

GENERAL NOTES:

- ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED DUKE ENERGY OR ITS DESIGNATED REPRESENTATIVE.
- 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.
- 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.
- WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2018 NC BUILDING CODE (2015 IBC W/ AMENDMENTS).
- 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.
- ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
- 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.
- 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.
- ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
- 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:

- 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.
- UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - STRUCTURAL STEEL, ASTM DESIGNATION A36 OR A992.
 - ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.
 - ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.
 - ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
- ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, LOAD AND, RESISTANCE FACTOR DESIGN, 13TH EDITION.
- HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
- HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
- REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTE; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF ANY EXCESS.
- A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- 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.
- FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.
- 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.
- 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.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- 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:



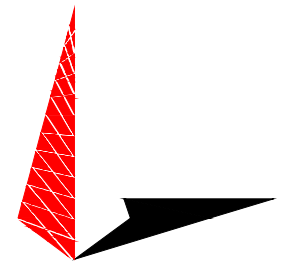
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

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:



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.


PLANS PREPARED FOR:

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PROJECT INFORMATION:
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 T2443 (NCBWY015)**
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SEAL:

 September 30, 2022













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

DRAWN BY: RJW | CHECKED BY: JBG

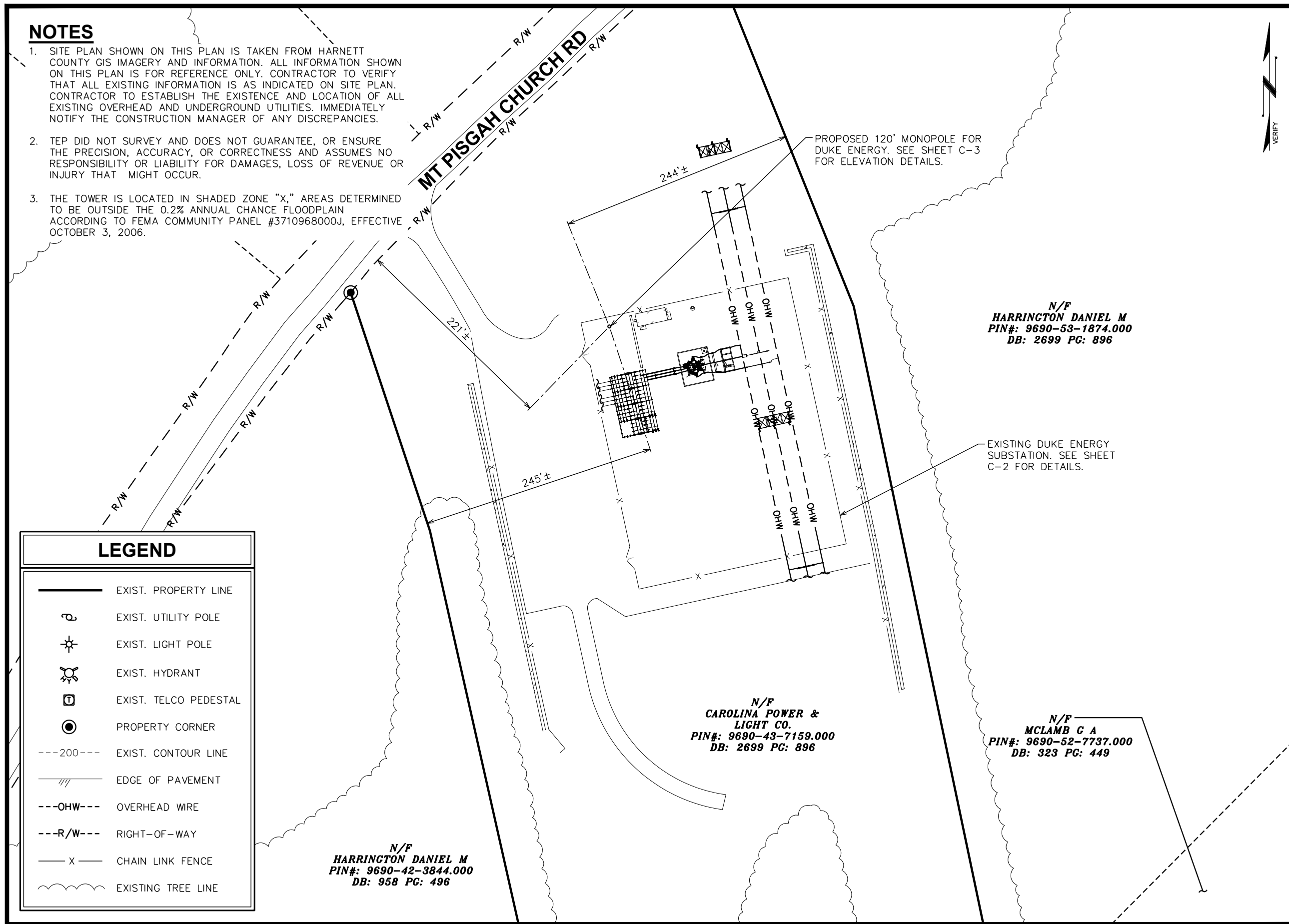
SHEET TITLE:
SITE PLAN

SHEET NUMBER: **C-1** | REVISION: **2**
 TEP#: 310883.677069

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'



NOTES

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SEAL:

 February 28, 2024







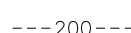
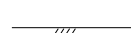

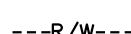
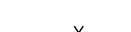

4	02-28-24	JURISDICTION COMMENTS
3	05-30-23	ADD POLE CONNECTION
2	09-30-22	CONSTRUCTION
1	08-29-22	CLIENT COMMENTS
REV	DATE	ISSUED FOR:

DRAWN BY: RJW | CHECKED BY: JBG

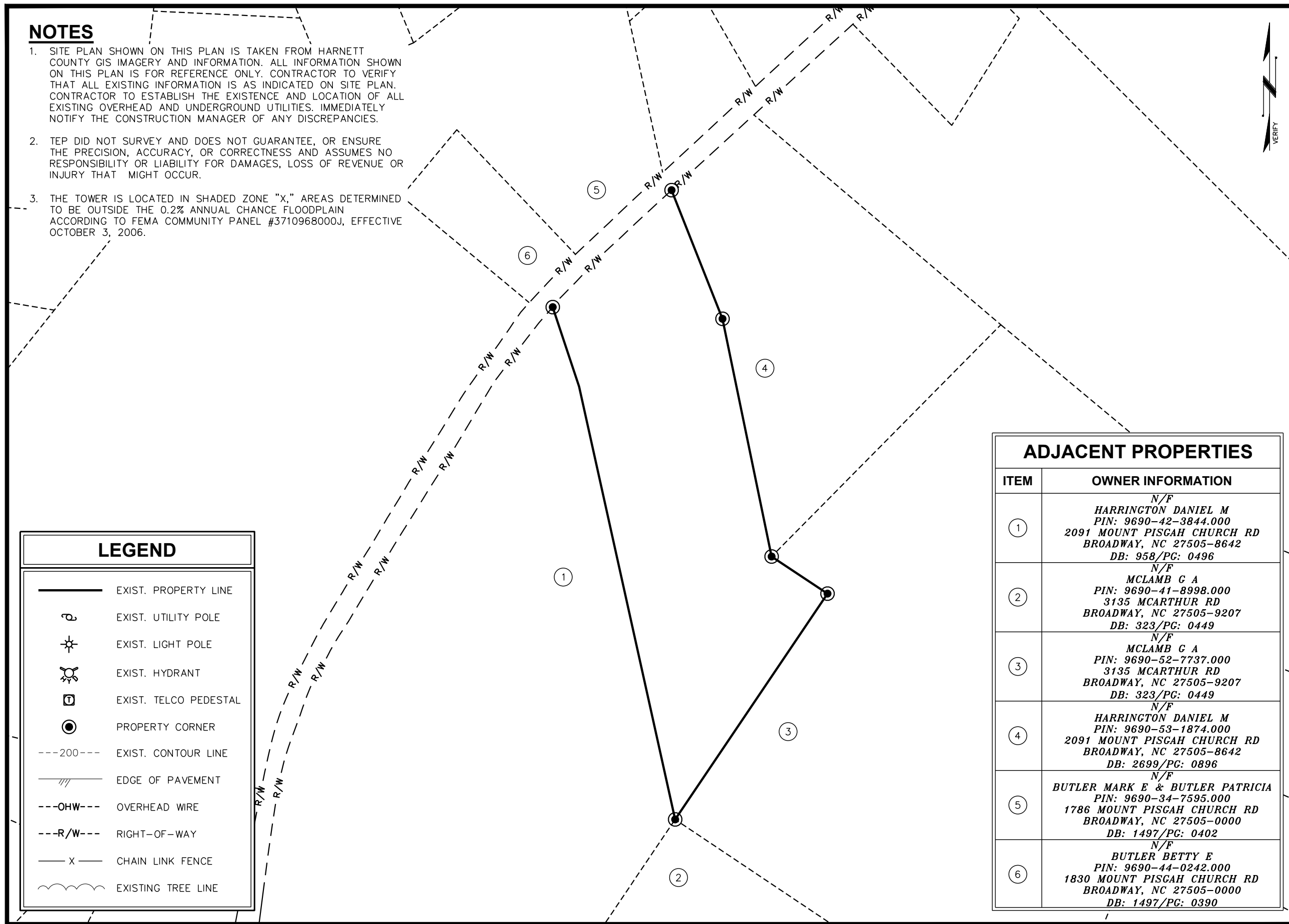
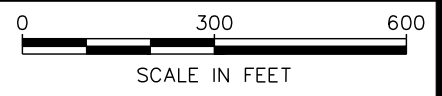
SHEET TITLE:
ADJACENT OWNERS LIST

