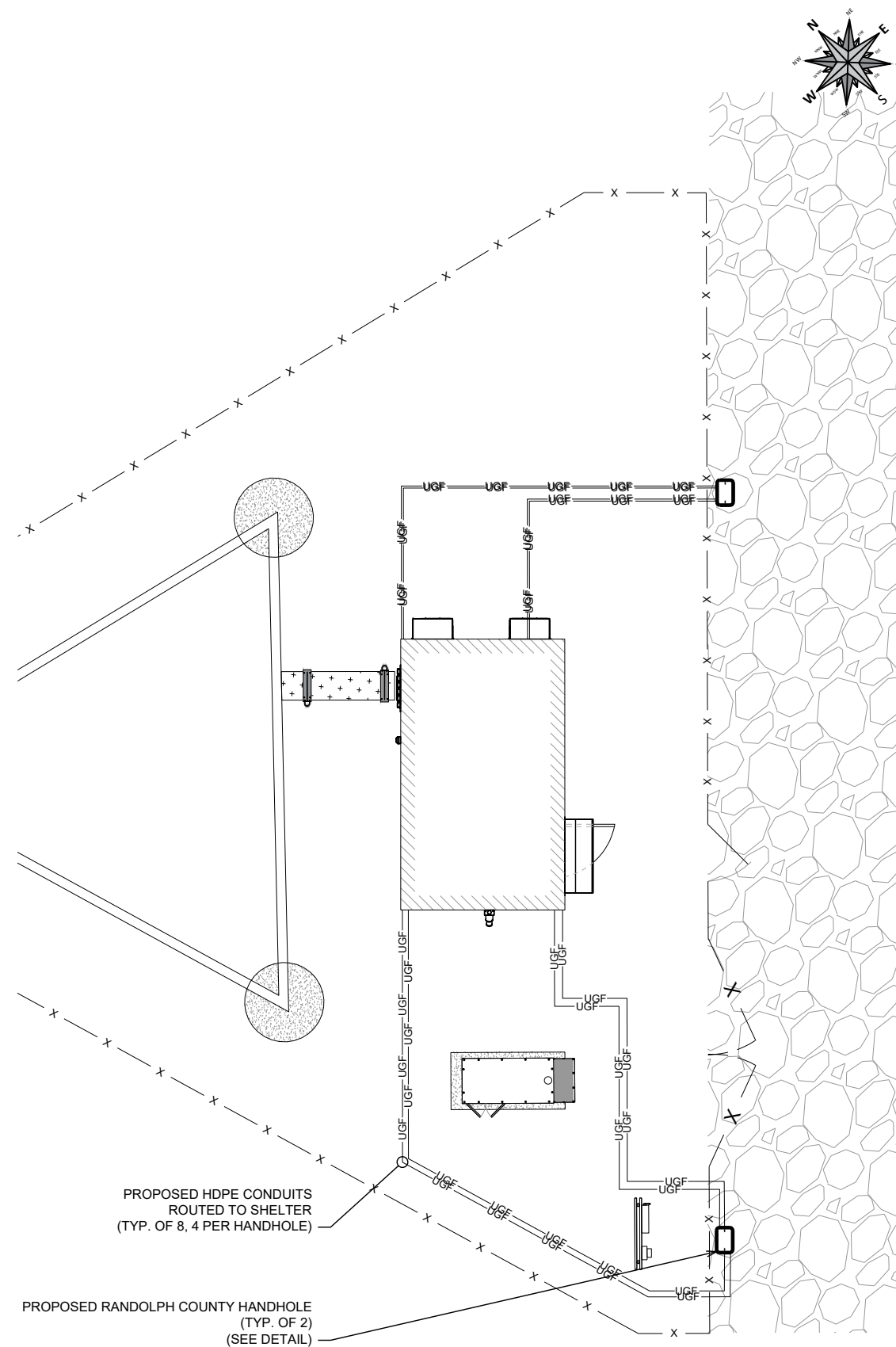


SERVICE BOX DETAIL

N.T.S.

NOT USED

N.T.S.



FIBER ROUTING PLAN

1/16" = 1'-0"



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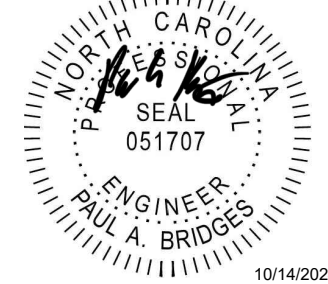
SITE NAME:

RANDLEMAN

SITE ADDRESS:
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RANDLEMAN, NC 27317
LATITUDE/LONGITUDE:
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10/14/2024

