

Pender County Planning and Community Development

Planning Division

805 S. Walker Street
PO Box 1519
Burgaw, NC 28425



Phone: 910-259-1202
Fax: 910-259-1295
www.pendercountync.gov

Duke 120' Tower US Hwy 117 Application Information Special Use Permit

Case Number: SUP 2025-50

Application Type: Special Use Permit

Applicant: Duke Energy Progress LLC

Owners: Duke Energy Progress LLC

Location: 12044 US HWY 117 S

Property ID #(s): 3233-43-0205-0000

Description: Request for the installation of a 120' communication pole with new Cambium equipment for remote access to the substation

Total Area of Project: 5.32

Current Zoning: RP, Residential Planning

Technical Review Committee Meeting: N/A

Board of County Commissioners/Planning Board Meeting: BOCC 3/10/2025

Application Materials

Application Package

Narrative

Site Plan

APPLICATION FOR SPECIAL USE PERMIT

THIS SECTION FOR OFFICE USE			
Application No.	SUP	Date	
Application Fee	\$	Invoice Number	
Pre-Application Conference		Hearing Date	
SECTION 1: APPLICANT INFORMATION			
Applicant's Name:	Duke Energy Progress LLC	Owner's Name:	Duke Energy Progress Inc
Applicant's Address:	410 S Wilmington Street	Owner's Address:	410 S Wilmington Street
City, State, & Zip	Raleigh, NC 27601	City, State, & Zip	Raleigh, NC 27601
Phone Number:	859 866-8366	Phone Number:	859 866-8366
Email Address:	genevieve.burkindine@duke-energy.com	Email Address:	genevieve.burkindine@duke-energy.com
Legal relationship of applicant to landowner:			
SECTION 2: PROJECT INFORMATION			
Property Identification Number (PIN):	3233-43-0205-0000	Total property acreage:	5.32
Zoning Classification:	RP Residential Performance	Acreage to be disturbed:	N/A; previously disturbed
Water Provider:	N/A	Wastewater Provider:	N/A
Project Address:	12044 US HWY 117 S		NAICS Code:
Description of Project Location:	Existing substation owned and operated by Duke Energy		
Describe activities to be undertaken on project site:	Installation of 120' communication pole with new Cambium equipment for remote access to substation		
SECTION 3: SIGNATURES			
Applicant's Signature	<i>Genevieve Burkindine</i>	Date:	<i>1/15/2025</i>
Applicant's Printed Name:	Genevieve Burkindine	Date:	<i>1/15/2025</i>
Owner's Signature	<i>Genevieve Burkindine</i>	Date:	<i>1/15/2025</i>
Owner's Printed Name:	Genevieve Burkindine Director IT Telecom, Duke Energy	Date:	<i>1/15/2025</i>
NOTICE TO APPLICANT			
<ol style="list-style-type: none"> 1. Applicant must also submit the information described on the Special Use Checklist. 2. Applicant or agent authorized in writing must attend the public hearing. 3. Once the public hearing has been advertised, the case will be heard unless the applicant withdraws the application or unless the Board of Commissioners or other authorized person agrees to table or delay the hearing. 4. Applicant may wish to review the required findings for approval of a Special Use Permit found on page 1 of this application 5. Permit will become void after 12 months if a final zoning permit is not obtained, unless specifically requested at the time of public hearing. 			

Office Use Only

\$ 300 for the first 5 acres; \$10 per acre over 5 acres of the project area

Total Fee Calculation: \$

Application#:

Date of Hearing:

Attachments Included with Application: (Please include # of copies)

CD /other digital version	<input type="checkbox"/> Y <input type="checkbox"/> N	Plan Sets	# of large	# of 11X17	Other documents/Reports	<input type="checkbox"/> Y <input type="checkbox"/> N
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Payment Method:	Cash : <input type="checkbox"/> \$ _____	Credit Card: <input type="checkbox"/> Master Card <input type="checkbox"/> Visa	Check: <input type="checkbox"/> Check # _____
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Application received by:		Date:
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Application completeness approved by:		Date:
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PROJECT NARRATIVE

Proposed Cambium Monopole – Rocky Point 230kV Substation

Duke Energy Progress, LLC (“Duke Energy”), by and through its agent and representative, Engineered Tower Solutions (“ETS”), is applying for a Special Use Permit (SUP) for the installation of a 120’ monopole. The location of the proposed 120’ monopole is inside Duke Energy’s existing Rocky Point 230kV Substation, which is located at 12044 US Hwy 117 S, Rocky Point, NC 28457 (Pender County PIN: 3233-43-0205-0000). This location is identified as Duke Energy’s substation transmission number: T6385.

The purpose for the installation of the proposed monopole is to support the installation and use of telecommunications equipment. This equipment will be used by Duke Energy to enhance the company’s ability to monitor the status of and communicate with its substation and related equipment, thus furthering the safety, reliability and resilience of the electrical grid. This monopole is intended to be used by Duke Energy and is not intended for use by third-parties like cellular telephone companies.

During construction, there will be approximately 4-8 construction personnel on site. Construction hours of operation will be approximately 7am to 5pm, weather and daylight depending. Currently, pending any changes that may arise throughout the duration of the project, ETS plans to complete project construction within 30 days of the start date.

Below is the information Duke Energy is providing in response to the requirements of Pender County UDO Section 3.12.3.G subsections 1-8.

Section 3.12.3

G. The Board of Commissioners shall approve, modify, or deny the application for a Special Use Permit. In approving a Special Use Permit, the Board of Commissioners, with due regard to the nature and state of all adjacent structures and uses in the district within same is located, shall make written finds that the following are fulfilled:

- 1) The use requested is listed among the special uses in the district for which application is made, or is similar in character to those listed in that district;

Duke Energy Response: Duke Energy is proposing to install at 120’ monopole at and inside its existing Rocky Point 230kV electric substation. The purpose of the new monopole is to allow Duke Energy to enhance the company’s ability to monitor the status of and communicate with its substation and related equipment, thus furthering the safety, reliability and resilience of the electrical grid. The parcel on which the substation is located is zoned RP – Residential Performance. Telecommunications towers are permitted in the RP zoning district with the issuance of a special use permit.

- 2) The requested use will not impair the integrity or character of the surrounding or adjoining districts, nor adversely affect the safety, health, morals, or welfare of the community or of the immediate neighbors of the property;

Duke Energy Response: The proposed monopole and associated antenna equipment will not impair the integrity or character of the surrounding or adjoining districts, nor will it adversely affect the

safety, health, morals, or welfare of the community or of the immediately neighbors of the property. The pole will be installed within Duke Energy's existing Rocky Point 230kV substation and will help aid in the performance of the company's role as a public utility. The pole itself will be contained within the confines of the fenced-in substation, off the road, and have no direct impact to the adjoining land. The existing substation is already well screened from the public road and neighboring residential uses by mature vegetation and the proposed installation of the monopole will not require the removal of any of the existing vegetation.

- 3) The proposed use shall not constitute a nuisance or hazard;

Duke Energy Response: The installation and use of the proposed monopole will not constitute a nuisance or hazard. Plans have been drawn to meet the requirements of the county to ensure there are no hazards due to the installation of the pole. The plans have been stamped and signed by a professional engineer. Due to the tower's location and function, no nuisance should be encountered due to the new pole.

- 4) The requested use will be in conformity with the Pender County Land Use Plan and other official plans, or policies adopted by the Board of County Commissioners;

Duke Energy Response: The requested use is in conformity with the Pender County Land Use Plan and other official plans, or policies adopted by the Board of County Commissioners.

- 5) Adequate utilities, access roads, drainage, sanitation, or other necessary facilities have been or are being provided;

Duke Energy Response: Duke Energy will be providing electricity to the site. ETS will be providing porta jons during the construction portion of this project. All permanent aspects of the site were addressed in the planning phases of the site and meet all regulations and standards. The installation of the proposed monopole does not require any additional drainage, sanitation or utilities (other than electric power).

- 6) That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize the traffic congestion in the public roads;

Duke Energy Response: The installation of this pole will not cause any increase in traffice on public roads. During construction, all vehicles and equipment will be parked at the substation and not on public roads. Post-construction, this will be an unmanned site that will not require any employees to need additional parking space. There is an existing access road, so there will be no need to add additional driveway cuts or facijlities along US 117.

- 7) That the special use shall, in all other respects, conform to the applicable regulations of the district in which it is located;

Duke Energy Response: This pole will be designed to conform to the applicable regulations of the district in which it is located.

- 8) The proposed use shall not adversely affect surrounding uses and shall be placed on a lot of sufficient size to satisfy the space requirements of said use.

Duke Energy Response: This pole location is designed to satisfy the space requirements of its use and has a fall zone that is fully compliant with the Pender County Zoning Ordinance and any other applicable regulations.

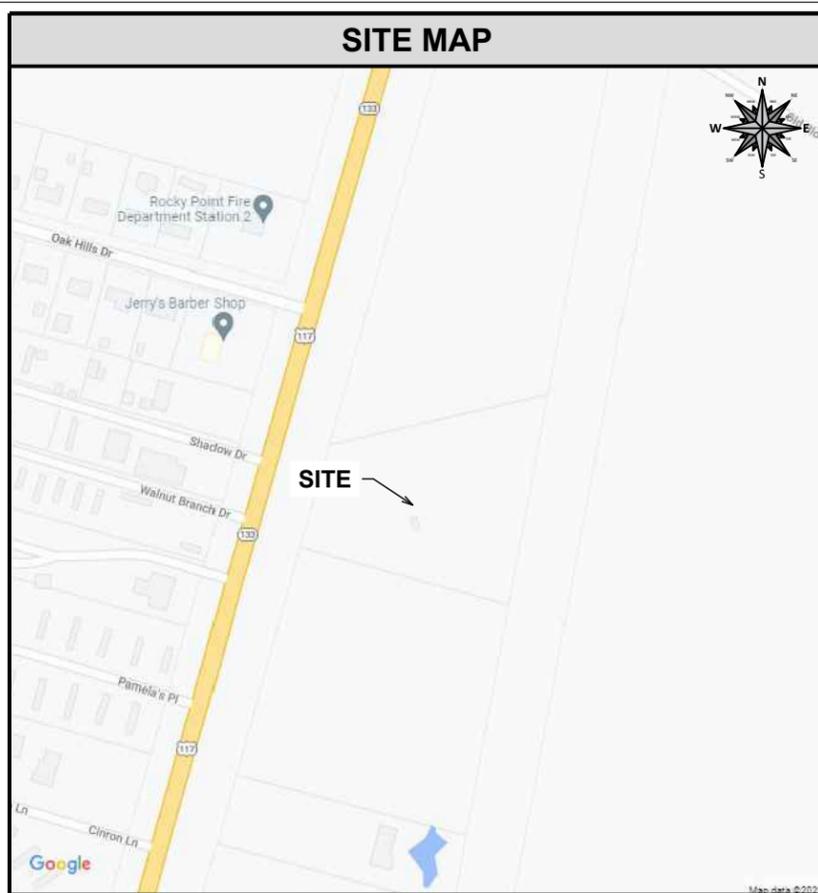


If you have any further questions, please contact Eric Dickerson with Engineered Tower Solutions at (919) 280-4191 or eric.dickerson@ets-pllc.com.

Very Respectfully,

A handwritten signature in black ink, appearing to read "J. Eric Dickerson", is written in a cursive style.

J. Eric Dickerson, E.I., CWI, GC
Executive Vice President – West Region
Engineered Tower Solutions, PLLC
3227 Wellington Ct, Raleigh, NC 27615
M: (919) 280-4191 / O: (919) 782-2710 / F: (919) 435-0631
Email: eric.dickerson@ets-pllc.com



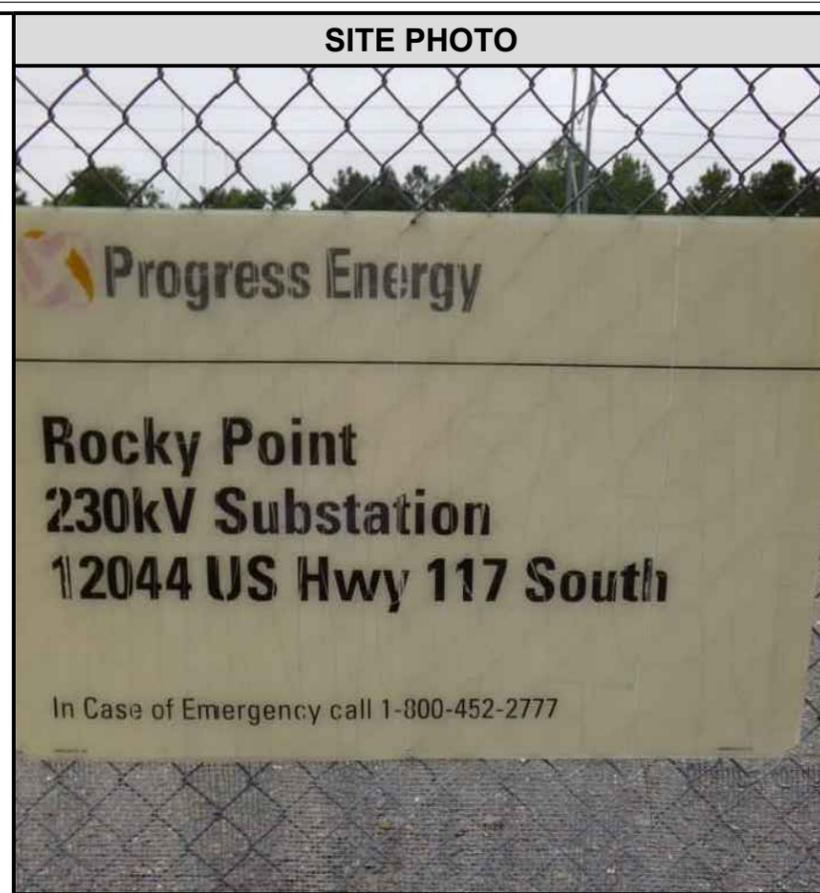
SUBSTATION NAME:
ROCKY POINT 230 SUB

SUBSTATION TELECOM NUMBER:
NCRPN011

SUBSTATION TRANSMISSION NUMBER:
T6385

SUBSTATION ADDRESS:
12044 US HWY 117 S
ROCKY POINT, NC 28457

LATITUDE & LONGITUDE:
N 34° 23' 08.78475" , W 77° 53' 34.97148"



PREPARED BY:

**ENGINEERED
TOWER SOLUTIONS**

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

PREPARED FOR:

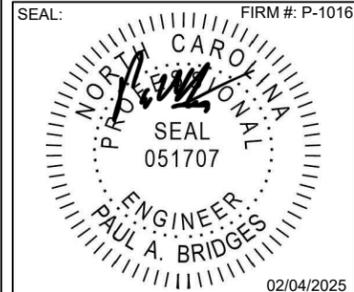
**DUKE
ENERGY®**

SUBSTATION NAME:
**ROCKY POINT 230
SUB**

SUBSTATION TRANSMISSION NUMBER:
T6385

SUBSTATION ADDRESS:
 12044 US HWY 117 S
 ROCKY POINT, NC 28457

LATITUDE/LONGITUDE:
 34.385773° , -77.893047°



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

INSTALLATION OF A PROPOSED 120'± COMMUNICATION POLE, WITH NEW MOUNTED CAMBIUM 5GHZ EQUIPMENT, WITHIN AN EXISTING DUKE ENERGY OWNED ELECTRICAL SUBSTATION.