SHEET NUMBER: **C-1A** | REVISION: **4**
 TEP#: 310883.677069

ADJACENT PROPERTIES	
ITEM	OWNER INFORMATION
①	N/F HARRINGTON DANIEL M PIN: 9690-42-3844.000 2091 MOUNT PISGAH 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 PISGAH 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 PISGAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1497/PG: 0402
⑥	N/F BUTLER BETTY E PIN: 9690-44-0242.000 1830 MOUNT PISGAH CHURCH RD BROADWAY, NC 27505-0000 DB: 1497/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
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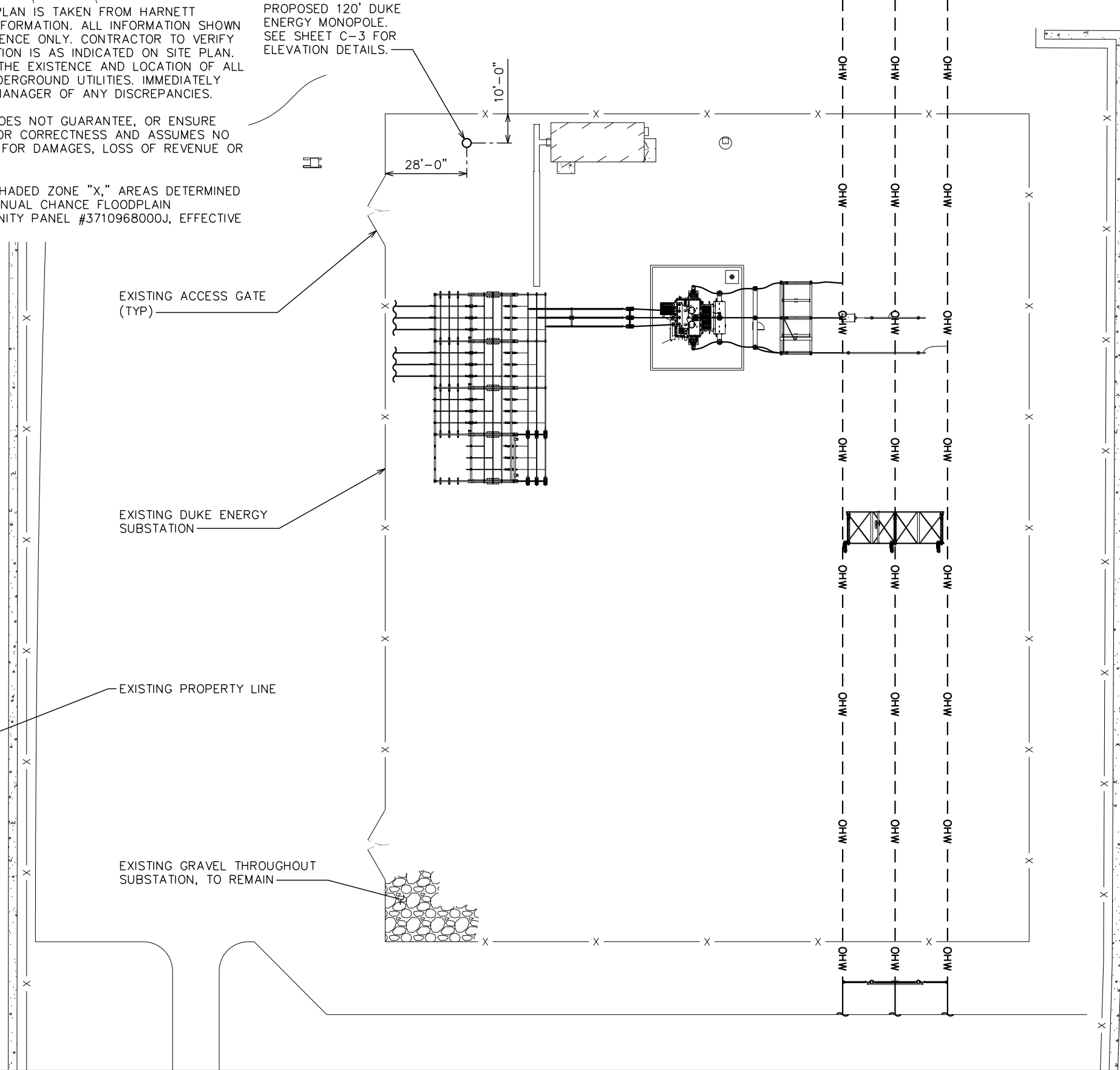
ADJACENT OWNERS LIST
 SCALE: 1" = 300'



NOTES

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



PLANS PREPARED FOR:



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:



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

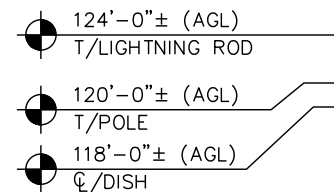
SHEET NUMBER: **C-2** | REVISION: **2**
TEP#: 310883.677069

COMPOUND DETAIL
SCALE: 1" = 40'



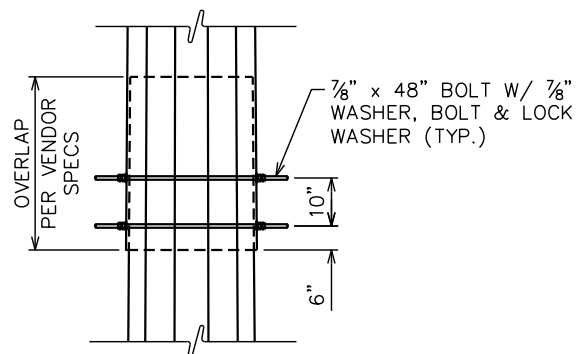
NOTE:

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



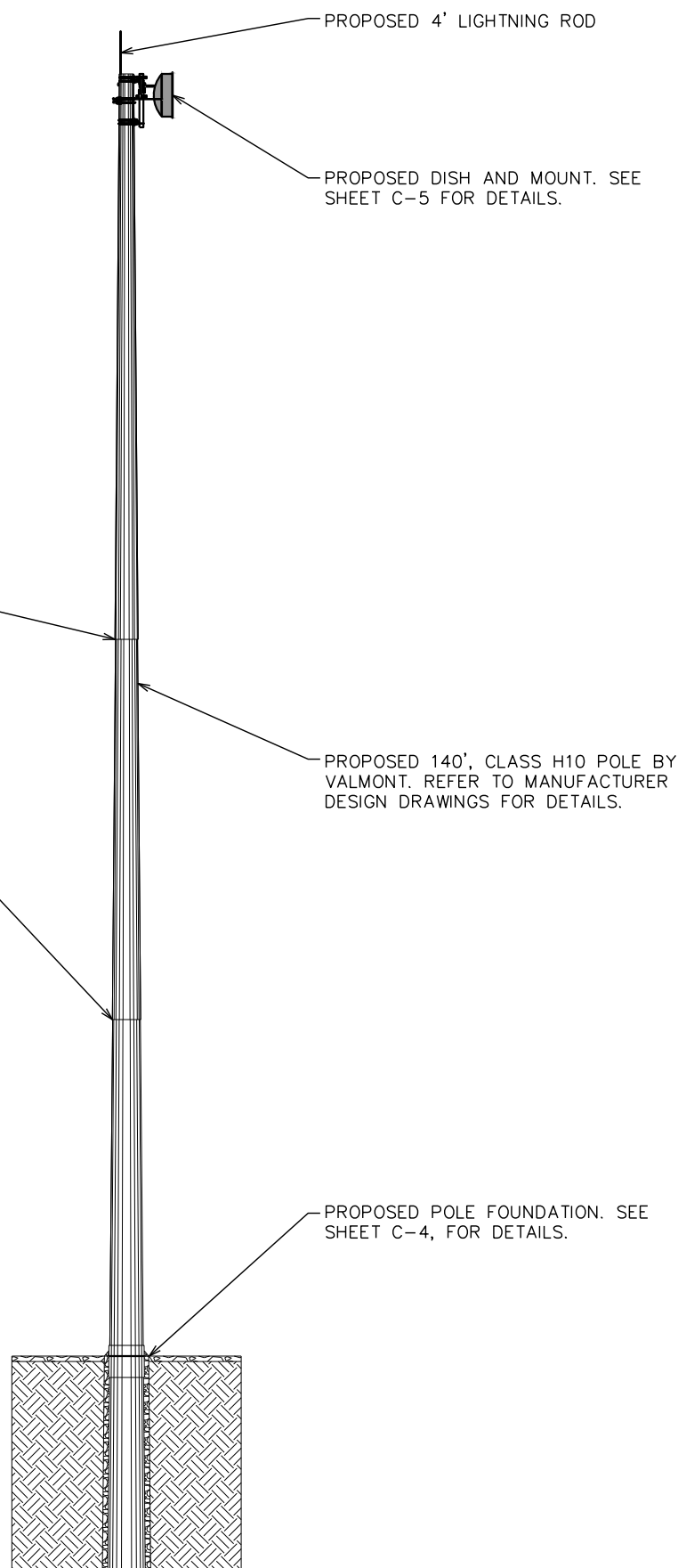
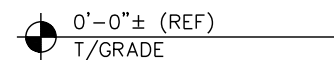
DETAIL NOTE:

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.



PLANS PREPARED FOR:



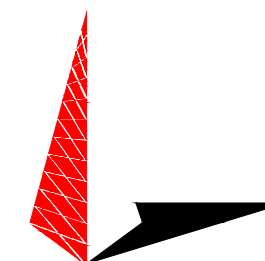
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SEAL:



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: RJW CHECKED BY: JBG

SHEET TITLE:

POLE ELEVATION

SHEET NUMBER: C-3	REVISION: 3 TEP#: 310883.677069
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POLE ELEVATION

SCALE: 1/8" = 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

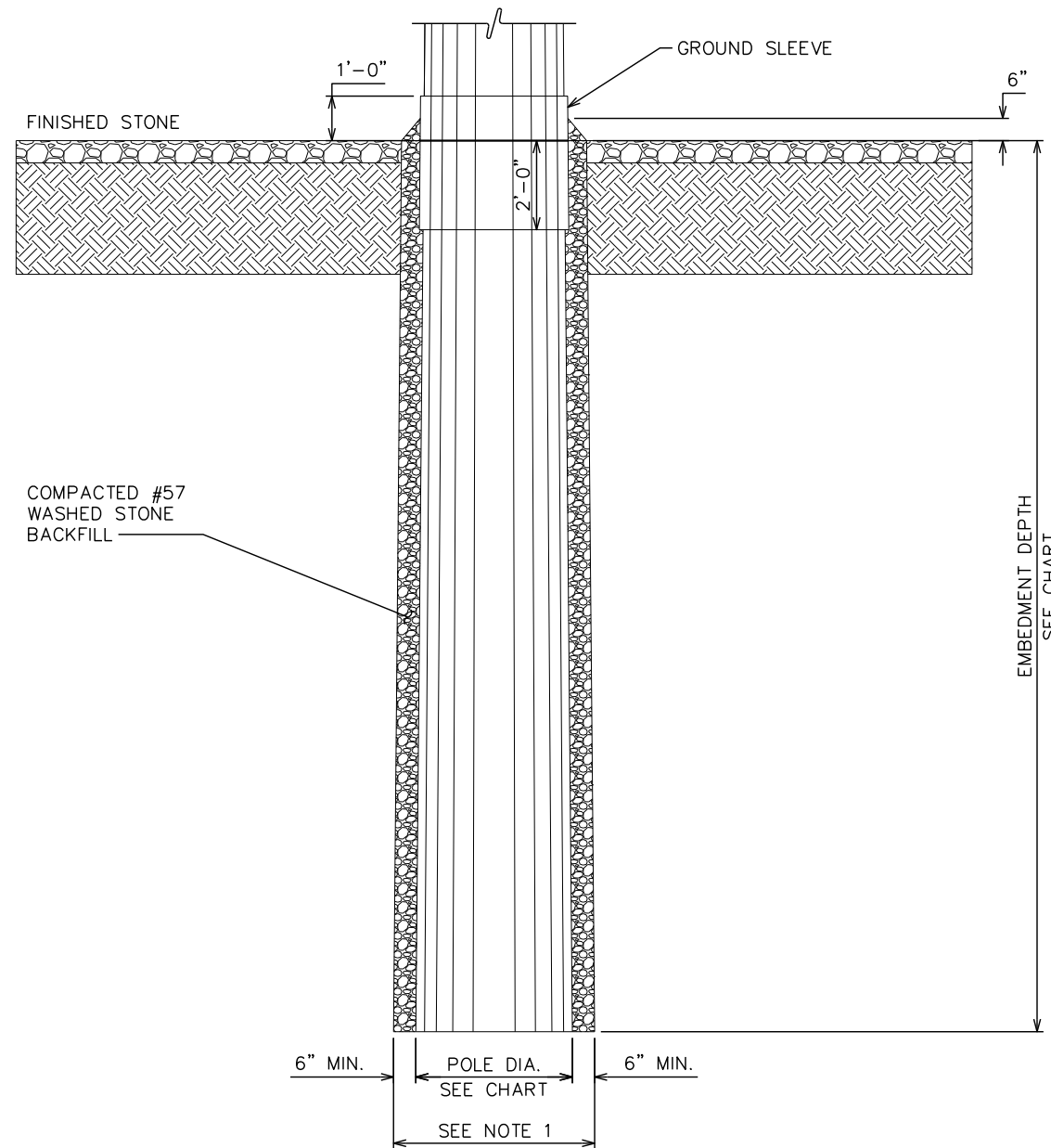
TOP OD	BASE OD	EMBEDMENT DEPTH	OVERALL POLE LENGTH
37.27"	41.00"	20'	140.00'

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:



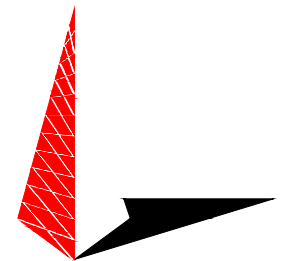
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

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:



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:

POLE FOUNDATION DETAIL & NOTES

SHEET NUMBER:

C-4

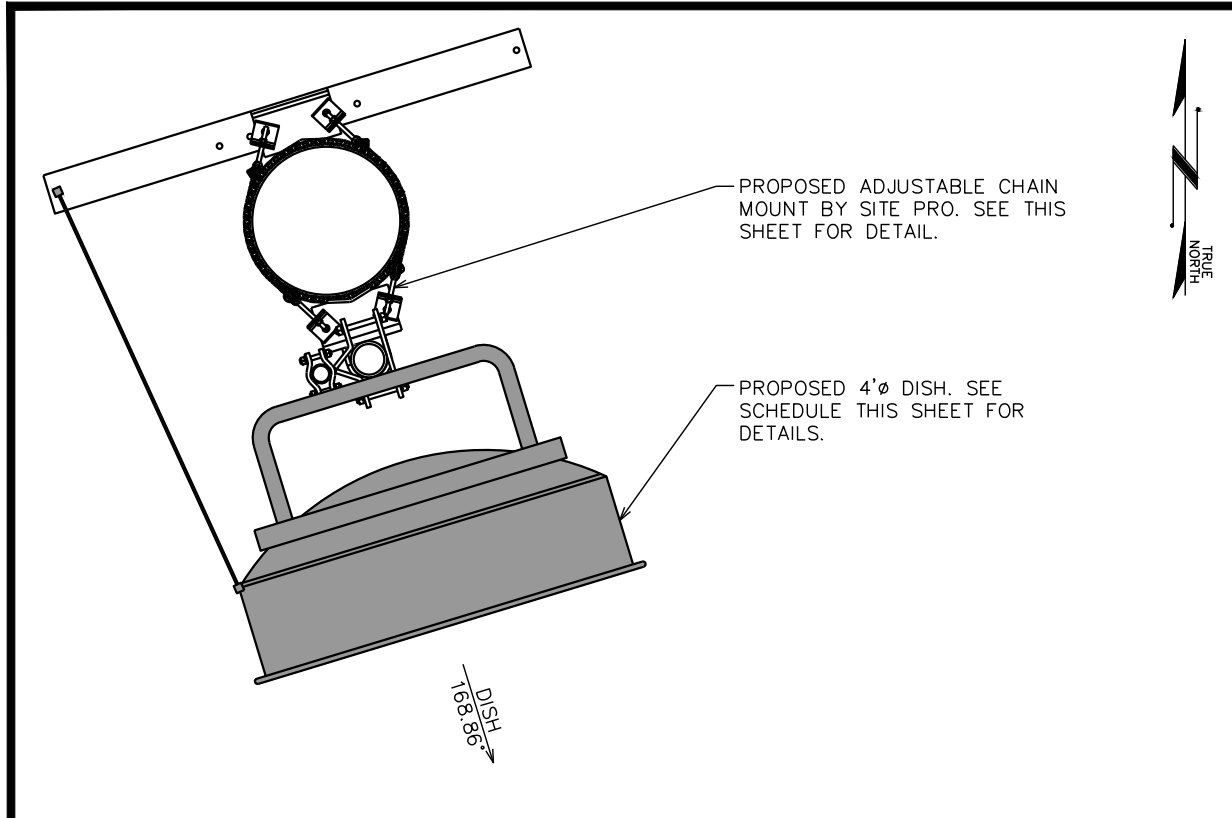
REVISION:

2

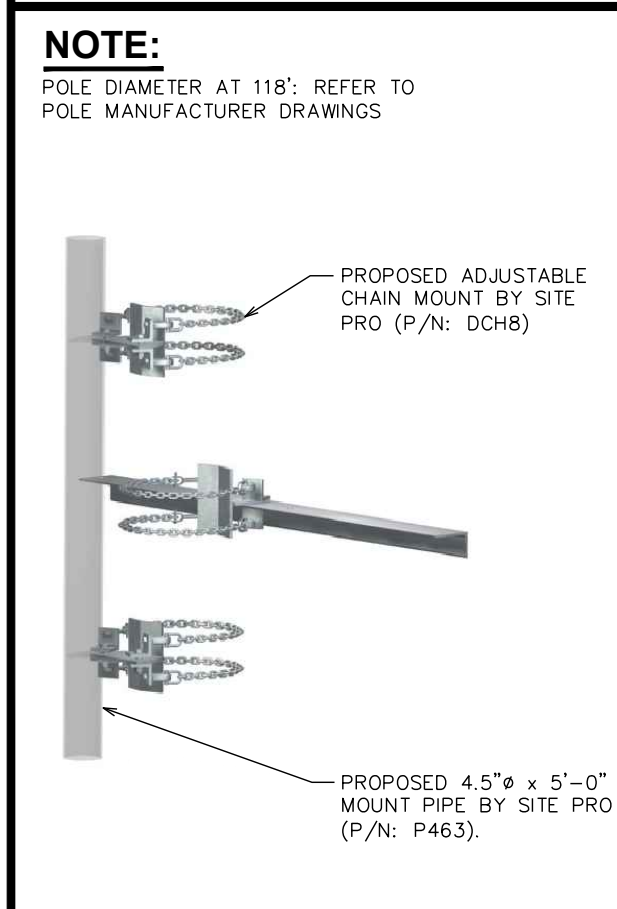
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POLE FOUNDATION DETAIL

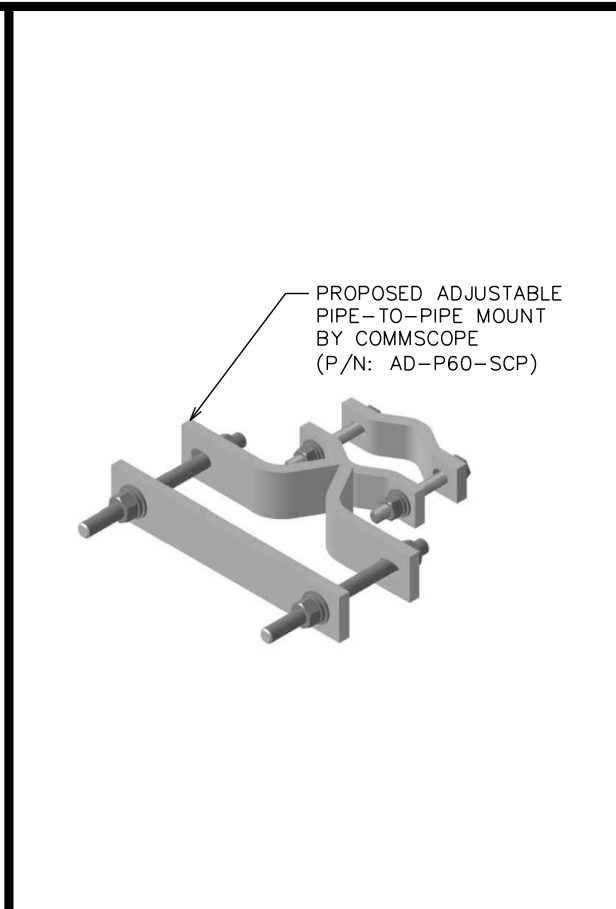
SCALE: N.T.S.



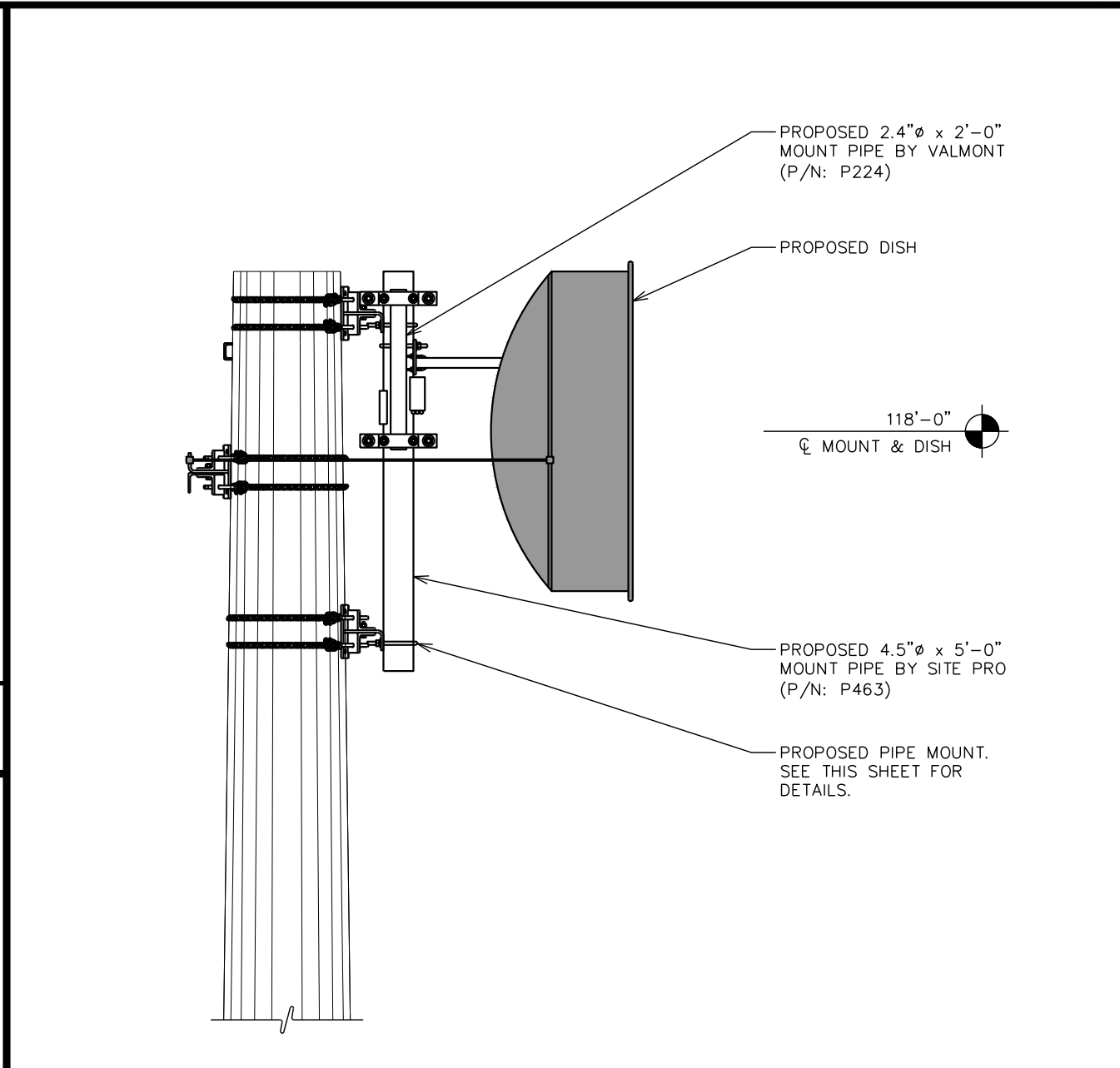
PROPOSED DISH @ 118'-0"
 SCALE: 1/2" = 1'-0"
 SCALE IN FEET