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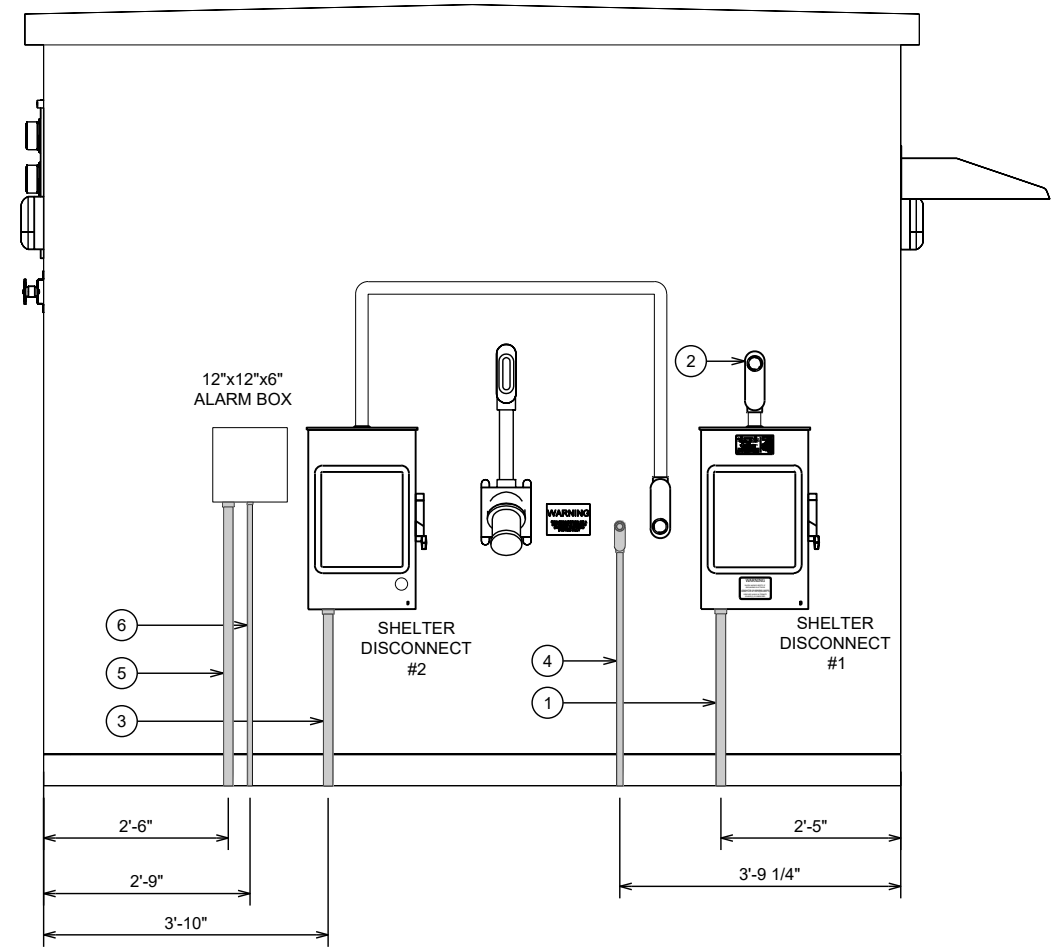
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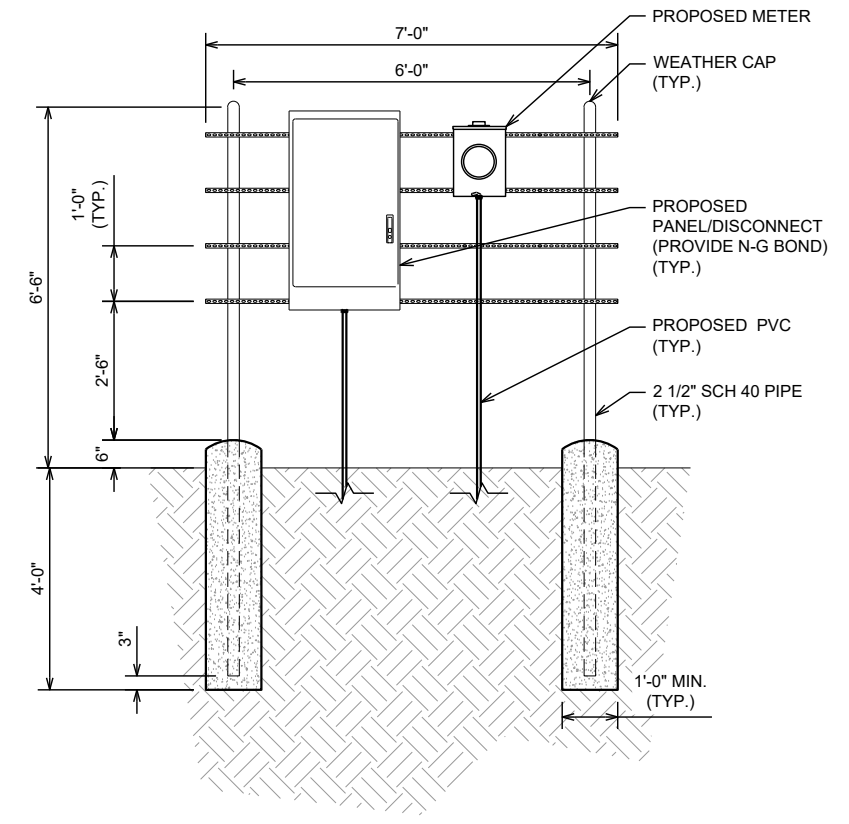
FIBER ROUTING PLAN

SHEET # **E-6** CURRENT REV #: 0
ETS #: 23119943

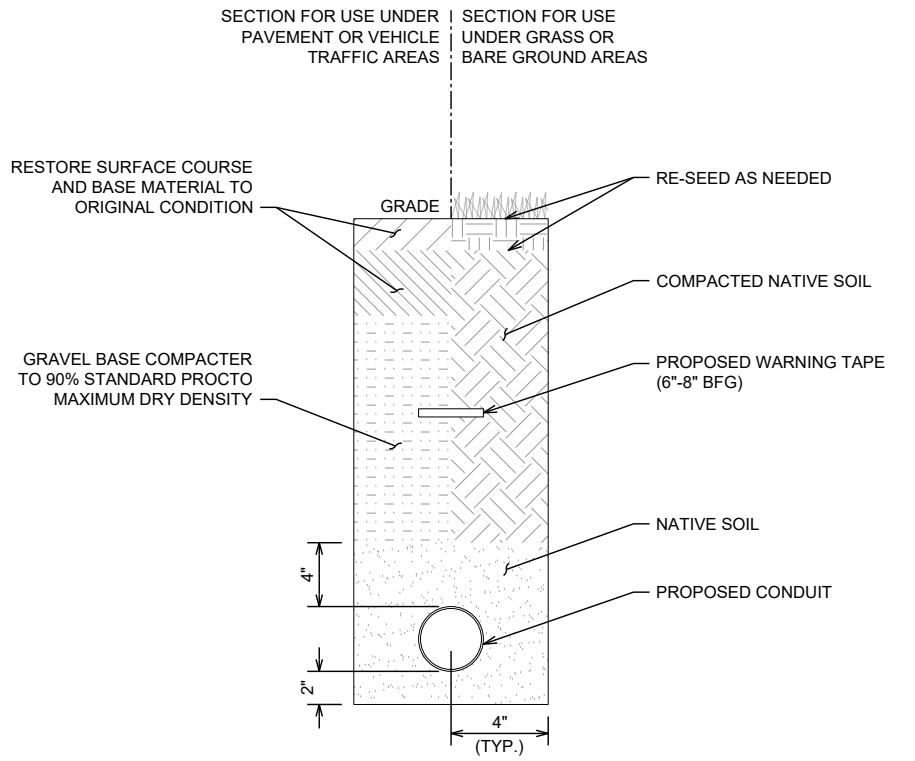
| PVC SCHEDULE | | | |
|--------------|-------------------|-----------------------------|---|
| | CONDUIT | TO | PURPOSE |
| 1 | 2" SCH 80 PVC | FRAME DISCONNECT SWITCH | MAIN AC SERVICE |
| 2 | 2" RGSC | AUTOMATIC TRANSFER SWITCH | MAIN AC SERVICE FEED INTO SHELTER |
| 3 | 2" SCH 80 PVC | GENERATOR DISCONNECT SWITCH | GENERATOR AC POWER FEED |
| 4 | 1" SCH 40 PVC | GENERATOR | AC POWER FEED TO BLOCK HEATER & BATTERY CHARGER |
| 5 | 1-1/2" SCH 40 PVC | GENERATOR | ALARMING |
| 6 | 3/4" SCH 40 PVC | GENERATOR | SPARE CONDUIT |



ELEVATION D
N.T.S.



UTILITY H-FRAME DETAIL
N.T.S.



TRENCH DETAILS
N.T.S.

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EMERGENCY SERVICES
RANDOLPH COUNTY
911

SITE NAME:
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SHEET TITLE:
UTILITY DETAILS

SHEET # **E-7** CURRENT REV # 0
ETS #: 23119943



PROPOSED TOWER LEG #2 AWG SOLID TINNED COPPER BONDED TO TOWER GROUND RING (TYP. PER LEG)

PROPOSED GROUND ROD W/ INSPECTION WELL (TYP.)

