

MEMORANDUM

TO: Harnett County Board of Adjustment Members
FROM: Teresa Byrd, Senior Dept. Support Specialist/Board Clerk *TByrd*
DATE: October 4, 2024
RE: **October 14, 2024 Meeting**

On this meeting agenda, there are the following:

- Singlewide Manufactured Homes in an RA-30 Zoning District.
- Two (2) Telecommunications Monopole Towers in an RA-30 Zoning District.

PLEASE CALL in advance if you **WILL NOT** be able to attend the meeting.

AGENDA
HARNETT COUNTY BOARD OF ADJUSTMENT
Harnett County Development Services
420 McKinney Parkway
Lillington, NC 27546
October 14, 2024 @ 6:00 p.m.

PUBLIC HEARING

Procedure to be followed at each Board of Adjustment Meeting:

- | | |
|---|---|
| 1. Call to order | 8. Cross-examination from the Board and others |
| 2. Invocation | 9. Close Conditional Use Hearing |
| 3. Swearing in of witnesses | 10. Deliberation by Board of Adjustment |
| 4. Briefing on application being considered | 11. Findings of Fact Checklist |
| 5. Public Hearing opened | 12. Decision by Board of Adjustment or Other Motion |
| 6. Testimony from applicant | 13. Approval of Minutes |
| 7. Testimony from other witnesses | 14. Board in Closed Session |

Special Use –New Business

1. BOA 2408-0001. David L McKinnon Sr. A Singlewide Manufactured Home in an RA-30 Zoning District; Pin # 0692-86-5637.000; .82 acres; Grove Township; SR # 1546 (Young Road).
2. BOA2408-0004. Carolina Power & Light Co-Duke Energy / Tower Engineering Professionals. A Telecommunications Monopole Tower in an RA-30 Zoning District; Pin # 9690-43-7159.000; 17.64 acres; Upper Little River Township; SR # 1214 (Mt. Pisgah Church Road).
3. BOA2408-0005. Carolina Power & Light Co-Duke Energy / Tower Engineering Professionals. A Telecommunications Monopole Tower in an RA-30 Zoning District; Pin # 0680-64-0848.000; 15.35 acres; Neill's Creek Township; NC Hwy 27 E.

HARNETT COUNTY
BOARD OF ADJUSTMENTS

October 14, 2024

Staff Contact: Emma Harris, Planner I
(910) 893-7525 or eharris@harnett.org

CASE NUMBER: BOA2408-0001
APPLICANT: DAVID L. MCKINNON SR.
OWNER: DAVID L. MCKINNON SR.
LOCATION: 138 YOUNG RD ANGIER, NC
ZONING: RA-30
ACREAGE: .82
LAND USE CLASSIFICATION: Agricultural

REQUEST: Single-wide Manufactured Home in RA-30 Zoning District

AERIAL: PIN#: 0692-86-5637.000



Directions from Lillington: Turn left onto Alexander Dr – Turn right onto McKinney Pkwy – Turn left onto US-401 N / US-421 S / NC-27 / NC-210 / N Main St – Turn right onto US-421 S / NC-27 / E Cornelius Harnett Blvd – Turn left onto NC-27 / NC 27 E – Keep right to stay on NC-27 / NC 27 E – Turn left onto N Orange St – Road name changes to Abattoir Rd – Turn left onto Denning Rd. – Turn left to stay on Denning Rd. – Turn left onto Langdon Rd. – Turn right onto Young Rd. – Arrive at 138 Young Rd.

PHYSICAL CHARACTERISTICS

- A. **Site:** Currently vacant and contains natural vegetation and forestry products.
- B. **Surrounding Land Uses:** Consists of single-family residential home sites, agricultural activities, and undeveloped parcels containing natural vegetation and forestry products.
- C. **Utilities:** **Water** – Public **Sewer** – Private (Septic)

TRANSPORTATION:

- The annual daily traffic count for Young Rd was unavailable.
- Site distances are good.

BACKGROUND:

- If the applicant's request for a Special Use permit is approved, the next stage in the developmental process will be to obtain all required permits associated with the setup of the manufactured home. The process will include the necessary reviews and inspections to ensure all regulatory codes and guidelines are adhered to as well as any conditions that may be placed on the requested land use.
- At the inspection of the site, information was obtained that indicated, if a manufactured home was placed on 138 Young Rd., then it would create a non-conforming manufactured home park. The applicant was notified of the issue and was informed of options to remedy the situation.

UNIFIED DEVELOPMENT ORDINANCE REGULATIONS

ARTICLE V. USE REGULATIONS

1.2 Table of Use Types & Regulations

	IND	LI	COMM	O&I	CONS	RA-40	RA-30	RA-20R	RA-20M	PARKING	USE GROUP LEVEL	BUILDING CODE CLASS
RESIDENTIAL USES												
Manufactured Homes (on individual parcel)							S*	P*	P*	2 per dwelling unit	1	R-3

3.1.2 Manufactured Homes

RA-30 Zoning District

All requirements or conditions shall be met prior to issuance of a Certificate of Occupancy (CO) for the home.

- A. The structure shall be built to the HUD code for manufactured homes.
- B. The structure shall have an a-pitched roof that is covered with material commonly used in standard residential roofing construction. Said material shall be installed properly and be consistent in appearance.
- C. The structure shall have underpinning consisting of a brick curtain wall or have galvanized metal sheeting, ABS, or PVC plastic color skirting with interlocking edges, installed around the perimeter of the home. Skirting shall be consistent in appearance, in good condition, continuous, permanent, and unpierced except for ventilation and access.
 - 1. In cases where the proposed home is located in Flood Zone AE, the home shall be located on a masonry foundation only, with approved flood vents or breakaway skirting. See "Flood Damage Prevention" Section of this Ordinance for more information.

- D. The exterior siding shall consist predominantly of vinyl, aluminum, wood or hardboard; and shall be comparable in composition, appearance, and durability to the exterior siding commonly used in standard residential construction. Said exterior siding shall be in good condition, complete, and not damaged or loose.
- E. The tongue or towing device shall be removed or landscaped.

HARNETT COUNTY COMPREHENSIVE GROWTH PLAN

FUTURE LAND USE PLAN

The Harnett community envisions a future where the county will continue to grow and prosper in a way that promotes a high quality of life, capitalizes on and protects the assets that make Harnett County unique, and ensures that all Harnett residents have access to a variety of housing, transportation, recreation and employment options.

FUTURE LAND USE CATEGORIES/ RESIDENTIAL AREAS

Agricultural and Rural Residential: Primarily agricultural and forestry uses with some rural residential areas. These areas are located outside of existing and future sewer service areas and rely on septic systems for wastewater treatment. They have a limited road network and, in some cases, lie within High Quality Watershed or Water Supply Watershed areas. The lack of utility and transportation infrastructure, the established low density development pattern and ongoing agricultural activities in these areas contribute to their rural character. This character can be enhanced by encouraging only low intensity uses, single family residential up to one unit per acre and context sensitive rural design.

LAND USE GOALS & STRATEGIES

LU-2: Encourage growth where infrastructure exists.

LU-4: Accommodate a mixture of housing types in appropriate areas.

SITE PHOTOS

Site



Across Street



Adjacent Properties



Street View



Sign Posted



SITE PLAN

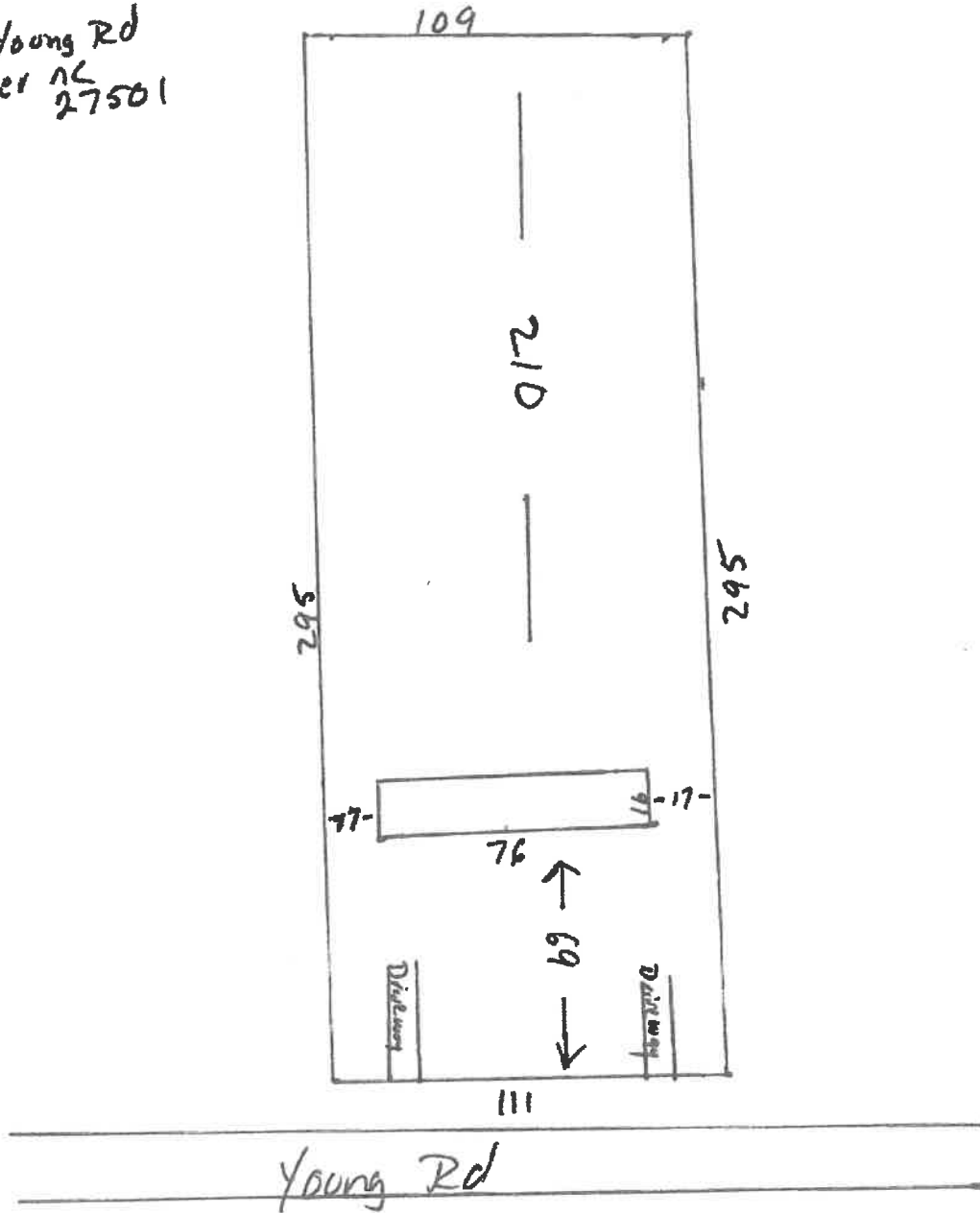
20-scale

20-scale

David McKinnon SR

138 Young Rd

Angier NC 27501





Residential Special Use Permit

Planning Department
420 McKinney Parkway
P.O. Box 65, Lillington, NC 27546
Phone: (910) 893-7525 Fax: (910) 893-2793

Total Fee: \$175.00
Receipt: _____
Date Submitted: Aug 2, 2024
Meeting Date: OCT 14, 2024
Case #: BOA 2408-001

Applicant Information

Owner of Record:

Name: David L McKinnon Sr
Address: 118 Young Road
City/State/Zip: Angier N.C. 27501
E-mail: David.mckinnon@7@gmail.com
Phone: 919-390-4833

Applicant:

Name: _____
Address: _____
City/State/Zip: _____
E-mail: _____
Phone: _____

Property Description

PIN(s): 0692-86-5637, 000 Acreage: 0.82 acres

Address/SR No.: _____
Directions from Lillington: NC 55 West, turn on Old Stage Rd North, turn right on Laydon Rd, left on Young Rd

Deed Book: 4227 Page: 1585 Plat Book: _____ Page: _____
Zoning District: RA-30 Township: Harnett Grove
Flood Plain & Panel: _____ Watershed Dist: _____

Water: Public (Harnett County) Private (Well) Sewer: Public (Harnett County) Private (Septic Tank)

Requested Use:

Special Use for Daughter's Home SWM#

Required Information:

1. Is an Erosion and Sedimentation Control Plan required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
2. It is recommended that all non-residential developments have preliminary discussions with NC DOT concerning driveways and other traffic issues for each project. Has this been done? No Yes
Date of Meeting: _____ NCDOT Contact: _____
3. Is a Driveway Permit required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
4. Have you contacted applicable local, state, and federal agencies regarding building, fire, and other possible code compliance issues? No Yes

SKETCH PLAN REQUIRED: Provide a sketch plan along with application. It is strongly encouraged that sketch plans be prepared by a NC Professional Land Surveyor and that it meet the following (as applicable):

TITLE BLOCK INFORMATION	
Name of Project & Date (Including all Revision Dates)	<input type="checkbox"/>
Applicant/Owner(s) Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Surveyor/Engineer Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Parcel ID Number/Tax ID of Tract(s)	<input type="checkbox"/>
Deed Reference of Tract(s)	<input type="checkbox"/>
Zoning Classification of Tract(s)	<input type="checkbox"/>
Location (Including Township, County, & State)	<input type="checkbox"/>
Flood Plain Depicted & Noted (Zone, Map Number, & Effective Date)	<input type="checkbox"/>
Watershed District Noted & Extent of Coverage Depicted	<input type="checkbox"/>
GENERAL REQUIREMENTS	
Map Size 22" x 34" & Scale 1"=100' or Larger	<input type="checkbox"/>
North Point, Graphic Scale, & Vicinity Map	<input type="checkbox"/>
Name(s) & Location(s) of Adjacent Property Owner(s) & Use(s)	<input type="checkbox"/>
Existing Boundaries of Tract(s) Showing Bearings & Distances	<input type="checkbox"/>
Gross Acreage of Development	<input type="checkbox"/>
Name(s) & Right(s)-of-way of Streets & State Road Number(s), Including Notation of Public or Private	<input type="checkbox"/>
Name, Location, Width, & Acreage of Additional Easement(s) & Right(s)-of-way Within or Adjacent to Site	<input type="checkbox"/>
Building Envelope & Required Setbacks	<input type="checkbox"/>
Existing & Proposed Utilities	<input type="checkbox"/>
Signage Location, Easement, Type, & Size	<input type="checkbox"/>
Existing Structure(s) Located on Site	<input type="checkbox"/>
SITE PLAN	
Fire Hydrant(s) & Street Light(s) Noted	<input type="checkbox"/>
Erosion Control Plan Submitted	<input type="checkbox"/>
Hours & Days of Operation	<input type="checkbox"/>
Impervious Surface (% Coverage of Lot)	<input type="checkbox"/>
Hazardous Materials to be Stored on Site	<input type="checkbox"/>
Existing & Proposed Mechanical Areas	<input type="checkbox"/>
Existing & Proposed Trash Containment Areas	<input type="checkbox"/>
Existing & Proposed Utility Areas	<input type="checkbox"/>
Parking Space Typical	<input type="checkbox"/>
Parking Lot Material	<input type="checkbox"/>
All parking areas on site (Based on Type of Business and/or Sq. Ft.)	<input type="checkbox"/>
Existing & Proposed Fencing, Screening, Gate(s) and/or Dock(s)	<input type="checkbox"/>
Spillage & Pollution Prevention & Response Methods	<input type="checkbox"/>
BUFFERING REQUIREMENTS	
Buffering Regulations (Per Harnett County Zoning Ordinance)	<input type="checkbox"/>

Signatures

I, as the landowner, hereby CERTIFY that the information contained herein is true to the best of my knowledge; and by accepting this Permit (if approved) shall in every respect conform to the terms of this application and to the provisions of the Statutes and Ordinances regulating development in Harnett County. Any VIOLATION of the terms above stated immediately REVOKES this Permit. I further understand this structure is not to be occupied until a CERTIFICATE OF OCCUPANCY is issued. This Permit expires 24 months (2 years) after the date the Permit is granted by the Harnett County Board of Adjustment.

David L. McKinnon Jr

Property Owner(s) Signature

8/2/24

Date

Written Statement

** Applicant is required to answer the following questions under oath at the Board of Adjustment Meeting - Please print answers **

Public Convenience & Welfare

1. Why are you requesting this use? Personal use
2. Why is this use essential or desirable to you? Single Mobile Home for my daughter
3. Why is this use essential or desirable to the citizens of Harnett County? Family estate

On-site & Surrounding Land Uses

4. What is on the property now? Nothing
5. What uses are on the surrounding properties in the general vicinity? 2 modular homes and 3 single mobile homes opposite side of property
6. How will the use you are requesting affect the surrounding properties, residents and businesses in the area? Describe in detail **why and how** it will or will not affect the surrounding area. There are single mobile homes around the property

Utilities, Access Roads, Drainage, etc...

7. Please select one: Public (County) Water Private Well
 Public (County) Sewer Private Septic Tank
8. Describe the driveway (width and surface) that you will be using to enter and exit the property. _____
9. Describe the drainage of this property. Flat drainage
10. How is your trash and garbage going to get to the landfill? Waste Industries

Traffic

11. Describe the traffic conditions and sight distances at the State Road that serves the property. Low Traffic
12. What is the approximate distance between your driveway and the next nearest driveway or intersection? 28 ft.

Conditions

13. State any conditions that you would be willing to consider as part of the approved Special Use Permit. None at this time
14. Additional Comments the Board should consider in reviewing your application: I own surrounding properties and either side. Will have to put the single mobile home for my daughter.

Action by the Board of Adjustment

The Board of Adjustment shall approve, modify, or deny the Application for Special Use Permit following the Public Hearing. In granting a Special Use Permit, the Board of Adjustment shall make written findings that the applicable regulations of the district in which it is located are fulfilled. With due regard to the nature and state of all adjacent structures and uses, the district within which it is located and official plans for future development, the Board of Adjustment shall also make written findings that the following provisions are fulfilled:

- 3.1 The requested use **is** in harmony with the surrounding area and compatible with the surrounding neighborhood.
- 3.2 The requested use **will not** materially endanger the public health and safety.
- 3.3 The requested use **will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is** or **will be** a public necessity.
- 3.4 The requested use **will** meet all required conditions and specifications.
- 3.5 The requested use **is** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans.

The Board of Adjustment may impose conditions on special use permits as part of the approval process. Conditions placed on the special use permit must be adhered to as part of the developmental process. Consent to any specified conditions must be received prior to the issuance of any development permits.

Note: The Board of Adjustment is a "Quasi-Judicial" Administrative Board. Quasi-Judicial means that the Board functions like a Court when proceedings are conducted. Sworn testimony is given, so everyone wishing to speak for or against an application or ask questions about a case must be sworn in. Those persons who cannot be sworn in for religious reasons may be "Affirmed". Land use professionals, including architects and engineers, land use planners, and other agents for the property owner may appear and testify as to factual matters and any expert opinions that they are qualified to present at the Board of Adjustment hearing; however, the presentation of other evidence, including the examination and cross-examination of witnesses, making legal arguments, and the advocacy for approval of the application on behalf of the property owner(s) is the practice of law that may only be performed by a licensed attorney at law.

A party wishing to submit a document into evidence must provide a copy to the Clerk during the hearing. Any document submitted into evidence will not be returned to the individual and must be retained by the Clerk as part of the official record of the case. The Board will accept a single copy of a proposed exhibit; however it is strongly recommended that enough copies are provided for each of the five Board members and the Clerk. Photographs, Videos, Recordings, Power Points or other types of evidence that are submitted via an electronic or digital device; must be pre-approved by the Harnett County IT Department prior to the start of the hearing. Personal computers such as laptops or other external media devices not belonging to the County will not be permitted to attach to the County's internal network. Documents cannot be submitted after the close of the hearing.

Action taken by this Board is final and cases are not taken to the Harnett County Board of Commissioners for review. Appeals of this Board must be filed with Superior Court. There must be three (3) Board of Adjustment members present at the meeting to hear a request for a Special Use Permit. A concurring vote from the simple majority of the Board shall be necessary to grant a Special Use permit.

** I have received and read the above statement:


Signature


Date

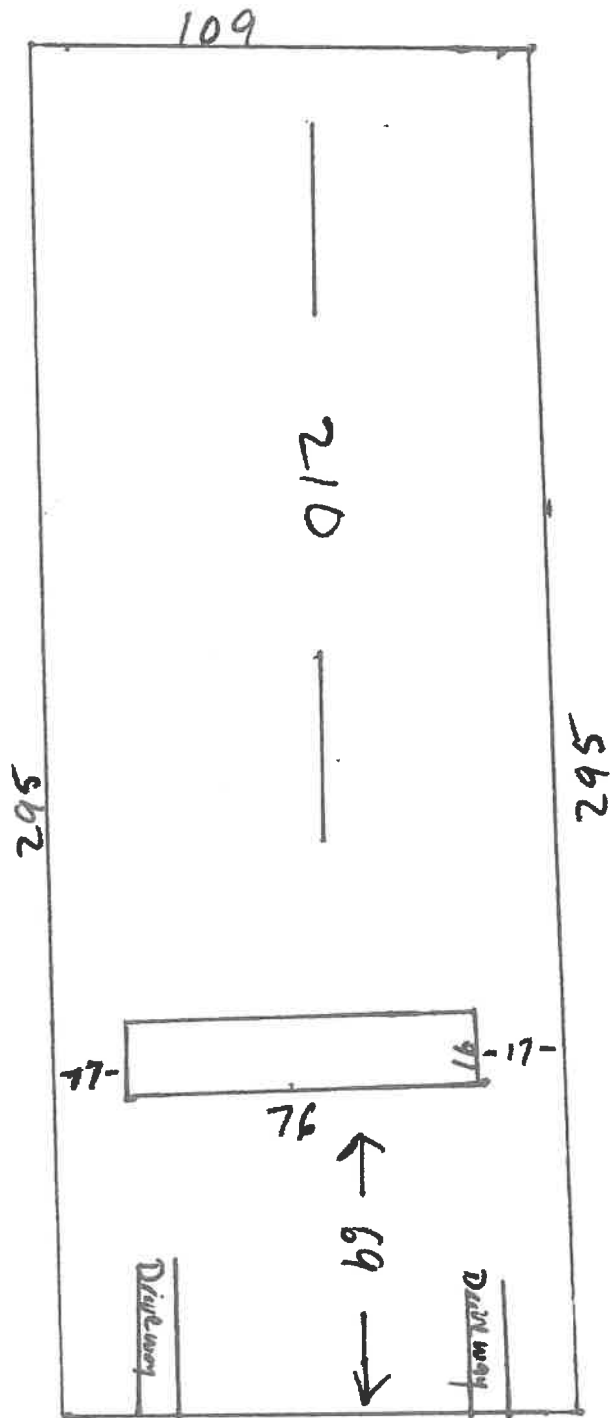
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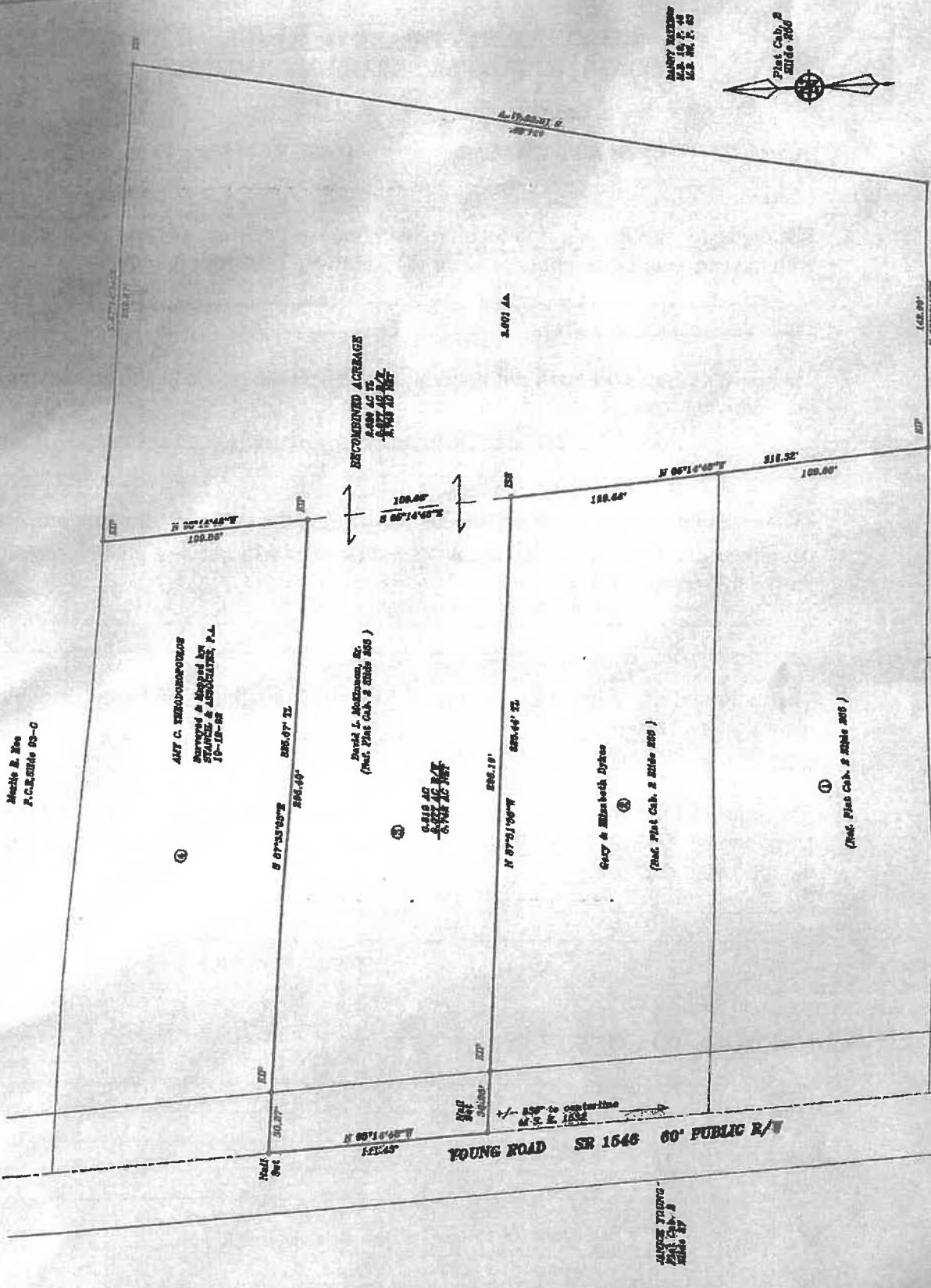
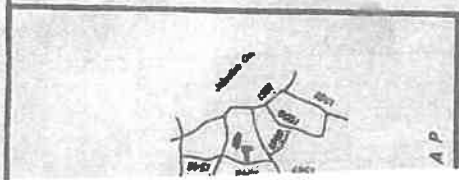
David McKinnon SR

138 Young Rd

Angier NC
27501



Young Rd



Metric E. Kee
P.C.R. Side 25-C

ART C. THEODOREPOULOS
Surveyor & Mapper by
SWANSON & ASSOCIATES, P.L.L.C.
11-18-88

David L. Matheson, Esq.
(Prof. Plat Cak. & Side 205)

Gay & Elizabeth Dykes
(Prof. Plat Cak. & Side 205)

(Prof. Plat Cak. & Side 205)

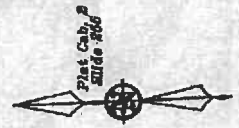
RECONSTRUCTED ALLEGEANCE
4.88 AC TO
4.88 AC TO
4.88 AC TO

0.118 AC
0.118 AC
0.118 AC

2.601 AC

YOUNG ROAD SR 1546 60' PUBLIC R/W

DANNY MATHEW
M.E. 18, P. 48
M.E. 22, P. 55



PLAT CAK. & SIDE 205
BOOK 452, PAGE 404-405

PLAT CAK. & SIDE 205
BOOK 452, PAGE 404-405

I, the undersigned, being a duly qualified and licensed Surveyor of this State, do hereby certify that the foregoing is a true and correct copy of the original plat on file in my office, and that the same conforms to the provisions of the laws of this State relating to the recording of plats.

