

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 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: (800) 452–2777

PROJECT INFORMATION:

DUNN OPERATIONS CENTER

1269 JONESBORO RD
DUNN, NC 28334
(HARNETT COUNTY)

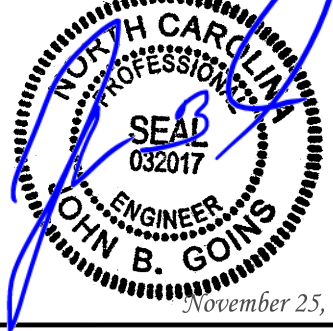
PLANS PREPARED BY:



TEP ENGINEERING, PLLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

N.C. LICENSE # P-1403

SEAL:



5	11-25-24	CONSTRUCTION
4	10-30-24	CONSTRUCTION
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REV	DATE	ISSUED FOR:

DRAWN BY: RJW | CHECKED BY: JBG

SHEET TITLE:

PROJECT NOTES

SHEET NUMBER: N-1	REVISION: 5 TEP#: 337281.931516
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NOTES

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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 POLE IS LOCATED IN SHADED ZONE "X," AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #3720153700L, EFFECTIVE JANUARY 5, 2007.

N/F
DIANNA COATS
PIN#: 1537-02-1965.000
DB: 0014E PG: 0423
ZONING: HOLLY SPRINGS PUD

N/F
CHARLES WEBB
PIN#: 1527-92-3974.000
DB: 0898 PG: 0588
ZONING: HOLLY SPRINGS PUD

NEW STORMWATER
MANAGEMENT POND (TYP)

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

PROPOSED SITE
LAYOUT. SEE SHEET
C-2 FOR DETAILS.

N/F
SWJ JOHNSON FARM LLC
PIN#: 1527-91-13.62.000
DB: 3892 PG: 0115
ZONING: HOLLY SPRINGS PUD

N/F
SWJ JOHNSON FARM LLC
PIN#: 1527-91-1362.000
DB: 3892 PG: 0115
ZONING: RA-20M

N/F
PRIMERA IGLESIA HISPANA
DE LAS ASAMBLEAS DE DIOS
PIN#: 1527-91-3183.000
DB: 3898 PG: 0908
ZONING: RA-20M

N/F
DUKE ENERGY
PROGRESS, LLC. (DEP)
PIN#: 1527-91-9952.00
DB: 4145 PG: 0654
ZONING: RA-20M

N/F
JOHN HOCKADAY
PIN#: 1537-02-3775.000
DB: 3791 PG: 0952
ZONING: RA-20M

N/F
JOHN HOCKADAY
PIN#: 1537-02-3537.000
DB: 1099 PG: 0730
ZONING: RA-20M

N/F
ROBBIE DEAN HOCKADAY
PIN#: 1537-02-2396.000
DB: 1099 PG: 0733
ZONING: RA-20M

N/F
HILDA SMITH
PIN#: 1537-02-4381.000
DB: 3343 PG: 0759
ZONING: RA-20M

N/F
MATHA THORNTON
PIN#: 1537-02-4167.000
DB: 2324 PG: 0048
ZONING: RA-20M

JONESBORO RD

N/F
CHARLES THORNTON,
ET.AL.
PIN#: 1537-02-4058.000
DB: 2324 PG: 0045
ZONING: RA-20M

N/F
CHARLES THORNTON
PIN#: 1537-01-4808.000
DB: 0732 PG: 0034
ZONING: RA-20M

N/F
GROVE PRESBYTERIAN
CHURCH EPC INC
PIN#: 1537-01-3796.000
DB: 3674 PG: 0403
ZONING: RA-20M

N/F
CEMETERY
PIN#: 1537-01-1392.000
DB: 4028 PG: 0888
ZONING: RA-20M

WISE RD

N/F
KAREN LEE STRICKLAND
PIN#: 1527-91-7035.000
DB: 0961 PG: 0770
ZONING: RA-20M

N/F
TERRY LEE
PIN#: 1527-90-5999.000
DB: 92E PG: 0055
ZONING: RA-20M

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" = 200'

PLANS PREPARED FOR:



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RALEIGH, NC 27601
OFFICE: (800) 452-2777

PROJECT INFORMATION:

DUNN OPERATIONS
CENTER

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DUNN, NC 28334
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DRAWN BY: RJW CHECKED BY: JBG

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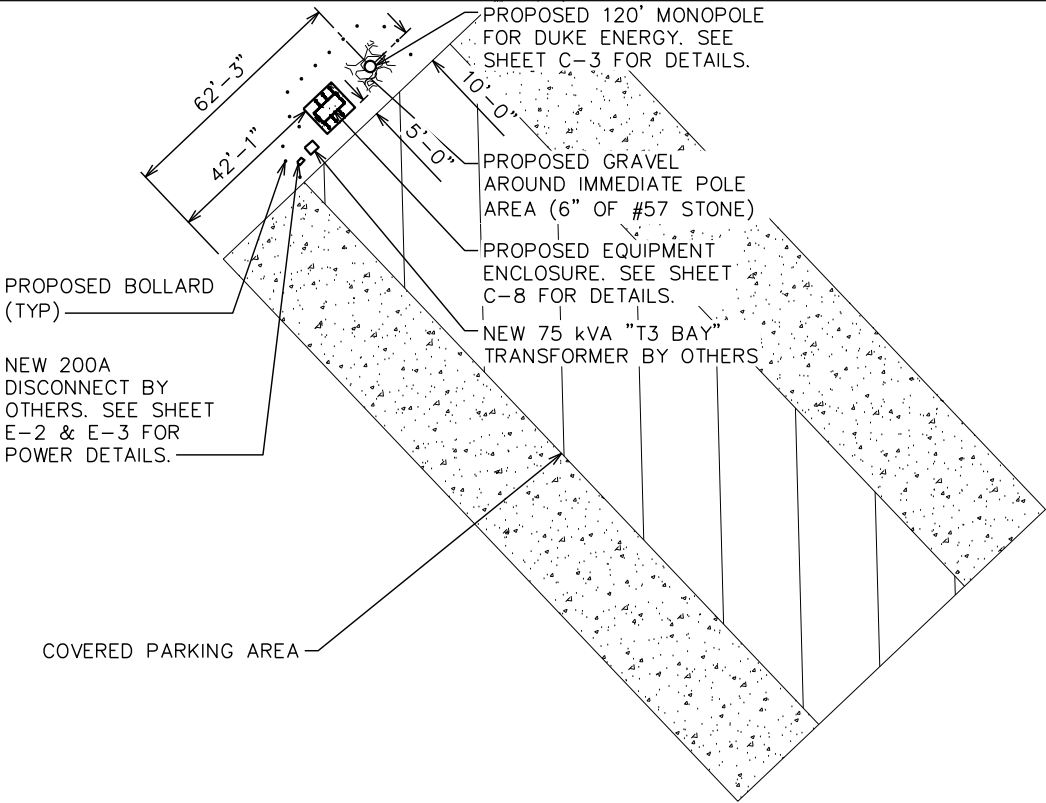
SITE PLAN

SHEET NUMBER:	REVISION:
C-1	5
	TEP#: 337281.931516

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4. DUKE TELECOM TO COORDINATE CONNECTION POINTS WITH SITE OWNER/CONTRACTOR. THE CURRENT CONNECTION POINT IS SHOWN AT THE "T3BAY" TRANSFORMER AND THE CONDUIT STUB AT THE 3 BAY EQUIPMENT ENCLOSURE. INFORM TEP AND ALL PARTIES IF THIS CONNECTION LOCATION IS DIFFERENT THAN SHOWN ON THESE DRAWINGS.



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

COMPOUND DETAIL

SCALE: 1" = 50'



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COMPOUND DETAIL

SHEET NUMBER:	REVISION:
C-2	5
TEP#: 337281.931516	

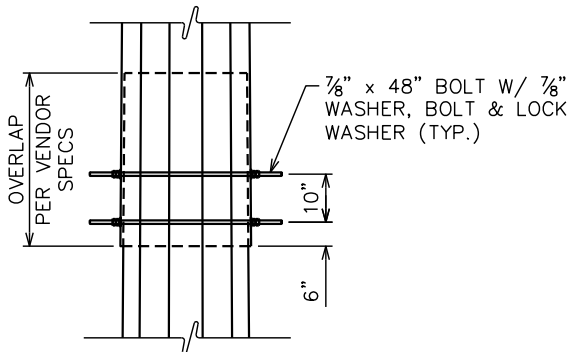
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NOTE:

- 1. POLE TO REMAIN A GALVANIZED COLOR.
- 2. POLE SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.F
- 3. POLE DESIGN PER STRUCTURAL ANALYSIS BY TEP DATED MAY 3, 2024.

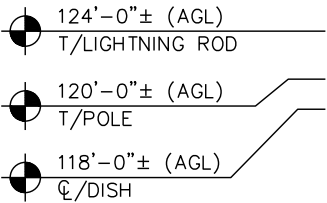
DETAIL NOTE:

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.

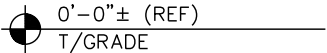


PROPOSED 4' LIGHTNING ROD

PROPOSED DISH AND MOUNT. SEE SHEET C-6 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.



POLE ELEVATION

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



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SHEET TITLE:

POLE ELEVATION

SHEET NUMBER:

C-3

REVISION:

5

TEP#: 337281.931516

REFERENCED DOCUMENTS		
DOCUMENT	REMARKS	DATE
GEOTECHNICAL REPORT	TEP PROJECT NO.: 337281.931518	03-11-24
POLE DESIGN DRAWINGS	VALMONT INDUSTRIES	06-22-22
STRUCTURAL ANALYSIS	TEP PROJECT NO.: 337281.931523	05-03-24
CONTRACTOR SHALL FIELD VERIFY ALL: DIMENSIONS, QUANTITIES, PART NUMBERS AND COAX/ANTENNA PLACEMENTS PRIOR TO: BIDDING ORDERING MATERIALS, AND CONSTRUCTION.		

APPLIED LOADS	
AXIAL	13901 LBS
MOMENT	1099036 LB-FT
SHEAR	15015 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.

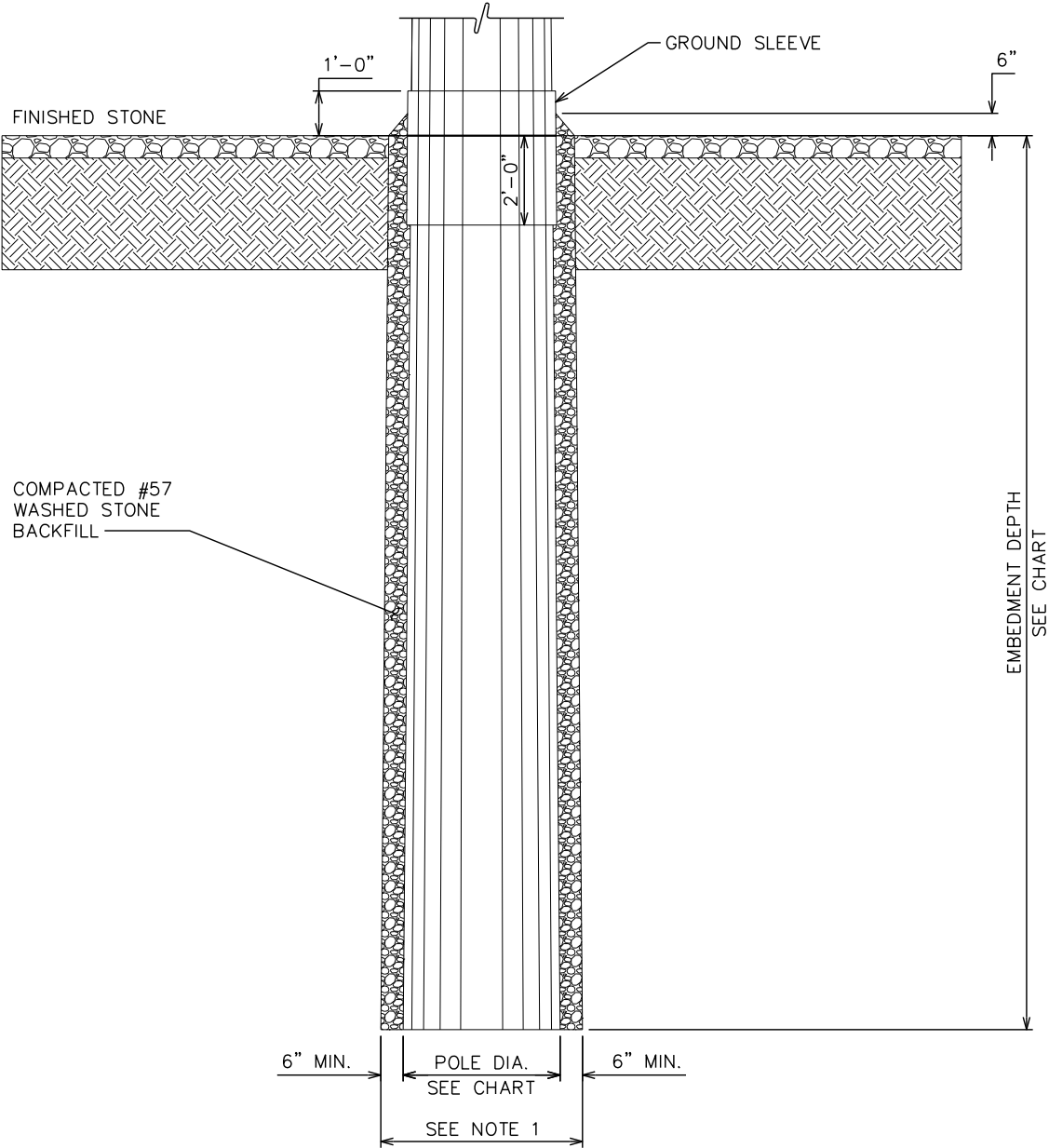
FOUNDATION CONSTRUCTION:

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:

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.