PROPOSED SHELTER MASTER GROUND BAR BONDED TO EQUIPMENT SHELTER GROUND RING W/ #2 AWG SOLID TINNED COPPER

PROPOSED TOWER #2 AWG SOLID TINNED COPPER GROUND RING

PROPOSED ICE BRIDGE #2 AWG SOLID TINNED COPPER GROUND (TYP. PER ICE BRIDGE POST)

PROPOSED #2 AWG SOLID TINNED COPPER BONDED TO FENCE (TYP.)

PROPOSED ICE-BRIDGE BUS BAR BONDED TO EQUIPMENT SHELTER GROUND RING W/ 3PL COPPER STRAPS

PROPOSED HVAC #2 AWG SOLID TINNED COPPER GROUND TO EQUIPMENT SHELTER GROUND RING (TYP. OF 2)

BOND ADDITIONAL FENCE POST TO LIMIT DISTANCE BETWEEN BONDED POSTS TO 40' OR LESS (AS NEEDED)

PROPOSED EQUIPMENT SHELTER #2 AWG SOLID TINNED COPPER GROUND RING (3'-0" MIN. OFF CONC. EDGE)

PROPOSED GENERATOR #2 AWG SOLID TINNED COPPER BONDED TO GROUND RING

PROPOSED 5/8" x 8' COPPER GROUND ROD (TYP.)

PROPOSED H-FRAME #2 AWG SOLID TINNED COPPER BONDED TO GROUND RING

PROPOSED SERVICE GROUND

KEY:

| | |
|--|---------------------------------|
| | GROUND ROD |
| | GROUND ROD WITH INSPECTION WELL |
| | CADWELD (EXOTHERMIC) |
| | MECHANICAL |

COMPOUND GROUNDING PLAN

3/32" = 1'-0"

PREPARED BY:

ENGINEERED TOWER SOLUTIONS

3227 WELLINGTON COURT
 RALEIGH, NC 27615
 919-782-2710
 www.ets-pllc.com

PREPARED FOR:

EMERGENCY SERVICES
 RANDOLPH COUNTY EMS
 911

SITE NAME:
RANDLEMAN

SITE ADDRESS:
 931 COMMONWEALTH ROAD
 RANDLEMAN, NC 27317
 LATITUDE/LONGITUDE:
 35.821314°, -79.831628°

SEAL: FIRM # P-1016

PAUL A. BRIDGES
 ENGINEER
 051707
 10/14/2024

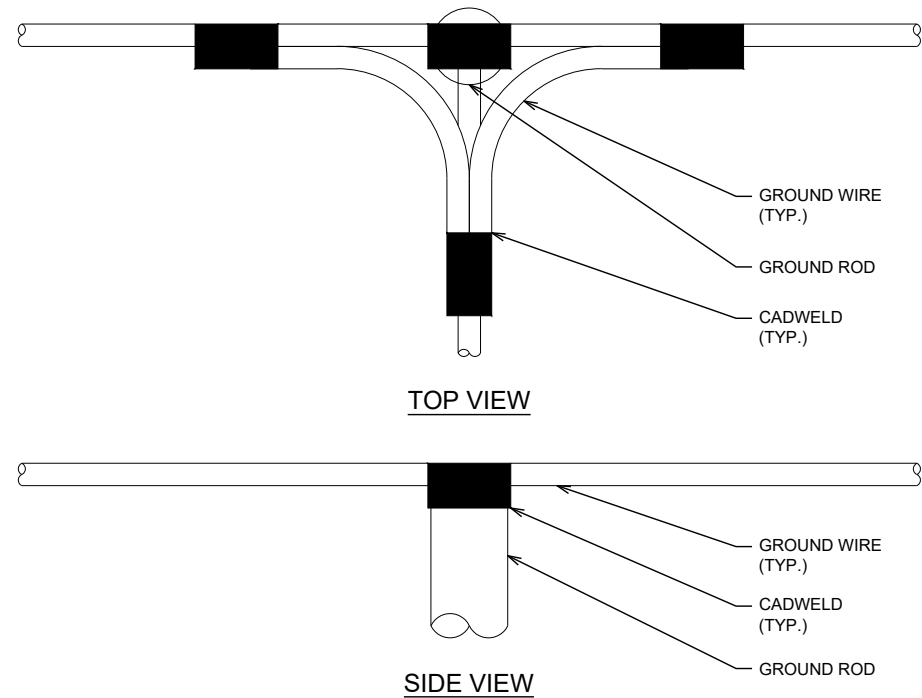
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GROUNDING PLAN

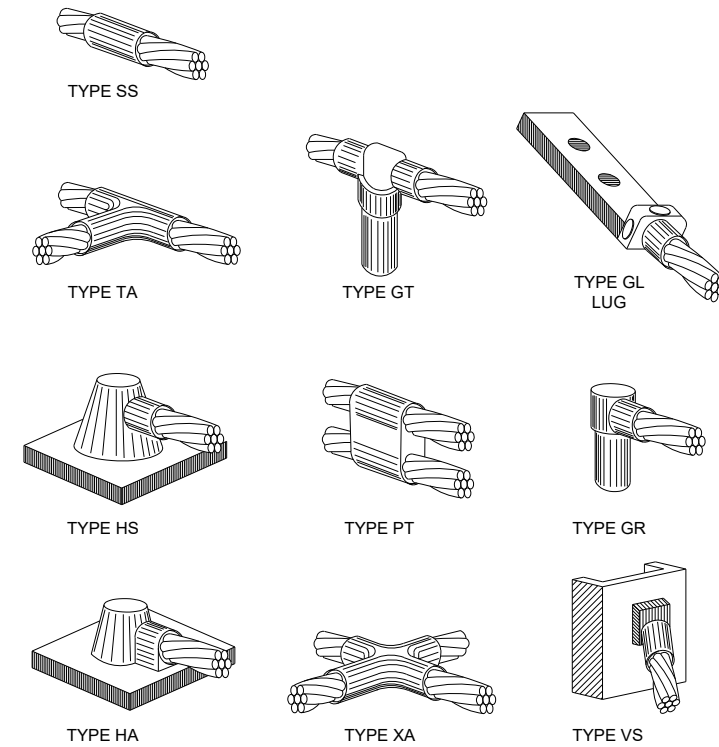
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 ETS #: 23119943