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)



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C-1.1	SUBSTATION COMPOUND PLAN
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SITE SUMMARY

SITE TYPE:	CAMBIUM POLE INSTALL
STRUCTURE TYPE:	COMMUNICATION POLE
STRUCTURE OWNER:	DUKE ENERGY
STRUCTURE HEIGHT (AGL):	120'±
OCCUPANCY TYPE:	UTILITY & MISCELLANEOUS (U)
STRUCTURE LATITUDE:	N 34° 23' 08.78475" (34.385773°)
STRUCTURE LONGITUDE:	W 77° 53' 34.97148" (-77.893047°)
JURISDICTION:	PENDER COUNTY
COUNTY:	PENDER
PARCEL ID:	3233-43-0205-0000
GROUND ELEV. (WGS84):	25.56037'

REV	DATE	DETAILS
0	11/09/2022	CONSTRUCTION
1	08/08/2023	REV. CONSTRUCTION
2	09/13/2023	REV. CONSTRUCTION
3	01/31/2024	REV. CONSTRUCTION
4	03/20/2024	REV. CONSTRUCTION
5	02/04/2025	REV. CONSTRUCTION
6		
7		
8		
9		
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14		

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SHEET TITLE:

TITLE PAGE

SHEET # **T-1** CURRENT REV # **5**
 ETS #: 22105740

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 (CONTINUED)
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 COMMUNICATION POLE, 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
1. 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.
2. 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.
3. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
4. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
5. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
6. 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.

TORQUE REQUIREMENTS
1. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
2. 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.
3. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
4. 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.
5. ALL 2', 3' & 4' ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
6. ALL 6' ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
7. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
8. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4-29.8 NM).
9. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7-2.3 NM).

COAXIAL CABLE NOTES
1. 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.
2. CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
3. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.
4. ALL JUMPERS TO THE ANTENNAS SHALL BE 1/2" DIA. LMR 400 AND SHALL NOT EXCEED 3'-0".
5. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
6. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
7. 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
1. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
2. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR SHALL REFERENCE THE STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

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PREPARED FOR:



SUBSTATION NAME:
**ROCKY POINT 230
SUB**

SUBSTATION TRANSMISSION NUMBER:
T6385

SUBSTATION ADDRESS:
12044 US HWY 117 S
ROCKY POINT, NC 28457

LATITUDE/LONGITUDE:
34.385773°, -77.893047°

SEAL: FIRM #: P-1016



03/20/2024

REV	DATE	DETAILS
0	11/09/2022	CONSTRUCTION
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DRAWN BY: CP CHECKED BY: SJ

SHEET TITLE:
GENERAL NOTES I

SHEET # **GN-1** CURRENT REV # : 4
ETS #: 22105740

GENERAL CABLE AND EQUIPMENT NOTES

- 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.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
 - TEMPERATURE SHALL BE ABOVE 50° F.
 - PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
 - FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
 - DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
- ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- 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" [038M].
- 90 SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST ONLY TRANSITION ON THE INSIDE OR BOTTOM OF ARMS (NO CABLE ON TOP OF ARMS).
- USE 90 CONNECTOR AT CABLE CONNECTION TO ANTENNAS.
- 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.
- USE 1/2" [013M] CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
- FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

FIBER & POWER CABLE MOUNTING

- FOR VERTICAL RUNS: ON TOWERS OR POLES, ALWAYS UNREEL THE SPOOL FROM THE TOP DOWN. ENSURE NO STRAIN IS PLACED ON THE FIRST 3 FEET OF THE CABLE, AND THAT THE CABLE IS SUPPORTED EVERY THREE FEET VERTICALLY. NEVER ALLOW THE CABLE TO EXPERIENCE THE STRAIN OF THE CABLE SPOOL WEIGHT. ANY BENDS SHALL BE SUPPORTED DIRECTLY ABOVE AND BELOW THE BEND. THE BOTTOM BEND SHALL HAVE A DRIP LOOP WITH A MINIMUM ONE FOOT BEND RADIUS AT 120°. IT IS RECOMMENDED THE FIBER BE TESTED BEFORE AND AFTER INSTALLATION FOR NO GREATER THAN .02 dB LOSS.

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:
 - FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.
 - 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	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 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".

FOUNDATION NOTES (CONTINUED)

- 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".

- 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.

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DRAWN BY: CP CHECKED BY: SJ

GENERAL NOTES II

SHEET # **GN-2** CURRENT REV #: 4
ETS #: 22105740

ABBREVIATIONS

ABC	AGGREGATE BASE COURSE	FT.	FOOT, FEET	RT	RIGHT
ABS	AIR BREAK SWITCH	FTG.	FOOTING	R/W	RIGHT OF WAY
A.C.	ASBESTOS CEMENT	GA	GAGE	RWM	RIGHT OF WAY MONUMENT
A/C	AIR CONDITIONING	GAL.	GALLON	SAN	SANITARY SEWER
A.D.	AREA DRAIN	GALV.	GALVANIZED	SB	SOIL BORING
A.F.F.	ABOVE FINISHED FLOOR	GC	GENERAL CONTRACTOR	SCH	SCHEDULE
ALT.	ALTERNATE	G.F.E.	GOVERNMENT FURNISHED EQUIPMENT	SET	SETBACK
ALUM.	ALUMINUM	GIS	GEOGRAPHIC INFORMATION SYSTEM	SF	SQUARE FEET
AMP.	AMPERES	GL	GAS LINE	SHT	SHEET
A.O.	ACCESS OPENING	GM	GAS METER	SIA	SIAMASE CONNECTION
APPROX.	APPROXIMATELY	G.P.H.	GALLONS/HOUR	SIG	SIGNAL
ARCH.	ARCHITECTURAL	G.P.M.	GALLONS/MINUTE	SOTF	SECURITY OPERATIONS TRAINING FACILITY
ASPH.	ASPHALT	GND.	GROUND	SP	SIGNAL POLE
A.T.P.	ANTI-TERRORISM FORCE PROTECTION	GOVT	GOVERNMENT	SPECS	SPECIFICATIONS
A.W.W.A.	AMERICAN WATER WORKS ASSOCIATION	GV	GATE VALVE	SQFT	SQUARE FEET
BLDG.	BUILDING	GW	GUY WIRE	SR	STATE ROAD
BM.	BENCH MARK	HC	HANDICAP	SS	SANITARY SEWER
BOC	BACK OF CURB	HCP	HANDICAP PARKING	STA.	STATION
BOL	BOLLARD	HCR	HANDICAP RAMP	STD.	STANDARD
BRG.	BEARING	HDW	HEADWALL	STM	STORM
BVC	BEGIN VERTICAL CURVE	HP	HIGH POINT	STL	STEEL
BVCE	BEGIN VERTICAL CURVE ELEVATION	HSS	HIGH STRENGTH STEEL	SW	SIDEWALK
BVCS	BEGIN VERTICAL CURVE STATION	HT	HEIGHT	SWM.	STORMWATER MANAGEMENT
C&G	CURB AND GUTTER	HYD	HYDRANT	T	TANGENT
CATV	CABLE TELEVISION	ID.	INSIDE DIAMETER	TBM	TEMPORARY BENCHMARK
CAP.	CAPACITY	INTX.	INTERSECTION	TERR	TERRA COTTA PIPE
C.B.	CATCH BASIN	INV.	INVERT	TEL	TELEPHONE
CBL	CABLE	ISL	ISLAND	TOC	TOP OF CURB
CEM.	CEMENT	ITL.	INDEPENDENT TESTING LABORATORY	TOB	TOP OF BANK
CER.	CERAMIC	J.B.	JUNCTION BOX	TOS	TOP OF SLOPE
C.F.M.	CUBIC FEET/MINUTE	JCT.	JUNCTION	TOW	TOP OF WALL
C.F.S.	CUBIC FEET/SECOND	JSOC	JOINT SPECIAL OPERATIONS COMMAND	TP	TELEPHONE POLE
C.I.	CURB INLET	JT.	JOINT	TRANS	TRANSFORMER
C.I.P.	CAST IRON PIPE	K	K VALVE	TYP.	TYPICAL
CIRC.	CIRCULATING	KVA	KILOVOLT AMPERE	U/C	UNDER CONSTRUCTION
C.A.	CONSTRUCTION JOINT/CONTRACTION JOINT	KW	KILOWATT	U/G	UNDERGROUND
C.L.	CENTER LINE	L	LENGTH	UNO	UNLESS NOTED OTHERWISE
C.A.	CONCRETE MONUMENT	LF	LINEAR FEET	UP	UTILITY POLE
C.M.P.	CONCRETE METAL PIPE	LGT	LIGHT	VC	VERTICAL CURVE
C.M.U.	CONCRETE MASONRY UNIT	LP	LIGHT POLE	VCP	VITRIFIED CLAY PIPE
C.O.	CLEAN OUT	LT	LEFT	VIF	VERIFY IN FIELD
COL.	COLUMN	MAX	MAXIMUM	WL	WATER LINE
CONC.	CONCRETE	MED	MEDIAN	WM	WATER METER
COND.	CONDENSATE	MH	MANHOLE	WSEL	WATER SURFACE ELEVATION
CONN.	CONNECTION	MIN	MINIMUM	WV	WATER VALVE
CONST.	CONSTRUCTION	MJ	MECHANICAL JOINT	WTR	WATER
CONT.	CONTINUOUS	MON	MONUMENT	WWF	WIRE WELD FABRIC
COR	CONTRACTING OFFICERS REPRESENTATIVE	MTL	METAL		
C.TO C.	CENTER TO CENTER	MW	MONITOR WELL / MICROWAVE		
C.Y.	CUBIC YARD	M.U.T.C.D	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES		
DET.	DETAIL	N/A	NOT APPLICABLE		
DI	DROP INLET	NAD 27	NORTH AMERICAN DATUM 1927		
DIA.	DIAMETER	NAD 83	NORTH AMERICAN DATUM 1983		
DIFF.	DIFFUSER	NBL	NORTH BOUND LINE		
DIM.	DIMENSION	NC	NORMAL CROWN		
D.I.P.	DUCTILE IRON PIPE	NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION		
DISC.	DISCONNECT				
D.J.	DUMMY JOINT	NIC	NOT IN CONTRACT		
DN.	DOWN	NIP	NEW IRON PIPE		
DR.	DRAIN	N.T.S.	NOT TO SCALE		
D.S.	DOWN SPOUT	O.U.	ON CENTER		
DW	DOMESTIC WATER	O.V.	OUTSIDE DIAMETER		
DWG.(S)	DRAWING(S)	OH	OVERHEAD		
EA.	EACH	OHE	OVERHEAD ELECTRIC		
E.F.	EXHAUST FAN	ONUS.	OLD NORTH UTILITY SERVICE		
EG.	EXISTING GRADE	OVH	OVERHANG		
E.I.P.	EXISTING IRON PIPE	P/A	PARKING AREA		
E.J.	EXPANSION JOINT	PC	POINT OF CURVATURE		
ELEC.	ELECTRIC	PCC	POINT OF COMPOUND CURVATURE		
EL.	ELEVATION	PED	PEDESTAL		
E.M.	ELECTRIC METER	PER.	PERIMETER		
EOP	EDGE OF PAVEMENT	PGL	PROPOSED GRADE LINE		
EQUIP.	EQUIPMENT	PI	POINT OF INTERSECTION		
EVC	END VERTICAL CURVE	PINC	POINT OF INTERSECTION ON CURVE		
EVCE	END VERTICAL CURVE ELEVATION	PIV	POST INDICATOR VALVE		
EVCS	END VERTICAL CURVE STATION	PIV ELEV	POINT OF VERTICAL INTERSECTION ELEVATION		
EXH.	EXHAUST	PLT	PLATE		
EXP.JT.	EXPANSION JOINT	PSF	POUNDS PER SQUARE FOOT		
EXT.	EXTERIOR	PSF	POUNDS/SQUARE FOOT		
EX./EXIST.	EXISTING	PSI	POUNDS/SQUARE INCH		
FC	FACE OF CURB	PIV STA	POINT OF VERTICAL INTERSECTION STATION		
F.D.	FLOOR DRAIN	PT	POINT		
F.D.C.	FIRE DEPARTMENT CONNECTION	PVMT	PAVEMENT		
F.E.S.	FLARED END SECTION	RAD.	RADIUS		
F.F.E.	FINISHED FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE		
FG	FINISHED GRADE	REINF.	REINFORCING		
FH	FIRE HYDRANT	REQ.	REQUIRED		
FIN.	FINISH FLOOR	REV	REVISED		
FM	FORCE MAIN	R.P.Z.	REDUCED PRESSURE ZONE		
FOC	FACE OF CURB				