[Signature]
Surveyor

**HARNETT COUNTY BOARD OF ADJUSTMENT
CONDITIONAL USE PERMIT WORKSHEET**

APPLICANT: David L McKinnon Sr.

CASE NUMBER: BOA2408-0001

1. The requested use **is / is not** in harmony with the surrounding area and compatible with the surrounding neighborhood for the following reasons:

2. The requested use **will / will not** materially endanger the public health and safety for the following reasons:

3. The requested use **will / will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is / is not** or **will / will not** be a public necessity for the following reasons:

4. The requested use **will / will not** meet all required conditions and specifications for the following reasons: _____

5. The requested use **is / is not** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans for the following reasons: _____

CONDITIONS TO CONSIDER:

1. _____
2. _____
3. _____
4. _____
5. _____

HARNETT COUNTY
BOARD OF ADJUSTMENTS
August 12, 2024

Staff Contact: Randy Baker, Assistant Manager of Planning Services
(910) 893-7525 or rbaker@harnett.org

CASE NUMBER: BOA2408-0004
APPLICANT: Tower Engineering Professionals
OWNER: Carolina Power & Light Co. – Duke Energy
LOCATION: 1833 Mt. Pisgah Church Road Broadway, NC 27505
ZONING: RA-30 Acreage: 17.64 PIN#: 9690-43-7159.000
LAND USE CLASSIFICATION: Agricultural

REQUEST: Monopole Communications Cell Tower

AERIAL:



Directions from Lillington: Travel US 421 North toward Sanford – Turn left onto Mt. Pisgah Church Road – Site is located on the left after passing Butler McLeod Lane.

PHYSICAL CHARACTERISTICS

- A. Site:** Currently contains an electrical substation on a portion of the property and the remainder consists of vegetation and forestry products .
- B. Surrounding Land Uses:** Residential home sites, agricultural and forestry related land uses.
- C. Utilities:** Water – Public Sewer – Private

TRANSPORTATION:

- Annual daily traffic count for this section of MT. Pisgah Church Road is unavailable.
- Site distances are good toward the northeast and fair toward the southwest due to the curvature of the road.

BACKGROUND:

- The applicant's request is for the placement of a wireless network device and utility pole as part of its communication network. This structure and equipment will allow the company to securely transmit data to and from substations in order to meet customer needs.
- Harnett County's tower consultant firm performed a technical review in order to verify that the request for tower location is consistent with the county's regulatory guidelines.
- The consulting firm has determined that the substation location is technically appropriate based on the lack of available alternatives and the need for wireless connectivity to this substation to improve grid reliability.
- If approved, this request would have to complete the Commercial Site Plan review process, which will include the proper permitting, review and inspections prior to any final approvals.

UNIFIED DEVELOPMENT ORDINANCE REGULATIONS

ARTICLE V. USE REGULATIONS

1.2 Table of Use Types & Regulations

	IND	LI	COMM	O&I	CONS	RA-40	RA-30	RA-20R	RA-20M	PARKING	USE GROUP LEVEL	BUILDING CODE CLASS
OTHER USES												
Comm. Towers: Microwave, TV, Telephone, Radio, & Cellular	S*	S*	S*	S*		S*	S*	S*	S*		4	U

HARNETT COUNTY COMPREHENSIVE GROWTH PLAN

FUTURE LAND USE PLAN

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FUTURE LAND USE CATEGORIES/ AGRICULTURAL and RURAL RESIDENTIAL AREAS

Agricultural and Rural Residential: Primarily agricultural and forestry uses with some rural residential areas. These areas are located outside of existing and future sewer service areas and rely on septic systems for wastewater treatment. They have a limited road network and in some cases lie within High Quality Watershed or Water Supply Watershed areas. The lack of utility and transportation infrastructure, the established low density development pattern and ongoing agricultural activities in these areas contribute to their rural character. This character can be enhanced by encouraging only low intensity uses, single family residential up to one unit per acre and context sensitive rural design.

SITE PHOTOS

Site



Adjoining Property



Facility



Street View



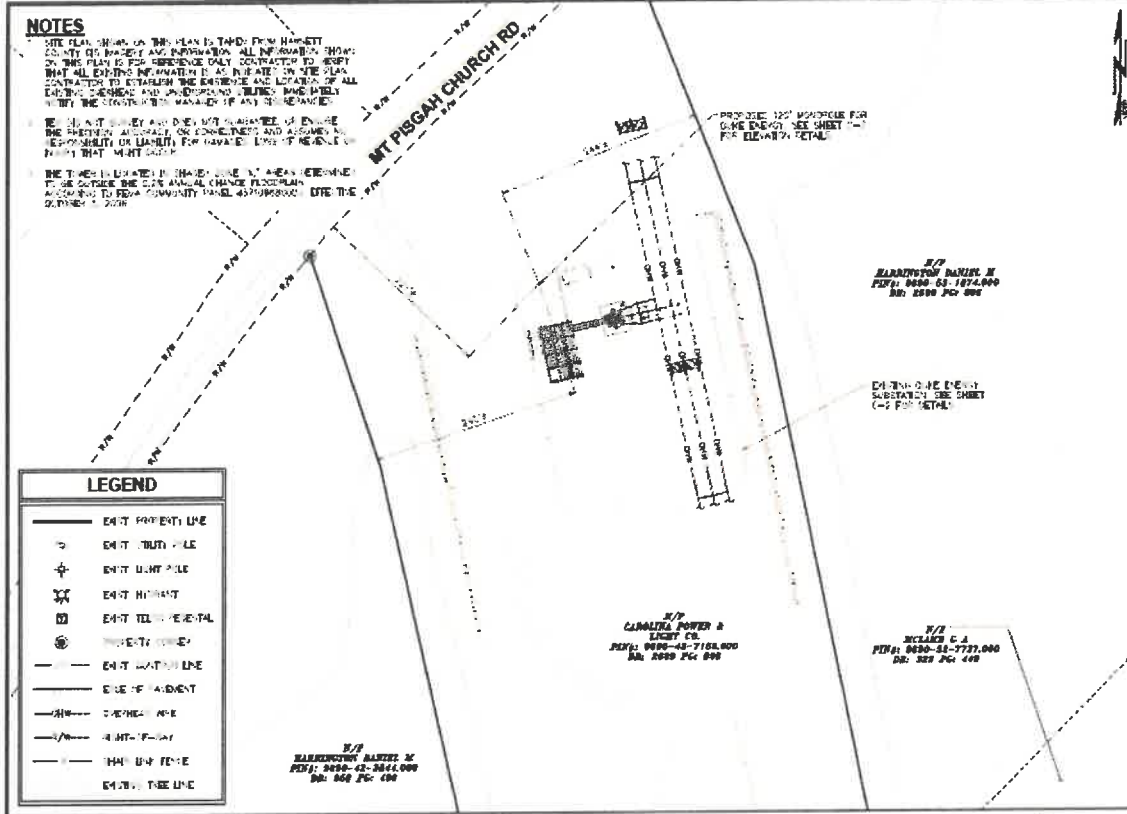
Street View



Across Street



SUBMITTED SITE PLAN



NOTES

1. SITE PLAN DRAWN ON THIS PLAN IS TYPED FROM HANSETT COUNTY DEPARTMENT AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON THE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES. UTILITIES: HANG PIPES VERIFY THE LOCATION WITH MANHOLE (IF ANY) OR REBAR.

2. THE PLANT SCHEDULE AND THE SITE SCHEDULE OF UTILITIES ARE PROVIDED AS GENERAL OR CONCEPTUAL AND ASSUME NO RESPONSIBILITY OR LIABILITY FOR DAMAGE TO EXISTING UTILITIES OR STRUCTURES THAT MAY OCCUR.

3. THE TRENCH IS LOCATED IN SHADY CREEK AT AREA REFERENCED TO BE OUTSIDE THE 2011 ANNUAL CHANGE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL 437008800C. DATE THE DETERMINED: 1/2018.

LEGEND	
	EXIST PROPERTY LINE
	EXIST BOUNDARY
	EXIST LIGHT POLE
	EXIST MANHOLE
	EXIST TELEPHONE
	PROPERTY CORNER
	EXIST WATER LINE
	EXIST SEWER LINE
	EXIST GAS LINE
	EXIST ELECTRIC
	EXIST FENCE
	EXIST TREE LINE

SITE PLAN
SCALE: 1" = 100'

PLANS PREPARED FOR:

DUKE ENERGY

401 SOUTH WILMINGTON STREET
RALEIGH, NC 27603
OFFICE: (800) 432-2777

PROJECT INFORMATION:

**BEAR BRANCH 230 SUB
T2443 (NCBWY015)**

1833 MT. PISGAH CHURCH NC
BROADWAY, NC 27605
(HARRIET COUNTY)

PLANS PREPARED BY:

JOHN B. BOINS
238 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 864-4324
www.jboins.com
N.C. LICENSE # C-1794

SEAL:

September 26, 2017

REV	DATE	ISSUED FOR	DESCRIPTION
1	09-30-17		CONSTRUCTION
2	05-29-18		EXIST COMMENTS
3	06-11-18		PRELIMINARY CONSTRUCTION
4	06-11-18		ISSUED FOR

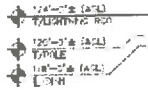
DRAWN BY: *sm* CHECKED BY: *jsb*

SHEET NUMBER: **C-1** REVISION: **2**

10/18/18 9:00:00 AM 0602 67*040

NOTE:

- 1 POLE TO BE PAINTED & GALVANIZED COLOR
- 2 POLE SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION



PROPOSE: LIGHTNING ROD

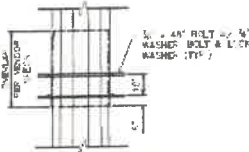
PROPOSE: FIN AND WAST. SEE SHEET C-3 FOR DETAILS

PROPOSE: 140 CLASS H12 POLE BY VALDONT. REFER TO MANUFACTURER'S DRAWING FOR DETAILS

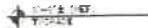
PROPOSE: POLE FOUNDATION. SEE SHEET C-4 FOR DETAILS

DETAIL NOTE:

IF POLE SECTIONS ARE JOINED TOGETHER PRIOR TO LIFTING AND SETTING THE POLE IN THE HOLE, THE JOINTS SHALL BE BOLDED AT THE SUPPORTS



POLE SLIP JOIN DETAIL
SCALE: N.T.S.



POLE ELEVATION
SCALE: 3/4" = 1'-0"

PLANS PREPARED FOR:

DUKE ENERGY
 401 SOUTH WASHINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
BEAR BRANCH 230 BUS T2443 (NCBWWY015)
 1833 MY PIGMAN CHURCH RD
 BROADWAY, NC 27506
 (HARRIS COUNTY)

PLANS PREPARED BY:

WVBC ENGINEERING PROFESSIONALS
 528 TRYON ROAD
 RALEIGH, NC 27606
 OFFICE: (919) 881-8251
 www.wvbcpe.com
 N.C. LICENSE # C-1794

SCALE:

JOHN B. GORMS
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 License No. 10662
 Exp. 12/31/2023

3	08-30-23	ADD POLE CONNECTION
2	08-30-22	CONSTRUCTION
1	05-28-22	CLIENT DOCUMENTS
0	06-21-23	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR
DRAWN BY: NUC		CHECKED BY: JBO

SHEET TITLE:
POLE ELEVATION

SHEET NUMBER: **C-3** REVISION: **3**
TE# 810650 6/11/08



Non-Residential Special Use Permit

Planning Department
420 McKinney Pkwy
P.O. Box 65, Lillington, NC 27546
Phone: (910) 893-7525 Opt. 2 Fax: (910) 893-2793

Total Fee: \$250.00
Receipt: _____
Date Submitted: 8-23-24
Meeting Date: Oct. 14, 2024
Case #: BOA2408-0004

Applicant Information

Owner of Record:

Name: Carolina Power & Light Co. - Duke Energy
Address: PO BOX 14042
City/State/Zip: St Petersburg / FL / 33733
E-mail: Aaron.Cook@duke-energy.com
Phone: (919) 546-2036

Applicant:

Name: Tower Engineering Professionals
Address: 326 Tryon Rd
City/State/Zip: Raleigh, NC 27603
E-mail: rjwoods@tepgroup.net
Phone: (919) 943-0397

Property Description

PIN(s): 9690-43-7159.000 Acreage: 17.64 acres
Address/SR No.: 1833 Mt. Pisgah Church Rd, Broadway, NC 27505
Directions from Lillington: Take preferred route to S 1st Street. Turn right onto E Front St. Continue onto US-421 N, 10.5 miles turn left on Mt. Pisgah Rd, site on left, 1.8 miles.

*SR 1214
Mt Pisgah
Ch Rd*

Deed Book: 2699 Page: 0896 Plat Book: 2015 Page: 303
Zoning District: RA-30 Township: Upper Little River JB
Flood Plain & Panel: 'X' - Panel # 3710968000J Watershed Dist: N/A JB
Water: Public (Harnett County) Sewer: Public (Harnett County)
 Private (Well) Private (Septic Tank)

Requested Use:

Special Use for Monopole Installation

Required Information:

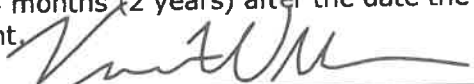
1. Is an Erosion and Sedimentation Control Plan required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
2. It is recommended that all non-residential developments have preliminary discussions with NC DOT concerning driveways and other traffic issues for each project. Has this been done? No Yes
Date of Meeting: _____ NCDOT Contact: _____
3. Is a Driveway Permit required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
4. Have you contacted applicable local, state, and federal agencies regarding building, fire, and other possible code compliance issues? No Yes

SKETCH PLAN REQUIRED: Provide a sketch plan along with application. It is strongly encouraged that sketch plans be prepared by a NC Professional Land Surveyor and that it meet the following (as applicable):

TITLE BLOCK INFORMATION	
Name of Project & Date (Including all Revision Dates)	<input type="checkbox"/>
Applicant/Owner(s) Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Surveyor/Engineer Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Parcel ID Number/Tax ID of Tract(s)	<input type="checkbox"/>
Deed Reference of Tract(s)	<input type="checkbox"/>
Zoning Classification of Tract(s)	<input type="checkbox"/>
Location (Including Township, County, & State)	<input type="checkbox"/>
Flood Plain Depicted & Noted (Zone, Map Number, & Effective Date)	<input type="checkbox"/>
Watershed District Noted & Extent of Coverage Depicted	<input type="checkbox"/>
GENERAL REQUIREMENTS	
Map Size 22" x 34" & Scale 1"=100' or Larger	<input type="checkbox"/>
North Point, Graphic Scale, & Vicinity Map	<input type="checkbox"/>
Name(s) & Location(s) of Adjacent Property Owner(s) & Use(s)	<input type="checkbox"/>
Existing Boundaries of Tract(s) Showing Bearings & Distances	<input type="checkbox"/>
Gross Acreage of Development	<input type="checkbox"/>
Name(s) & Right(s)-of-way of Streets & State Road Number(s), Including Notation of Public or Private	<input type="checkbox"/>
Name, Location, Width, & Acreage of Additional Easement(s) & Right(s)-of-way Within or Adjacent to Site	<input type="checkbox"/>
Building Envelope & Required Setbacks	<input type="checkbox"/>
Existing & Proposed Utilities	<input type="checkbox"/>
Signage Location, Easement, Type, & Size	<input type="checkbox"/>
Existing Structure(s) Located on Site	<input type="checkbox"/>
SITE PLAN	
Fire Hydrant(s) & Street Light(s) Noted	<input type="checkbox"/>
Erosion Control Plan Submitted	<input type="checkbox"/>
Hours & Days of Operation	<input type="checkbox"/>
Impervious Surface (% Coverage of Lot)	<input type="checkbox"/>
Hazardous Materials to be Stored on Site	<input type="checkbox"/>
Existing & Proposed Mechanical Areas	<input type="checkbox"/>
Existing & Proposed Trash Containment Areas	<input type="checkbox"/>
Existing & Proposed Utility Areas	<input type="checkbox"/>
Parking Space Typical	<input type="checkbox"/>
Parking Lot Material	<input type="checkbox"/>
All parking areas on site (Based on Type of Business and/or Sq. Ft.)	<input type="checkbox"/>
Existing & Proposed Fencing, Screening, Gate(s) and/or Dock(s)	<input type="checkbox"/>
Spillage & Pollution Prevention & Response Methods	<input type="checkbox"/>
BUFFERING REQUIREMENTS	
Buffering Regulations (Per Harnett County Zoning Ordinance)	<input type="checkbox"/>

Signatures

I, as the landowner, hereby CERTIFY that the information contained herein is true to the best of my knowledge; and by accepting this Permit (if approved) shall in every respect conform to the terms of this application and to the provisions of the Statutes and Ordinances regulating development in Harnett County. Any VIOLATION of the terms above stated immediately REVOKES this Permit. I further understand this structure is not to be occupied until a CERTIFICATE OF OCCUPANCY is issued. This Permit expires 24 months (2 years) after the date the Permit is granted by the Harnett County Board of Adjustment.



5/19/2023

Property Owner(s) Signature

Date

Written Statement

** Applicant is required to answer the following questions under oath at the Board of Adjustment Meeting – Please print answers **

Public Convenience & Welfare

1. Why are you requesting this use? Duke is installing a wireless network device and utility pole as part of its communication network to securely transmit data to and from substations, and to support smart technology improvements Duke has made at these locations to increase reliability and quality of service to customers. Currently, information is being monitored over a leased copper T-1 circuit. This is outdated technology, and the lease is expiring, so these upgrades are important to ensure its systems operate efficiently to meet customer needs.

2. How will this use benefit the citizens of Harnett County? This installation will improve reliability and quality of utility services in the surrounding area.

On-site & Surrounding Land Uses

3. How will the use you are requesting affect the surrounding properties, residents and businesses in the area? Describe in detail **why and how** it will or will not affect the surrounding areas? The requested use will not substantially injure the value of adjoining properties and is a public necessity. This pole will be located on Duke's existing substation and the monopole design was chosen as the least intrusive and most aesthetic option. The monopole will not be painted and will be constructed of galvanized steel which conforms aesthetically with the other equipment and distribution towers on the existing substation (see photo simulations). Additionally, the pole is setback from the nearest property line farther than its height, meaning it is not a hazard to nearby properties.

Utilities, Access Roads, Drainage, etc...

4. Describe the driveway (width and surface) that you will be using to enter and exit the property. The existing ~20' gravel access drive will still be sufficient for the pole's addition to the property.

5. Describe the drainage of this property. The existing drainage will not be changed for this pole installation.

6. How is your trash and garbage going to get to the landfill? Any debris of trash generated by this project will be removed from the site by contractors.

Traffic

7. Describe the traffic conditions and sight distances at the State Road that serves the property. This pole will operate autonomously and requires no additional manpower. There will be no increase in traffic in the area due to this pole. The pole will be approximately 220' from Mt. Pisgah Rd.

8. What is the approximate distance between your driveway and the next nearest driveway or intersection? The nearest driveway is across the street from our driveway. Approximately 30' from entrance to entrance.

General

9. How many employees will this development employ? N/a

10. What is the estimated investment of the development? \$70,000

11. What experience do you have in the proposed field? Tower Engineering Professionals provide engineering services for companies wishing to build and design tower installations. TEP has designed and permitted similar monopoles for Duke with this exact same scope of work in several other jurisdictions.

Conditions

12. State any conditions that you would be willing to consider as part of the approved Special Use Permit. As discussed with County staff, a variance application is being submitted to accommodate the fact that the proposed monopole will only be used for Duke's internal purposes and will be located within an existing Duke substation. If any additional conditions or stipulations are requested by the jurisdiction, Duke will assess them as they arise.

13. Additional comments the Board should consider in reviewing your application: _____

Duke is looking to upgrade their system and network at this location. This will allow for greater reliability and future growth for the substation and its capabilities. This addition will provide a boon to the surrounding properties and residents.

Action by the Board of Adjustment

The Board of Adjustment shall approve, modify, or deny the Application for Special Use Permit following the Public Hearing. In granting a Special Use Permit, the Board of Adjustment shall make written findings that the applicable regulations of the district in which it is located are fulfilled. With due regard to the nature and state of all adjacent structures and uses, the district within which it is located and official plans for future development, the Board of Adjustment shall also make written findings that the following provisions are fulfilled:

- 3.1 The requested use **is** in harmony with the surrounding area and compatible with the surrounding neighborhood.
- 3.2 The requested use **will not** materially endanger the public health and safety.
- 3.3 The requested use **will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is** or **will be** a public necessity.
- 3.4 The requested use **will** meet all required conditions and specifications.
- 3.5 The requested use **is** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans.

The Board of Adjustment may impose conditions on special use permits as part of the approval process. Conditions placed on the special use permit must be adhered to as part of the developmental process. Consent to any specified conditions must be received prior to the issuance of any development permits.

Note: There must be three (3) Board of Adjustment members present at the meeting to hear a request for a Special Use Permit. A concurring vote from the simple majority of the Board shall be necessary to grant a Special Use permit.

** I have received and read the above statement:

Ryan Woods
Signature

5/19/23
Date

PLANS PREPARED BY:

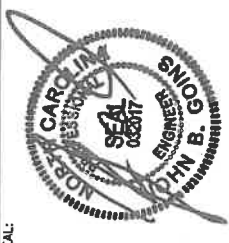


TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603-5263
 OFFICE: (919) 861-6381
 www.tepgroup.net

N.C. LICENSE # C-1794

REV	DATE	ISSUED FOR:
4	02-28-24	JURISDICTION COMMENTS
3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	07-07-22	PRELIMINARY CONSTRUCTION

DRAWN BY: RAW CHECKED BY: JBG
 SEAL:



February 28, 2024

SEAL:

SHEET NUMBER: **T-1**
 REVISION: **4**
 TEP#31 10663.677069

PLANS PREPARED FOR:



401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777



THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS AND DEPTHS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

UTILITY STATEMENT

SHEET	DESCRIPTION	REV
T1	TITLE SHEET	4
N1	PROJECT NOTES	2
C1	SITE PLAN	2
C1A	ADJACENT OWNERS LIST	4
C2	COMPOUND DETAIL	2
C3	POLE ELEVATION	3
C4	POLE FOUNDATION DETAIL & NOTES	2
C5	ANTENNA MOUNTING DETAILS	2
C6	UNDERGROUND CONDUIT DETAILS	3
E1	ELECTRICAL NOTES	2
E2	POLE GROUNDING AND ROUTING PLAN	2
E3	BILL OF MATERIALS	2
E4	GROUNDING DETAILS I	2
E5	GROUNDING DETAILS II	2

INDEX OF SHEETS

PROJECT INFORMATION:

PROPOSED TELECOMMUNICATIONS POLE

SITE NAME:
BEAR BRANCH 230 SUB

SUBSTATION NUMBER (TELCOM ABBREVIATION):
T2443 (NCBWWY015)

SITE ADDRESS:
**1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)**

GROUND ELEVATION (MMSL) = 331.3'
 LATITUDE N 36° 24' 33.87" (36.4091311°) (NAD 83)
 LONGITUDE W 78° 01' 05.88" (-78.0182843°) (NAD 83)
 LATITUDE AND GROUND ELEVATION INFORMATION PER 1A BY TOWER ENGINEERING PROFESSIONALS DATED JUNE 1, 2022

POLE COORDINATES

POLE OWNER:
 DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 CONTACT: SAILEY DUTEN
 PHONE: (919) 334-0797

PROPERTY OWNER:
 DORIS ANN POWELL & HUBBARD
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 CONTACT: SAILEY DUTEN
 PHONE: (919) 334-0797

SITE APPLICANT:
 TOWER ENGINEERING PROFESSIONALS, INC.
 326 TRYON ROAD
 RALEIGH, NC 27603
 CONTACT: MARK S. OLMAROSH, P.E.
 PHONE: (919) 661-6381

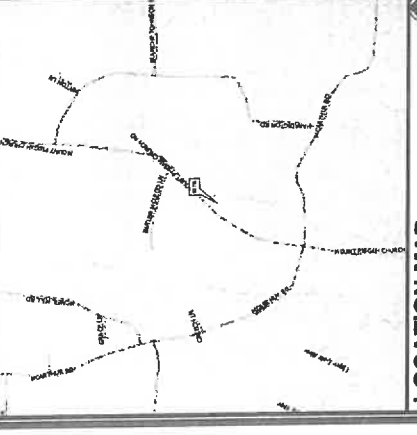
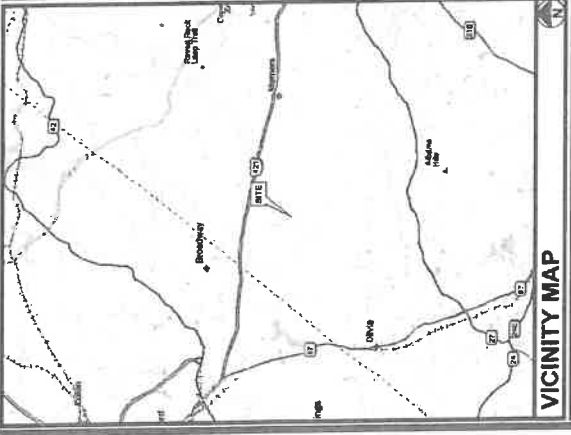
AREA OF CONSTRUCTION: 1804 S.F.
PRESENT OCCUPANCY TYPE: ELECTRICAL SUBSTATION
PROPOSED OCCUPANCY TYPE: TELECOMMUNICATIONS POLE
CURRENT ZONING: RA-30
PARCEL ID: 159580 0028 01
JURISDICTION: HARNETT COUNTY

UTILITIES:
 DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 CONTACT: SAILEY DUTEN
 PHONE: (919) 334-0797

UTILITY MANUFACTURER:
 VALKONT INDUSTRIES
 14000 WILKINSON ROAD
 DALLAS, TEXAS 75244
 CONTACT: CUSTOMER SERVICE
 PHONE: (646) 763-1088

PROJECT SUMMARY

PROJECT TEAM



DRIVING DIRECTIONS
 FROM RALEIGH, NC: TAKE I-85 N TOWARD WAKE FOREST TO I-77 W TOWARD WAKE FOREST. TAKE EXIT 15A TO R-203A. FOLLOW SIGNS FOR US-15/US-64 W/CARY/ASHEBORO. KEEP LEFT AT THE JUNCTION TO CONTINUE TOWARD US-15. FOLLOW SIGNS FOR US-15/US-64 W/CARY/ASHEBORO. TAKE EXIT 421 TO BYPASS PLUGWAY-MARINA. KEEP LEFT AND MERGE ONTO US-421S TOWARD LILLINGTON. TAKE EXIT 421S TO STAY ON US-421S TOWARD LILLINGTON. TURN RIGHT ON MT. PISGAH CHURCH RD. THE SITE WILL BE ON THE LEFT IN ABOUT 2 MILES.