NOTES:
 • MINIMUM SPACING OF 1'-0" BETWEEN ALL CADWELDS



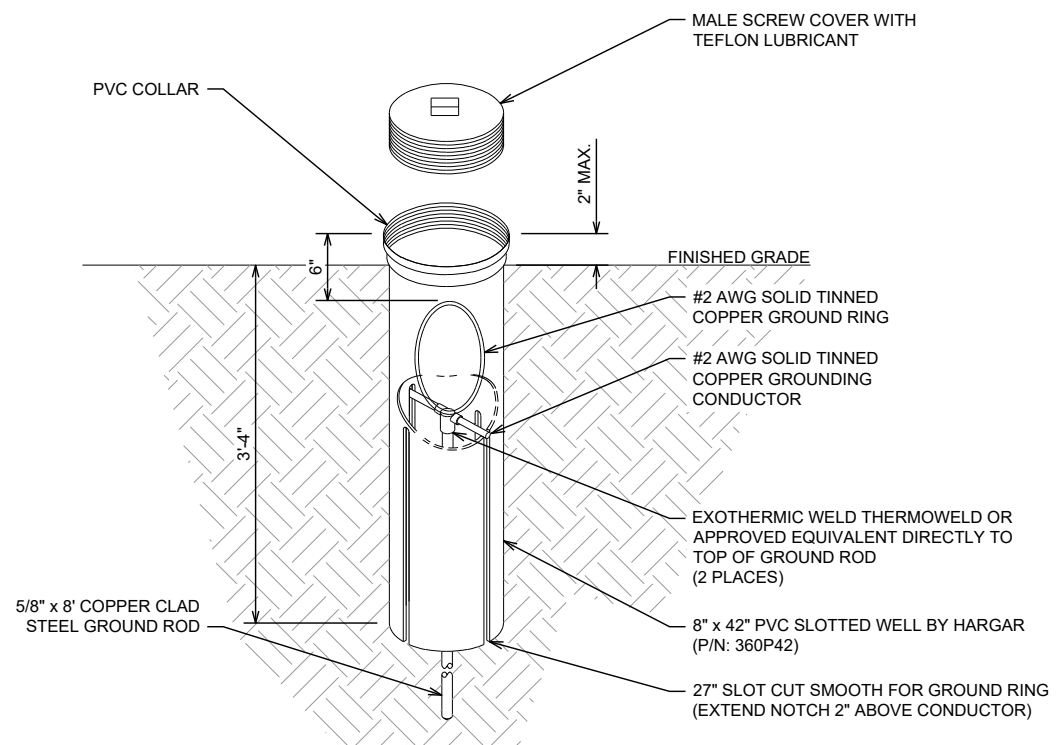
CADWELD GROUNDING DETAIL

N.T.S.



STANDARD CADWELD DETAILS

N.T.S.



GROUND ROD WITH INSPECTION WELL

N.T.S.

1. GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING #2 AWG SOLID TINNED BARE WIRE. THE TOP OF THE GROUND RODS AND THE RING CONDUCTOR SHALL BE 30 INCHES BELOW FINISHED GRADE OR BELOW FROST LINE, WHICHEVER IS GREATER. GROUNDING ELECTRODES SHALL BE INSTALLED A MINIMUM SPACING OF 16'-0"
2. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250.30
3. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
4. GROUND RINGS SHALL BE INSTALLED IN DIRECT CONTACT WITH THE EARTH AT A DEPTH OF 30 INCHES BELOW THE EARTH'S SURFACE WHEREVER POSSIBLE, OR BELOW THE FROST LINE, WHICHEVER IS DEEPER (ANSI T1.334-2002, SECTION 5.3.1 AND NFPA 70-2005, ARTICLE 250.53)
 - A. BUILDING GROUND RINGS SHALL BE INSTALLED AT LEAST 3 FEET FROM THE BUILDING FOUNDATION AND SHOULD BE INSTALLED BEYOND THE DRIP LINE OF THE ROOF. IT IS RECOMMENDED THAT THE BUILDING GROUND RING AND GROUND RODS BE POSITIONED 2 FEET TO 6 FEET OUTSIDE OF THE DRIP LINE OF THE BUILDING OR STRUCTURE TO ENSURE THAT PRECIPITATION WETS THE EARTH AROUND THE GROUND RING AND RODS (MIL-HDBK-419A AND MIL-STD-188-124B)
 - B. TOWER GROUND RINGS SHALL BE INSTALLED AT LEAST 2 FEET FROM THE TOWER FOUNDATION (ANSI T1.334-2002, SECTION 5.3.1)
5. BOND PPC AND EQUIPMENT ENCLOSURES TO BURIED GROUNDING CONDUCTOR. USE A NEMA DRILLED TWO-HOLE CONNECTOR FOR BONDS TO EQUIPMENT ENCLOSURES; USE AN APPROVED CONDUIT CLAMP FOR CONNECTIONS TO SERVICE CONDUITS. EXOTHERMICALLY WELD CONNECTIONS TO GROUNDING CONDUCTOR.
6. 5/8" x 8'-0" LONG GROUND ROD. SPACING BETWEEN RODS, AS SHOWN (NON-LINEAR). PROVIDE TEE TYPE EXOTHERMIC WELD TO BOND GROUND ROD TO BURIED GROUND RING. TYPICAL FOR ALL GROUND RODS SHOWN AROUND TOWER. SEE GROUND ROD INSPECTION SLEEVE DETAIL.
7. BOND ALL EXTERIOR CONDUITS, PIPES AND CYLINDRICAL METALLIC OBJECTS WITH A PENN-UNION GT SERIES CLAMP, BLACKBURN GUV SERIES CLAMP OR A BURNDY GAR 3900BU SERIES CLAMP.
8. BEFORE AND AFTER INSTALLATION IS COMPLETED IN CONFORMANCE WITH THESE DRAWINGS AND THE STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL CONFIRM THE IMPEDANCE (GROUND RESISTANCE) TO EARTH AND BETWEEN GROUNDING CIRCUITS. THE GROUNDING SYSTEM IS EXPECTED TO PROVIDE FOR A MAXIMUM EARTH RESISTANCE OF 5 OHMS. THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO ALL TESTING AND SHALL FURTHER NOTIFY THE OWNER IN THE EVENT THE EARTH RESISTANCE IS GREATER THAN 10 OHMS. USE 3 POINT FALL OF POTENTIAL METHOD.
9. ALL GROUNDING CONNECTIONS SHALL BE MADE WITH CADWELDS U.N.O.
10. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES. HAND DIG IN THIS VICINITY TO PROTECT FROM DAMAGE.
11. ALL BENDS ON THE GROUND CONDUCTOR TO BE MADE WITH A MINIMUM 8" RADIUS. BENDS ARE NOT TO EXCEED 90° PER NFPA 780-2004, SECTION 4.9.5 AND ANSI T1.313-2003.
12. GROUNDING SHALL BE IN ACCORDANCE WITH THE FOLLOWING MOTOROLA R56 STANDARD PRACTICES (AS REQUIRED): (GENERAL CONTRACTOR SHALL CONFIRM LATEST STANDARDS)
 - A. SSEO 3.018.02.004 BONDING, GROUNDING AND TRANSIENT PROTECTION
 - B. SSEO 3.018.10.002 SITE RESISTANCE TO EARTH TESTING
 - C. REFER TO DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS
13. CONTRACTOR SHALL TEST EXISTING GROUND RING FOR TOWER BEFORE START OF AND AFTER COMPLETION OF CONSTRUCTION TO VERIFY LESS THAN 5 OHMS RESISTANCE.