POLE FOUNDATION DETAIL

SCALE: N.T.S.

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SHEET TITLE:

**TOWER FOUNDATION
DETAIL & NOTES**

SHEET NUMBER:	REVISION:
C-4	5
TEP#: 337281.931516	

FOUNDATION NOTES:

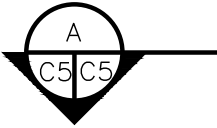
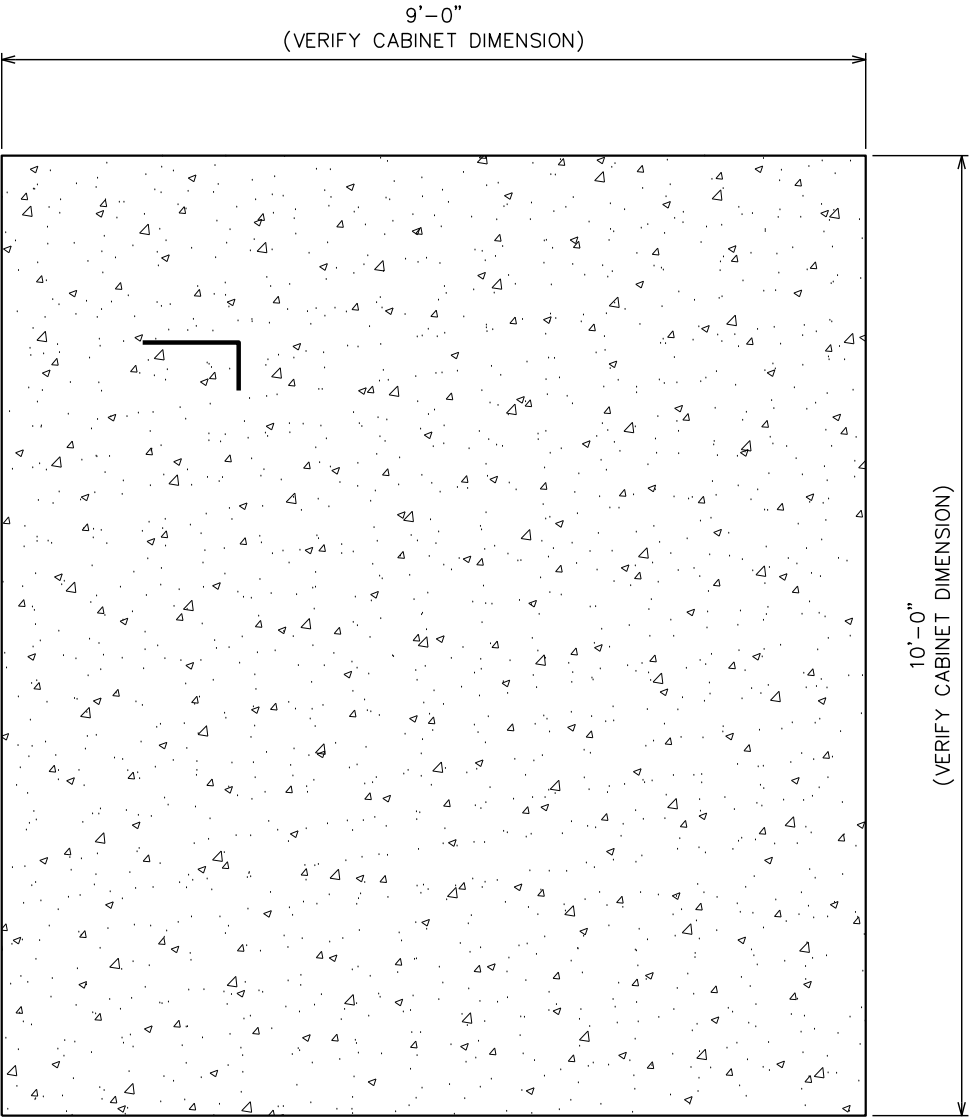
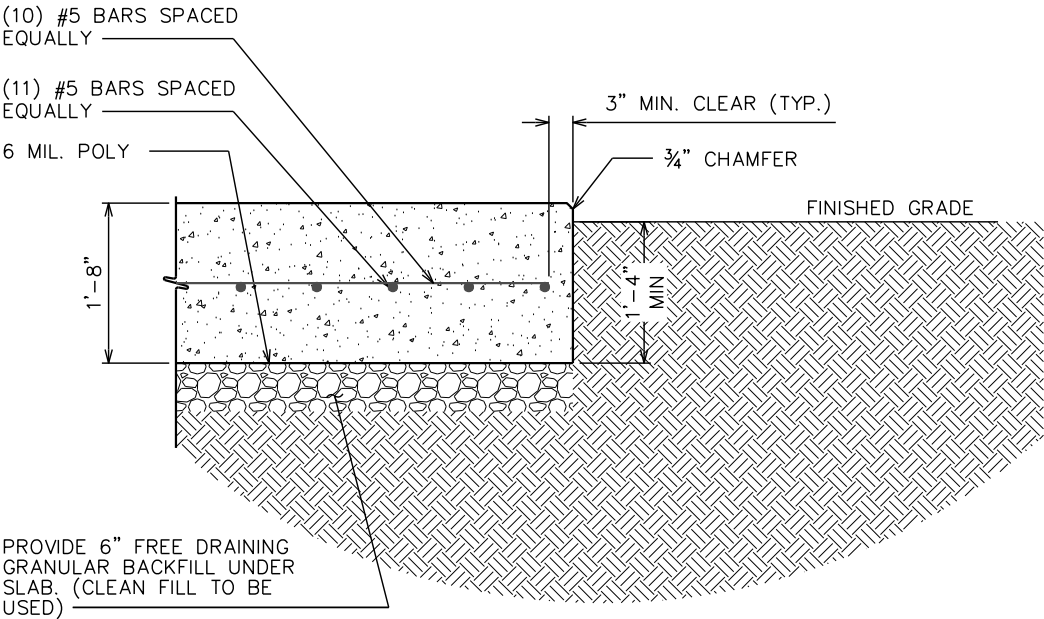
1. FOUNDATION INSTALLATION TOLERANCES:
*SLAB TOLERANCE FOR BOTH LENGTH AND WIDTH: ±½"
*MEASURED DIAGONAL LENGTHS SHALL BE WITHIN ½" OF EACH OTHER
*VARIATION FROM LEVEL:
A. IN ANY 10' OF LENGTH: ⅛" MAX
B. FOR THE ENTIRE LENGTH ½" MAX
*VARIATION FROM FLAT:
A. IN ANY 10' OF LENGTH: ⅛" MAX
B. FOR THE ENTIRE LENGTH ½" MAX
2. USE SHIMS AS REQUIRED TO ASSURE CABINET IS BEARING AT PERIMETER. SEAL PERIMETER WITH CAULK OR GROUT AS DESIRED.
3. THE MATERIAL USED FOR STRUCTURAL FILL SHALL CONFORM WITH ASTM C33 SIZE NO. 57 AND BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES. STRUCTURAL FILL SHALL BE MOISTURE CONDITIONED AS NECESSARY TO BRING MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM AND COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 OR 85% OF RELATED DENSITY AS DETERMINED BY ASTM D4254.
4. A MINIMUM OF 1'-0" SHOULD BE EXCAVATED AROUND FOUNDATION PERIMETER.

GENERAL STRUCTURAL NOTES:

- SPECIFICATIONS / CODES:
1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE ACI CODE.
2. STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 15th EDITION.
3. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-15 "STRUCTURAL WELDING CODE-STEEL".
4. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI). "MANUAL OF STANDARD PRACTICE".

NOTES:

1. SURFACE OF FINISHED SLAB SHALL BE LEVEL AND FLAT WITHIN ¼"
2. CONTRACTOR TO VERIFY WITH MANUFACTURER ACTUAL DIMENSIONS AND BOLT LAYOUT OF CABINET PRIOR TO LAYING FOUNDATION
3. CONTRACTOR SHALL VERIFY DESIGN WITH ACTUAL SITE CONDITIONS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES.
4. SLAB FOUNDATION DESIGNED ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
5. CONCRETE STRENGTH SHALL BE A MINIMUM OF 4000 PSI.
6. FOOTING TO EXTEND TO A MINIMUM OF 24" BELOW UNDISTURBED SOIL OR 6" BELOW FROST LINE.



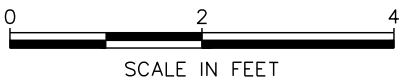
SECTION

SCALE: ½" = 1'-0"



FOUNDATION PLAN

SCALE: ½" = 1'-0"



PLANS PREPARED FOR:



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

PROJECT INFORMATION:

DUNN OPERATIONS
CENTER

1269 JONESBORO RD
DUNN, NC 28334
(HARNETT COUNTY)

PLANS PREPARED BY:



TEP ENGINEERING, PLLC

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

N.C. LICENSE # P-1403

SEAL:



5	11-25-24	CONSTRUCTION
4	10-30-24	CONSTRUCTION
3	10-24-24	CONSTRUCTION
2	07-16-24	PRELIMINARY CONSTRUCTION
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DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

EQUIPMENT
ENCLOSURE
FOUNDATION DETAILS

SHEET NUMBER: C-5	REVISION: 5 TEP#: 337281.931516
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PROPOSED 3'Ø DISH.
SEE SCHEDULE THIS
SHEET FOR DETAILS.

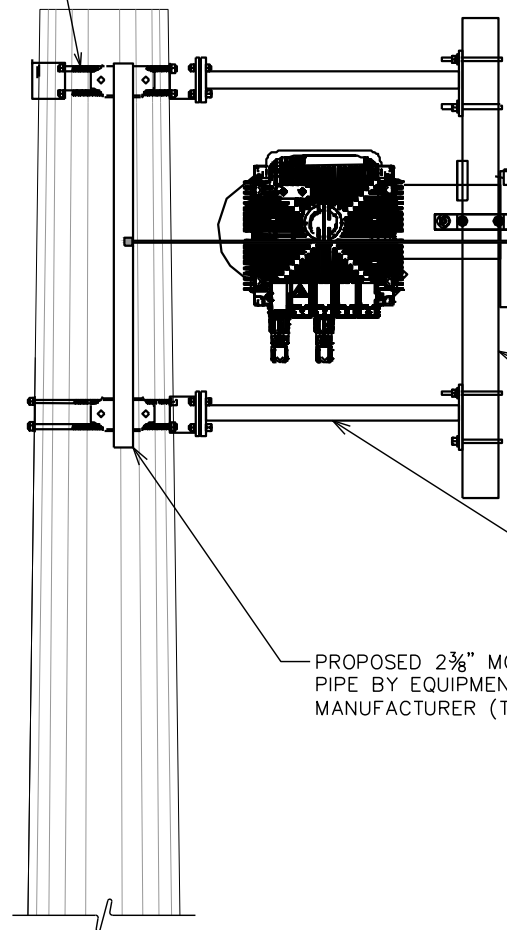
DISH
281.48°

STABILIZER STIFF
ARM BY NOKIA
(VSTRUT-P3KIT)
(TYP OF 2)

PROPOSED STIFF ARM
BRACKET (SA-BU) BY
EQUIPMENT MANUFACTURER.
SEE DETAIL, THIS SHEET.