DRIVING DIRECTIONS

GENERAL NOTES:

1. ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED DUKE ENERGY OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWN TO THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
3. STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-H STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES, ANTENNAS, AND SMALL WIND TURBINE SUPPORT STRUCTURES AND THE 2018 NORTH CAROLINA STATE BUILDING CODE.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2018 NC BUILDING CODE (2015 IBC W/ AMENDMENTS).
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE, TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY, SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. DIMENSIONS SHALL NOT SCALE CONTRACT DRAWINGS IN LEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND WRITTEN BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE. THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFTER MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
18. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 13TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - A. STRUCTURAL STEEL, ASTM DESIGNATION A36 OR A992.
 - B. ALL BOLTS, ASTM A325 TYPE 1 GALVANIZED HIGH STRENGTH BOLTS.
 - C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
 - D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 13TH EDITION.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. 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.
6. 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 PASTE. EXCESS MOLLEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF ANY EXCESS.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. 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.
10. ALL ASSEMBLY AND ANCHOR BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 30, 2004.
11. FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.
12. DO NOT OVER TORQUE ASSEMBLY BOLTS. GALVANIZING ON BOLTS, NUTS, AND STEEL PARTS MAY ACT AS A LUBRICANT. THUS OVER TIGHTENING MAY OCCUR AND MAY CAUSE BOLTS TO CRACK AND SNAP OFF.
13. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE UP OUT. PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS ARE PROVIDED.
14. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
15. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-2010 STRUCTURAL WELDING CODE - STEEL.

FIBER NOTES:

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 EXCEED 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.

PLANS PREPARED FOR:

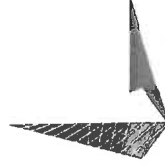


401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (900) 452-2777

PROJECT INFORMATION:

**BEAR BRANCH 230 SUB
T2443 (NCBWO15)**
1833 MT. PISGACH CHURCH RD
BROADWAY, NC 27505
(HARNETT COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS

305 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 664-6351
www.tepgrp.com

N.C. LICENSE # C-1794

SEAL:



September 30, 2022

2	09-30-22	CONSTRUCTION
1	09-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY:	RJW	CHECKED BY: JBC

SHEET TITLE:

PROJECT NOTES

SHEET NUMBER: **N-1**

REVISION: **2**


TEP # 3 10693.677069

PLANS PREPARED FOR:
DUKE ENERGY.
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:

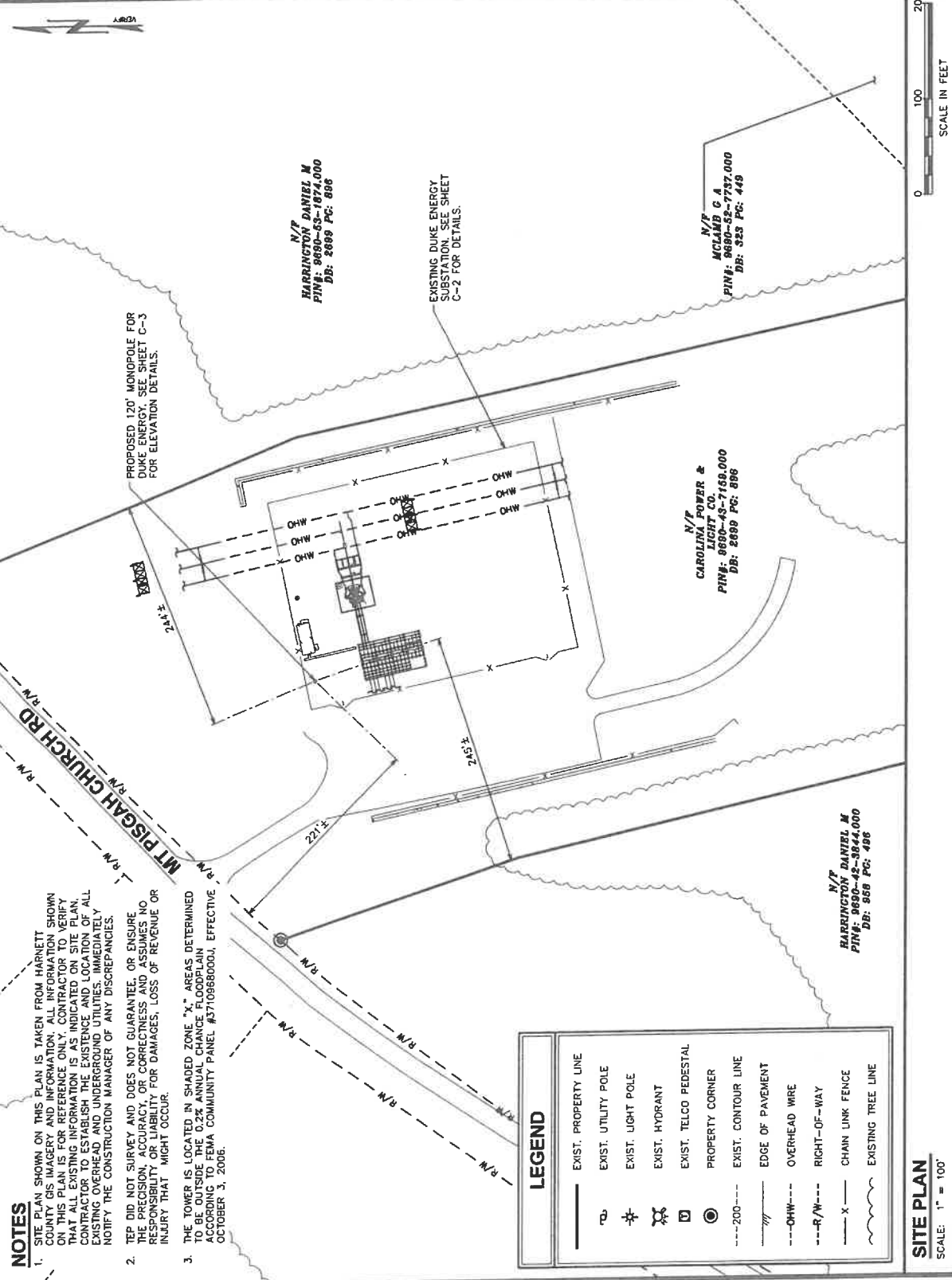
TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 864-6351
 www.tepgroup.net
 N.C. LICENSE # C-1794

SEAL:


2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: R/W		CHECKED BY: JBG

SHEET TITLE:
SITE PLAN

SHEET NUMBER: **C-1**
 REVISION: **2**
 TEP# 31.00.03.677069



NOTES

- SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM HARNETT COUNTY GIS IMAGERY AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL OVERHEAD WIRES AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
- TEP DID NOT SURVEY AND DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.
- THE TOWER IS LOCATED IN SHADED ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AREA OF FEMA COMMUNITY PANEL #3710988000J, EFFECTIVE OCTOBER 3, 2006.


LEGEND


	EXIST. PROPERTY LINE
	EXIST. UTILITY POLE
	EXIST. LIGHT POLE
	EXIST. HYDRANT
	EXIST. TELCO PEDESTAL
	PROPERTY CORNER
	EXIST. CONTOUR LINE
	EDGE OF PAVEMENT
	OVERHEAD WIRE
	RIGHT-OF-WAY
	CHAIN LINK FENCE
	EXISTING TREE LINE

SITE PLAN
 SCALE: 1" = 100'

PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISCAGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 961-6361
 www.tegroup.net
 N.C. LICENSE # C-1794

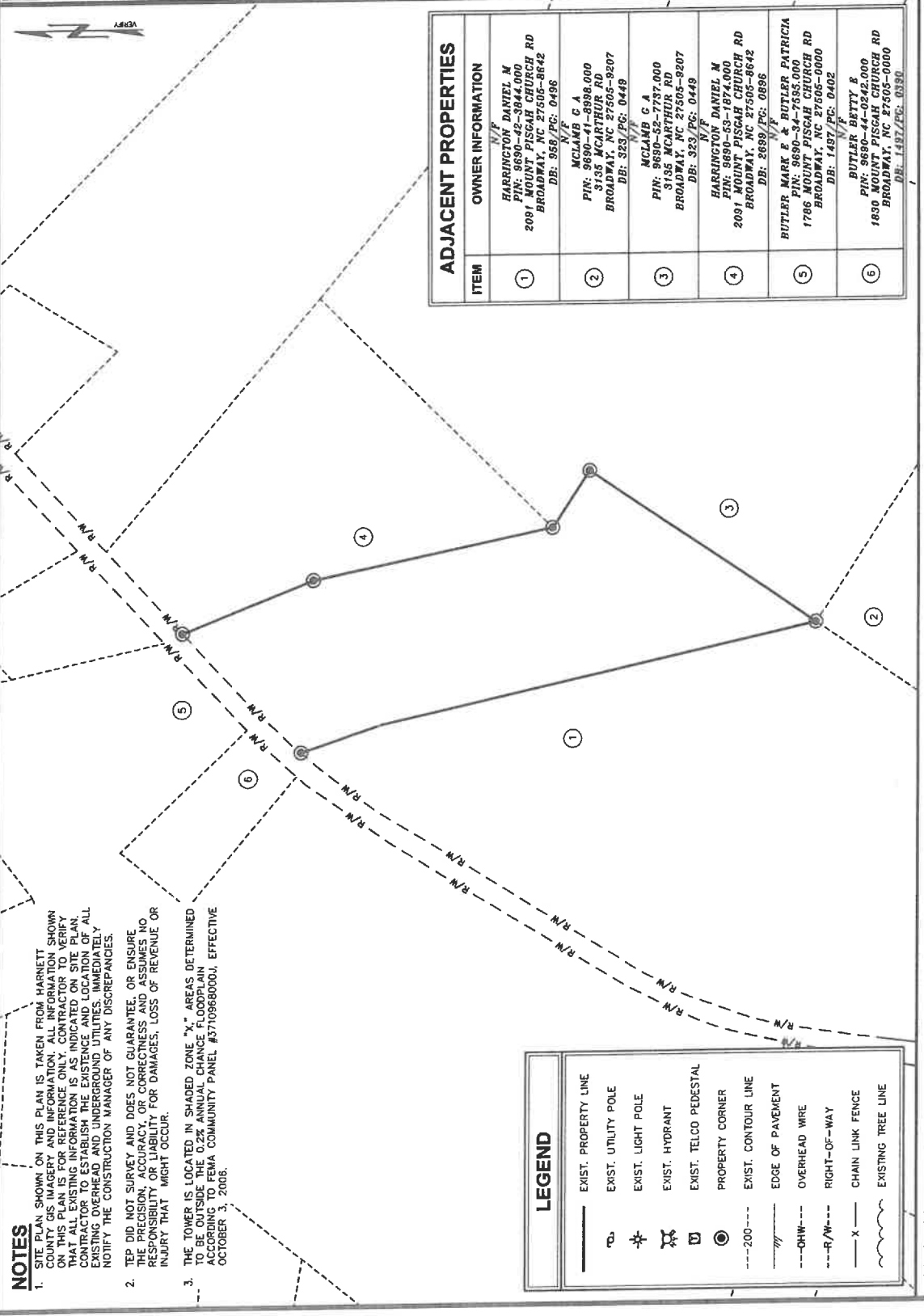
SEAL:

 February 28, 2024

4	02-28-24	JURISDICTION COMMENTS
3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	09-29-22	CLIENT COMMENTS

ISSUED FOR:
 DRAWN BY: R/W
 CHECKED BY: JBG
 SHEET TITLE:

ADJACENT OWNERS LIST

SHEET NUMBER: **C-1A**
 REVISION: **4**
 TEP#3.10653.677063



NOTES

- SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM HARNETT COUNTY GIS IMAGERY AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
- TEP DID NOT SURVEY AND DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.
- THE TOWER IS LOCATED IN SHADED ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #3710968000, EFFECTIVE OCTOBER 3, 2006.

ITEM	OWNER INFORMATION
1	N/F HARRINGTON DANIEL M PIN: 9690-42-3944.000 2091 MOUNT PISCAGAH CHURCH RD BROADWAY, NC 27505-8642 DB: 958/PG: 0496
2	N/F MCLAMB G A PIN: 9690-41-5988.000 3135 MCARTHUR RD BROADWAY, NC 27505-9207 DB: 323/PG: 0449
3	N/F MCLAMB G A PIN: 9690-52-7737.000 3155 MCARTHUR RD BROADWAY, NC 27505-9207 DB: 323/PG: 0449
4	N/F HARRINGTON DANIEL M PIN: 9690-42-3944.000 2091 MOUNT PISCAGAH CHURCH RD BROADWAY, NC 27505-8642 DB: 2689/PG: 0896
5	N/F BUTLER MARK E & BUTLER PATRICIA PIN: 9690-34-7595.000 1786 MOUNT PISCAGAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1487/PG: 0402
6	N/F BUTLER BETTY E PIN: 9690-44-0242.000 1830 MOUNT PISCAGAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1487/PG: 0390

LEGEND

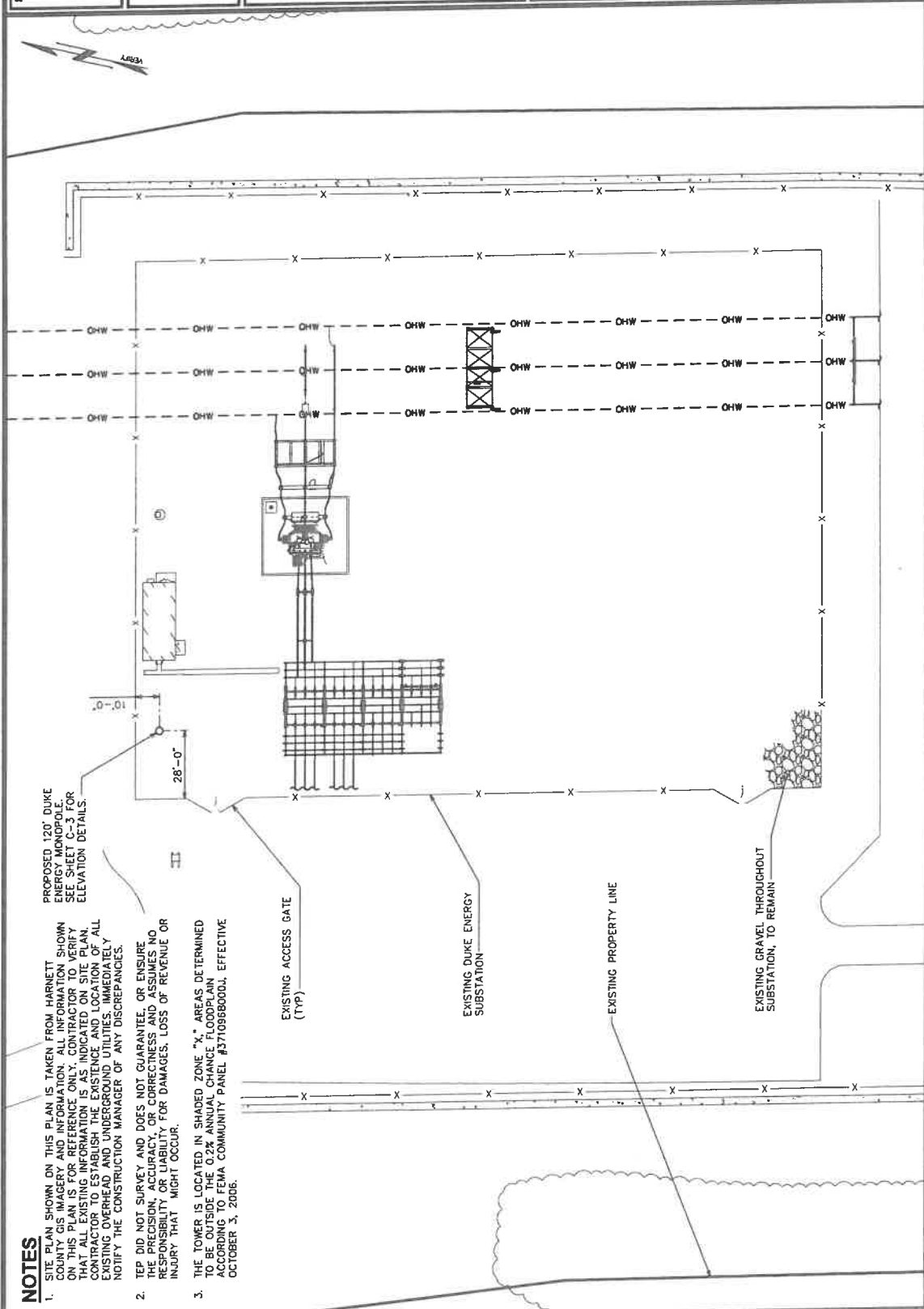
	EXIST. PROPERTY LINE
	EXIST. UTILITY POLE
	EXIST. LIGHT POLE
	EXIST. HYDRANT
	EXIST. TELCO PEDESTAL
	PROPERTY CORNER
	EXIST. CONTOUR LINE
	EDGE OF PAVEMENT
	OVERHEAD WIRE
	RIGHT-OF-WAY
	CHAIN LINK FENCE
	EXISTING TREE LINE

ADJACENT OWNERS LIST
 SCALE: 1" = 300'

NOTES

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM HARNETT COUNTY GIS IMAGERY AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. TEP DID NOT SURVEY AND DOES NOT GUARANTEE OR ENSURE THE PRECISION, ACCURACY, OR COMPLETENESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.
3. THE TOWER IS LOCATED IN SHADED ZONE "X," AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #3710968000J, EFFECTIVE OCTOBER 3, 2006.

PROPOSED 120' DUKE ENERGY MONOPOLE. SEE SHEET C-3 FOR ELEVATION DETAILS.



PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 861-6351
 www.tepgroup.net
 N.C. LICENSE #C-1794

SEAL:

2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: R.J.W.		CHECKED BY: J.B.G.

SHEET TITLE:
COMPOUND DETAIL

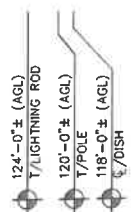
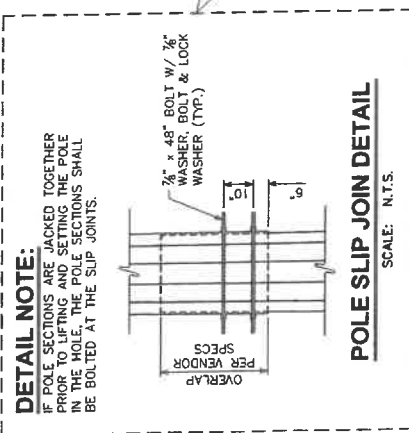
SHEET NUMBER:
C-2
 REVISION: **2**
 TEP#310893.677063

COMPOUND DETAIL
 SCALE: 1" = 40'

SCALE IN FEET
 0 40 80

NOTE:

1. POLE TO REMAIN A GALVANIZED COLOR.
2. POLE SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.



PROPOSED 4" LIGHTNING ROD

PROPOSED DISH AND MOUNT. SEE SHEET C-5 FOR DETAILS.

PROPOSED 140' CLASS H10 POLE BY VALMONT. REFER TO MANUFACTURER DESIGN DRAWINGS FOR DETAILS.

PROPOSED POLE FOUNDATION. SEE SHEET C-4, FOR DETAILS.



PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISCATAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 661-6361
 www.tepgroup.net

N.C. LICENSE # C-1794

SEAL:

May 30, 2023

3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: R.J.W.		CHECKED BY: J.B.G.

SHEET TITLE:
POLE ELEVATION

SHEET NUMBER: **C-3**

REVISION: **3**

TEP #310063.677069



POLE ELEVATION
 SCALE: 3/8" = 1'-0"

REFERENCED DOCUMENTS

DOCUMENT	REMARKS	DATE
GEOTECHNICAL REPORT	TEP PROJECT NO.: 310883.677070	08-01-22
POLE DESIGN DRAWINGS	VALMONT INDUSTRIES	06-22-22
STRUCTURAL ANALYSIS	TEP PROJECT NO.: 310883.677072	08-25-22

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, QUANTITIES, PART NUMBERS AND COAX/ANTENNA PLACEMENTS PRIOR TO BIDDING ORDERING MATERIALS, AND CONSTRUCTION.

APPLIED LOADS

AXIAL	11898 LBS
MOMENT	819100 LB-FT
SHEAR	12343 LBS

DESIGN REACTIONS TAKEN FROM THE STRUCTURAL ANALYSIS LISTED IN THE REFERENCED DOCUMENTS CHART ABOVE.

DESIGN NOTE:

REFER TO VALMONT INDUSTRIES DRAWINGS FOR FINAL POLE AND FOUNDATION CONSTRUCTION AND ASSEMBLY DETAILS. ANY INFORMATION SHOWN IN THIS DRAWING SHALL BE SUPERSEDED BY MANUFACTURER DESIGN DOCUMENTS.

FOUNDATION CONSTRUCTION:

THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT REFERENCED ABOVE. CONTRACTOR SHALL CONSULT THE GEOTECHNICAL REPORT PRIOR TO BIDDING AND CONSTRUCTION.

FOUNDATION DESIGN

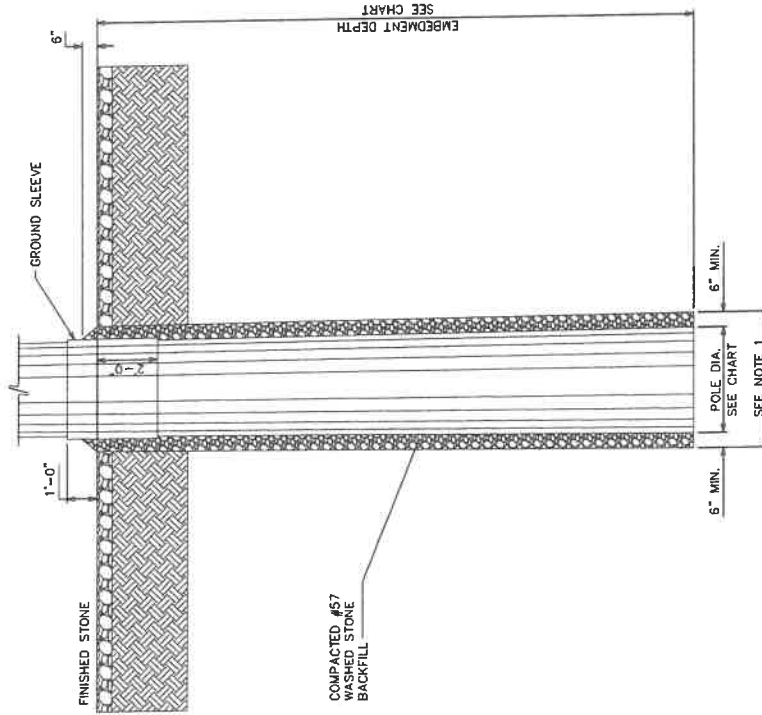
TOP OD	BASE OD	EMBEDMENT DEPTH	OVERALL POLE LENGTH
37.27"	41.00"	20'	140.00'

NOTE:

BEARING PLATE DETAILS ARE SPECIFIED IN THE POLE MFG'S DRAWINGS. VERIFY PRIOR TO CONSTRUCTION.

BACKFILL NOTES:

- HOLE SHALL BE EXCAVATED BY AN AUGER OF SUFFICIENT SIZE TO ALLOW A MINIMUM OF 6" BETWEEN THE SIDES OF THE HOLE AND THE POLE SO THAT PROPER TAMPING/RODDING OF THE GRAVEL BACKFILL CAN BE PERFORMED FROM THE BOTTOM OF THE HOLE TO THE GROUND SURFACE.
- IF THE HOLE IS DRILLED DEEPER THAN REQUIRED, THE EXTRA DEPTH IS TO BE BACKFILLED WITH #57 STONE AND TAMPED BEFORE THE POLE IS SET. IF THE BOTTOM OF THE HOLE IS SOFT OR IF WATER IS IN THE HOLE, #57 STONE SHALL BE USED TO FILL THE OVER-EXCAVATION.
- THE #57 STONE BACKFILL SHALL BE PLACED IN EVEN LIFTS WITH A MAXIMUM DEPTH OF 6" PER LIFT. THE STONE BACKFILL SHALL BE COMPACTED BY MECHANICALLY OR MANUALLY RODDING EACH LIFT AFTER PLACEMENT IN THE HOLE. THE MAXIMUM UNIFORM DENSITY FROM THE BOTTOM OF THE HOLE TO THE NATURAL GROUND SURFACE SHALL BE ATTAINED.
- AFTER COMPLETION OF BACKFILLING, THE BACKFILL SHALL BE BANKED AROUND THE POLE TO AN ELEVATION OF 6" ABOVE THE EXISTING GRADE.