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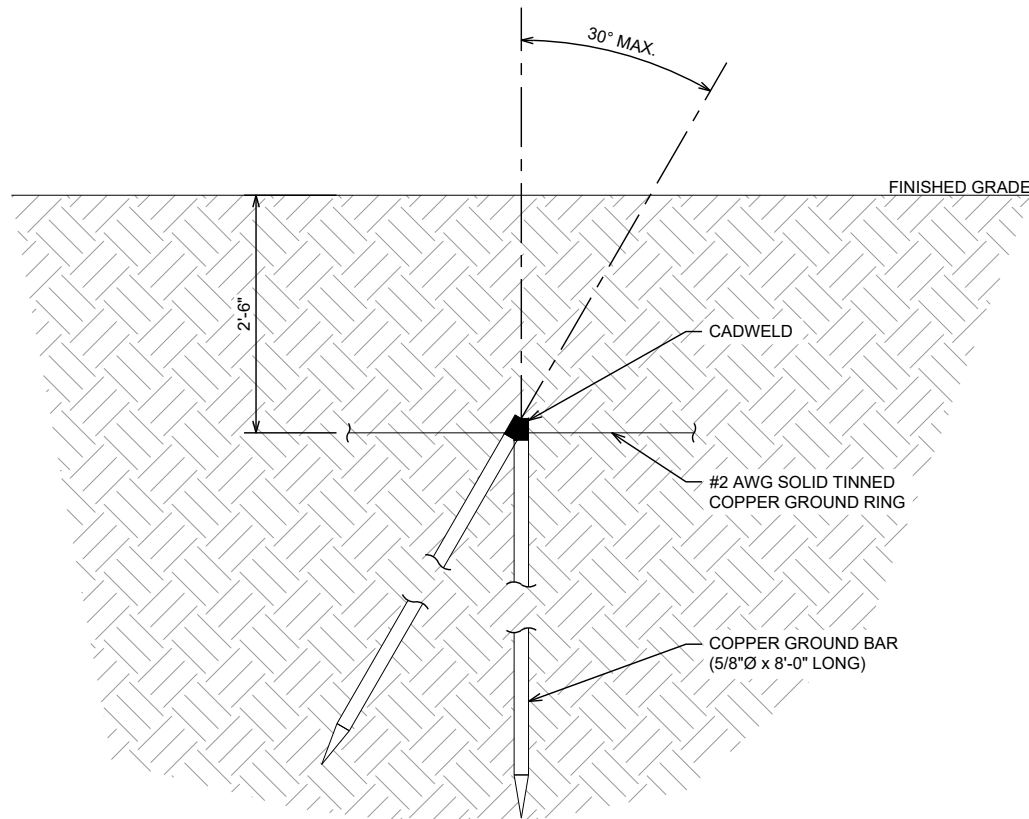
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GROUNDING DETAILS I

SHEET # **G-2.1** CURRENT REV # 0
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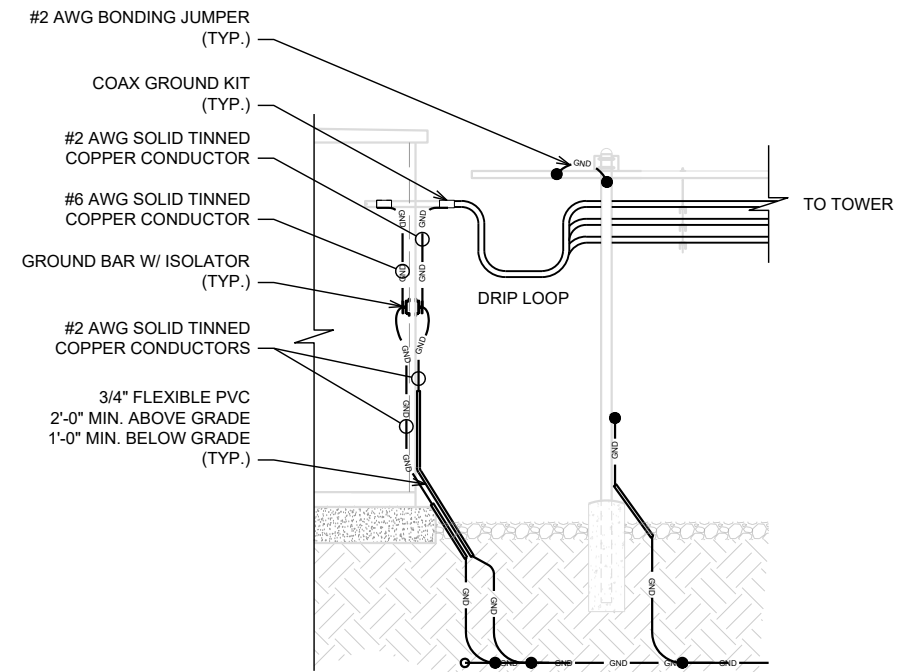


COPPER-CLAD STEEL GROUND ROD

N.T.S.

NOTES:

- GROUNDING & BONDING CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN 8" (90° ANGLE).
- EACH ICE BRIDGE POST MUST BE GROUNDED.
- CONDUCTOR BONDING TO THE GROUND RING SHALL BE EXOTHERMIC.
- BONDING JUMPERS TO BE JACKETED & SHALL BE A EXOTHERMIC BOND TO ICE BRIDGE & POST.

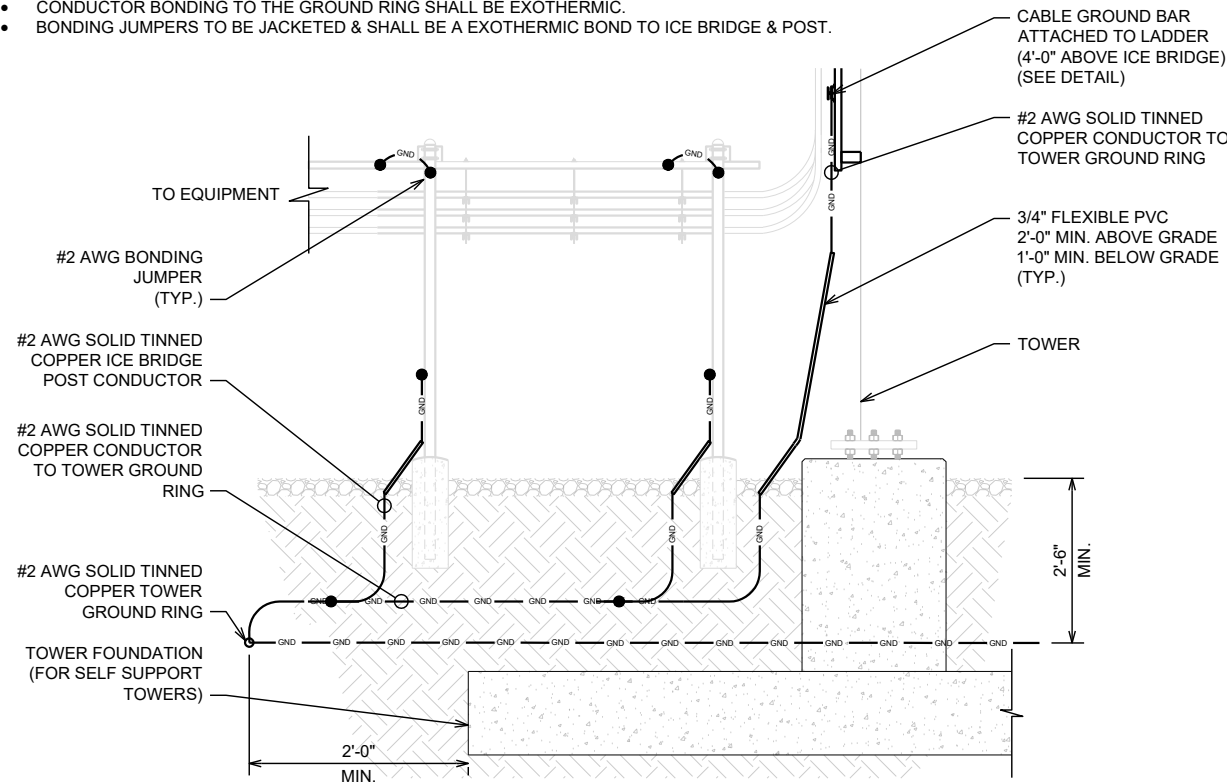


ICE BRIDGE GROUNDING @ SHELTER

N.T.S.