PROPOSED COLLAR
MOUNT BY SABRE
INDUSTRIES. SEE
THIS SHEET FOR
DETAIL



PROPOSED DISH

117'-6"
CL MOUNT & DISH

PROPOSED 4.5"Ø x 5'-0"
MOUNT PIPE BY EQUIPMENT
MANUFACTURER

PROPOSED 2 3/8" MOUNT
PIPE BY EQUIPMENT
MANUFACTURER (TYP OF 2)

PROPOSED PIPE MOUNT.
SEE THIS SHEET FOR
DETAILS.

PROPOSED COLLAR MOUNT PROFILE

SCALE: N.T.S.

PROPOSED ANTENNA/CABLE SCHEDULE

TECHNOLOGY	MANUFACTURER (MODEL #)	MOUNTING HEIGHT	AZIMUTH	CABLE SIZE (mm)	CABLE LENGTH
DISH	COMMSCOPE (VHLPX3-11W/A)	CL @ 118'-0"	281.48°	(2) 11.6Ø	*150'±
-	NOKIA (UBT-T)				

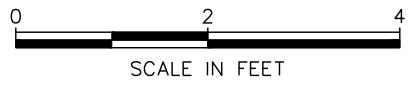
*CONTRACTOR SHALL FIELD VERIFY COAX LENGTH PRIOR TO CONSTRUCTION.

PROPOSED ANTENNA/COAX SCHEDULE

SCALE: N.T.S.

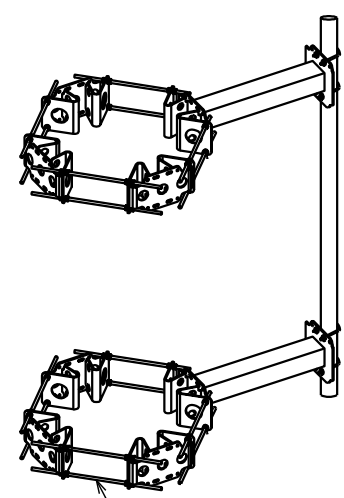
PROPOSED DISH @ 117'-6"

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

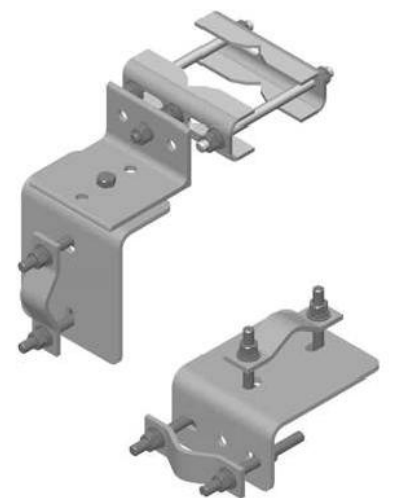


NOTE:

POLE DIAMETER AT 118'-0": ~17"Ø



PROPOSED (2) QUAD COLLAR
MOUNTS BY SABRE INDUSTRIES
(P/N: C10110300)



STIFF ARM BRACKET FOR 1 1/4"-3 1/2" Ø PIPE

PROPOSED PIPE MOUNT

SCALE: N.T.S.

PROP. STIFF ARM BRACKET

SCALE: N.T.S.

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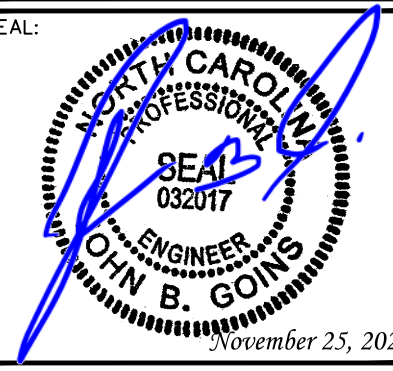


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SHEET TITLE:

ANTENNA MOUNTING DETAILS

SHEET NUMBER:

C-6

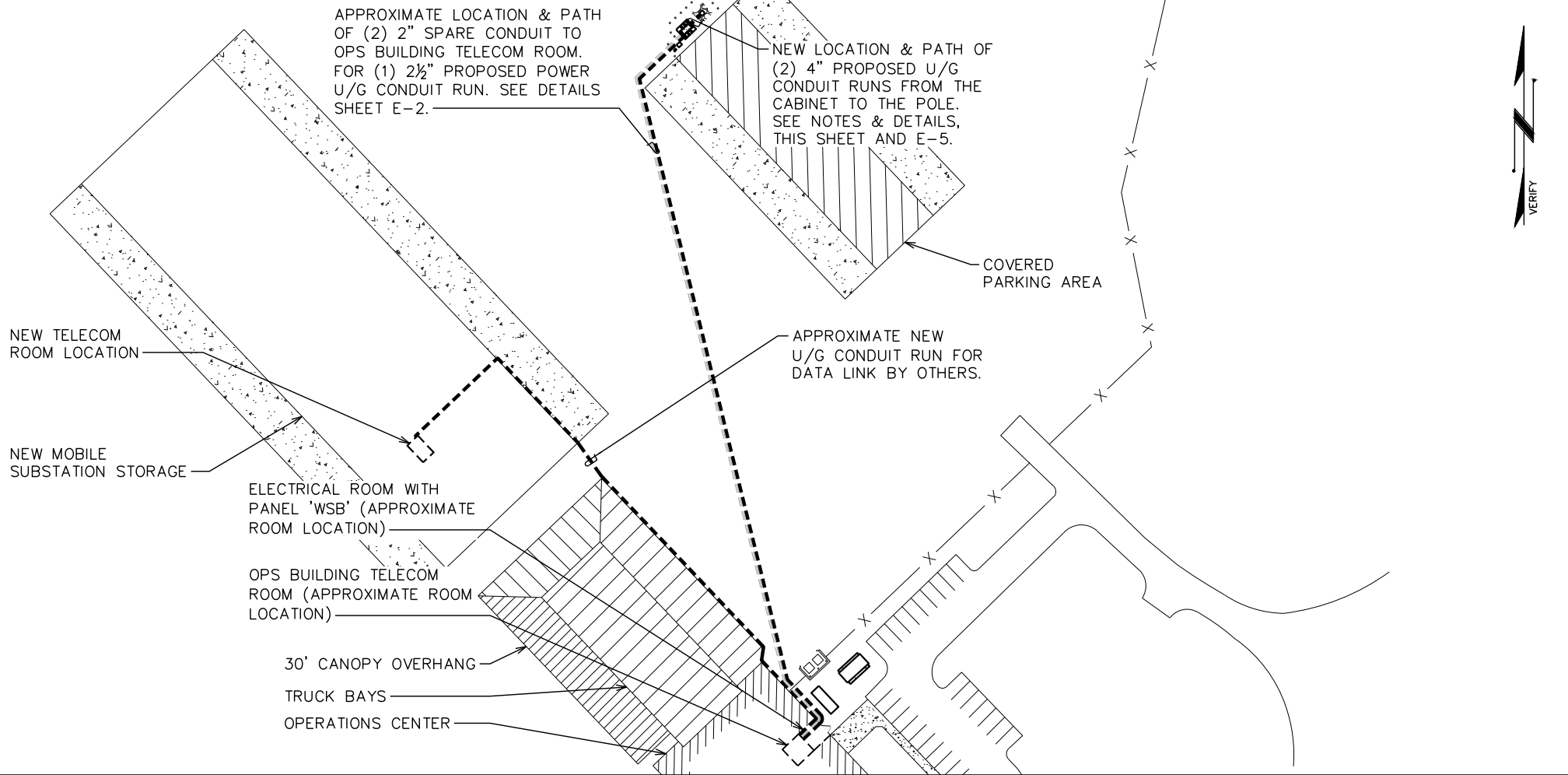
REVISION:

5

TEP#: 337281.931516

NOTES:

- 1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING U/G CONDUITS.
- 2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR ROUTING.
- 3. CONDUIT RUN FROM OPERATIONS BUILDING TO EQUIPMENT ENCLOSURE IS APPROXIMATELY 540'± (515'± HORIZONTAL RUN & 25'± FOR VERTICAL RUNS)
- 4. CONDUIT RUN FROM EQUIPMENT ENCLOSURE UP THE POLE IS APPROXIMATELY 150'± (30'± TO BASE OF POLE & 120'± FOR RUN UP POLE)

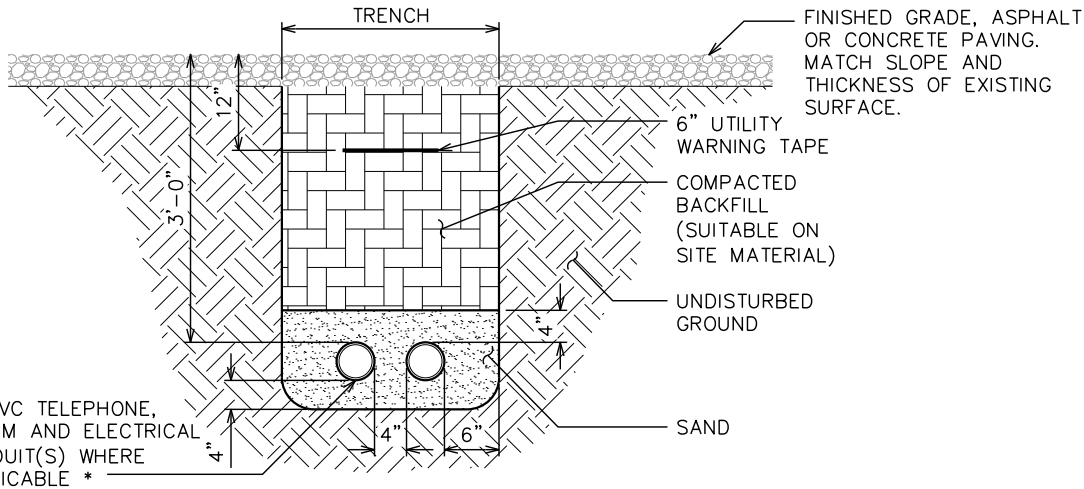


TELECOMMUNICATIONS ROUTING PLAN

SCALE: 1" = 100'

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.



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

UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

CONDUIT ROUTING DETAIL

SCALE: N.T.S.