PLANS PREPARED FOR:



401 SOUTH WILKINSON STREET
RALEIGH, NC 27603
OFFICE: (800) 452-2777

PROJECT INFORMATION:

**BEAR BRANCH 230 SUB
T2443 (NCBWY015)**

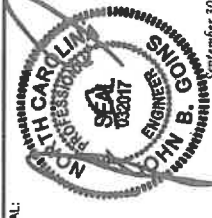
1833 MT. PISGAH CHURCH RD
BROADWAY, NC 27505
(HARNETT COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net
N.C. LICENSE #C-1794

SEAL:



REV	DATE	ISSUED FOR:
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION

DRAWN BY: JSW CHECKED BY: JBG

SHEET TITLE:

**POLE FOUNDATION
DETAIL & NOTES**


SHEET NUMBER: **C-4**
REVISION: **2**
TEP #31 0665.677063

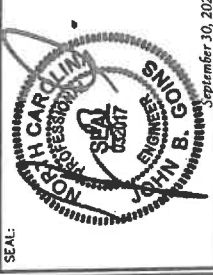
POLE FOUNDATION DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

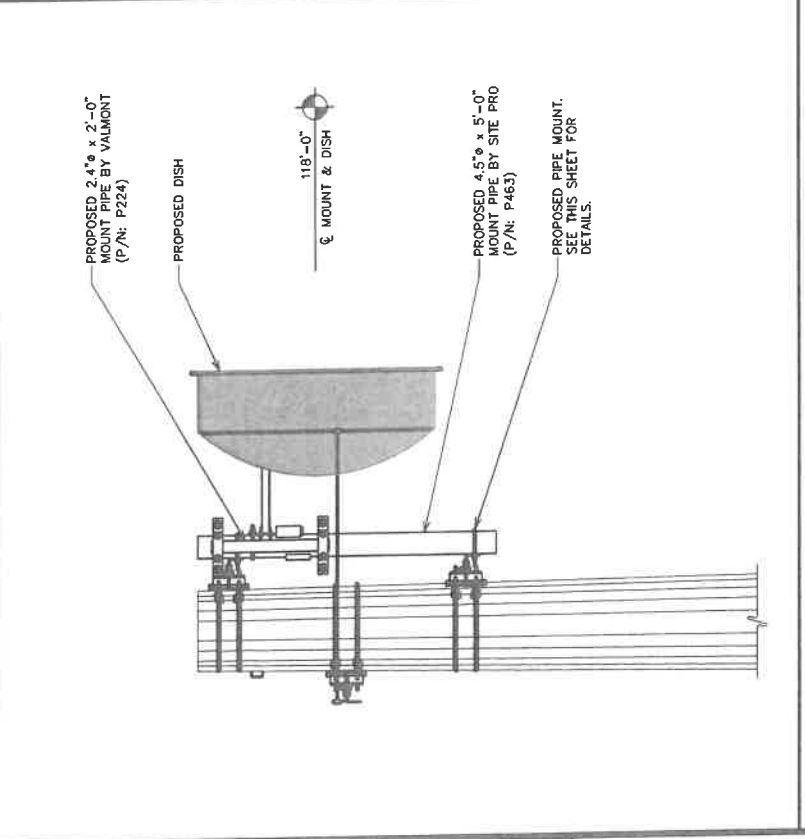
PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 661-6351
 www.tegroup.net
 N.C. LICENSE # C-1784

SEAL:

 September 30, 2022

2	09-30-22	CONSTRUCTION
1	09-29-22	CURT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: RJM		CHECKED BY: JBG

SHEET TITLE:
**ANTENNA MOUNTING
 DETAILS**

SHEET NUMBER:
C-5
 REVISION:
2
 TEP#310993.677069

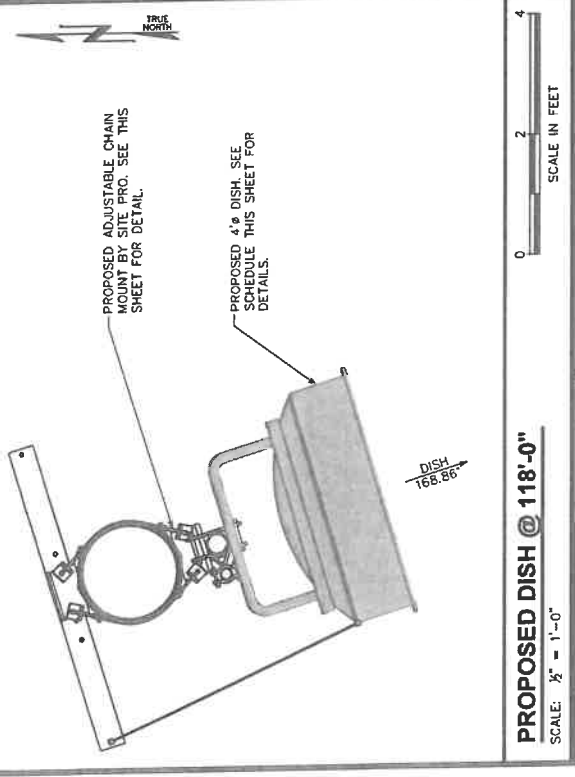


PROPOSED PIPE MOUNT PROFILE
 SCALE: N.T.S.

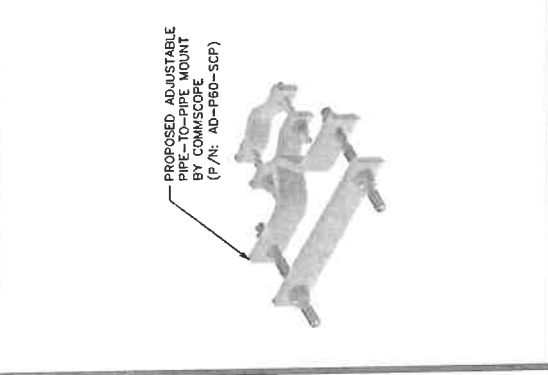
PROPOSED ANTENNA/COAX SCHEDULE

TECHNOLOGY	MANUFACTURER (MODEL #)	MOUNTING HEIGHT	AZIMUTH	CABLE SIZE	CABLE LENGTH
DISH	RADIOWAVES (HPD4-5.2)	ϕ 118'-0" *CONTRACTOR SHALL FIELD VERIFY COAX LENGTH PRIOR TO CONSTRUCTION.	168.86'	(1) CAT5e	*165'±
	CAMBUM (PMP450I NON-INTEGRATED)				

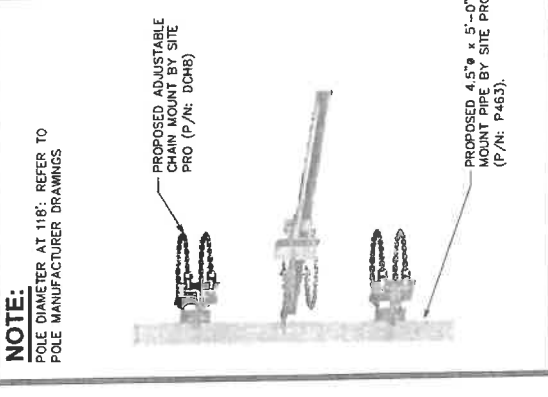
PROPOSED ANTENNA/COAX SCHEDULE
 SCALE: N.T.S.



PROPOSED DISH @ 118'-0"
 SCALE: 1/2" = 1'-0"



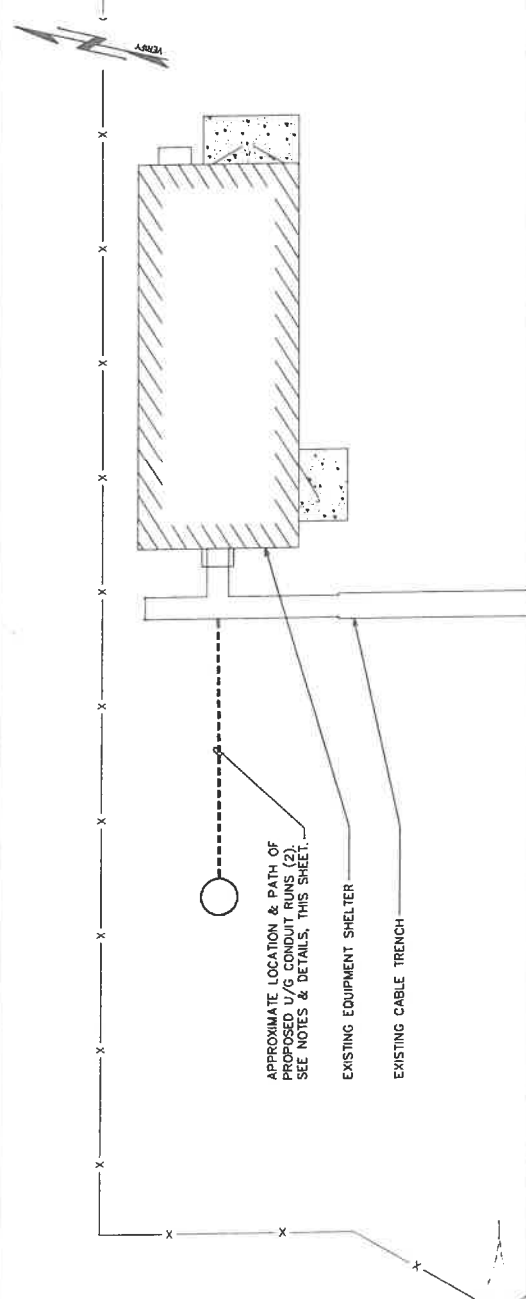
PROP. PIPE-TO-PIPE MOUNT
 SCALE: N.T.S.



PROPOSED PIPE MOUNT
 SCALE: N.T.S.

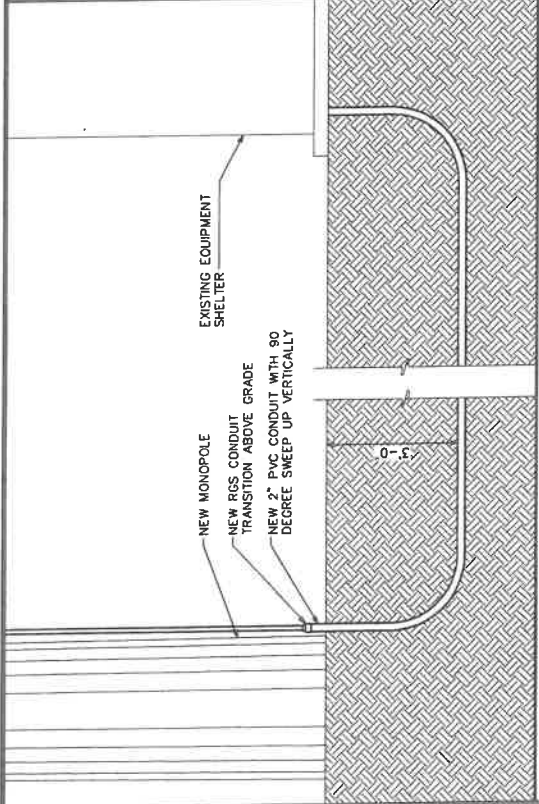
COMPOUND DETAIL

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING U/G CONDUITS.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR ROUTING.



COMPOUND DETAIL

SCALE: 1" = 10'

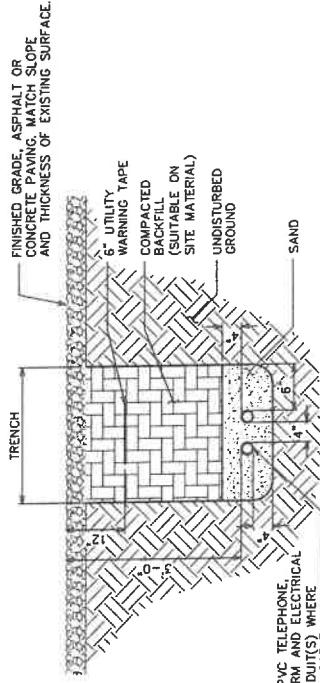


CONDUIT ROUTING DETAIL

SCALE: N.T.S.

NOTES:

1. ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
2. PROVIDE PVC CONDUIT BELOW GRADE.
3. PROVIDE RGS CONDUIT AND ELBOWS AT STUB UP LOCATIONS (I.E. SERVICE POLES, EQUIPMENT, ETC.)
4. PROVIDE RGS CONDUIT FOR INSTALLATIONS BELOW PARKING LOTS AND ROADWAYS.



- 2" PVC TELEPHONE, ALARM AND ELECTRICAL CONDUITS WHERE APPLICABLE
- SEPARATION DIMENSIONS TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:
DUKE ENERGY.
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27905
 (HARRETT COUNTY)

PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 861-6351
 www.teggroup.net
 N.C. LICENSE # C-1794

SEAL:
JOHN B. SHOG
 ENGINEER
 No. H. Carolina Professional Engineer License No. 35027
 May 30, 2023

3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: RJM CHECKED BY: JBG		
SHEET TITLE:		

**UNDERGROUND
 CONDUIT DETAILS**

SHEET NUMBER: **C-6**
 REVISION: **3**
 TEP#310663.677063

PLANS PREPARED FOR: **DUKE ENERGY.**
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27605
 (HARRNETT COUNTY)


PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 861-6351
 www.tepgroup.net

M.C. LICENSE # C-1794

SEAL:



2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: RAW		CHECKED BY: JSG

SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER: **E-1**
 REVISION: **2**
 TEP#31.0083.677069

EQUIPMENT:

- DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
- CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
- NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

UL COMPLIANCE:

- ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL, COUNTY OR STATE), APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

- 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 BUSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
- PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
- PROVIDE BONDING AND GROUND TO MEET NFPA 780 - "LIGHTNING PROTECTION" AS A MINIMUM.
- PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R59 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	AMPERE	PNLBD	PANELBOARD
AFG	ABOVE FINISHED GRADE	PVC	RIGID NON-METALLIC CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH	RGS	RIGID GALVANIZED STEEL CONDUIT
AWG	AMERICAN WIRE GAUGE	SW	SWITCH
BCW	BARE COPPER WIRE	TGB	TOWER GALVANIZED STEEL CONDUIT
BFG	BELOW FINISHED GRADE	UL	UNDERWRITERS LABORATORIES
BKR	BREAKER	V	VOLTAJE
C	CIRCUIT	W	WATTS
CKT	CIRCUIT	XFMR	TRANSFORMER
DISC	DISCONNECT	XMTX	TRANSMITTER
EGR	EXTERNAL GROUND RING		
EMT	ELECTRIC METALLIC TUBING		
FSC	FLEXIBLE STEEL CONDUIT		
GEN	GENERATOR		
GPS	GLOBAL POSITIONING SYSTEM		
GRD	GROUND		
IGB	ISOLATED GROUND BAR		
IGR	INTERIOR GROUND RING (HALO)		
KW	KILOWATTS		
NEC	NATIONAL ELECTRIC CODE		
PCS	PERSONAL COMMUNICATION SYSTEM		
PH	PHASE		
PNL	PANEL		

---	E	UNDERGROUND ELECTRICAL CONDUIT
---	T	UNDERGROUND TELEPHONE CONDUIT
---	□	KILOWATT-HOUR METER
---	⊞	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
---	∅	GROUND ROD
---	●	EXOTHERMIC WELD
---	■	GROUND ROD WITH INSPECTION WELL

SCOPE:

- PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

- THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
 - THE NATIONAL ELECTRICAL SAFETY CODE
 - THE INTERNATIONAL ELECTRIC CODE - NFPA-70
 - REGULATIONS OF THE SERVING UTILITY COMPANY (WHERE APPLICABLE)
- PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
- AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

- UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

- IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
- THE WARRANTIES CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

- CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

- PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION SHALL BE AT THE CONTRACTOR'S RISK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

- COORDINATION OF SLEEVES, CHASES, ETC. BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
- NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
- SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

- CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
- EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

- EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
- WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
- UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
- BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
- CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

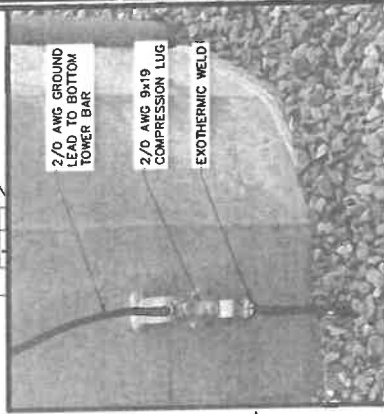
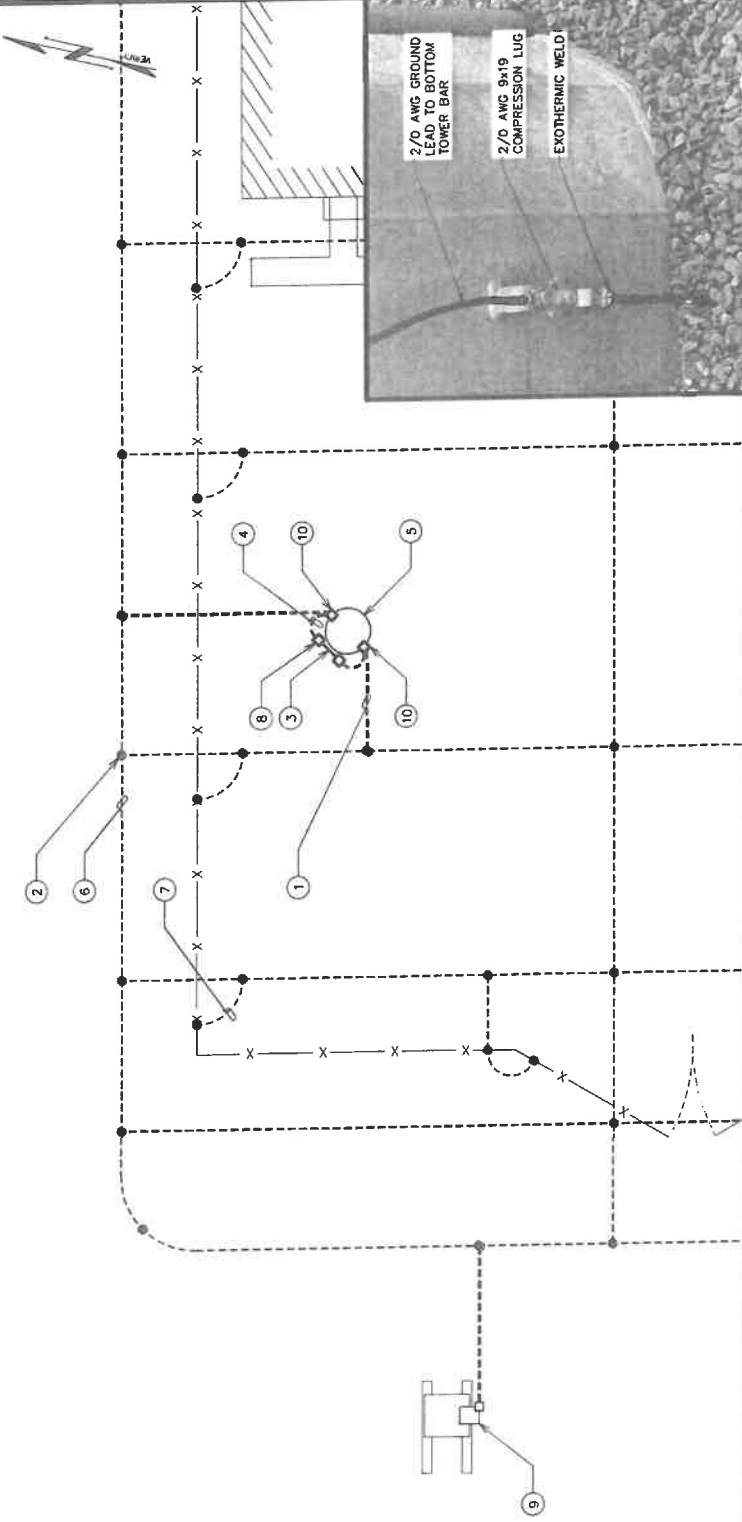
- CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
- CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
- PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

DRAWING NOTES:

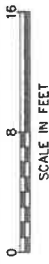
- 1 EXOTHERMIC WELD FROM EXISTING GROUND SYSTEM (CONTRACTOR TO VERIFY LOCATION) TO GROUND BRACKET (TYP OF 2) ON POLE. SEE THIS SHEET FOR DETAILS.
- 2 EXOTHERMIC WELD (TYP)
- 3 POLE BOTTOM BUSS BAR
- 4 POLE BUSS BAR BONDING CONDUCTOR (TYP OF 2) TO EXISTING POLE GROUNDING BRACKETS
- 5 PROPOSED POLE
- 6 EXISTING SUBSTATION GROUND SYSTEM
- 7 EXISTING FENCE GROUND CONNECTION
- 8 MECHANICAL GROUND LUG (TYP)
- 9 LPU (LIGHTNING PROTECTION UNIT)
- 10 GROUNDING BRACKET AT BOTTOM OF POLE (TYP OF 2). SEE DETAIL THIS SHEET.

GROUNDING NOTES

1. CONTRACTOR SHALL VERIFY THAT GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING 2/0 AWG OR 4/0 AWG (CONTRACTOR TO VERIFY EXISTING GROUND MAT SIZING) BARE TINNED COPPER WIRE. THE TOP OF THE GROUND RODS AND THE RING CONDUCTOR SHALL BE 30" BELOW FINISHED GRADE. GROUNDING ELECTRODES SHALL BE DRIVEN ON 10'-0" CENTERS. (MINIMUM: 15'-0" MAX. PROVIDE AND INSTALL AS REQUIRED PER PLAN BELOW).
2. GROUND RING CONNECTION CONDUCTORS SHALL BE OF EQUAL LENGTH, MATERIAL, AND BONDING TECHNIQUE.
3. PROVIDE AND INSTALL GROUNDING CONNECTIONS SHOWN BELOW AS NEEDED PER EXISTING SITE GROUNDING SYSTEM. CONTRACTOR SHALL VERIFY ALL EXISTING SITE GROUNDING CONDITIONS BEFORE STARTING WORK OR PURCHASING EQUIPMENT.
4. BOND POLE GROUND BAR TO EXTERNAL GROUND RING WITH 2 RUNS OF 2/0 OR 4/0 AWG (CONTRACTOR TO VERIFY EXISTING GROUND MAT SIZING) BARE, TINNED, SOLID COPPER CONDUCTORS IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND EXOTHERMICALLY WELD THE OTHER END TO THE EXTERNAL GROUND ROD.
5. BONDING CONDUCTORS SHALL BE ROUTED THROUGH A 3/4" PVC CONDUIT SLEEVE RUN UNDER THE FOUNDATION. REFER TO THE GROUNDING PLAN BELOW.
6. ALL CONDUIT, GROUND GRID CONDUCTOR AND UNDERGROUND FEEDER CIRCUIT LOCATIONS ARE APPROXIMATE. HAND DIG TO A MINIMUM OF 36" PRIOR TO MACHINERY EXCAVATIONS WHERE THERE IS A POTENTIAL FOR IMPACTING EXISTING UNDERGROUND COMPONENTS.



GROUND BRACKET DETAIL
SCALE: N.T.S.