NOTES:

- GROUNDING & BONDING CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN 8" (90° ANGLE).
- EACH ICE BRIDGE POST MUST BE GROUNDED.
- CONDUCTOR BONDING TO THE GROUND RING SHALL BE EXOTHERMIC.
- BONDING JUMPERS TO BE JACKETED & SHALL BE A EXOTHERMIC BOND TO ICE BRIDGE & POST.

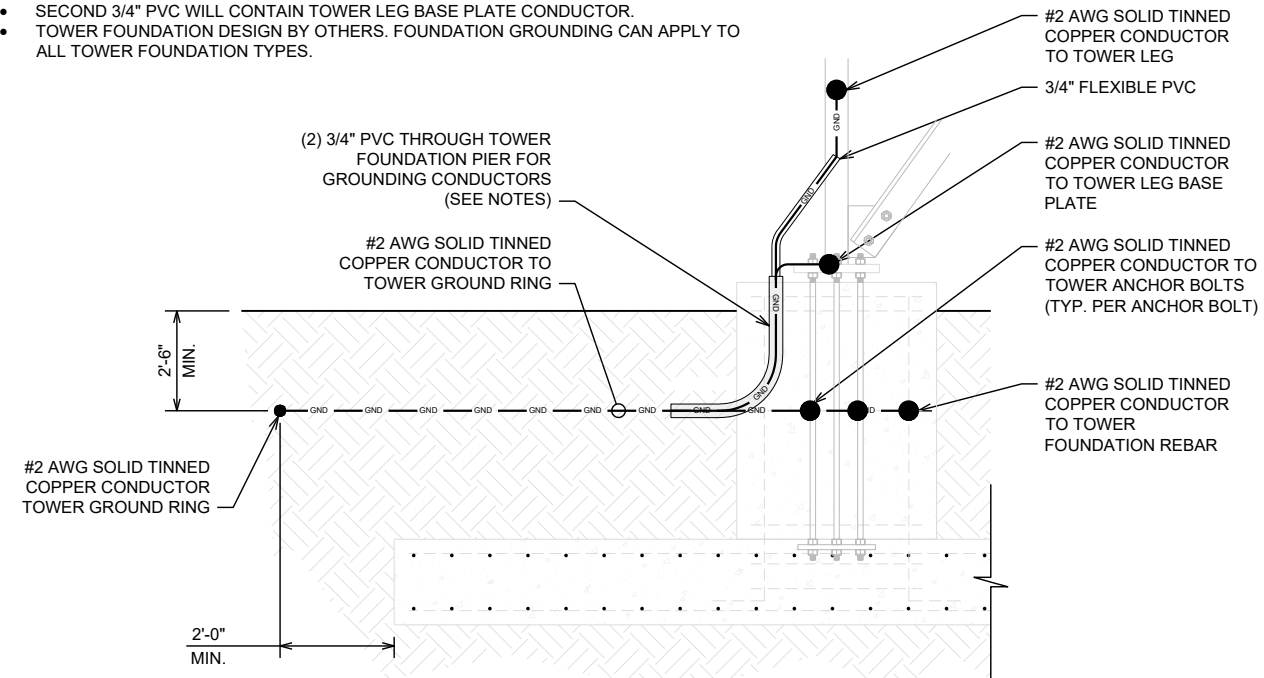


ICE BRIDGE GROUNDING @ TOWER

N.T.S.

NOTES:

- GROUNDING & BONDING CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN 8" (90° ANGLE).
- EACH TOWER LEG MUST BE GROUNDED AS SHOWN.
- CONDUCTOR BONDING TO THE GROUND RING SHALL BE EXOTHERMIC.
- CONDUCTOR BONDING TO ANCHOR BOLTS & REBAR SHALL BE MECHANICAL CLAMPS.
- FIRST 3/4" PVC WILL CONTAIN TOWER DOWN CONDUCTOR.
- SECOND 3/4" PVC WILL CONTAIN TOWER LEG BASE PLATE CONDUCTOR.
- TOWER FOUNDATION DESIGN BY OTHERS. FOUNDATION GROUNDING CAN APPLY TO ALL TOWER FOUNDATION TYPES.



TOWER LEG GROUNDING

N.T.S.

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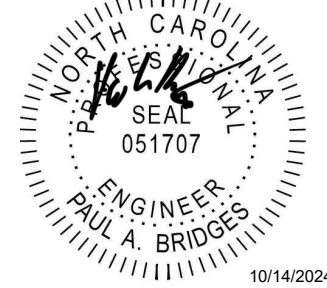
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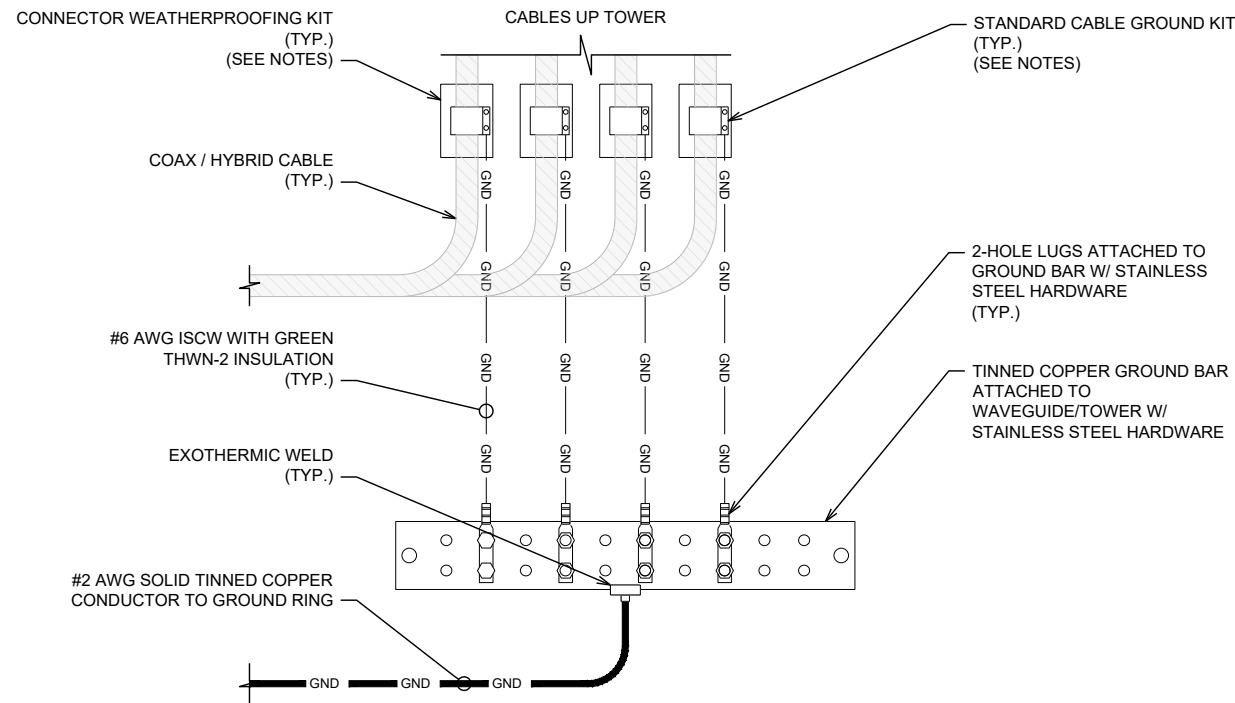
**GROUNDING
DETAILS II**