LINETYPES

---	PARENT PROPERTY BOUNDARY
----	ADJACENT PROPERTY BOUNDARY
---	EASEMENT
---	LEASE AREA
--- R/W --- R/W --- R/W ---	RIGHT OF WAY
--- SF --- SF --- SF ---	SILT FENCE
--- X --- X --- X --- X ---	CHAIN-LINK FENCE
---UGW ---UGW ---UGW ---	UNDERGROUND WATER
---UGP ---UGP ---UGP ---UGP ---	UNDERGROUND POWER
--- OHP --- OHP --- OHP ---	OVERHEAD POWER
--- ACP --- ACP --- ACP ---	ALTERNATING CURRENT POWER
--- DCP --- DCP --- DCP ---	DIRECT CURRENT POWER
--- FO/DC --- FO/DC --- FO/DC ---	FIBER/DC POWER COMPOSITE CABLE
--- HYBRID --- HYBRID ---	HYBRID CABLE
---UGF ---UGF ---UGF ---UGF ---	UNDERGROUND FIBER
--- OHF --- OHF --- OHF ---	OVERHEAD FIBER
--- MMF --- MMF --- MMF ---	MULTI-MODE FIBER
--- SMF --- SMF --- SMF ---	SINGLE-MODE FIBER
--- SM6 --- SM6 --- SM6 ---	FIBER TRUNK - 6 STRAND
--- SM12 --- SM12 --- SM12 ---	FIBER TRUNK - 12 STRAND
--- SM24 --- SM24 --- SM24 ---	FIBER TRUNK - 24 STRAND
--- SM48 --- SM48 --- SM48 ---	FIBER TRUNK - 48 STRAND
--- SM96 --- SM96 --- SM96 ---	FIBER TRUNK - 96 STRAND
--- SM144 --- SM144 ---	FIBER TRUNK - 144 STRAND
--- SM288 --- SM288 ---	FIBER TRUNK - 288 STRAND
--- GND --- GND --- GND ---	GROUND WIRE
--- GAS --- GAS --- GAS ---	GAS LINE
--- ETH --- ETH --- ETH ---	ETHERNET CABLE
--- CAT6 --- CAT6 --- CAT6 ---	CAT6 CABLE
--- CAT5 --- CAT5 --- CAT5 ---	CAT5 CABLE
--- ALM --- ALM --- ALM ---	ALARM CABLE
--- C --- C --- C ---	CONDUIT
--- COAX --- COAX --- COAX ---	COAX FEEDLINE
--- TFT-402 --- TFT-402 ---	COAX FEEDLINE / JUMPER - TFT-402
--- PTS1-50 --- PTS1-50 ---	COAX FEEDLINE / JUMPER - PTS1-50
--- LMR-240 --- LMR-240 ---	COAX FEEDLINE / JUMPER - LMR-240
--- LDF4-50 --- LDF4-50 ---	COAX FEEDLINE / JUMPER - LDF4-50
--- LDF1-50 --- LDF1-50 ---	COAX FEEDLINE / JUMPER - LDF1-50
--- HL4RPV --- HL4RPV ---	COAX FEEDLINE / JUMPER - HL4RPV
--- FSJ4-50 --- FSJ4-50 ---	COAX FEEDLINE / JUMPER - FSJ4-50
--- FSJ1-50 --- FSJ1-50 ---	COAX FEEDLINE / JUMPER - FSJ1-50
--- AL4RPV --- AL4RPV ---	COAX FEEDLINE / JUMPER - AL4RPV

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PREPARED FOR:



SUBSTATION NAME:

**ROCKY POINT 230
SUB**

SUBSTATION TRANSMISSION NUMBER:

T6385

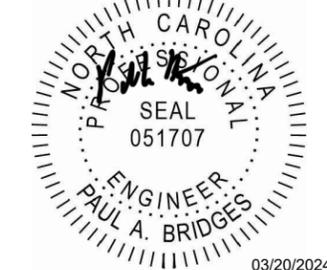
SUBSTATION ADDRESS:

12044 US HWY 117 S
ROCKY POINT, NC 28457

LATITUDE/LONGITUDE:
34.385773°, -77.893047°

SEAL:

FIRM #: P-1016



REV	DATE	DETAILS
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CHECKED BY: SJ

SHEET TITLE:

GENERAL NOTES III

SHEET #

GN-3

CURRENT REV #: 4

ETS #: 22105740

**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: ROCKY POINT 230 SUB
 Address: 12044 US HWY 117 S, ROCKY POINT, NC Zip Code 28457
 Owner/Authorized Agent: DUKE ENERGY Phone # () - E-Mail
 Owned By: City/County Private State
 Code Enforcement Jurisdiction: City County PENDER State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Engineered Tower Solutions, PLLC	Paul Bridges	051707	(336) 830-1660	Paul.Bridges@ets-llc.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 Yes NFPA 13D

Standpipes: No Yes

Fire District: No Yes

Special Inspections Required: No Yes

2018 NC Administrative Code and Policies Appendix B for Building

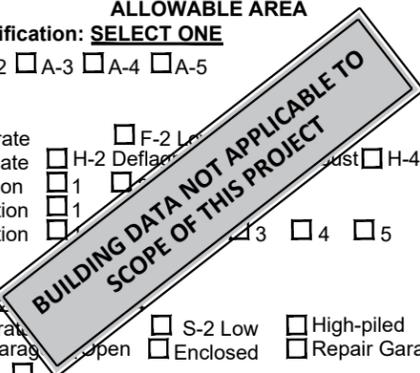
Gross Building Area:

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				
Basement				
TOTAL				

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 Deflag. H-3 Just H-4 Health H-5 HPM
 Institutional I-1 Condition 1 2 3 4 5
 I-2 Condition 1 2 3 4 5
 I-3 Condition 1 2 3 4 5
 I-4
 Mercantile
 Residential R-1 R-2
 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:

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 SUB**
 SUBSTATION TRANSMISSION NUMBER:
T6385
 SUBSTATION ADDRESS:
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 ROCKY POINT, NC 28457
 LATITUDE/LONGITUDE:
 34.385773°, -77.893047°

SEAL: FIRM #: P-1016

03/20/2024

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SHEET TITLE:
NC APPENDIX B I

SHEET # **GN-4** CURRENT REV #: 4
 ETS #: 22105740

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 Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase If = $100 [F/P - 0.25] \times W/30 =$ _____ (%)
- 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 HEIGHT (TABLE 504.3)	PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)		
Building Height in Stories (Table 504.4)		

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

BUILDING DATA NOT APPLICABLE TO SCOPE OF THIS PROJECT

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							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly							
Column Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Column Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

BUILDING DATA NOT APPLICABLE TO SCOPE OF THIS PROJECT

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY 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 #: 4
ETS #: 22105740

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 based on egress width (1005.3)
- Actual occupant load for each exit door
- A separate schematic plan indicating where fire rated walls or roof structure is provided for purposes of occupancy separation and supporting construction fire partition/smoke barrier.
- Location of doors with panic hardware (1010.1.9.7)
- Location of doors with delayed egress (1010.1.9.7)
- Location of doors with electromagnetic lock (1010.1.9.9)
- Location of doors equipped with panic hardware (1010.1.9.7)
- Location of emergency escape routes
- The square footage of each room
- 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

BUILDING DATA NOT APPLICABLE TO SCOPE OF THIS PROJECT

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

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	PROVIDED	# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE 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 Health, Fire Department, DHHS, ICC, etc., describe below)

BUILDING DATA NOT APPLICABLE TO SCOPE OF THIS PROJECT

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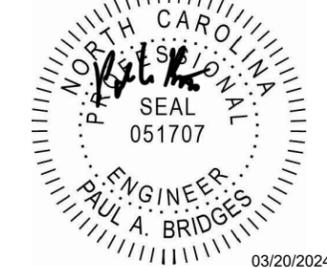
PREPARED FOR:



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ROCKY POINT 230 SUB
 SUBSTATION TRANSMISSION NUMBER:
T6385

SUBSTATION ADDRESS:
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SHEET TITLE:
NC APPENDIX B III

SHEET # **GN-6** CURRENT REV #: 4
 ETS #: 22105740

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: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Skylights in each assembly: _____
 U-Value of skylight: _____
 Total square footage of skylight: _____

Exterior Walls (each assembly)

Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Openings (windows or doors with glazing): _____
 U-Value of assembly: _____
 Solar heat gain coefficient: _____
 Projection factor: _____
 Door R-Values: _____

Walls below grade (each assembly)

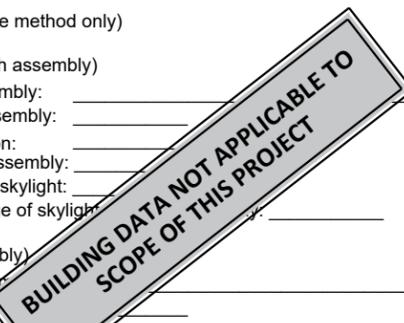
Description of assembly: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____

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: _____
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Horizontal/Vertical requirement: _____
 Slab Heated: _____



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

DESIGN LOADS:

Importance Factors: Snow (I_s) 1
 Seismic (I_e) 1

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

Ground Snow Load: N/A psf

Wind Load: Ultimate Wind Speed 150 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 $SS_{0.206}$ 0.206 %g $S1_{0.099}$ 0.099 %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

Analysis Procedure: Moment Frame Inverted Pendulum
 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) 45,000 psf
 Presumptive Bearing capacity _____ psf
 Pile size, type, and capacity _____

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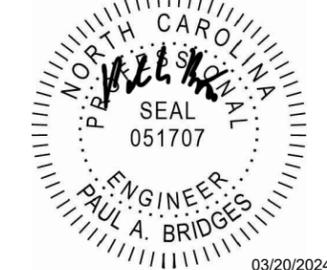
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SUBSTATION NAME:
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SHEET TITLE:

NC APPENDIX B IV

SHEET # **GN-7** CURRENT REV #: 4
 ETS #: 22105740

**2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS**
MECHANICAL DESIGN
(PROVIDE ON THE MECHANIC 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: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category: _____ Reason: _____
Chiller
Size category: _____ state reason: _____

List equipment efficiencies: _____

**BUILDING DATA NOT APPLICABLE TO
SCOPE OF THIS PROJECT**

**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: Prescriptive Performance
ASHRAE 90.1: Prescriptive Performance

Lighting schedule (each fixture type)

lamp type required in fixture _____
number of lamps in fixture _____
ballast type used in the fixture _____
number of ballasts in fixture _____
total wattage per fixture _____
total interior wattage specified vs. allowed (whole building or space by space) _____
total exterior wattage specified vs. allowed _____

**Additional Efficiency Package Options
(When using the 2018 NCECC; not required)**

- C406.2 More Efficient Mechanical Equipment
- C406.3 Reduced Lighting Power Density
- C406.4 Enhanced Digital Lighting Controls
- C406.5 On-Site Renewable Energy
- C406.6 Dedicated Energy Efficient Service Water Heating
- C406.7 Reduced Energy Efficient Service Water Heating

**BUILDING DATA NOT APPLICABLE TO
SCOPE OF THIS PROJECT**

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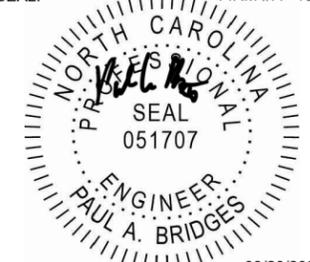
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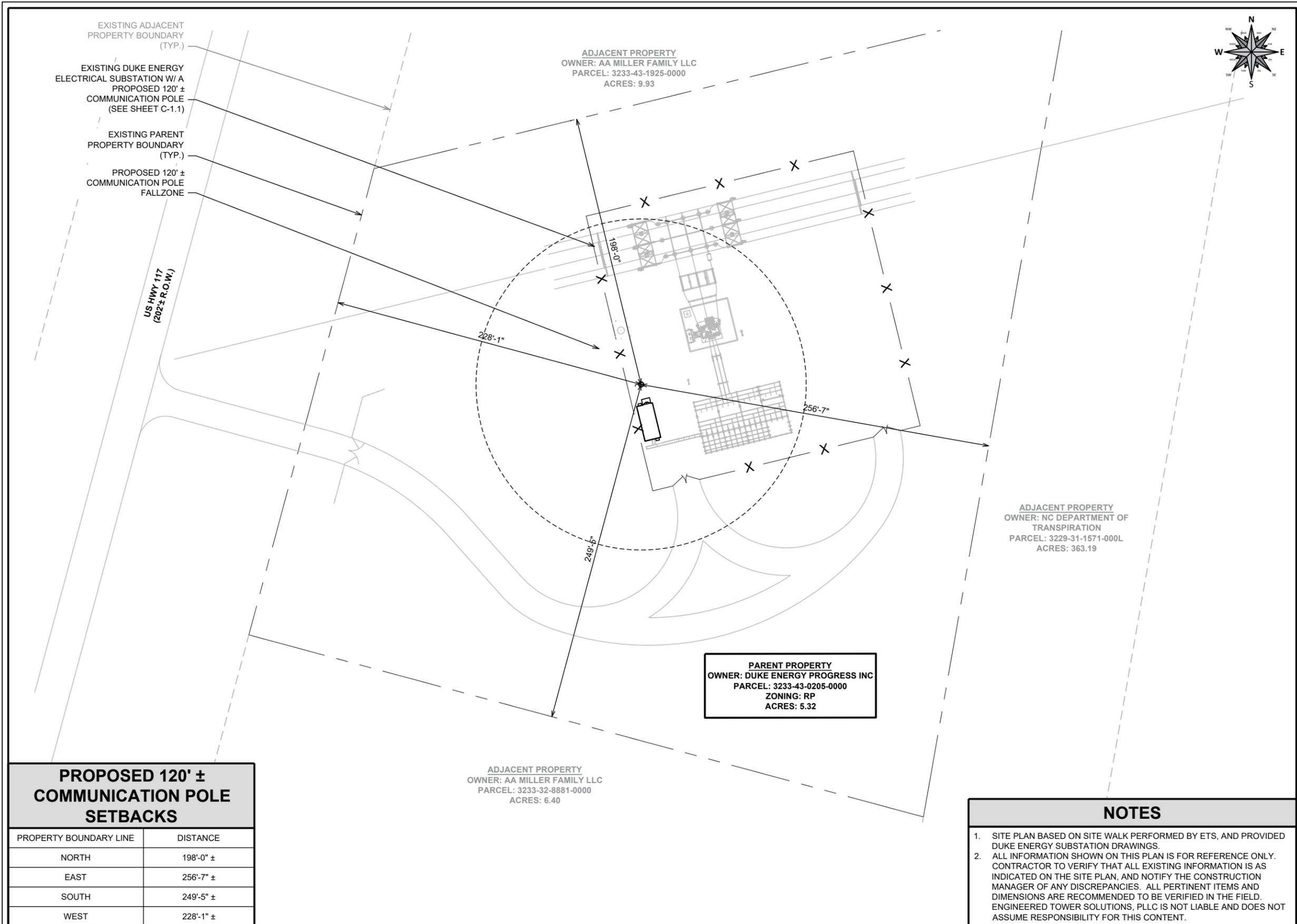
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SHEET TITLE:
NC APPENDIX B V