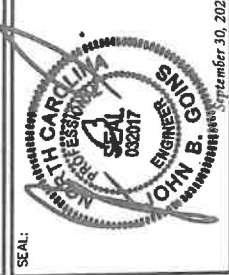


TOWER GROUNDING PLAN
SCALE: 3/8" = 1'-0"

PLANS PREPARED FOR:
DUKE ENERGY
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
T2443 (NCBWY015)**
1833 MT. PISGAH CHURCH RD
BROADWAY, NC 27505
(HARRNETT COUNTY)

PLANS PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 661-6351
www.tepgroup.net
N.C. LICENSE # C-1794



2	06-30-22	CONSTRUCTION
1	06-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:


DRAWN BY: RJV CHECKED BY: JBC

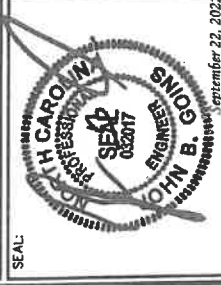
SHEET TITLE:
**TOWER GROUNDING
AND ROUTING PLAN**

SHEET NUMBER:
E-2
REVISION: **2**
TEP #310603.677069

PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27603
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISCAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 335 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 661-6351
 www.tepgroup.net
 N.C. LICENSE # C-1784

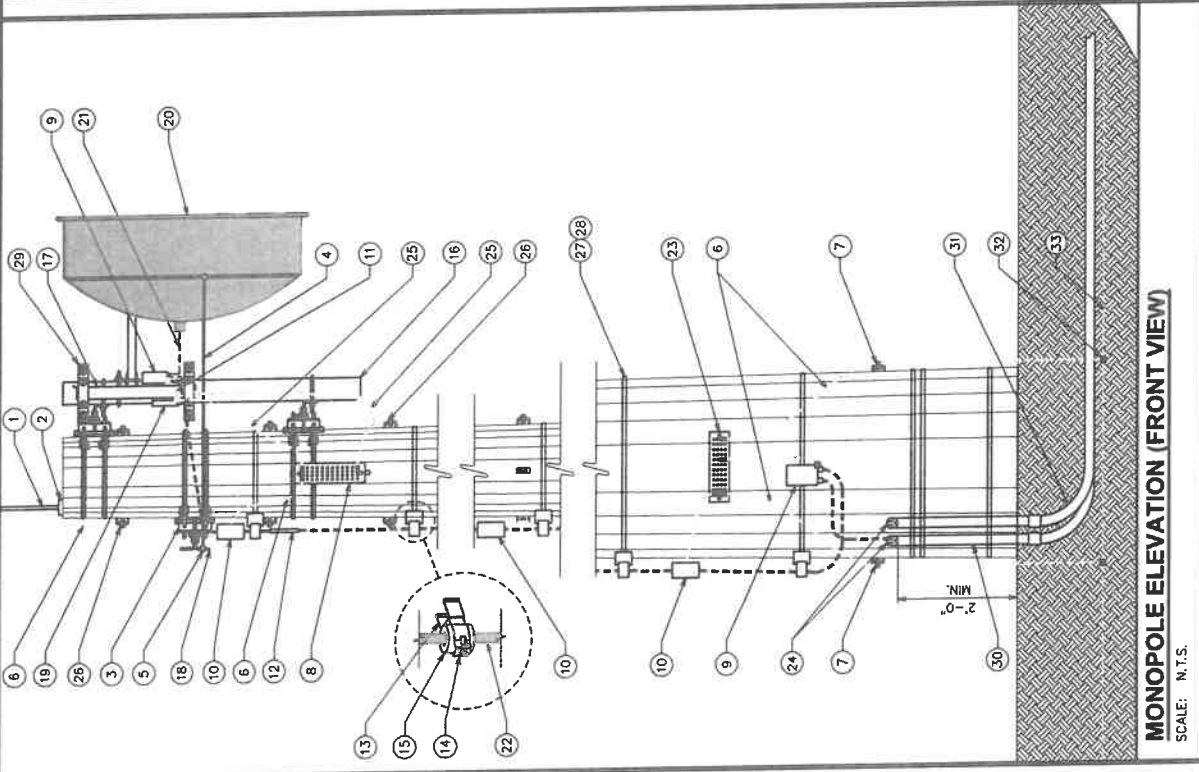


2	09-22-22	CONSTRUCTION
1	09-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: E.W. CHECKED BY: JBG		

SHEET TITLE:
BILL OF MATERIALS
 SHEET NUMBER:
E-3
 REVISION: **2**
 TEP #31.0863.677069

BILL OF MATERIALS - TELECOMMUNICATIONS		
ITEM	QTY	DESCRIPTION
1	1	AIR TERMINAL, COPPER CLAD AIR BASE, 1/2" DIA. 4B" TESSCO 446478
2	1	TERMINAL BRONZE AIR BASE, 1/2" DIA. INTERNALLY THREADED HUB
3	1	MOUNT, ANTENNA, CHAIN MOUNT, TIE BACK ARMS, U-BOLTS
4	1	DISH ANTENNA STABILIZER BAR
5	1	STIFF ARM SUPPORT BRACKET FOR 2 1/2"
6	25'-0"	WIRE/CABLE, 2/D AWG, CU SOFT DRAWN, 19 STR, BARE COPPER, CLASS B
7	2	CONNECTOR, ELECTRICAL, TERMINAL LUG, 2/D AWG CONDUCTOR, (2) 3/8" HOLE TERMINATION, BLACK STD COMPRESSION
8	1	TOP GROUND BAR, 2"WD x 12"LG x 1/2"THK W/ INSULATORS & BRACKETS, (18) PRE-DRILLED 3/8" HOLES
9	2	LIGHTNING PROTECTION UNIT KIT, GROUNDING, ETHERNET CABLE, PREFRITTED CABLE CLAND, CONNECTOR, GROUNDING WIRE/CABLE, 2/D AWG, CU, SOFT DRAWN, 19 STR, BARE COPPER, CLASS B, (2) LPTS PER KIT
10	3	KIT, SHIELD GROUNDING, GROUND STRIPS, TAPE, GROUND BOLT & NUT INCLUDED IN LPU KIT
11	3'-0"	GRIP, CABLE HOISTING, 3/8" CABLE, SS, PRE-LACED
12	1	BRACKET, UNIVERSAL STANDOFF MOUNTING, NO ADAPTER
13	50	1 1/2" CABLE HANGER, SNAP-IN, STACKABLE, (10) PER PACK
14	5	1 1/2" UNIVERSAL SNAP-IN, BARREL CUSHION, 14-36MM, (10) PER BOX
15	5	4 1/2" OD PIPE MOUNT, 5' LONG
16	1	2 1/2" OD PIPE MOUNT, 2' LONG
17	1	BRACKET MOUNTING, HOT DIPPED GALVANIZED STEEL
18	1	CAMBUM PMP 450I NON-CONNECTORIZED RADIO
19	1	ANTENNA, PARABOLIC DISH, 5.25-5.85GHZ, N-FEMALE CONNECTOR, 4' HIGH PERFORMANCE DUAL POLE, .5A1 DBI GAIN
20	1	CDAX JUMPER, LMR-400, 3' LONG, N MALE TO N MALE
21	1	WIRE/CABLE, CAT5, 4 PAIR, 24 AWG, CU SHIELDED INSULATION, 328' SPOOLS
22	1	BOTTOM GROUND BAR, 4"WD x 14"LG x 1/2"THK, TINNED W/ HARDWARE
23	1	WEATHERHEAD, SERVICE ENTRANCE, 2" RIGID PVC SLIP-ON WEATHERHEAD
24	2	WIRE/CABLE, 6 AWG, CU SOFT DRAWN, BARE COPPER, CLASS B
25	2	CONNECTOR, ELECTRICAL, TERMINAL LUG, 2/D AWG CONDUCTOR, (2) 1/2" STUD HOLE TERMINATION, BLACK, 1 1/2" CENTER
26	6	3/4" BANDING, 100' LONG, 3" THK, 316 SS, 1800 LB, ASSUME 6' DIA.
27	3	BUCKLE, BANDING, 3/4" WD, SS
28	40	BRACKET, MOUNTING, GALV. BOOM GATE CLAMP SET, 4 1/2" TO 12", 60° ANGLE LEGS
29	1	

BILL OF MATERIALS - TRANSMISSION		
ITEM	QTY	DESCRIPTION
30	2	2" x 10' SCH. 40 GRAY PVC W/COUPLING ON ONE END
31	2	2" x 9 1/2" RADIUS SCH. 40, 90 DEGREE PVC ELBOW
32	1	POWDER, WELDING, EXO. #300PLUS20, LIGHT GREEN
33	N/A	EXISTING SUBSTATION GROUNDING MAT



MONOPOLE ELEVATION (FRONT VIEW)
 SCALE: N.T.S.

PLANS PREPARED FOR:
DUKE ENERGY.
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISGAH CHURCH RD
 BROADWAY, NC 27505
 (HARNETT COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 661-6351
 www.tepgroup.net
 N.C. LICENSE: # C-1794



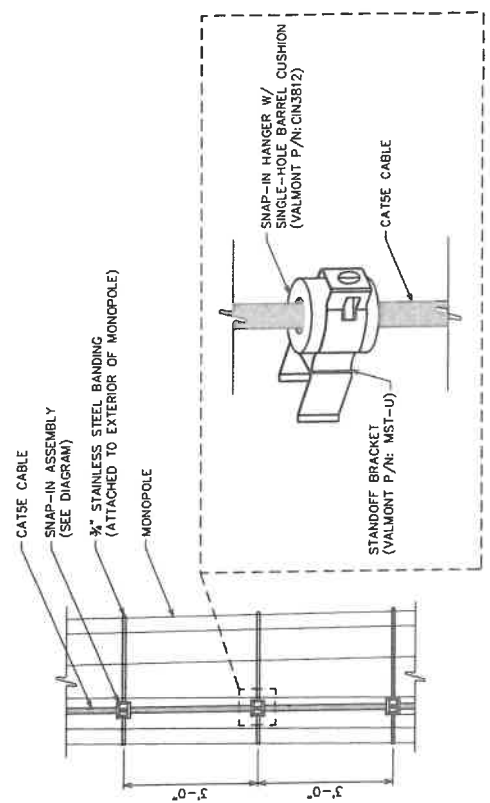
2	09-22-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

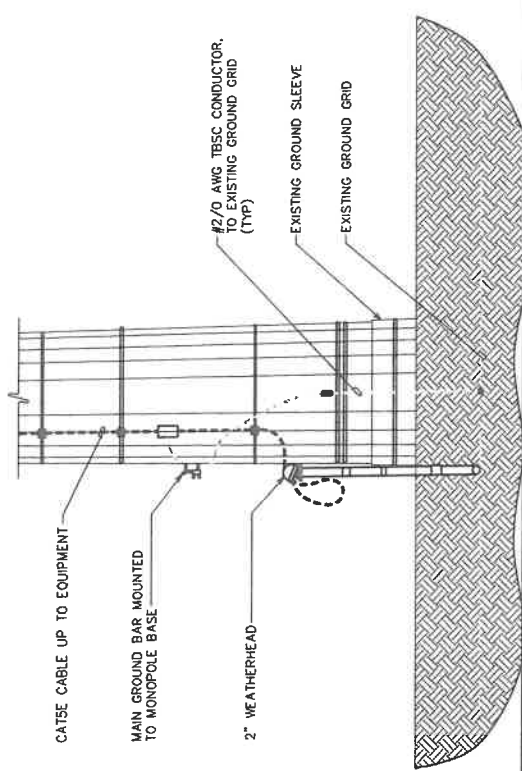
**GROUNDING
 DETAILS I**

SHEET NUMBER: **E-4** REVISION: **2**
 TEP #310893.677069



MONOPOLE GROUNDING

SCALE: N.T.S.



MONOPOLE BASE DETAIL (SIDE VIEW)

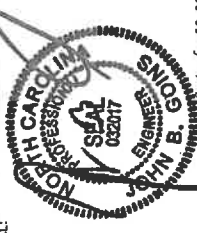
SCALE: N.T.S.

PLANS PREPARED FOR:
DUKE ENERGY.
 401 SOUTH WILKINSON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. DISCAL, CHURCH RD
 BROADWAY, NC 27605
 (HARRETT COUNTY)

PLANS PREPARED BY:

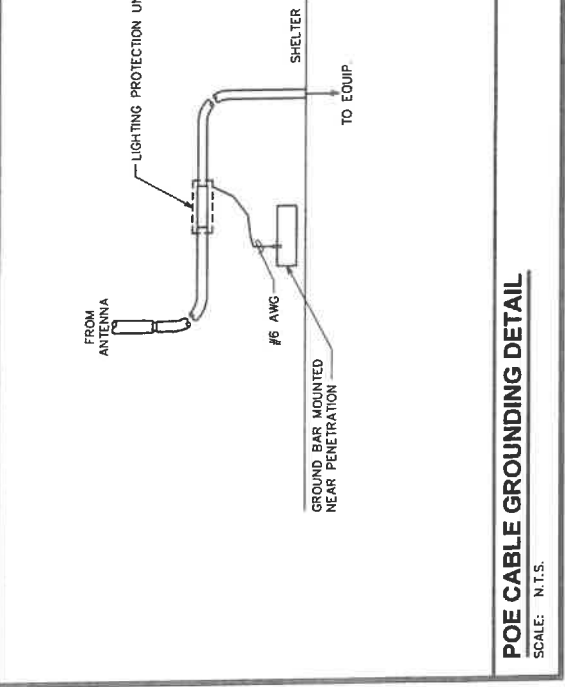
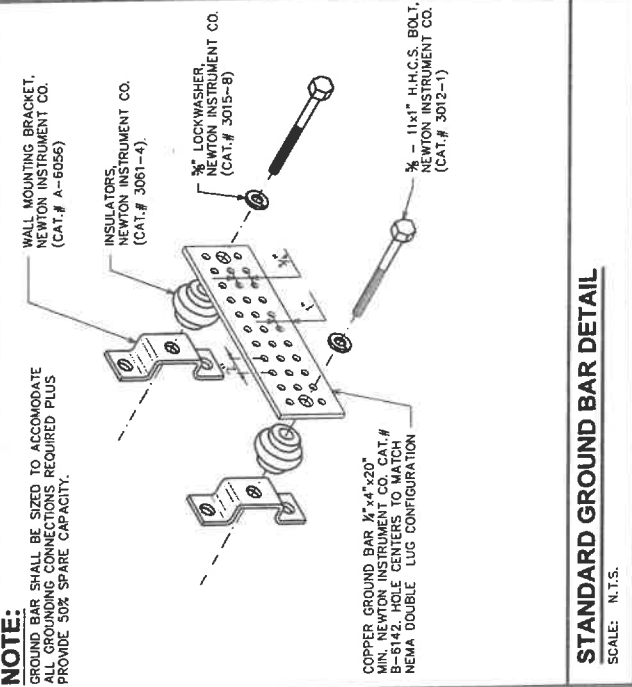
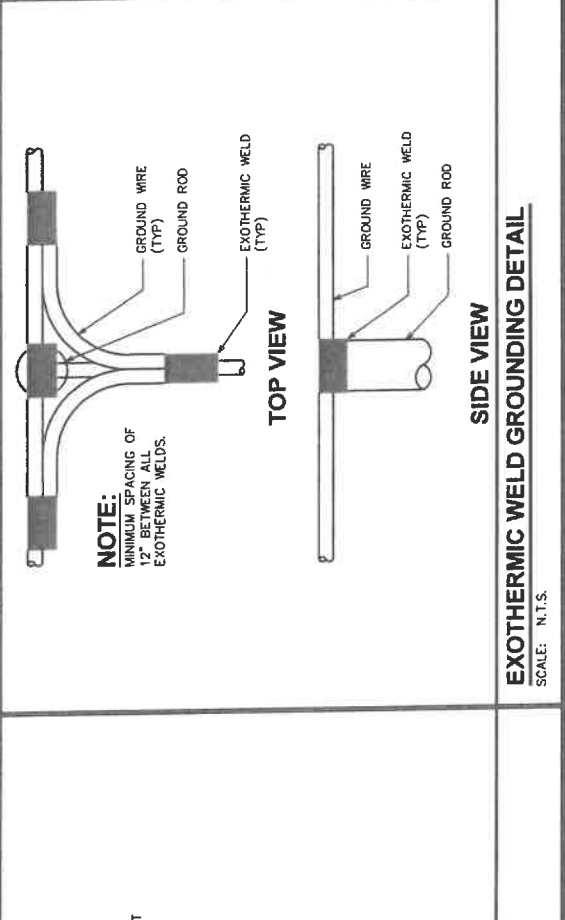
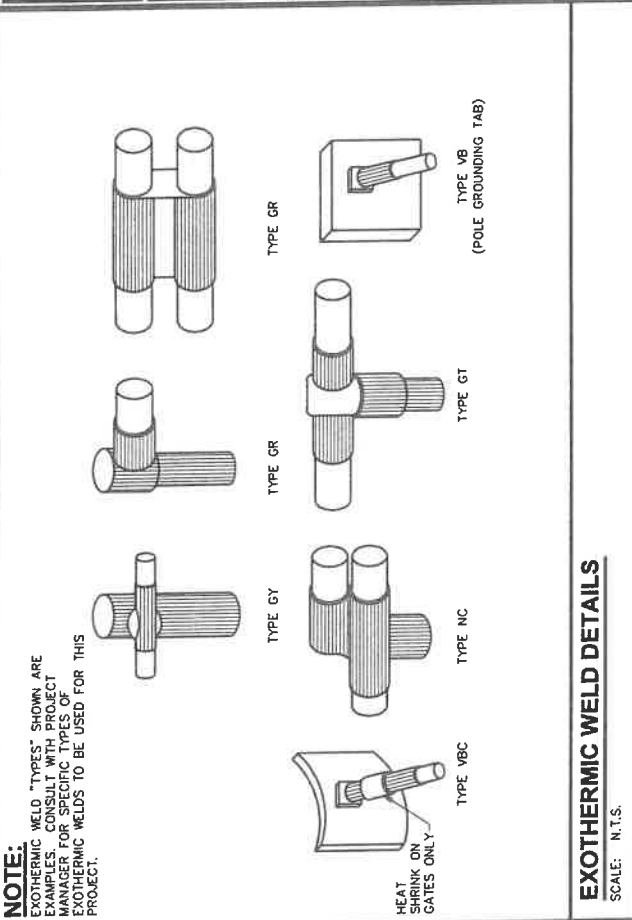
TOWER ENGINEERING PROFESSIONALS
 305 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 664-6351
 www.tepgroup.net
 N.C. LICENSE # C-1794

SEAL:

 JOHN B. SNIOG
 ENGINEER
 STATE OF NORTH CAROLINA
 License No. 062817
 Expires September 30, 2022

2	09-30-22	CONSTRUCTION
1	06-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: RJW CHECKED BY: JBG		
SHEET TITLE:		

**GROUNDING
 DETAILS II**

SHEET NUMBER: **E-5**
 REVISION: **2**
 TEP#310893.677063



**HARNETT COUNTY BOARD OF ADJUSTMENT
CONDITIONAL USE PERMIT WORKSHEET**

APPLICANT: Tower Engineering Professionals CASE NUMBER: BOA2408-0004

1. The requested use **is / is not** in harmony with the surrounding area and compatible with the surrounding neighborhood for the following reasons:

2. The requested use **will / will not** materially endanger the public health and safety for the following reasons:

3. The requested use **will / will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is / is not** or **will / will not** be a public necessity for the following reasons:

4. The requested use **will / will not** meet all required conditions and specifications for the following reasons: _____

5. The requested use **is / is not** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans for the following reasons: _____

CONDITIONS TO CONSIDER:

1. _____
2. _____
3. _____
4. _____
5. _____

HARNETT COUNTY
BOARD OF ADJUSTMENTS
August 12, 2024

Staff Contact: Randy Baker, Assistant Manager of Planning Services
(910) 893-7525 or rbaker@harnett.org

CASE NUMBER: BOA2408-0005
APPLICANT: Tower Engineering Professionals
OWNER: Carolina Power & Light Co. – Duke Energy
LOCATION: 1716 NC 27 E Lillington, NC 27546
ZONING: RA-30 Acreage: 15.35 PIN#: 0680-64-0848.000
LAND USE CLASSIFICATION: Low Density Residential
NC WATERSHED: WS-IV-P

REQUEST: Monopole Communications Cell Tower

AERIAL:



Directions from Lillington: Travel US 421 South toward Campbell College – Turn left onto Leslie Campbell Ave. – Turn right onto NC 27 E – Property is located on the left behind the property addressed as 1714.

PHYSICAL CHARACTERISTICS

- A. Site:** Currently contains an electrical substation on a portion of the property and the remainder consists of vegetation and forestry products.
- B. Surrounding Land Uses:** Residential home sites, agricultural and forestry related land uses.
- C. Utilities:** **Water** – Public Availability **Sewer** – Public Availability

TRANSPORTATION:

- Annual daily traffic count for this section of NC 27 East is 2100.
- Site distances are good.

BACKGROUND:

- The applicant's request is for the placement of a wireless network device and utility pole as part of its communication network. This structure and equipment will allow the company to securely transmit data to and from substations in order to meet customer needs.
- Harnett County's tower consultant firm performed a technical review in order to verify that the request for tower location is consistent with the county's regulatory guidelines.
- The consulting firm has determined that the substation location is technically appropriate based on the lack of available alternatives and the need for wireless connectivity to this substation to improve grid reliability.
- This site is located within the NC Watershed protected area of the County. The requested use will be located within an existing facility. Therefore, the facility is Grandfathered and would not be required to apply for a SNIA.

UNIFIED DEVELOPMENT ORDINANCE REGULATIONS

ARTICLE V. USE REGULATIONS

1.2 Table of Use Types & Regulations

	IND	LI	COMM	O&I	CONS	RA-40	RA-30	RA-20R	RA-20M	PARKING	USE GROUP LEVEL	BUILDING CODE CLASS
OTHER USES												
Comm. Towers: Microwave, TV, Telephone, Radio, & Cellular	S*	S*	S*	S*		S*	S*	S*	S*		4	U

HARNETT COUNTY COMPREHENSIVE GROWTH PLAN

FUTURE LAND USE PLAN

The Harnett community envisions a future where the county will continue to grow and prosper in a way that promotes a high quality of life, capitalizes on and protects the assets that make Harnett County unique, and ensures that all Harnett residents have access to a variety of housing, transportation, recreation and employment options.

FUTURE LAND USE CATEGORIES/ RESIDENTIAL AREAS

Low Density Residential: Single family detached residential intended to remain predominantly suburban in character and provide for low-density single-family residential development on lots smaller than those in Rural Residential areas. Gross densities of 1-3 dwelling units per acre depending on utilities, soils and character of adjacent development.

SITE PHOTOS

Site



Adjoining Property



Facility



Street View



Street View



Across Street From Access Easement



Access Easement



Adjoining Property



SUBMITTED SITE PLAN

NOTES

SITE PLAN SHOWN ON THE PLAN IS TAKEN FROM HANNETT COUNTY GIS, MAPS AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS ACCURATE. ON SITE PLAN CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING CURBS AND UNDERPASSING TRENCHES IMMEDIATELY UPON THE COMMENCEMENT OF ANY DEMOLITION.

THE SITE IS NOT SURVEYED AND DOES NOT GUARANTEE OR ASSURE THE ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OF LIABILITY FOR DAMAGE, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.

THE TITLE IS LIMITED BY SURVEY DONE IN AREA REFERENCED TO BE DONE BY THE 2023 ANNUAL STATE PLAT/PLAN APPLICABLE TO PUBLIC COMMUNITY MAPS AND RECORDS, DATE TIME OF TITLE, ETC.

ITEM	OWNER INFORMATION
1	<p>WENDY REBEKAH ECKH PIN: 0080-54-2923.000 PO BOX 1288 LILLINGTON, NC 27646-0000 DR: 1/18/76; 0442</p>
2	<p>MARIALYN RAYMOND PEREZ AND MARIALYN VICTORIA ALBARRAN PIN: 0080-55-2401.000 PO BOX 73 AYLER, NC 27501 DR: 1/17/76; 0442</p>
3	<p>MARIALYN RAYMOND PEREZ AND MARIALYN VICTORIA ALBARRAN PIN: 0080-55-2471.000 PO BOX 73 AYLER, NC 27501 DR: 3/10/76; 0442</p>
4	<p>FRANCIS ESTER KENT PIN: 0080-55-2636.000 2140 JET 27 E COLTS, NC 27521-0000 DR: 1/11/76; 0442</p>
5	<p>JURISTYCE CRAIG CHRISTOPHER A JURISTYCE JAMIE CARROLL PIN: 0080-54-2828.000 804 HILAND DRAS COLTS, NC 27521-0000 DR: 11/11/76; 0399</p>
6	<p>POPPER ROBERT T PIN: 0080-54-4111.000 245 ROCKY HILL LN LILLINGTON, NC 27646-4157 DR: 2/16/76; 0684</p>
7	<p>CAROLYN DELLA POTTS PIN: 0080-54-2821.000 245 ROCKY HILL LN LILLINGTON, NC 27646-4157 DR: 3/10/76; 0181</p>
8	<p>MELANIE HELEN WALTER & BILALDIE MELANIE C PIN: 0080-54-4366.000 218 ROCKY HILL LN LILLINGTON, NC 27646-4000 DR: 1/18/76; 0343</p>
9	<p>CHRIS ANTONIO PIN: 0080-54-2178.000 186 ROCKY HILL LN LILLINGTON, NC 27646 DR: 4/13/76; 0094</p>

ITEM	OWNER INFORMATION
10	<p>BOCK ROBERT L & BOCK LINDA A PIN: 0080-54-6482.000 175 ROCKY HILL LN LILLINGTON, NC 27646-4145 DR: 2/15/76; 0570</p>
11	<p>FRANKIE PHILIP & FRANKIE KAY L PIN: 0080-54-6488.000 155 ROCKY HILL LN LILLINGTON, NC 27646 DR: 3/21/76; 0442</p>
12	<p>STANISLAW WILLIAM & STANISLAW JERZY PIN: 0080-54-4534.000 186 ROCKY HILL LN LILLINGTON, NC 27646 DR: 1/18/76; 0471</p>
13	<p>CITY CENTER B PIN: 0080-54-4801.000 213 ROCKY HILL LN LILLINGTON, NC 27646 DR: 1/18/76; 0582</p>

LEGEND

- EXIST. PROPERTY LINE
- EXIST. TRUTH PALE
- EXIST. LIGHT PALE
- EXIST. HOUSING
- EXIST. TRENCH
- EXIST. UTILITY LINE
- EXIST. EASEMENT
- EXIST. CURB
- EXIST. UNDERPASS
- EXIST. TREE LINE

ADJACENT PROPERTIES

PROPOSED 120' WIDE EASEMENT MONOPILE SEE SHEET C-1 FOR ELEVATION DETAILS.

EXISTING UNDERPASS MONOPILE SEE SHEET C-2 FOR DETAILS.

SCALE: 1" = 200'

SITE PLAN

SEAL:

PLANS PREPARED FOR:

DUKE ENERGY
 40 SOUTH HANNETT STREET
 RALEIGH, NC 27601
 OFFICE: (800) 482-2777

PROJECT INFORMATION:

BOIES CREEK
230 SUB
T5504 (NCBCU011)
 174 NO-77
 LILLINGTON, NC 27646
 GRANETT COUNTY

PLANS PREPARED BY:

POWER ENGINEERING PROFESSIONALS
 325 TRYON ROAD
 RALEIGH, NC 27608
 OFFICE: (919) 994-6204
 www.hepprop.net
 N.C. LICENSE #C-1794

REVISIONS:

NO.	DATE	DESCRIPTION
1	08-23-24	ADD POINT ON CORNER 12
2	08-30-24	ADD POINT ON CORNER 10
3	09-26-24	CONSTRUCTION

ISSUED FOR: []
 CHECKED BY: []

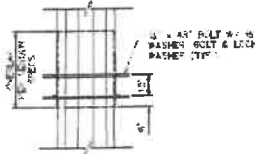
SHEET NUMBER: C-1 **REVISION:** 4

NOTE:

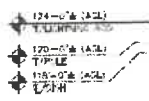
- POLE TO REMAIN A GALVANIZED COLOR
- POLE SHALL BE LIT ONLY IF REQUIRED BY THE REVENUE ADMINISTRATION

DETAIL NOTE:

IF POLE SECTIONS ARE PACKED TOGETHER PAINT TO LIFTING AND SETTING THE POLE IN THE HOLE THE POLE SECTIONS SHALL BE BOLTED AT THE SLIP JOINTS



POLE SLIP JOIN DETAIL
SCALE: N.T.S.

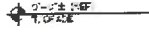


PROPOSED 4 LIGHTING RP1

PROPOSED BUSH AND MOUNT SEE SHEET C-1 FOR DETAILS

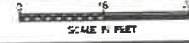
PROPOSED 140 CLASS HDG POLE BY VALMONT NEED TO MANUFACTURE BENCH DRAWING FOR DETAIL

PROPOSED POLE FOUNDATION SEE SHEET C-4 FOR DETAILS



POLE ELEVATION

SCALE: 3/4" = 1'-0"



PLANS PREPARED FOR:

DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (919) 452-2777

PROJECT INFORMATION
BOIES CREEK
230 SUB
T5504 (NCBCU011)
 1718 NC-27
 ULLINCTION, NC 27546
 (HARNETT COUNTY)

PLANS PREPARED BY:

WSP ENGINEERING PERFORMANCE
 326 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 944-4251
 www.wspcorp.com
 N.C. LICENSE #C-1794

SEAL:

 Olin B. Gomb
 June 28, 2022

3	08-26-22	ADD POLE DIMENSION
2	10-30-22	CONSTRUCTION
1	08-29-22	REPLACEMENT OF SHEET C-1
0	07-07-22	REPLACEMENT OF SHEET C-1
REV	DATE	ISSUED FOR
DRAWN BY: <i>am</i>		CHECKED BY: <i>am</i>
SHEET TITLE		
POLE ELEVATION		

SHEET NUMBER: **C-3** REVISION: **3**
100% & 1:0000 (1"=100')



Non-Residential Special Use Permit

Planning Department
420 McKinney Pkwy
P.O. Box 65, Lillington, NC 27546
Phone: (910) 893-7525 Opt. 2 Fax: (910) 893-2793

Total Fee: \$250.00
Receipt: _____
Date Submitted: 8-23-24
Meeting Date: Oct. 14, 2024
Case #: BOA 2408-0005

Applicant Information

Owner of Record:

Name: Carolina Power & Light Co. - Duke Energy
Address: PO BOX 14042
City/State/Zip: St Petersburg / FL / 33733
E-mail: Aaron.Cook@duke-energy.com
Phone: (919) 546-2036

Applicant:

Name: Tower Engineering Professionals
Address: 326 Tryon Rd
City/State/Zip: Raleigh, NC 27603
E-mail: rjwoods@tepgroup.net
Phone: (919) 943-0397

Property Description

PIN(s): 0680-64-0848.000 Acreage: 15.35 acres
Address/SR No.: 1716 NC 27 E, Lillington, NC 27546
Directions from Lillington: Take preferred route to S Main St. Turn right onto US-421 S. Turn left on NC-27 E. In approximately 1.7 miles turn right onto access drive. The site will be at the end of the road.