SHEET # **G-2.2**

CURRENT REV # 0
ETS #: 23119943

NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
- GROUND BAR SHOULD BE INSTALLED AT A POINT WHERE GROUND KIT CONDUCTORS DO NOT HAVE TO BE EXTENDED.
- WEATHER PROOFING SHALL BE ANDREWS (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER).
- GROUNDING & BONDING CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN 8" (90° ANGLE).

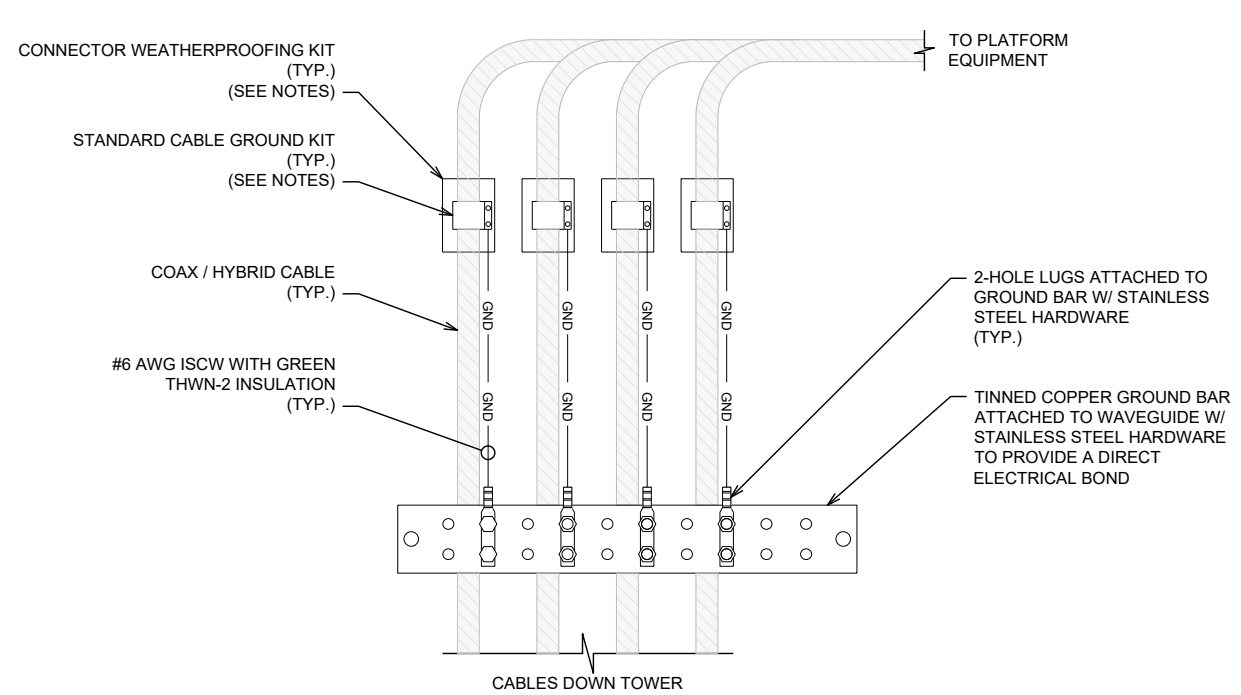


CABLE TO BASE GROUND BAR

N.T.S.

NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
- GROUND BAR SHOULD BE INSTALLED AT A POINT WHERE GROUND KIT CONDUCTORS DO NOT HAVE TO BE EXTENDED.
- WEATHER PROOFING SHALL BE ANDREWS (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER).
- GROUNDING & BONDING CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN 8" (90° ANGLE).

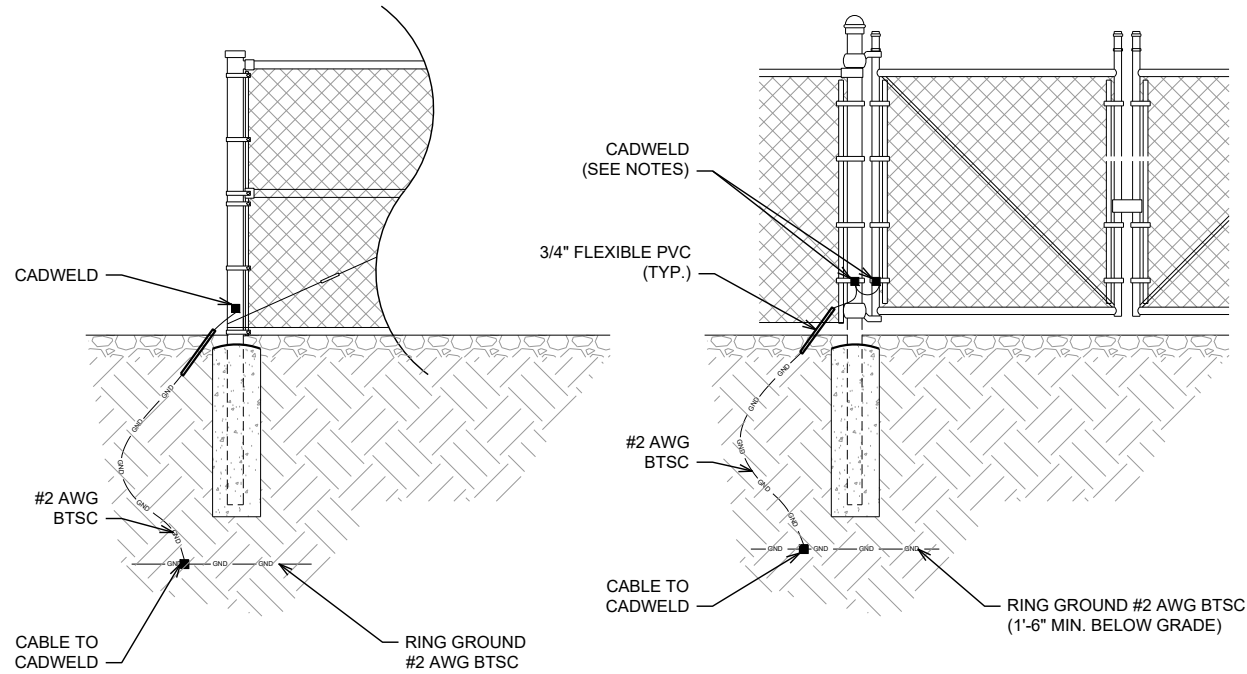


CABLE TO TOP GROUND BAR

N.T.S.