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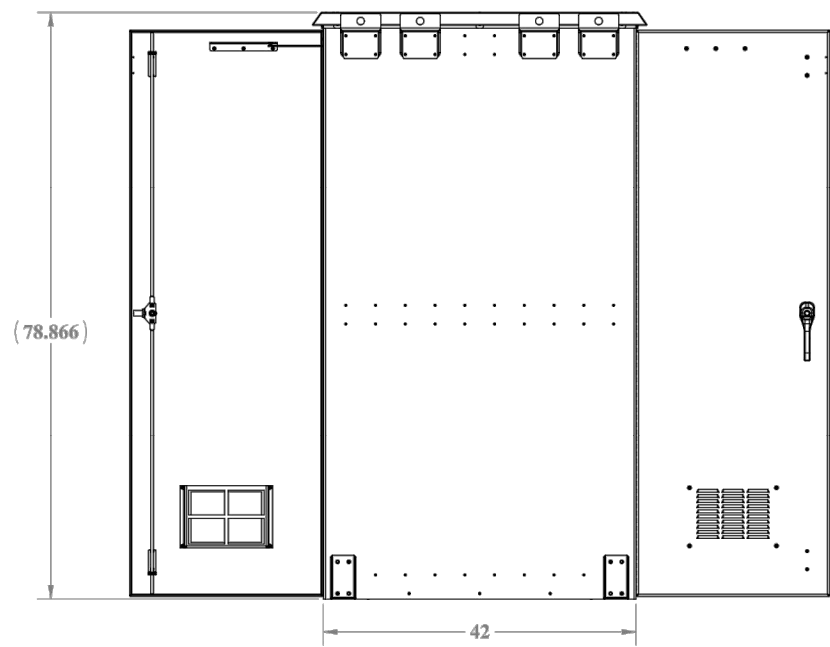
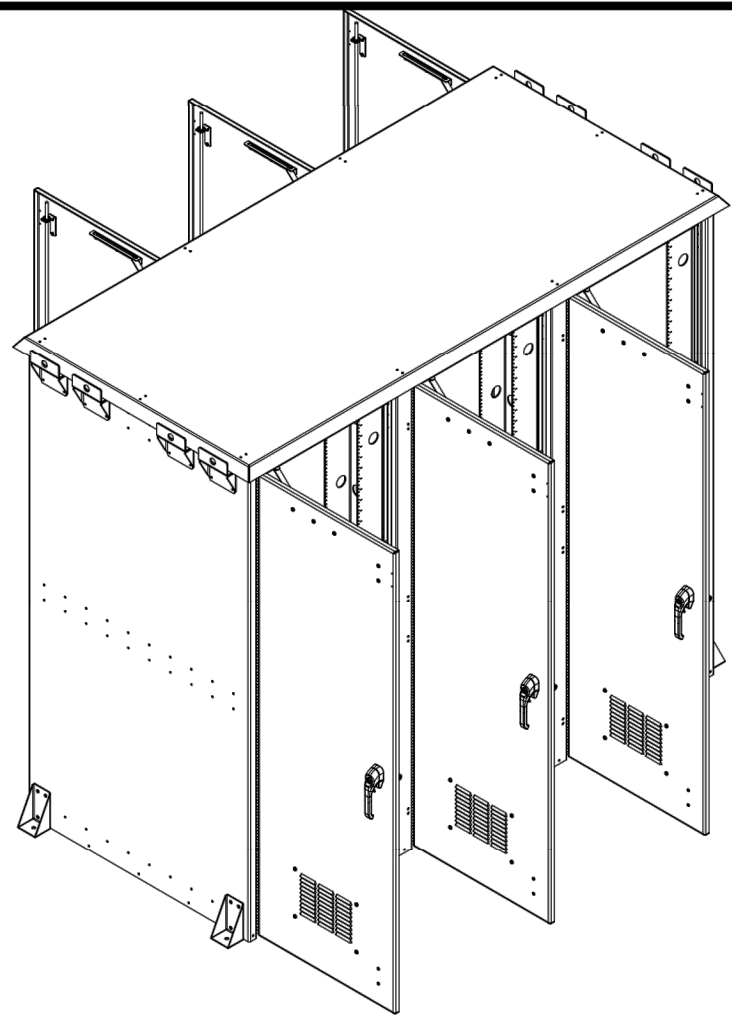
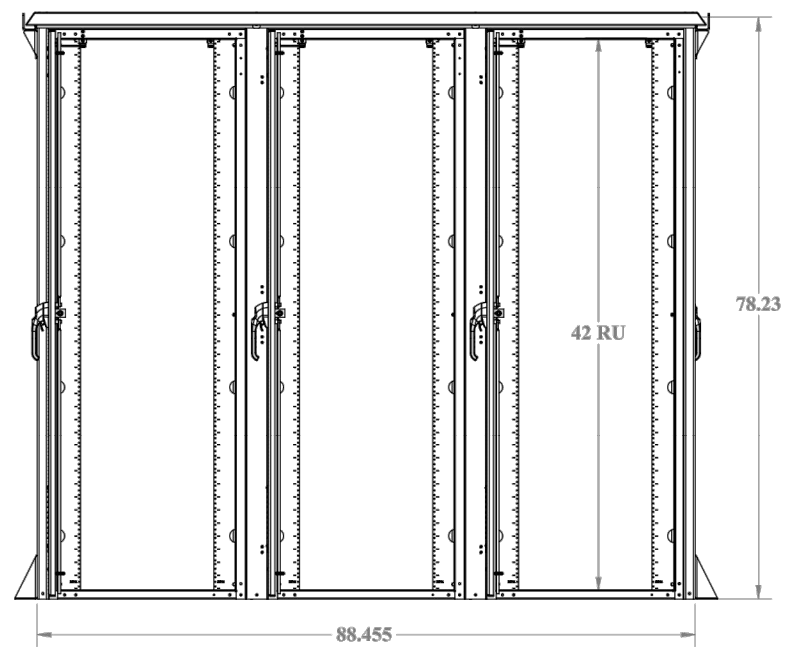
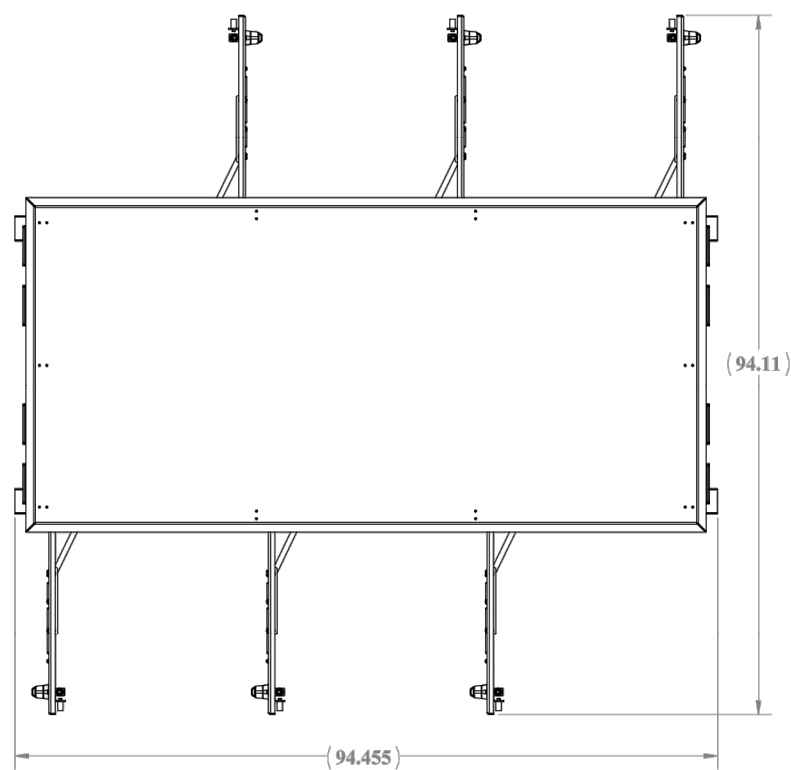
SHEET TITLE:

TELECOMMUNICATIONS CONDUIT DETAILS

SHEET NUMBER: C-7 REVISION: 5

TEP#: 337281.931516

NOTE:
EQUIPMENT ENCLOSURE CABINET:
(DDB UNLIMITED INC. P/N: 30D-90DDX)



EQUIPMENT ENCLOSURE DETAIL
SCALE: N.T.S.

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

PROJECT INFORMATION:
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SEAL:



November 25, 2024

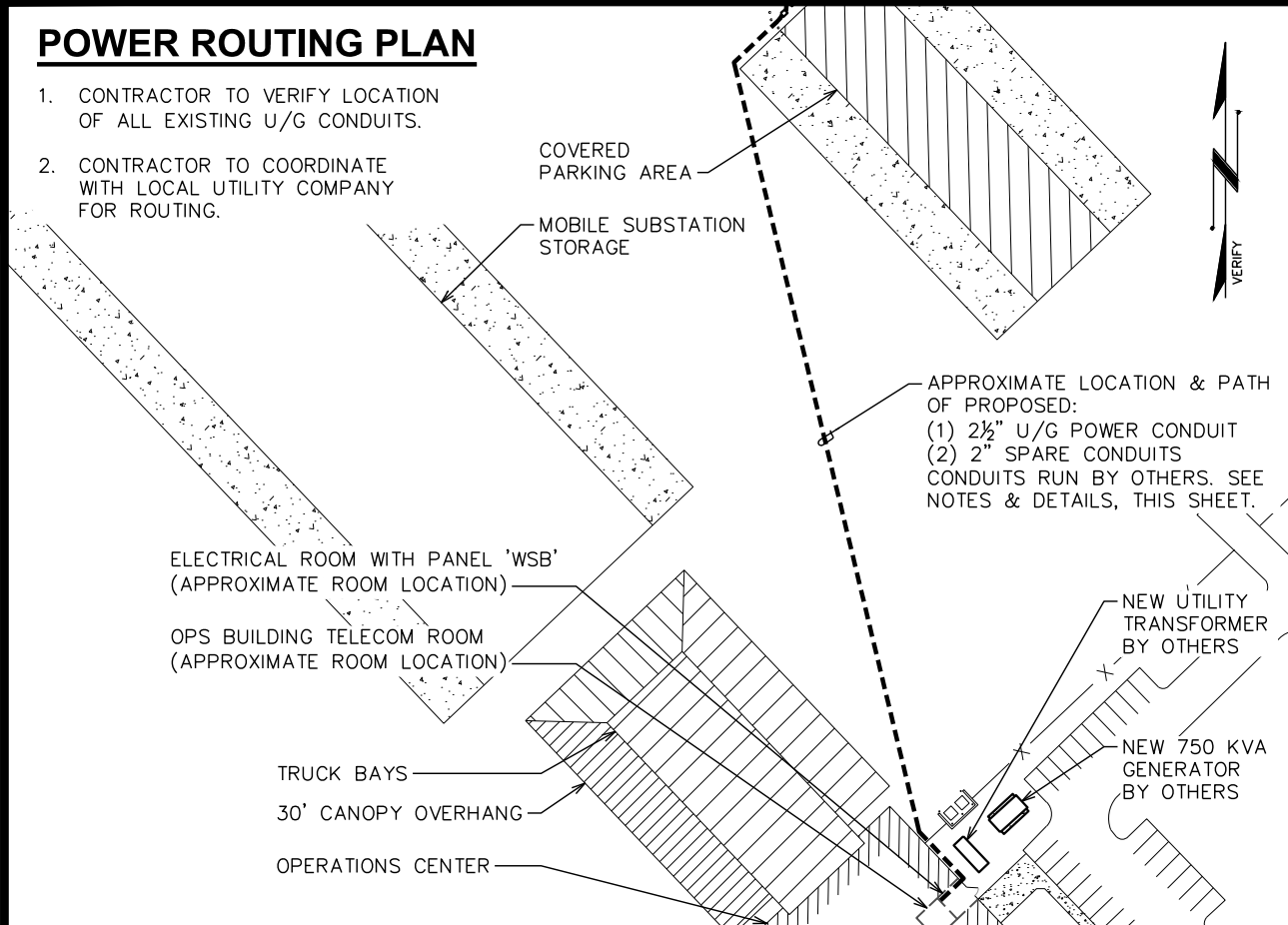
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SHEET TITLE:
EQUIPMENT ENCLOSURE DETAIL