SHEET # **GN-8** CURRENT REV #: 4
ETS #: 22105740



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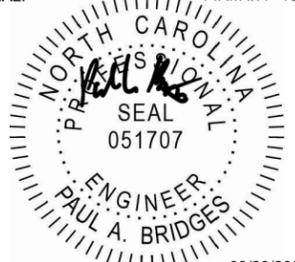
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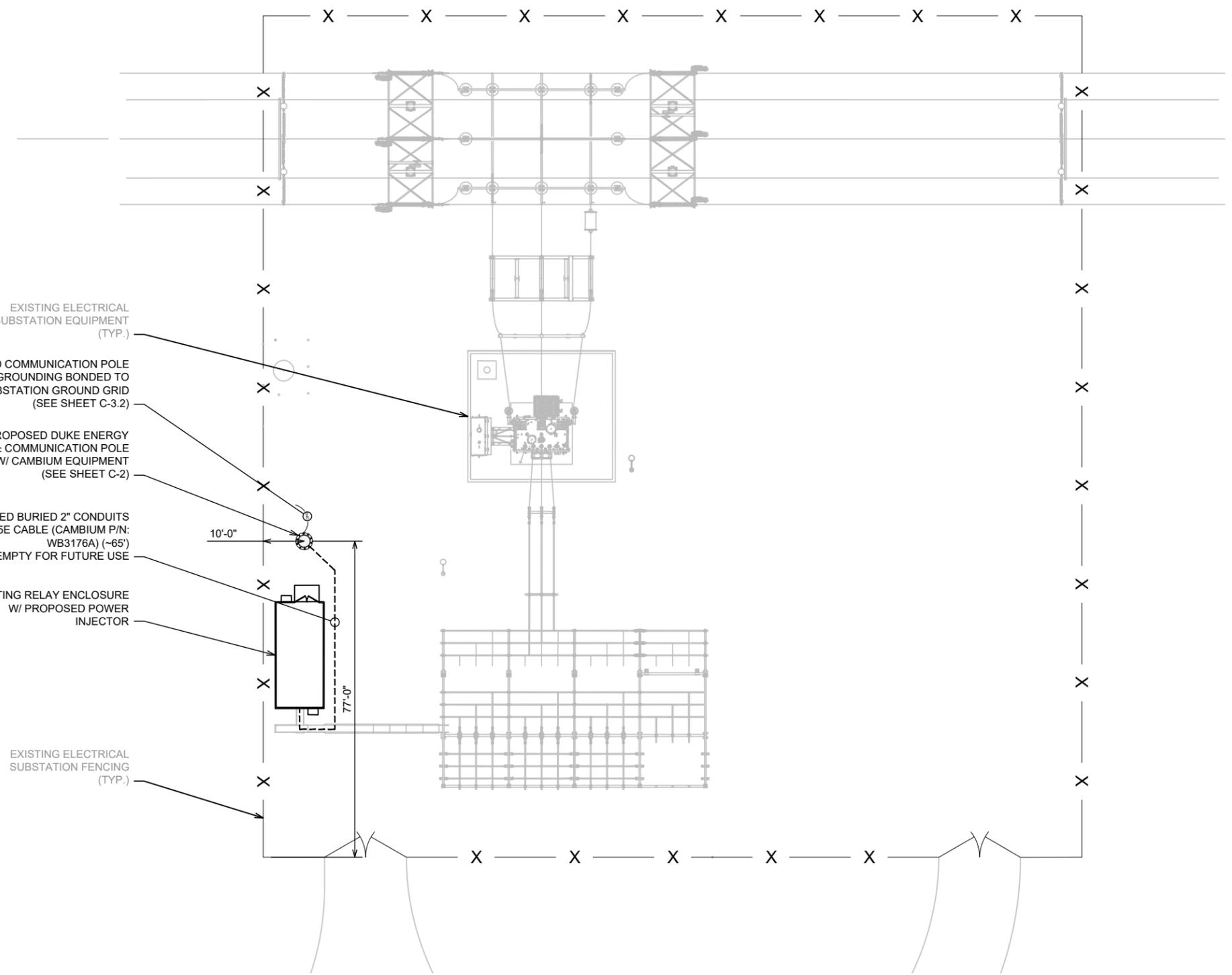
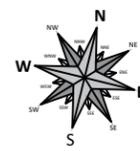
SHEET TITLE:
OVERALL PROPERTY PLAN

SHEET # **C-1.0** CURRENT REV #: 4
 ETS #: 22105740

PROPOSED 120' ± COMMUNICATION POLE SETBACKS	
PROPERTY BOUNDARY LINE	DISTANCE
NORTH	198'-0" ±
EAST	256'-7" ±
SOUTH	249'-5" ±
WEST	228'-1" ±

NOTES

- SITE PLAN BASED ON SITE WALK PERFORMED BY ETS, AND PROVIDED DUKE ENERGY SUBSTATION DRAWINGS.
- 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.



- EXISTING ELECTRICAL SUBSTATION EQUIPMENT (TYP.)
- PROPOSED COMMUNICATION POLE BASE GROUNDING BONDED TO EXISTING SUBSTATION GROUND GRID (SEE SHEET C-3.2)
- PROPOSED DUKE ENERGY 120± COMMUNICATION POLE W/ CAMBIUM EQUIPMENT (SEE SHEET C-2)
- PROPOSED BURIED 2" CONDUITS (1) W/ CAT5E CABLE (CAMBIUM P/N: WB3176A) (~65') (1) EMPTY FOR FUTURE USE
- EXISTING RELAY ENCLOSURE W/ PROPOSED POWER INJECTOR
- EXISTING ELECTRICAL SUBSTATION FENCING (TYP.)

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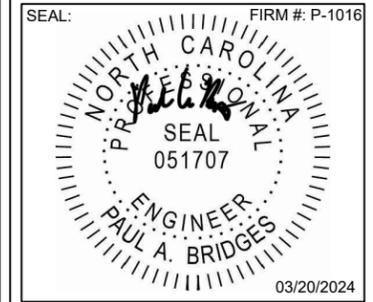


SUBSTATION NAME:
ROCKY POINT 230 SUB

SUBSTATION TRANSMISSION NUMBER:
T6385

SUBSTATION ADDRESS:
 12044 US HWY 117 S
 ROCKY POINT, NC 28457

LATITUDE/LONGITUDE:
 34.385773°, -77.893047°



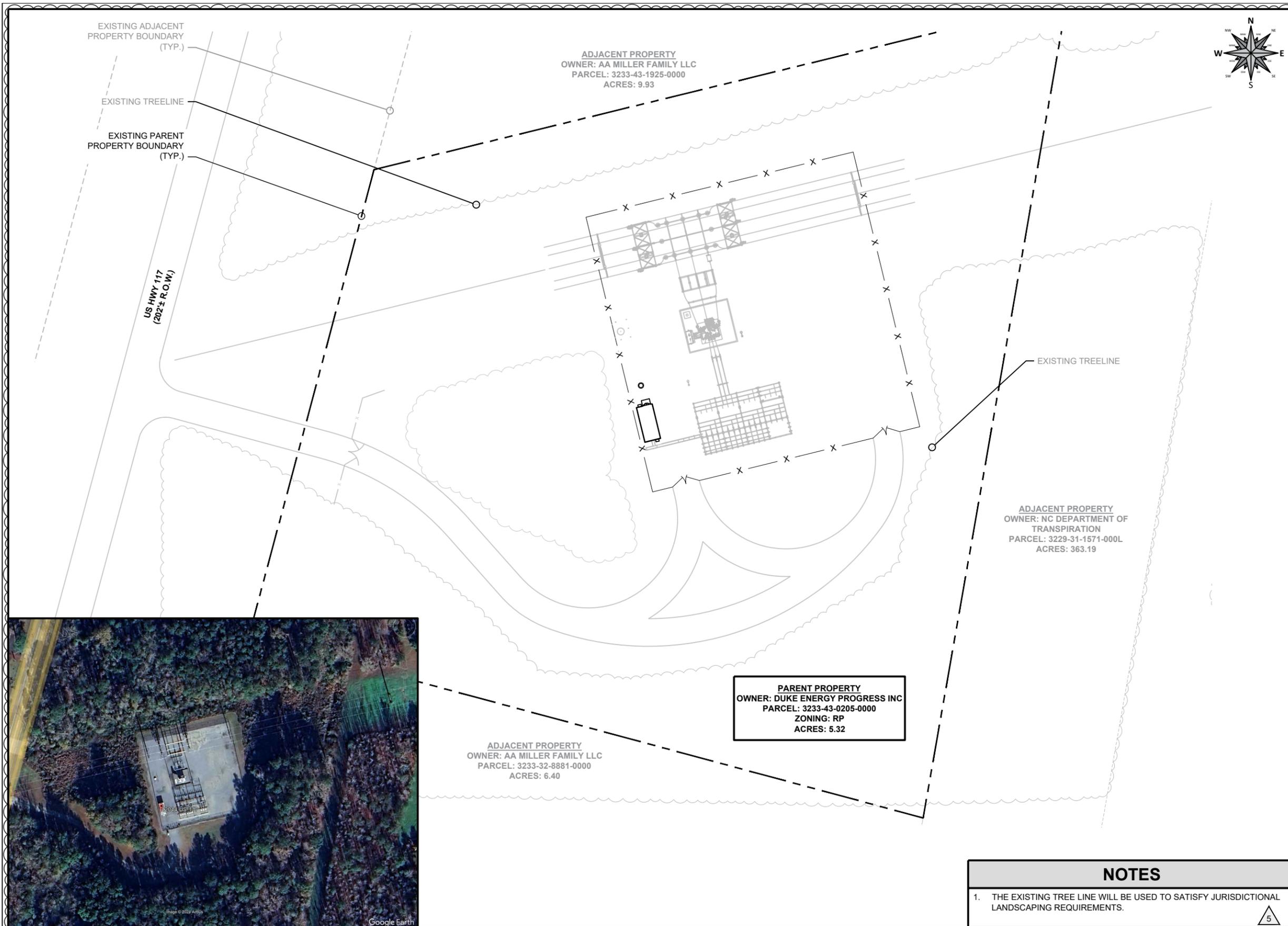
REV	DATE	DETAILS
0	11/09/2022	CONSTRUCTION
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4	03/20/2024	REV. CONSTRUCTION
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SHEET TITLE:
SUBSTATION COMPOUND PLAN

SHEET # **C-1.1** CURRENT REV #: 4
 ETS #: 22105740

SUBSTATION COMPOUND PLAN
 1" = 30'-0"



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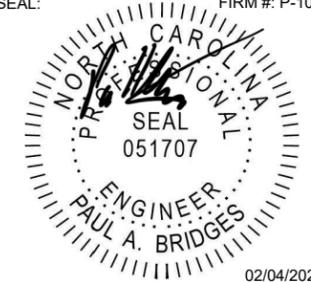
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PREPARED FOR:



SUBSTATION NAME:
ROCKY POINT 230 SUB
 SUBSTATION TRANSMISSION NUMBER:
T6385
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 ROCKY POINT, NC 28457
 LATITUDE/LONGITUDE:
 34.385773°, -77.893047°

SEAL: FIRM # P-1016



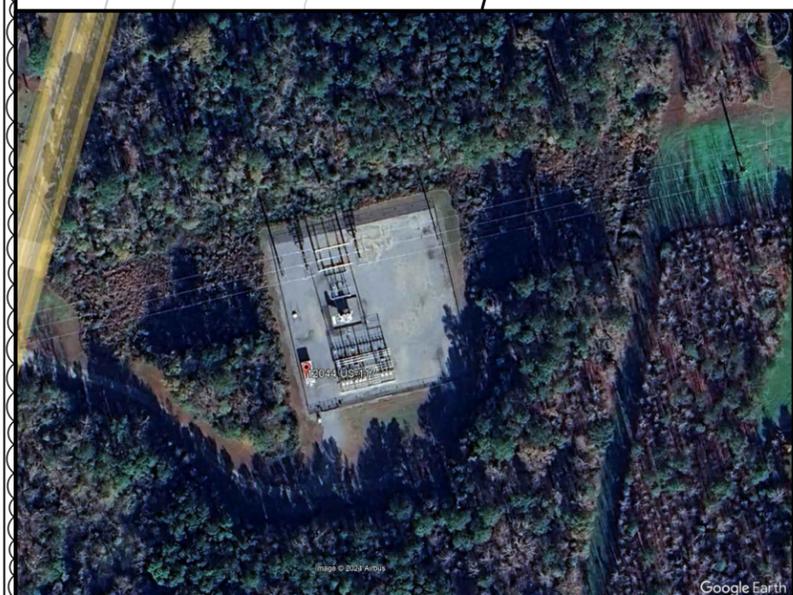
02/04/2025

REV	DATE	DETAILS
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1	08/08/2023	REV. CONSTRUCTION
2	09/13/2023	REV. CONSTRUCTION
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DRAWN BY: HM CHECKED BY: AS

SHEET TITLE:
LANDSCAPE PLAN

SHEET # **C-1.2** CURRENT REV # **5**
 ETS #: 22105740



PARENT PROPERTY
 OWNER: DUKE ENERGY PROGRESS INC
 PARCEL: 3233-43-0205-0000
 ZONING: RP
 ACRES: 5.32

ADJACENT PROPERTY
 OWNER: AA MILLER FAMILY LLC
 PARCEL: 3233-32-8881-0000
 ACRES: 6.40

ADJACENT PROPERTY
 OWNER: NC DEPARTMENT OF
 TRANSPORTATION
 PARCEL: 3229-31-1571-000L
 ACRES: 363.19

ADJACENT PROPERTY
 OWNER: AA MILLER FAMILY LLC
 PARCEL: 3233-43-1925-0000
 ACRES: 9.93

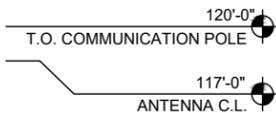
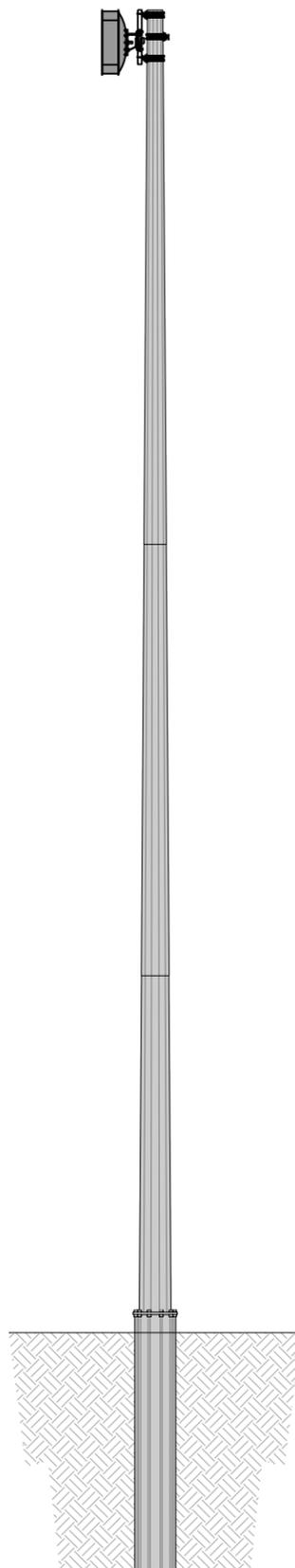
NOTES

- THE EXISTING TREE LINE WILL BE USED TO SATISFY JURISDICTIONAL LANDSCAPING REQUIREMENTS.