NOTES:

- VERTICAL POSTS SHALL BE BONDED TO THE GROUND RING AT EACH CORNER AND AT EACH GATE POST. AT MINIMUM, ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100 - FOOT STRAIGHT RUN OF FENCE.
- THE #2 AWG BTSC, FROM THE GROUND RING SHALL BE CADWELDED TO THE POST ABOVE GROUND.
- GATE JUMPER SHALL BE #4/0 AWG WELDING CABLE OR FLEXIBLE COPPER BRAIDED FLAT STRAP WITH SLEEVES ON EACH END DESIGNED FOR EXOTHERMIC WELDING
- GATE JUMPER SHALL BE INSTALLED SO THAT IT WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULL OPEN IN EITHER DIRECTION

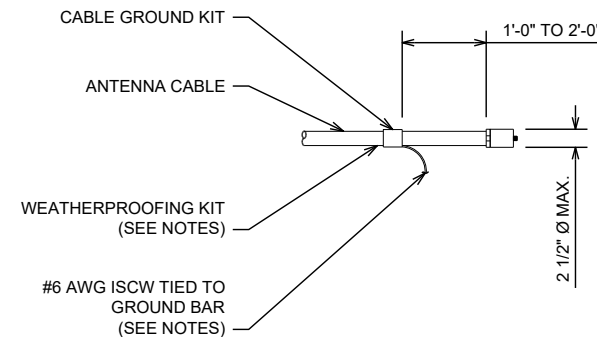


FENCE GROUNDING DETAILS

N.T.S.

NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR
- GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG
- WEATHER PROOFING SHALL INCORPORATE PPC WEATHERPROOFING TAPE KIT; COLD SHRINK SHALL NOT BE USED



CABLE GROUNDING DETAIL

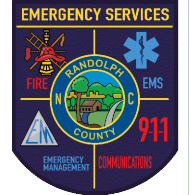
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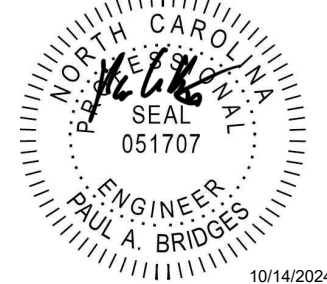
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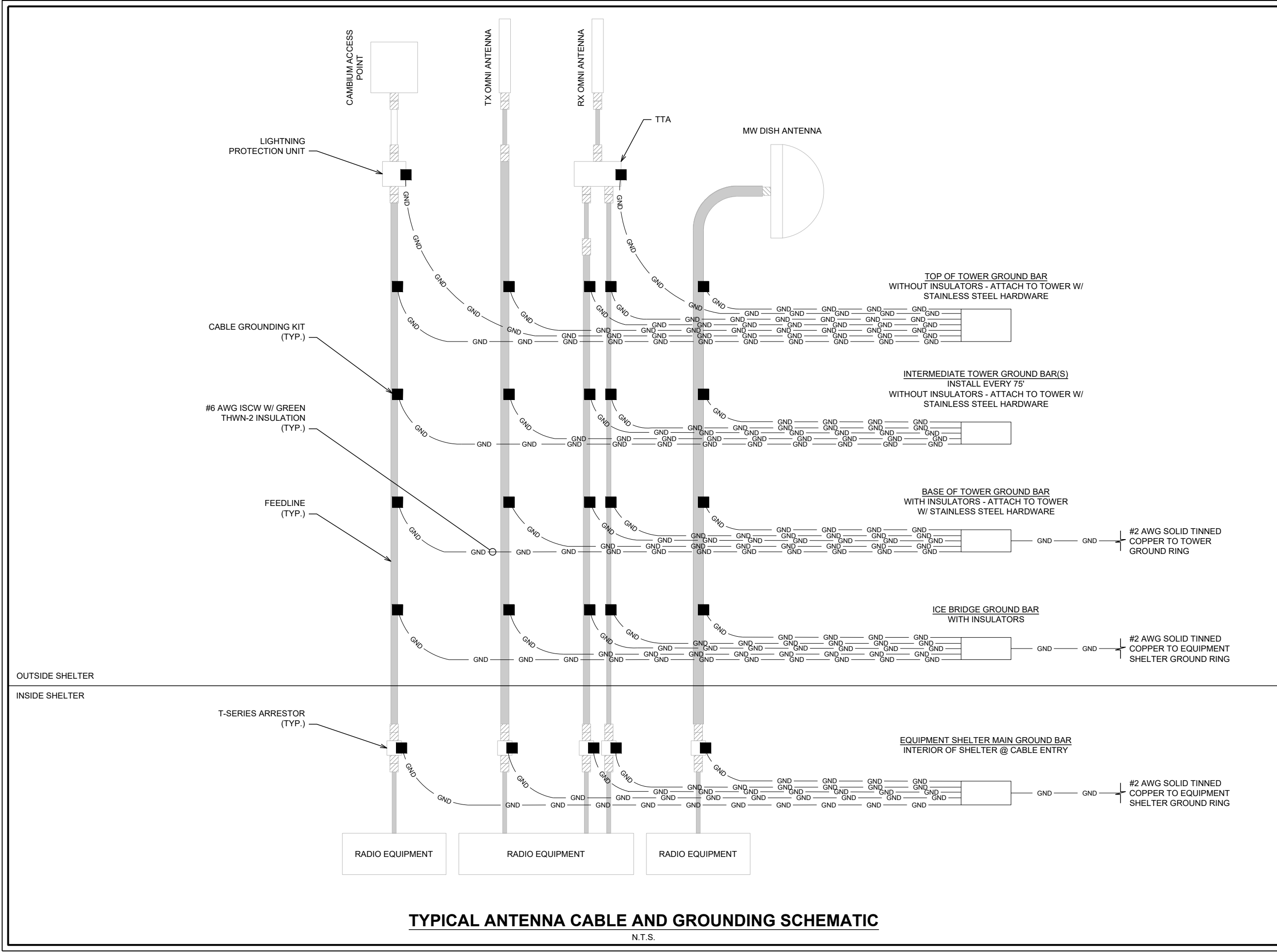
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**GROUNDING
DETAILS III**

SHEET # **G-2.3**

CURRENT REV # 0
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TYPICAL ANTENNA CABLE AND GROUNDING SCHEMATIC

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**GROUNDING
 DETAILS IV**

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 ETS #: 23119943