Deed Book: 722 Page: 0427 Plat Book: N/a Page: N/a
Zoning District: RA-30 Township: Neill's Creek
Flood Plain & Panel: 'X' - Panel # 3720068000J Watershed Dist: WS III (ab)
Water: Public (Harnett County) Private (Well) Sewer: Public (Harnett County) Private (Septic Tank)

Requested Use:

Special Use for Monopole Installation

Required Information:

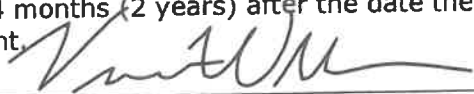
1. Is an Erosion and Sedimentation Control Plan required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
2. It is recommended that all non-residential developments have preliminary discussions with NC DOT concerning driveways and other traffic issues for each project. Has this been done? No Yes
Date of Meeting: _____ NCDOT Contact: _____
3. Is a Driveway Permit required? No Yes
If yes, is one on file? No Yes (Please attach a copy to your application)
4. Have you contacted applicable local, state, and federal agencies regarding building, fire, and other possible code compliance issues? No Yes

SKETCH PLAN REQUIRED: Provide a sketch plan along with application. It is strongly encouraged that sketch plans be prepared by a NC Professional Land Surveyor and that it meet the following (as applicable):

TITLE BLOCK INFORMATION	
Name of Project & Date (Including all Revision Dates)	<input type="checkbox"/>
Applicant/Owner(s) Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Surveyor/Engineer Contact Information (Name, Address, & Phone)	<input type="checkbox"/>
Parcel ID Number/Tax ID of Tract(s)	<input type="checkbox"/>
Deed Reference of Tract(s)	<input type="checkbox"/>
Zoning Classification of Tract(s)	<input type="checkbox"/>
Location (Including Township, County, & State)	<input type="checkbox"/>
Flood Plain Depicted & Noted (Zone, Map Number, & Effective Date)	<input type="checkbox"/>
Watershed District Noted & Extent of Coverage Depicted	<input type="checkbox"/>
GENERAL REQUIREMENTS	
Map Size 22" x 34" & Scale 1"=100' or Larger	<input type="checkbox"/>
North Point, Graphic Scale, & Vicinity Map	<input type="checkbox"/>
Name(s) & Location(s) of Adjacent Property Owner(s) & Use(s)	<input type="checkbox"/>
Existing Boundaries of Tract(s) Showing Bearings & Distances	<input type="checkbox"/>
Gross Acreage of Development	<input type="checkbox"/>
Name(s) & Right(s)-of-way of Streets & State Road Number(s), Including Notation of Public or Private	<input type="checkbox"/>
Name, Location, Width, & Acreage of Additional Easement(s) & Right(s)-of-way Within or Adjacent to Site	<input type="checkbox"/>
Building Envelope & Required Setbacks	<input type="checkbox"/>
Existing & Proposed Utilities	<input type="checkbox"/>
Signage Location, Easement, Type, & Size	<input type="checkbox"/>
Existing Structure(s) Located on Site	<input type="checkbox"/>
SITE PLAN	
Fire Hydrant(s) & Street Light(s) Noted	<input type="checkbox"/>
Erosion Control Plan Submitted	<input type="checkbox"/>
Hours & Days of Operation	<input type="checkbox"/>
Impervious Surface (% Coverage of Lot)	<input type="checkbox"/>
Hazardous Materials to be Stored on Site	<input type="checkbox"/>
Existing & Proposed Mechanical Areas	<input type="checkbox"/>
Existing & Proposed Trash Containment Areas	<input type="checkbox"/>
Existing & Proposed Utility Areas	<input type="checkbox"/>
Parking Space Typical	<input type="checkbox"/>
Parking Lot Material	<input type="checkbox"/>
All parking areas on site (Based on Type of Business and/or Sq. Ft.)	<input type="checkbox"/>
Existing & Proposed Fencing, Screening, Gate(s) and/or Dock(s)	<input type="checkbox"/>
Spillage & Pollution Prevention & Response Methods	<input type="checkbox"/>
BUFFERING REQUIREMENTS	
Buffering Regulations (Per Harnett County Zoning Ordinance)	<input type="checkbox"/>

Signatures

I, as the landowner, hereby CERTIFY that the information contained herein is true to the best of my knowledge; and by accepting this Permit (if approved) shall in every respect conform to the terms of this application and to the provisions of the Statutes and Ordinances regulating development in Harnett County. Any VIOLATION of the terms above stated immediately REVOKES this Permit. I further understand this structure is not to be occupied until a CERTIFICATE OF OCCUPANCY is issued. This Permit expires 24 months (2 years) after the date the Permit is granted by the Harnett County Board of Adjustment.



5/19/2023

Property Owner(s) Signature

Date

Written Statement

** Applicant is required to answer the following questions under oath at the Board of Adjustment Meeting - Please print answers **

Public Convenience & Welfare

1. Why are you requesting this use? Duke is installing a wireless network device and utility pole as part of its communication network to securely transmit data to and from substations, and to support smart technology improvements Duke has made at these locations to increase reliability and quality of service to customers. Currently, information is being monitored over a leased copper T-1 circuit. This is outdated technology, and the lease is expiring, so these upgrades are important to ensure its systems operate efficiently to meet customer needs.
2. How will this use benefit the citizens of Harnett County? This installation will improve reliability and quality of utility services in the surrounding area.

On-site & Surrounding Land Uses

3. How will the use you are requesting affect the surrounding properties, residents and businesses in the area? Describe in detail **why and how** it will or will not affect the surrounding areas? The requested use will not substantially injure the value of adjoining properties and is a public necessity. This pole will be located on Duke's existing substation and the monopole design was chosen as the least intrusive and most aesthetic option. The monopole will not be painted and will be constructed of galvanized steel which conforms aesthetically with the other equipment and distribution towers on the existing substation (see photo simulations). Additionally, the pole is setback from the nearest property line farther than its height, meaning it is not a hazard to nearby properties.

Utilities, Access Roads, Drainage, etc...

4. Describe the driveway (width and surface) that you will be using to enter and exit the property. The existing ~20' gravel access drive will still be sufficient for the pole's addition to the property.
5. Describe the drainage of this property. The existing drainage will not be changed for this pole installation.
6. How is your trash and garbage going to get to the landfill? Any debris of trash generated by this project will be removed from the site by contractors.

Traffic

7. Describe the traffic conditions and sight distances at the State Road that serves the property. This pole will operate autonomously and requires no additional manpower. There will be no increase in traffic in the area due to this pole. The pole will be approximately 1000' from NC-27.
8. What is the approximate distance between your driveway and the next nearest driveway or intersection? The nearest driveway is approximately 150' from entrance to entrance.

General

9. How many employees will this development employ? N/a
10. What is the estimated investment of the development? \$70,000
11. What experience do you have in the proposed field? Tower Engineering Professionals provide engineering services for companies wishing to build and design tower installations. TEP has designed and permitted similar monopoles for Duke with this exact same scope of work in several other jurisdictions.

Conditions

12. State any conditions that you would be willing to consider as part of the approved Special Use Permit. As discussed with County staff, a variance application is being submitted to accommodate the fact that the proposed monopole will only be used for Duke's internal purposes and will be located within an existing Duke substation. If any additional conditions or stipulations are requested by the jurisdiction, Duke will assess them as they arise.

13. Additional comments the Board should consider in reviewing your application: Duke is looking to upgrade their system and network at this location. This will allow for greater reliability and future growth for the substation and its capabilities. This addition will provide a boon to the surrounding properties and residents.

Action by the Board of Adjustment

The Board of Adjustment shall approve, modify, or deny the Application for Special Use Permit following the Public Hearing. In granting a Special Use Permit, the Board of Adjustment shall make written findings that the applicable regulations of the district in which it is located are fulfilled. With due regard to the nature and state of all adjacent structures and uses, the district within which it is located and official plans for future development, the Board of Adjustment shall also make written findings that the following provisions are fulfilled:

- 3.1 The requested use **is** in harmony with the surrounding area and compatible with the surrounding neighborhood.
- 3.2 The requested use **will not** materially endanger the public health and safety.
- 3.3 The requested use **will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is** or **will be** a public necessity.
- 3.4 The requested use **will** meet all required conditions and specifications.
- 3.5 The requested use **is** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans.

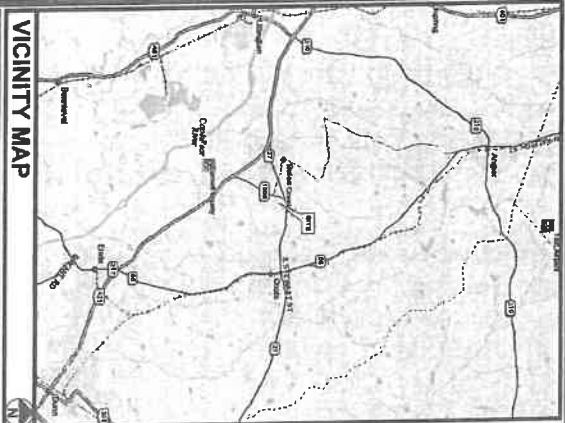
The Board of Adjustment may impose conditions on special use permits as part of the approval process. Conditions placed on the special use permit must be adhered to as part of the developmental process. Consent to any specified conditions must be received prior to the issuance of any development permits.

Note: There must be three (3) Board of Adjustment members present at the meeting to hear a request for a Special Use Permit. A concurring vote from the simple majority of the Board shall be necessary to grant a Special Use permit.

** I have received and read the above statement:

Ryan Woods
Signature

5/19/23
Date



PROJECT INFORMATION:


PROPOSED TELECOMMUNICATIONS POLE

SITE NAME: **BUIES CREEK 230 SUB**

SUBSTATION NUMBER (TELCOM ABBREVIATION):
T5504 (NCBCU011)

SITE ADDRESS:
**1716 NC-27
LILLINGTON, NC 27546
(HARNETT COUNTY)**

PLANS PREPARED FOR:

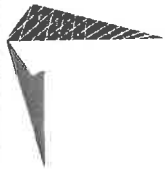


401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

811
Toner's experts locate.
Call before you dig.

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTOR'S CONFORMANCE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES SHOWN AND BE RESPONSIBLE FOR THE ACCURACY OF THE UTILITIES SHOWN AND IF SHOWN, BE THE SOLE RESPONSIBLE PARTY FOR THE CORRECTION OF ANY ERRORS.

PLANS PREPARED BY:



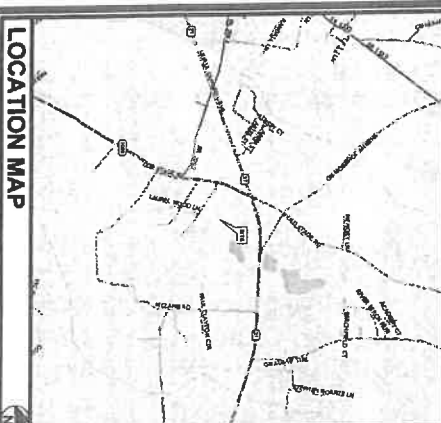
TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-5283
OFFICE: (919) 661-6351
www.tepgroup.net

N.C. LICENSE # C-1794

4	02-23-24	JURISDICTION COMMENTS
3	05-30-23	ADD POLE CONNECTION
2	10-26-22	CONSTRUCTION
1	09-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION

REV: DATE ISSUED FOR:

DRAWN BY: GAT1 CHECKED BY: JBG



LOCATION MAP

FROM RALEIGH, NC: TAKE PREFERRED ROUTE TO US-401 S/W/5-70 E / N AND TURN RIGHT ON US-401 SOUTH AND TAKE RIGHT TURN ON NC-27 WEST AND TURN RIGHT ON OLD STAGE ROAD, CONTINUE STRAIGHT ONTO NC-27 W. AFTER PASSING LESLIE CAMPBELL AVE, TURN LEFT ONTO THE ACCESS ROAD IN ABOUT 800 FEET. THE SITE WILL BE ON THE RIGHT.

POLE OWNER: DUKE ENERGY, WILMINGTON STREET, RALEIGH, NC 27601, (919) 546-2977

PROPERTY OWNER: CAROLINA POWER & LIGHT CO, UNKNOWN, 7000 WARRIOR, (919) 546-1996

SITE APPLICANT: LURE ENERGY, 401 SOUTH WILMINGTON STREET, RALEIGH, NC 27601, (919) 546-2038

AREA OF CONSTRUCTION: 1802 S.F.

PRESENT OCCUPANCY TYPE: ELECTRICAL SUBSTATION

PROPOSED OCCUPANCY TYPE: MICROWAVE POLE

CURRENT ZONING: RA-30

PARCEL ID: 070620 0017 01

JURISDICTION: HARNETT COUNTY

UTILITIES: POWER, GAS, WATER, FIBER, CABLE, TELEPHONE, SATELLITE

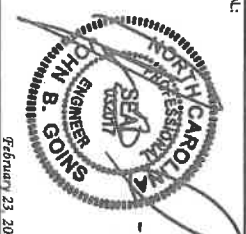
CONTRACTOR: TOWER ENGINEERING PROFESSIONALS, INC., 326 TRYON ROAD, RALEIGH, NC 27603-5283, (919) 661-6351

POLE MANUFACTURER: VALKOR INDUSTRIES, 2000 W. HARRIS AVE., DANMORA, VA 22819, (435) 953-1000

INDEX OF SHEETS

SHEET	DESCRIPTION	REV
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N1	PROJECT NOTES	2
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C3	POLE ELEVATION	3
C4	POLE FOUNDATION DETAIL & NOTES	2
C5	ANTENNA MOUNTING DETAILS	2
C6	UNDERGROUND CONDUIT DETAILS	3
E1	ELECTRICAL NOTES	2
E2	POLE GROUNDING AND ROUTING PLAN	2
E3	BILL OF MATERIALS	2
E4	GROUNDING DETAILS I	2
E5	GROUNDING DETAILS II	2

SEAL:



John B. Sings
February 23, 2024

DRIVING DIRECTIONS

PROJECT SUMMARY

PROJECT TEAM

GENERAL NOTES:

1. ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED DUKE ENERGY OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTEMPTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
3. STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-H STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES, ANTENNAS, AND SMALL WIND TURBINE SUPPORT STRUCTURES AND THE 2018 NORTH CAROLINA STATE BUILDING CODE.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2018 NC BUILDING CODE (2015 IBC W/ AMENDMENTS).
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE, TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS, THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR THE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS OR INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION, THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FLAWS, AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COMPANATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR THE MATERIAL REMAINS UNSUITABLE FOR SUBGRADE IN ITS PRESENT STATE AFTER REMOVAL. IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROTECTED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SLOTTED MATERIAL SHALL BE REMOVED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPS, DITCHES AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
18. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 15TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - A. STRUCTURAL STEEL, ASTM DESIGNATION A36 OR A992.
 - B. ALL BOLTS, ASTM A325 TYPE 1 GALVANIZED HIGH STRENGTH BOLTS.
 - C. ALL NUTS, ASTM A325.
 - D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 15TH EDITION.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. 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.
6. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A800 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM SURFACES TO BE REPAIRED. REPAIRS SHALL BE MADE AT A TEMPERATURE SUFFICIENT TO MELT THE METALS IN STICK OR PASTE TO FORM A MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND Wipe OFF ANY EXCESS.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. 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.
10. ALL ASSEMBLY AND ANCHOR BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 30, 2004.
11. FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.
12. DO NOT OVER TORQUE ASSEMBLY BOLTS. GALVANIZING ON BOLTS, NUTS, AND STEEL PARTS MAY ACT AS A LUBRICANT, THUS OVER TIGHTENING MAY OCCUR AND MAY CAUSE BOLTS TO CRACK AND SNAP OFF.
13. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE UP OUT. PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS ARE PROVIDED.
14. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
15. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-2010 STRUCTURAL WELDING CODE - STEEL.

FIBER NOTES:

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 SURE TO STRAIN THREE FEET VERTICALLY. NEVER ALLOW THE CABLE TO EXCEED THE STRAIN OF THE CABLE SPOOL WEIGHT. ANY BINDS SHALL BE SUPPORTED BY A MINIMUM ONE FOOT BEYOND ROUNDS BEYOND THE SPOOL. THE CABLE LOOP WITH A MINIMUM ONE FOOT BEYOND ROUNDS BEYOND THE SPOOL. THE FIBER BE TESTED BEFORE AND AFTER INSTALLATION FOR NO GREATER THAN .02 DB LOSS.


PLANS PREPARED FOR:



401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

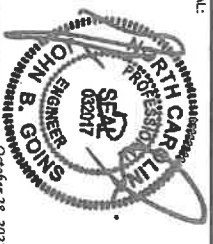
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PLANS PREPARED BY:



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 RALEIGH, NC 27603
 OFFICE: (919) 661-4531
 www.towereng.com
 N.C. LICENSE #C-1794

SEAL:



REV	DATE	ISSUED FOR:
2	10-26-22	CONSTRUCTION
1	09-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION

DRAWN BY: GAN
 CHECKED BY: JBG

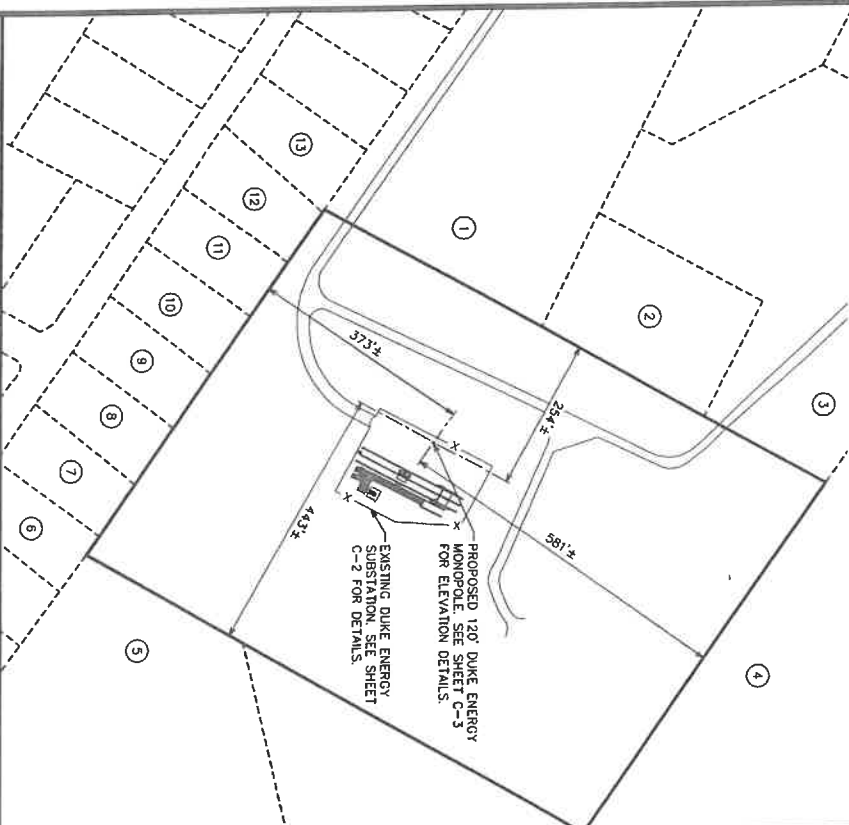
SHEET TITLE:
PROJECT NOTES

SHEET NUMBER: N-1	REVISION: 2
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TEP#310205-6770203

NOTES

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM HARNETT COUNTY RECORDS AND DEEDS. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. THE PRECISION, ACCURACY OR CORRECTNESS OF THIS ASSESSMENT RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.
3. THE POLE IS LOCATED IN SHADED ZONE "X". AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #372008000, EFFECTIVE OCTOBER 31, 2006.

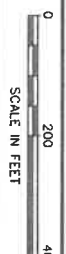


ADJACENT PROPERTIES	
ITEM	OWNER INFORMATION
1	<i>N/F</i> WHITE WHEATY LEIGH PIN: 0680-54-3929,000 LILLINGTON, NC 27546-0000 DB: 1438/PG: 0842
2	<i>N/F</i> MADRIGAL RANDALL FERNANDO & MADRIGAL VICTORIA ALEXANDRA PIN: 0680-55-7201,000 PO BOX 73 ANGIER, NC 27501 DB: 3499/PG: 0024
3	<i>N/F</i> MADRIGAL RANDALL FERNANDO & MADRIGAL VICTORIA ALEXANDRA PIN: 0680-55-5471,000 PO BOX 73 ANGIER, NC 27501 DB: 3499/PG: 0024
4	<i>N/F</i> PERVY BOWEN KENT PIN: 0680-54-6584,000 COATS, NC 27521-0000 DB: 1181/PG: 0468
5	<i>N/F</i> TURLINGTON CHAD CHRISTOPHER & TURLINGTON JAMIE CARROLL PIN: 0680-64-7238,000 384 McCLAMB ROAD COATS, NC 27521-0000 DB: 3410/PG: 0396
6	<i>N/F</i> POTTER DOROTHY T PIN: 0680-64-0147,000 285 ROCKY RUN LN LILLINGTON, NC 27546-6157 DB: 2450/PG: 0504
7	<i>N/F</i> CARAWAN DELIA POTTER PIN: 0680-54-9253,000 245 ROCKY RUN LN LILLINGTON, NC 27546-6157 DB: 3402/PG: 0181
8	<i>N/F</i> BLALOCK RICKY WAYNE & BLALOCK MELANIE C PIN: 0680-54-6380,000 403 ROCKY RUN LN LILLINGTON, NC 27546-0000 DB: 1702/PG: 0846
9	<i>N/F</i> GRAVIS ANTONIO PIN: 0680-54-7070,000 195 ROCKY RUN LN LILLINGTON, NC 27546 DB: 3193/PG: 0004

10	<i>N/F</i> BOOK NOEL C & BOOK LISA A PIN: 0680-54-9482,000 LILLINGTON, NC 27546-6146 DB: 2875/PG: 0570
11	<i>N/F</i> FERRELL PHILLIP & FERRELL KAY C PIN: 0680-54-5488,000 165 ROCKY RUN LN LILLINGTON, NC 27546 DB: 3261/PG: 0842
12	<i>N/F</i> STONEROCK WILLIAM & STONEROCK BECKY PIN: 0680-54-4594,000 111 ROCKY RUN LN LILLINGTON, NC 27546 DB: 1667/PG: 0671
13	<i>N/F</i> GUY RICHARD B PIN: 0680-54-4601,000 111 ROCKY RUN LN LILLINGTON, NC 27546 DB: 1658/PG: 0669

LEGEND

- EXIST. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. LIGHT POLE
- EXIST. HYDRANT
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- EXIST. CONTOUR LINE
- 200' EDGE OF PAVEMENT
- OVERHEAD WIRE
- CHAIN LINK FENCE
- EXISTING TREE LINE



PLANS PREPARED FOR:

DUKE ENERGY.

401 SOUTH WILKINSON STREET
RALEIGH, NC 27601
OFFICE: (900) 452-2777

PROJECT: **DUKE ENERGY**
BULES CREEK
230 SUB
T5504 (NCBCU01-1)
1716 NC-27
LILLINGTON, NC 27546
(HARNETT COUNTY)

PLANS PREPARED BY:

TOWNE ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 861-6351
www.towneeng.com

N.C. LICENSE #C-1794

SEAL: **JOHN B. GOINS**
REGISTERED PROFESSIONAL ENGINEER
NO. 10000
EXPIRES 02/28/2024

REV	DATE	ISSUED FOR:
1	06-29-22	PRELIMINARY CONSTRUCTION
2	10-20-22	CONSTRUCTION
3	05-30-23	ADD POLE CONNECTION
4	02-23-24	JURISDICTION COMMENTS

DRAWN BY: GAT CHECKED BY: JBG

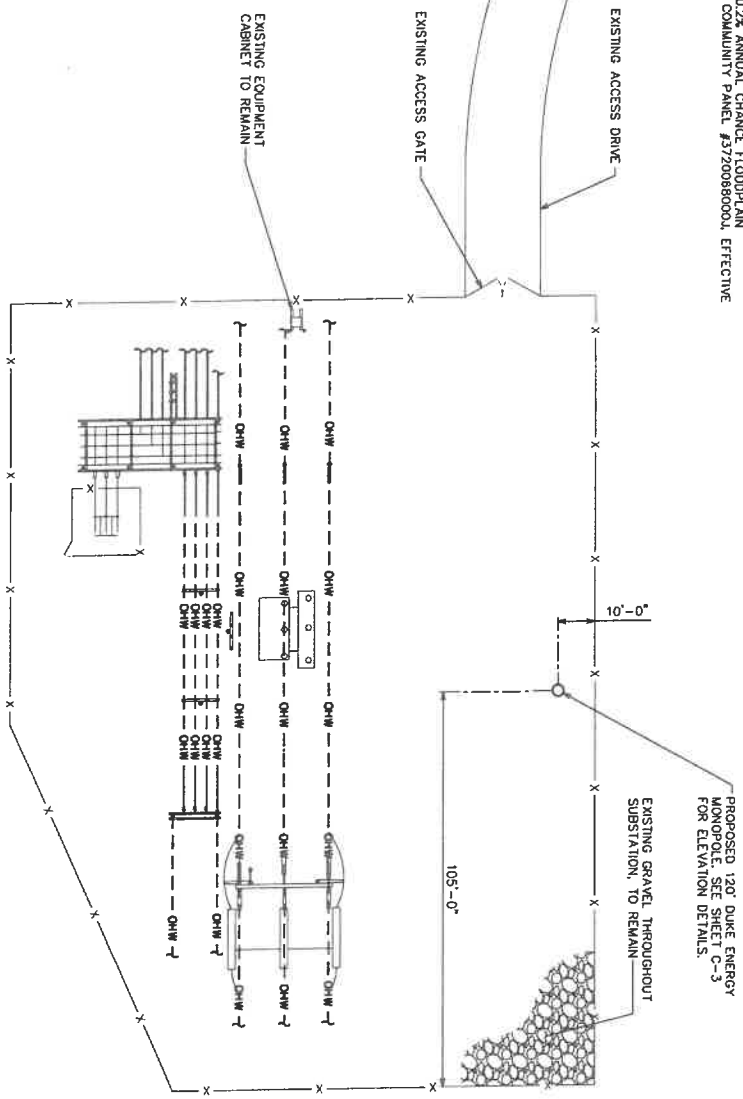
SITE PLAN

SHEET NUMBER: **C-1** REVISION: **4**

TP#4310096.C77028

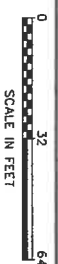
NOTES

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM HARNETT COUNTY'S RECORDS AND INFORMATION. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. TEP DID NOT SURVEY AND DOES NOT GUARANTEE OR ASSURE THE PRECISION, ACCURACY OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR.
3. THE POLE IS LOCATED IN SHADED ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #372008000L, EFFECTIVE OCTOBER 3, 2008.



