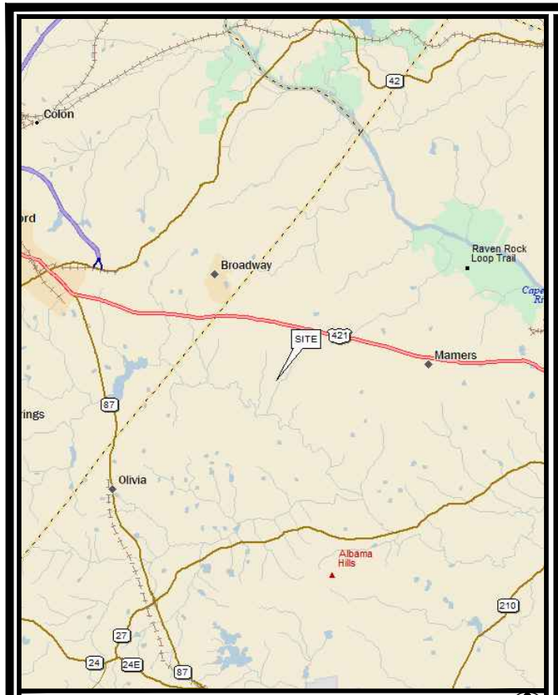
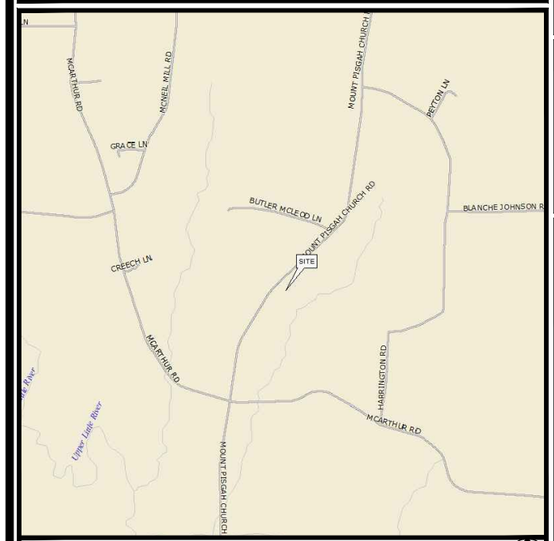


VICINITY MAP



LOCATION MAP

FROM RALEIGH, NC: TAKE PREFERRED ROUTE TO I-40W TOWARD CARY/DURHAM/FARMERS MARKET. TAKE EXIT 293 FOR I-440E/US-1/US-64 W TOWARD RALEIGH/CARY/WAKE FOREST. KEEP LEFT AT THE FORK TO CONTINUE TOWARD US-1S/US-64 W. KEEP RIGHT TO TAKE EXIT 293A, FOLLOW SIGNS FOR US-1S/US-64 W/CARY/ASHEBORO. KEEP LEFT AT THE FORK TO CONTINUE TOWARD US-1 S/US-64W. FOLLOW SIGNS FOR US-64W/APEX/SANFORD/ASHEBORO/ US-1S AND MERGE ON US-1S/US-64W. TAKE EXIT 70A FOR US 421 BYPASS E TOWARD FUQUAY-VARINA. KEEP LEFT AND MERGE ONTO US-421S TOWARD LILLINGTON. TAKE EXIT 143A 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

PROJECT INFORMATION:

PROPOSED TELECOMMUNICATIONS POLE

SITE NAME:

BEAR BRANCH 230 SUB

SUBSTATION NUMBER (TELCOM ABBREVIATION):

T2443 (NCBWY015)

SITE ADDRESS:

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

LATITUDE	N 35° 24' 33.59" (35.409331°)* (NAD '83)
LONGITUDE	W 79° 01' 05.86" (-79.018294°)* (NAD '83)

GROUND ELEVATION (AMSL) = 331.3'*

*LATITUDE, LONGITUDE AND GROUND ELEVATION INFORMATION PER 1A BY TOWER ENGINEERING PROFESSIONALS DATED JUNE 1, 2022

POLE COORDINATES

POLE OWNER:

NAME	DUKE ENERGY
ADDRESS	401 SOUTH WILMINGTON STREET
CITY, STATE, ZIP	RALEIGH, NC 27601
CONTACT	BAILEY OUTEN
PHONE	(919) 334-0797

PROPERTY OWNER:

NAME	CAROLINA POWER & LIGHT CO.
ADDRESS	PO BOX 14042 C/O PENNEY DEVELLE ST
CITY, STATE, ZIP	ST PETERSBURG, FL 33733
CONTACT	TODD HARRIS
PHONE	(919) 546-7996

SITE APPLICANT:

NAME	DUKE ENERGY
ADDRESS	401 SOUTH WILMINGTON STREET
CITY, STATE, ZIP	RALEIGH, NC 27601
CONTACT	AARON COOK
PHONE	(919) 546-2036

AREA OF CONSTRUCTION:	180± S.F.
PRESENT OCCUPANCY TYPE:	ELECTRICAL SUBSTATION
PROPOSED OCCUPANCY TYPE:	TELECOMMUNICATIONS POLE
CURRENT ZONING:	RA-30
PARCEL ID:	139690 0028 01
JURISDICTION:	HARNETT COUNTY

UTILITIES:

POWER COMPANY:	DUKE ENERGY
CONTACT:	CUSTOMER SERVICE
PHONE:	(800) 452-2777
POLE # NEAR SITE:	UNKNOWN
TELEPHONE COMPANY:	UNKNOWN
CONTACT:	UNKNOWN
PHONE:	UNKNOWN
PEDESTAL # NEAR SITE:	UNKNOWN

PROJECT SUMMARY

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

1. 2018 NORTH CAROLINA BUILDING CODE (2015 IBC W/ AMENDMENTS)
2. NORTH CAROLINA CODE COUNCIL ANSI/TIA-222-G-H
3. NATIONAL ELECTRIC CODE (2020 EDITION)
4. CITY/COUNTY ORDINANCES
5. LOCAL BUILDING CODE

CODE COMPLIANCE

SURVEYOR:

NAME	N/A
ADDRESS	N/A
CITY, STATE, ZIP	N/A
CONTACT	N/A
PHONE	N/A

CIVIL ENGINEER:

NAME	TOWER ENGINEERING PROFESSIONALS, INC.
ADDRESS	326 TRYON ROAD
CITY, STATE, ZIP	RALEIGH, NC 27603
CONTACT	JOHN B. GOINS, P.E.
PHONE	(919) 661-6351

STRUCTURAL ENGINEER:

NAME	TOWER ENGINEERING PROFESSIONALS, INC.
ADDRESS	326 TRYON ROAD
CITY, STATE, ZIP	RALEIGH, NC 27603
CONTACT	AARON T. RUCKER, P.E.
PHONE	(919) 661-6351

ELECTRICAL ENGINEER:

NAME	TOWER ENGINEERING PROFESSIONALS, INC.
ADDRESS	326 TRYON ROAD
CITY, STATE, ZIP	RALEIGH, NC 27603
CONTACT	MARK S. QUAKENBUSH, P.E.
PHONE	(919) 661-6351

GEOTECHNICAL ENGINEER:

NAME	TOWER ENGINEERING PROFESSIONALS, INC.
ADDRESS	326 TRYON ROAD
CITY, STATE, ZIP	RALEIGH, NC 27603
CONTACT	JOHN D. LONGEST, P.E.
PHONE	(919) 661-6351

POLE MANUFACTURER:

NAME	VALMONT INDUSTRIES
ADDRESS	15000 VALMONT PLAZA
CITY, STATE, ZIP	OMAHA, NEBRASKA, 68154
CONTACT	CUSTOMER SERVICE
PHONE	1(402) 963-1000

PROJECT TEAM

PLANS PREPARED FOR:

DUKE ENERGY

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

811 Know what's below. Call before you dig.

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 ALL UTILITIES WITHIN THE LIMITS 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

PLANS PREPARED BY:

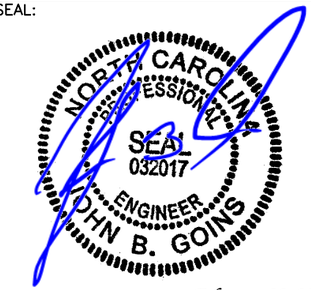
TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-5263
OFFICE: (919) 661-6351
www.tepgroup.net

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: RJW | CHECKED BY: JBG

SEAL:



February 28, 2024

SEAL:

SHEET NUMBER: **T-1**

REVISION: 4

TEP#:310883.677069

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 KNOWLEDGABLE 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 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. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE 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 FAULTS 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 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 DESCREPANCEIES 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 I 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; SPREAD 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 LIP 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 EXPERIENCE THE STRAIN OF THE CABLE SPOOL WIEGHT. 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:

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

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 032017 ENGINEER JOHN B. GOINS

September 30, 2022

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

DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

PROJECT NOTES

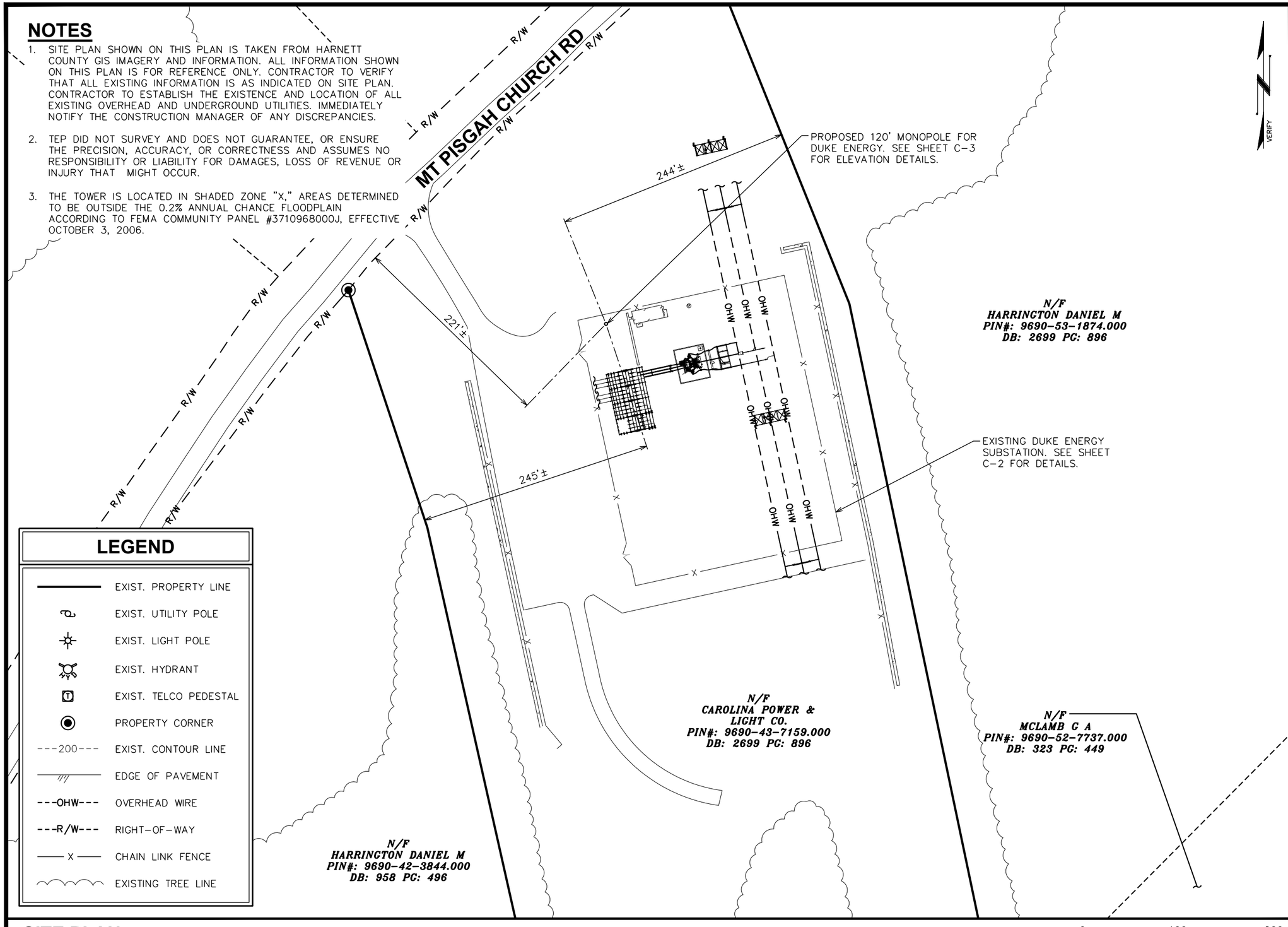
SHEET NUMBER: **N-1**

REVISION: **2**

TEP#: 310883.677069

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 CORRECTNESS 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.



LEGEND

- EXIST. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. LIGHT POLE
- EXIST. HYDRANT
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- ---200--- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE

SITE PLAN

SCALE: 1" = 100'

0 100 200

SCALE IN FEET

PLANS PREPARED FOR:

DUKE ENERGY.

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

PROJECT INFORMATION:

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

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
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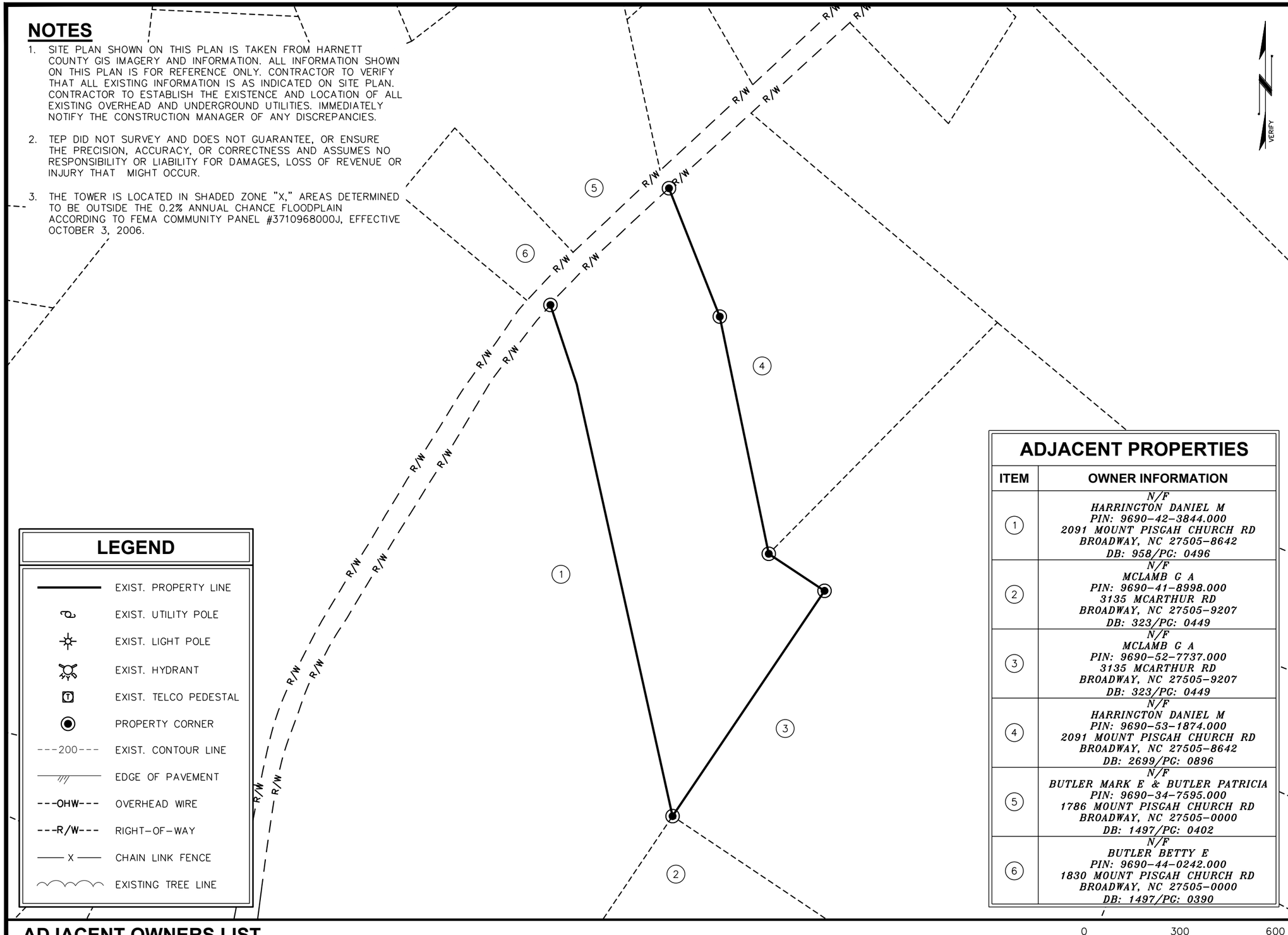

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- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE

ADJACENT PROPERTIES

ITEM	OWNER INFORMATION
1	N/F HARRINGTON DANIEL M PIN: 9690-42-3844.000 2091 MOUNT PISCAH CHURCH RD BROADWAY, NC 27505-8642 DB: 958/PG: 0496
2	N/F MCLAMB G A PIN: 9690-41-8998.000 3135 MCARTHUR RD BROADWAY, NC 27505-9207 DB: 323/PG: 0449
3	N/F MCLAMB G A PIN: 9690-52-7737.000 3135 MCARTHUR RD BROADWAY, NC 27505-9207 DB: 323/PG: 0449
4	N/F HARRINGTON DANIEL M PIN: 9690-53-1874.000 2091 MOUNT PISCAH CHURCH RD BROADWAY, NC 27505-8642 DB: 2699/PG: 0896
5	N/F BUTLER MARK E & BUTLER PATRICIA PIN: 9690-34-7595.000 1786 MOUNT PISCAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1497/PG: 0402
6	N/F BUTLER BETTY E PIN: 9690-44-0242.000 1830 MOUNT PISCAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1497/PG: 0390

ADJACENT OWNERS LIST

SCALE: 1" = 300'

0 300 600

SCALE IN FEET

PLANS PREPARED FOR:

DUKE ENERGY.