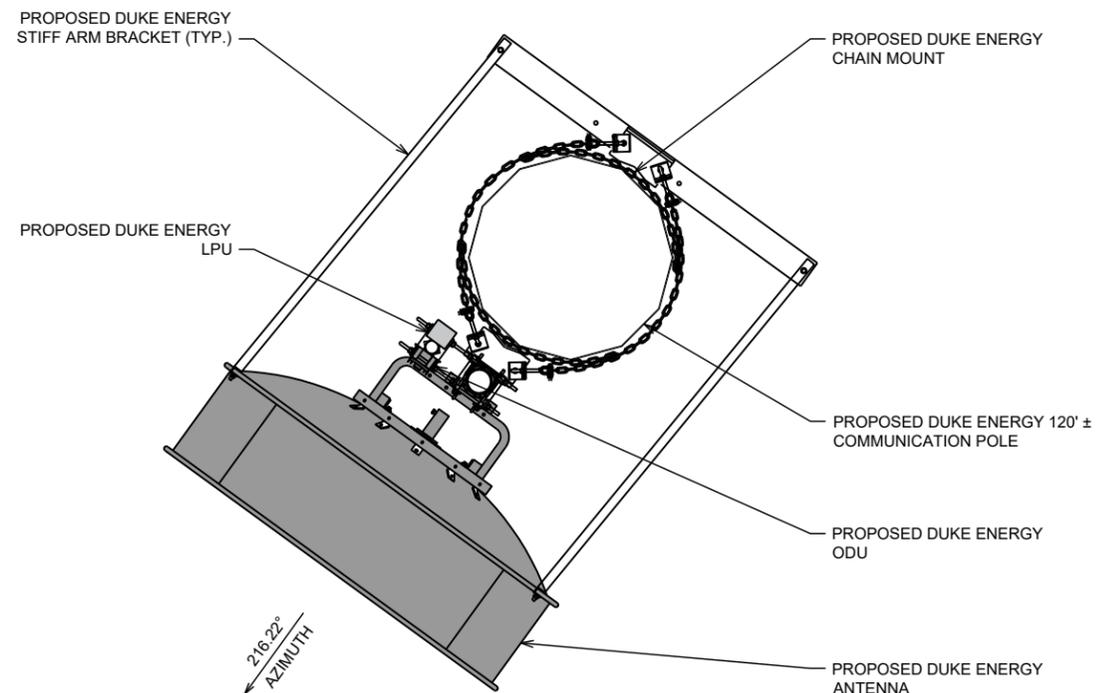
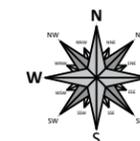
LANDSCAPE PLAN
 1" = 70'-0"

NOTES

1. CONTRACTOR TO REFER TO MOST RECENT COMMUNICATION POLE ANALYSIS, COMPLETED BY ENGINEERED TOWER SOLUTIONS, PRIOR TO INSTALLATION.
2. COMMUNICATION POLE TO BE A GALVANIZED STEEL COLOR TO BLEND IN WITH EXISTING TRANSMISSION LINE EQUIPMENT.
3. COMMUNICATION POLE INTENDED FOR DUKE ENERGY EQUIPMENT ONLY. NO TENANTS ARE PERMITTED TO CO-LOCATE ONTO COMMUNICATION POLE.



SIZE (FT)	TYPE	MANUFACTURE	PART #	ELEVATION (FT)	AZIMUTH	MOUNT
6'	ANTENNA	RADIOWAVES	HPD6-5.2	117'-0"	216.22°	CHAIN MOUNT
5.3"x10.3"x3.3"	ODU	CAMBIUM NETWORKS	PMP450i NON-INTEGRATED	117'-0"	--	ANTENNA



COMMUNICATION POLE ELEVATION

1/16" = 1'-0"

ANTENNA PLAN

3/8" = 1'-0"

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PREPARED FOR:



SUBSTATION NAME:

**ROCKY POINT 230
SUB**

SUBSTATION TRANSMISSION NUMBER:

T6385

SUBSTATION ADDRESS:

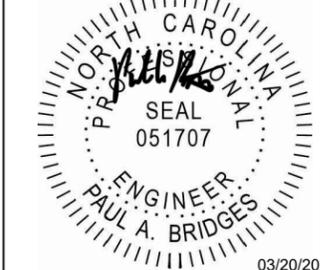
12044 US HWY 117 S
ROCKY POINT, NC 28457

LATITUDE/LONGITUDE:

34.385773°, -77.893047°

SEAL:

FIRM #: P-1016



REV	DATE	DETAILS
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SHEET TITLE:

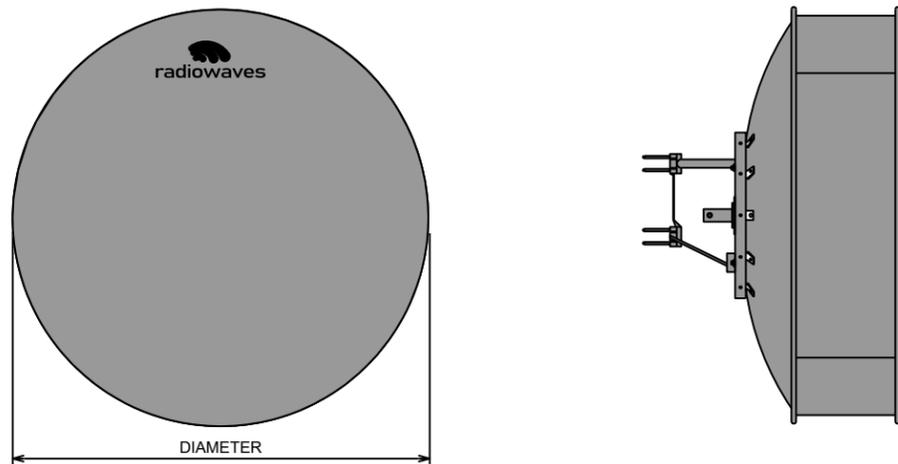
**COMMUNICATION
POLE ELEVATION &
ANTENNA PLAN**

SHEET # **C-2**

CURRENT REV #: 4
ETS #: 22105740

RADIOWAVES - HPD6-5.2

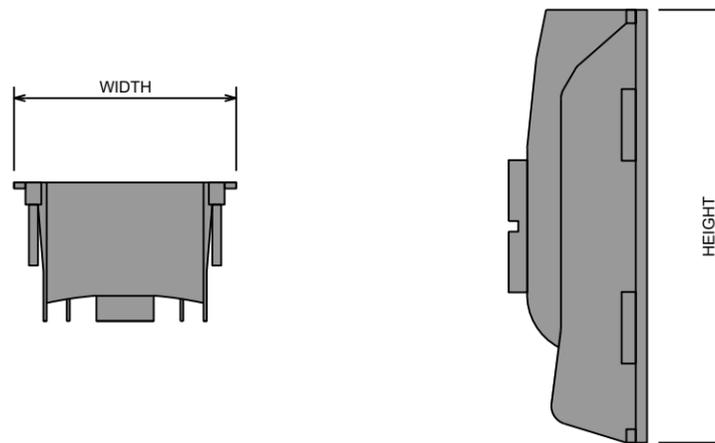
DIAMETER	WEIGHT	ANTENNA CONNECTOR	FREQUENCY
6'-0"	251 LBS	N-TYPE FEMALE	5.25 - 5.85 GHz



ANTENNA DETAIL
N.T.S.

CAMBIUM NETWORKS - PMP 450i

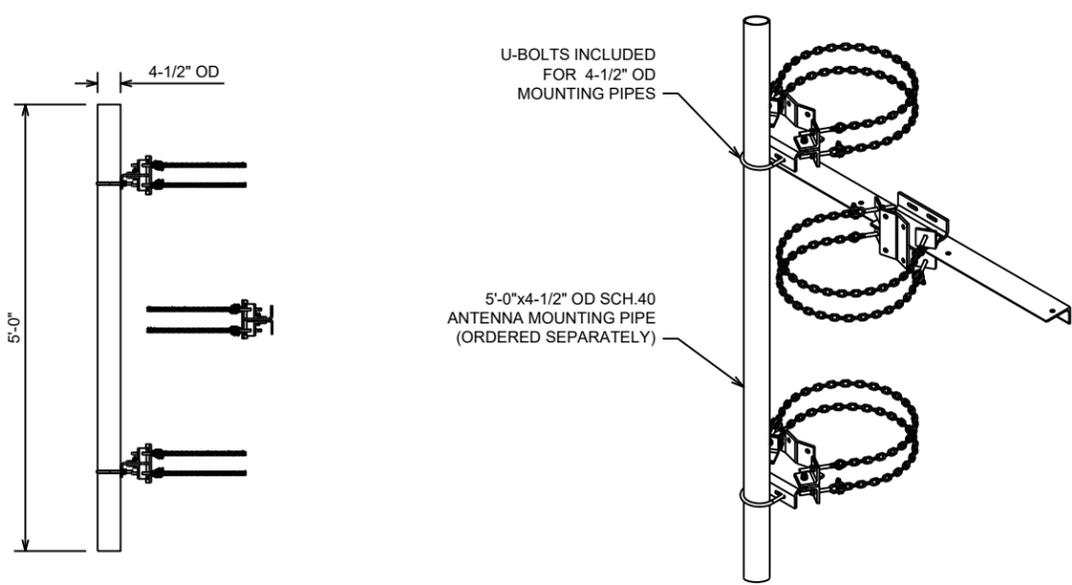
HEIGHT	WIDTH	DEPTH	WEIGHT	ANTENNA CONNECTOR	FREQUENCY
10.3"	5.3"	3.3"	4.5 LBS	(2) N-TYPE FEMALE	3 GHz: 3300 - 3900 MHz 5 GHz: 4900 - 5925 MHz



ODU DETAIL
N.T.S.

VALMONT - DCH8

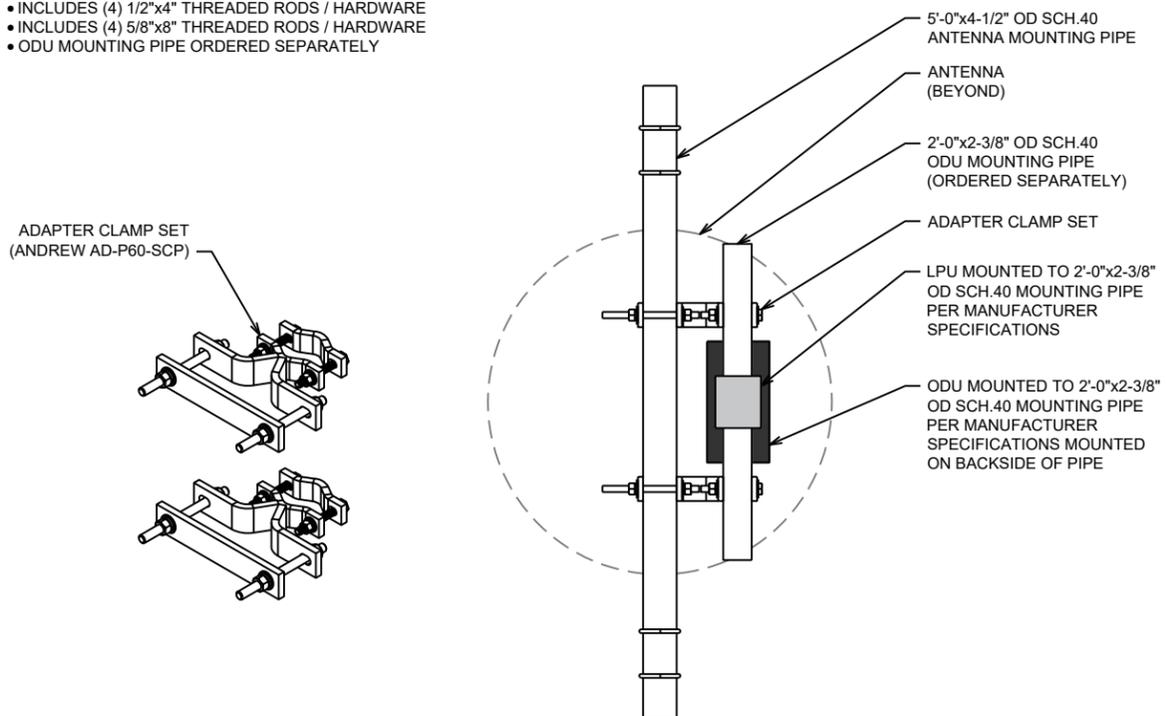
- FITS POLYGON OR ROUND POLES 5" - 36"
- INCLUDES U-BOLTS FOR MOUNTING 4-1/2" OD PIPES
- INCLUDES SIDE-STRUT SUPPORT BRACKET FOR TIE-BACK ARMS
- MOUNTING PIPE ORDERED SEPARATELY



CHAIN MOUNT DETAIL
N.T.S.