COMPOUND DETAIL

SCALE: 1/8" = 1'-0"



PLANS PREPARED FOR:
DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
BULES CREEK
230 SUB
T5504 (NCBCU011)
 1716 NC-27
 LILLINGTON, NC 27546
 (HARNETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 328 TRYON ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 861-6351
 www.tepprop.net
 N.C. LICENSE #C-1794

SEAL:

 JOHN B. GONS
 ENGINEER
 08/2017
 October 28, 2022

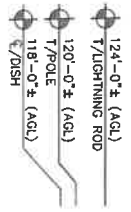
2	10-28-22	CONSTRUCTION
1	08-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: GAH CHECKED BY: JBG		
SHEET TITLE:		

COMPOUND DETAIL

SHEET NUMBER: **C-2**
 REVISION: **2**
 TEP #310956-C770293

NOTE:

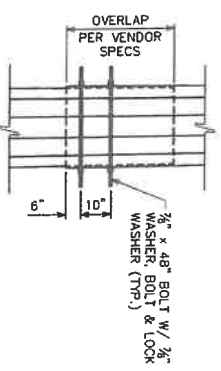
1. POLE TO REMAIN A GALVANIZED COLOR.
2. POLE SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.



PROPOSED 4' LIGHTNING ROD
 PROPOSED DISH AND MOUNT. SEE SHEET C-5 FOR DETAILS.

DETAIL NOTE:

POLE SECTIONS ARE JACKED TOGETHER PRIOR TO THE HOLES. THE POLE IN THE HOLE. THE POLE SECTIONS SHALL BE BOLTED AT THE SLIP JOINTS.

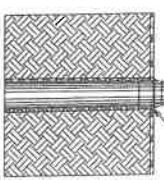
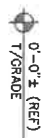


POLE SLIP JOINT DETAIL

SCALE: N.T.S.

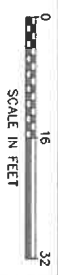
PROPOSED 140' CLASS H10 POLE BY VALMONT. REFER TO MANUFACTURER DESIGN DRAWINGS FOR DETAILS.

PROPOSED POLE FOUNDATION. SEE SHEET C-4, FOR DETAILS.



POLE ELEVATION

SCALE: 3/8" = 1'-0"



SCALE IN FEET

PLANS PREPARED FOR:



PROJECT INFORMATION:
BULES CREEK
 230 SUB
TS504 (NCBSCU011)

1716 NC-27
 LILINGTON, NC 27546
 (HARRNETT COUNTY)

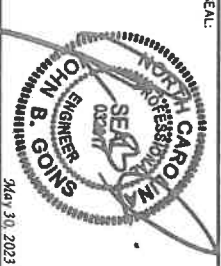
PLANS PREPARED BY:



TONER ENGINEERING PROFESSIONALS

326 TRYON ROAD
 RALEIGH, NC 27613
 OFFICE: (919) 661-4331
 www.teppgroup.net
 N.C. LICENSE #C-1794

SEAL:



3	05-30-23	ADD POLE CONNECTION
2	10-20-22	CONSTRUCTION
1	06-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: GHI CHECKED BY: JSG

POLE ELEVATION

SHEET NUMBER:	REVISION:
C-3	3
TEP#310906-677066	

REFERENCED DOCUMENTS

DOCUMENT	REMARKS	DATE
GEOTECHNICAL REPORT	REP PROJECT NO.: 310886.677099	07-29-22
POLE DESIGN DRAWINGS	VALMONT INDUSTRIES	06-22-22
STRUCTURAL ANALYSIS	REP PROJECT NO.: 310896.677091	08-25-22

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, QUANTITIES, PART NUMBERS AND COAY/ANTENNA PLACEMENTS PRIOR TO BIDDING ORDERING MATERIALS, AND CONSTRUCTION.

APPLIED LOADS

AXIAL	11898 LBS
MOMENT	848418 LB-FT
SHEAR	12785 LBS

DESIGN REACTIONS TAKEN FROM THE STRUCTURAL ANALYSIS LISTED IN THE REFERENCED DOCUMENTS CHART ABOVE.

DESIGN NOTE:

REFER TO VALMONT INDUSTRIES DRAWINGS FOR FINAL POLE AND FOUNDATION CONSTRUCTION, AND ASSEMBLY DETAILS. ANY MODIFICATION SHOWN IN THIS DRAWING SHALL BE SUPERSEDED BY MANUFACTURER DESIGN DOCUMENTS.

FOUNDATION CONSTRUCTION:

THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT REFERENCED ABOVE. CONTRACTORS SHALL CONSULT THE GEOTECHNICAL REPORT PRIOR TO BIDDING AND CONSTRUCTION.

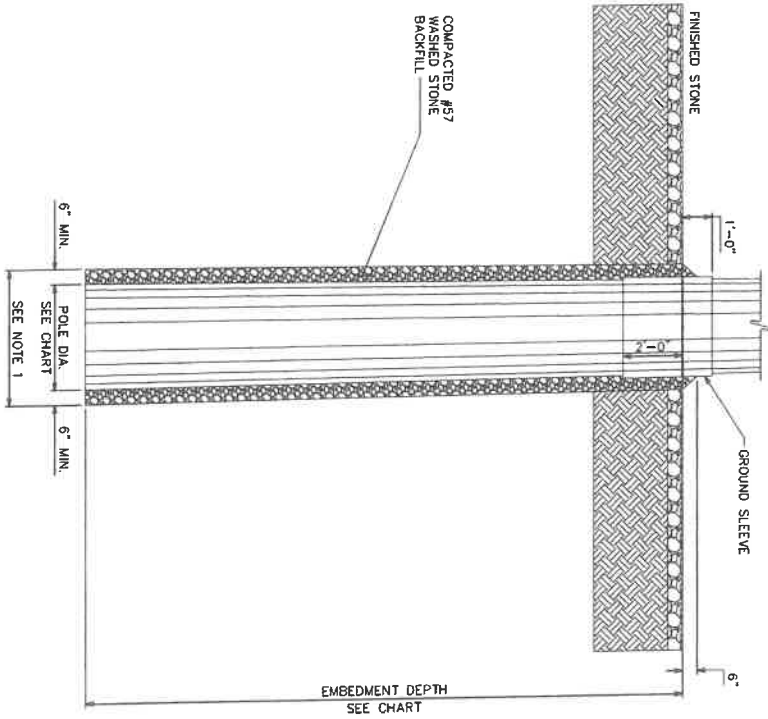
FOUNDATION DESIGN

TOP OD	BASE OD	EMBEDMENT DEPTH	OVERALL POLE LENGTH
37.27'	41.00'	20'	140.00'

NOTE:
BEARING PLATE DETAILS ARE SPECIFIED IN THE POLE MFG'S DRAWINGS. REFER TO CONSTRUCTION.

BACKFILL NOTES:

- HOLE SHALL BE EXCAVATED BY AN AUGER OF SUFFICIENT SIZE TO ALLOW A MINIMUM OF 6" BETWEEN THE SIDES OF THE HOLE AND THE POLE SO THAT PROPER TAMING/RODING OF THE GRAVEL BACKFILL CAN BE PERFORMED FROM THE BOTTOM OF THE HOLE TO THE GROUND SURFACE.
- IF THE HOLE IS DRILLED DEEPER THAN REQUIRED, THE EXTRA DEPTH IS TO BE BACKFILLED WITH #57 STONE AND TAMPED BEFORE THE POLE IS SET. IF THE BOTTOM OF THE HOLE IS SOFT OR IF WATER IS IN THE HOLE, #57 STONE SHALL BE USED TO FILL THE OVER-EXCAVATION.
- THE #57 STONE BACKFILL SHALL BE PLACED IN EVEN LIFTS WITH A MAXIMUM HEIGHT OF 12" PER LIFT. THE STONE SHALL BE MECHANICALLY COMPACTED BY MEANS OF A MANUAL TAMPER AFTER PLACEMENT. THE MAXIMUM UNIFORM DENSITY FROM THE BOTTOM OF THE HOLE TO THE NATURAL GROUND SURFACE SHALL BE ATTAINED.
- AFTER COMPLETION OF BACKFILLING, THE BACKFILL SHALL BE BANKED AROUND THE POLE TO AN ELEVATION OF 6" ABOVE THE EXISTING GRADE.



POLE FOUNDATION DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

DUKE ENERGY
 401 SOUTH WILMINGTON STREET
 RALEIGH, NC 27601
 OFFICE: (800) 452-2777

PROJECT INFORMATION:
BUIES CREEK
230 SUB
T5504 (NCBCU011)
 1716 NC-27
 LILLINGTON, NC 27546
 (HARNETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
 326 TRIVION ROAD
 RALEIGH, NC 27603
 OFFICE: (919) 661-6361
 www.tengroup.net
 N.C. LICENSE #C-1794

SEAL:

JOHN B. GOINS
 ENGINEER
 October 28, 2022

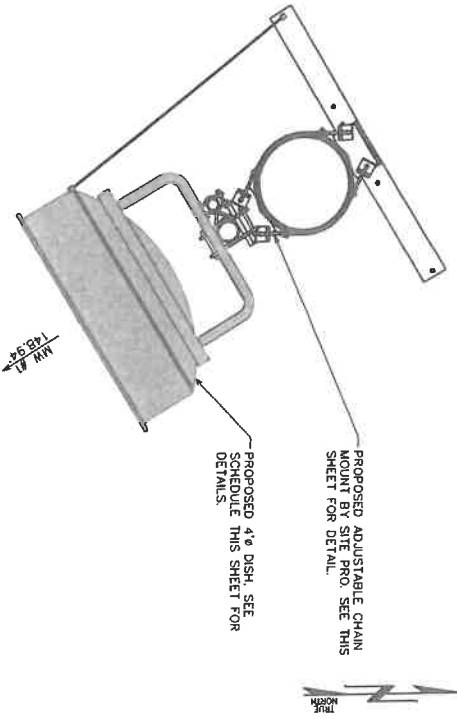
REV	DATE	ISSUED FOR:
2	10-28-22	CONSTRUCTION
1	06-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION

DRAWN BY: GAI CHECKED BY: JBG

SHEET TITLE:
POLE FOUNDATION DETAIL & NOTES

SHEET NUMBER: **C-4** REVISION: **2**

TEP#31.0096.677093

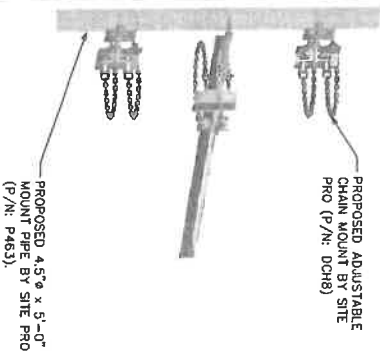


PROPOSED DISH @ 118'-0"

SCALE: 1/2" = 1'-0"

SCALE IN FEET

NOTE:
POLE DIAMETER AT 118': REFER TO POLE MANUFACTURER DRAWINGS

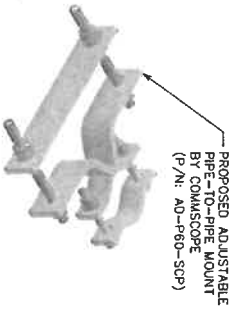


PROPOSED ADJUSTABLE CHAIN MOUNT BY SITE PRO (P/N: DCH8)

PROPOSED 4.5"ø x 5'-0" MOUNT PIPE BY SITE PRO (P/N: P463).

PROPOSED PIPE MOUNT

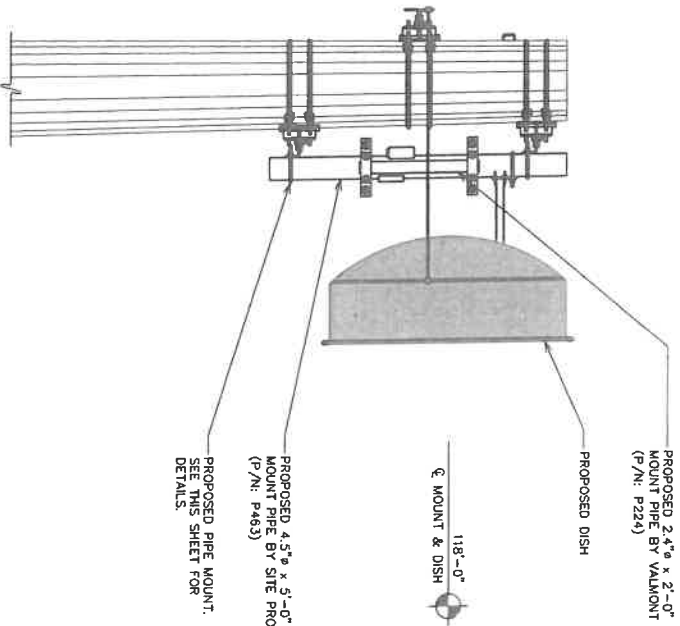
SCALE: N.T.S.



PROPOSED ADJUSTABLE PIPE-TO-PIPE MOUNT BY COMASCOPE (P/N: AD-P80-SDP)

PROP. PIPE-TO-PIPE MOUNT

SCALE: N.T.S.



PROPOSED PIPE MOUNT PROFILE

SCALE: N.T.S.

PROPOSED ANTENNA/CABLE SCHEDULE					
TECHNOLOGY	MANUFACTURER (MODEL #)	MOUNTING HEIGHT	AZIMUTH	CABLE SIZE	CABLE LENGTH
DISH	RADOMAVES (RPD4-5-2)	ø 118'-0"	148.94°	(1) CAT19e	*270' ±
	CAMBUM (PMP450I NON-INTEGRATED)				

*CONTRACTOR SHALL FIELD VERIFY CABLE LENGTH PRIOR TO CONSTRUCTION.

PROPOSED ANTENNA/CABLE SCHEDULE

SCALE: N.T.S.

PLANS PREPARED FOR:
DUKE ENERGY.
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

PROJECT INFORMATION:
BOIES CREEK
230 SUB
T5504 (NCBCU011)
1716 NC-27
LILLINGTON, NC 27546
(HARRETT COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603
OFFICE: (919) 861-6351
www.teppro.com
N.C. LICENSE #C-1794

SEAL:
JOHN B. GOINS
REGISTERED PROFESSIONAL ENGINEER
October 28, 2022

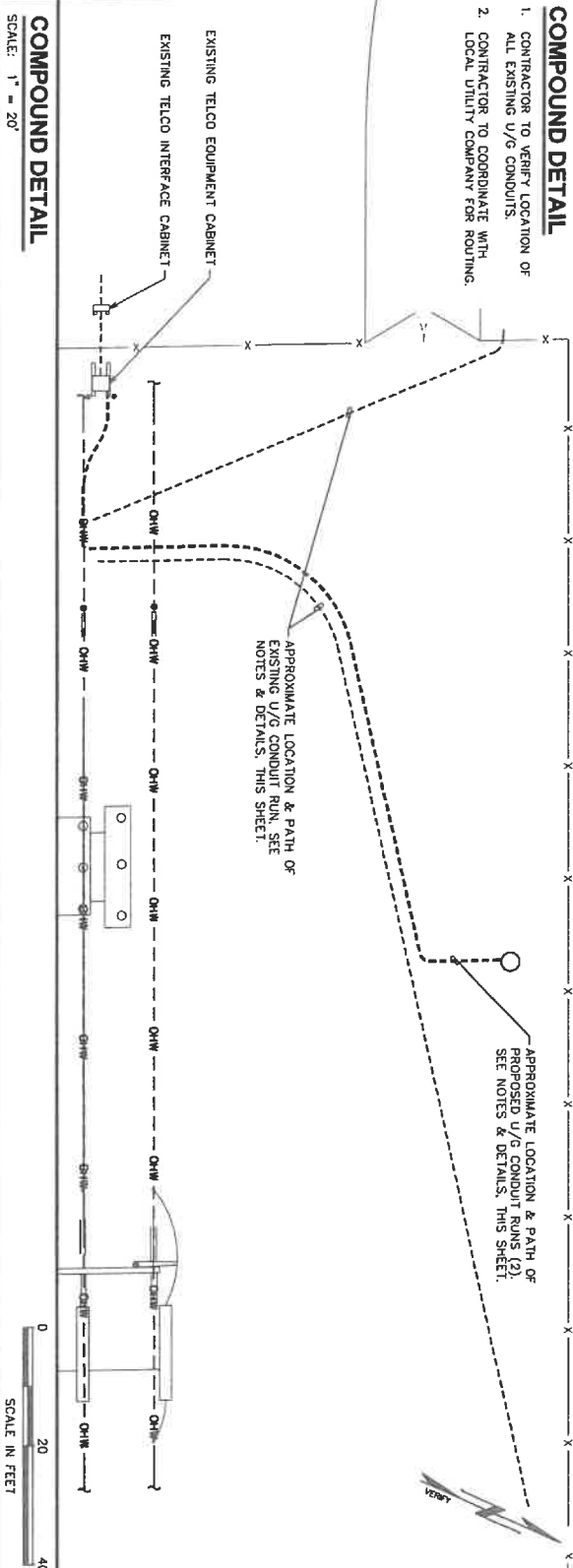
REV	DATE	ISSUED FOR:
2	10-28-22	CONSTRUCTION
1	08-22-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION

DRAWN BY: GALT CHECKED BY: JBC
SHEET TITLE: ANTENNA MOUNTING DETAILS

SHEET NUMBER: **C-5**
REVISION: 2
TEP #310006.6770069

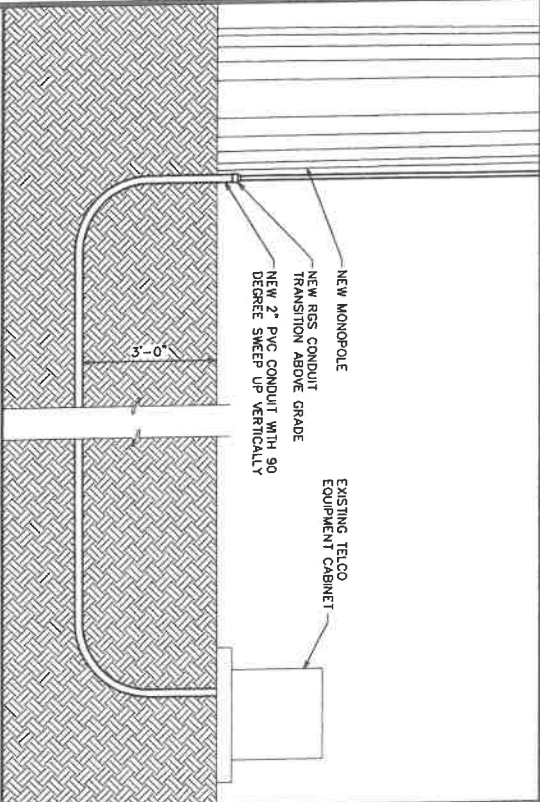
COMPOUND DETAIL

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING U/G CONDUITS.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR ROUTING.



COMPOUND DETAIL

SCALE: 1" = 20'

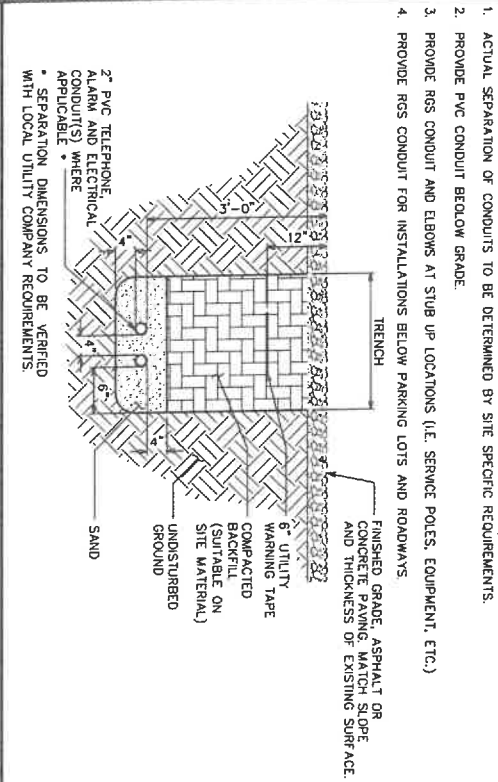


CONDUIT ROUTING DETAIL

SCALE: N.T.S.

NOTES:

1. ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
2. PROVIDE PVC CONDUIT BELOW GRADE.
3. PROVIDE RGS CONDUIT AND ELBOWS AT SUB UP LOCATIONS (I.E. SERVICE POLES, EQUIPMENT, ETC.)
4. PROVIDE RGS CONDUIT FOR INSTALLATIONS BELOW PARKING LOTS AND ROADWAYS.



UNDERGROUND CONDUITS/ TRENCH DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

DUKE ENERGY.

401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (900) 452-2777

PROJECT INFORMATION

BULES CREEK

230 SUB

T5504 (NCBUCU011)

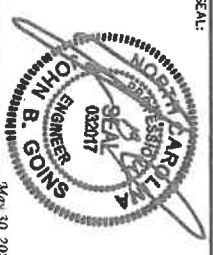
1716 NC-27
ULLINGTON, NC 27546
(HARRNETT COUNTY)

PLANS PREPARED BY:

TOWNE ENGINEERING PROFESSIONALS

328 TRYON ROAD
RALEIGH, NC 27603
OFFICE (919) 661-6361
www.towneeng.com

N.C. LICENSE #C-1794



SEAL:

3	05-30-23	ADD POLE CONNECTION
2	10-26-22	CONSTRUCTION
1	06-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: GAT CHECKED BY: JGG

SHEET TITLE:

UNDERGROUND CONDUIT DETAILS

SHEET NUMBER:	REVISION:
C-6	3
TEP#310966, 677066	

SCOPE:
 1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRICAL, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:
 1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
 A. THE NATIONAL ELECTRICAL SAFETY CODE - NFPA-70
 B. THE NATIONAL ELECTRICAL SAFETY CODE - NFPA-78
 C. REGULATIONS OF THE SERVING UTILITY COMPANY
 D. LOCAL AND STATE AMENDMENTS
 E. THE INTERNATIONAL ELECTRIC CODE - IEC (WHERE APPLICABLE)
 F. THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARDOUS LIQUID (HLL) CODE - NFPA-704
 2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
 3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:
 1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. 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 AND WITHOUT EXPERIENCE TO THE OWNER.
 2. THE WARRANTIES CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS PERTAINING TO THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AND WORKING SYSTEMS OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.

2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.