SHEET NUMBER: **C-8** REVISION: **5**
TEP#: 337281.931516

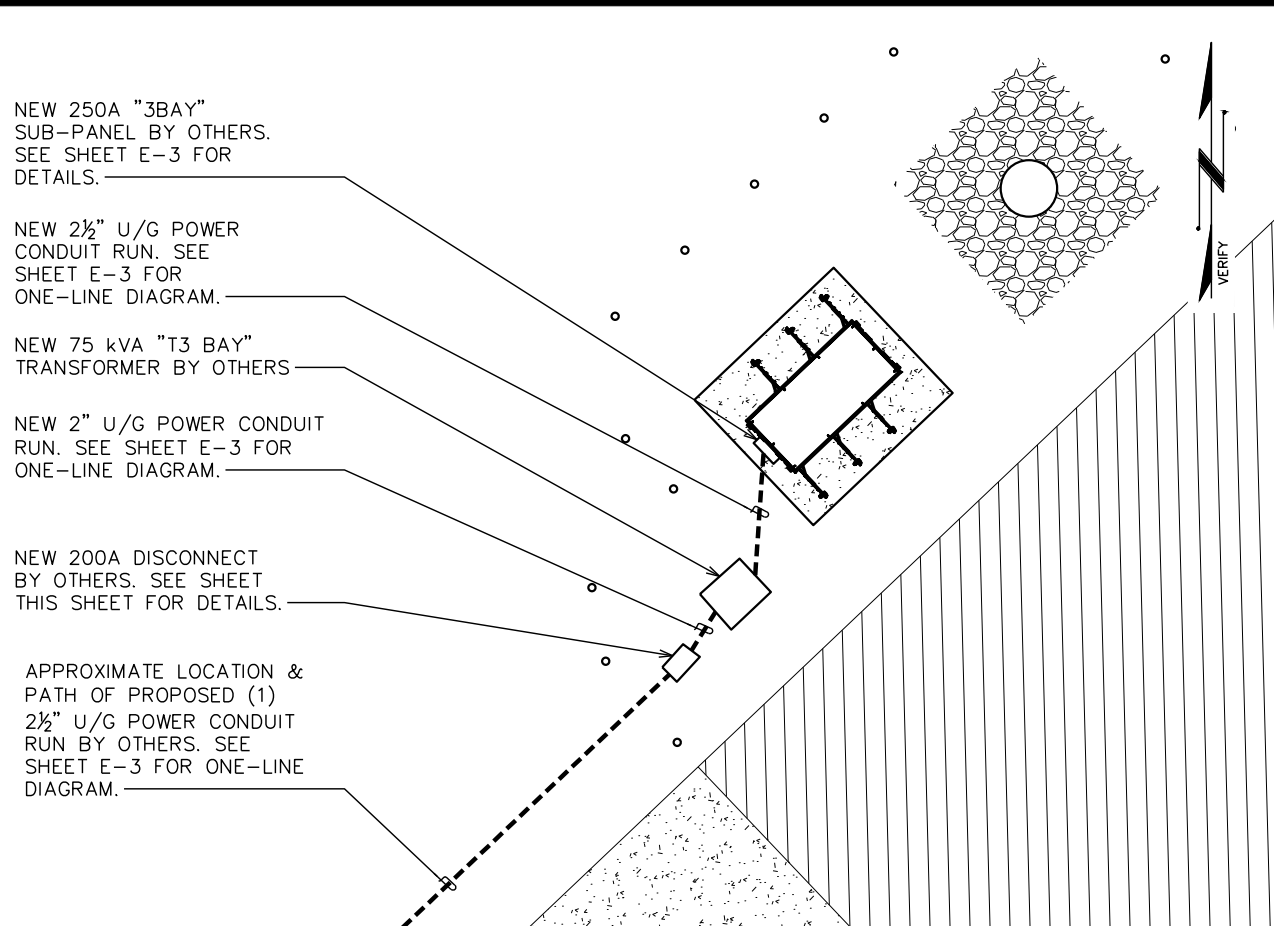
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POWER ROUTING PLAN

SCALE: 1" = 100'

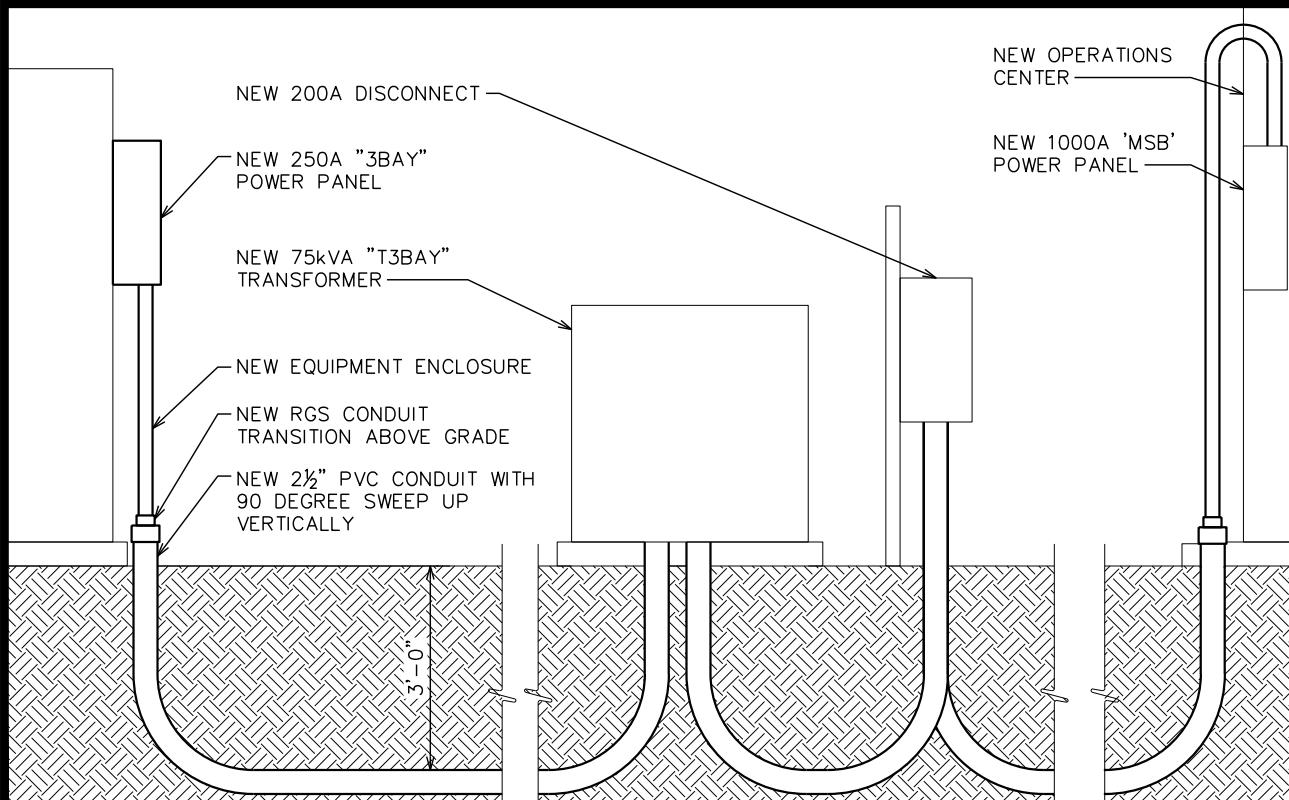
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SCALE IN FEET



POWER ROUTING DETAIL (AT POLE)

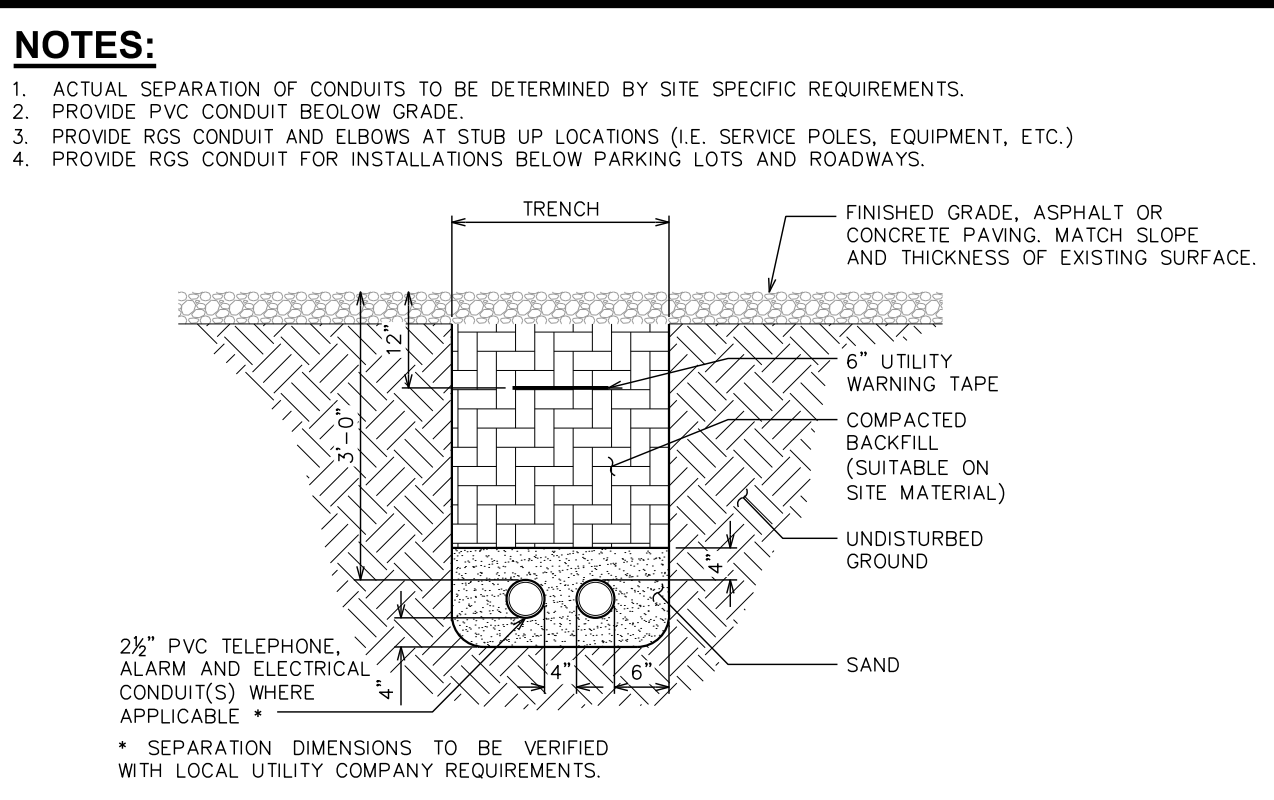
SCALE: 1" = 10'

0 10 20
SCALE IN FEET



CONDUIT ROUTING DETAIL

SCALE: N.T.S.



UNDERGROUND CONDUIT(S) TRENCH DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:

DUKE ENERGY.

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RALEIGH, NC 27601
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PROJECT INFORMATION:

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(HARNETT COUNTY)

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SHEET TITLE:

POWER ROUTING PLAN

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

TEP#: 337281.931516

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NOTES:

1. CONTRACTOR TO VERIFY PANEL POWER USAGE PER BREAKER AS WELL AS NEW PANEL LOCATIONS FOR NEW EQUIPMENT.
2. CONTRACTOR TO VERIFY LOAD DOES NOT OVERLOAD SYSTEM.

PANEL 'MSB' 1000AMP, 277/280VAC, 3Ø/4W, AIC 42K															
LOAD SERVED	VOLT AMPERES (kW)			TRIP	CKT #	PHASE			CKT #	TRIP	VOLT AMPERES (kW)			LOAD SERVED	
	L1	L2	L3								L1	L2	L3		
MP1	91.898			400A	1		A		2	125A	16.78			3-BAY CAB XFMR	
		90.44			3		B		4			16.6			
			97.24		5		C		6				0		
MSH	80.177			400A	7		A		8	-	-			SPACE	
		79.24			9		B		10			-			
			74.69		11		C		12				-		
WH	35.562			225A	13		A		14	-	-			SPACE	
		32.97			15		B		16			-			
			32.194		17		C		18				-		
PANEL HS	-			100A	19		A		20	-	-			SPACE	
		-			21		B		22			-			
			-		23		C		24				-		
SPD	-			60A	25		A		26	-	-			SPACE	
		-			27		B		28			-			
			-		29		C		30				-		
SPACE	-			-	31		A		32	-	-			SPACE	
		-			33		B		34			-			
			-		35		C		36				-		
SPACE	-			-	37		A		38	-	-			SPACE	
		-			39		B		40			-			
			-		41		C		42				-		
VOLT AMPS (kW)	207.64	202.65	204.12							16.78	16.6	0	VOLT AMPS (kW)		
					L1	L2	L3	VOLT AMPERES (kW) AMPS MAX AMPS MAX AMPS x125%							
					224.42	219.25	204.12								
					810.18	791.52	736.90								
					810.18										
					1012.73										