ADAPTER CLAMP SET: ANDREW - AD-P60-SCP

- FITS PIPES 4-1/2" TO 12"
- INCLUDES (4) 1/2"x4" THREADED RODS / HARDWARE
- INCLUDES (4) 5/8"x8" THREADED RODS / HARDWARE
- ODU MOUNTING PIPE ORDERED SEPARATELY



ODU MOUNTING DETAIL
N.T.S.

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ROCKY POINT 230 SUB
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SEAL: FIRM #: P-1016

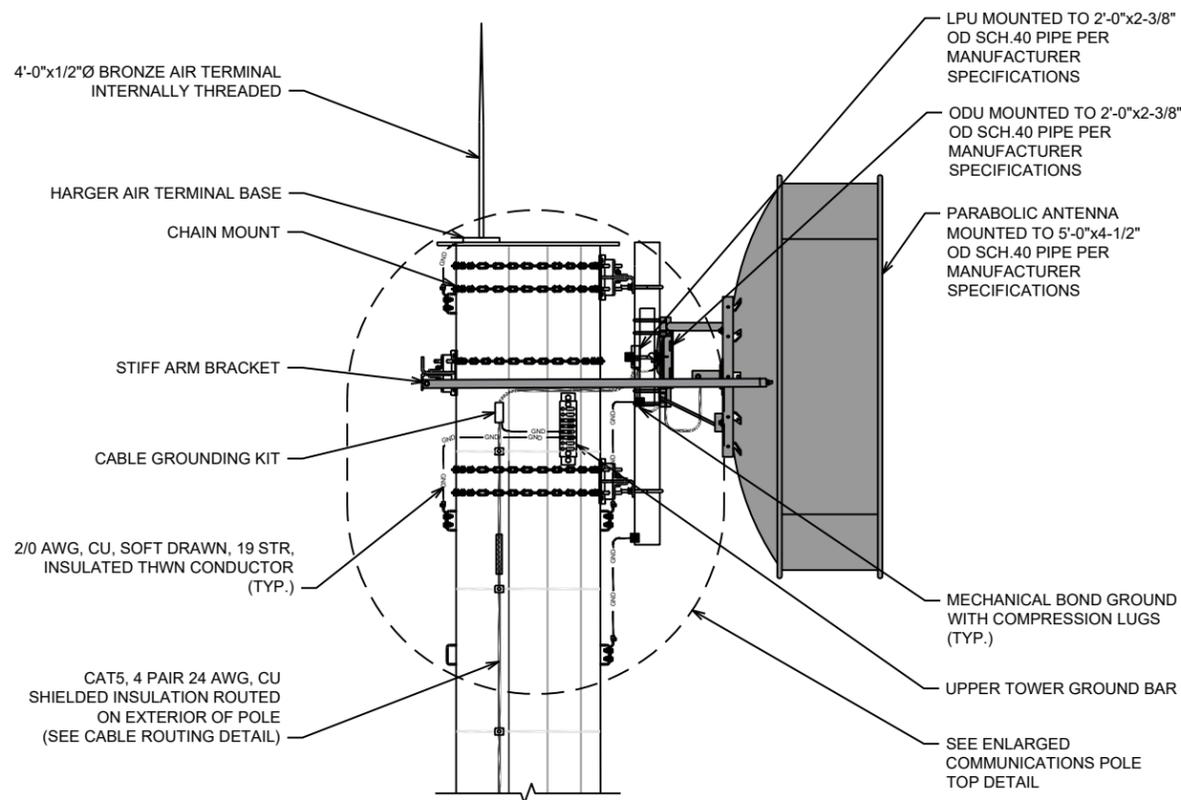


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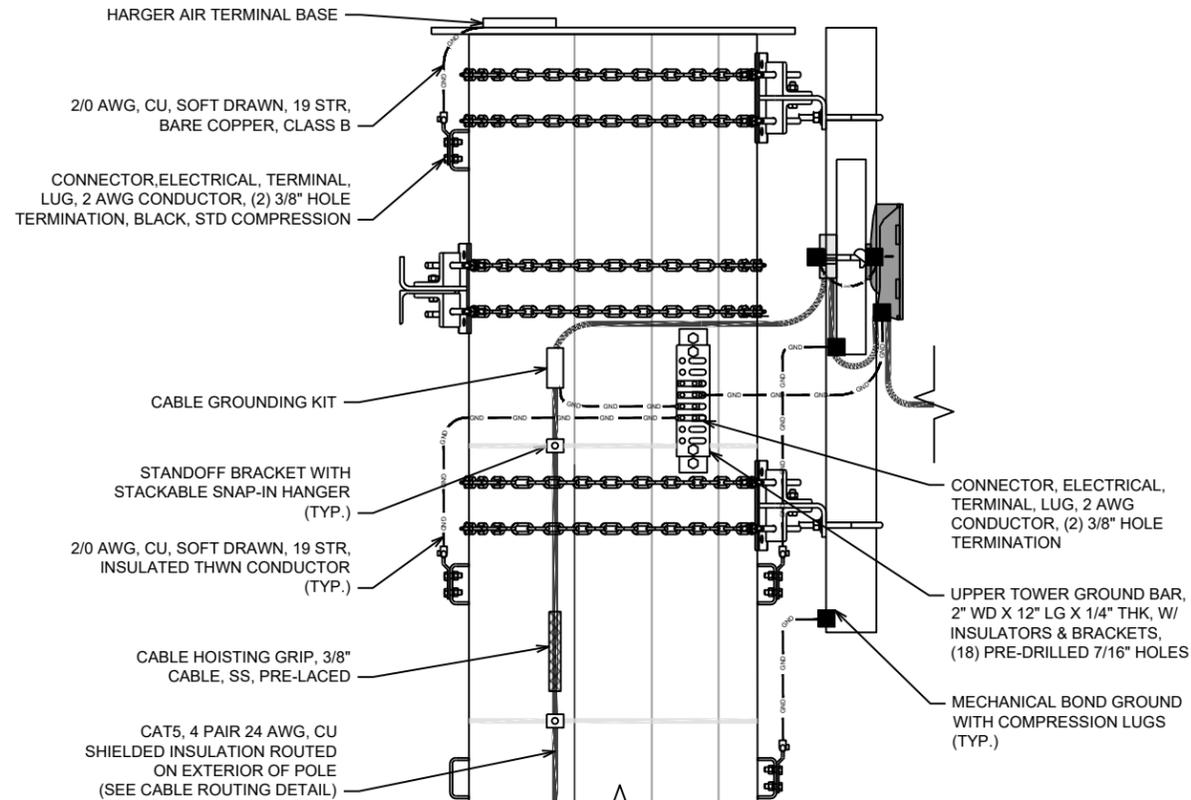
SHEET TITLE:
DETAILS I

SHEET # **C-3.1** CURRENT REV #: 4
ETS #: 22105740



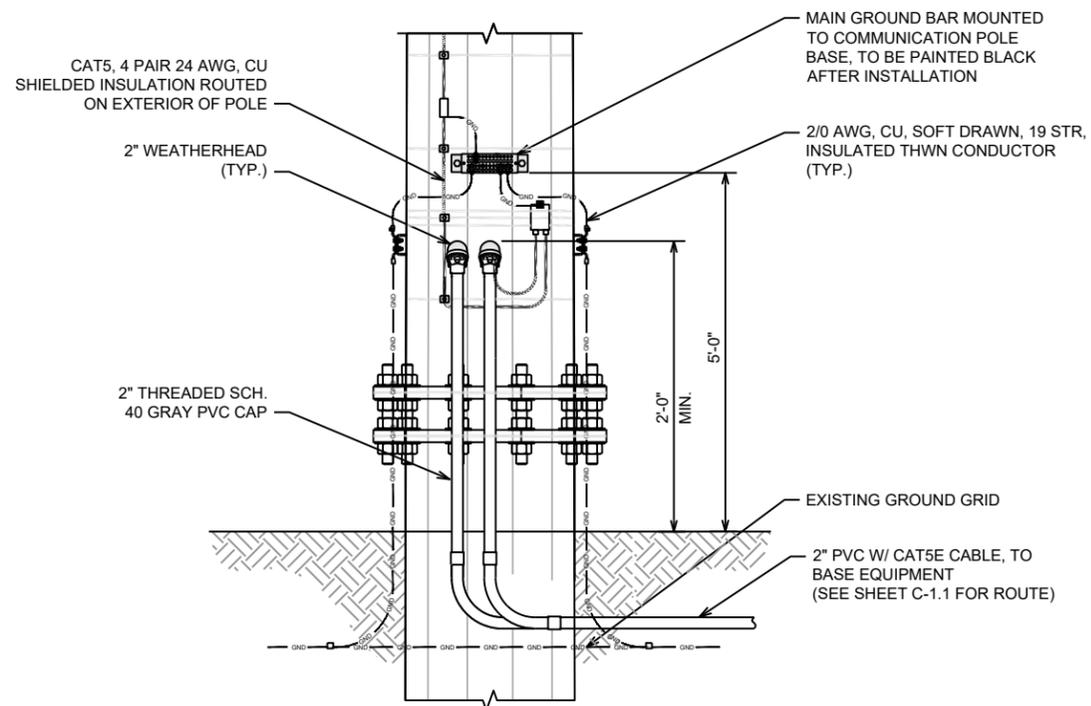
COMMUNICATION POLE TOP DETAIL

N.T.S.



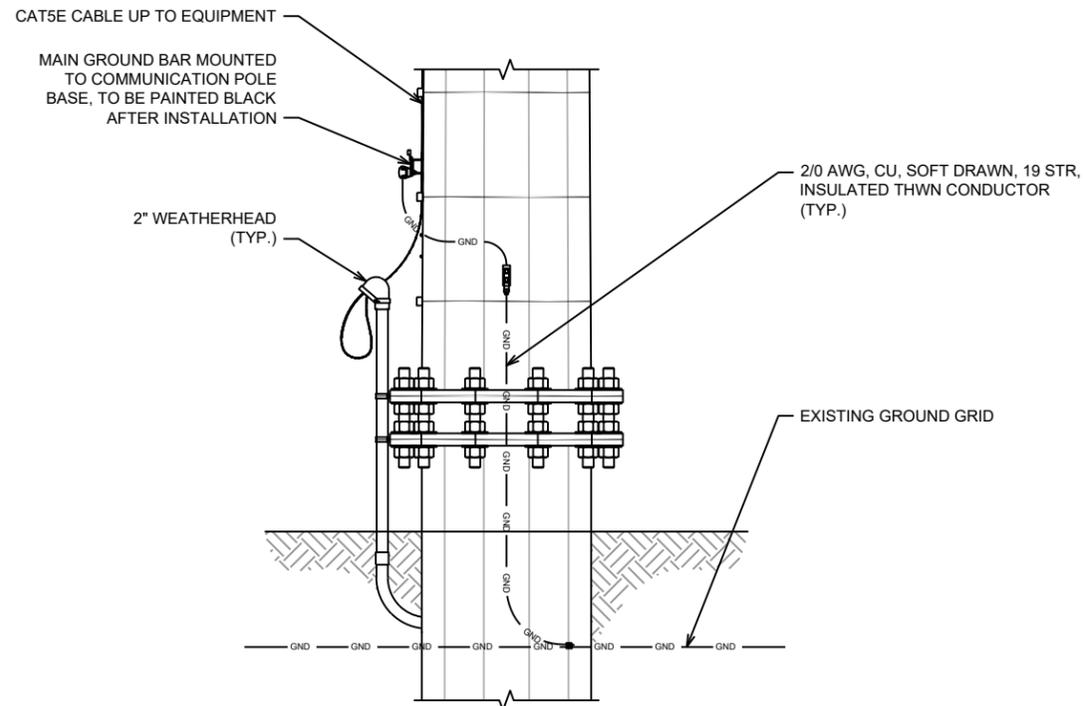
ENLARGED COMMUNICATION POLE TOP DETAIL

N.T.S.



COMMUNICATION POLE BASE DETAIL (FRONT VIEW)

N.T.S.



COMMUNICATION POLE BASE DETAIL (SIDE VIEW)

N.T.S.

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ROCKY POINT 230 SUB

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LATITUDE/LONGITUDE:
34.385773°, -77.893047°

SEAL: FIRM #: P-1016

03/20/2024

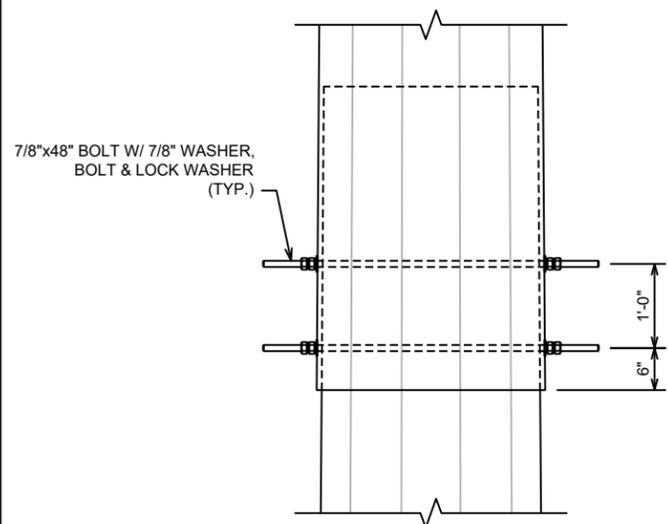
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SHEET TITLE:
DETAILS II

SHEET # **C-3.2** CURRENT REV #: 4
ETS #: 22105740

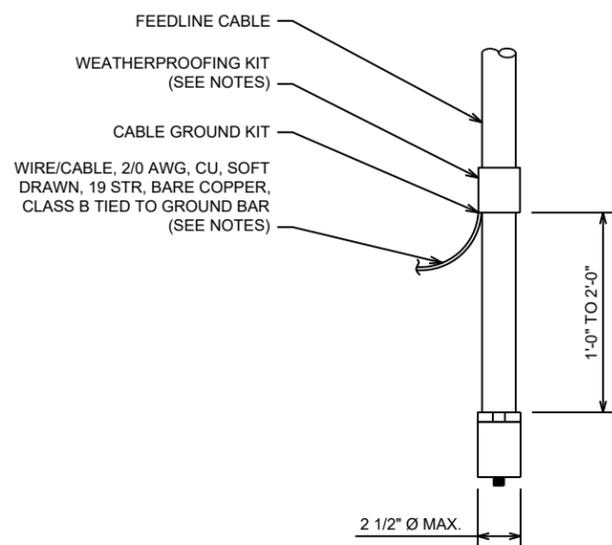
NOTE:
IF POLE SECTIONS ARE JACKED TOGETHER PRIOR TO LIFTING AND SETTING THE POLE IN THE HOLE, THE POLE SECTIONS SHALL BE BOLTED AT THE SLIP JOINTS



POLE SLIP JOINT DETAIL

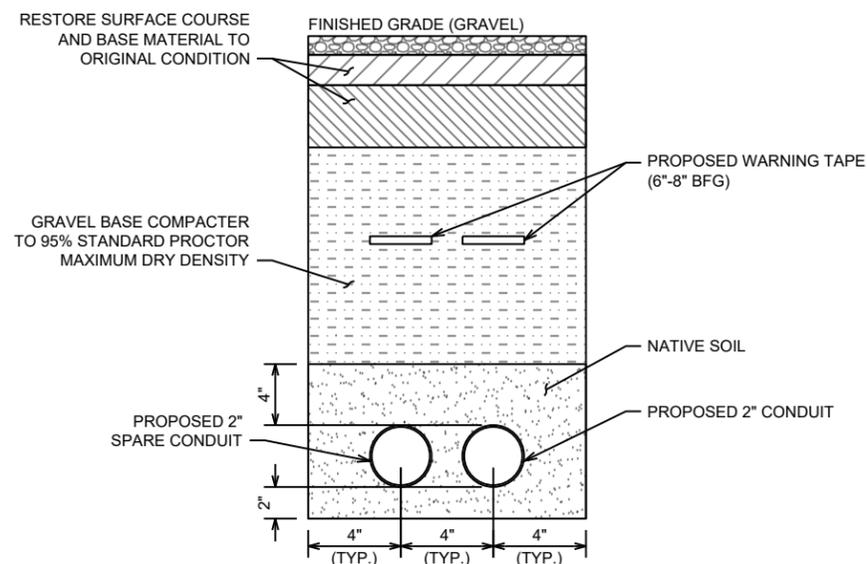
N.T.S.