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

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PLANS PREPARED BY:

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February 28, 2024

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DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

ADJACENT OWNERS LIST

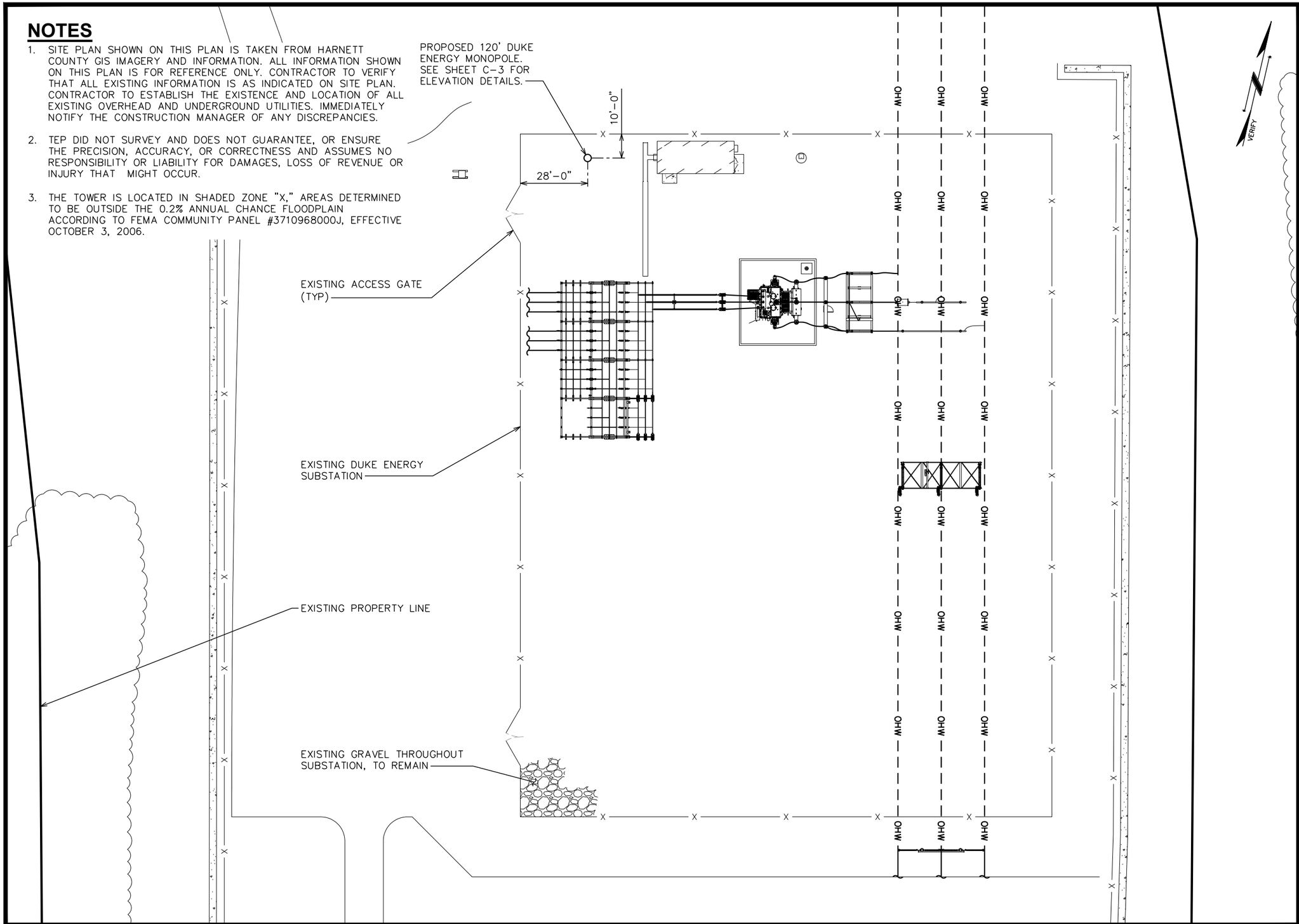
SHEET NUMBER: **C-1A**

REVISION: 4

TEP#: 310883.677069

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 CORRECTNESS 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.



COMPOUND DETAIL

SCALE: 1" = 40'

0 40 80

SCALE IN FEET

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

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 032017 ENGINEER JOHN B. GOINS

September 30, 2022

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

DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

COMPOUND DETAIL

SHEET NUMBER: **C-2**

REVISION: **2**

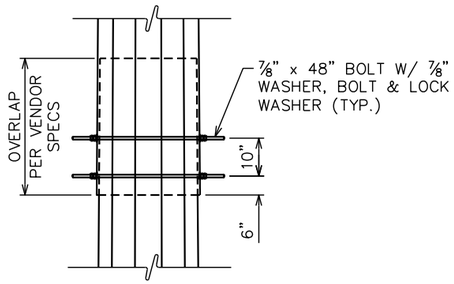
TEP#: 310883.677069

NOTE:

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

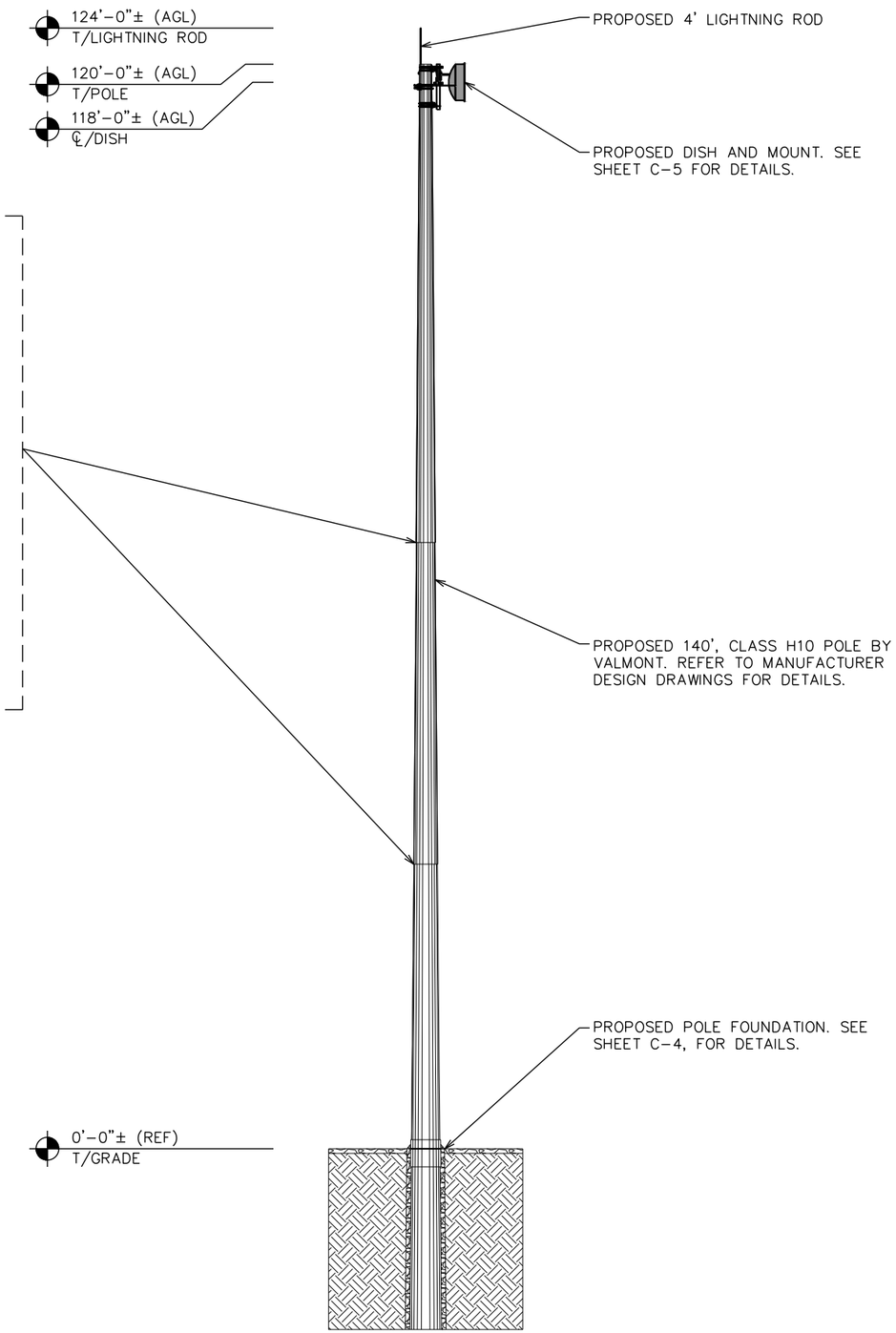
DETAIL NOTE:

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



POLE SLIP JOIN DETAIL

SCALE: N.T.S.



POLE ELEVATION

SCALE: 1/16" = 1'-0"

0 16 32

SCALE IN FEET

PLANS PREPARED FOR:

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N.C. LICENSE # C-1794

SEAL:

May 30, 2023

REV	DATE	ISSUED FOR:
3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION

DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

POLE ELEVATION

SHEET NUMBER: **C-3**

REVISION: 3

TEP#: 310883.677069

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.

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:

1. 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 HOLD TO THE GROUND SURFACE.
2. 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.
3. 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.
4. AFTER COMPLETION OF BACKFILLING, THE BACKFILL SHALL BE BANKED AROUND THE POLE TO AN ELEVATION OF 6" ABOVE THE EXISTING GRADE.

APPLIED LOADS

AXIAL	11898 LBS
MOMENT	819100 LB-FT
SHEAR	12343 LBS

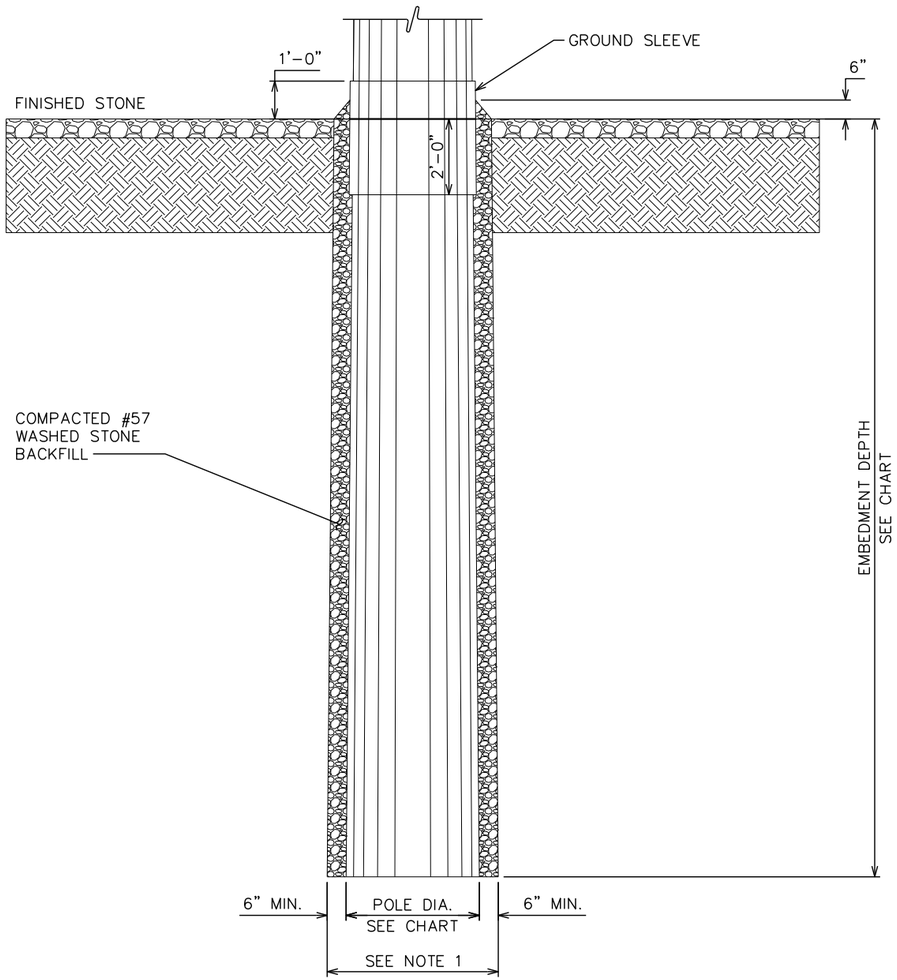
DESIGN REACTIONS TAKEN FROM THE STRUCTURAL ANALYSIS LISTED IN THE REFERENCED DOCUMENTS CHART ABOVE.

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.



POLE FOUNDATION DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

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SEAL:

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September 30, 2022

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DRAWN BY: RJW | CHECKED BY: JBG

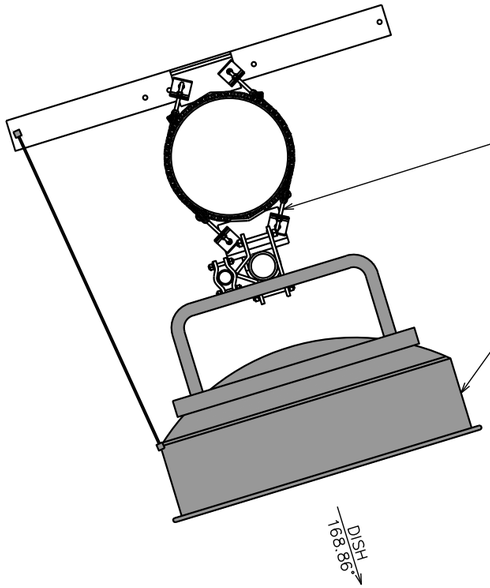
SHEET TITLE:

POLE FOUNDATION DETAIL & NOTES

SHEET NUMBER: **C-4**

REVISION: **2**

TEP#: 310883.677069



PROPOSED DISH @ 118'-0"

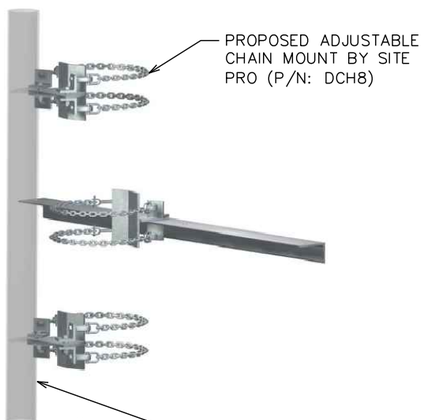
SCALE: ½" = 1'-0"

0 2 4

SCALE IN FEET

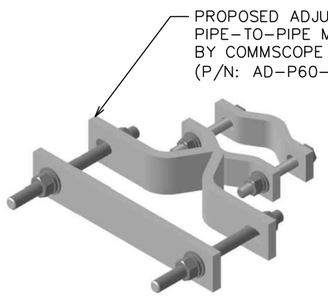
NOTE:

POLE DIAMETER AT 118': REFER TO POLE MANUFACTURER DRAWINGS



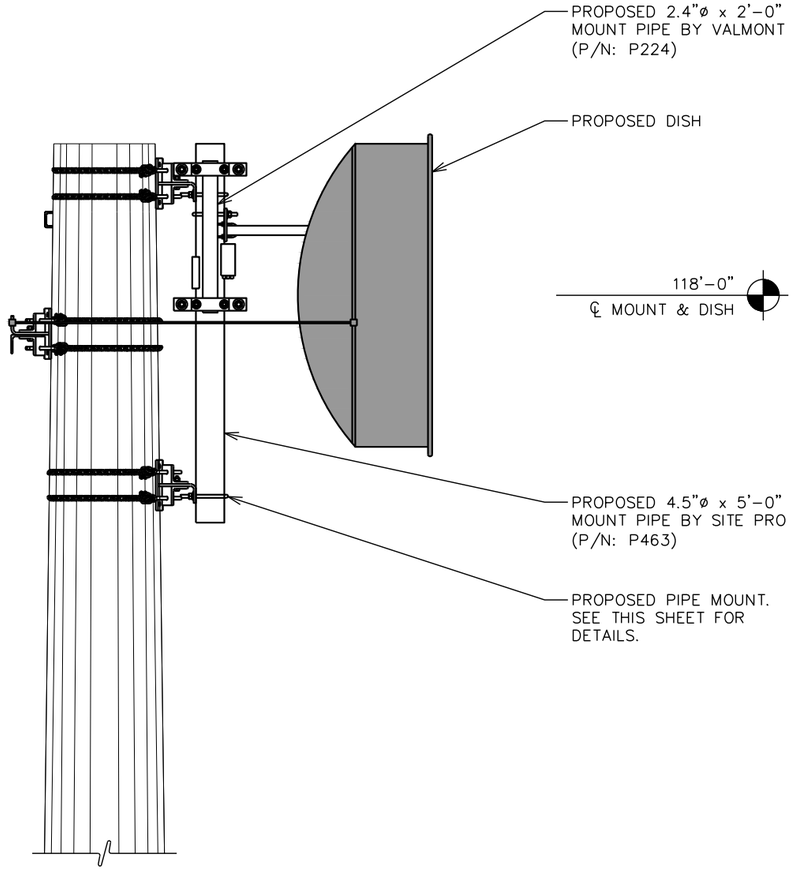
PROPOSED PIPE MOUNT

SCALE: N.T.S.



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	RADIOWAVES (HPD4-5.2)	℄ @ 118'-0"	168.86°	(1) CAT5e	*165'±
–	CAMBIUM (PMP450i NON-INTEGRATED)				

*CONTRACTOR SHALL FIELD VERIFY COAX LENGTH PRIOR TO CONSTRUCTION.

PROPOSED ANTENNA/COAX SCHEDULE

SCALE: N.T.S.

PLANS PREPARED FOR:

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DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

ANTENNA MOUNTING DETAILS

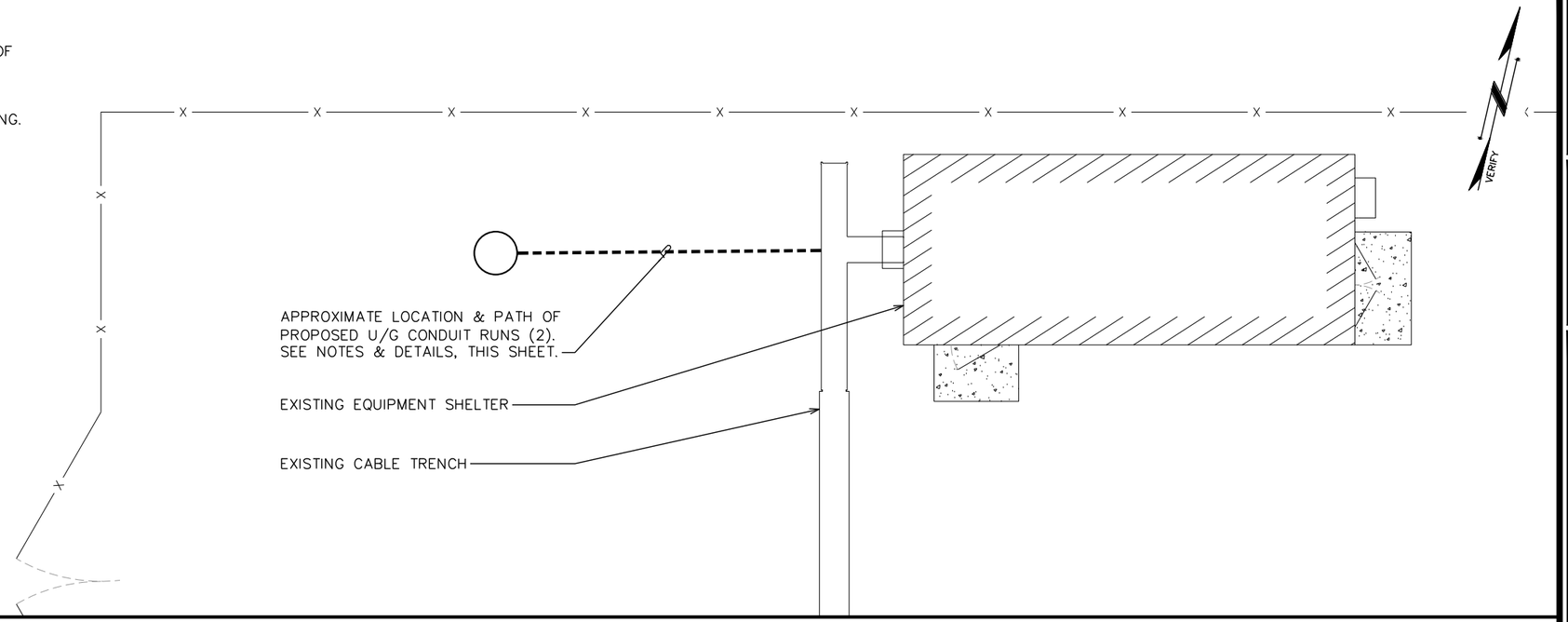
SHEET NUMBER: **C-5**

REVISION: 2

TEP #: 310883.677069

COMPOUND DETAIL

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

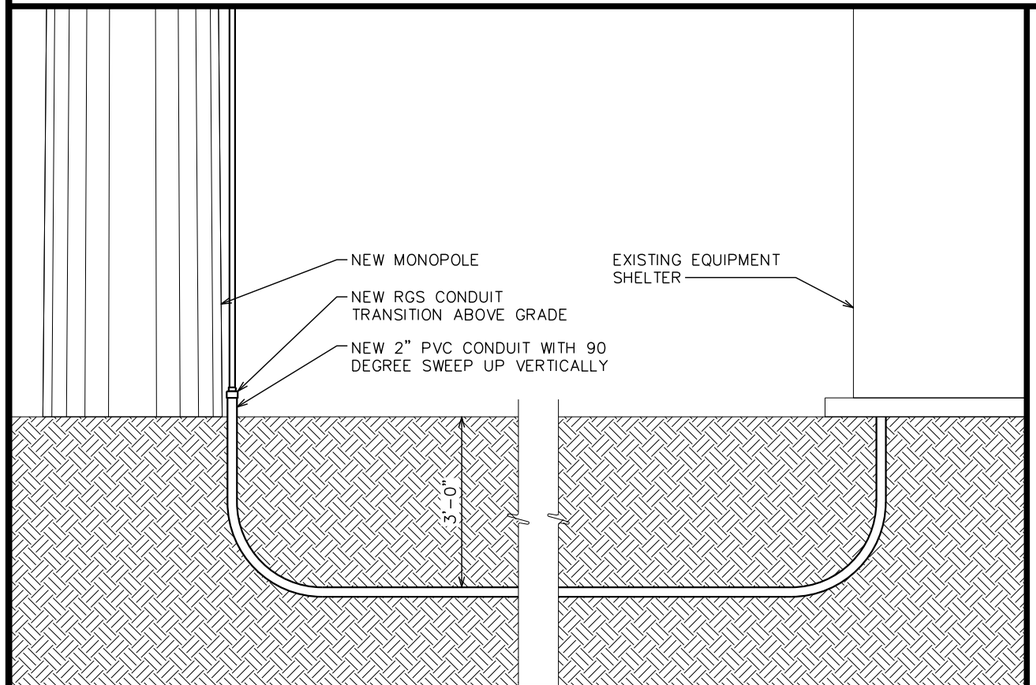


COMPOUND DETAIL

SCALE: 1" = 10'

0 10 20

SCALE IN FEET

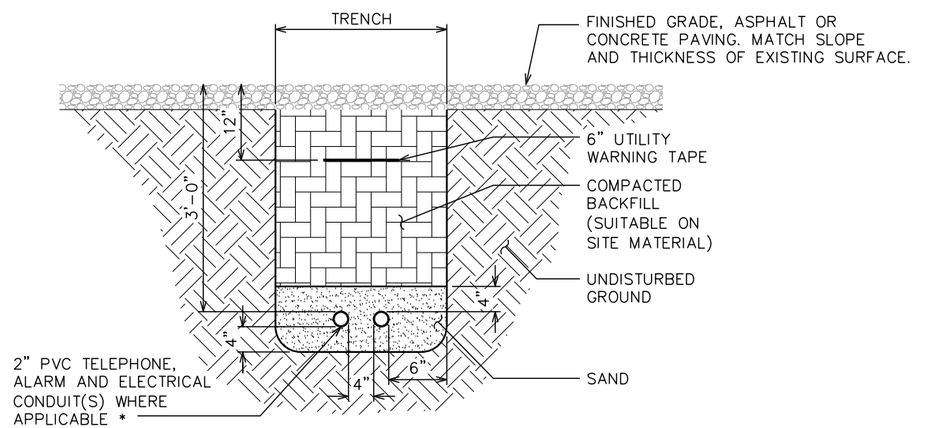


CONDUIT ROUTING DETAIL

SCALE: N.T.S.