PANEL SCHEDULE

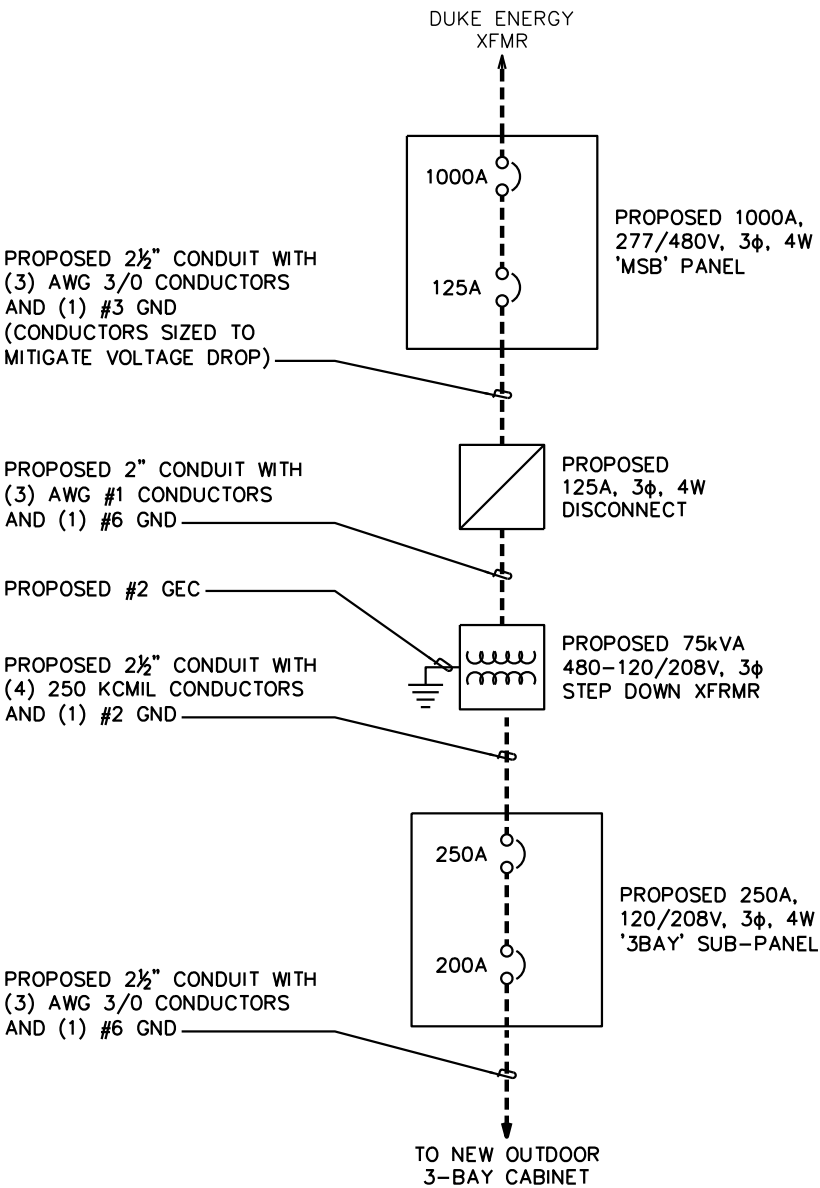
SCALE: N.T.S.

NOTES:

1. UTILITY SERVICE SIZE UNKNOWN.
2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY BUILDING MANAGER.
3. ELECTRICAL CONTRACTOR TO VERIFY LOAD DOES NOT EXCEED PANEL LIMITS, AND CONTACT ENGINEER OF RECORD FOR CORRECTIVE ACTION IF PANEL LIMITS ARE EXCEEDED.
4. ALL EXTERIOR ENCLOSURES TO BE NEMA 3 RATED.

ONE LINE DIAGRAM

SCALE: N.T.S.



PLANS PREPARED FOR:



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RALEIGH, NC 27601
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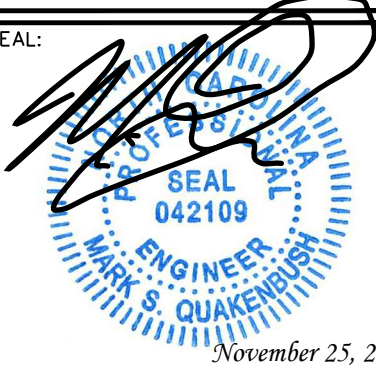


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SHEET TITLE:

ONE-LINE DIAGRAM,
PANEL SCHEDULE &
NOTES

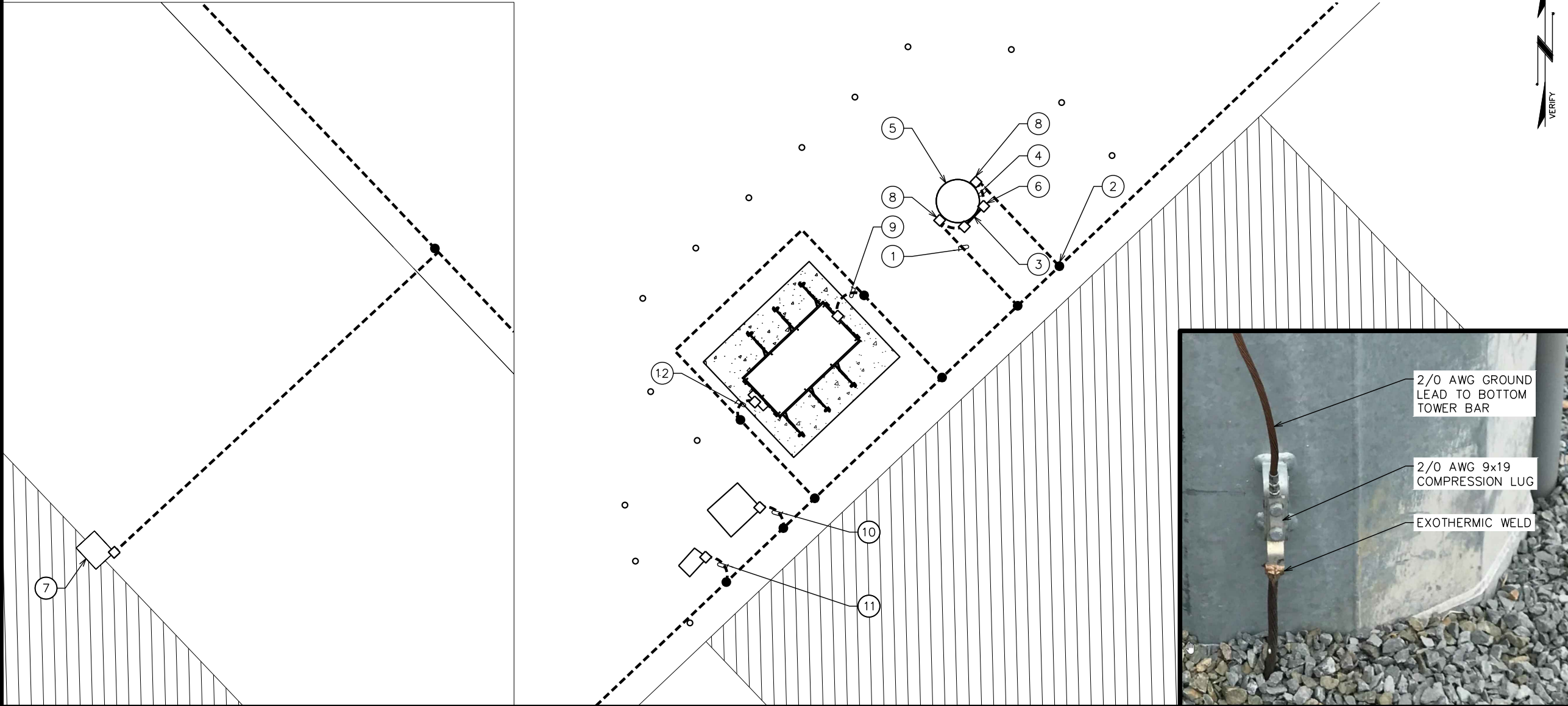
SHEET NUMBER: E-3	REVISION: 5 TEP#: 337281.931516
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DRAWING NOTES:

- 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 MECHANICAL GROUND LUG (TYP)
- 7 LPU (LIGHTNING PROTECTION UNIT)
- 8 GROUNDING BRACKET AT BOTTOM OF POLE (TYP OF 2). SEE DETAIL THIS SHEET.
- 9 MECHANICAL LUG CONNECTION TO EQUIPMENT ENCLOSURE
- 10 MECHANICAL LUG CONNECTION TO TRANSFORMER
- 11 MECHANICAL LUG CONNECTION TO DISCONNECT
- 12 MECHANICAL LUG CONNECTION TO SUB-PANEL

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.

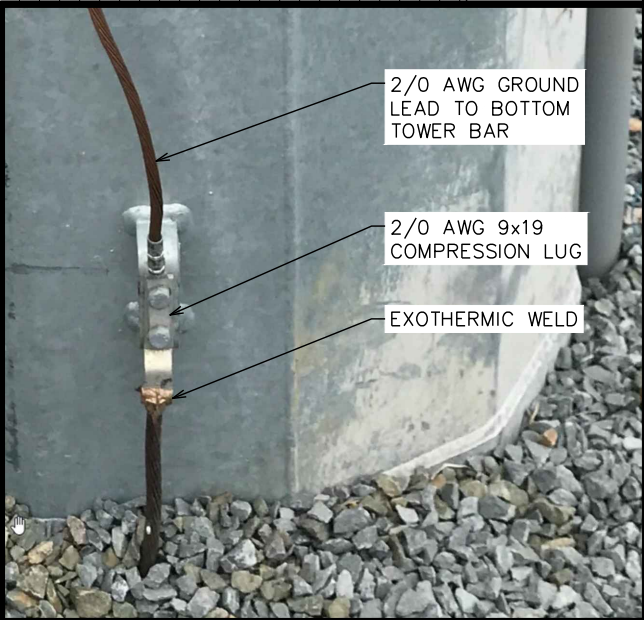


POLE GROUNDING PLAN

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

GROUND BRACKET DETAIL

SCALE: N.T.S.



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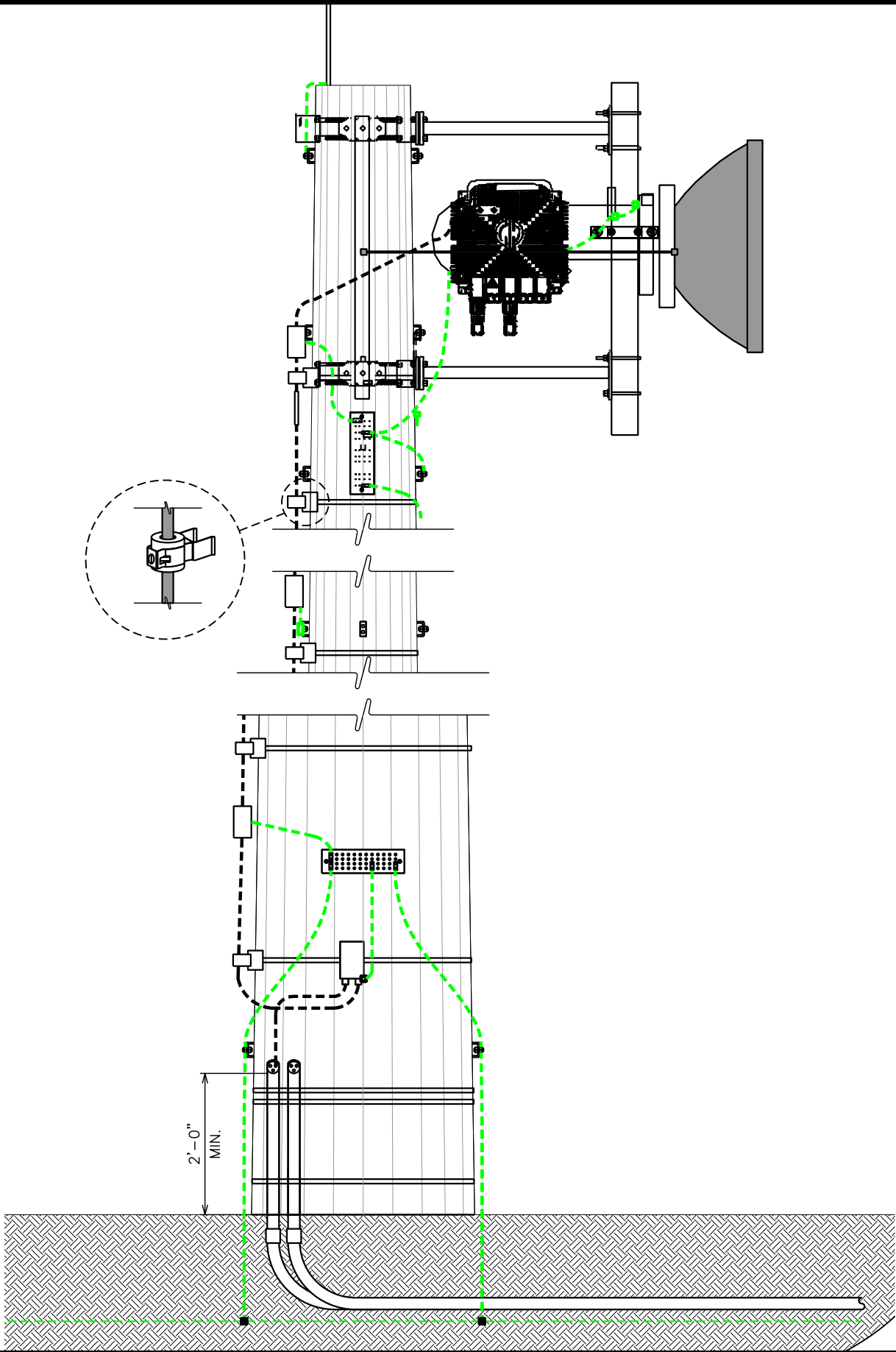
POLE GROUNDING AND ROUTING PLAN

SHEET NUMBER:	REVISION:
E-4	5
	TEP#: 337281.931516

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NOTE:

INSTALLATION PER INFINITY DUKE ENERGY NOKIA UBT
INTERCONNECT INSTALLATION SCHEMATIC DRAWINGS,
DATED 11/7/2024. CONTRACTOR TO REFER TO
SUPPLIER FOR BOM AND INSTALLATION DETAILS.