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:

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

PROJECT INFORMATION:
**BEAR BRANCH 230 SUB
 T2443 (NCBWY015)**
 1833 MT. PISGAH CHURCH RD
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 326 TRYON ROAD
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SEAL:

 JOHN B. GOINS
 ENGINEER
 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:
**ANTENNA MOUNTING
 DETAILS**

SHEET NUMBER: **C-5** REVISION: **2**
 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															
<p>A – AMPERE</p> <p>AFG – ABOVE FINISHED GRADE</p> <p>ATS – AUTOMATIC TRANSFER SWITCH</p> <p>AWG – AMERICAN WIRE GAUGE</p> <p>BCW – BARE COPPER WIRE</p> <p>BFG – BELOW FINISHED GRADE</p> <p>BKR – BREAKER</p> <p>C – CONDUIT</p> <p>CKT – CIRCUIT</p> <p>DISC – DISCONNECT</p> <p>EGR – EXTERNAL GROUND RING</p> <p>EMT – ELECTRIC METALLIC TUBING</p> <p>FSC – FLEXIBLE STEEL CONDUIT</p> <p>GEN – GENERATOR</p> <p>GPS – GLOBAL POSITIONING SYSTEM</p> <p>GRD – GROUND</p> <p>IGB – ISOLATED GROUND BAR</p> <p>IGR – INTERIOR GROUND RING (HALO)</p> <p>KW – KILOWATTS</p> <p>NEC – NATIONAL ELECTRIC CODE</p> <p>PCS – PERSONAL COMMUNICATION SYSTEM</p> <p>PH – PHASE</p> <p>PNL – PANEL</p>	<p>PNLBD – PANELBOARD</p> <p>PVC – RIGID NON-METALLIC CONDUIT</p> <p>RGS – RIGID GALVANIZED STEEL CONDUIT</p> <p>SW – SWITCH</p> <p>TGB – TOWER GROUND BAR</p> <p>UL – UNDERWRITERS LABORATORIES</p> <p>V – VOLTAGE</p> <p>W – WATTS</p> <p>XFMR – TRANSFORMER</p> <p>XMTR – TRANSMITTER</p>														
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; border-bottom: 1px dashed black;">E</td> <td style="border-bottom: 1px dashed black;">UNDERGROUND ELECTRICAL CONDUIT</td> </tr> <tr> <td style="width: 20%; border-bottom: 1px dashed black;">T</td> <td style="border-bottom: 1px dashed black;">UNDERGROUND TELEPHONE CONDUIT</td> </tr> <tr> <td style="width: 20%; text-align: center;">⏏</td> <td>KILOWATT-HOUR METER</td> </tr> <tr> <td style="width: 20%; border-bottom: 1px dashed black;">-----</td> <td style="border-bottom: 1px dashed black;">UNDERGROUND BONDING AND GROUNDING CONDUCTOR.</td> </tr> <tr> <td style="width: 20%; text-align: center;">∅</td> <td>GROUND ROD</td> </tr> <tr> <td style="width: 20%; text-align: center;">●</td> <td>EXOTHERMIC WELD</td> </tr> <tr> <td style="width: 20%; text-align: center;">⊠</td> <td>GROUND ROD WITH INSPECTION WELL</td> </tr> </table>		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
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PLANS PREPARED FOR:



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T2443 (NCBWY015)**


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BROADWAY, NC 27505
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SEAL:



2	09-30-22	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:

**ELECTRICAL
NOTES**

SHEET NUMBER:	REVISION:
E-1	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 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.

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SEAL:



September 30, 2022

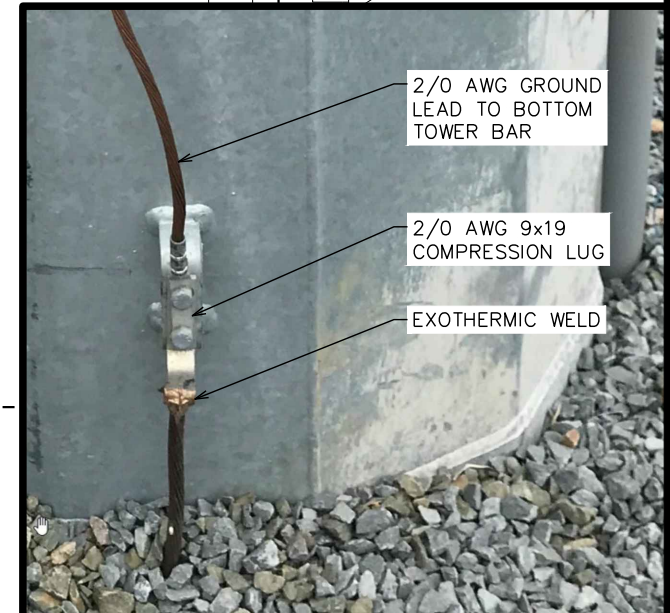
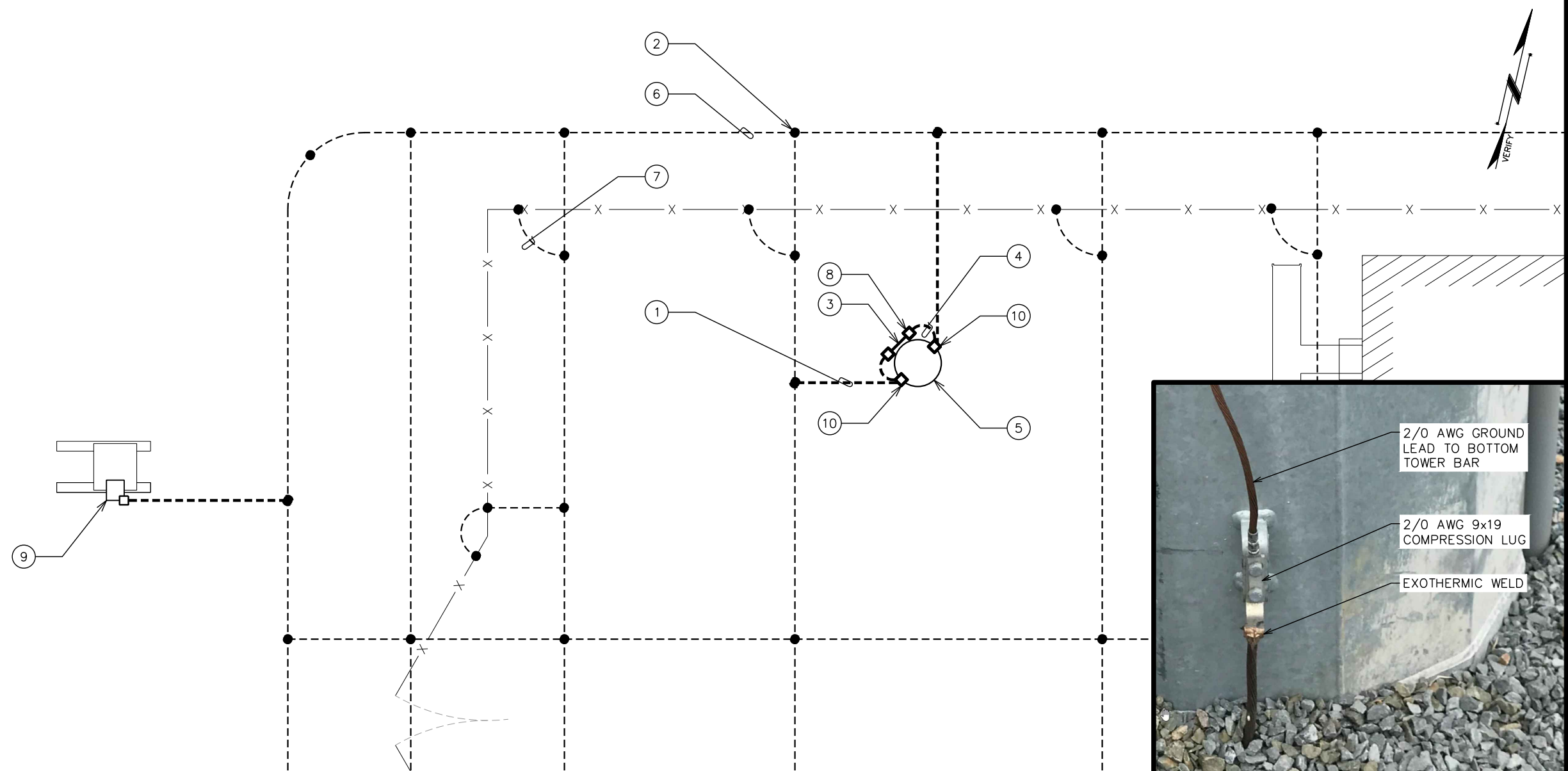
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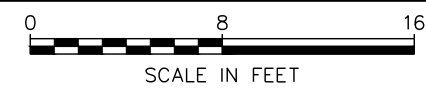
**TOWER GROUNDING
AND ROUTING PLAN**