NOTES:

1. ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
2. PROVIDE PVC CONDUIT BEOLOW 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.



* SEPARATION DIMENSIONS TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

DUKE ENERGY.

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DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

UNDERGROUND CONDUIT DETAILS

SHEET NUMBER: **C-6**

REVISION: **3**

TEP#: 310883.677069

SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, 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
   B. THE NATIONAL ELECTRIC CODE – NFPA-70
   C. REGULATIONS OF THE SERVING UTILITY COMPANY
   D. LOCAL AND STATE AMENDMENTS
   E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
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 EXPENSE TO THE OWNER.
2. THE WARRANTEE 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 AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM 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 DRAWING.
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, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUCTORS.
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 CODE FOR 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 BUSHING 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 NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, 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
AFG	–	ABOVE FINISHED GRADE
ATS	–	AUTOMATIC TRANSFER SWITCH
AWG	–	AMERICAN WIRE GAUGE
BCW	–	BARE COPPER WIRE
BFG	–	BELOW FINISHED GRADE
BKR	–	BREAKER
C	–	CONDUIT
CKT	–	CIRCUIT
DISC	–	DISCONNECT
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
PNLBD	–	PANELBOARD
PVC	–	RIGID NON-METALLIC CONDUIT
RGS	–	RIGID GALVANIZED STEEL CONDUIT
SW	–	SWITCH
TGB	–	TOWER GROUND BAR
UL	–	UNDERWRITERS LABORATORIES
V	–	VOLTAGE
W	–	WATTS
XFMR	–	TRANSFORMER
XMTR	–	TRANSMITTER

----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

PLANS PREPARED FOR:

DUKE ENERGY.

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DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

ELECTRICAL NOTES

SHEET NUMBER: **E-1**

REVISION: 2

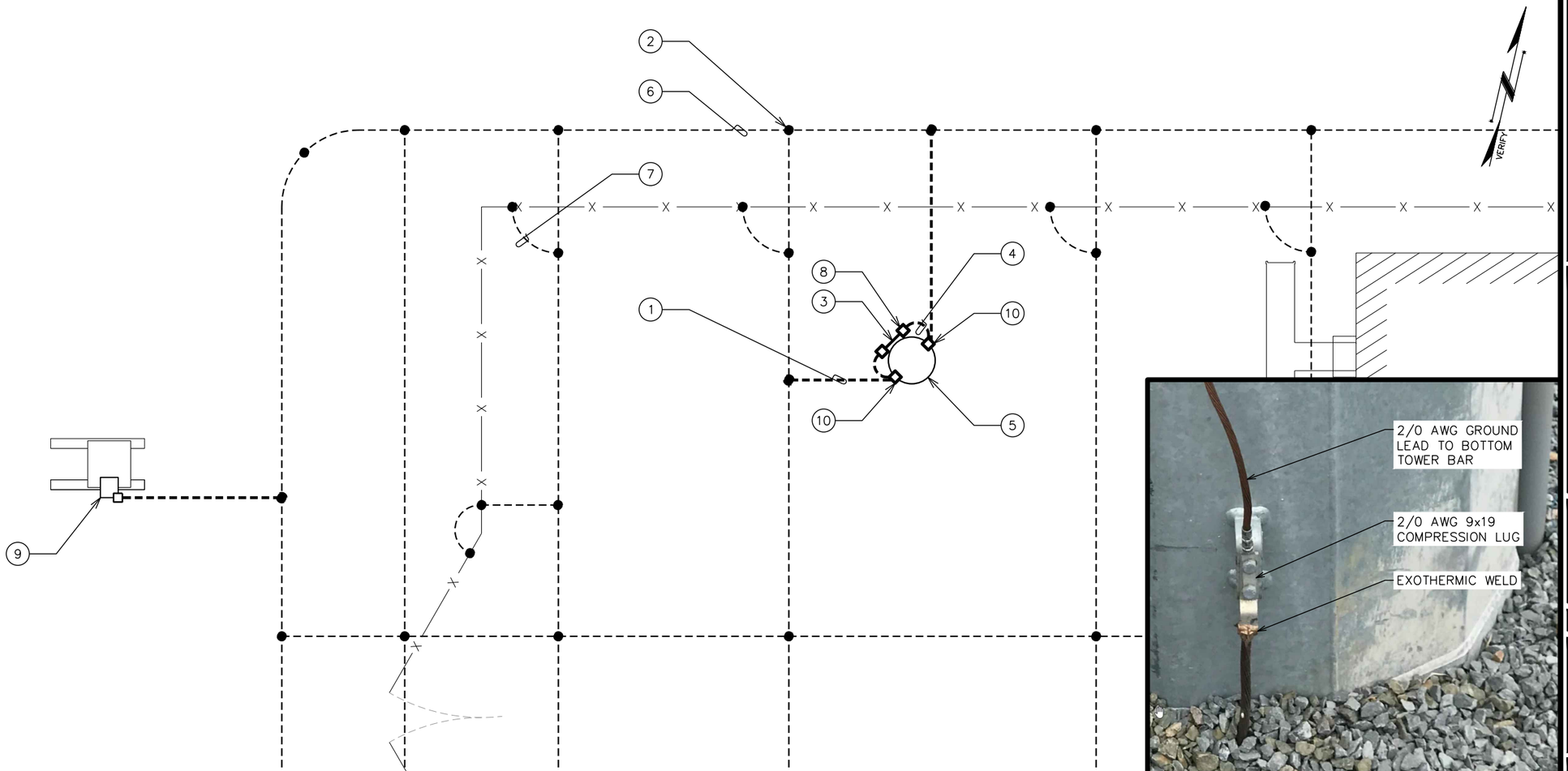
TEP#: 310883.677069

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 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 ¾" 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.



TOWER GROUNDING PLAN

SCALE: ⅛" = 1'-0"

0 8 16

SCALE IN FEET

GROUND BRACKET 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.tepgroup.net

N.C. LICENSE # C-1794

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 032017 ENGINEER JOHN B. GOINS

September 30, 2022

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

DRAWN BY: RJW CHECKED BY: JBG

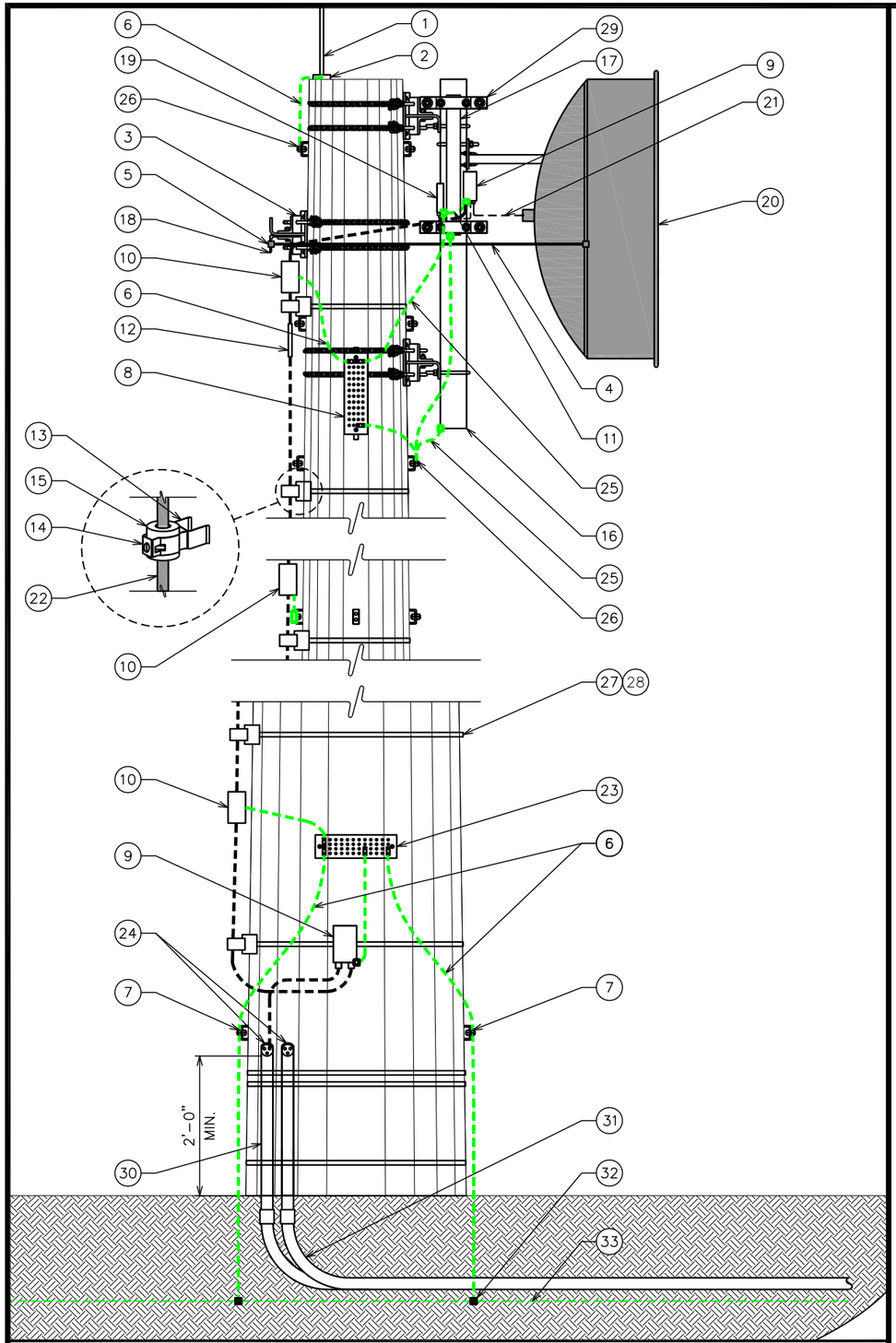
SHEET TITLE:

TOWER GROUNDING AND ROUTING PLAN

SHEET NUMBER: **E-2**

REVISION: 2

TEP #: 310883.677069



MONOPOLE ELEVATION (FRONT VIEW)

SCALE: N.T.S.

BILL OF MATERIALS - TELECOMMUNICATIONS

ITEM	QTY	MAXIMO PART NUMBER	DESCRIPTION
1	1	1505632	AIR TERMINAL, COPPER CLAD AIR BASE, ½" DIA. 48" TESSCO 448478
2	1	1479387	TERMINAL BRONZE AIR BASE, ½" DIA. INTERNALLY THREADED HUB
3	1	1588737	MOUNT, ANTENNA, CHAIN MOUNT, TIE BACK ARMS, U-BOLTS
4	1	NO MAXIMO P/N	DISH ANTENNA STABILIZER BAR
5	1	NO MAXIMO P/N	STIFF ARM SUPPORT BRACKET FOR 2⅜"
6	25'-0"	1502506	WIRE/CABLE, 2/0 AWG, CU SOFT DRAWN, 19 STR, BARE COPPER, CLASS B
7	2	1504572	CONNECTOR, ELECTRICAL TERMINAL LUG, 2/0 AWG CONDUCTOR, (2) ⅜" HOLE TERMINATION, BLACK STD COMPRESSION
8	1	1525371	TOP GROUND BAR, 2"WD x 12"LG x ¼"THK W/ INSULATORS & BRACKETS, (18) PRE-DRILLED 7/16" HOLES
9	2	1539777	LIGHTNING PROTECTION UNIT KIT, GROUNDING, ETHERNET CABLE, PREFITTED CABLE GLAND, CONNECTOR, GROUNDING WIRE/CABLE, 2/0 AWG, CU, SOFT DRAWN, 19 STR, BARE COPPER, CLASS B, (2) LPU'S PER KIT
10	3	1539778	KIT, SHIELD GROUNDING, GROUND STRIPS, TAPE, GROUND BOLT & NUT
11	3'-0"	1502506	INCLUDED IN LPU KIT
12	1	1554484	GRIP, CABLE HOISTING, ⅜" CABLE, SS, PRE-LACED
13	50	1473338	BRACKET, UNIVERSAL STANDOFF MOUNTING, NO ADAPTER
14	5	1505037	1⅝" CABLE HANGER, SNAP-IN, STACKABLE, (10) PER PACK
15	5	1564840	1⅝" UNIVERSAL SNAP-IN, BARREL CUSHION, 14-36MM, (10) PER BOX
16	1	1503531	4½" OD PIPE MOUNT, 5' LONG
17	1	1479381	2⅜" OD PIPE MOUNT, 2' LONG
18	1	1501289	BRACKET MOUNTING, HOT DIPPED GALVANIZED STEEL
19	1	1546830	CAMBIUM PMP 450i NON-CONNECTORIZED RADIO
20	1	1564958	ANTENNA, PARABOLIC DISH, 5.25-5.85GHZ, N-FEMALE CONNECTOR, 4' HIGH PERFORMANCE DUAL POLE, 34.1 DBI GAIN
21	1	1570020	COAX JUMPER, LMR-400, 3' LONG, N MALE TO N MALE
22	1	1539773	WIRE/CABLE, CAT5, 4 PAIR, 24 AWG, CU SHIELDED INSULATION, 328' SPOOLS
23	1	1505048	BOTTOM GROUND BAR, 4"WD x 14"LG x ¼"THK, TINNED W/ HARDWARE
24	2	904105	WEATHERHEAD, SERVICE ENTRANCE, 2" RIGID PVC SLIP-ON WEATHERHEAD
25	2	NO MAXIMO P/N	WIRE/CABLE, 6 AWG, CU SOFT DRAWN, BARE COPPER, CLASS B
26	6	1503888	CONNECTOR, ELECTRICAL, TERMINAL, LUG, 2/0 AWG CONDUCTOR, (2) ½" STUD HOLE TERMINATION, BLACK, 1¾" CENTER
27	3	1490605	¾" BANDING, 100' LONG, 3" THK, 316 SS, 1800 LB, ASSUME 6' DIA.
28	40	1490606	BUCKLE, BANDING, ¾" WD, SS
29	1	1501289	BRACKET, MOUNTING, GALV. BOOM GATE CLAMP SET, 4½" TO 12", 60° ANGLE LEGS

BILL OF MATERIALS - TRANSMISSION

ITEM	QTY	MAXIMO PART NUMBER	DESCRIPTION
30	2	61354	2" x 10' SCH. 40 GRAY PVC W/COUPLING ON ONE END
31	2	UNKNOWN	2" x 9½" RADIUS SCH. 40, 90 DEGREE PVC ELBOW
32	1	NO MAXIMO P/N	POWDER, WELDING, EXO. #300PLUS20, LIGHT GREEN
33	N/A	N/A	EXISTING SUBSTATION GROUNDING MAT

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N.C. LICENSE # C-1794

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 032017 ENGINEER JOHN B. GOINS

September 22, 2022

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

DRAWN BY: RJW | CHECKED BY: JBG

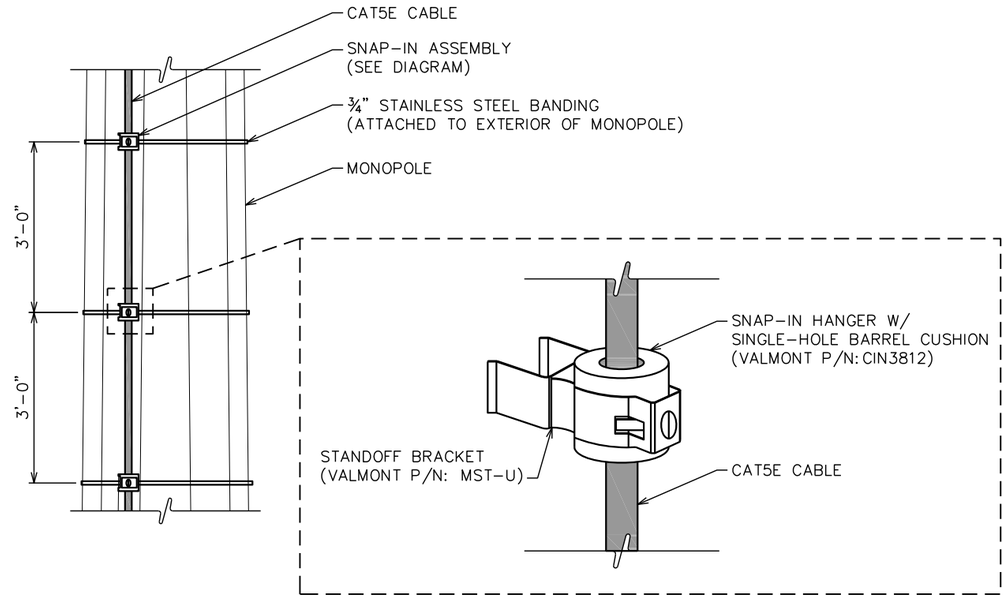
SHEET TITLE:

BILL OF MATERIALS

SHEET NUMBER: **E-3**

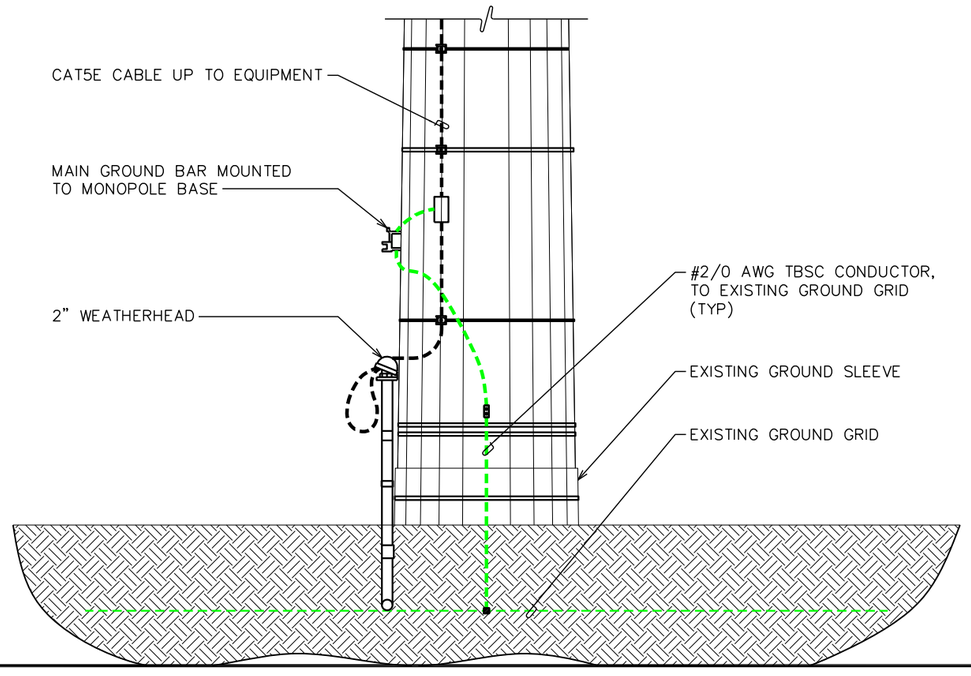
REVISION: 2

TEP#: 310883.677069



MONOPOLE GROUNDING

SCALE: N.T.S.



MONOPOLE BASE DETAIL (SIDE VIEW)

SCALE: N.T.S.

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DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

GROUNDING DETAILS I

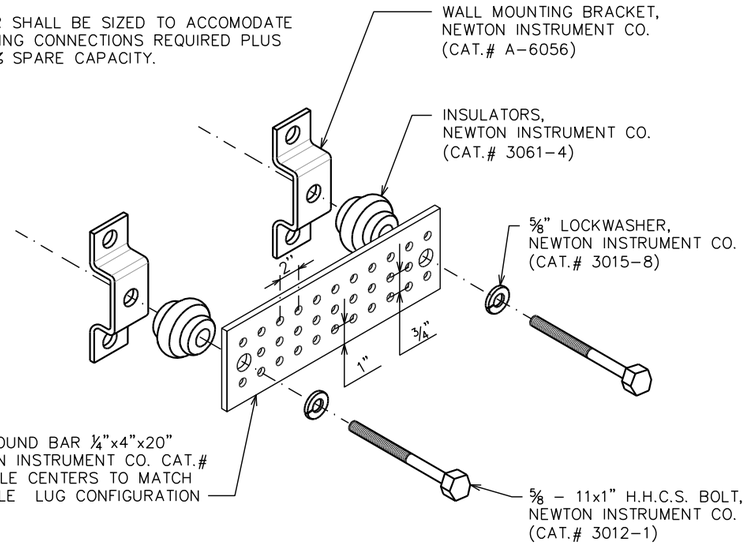
SHEET NUMBER: **E-4**

REVISION: 2

TEP#: 310883.677069

NOTE:

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

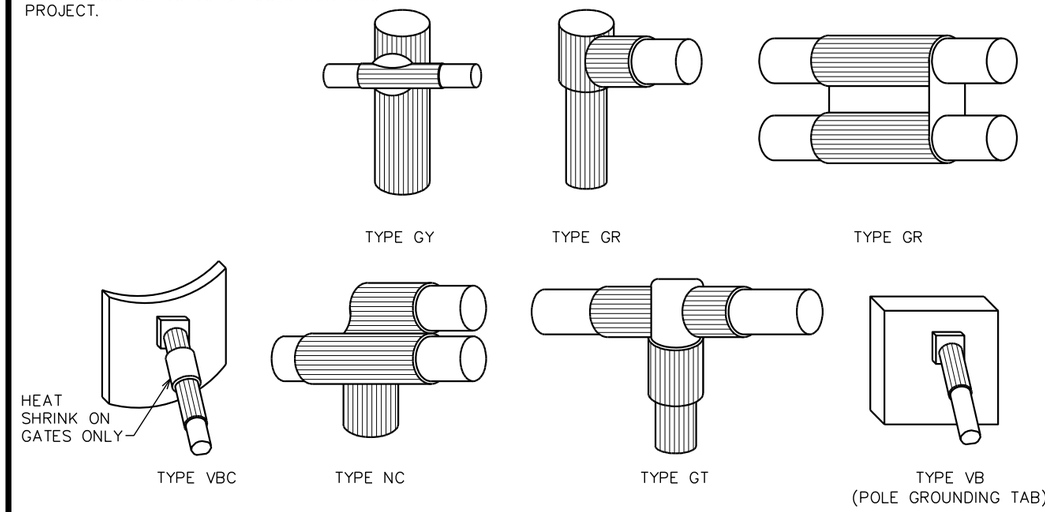


STANDARD GROUND BAR DETAIL

SCALE: N.T.S.

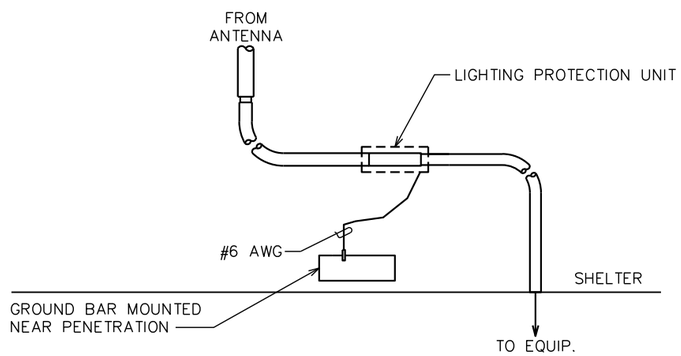
NOTE:

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



EXOTHERMIC WELD DETAILS

SCALE: N.T.S.

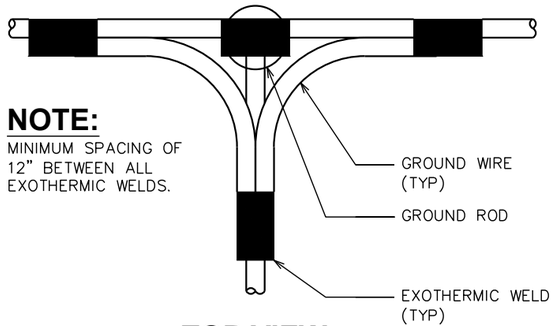


POE CABLE GROUNDING DETAIL

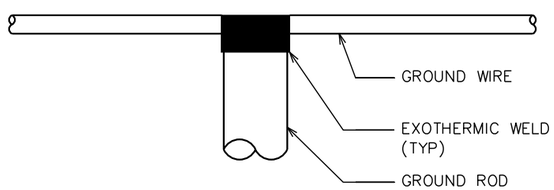
SCALE: N.T.S.

NOTE:

MINIMUM SPACING OF 12" BETWEEN ALL EXOTHERMIC WELDS.



TOP VIEW



SIDE VIEW

EXOTHERMIC WELD GROUNDING DETAIL

SCALE: N.T.S.

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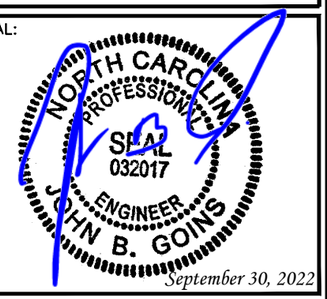

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SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER: **E-5**

REVISION: 2

TEP#: 310883.677069