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



FEEDLINE CABLE GROUNDING DETAIL

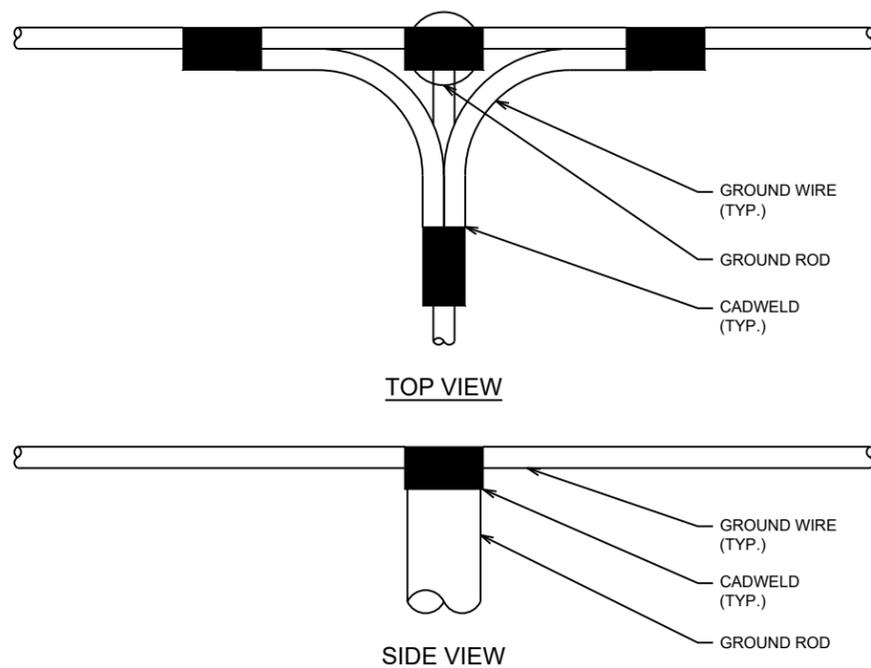
N.T.S.



TRENCH DETAILS

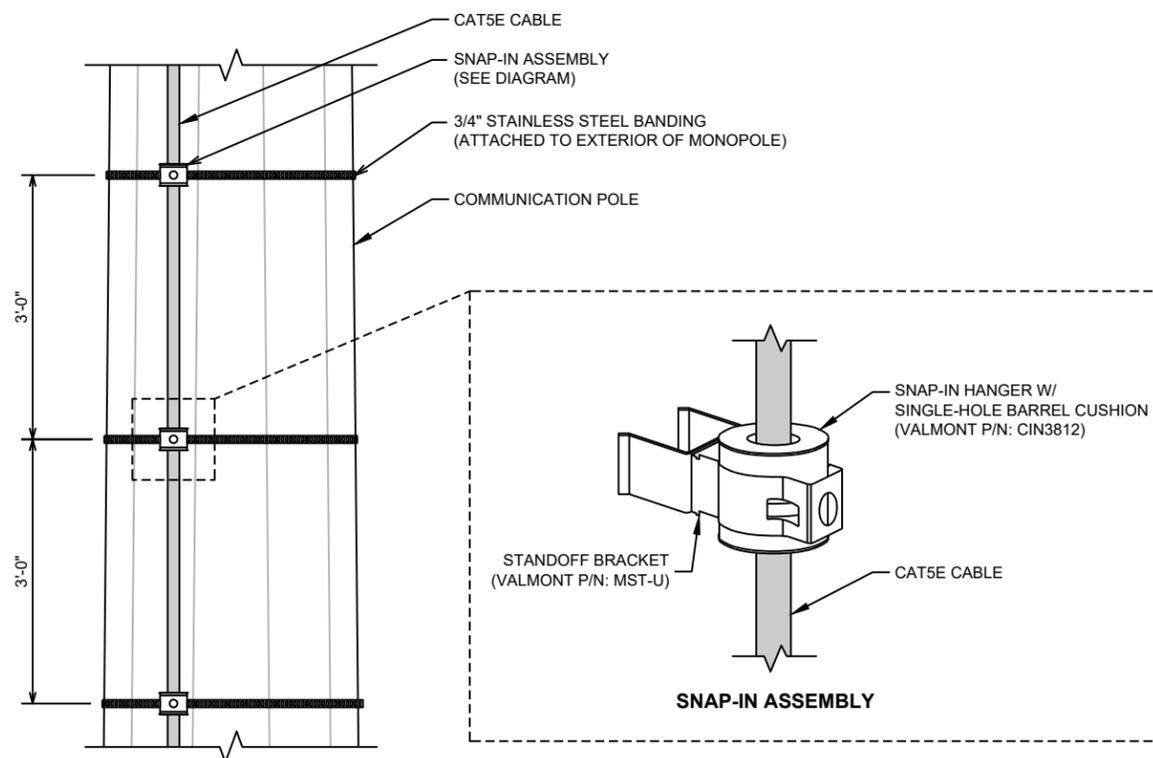
N.T.S.

NOTES:
• MINIMUM SPACING OF 1'-0" BETWEEN ALL CADWELDS.
• TOP VIEW DETAIL ONLY TO BE USED AT SPLICE LOCATIONS.



CADWELD GROUNDING DETAIL

N.T.S.



CABLE ROUTING DETAIL

N.T.S.

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SUBSTATION NAME:
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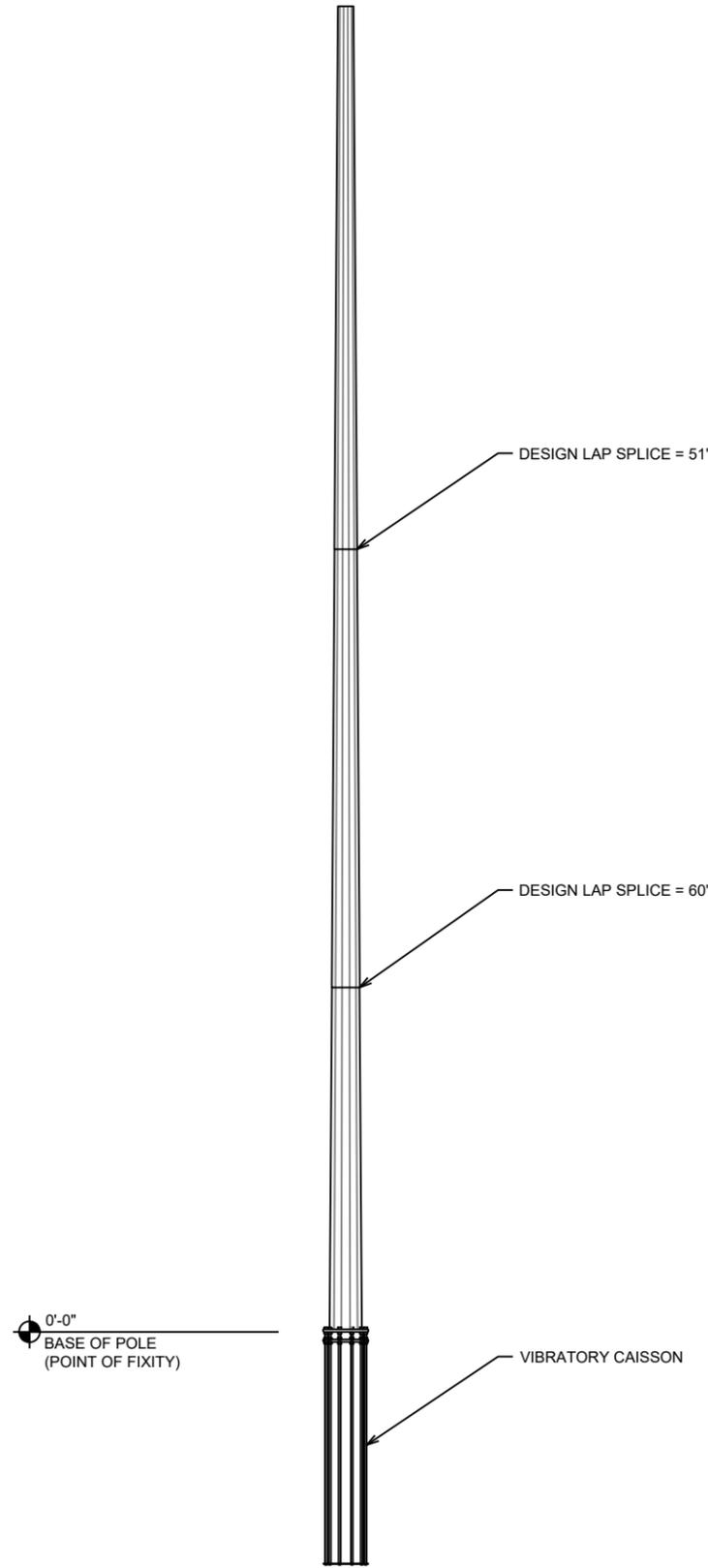
SEAL: FIRM #: P-1016

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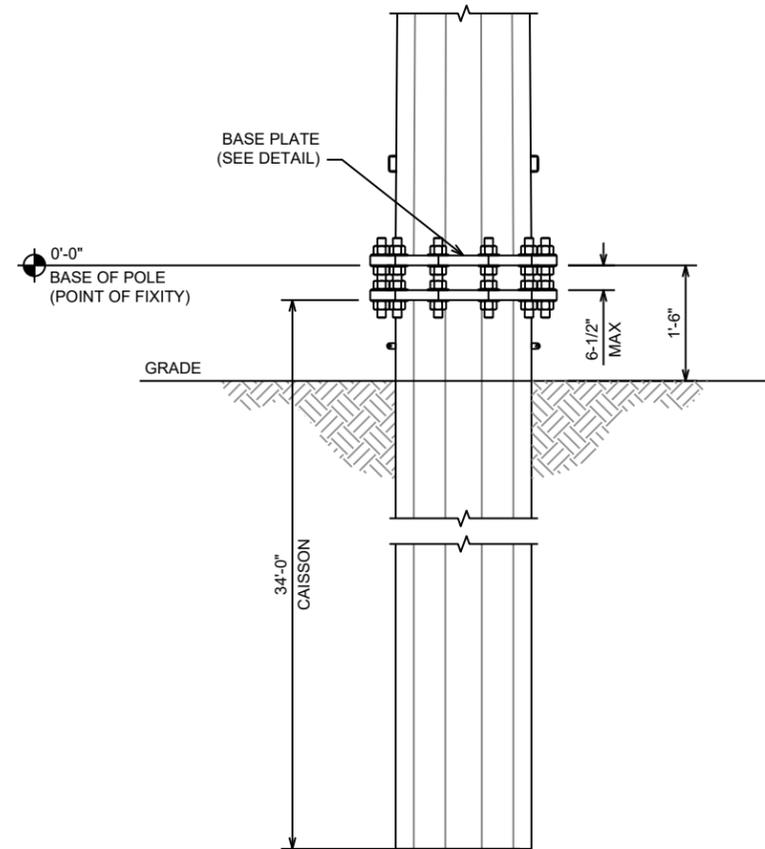
SHEET TITLE:
DETAILS III

SHEET # **C-3.3** CURRENT REV #: 4
ETS #: 22105740



ELEVATION VIEW

N.T.S.



POLE SECTION DETAIL

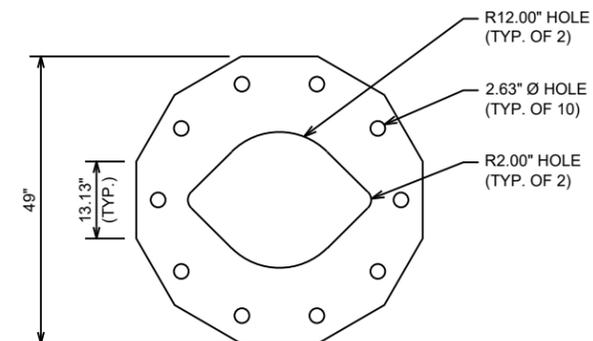
N.T.S.

NOTES:

1. BASE PLATE THICKNESS = 2.750"
2. BASE PLATE ALLOWABLE STRESS (KSI) = 50
3. VENT AND DRAIN HOLES PROVIDED
4. MAXIMUM BOLT CIRCLE DIAMETER = 43"
5. MAXIMUM CAGE TEMPLATE DIAMETER = 49"

HOLE COORDS

X - COORD	Y - COORD
21.50"	0.00"
17.39"	12.64"
6.64"	20.45"



NOTES

N.T.S.