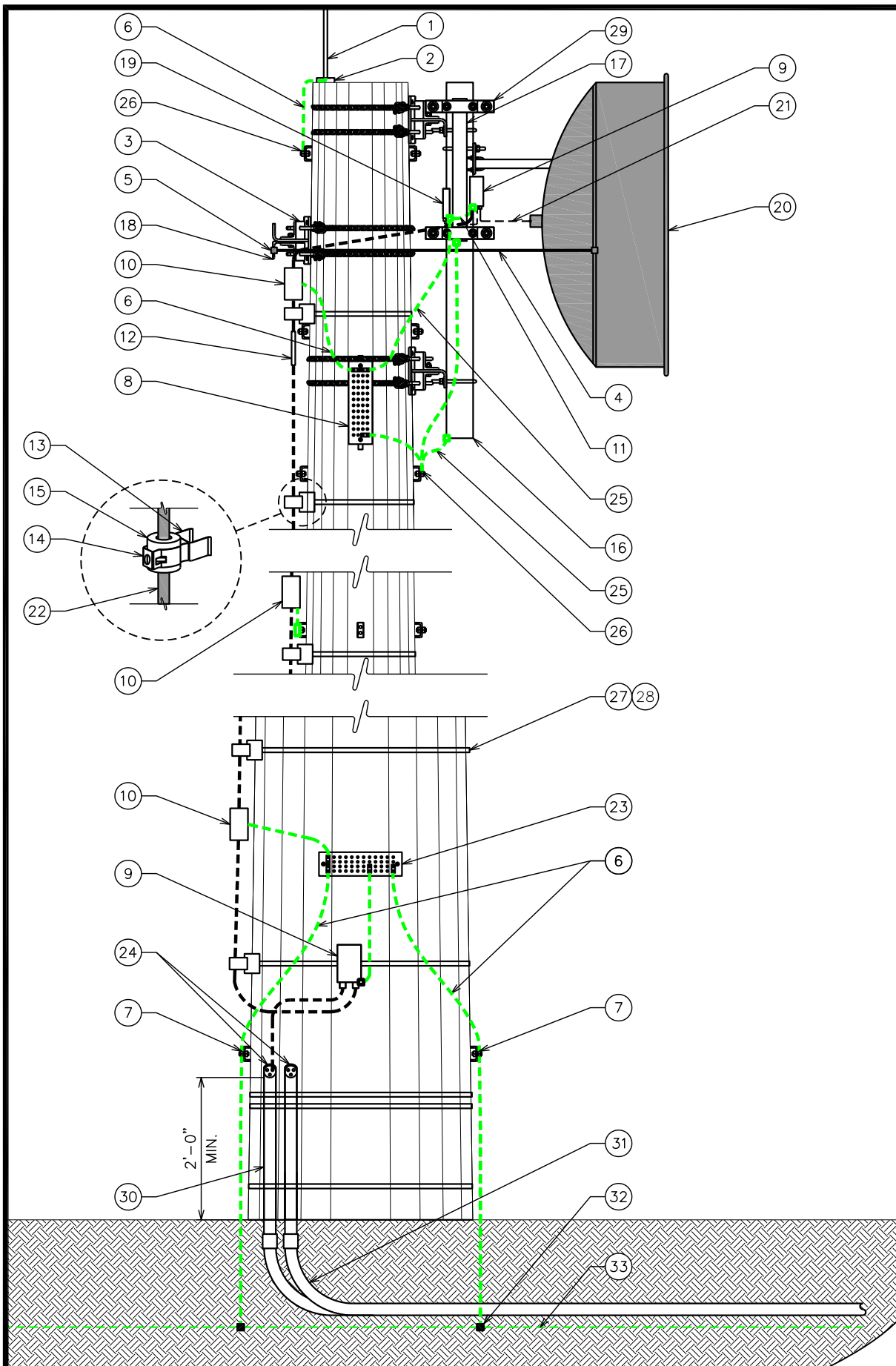
SHEET NUMBER: **E-2** | REVISION: **2**
TEP#: 310883.677069



GROUND BRACKET DETAIL
SCALE: N.T.S.