3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL. **RACEWAYS / CONDUITS GENERAL:**

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, COMPLETE BEFORE INSTALLING CONDUITORS.
 2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS, SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
 2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
 3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
 4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
 5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT.
 2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSINGS FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
 3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
 2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
 3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. 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 ALL METAL RACEWAYS, CONDUITS, AND CONDUIT BUSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
 2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
 3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 - "LIGHTNING PROTECTION" AS A MINIMUM.
 4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	AMPERE	PANELBOARD
ABG	ABOVE FINISHED GRADE	PVC
ATS	AUTOMATIC TRANSFER SWITCH	ROS
AWG	AMERICAN WIRE GAUGE	SW
BCW	BARE COPPER WIRE	T88
BFG	BELOW FINISHED GRADE	UL
BKR	BREAKER	V
C	CONDUIT	W
CKT	CIRCUIT	XMR
DISC	DISCONNECT	XMT
EGR	EXTERNAL GROUND RING	
EMT	ELECTRIC METALLIC TUBING	
FSC	FLEXIBLE STEEL CONDUIT	
GEN	GENERATOR	
GPS	GLOBAL POSITIONING SYSTEM	
GRD	GROUND	
IGR	ISOLATED GROUND BAR	
ISB	INTERIOR GROUND RING (HAALO)	
KW	KILOWATTS	
NEC	NATIONAL ELECTRIC CODE	
PCS	PERSONAL COMMUNICATION SYSTEM	
PH	PHASE	
PNL	PANEL	

PLANS PREPARED FOR:
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PROJECT INFORMATION:
BUES CREEK
230 SUB
T5604 (NCBCU011)
 1716 NC-27
 LILINGTON, NC 27546
 (HARRETT COUNTY)

PLANS PREPARED BY:

TOMER ENGINEERING PROFESSIONALS

326 TRYON ROAD
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NC LICENSE #C-1794

NO.	DATE	DESCRIPTION
1	10-28-22	CONSTRUCTION
2	06-28-22	PRELIMINARY CONSTRUCTION
3	07-07-22	PRELIMINARY CONSTRUCTION

REV.	DATE	ISSUED FOR:
1	07-07-22	ISSUED FOR:

DRAWN BY: G4H CHECKED BY: JSG

SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER: **E-1** REVISION: **2**

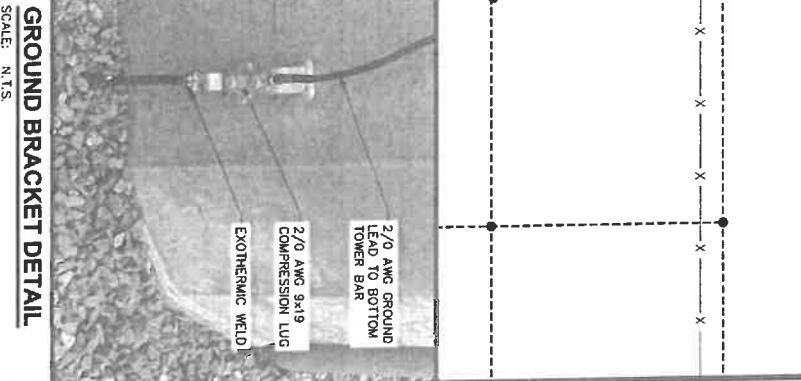
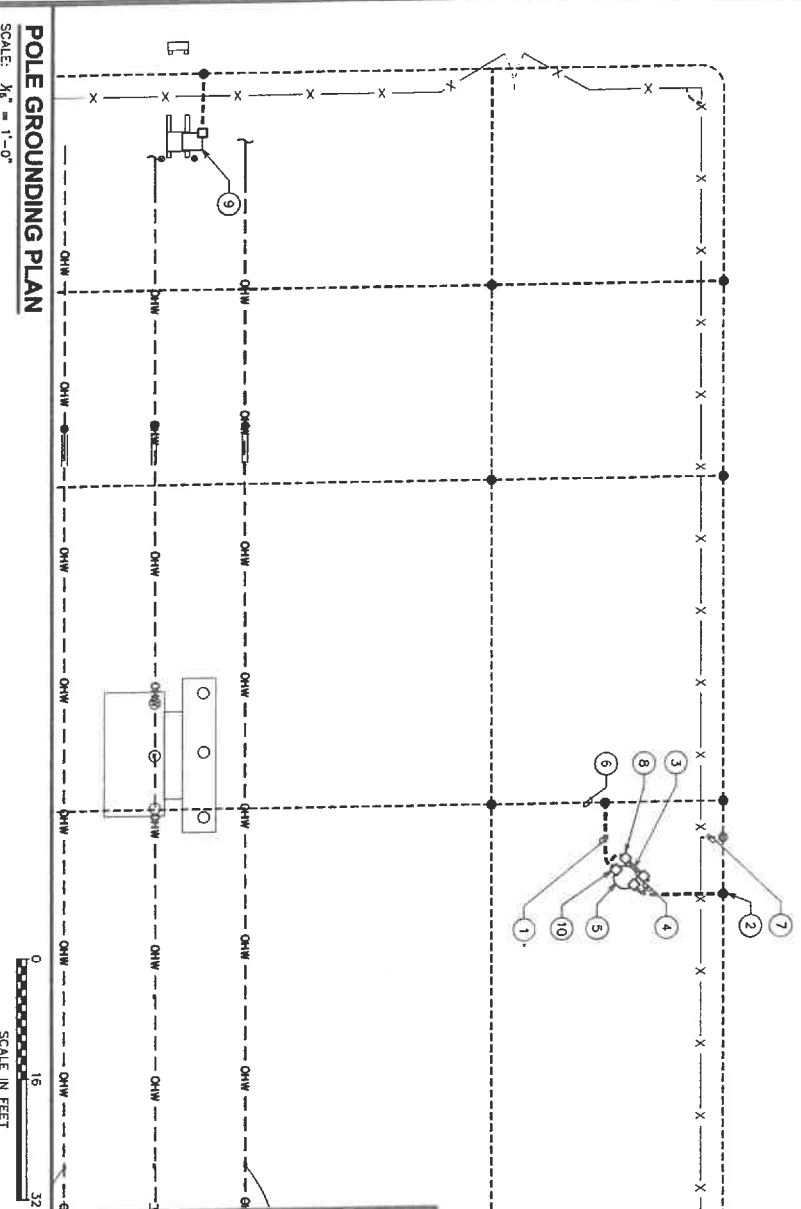
TRP # 3 10886 677086

DRAWING NOTES:

- 1 EXOTHERMIC WELD FROM EXISTING GROUND SYSTEM (CONTRACTOR TO VERIFY LOCATION) TO GROUND BRACKET (TYP OF 2) ON POLE. SEE THIS SHEET FOR DETAILS.
- 2 EXOTHERMIC WELD (TYP)
- 3 POLE BOTTOM BUSS BAR
- 4 POLE BUSS BAR BONDING CONDUCTOR (TYP OF 2) TO EXISTING POLE GROUNDING BRACKETS
- 5 PROPOSED POLE
- 6 EXISTING SUBSTATION GROUND SYSTEM
- 7 EXISTING FENCE GROUND CONNECTION
- 8 MECHANICAL GROUND LUG (TYP)
- 9 LPU (LIGHTNING PROTECTION UNIT)
- 10 GROUNDING BRACKET AT BOTTOM OF POLE (TYP OF 2). SEE DETAIL THIS SHEET.

GROUNDING NOTES

1. CONTRACTOR SHALL VERIFY THAT GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING 2/0 AWG OR 4/0 AWG (CONTRACTOR TO VERIFY EXISTING GROUND MAT SIZING) BARE TINNED COPPER WIRE. THE TOP OF THE GROUND RODS AND THE RING CONDUCTOR SHALL BE 36" BELOW FINISHED GRADE. GROUNDING ELECTRODES SHALL BE DRIVEN ON 10'-0" CENTERS. (MINIMUM: 15'-0" MAX. PROVIDE AND INSTALL AS REQUIRED PER PLAN BELOW).
2. GROUND RING CONNECTION CONDUCTORS SHALL BE OF EQUAL LENGTH, MATERIAL, AND BONDING TECHNIQUE.
3. PROVIDE AND INSTALL GROUNDING CONNECTIONS SHOWN BELOW AS NEEDED PER EXISTING SITE GROUNDING SYSTEM. CONTRACTOR SHALL VERIFY ALL EXISTING SITE GROUNDING CONDITIONS BEFORE STARTING WORK OR PURCHASING EQUIPMENT.
4. BOND POLE GROUND BAR TO EXTERNAL GROUND RING WITH 2 RINGS OF 2/0 OR 4/0 AWG (CONTRACTOR TO VERIFY SIZING) AND SIZED GROUND CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND EXOTHERMICALLY WELD THE OTHER END TO THE EXTERNAL GROUND ROD.
5. BONDING CONDUCTORS SHALL BE ROUTED THROUGH A 3/4" PVC CONDUIT SLEEVE RUN UNDER THE FOUNDATION. REFER TO THE GROUNDING PLAN BELOW.
6. ALL CONDUIT, GROUND GRID CONDUCTOR AND UNDERGROUND FEEDER CIRCUIT LOCATIONS ARE APPROXIMATE. HAND DIG TO A MINIMUM OF 36" PRIOR TO MACHINERY EXCAVATIONS WHERE THERE IS A POTENTIAL FOR IMPACTING EXISTING UNDERGROUND COMPONENTS.

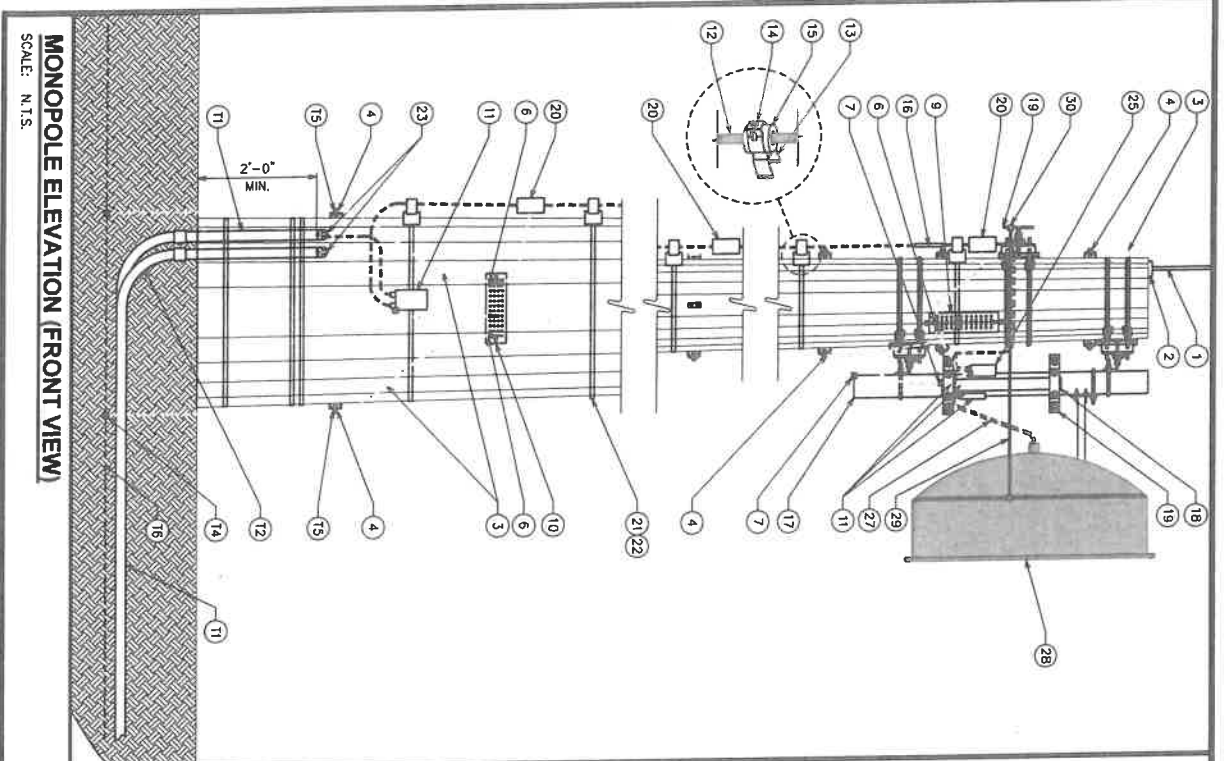


<p>PLANS PREPARED FOR:</p> <p>DUKE ENERGY,</p> <p>401 SOUTH WASHINGTON STREET RALEIGH, NC 27603 OFFICE: (900) 452-2777</p>	<p>PROJECT: BUSES CREEK</p> <p>230 SUB</p> <p>15504 (NCBSCU011)</p> <p>1716 NC-27 LILLINGTON, NC 27546 (HARNETT COUNTY)</p>	<p>PLANS PREPARED BY:</p> <p>TOWNE ENGINEERING PROFESSIONALS</p> <p>326 TRYON ROAD RALEIGH, NC 27603 OFFICE: (919) 861-6361 www.tepgroup.net</p> <p>N.C. LICENSE #C-1794</p>	<p>SEAL:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV</th> <th>DATE</th> <th>ISSUED FOR:</th> </tr> <tr> <td>2</td> <td>10-28-22</td> <td>CONSTRUCTION</td> </tr> <tr> <td>1</td> <td>09-29-22</td> <td>PRELIMINARY CONSTRUCTION</td> </tr> <tr> <td>0</td> <td>07-07-22</td> <td>PRELIMINARY CONSTRUCTION</td> </tr> </table> <p>DRAWN BY: G4H CHECKED BY: JBG</p> <p>SHEET TITLE: POLE GROUNDING AND ROUTING PLAN</p> <p>SHEET NUMBER: E-2 REVISION: 2</p> <p>TEP#310286, 677028</p>	REV	DATE	ISSUED FOR:	2	10-28-22	CONSTRUCTION	1	09-29-22	PRELIMINARY CONSTRUCTION	0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:														
2	10-28-22	CONSTRUCTION														
1	09-29-22	PRELIMINARY CONSTRUCTION														
0	07-07-22	PRELIMINARY CONSTRUCTION														

SCALE: 3/8" = 1'-0"

SCALE IN FEET

SCALE: N.T.S.



MONOPOLE ELEVATION (FRONT VIEW)
SCALE: N.T.S.

BILL OF MATERIALS - TELECOMMUNICATIONS

ITEM	QTY	UNIT	MAXIMO PART NUMBER	DESCRIPTION
1	1	EA	1505632	AIR TERMINAL, COPPER CLAD AIR BASE, 1/2" DIA X 48"
2	1	EA	1479397	TERMINAL, BRONZE AIR BASE, 1/2" DIA, INTERNALLY THREADED HUB
3	1	RO	1502506	WIRE/CABLE 2/0 AWG. CU, SOFT DRAWM, 19 STR, BARE CU, CLASS B, PACKAGED IN 25 HAND COILS
4	6	EA	1503888	TERMINAL, LUG, 2/0 AWG CONDUCTOR, (2) 1/2" HOLE BLACK, 1-3/4" CIR
5	1	EA	1612775	TERMINAL, LUG, 2/0 AWG CONDUCTOR, (2) 1/2" HOLE, 1" CIR, BLACK, LONG
6	3	EA	1504572	TERMINAL, LUG, 2/0 AWG, COMP. CU. (2) 3/8" HOLE, 1" CIR
7	2	EA	1505554	TERMINAL, LUG, 2/0 AWG CONDUCTOR, SQ. HOLE 3/8" POST F/
8	3	EA	LOOSE	TERMINAL, LUG, # 6 AWG. (2) 1/2" HOLE, 1 3/4" SPACE BLUE LONG
9	1	EA	1525371	BAR, GROUND, 2" WD X 12" LG X 1/4" THK, W/ INSULATORS & BRACKETS, (10) PRE-DRILLED 7/16" HOLE
10	1	EA	1505048	BAR, GROUND, BUSS, 4" WD X 14" LG X 1/4" THK, TINNED, W/ HARDWARE
11	1	KT	1539777	LPU KIT, GROUNDING, LIGHTNING PROTECTION UNIT, ETHERNET CABLE, PREFITTED CABLE GLAND.
12	1	SP	1539773	WIRE/CABLE/ELECTRICAL, CAT5, 4 PAIR, 24 AWG. CU, SHIELDED INSULATION
13	4	PK	1473338	BRACKET, UNIVERSAL, STANDOFF MOUNTING, NO ADAPTER
14	4	PK	1509037	HANGER, CABLE, SNAP-IN, STACKABLE, F/ 1-5/8" CABLE
15	4	PK	1564840	CUSHION, BARREL, 1-5/8", UNIVERSAL, 14-35MM, SNAP-IN, 10 PER BOX
16	1	EA	1554464	GRIP CABLE, HOUSING, 3/8" CABLE SS, PRE-LACED
17	1	EA	1503531	PIPE, 5" LG, ALUM, 4-1/2" OD, F/ ANTENNA MOUNT
18	1	EA	1479381	BRACKET, MOUNTING, HOT DIP GALV STL, BOOM GATE CLAMP SET, 4-1/2" TO 12", 60 DEG ANGLE LEGS
19	1	EA	1501289	KIT, SHIELD GROUNDING, GROUND STRIPS, MASTIC TAPE, ELECTRICAL TAPE, GROUND BOLT & NUT, RETAINING ZIP TIES, F/
20	3	EA	1539778	BAND, STRAPPING, 3/4" WD, 100 LG, 0.03" THK, 316 SS, 1800 LB
21	4	RO	1480605	BUCKLE, BANDING, 3/4" WD, SS
22	100	EA	1480606	HEAD, SERVICE ENTRANCE, RIGID, 2" SLIP-ON, PVC, WEATHER HD, STD PKG/5
23	2	EA	904105	BRACKET, MOUNTING, CAMBIUM TILT, BRACKET ASSY
24	1	EA	1545989	MODULE, RADIO FREQUENCY, CAMBIUM SX GHZ PUMP 4SQ CONNECTORIZED SUBSCRIBER MODULE
25	1	EA	1539782	CHAIN MOUNT, FLUSH ANTENNA, CHAIN MOUNT, THE BACK ARMS, U-BOLTS, F/ DISH ANTENNA W/ SIDE SUPPORT BRACKETS, F/ 4-1/2" DIA
26	1	EA	1568737	JUMPER, COAX, 5' LG, N MALE TO N MALE, LMR-400, W/ WEATHER BOOTS
27	2	EA	1603548	ANTENNA, PARABOLIC DISH, 5.25-5.85GHZ, N-FEMALE CONNECTOR, 4" HPDP, 34.1 DBI GAIN
28	1	EA	1564956	BRACKET, MOUNTING, STABILIZER BARS-STIFF ARM, F/ 4" & 6" DISH ANTENNA SERIES SP
29	1	EA	1501100	STIFF ARM SUPPORT BRACKET FOR 2-3/8" N OD PIPE
30	1	EA	NONE	

BILL OF MATERIALS - TRANSMISSION

ITEM	QTY	UNIT	MAXIMO PART NUMBER	DESCRIPTION
11	32	EA	61354	CONDUIT, RIGID, HEAVY WALL, 2", 10' LG, SCH 40, PVC, LG BELLED ONE END, RATED F/ 90 DEG C
12	2	EA	79433	ELBOW, CONDUIT, RIGID, 2", GRAY PVC, 90 DEG, 9-1/2" RADIUS, PLAIN END, F/ 2" CONDUIT, PACKAGING: 15 PER PACK
13	16	FT	4177461	WIRE/CABLE, ELECTRICAL, BARE, GROUND, 19 STR SOL. SO, 9 AWG, DEAD SOFT ANNEALED COPPER/CLAD
14	1	BK	50130218	POWER, WELDING, EXO. #50DPLUS20, LIGHT GREEN
15	2	EA	67295	TERMINAL, TIN PLTD CU CONDUCTOR, WELDED CONDUCTOR CONNECTION, (2) 1/2" HOLE 1-3/4" CIR
16	15		N/A	EXISTING SUBSTATION GROUND MAT

PLANS PREPARED FOR:
DUKE ENERGY
401 SOUTH WILMINGTON STREET
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PROJECT INFORMATION:
BUES CREEK
230 SUB
TS504 (INCBCU011)
1716 NC-27
LILLINGTON, NC 27546
(HARRETT COUNTY)

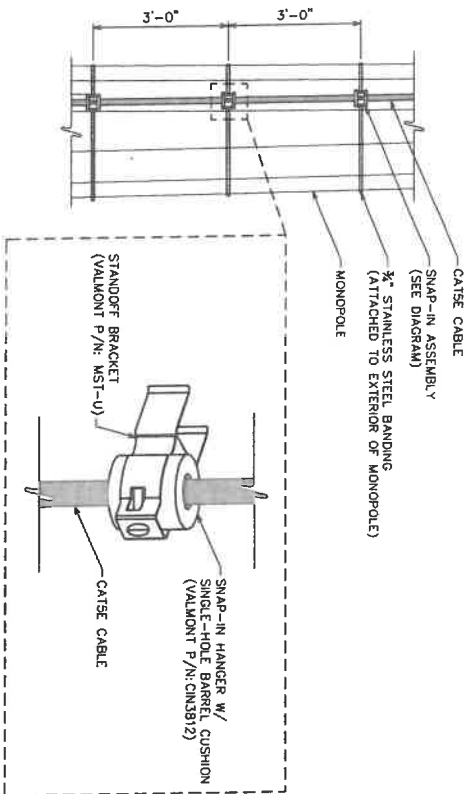
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SEAL: **JOHN H. GARLICK**
REGISTERED PROFESSIONAL ENGINEER
002071
October 28, 2022

SHEET NUMBER: **E-3** REVISION: **2**
DRAWN BY: CAH | CHECKED BY: JCG
SHEET TITLE: **BILL OF MATERIALS**
1 10-20-22 CONSTRUCTION
0 08-29-22 PRELIMINARY CONSTRUCTION
0 07-07-22 PRELIMINARY CONSTRUCTION
REV DATE ISSUED FOR:
DRAWN BY: CAH | CHECKED BY: JCG

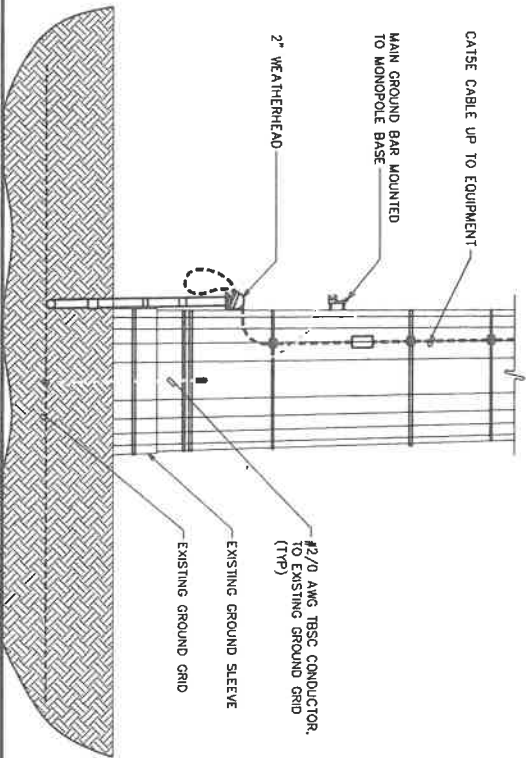
MONOPOLE GROUNDING

SCALE: N.T.S.



MONOPOLE BASE DETAIL (SIDE VIEW)

SCALE: N.T.S.



PLANS PREPARED FOR:



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PROJECT INFORMATION
BOILES CREEK

230 SUB
T5504 (NCBCU011)

1716 NC-27
ULLINGTON, NC 27546
(HARNETT COUNTY)

PLANS PREPARED BY:



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N.C. LICENSE #C-1794

SEAL:



2	10-20-22	CONSTRUCTION
1	06-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: GAI CHECKED BY: JBC		

SHEET TITLE:

**GROUNDING
DETAILS 1**

SHEET NUMBER:

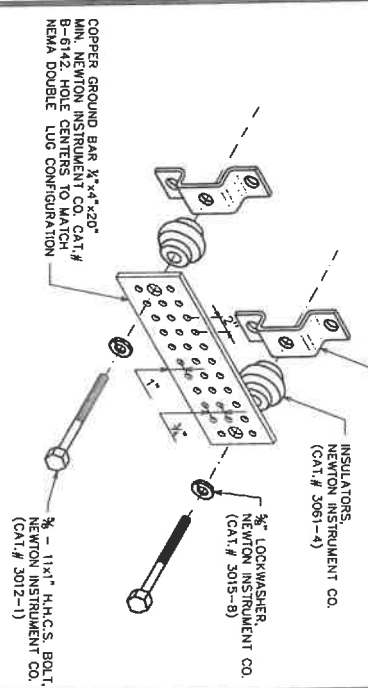
E-4

REVISION:

2

TEP#31 0006, 677003

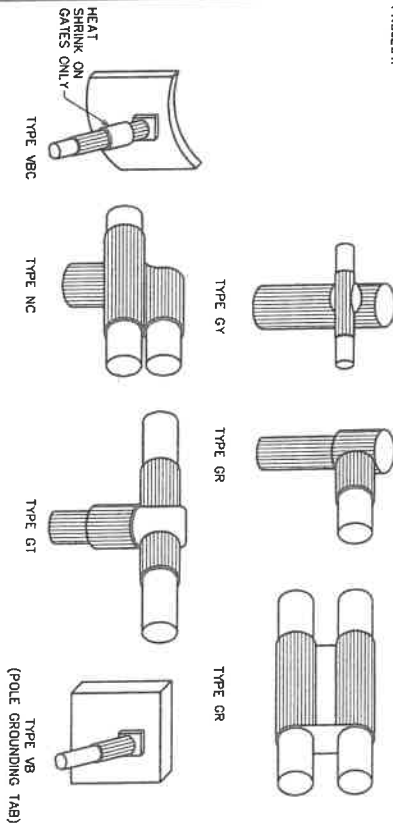
NOTE:
GROUND BAR SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY.



STANDARD GROUND BAR DETAIL

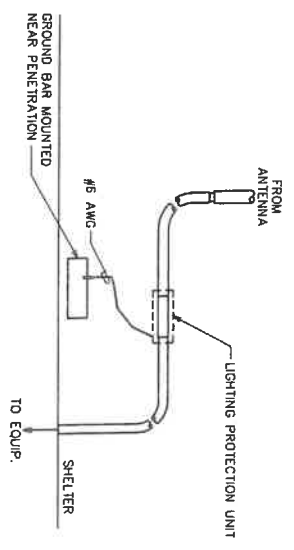
SCALE: N.T.S.

NOTE:
EXOTHERMIC WELD "TYPES" SHOWN ARE EXAMPLES. CONSULT WITH PROJECT ENGINEER FOR SPECIFIC TYPES OF EXOTHERMIC WELDS TO BE USED FOR THIS PROJECT.



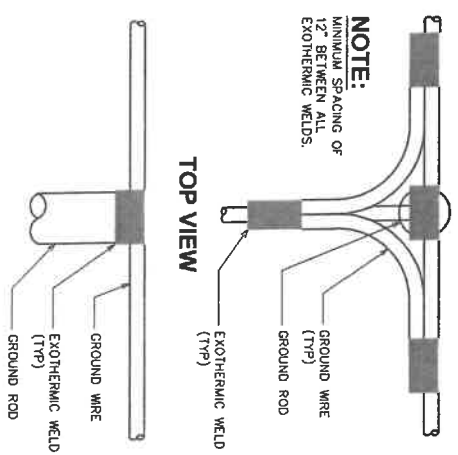
EXOTHERMIC WELD DETAILS

SCALE: N.T.S.



POE CABLE GROUNDING DETAIL

SCALE: N.T.S.



EXOTHERMIC WELD GROUNDING DETAIL

SCALE: N.T.S.

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230 SUB
T5504 (NCBUC011)
1716 NC-27
LILLINGTON, NC 27546
(HARRNETT COUNTY)

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SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER
DAN B. GOINS
022017
October 28, 2022

2	10-26-22	CONSTRUCTION
1	06-29-22	PRELIMINARY CONSTRUCTION
0	07-07-22	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY: GAH CHECKED BY: JSG		

SHEET TITLE:
GROUNDING DETAILS II

SHEET NUMBER: **E-5** | REVISION: **2**

TEP#310066-677006

**HARNETT COUNTY BOARD OF ADJUSTMENT
CONDITIONAL USE PERMIT WORKSHEET**

APPLICANT: Tower Engineering Professionals CASE NUMBER: BOA2408-0005

1. The requested use **is / is not** in harmony with the surrounding area and compatible with the surrounding neighborhood for the following reasons:

2. The requested use **will / will not** materially endanger the public health and safety for the following reasons:

3. The requested use **will / will not** substantially injure the value of adjoining property, **or**, alternatively, the requested use **is / is not** or **will / will not** be a public necessity for the following reasons:

4. The requested use **will / will not** meet all required conditions and specifications for the following reasons: _____

5. The requested use **is / is not** in general conformance with the Harnett County Unified Development Ordinance (UDO), Land Use Plan, and other relevant adopted plans for the following reasons: _____

CONDITIONS TO CONSIDER:

1. _____
2. _____
3. _____
4. _____
5. _____