MONOPOLE ELEVATION

SCALE: N.T.S.

PLANS PREPARED FOR:



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

PROJECT INFORMATION:

DUNN OPERATIONS
CENTER

1269 JONESBORO RD
DUNN, NC 28334
(HARNETT COUNTY)

PLANS PREPARED BY:

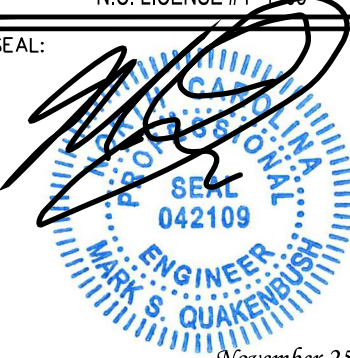


TEP ENGINEERING, PLLC

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

N.C. LICENSE # P-1403

SEAL:



November 25, 2024

5	11-25-24	CONSTRUCTION
4	10-30-24	CONSTRUCTION
3	10-24-24	CONSTRUCTION
2	07-16-24	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

GROUNDING AND
CABLE ELEVATION

SHEET NUMBER:

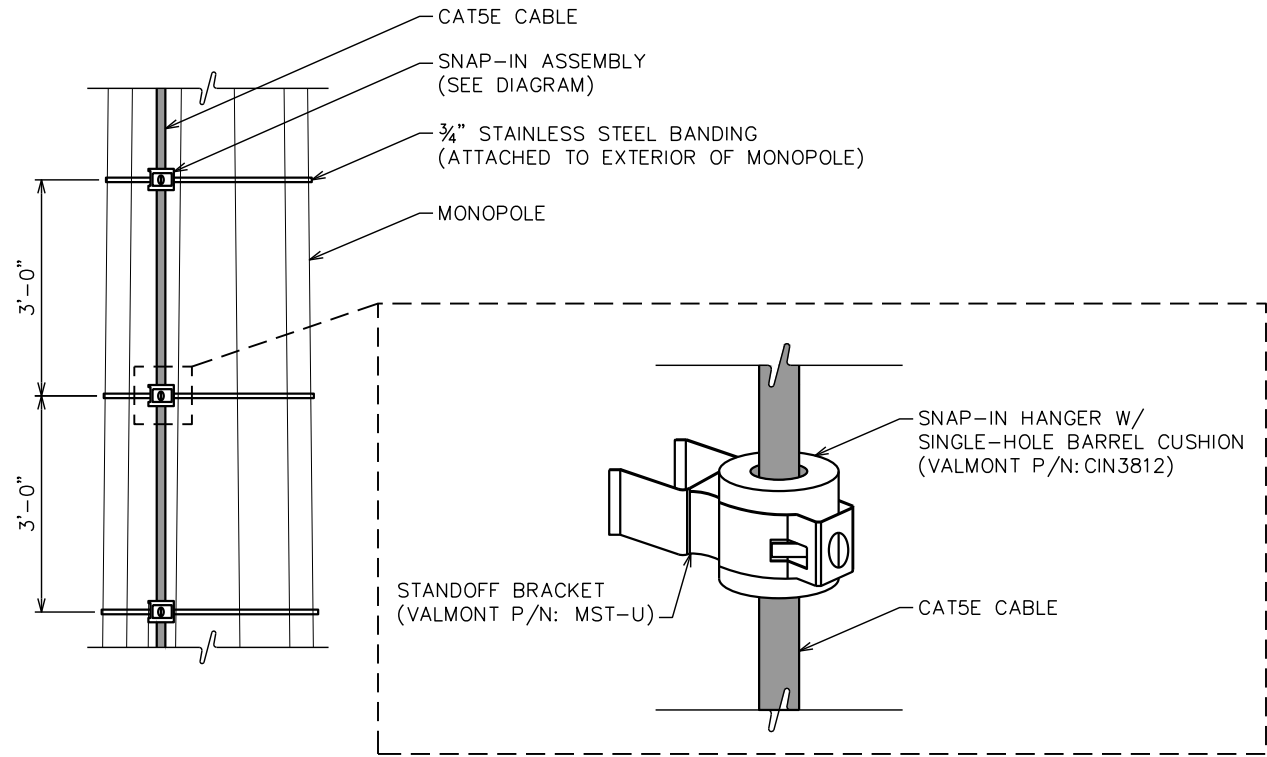
E-5

REVISION:

5

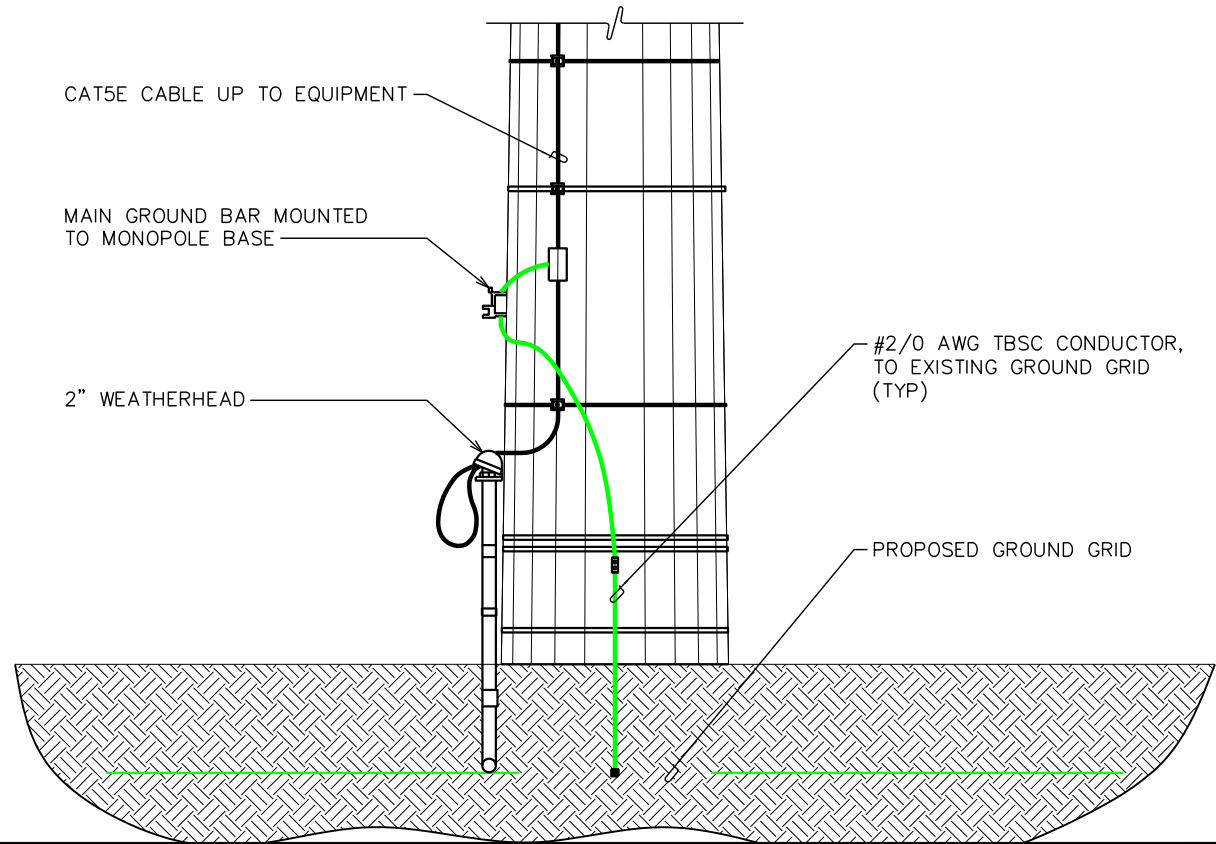
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MONOPOLE GROUNDING

SCALE: N.T.S.



MONOPOLE BASE DETAIL (SIDE VIEW)

SCALE: N.T.S.

PLANS PREPARED FOR:



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

PROJECT INFORMATION:

DUNN OPERATIONS CENTER

1269 JONESBORO RD
DUNN, NC 28334
(HARNETT COUNTY)

PLANS PREPARED BY:

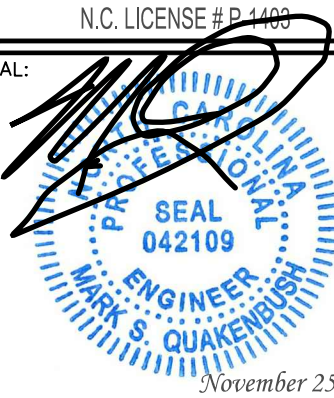


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OFFICE: (919) 661-6351
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N.C. LICENSE # P-1403

SEAL:



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3	10-24-24	CONSTRUCTION
2	07-16-24	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

GROUNDING DETAILS I

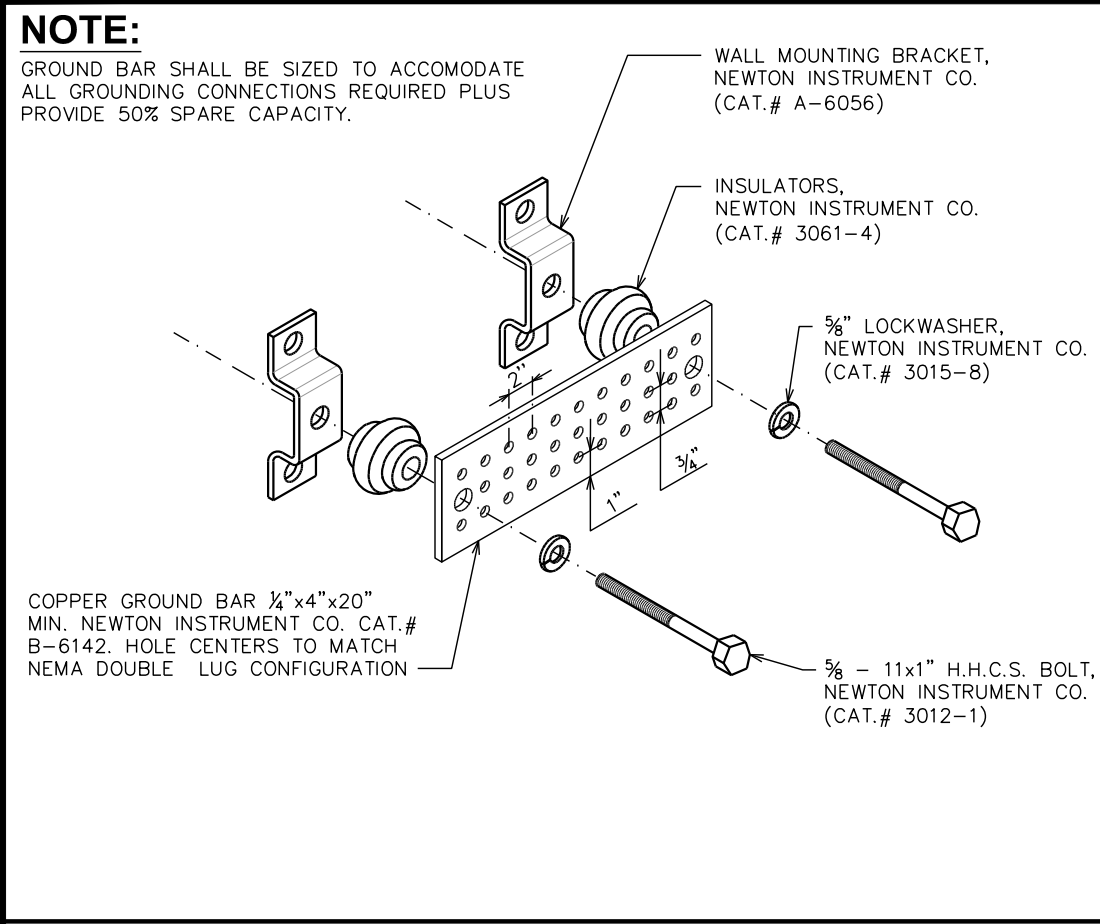
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E-6