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





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, 1/2" DIA. 48" TESSCO 448478
2	1	1479387	TERMINAL BRONZE AIR BASE, 1/2" 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 2 3/8"
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) 3/8" HOLE TERMINATION, BLACK STD COMPRESSION
8	1	1525371	TOP GROUND BAR, 2"WD x 12"LG x 1/4"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, 3/8" CABLE, SS, PRE-LACED
13	50	1473338	BRACKET, UNIVERSAL STANDOFF MOUNTING, NO ADAPTER
14	5	1505037	1 5/8" CABLE HANGER, SNAP-IN, STACKABLE, (10) PER PACK
15	5	1564840	1 5/8" UNIVERSAL SNAP-IN, BARREL CUSHION, 14-36MM, (10) PER BOX
16	1	1503531	4 1/2" OD PIPE MOUNT, 5' LONG
17	1	1479381	2 3/8" 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 1/4"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) 1/2" STUD HOLE TERMINATION, BLACK, 1 3/4" CENTER
27	3	1490605	3/4" BANDING, 100' LONG, 3" THK, 316 SS, 1800 LB, ASSUME 6' DIA.
28	40	1490606	BUCKLE, BANDING, 3/4" WD, SS
29	1	1501289	BRACKET, MOUNTING, GALV. BOOM GATE CLAMP SET, 4 1/2" 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 9 1/2" 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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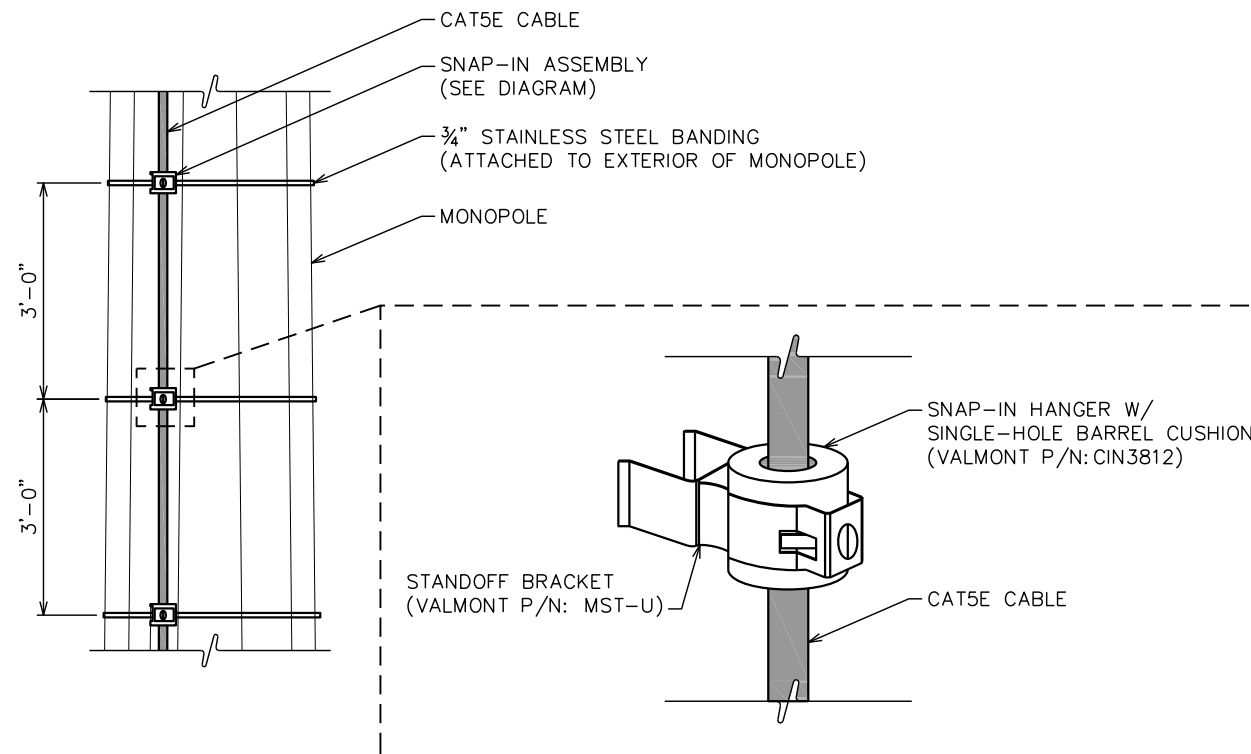
SEAL:

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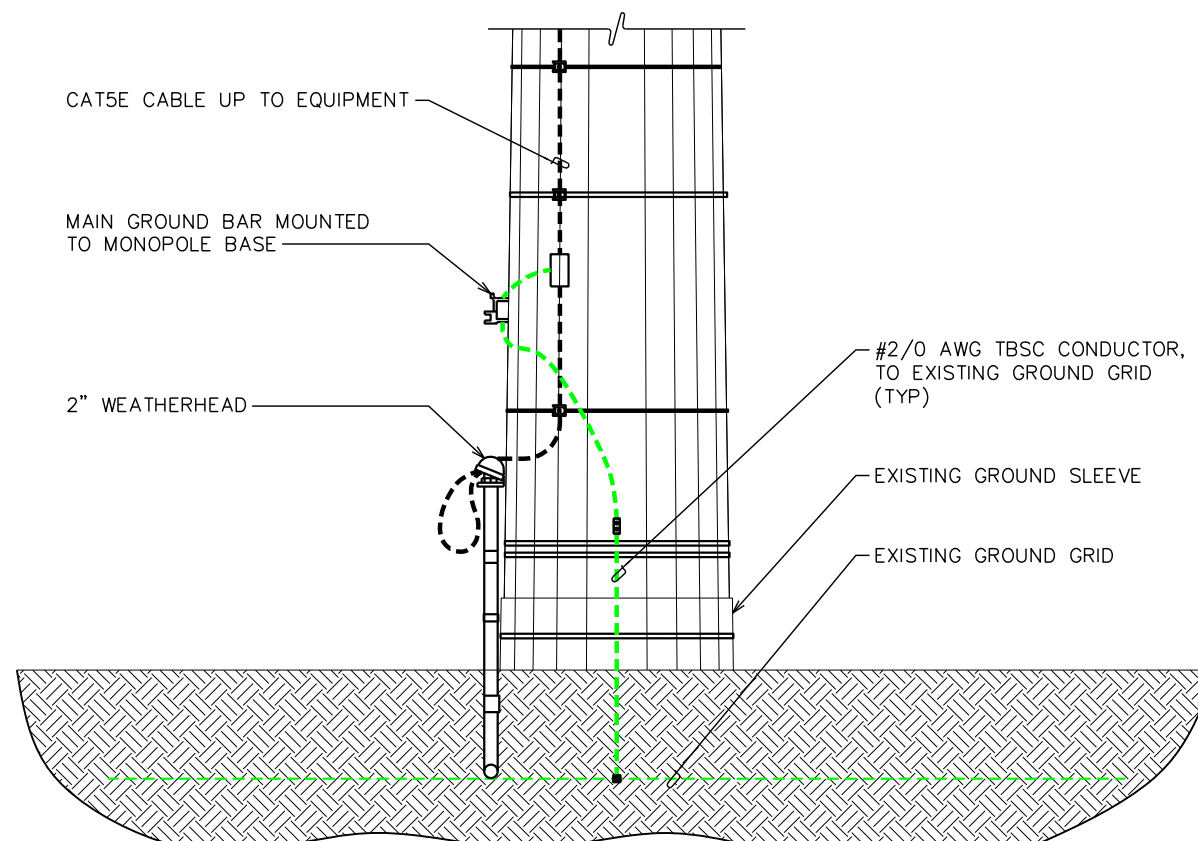
SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: **E-3** REVISION: **2**
 TEP#: 310883.677069



MONOPOLE GROUNDING

SCALE: N.T.S.



MONOPOLE BASE DETAIL (SIDE VIEW)

SCALE: N.T.S.

PLANS PREPARED FOR:



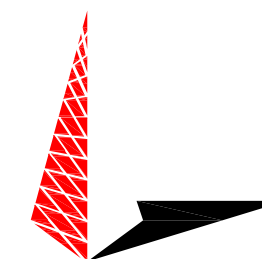
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1	08-29-22	CLIENT COMMENTS
0	06-21-22	PRELIMINARY CONSTRUCTION

DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER:

E-4

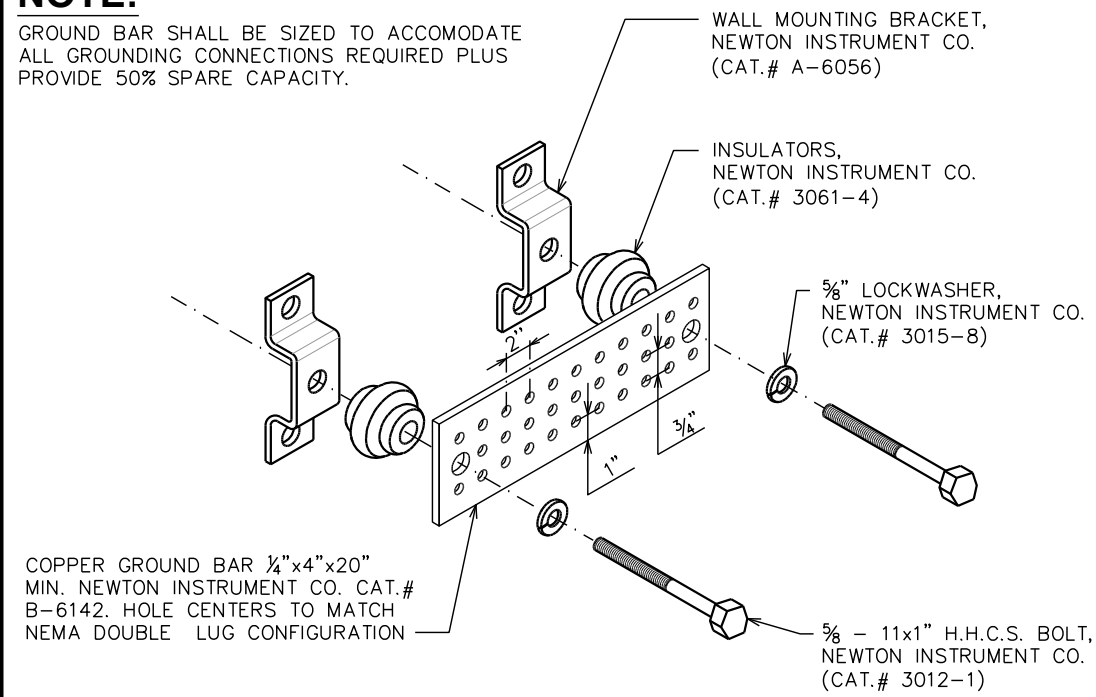
REVISION:

2

TEP#: 310883.677069

NOTE:

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

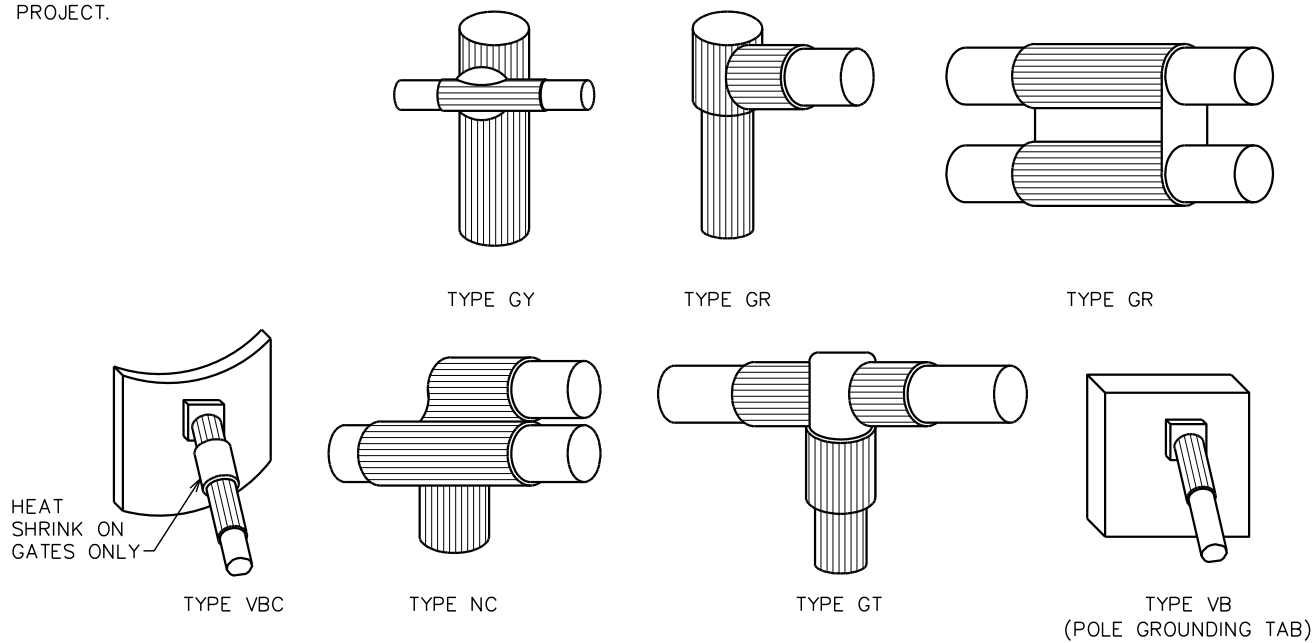


STANDARD GROUND BAR DETAIL

SCALE: N.T.S.

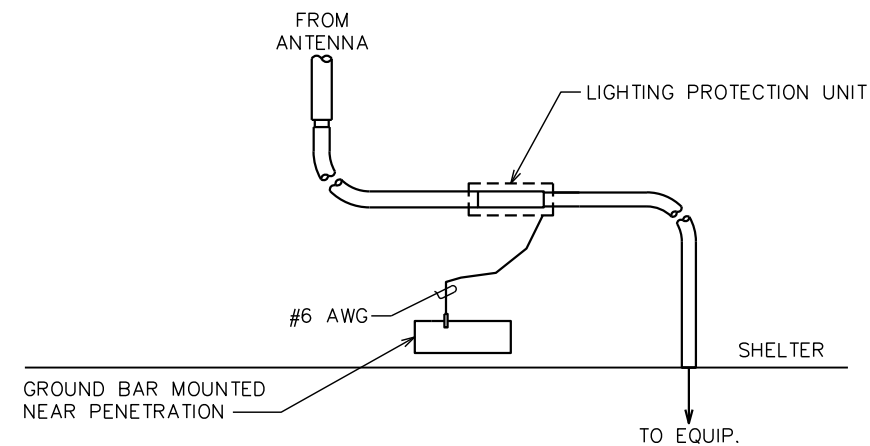
NOTE:

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



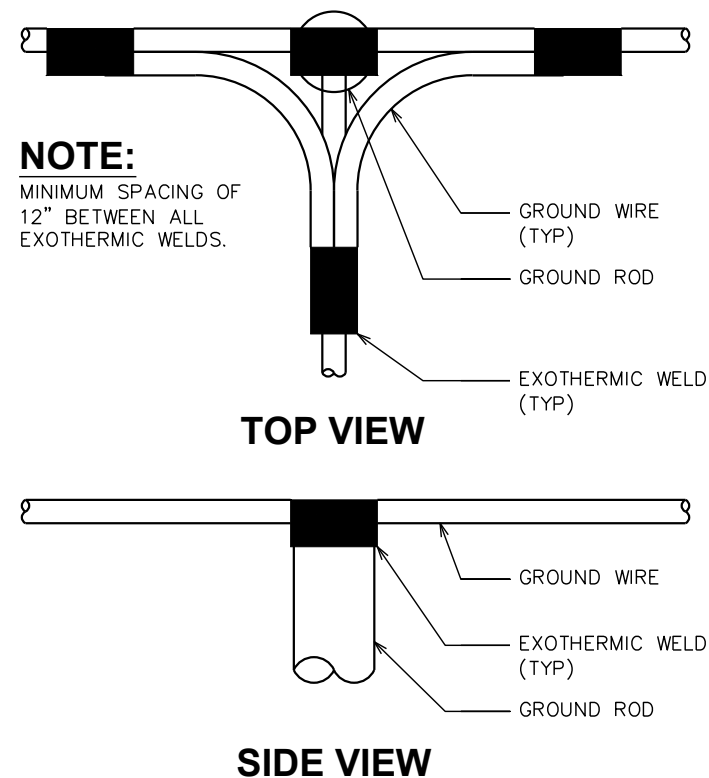
EXOTHERMIC WELD DETAILS

SCALE: N.T.S.



POE CABLE GROUNDING DETAIL

SCALE: N.T.S.



EXOTHERMIC WELD GROUNDING DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:



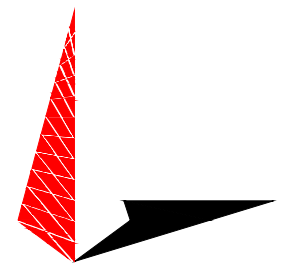
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
OFFICE: (800) 452-2777

PROJECT INFORMATION:

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

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

PLANS PREPARED BY:

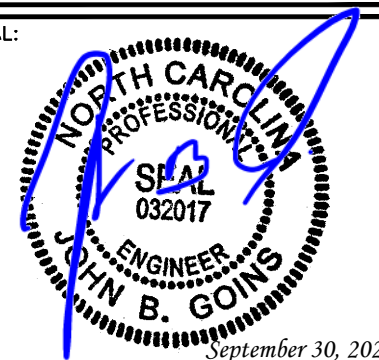


TOWER ENGINEERING PROFESSIONALS

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

N.C. LICENSE # C-1794

SEAL:



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:

**GROUNDING
DETAILS II**

SHEET NUMBER:

E-5

REVISION:

2

TEP#:310883.677069