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SUBSTATION NAME:
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SUB**

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FIRM #: P-1016



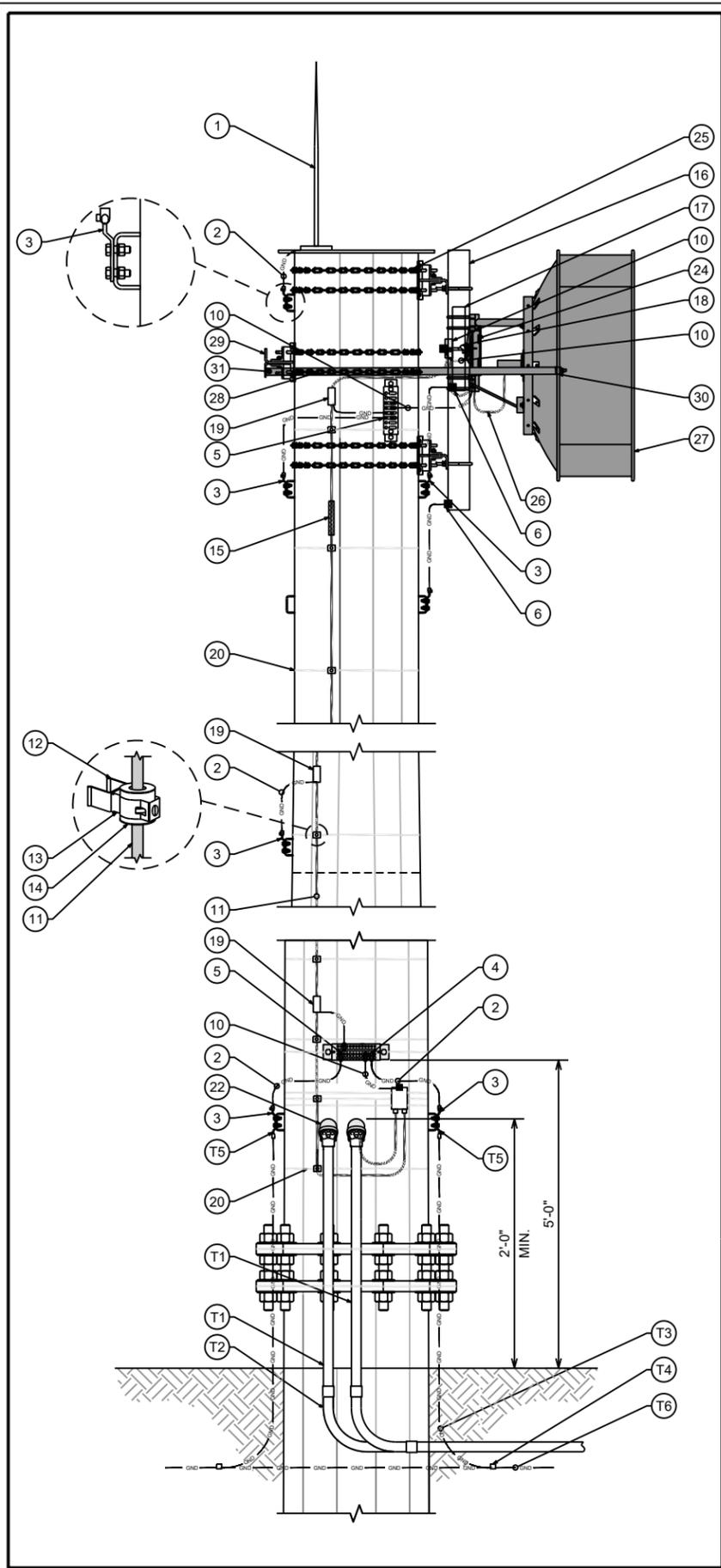
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SHEET TITLE:

DETAILS IV

SHEET # **C-3.4** CURRENT REV #: 4
ETS #: 22105740



ITEM	QTY	UI	MAXIMO P/N	DESCRIPTION	NOTES/ENGINEERING RULE
1	1	EA	1505632	AIR TERMINAL, COPPER CLAD AIR BASE, 1/2" DIA. X 48"	MOUNT THE LIGHTNING ROD 180° AWAY FROM DISH POSITION
2	1	RO	1502506	WIRE/CABLE, 2/0 AWG, CU, SOFT DRAWN, 19 STR, BARE CU, CLASS B, PACKAGED IN 25' HAND COILS	APPROXIMATELY 16' REQUIRED
3	6	EA	1503888	TERMINAL, LUG, 2/0 AWG CONDUCTOR, (2) 1/2" HOLE BLACK, 1-3/4" CTR	FITS EVERY BONDING CONNECTOR WELDED TO VALMONT H-10 POLE
4	1	EA	1612775	TERMINAL, LUG, 2/0 AWG CONDUCTOR, (2) 1/2" HOLE, 1" CTR, BLACK, LONG	NEED 2 PER POLE - 2 ON LOWER GROUND BAR, (MAIN GNDS AT BOT) 1 ON UPPER
5	3	EA	1504572	TERMINAL, LUG, 2/0 AWG, COMP, CU, (2) 3/8" HOLE, 1" CTR	NEED 1 PER POLE - 1 ON UPPER GND BAR (MAIN GND AT TOP) 2 ON LOWER
6	2	EA	1505554	TERMINAL, LUG, 2/0 AWG CONDUCTOR, SGL HOLE 3/8" POST F/	2/0 AWG SINGLE HOLE 2 PER POLE, BOND FOR THE 4.5" & 2.5" PIPE
7	3	EA	LOOSE	TERMINAL, LUG, # 6 AWG, (2) 1/2" HOLE, 1 3/4" SPACE BLUE, LONG	USED FOR MID CAT-5 BOND TO POLE GROUND NEW PART
8	1	EA	1525371	BAR, GROUND, 2" WD X 12" LG X 1/4" THK, W/ INSULATORS & BRACKETS, (18) PRE-DRILLED 7/16" HOLE	BAR, GROUND - ENGINEERING RULE = TOP GROUND BAR - VERT
9	1	EA	1505048	BAR, GROUND, BUSS, 4" WD X 14" LG X 1/4" THK, TINNED, W/ HARDWARE	BAR, GROUND - ENGINEERING RULE = BOTTOM GROUND BAR - HORIZ 3/4", 1" AND 1-3/4" ON CENTER
10	1	KT	1539777	LPU KIT, GROUNDING, LIGHTNING PROTECTION UNIT, ETHERNET CABLE, PRE-FITTED CABLE GLAND,	ENGINEERING RULE = 1 LPU KIT PER OSP CAT-5 CABLE (2 PER KIT)
11	1	SP	1539773	WIRE/CABLE, ELECTRICAL, CAT5, 4 PAIR, 24 AWG, CU, SHIELDED INSULATION	ENGINEERING RULE = SPOOL 328' - POLE 120' RADIO TO LPU MAXIMUM DISTANCE TO ISP PSU = 320'
12	4	PK	1473338	BRACKET, STANDOFF, MOUNTING, UNIVERSAL, NO ADAPTER	BRACKET - 10/BAG ENGINEERING RULE = 1 EVERY 3 FEET
13	4	PK	1505037	HANGER, CABLE, SNAP-IN STACKABLE, F/ 1-5/8" CABLE	SNAP-IN, 10/BAG - ENGINEERING RULE = 1 EVERY 3 FEET
14	4	PK	1564840	CUSHION, BARREL, 1-5/8", UNIVERSAL, 14-36MM, SNAP-IN, 10 PER BOX	BARREL CUSHION, 10/BAG - ENGINEERING RULE = 1 EVERY 3 FEET
15	1	EA	1554484	GRIP, CABLE, HOISTING, 3/8" CABLE, SS, PRE-LACED	ENGINEERING RULE = 1 PER CAT-5 RISER TOP & MID IF > 200'
16	1	EA	1503531	PIPE, 5' LG, ALUM, 4-1/2" OD, F/ ANTENNA MOUNT	PIPE, 5' LG, ALUM, 4-1/2" OD, 1 per DISH
17	1	EA	1479381	PIPE, 2-3/8", 2' LG, PLAIN ENDS, STL, F/ ANTENNA MOUNT	PIPE, 2-3/8", 2' LG, 1 per Radio/LPU ASSY
18	1	EA	1501289	BRACKET, MOUNTING, HOT DIP GALV STL, BOOM GATE CLAMP SET, 4-1/2" TO 12", 60 DEG ANGLE LEGS	TOWER LEG CLAMP SET ENGINEERING RULE = 1 PER 2' RADIO/LPU ASSY
19	3	EA	1539778	KIT, SHIELD GROUNDING, GROUND STRIPS, MASTIC TAPE, ELECTRICAL TAPE, GROUND BOLT & NUT, RETAINING ZIP TIES, F/	(1) AT BOTTOM (1) AT MIDDLE (ABOVE SLIP JOINT) (1) AT TOP OF MONOPOLE"
20	4	RO	1490605	BAND, STRAPPING, 3/4" WD, 100' LG, 0.03" THK, 316 SS, 1800 LB	BAND, STRAPPING, 3/4" ASSUME 6" DIAMETER & ALL OTHER MISC
21	100	EA	1490606	BUCKLE, BANDING, 3/4" WIDE, SS	BUCKLE, BANDING, 3/4" WD, SS
22	2	EA	904105	HEAD, SERVICE ENTRANCE, RIGID, 2", SLIP-ON, PVC, WEATHER HD, STD PKG/5	WEATHER HEAD, 2" ALL TO BE SCHEDULE 40
23	1	EA	1545989	BRACKET, MOUNTING, CAMBIUM TILT BRACKET ASSY	BRACKET, MOUNTING, CAMBIUM TILT BRACKET ASSY ENGINEERING RULE = 1 PER PMP-450 REMOVE FOR 670
24	1	EA	1546830	MODULE, RADIO FREQUENCY, CAMBIUM 5X GHZ 450i INTEGRATED SUBSCRIBER MODULE	5 GHZ PMP 450i INT SM
25	1	EA	1588737	CHAIN MOUNT, FLUSH ANTENNA, CHAIN MOUNT, TIE BACK ARMS, U-BOLTS, F/ DISH ANTENNA W/ SIDE SUPPORT BRACKETS, F/ 4-1/2" DIA -	4' AND 6' DISH ONLY - DHC8 SA-B10 INCLUDES U-BOLTS FOR MOUNTING 4-1/2" OD PIPES AND SIDE-STRUT SUPPORT BRACKET FOR TIE-BACK ARMS
26	2	EA	1603548	JUMPER, COAX, 5' LG, N MALE TO N MALE, LMR-400, W/ WEATHER BOOTS	JUMPER, COAX, 5' LG, (NEED FOR DISHES GREATER THAN 3')
27	1	EA	1564958	ANTENNA, PARABOLIC DISH, 5.25-5.85GHZ, N-FEMALE CONNECTOR, 6' HPDP, 37.2 DBI GAIN	6' HPDP CAMBIUM NON-INTEGRATED PMP OR PTP APPLICATIONS
28	2	EA	1501100	BRACKET, MOUNTING, STABILIZER BARS-STIFF ARM, F/ 4' & 6' DISH ANTENNA SERIES SP	STIFF ARM / TIEBACK BRACKET, INCLUDES 126" PIPE 4' & 6'
29	2	EA	NONE	STIFF ARM SUPPORT BRACKET FOR 2-3/8" IN OD PIPE	BRACKET FOR 4' AND 6'
30	2	EA	1624192	BRACKET, MOUNTING, 8" WD X 8" LG X 6" HT, HOT DIP GALV STL:	DISH ATTACHMENT BRACKET FOR STIFF ARM
31	2	EA	1624191	STRUT, SIDE, 48" LG, F/ ANTENNA	STIFF ARM 48" ANGLE IRON ATTACHMENT
TRANSMISSIONS					
ITEM	QTY	UI	MAXIMO P/N	DESCRIPTION	NOTES
T1	TBD	EA	61354	CONDUIT, RIGID, HEAVY WALL, 2", 10' LG, SCH 40, PVC, LG BELLED ONE END, RATED F/ 90 DEG C	2" x 10'-0" SCH. 40 GRAY PVC W/ COUPLING ON ONE END
T2	2	EA	79433	ELBOW, CONDUIT, RIGID, 2", GRAY PVC, 90 DEG, 9-1/2" RADIUS, PLAIN END, F/ 2" CONDUIT; PACKAGING: 15 PER PACK	2" x 9-1/2" RADIUS SCH. 40, 90 DEGREE PVC ELBOW
T3	16	FT	4177461	WIRE/CABLE, ELECTRICAL, BARE, GROUND, 19 STR SOL SD, 9 AWG, DEAD SOFT ANNEALED COPPERCLAD	2 CONNECTIONS / POLE ASSUME MINIMUM 2' ABOVE 4' BELOW
T4	1	BX	50130218	POWDER, WELDING, EXO., #300PLUS20, LIGHT GREEN	CAD WELD 4 PER POLE 10 CARTRIGES / BOX
T5	2	EA	67295	TERMINAL, TIN PLTD CU CONDUCTOR, WELDED CONDUCTOR CONNECTION, (2) 1/2" HOLE 1-3/4" CTR	POLE HOLE PATTERN TO CAD WELD 9X19 TO GRID MAT
T6	1		N/A	EXISTING SUBSTATION GROUND MAT	2 CONNECTIONS TO GRID MAT ASSUME 4' DEPTH

PREPARED BY:

3227 WELLINGTON COURT
RALEIGH, NC 27615
919-782-2710
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PREPARED FOR:

SUBSTATION NAME:
ROCKY POINT 230 SUB
SUBSTATION TRANSMISSION NUMBER:
T6385
SUBSTATION ADDRESS:
12044 US HWY 117 S
ROCKY POINT, NC 28457
LATITUDE/LONGITUDE:
34.385773°, -77.893047°

SEAL: FIRM #: P-1016

03/20/2024

REV	DATE	DETAILS
0	11/09/2022	CONSTRUCTION
1	8/8/2023	REV. CONSTRUCTION
2	9/13/2023	REV. CONSTRUCTION
3	1/31/2024	REV. CONSTRUCTION
4	03/20/2024	REV. CONSTRUCTION
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

DRAWN BY: CP CHECKED BY: SJ

SHEET TITLE:
DETAILS V

SHEET # **C-3.5** CURRENT REV #: 4
ETS #: 22105740