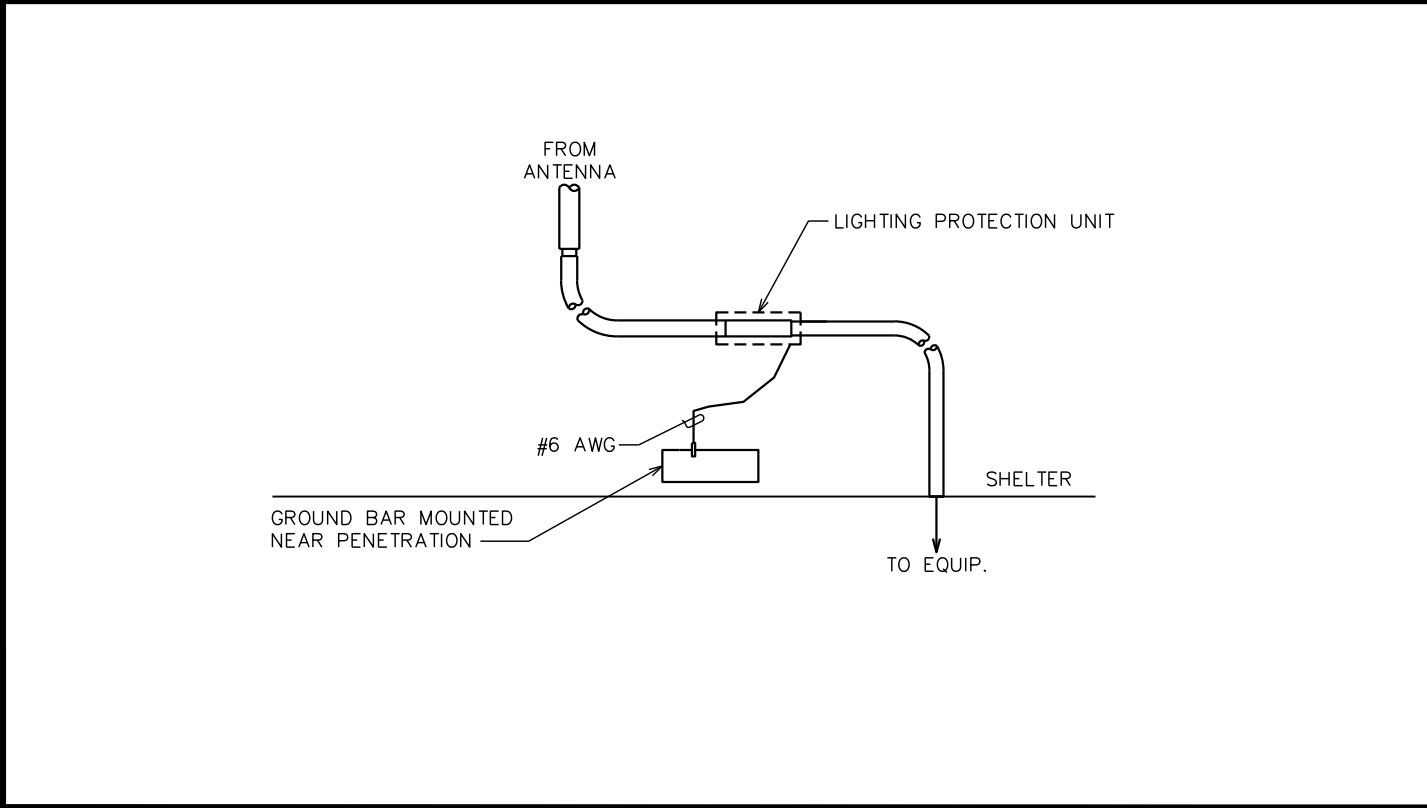
REVISION:

5

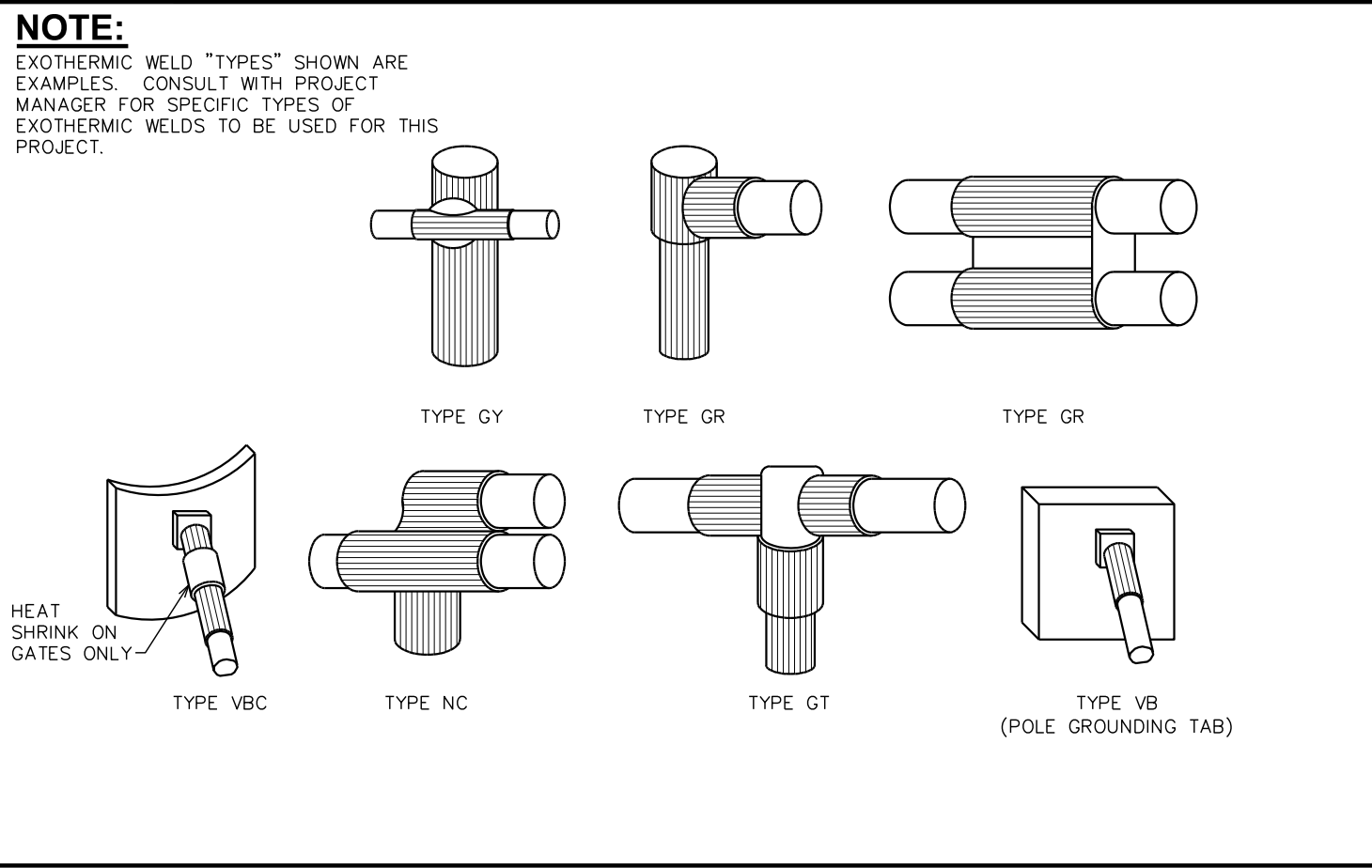
TEP#: 337281.931516



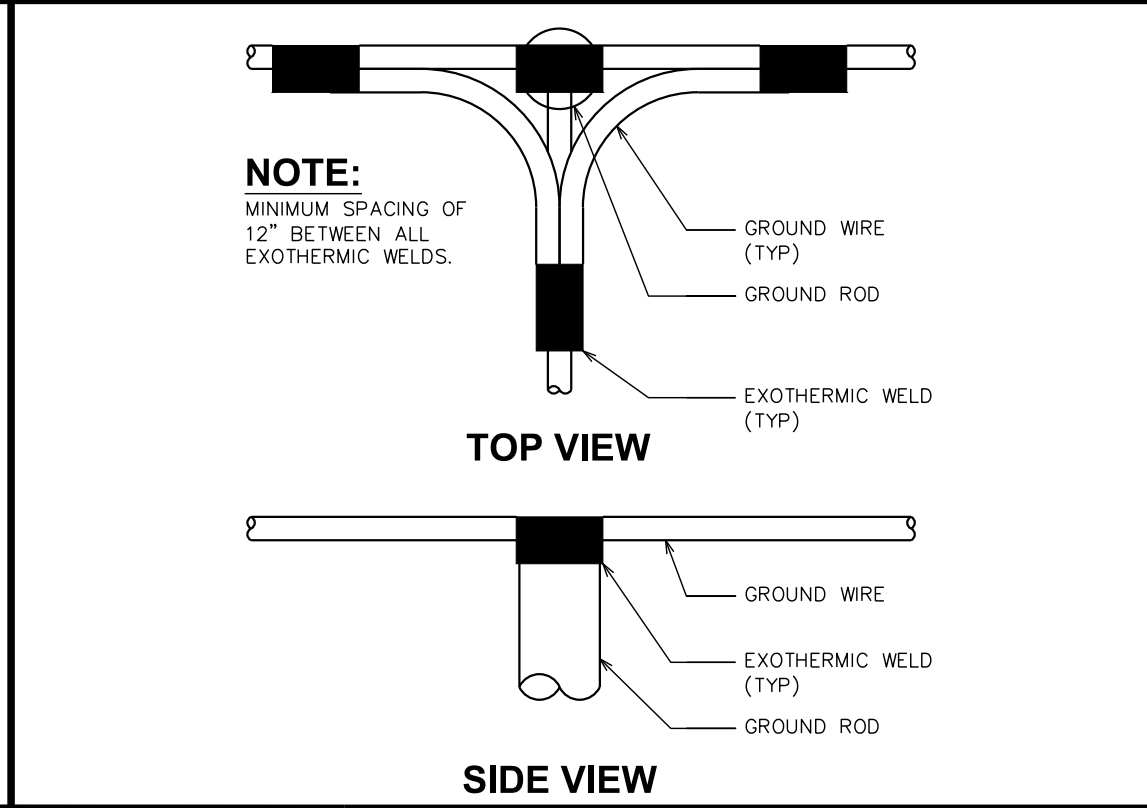
STANDARD GROUND BAR DETAIL
SCALE: N.T.S.



POE CABLE GROUNDING DETAIL
SCALE: N.T.S.



EXOTHERMIC WELD DETAILS
SCALE: N.T.S.



EXOTHERMIC WELD GROUNDING DETAIL
SCALE: N.T.S.

PLANS PREPARED FOR:

DUKE ENERGY.

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

PROJECT INFORMATION:

DUNN OPERATIONS CENTER

1269 JONESBORO RD
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PLANS PREPARED BY:

TEP

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RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

N.C. LICENSE # P-1403

SEAL:

November 25, 2024

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3	10-24-24	CONSTRUCTION
2	07-16-24	PRELIMINARY CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: RJW CHECKED BY: JBG

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER: **E-7**

REVISION: **5**

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