



# 5RA0183A

162 MATTIE RIDGELL LANE  
LILLINGTON, NC 27546

POWER HARDENING  
SBA#: NC14882-A



2105 WATER RIDGE PARKWAY, SUITE 400  
CHARLOTTE, NC 28217

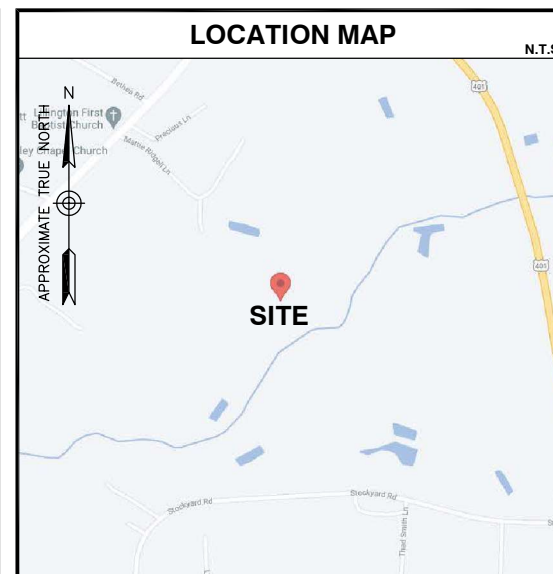
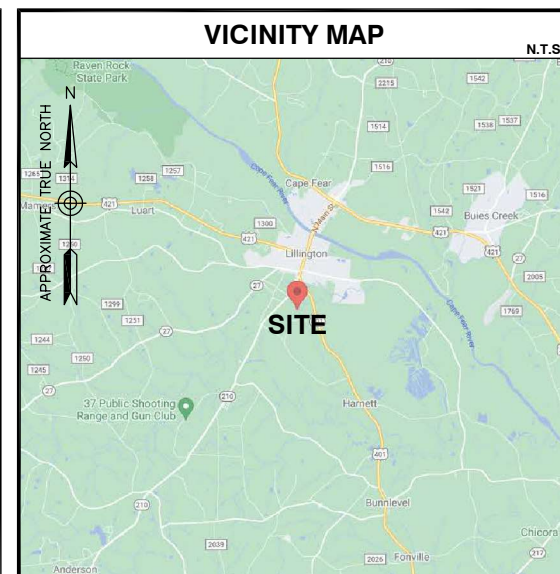
5RA0183A



Dewberry Engineers Inc.  
2610 WYCLIFF ROAD  
SUITE 410  
RALEIGH, NC 27607  
PHONE: 919.881.9939  
FAX: 919.881.9923  
NCBELS # F-0929

SITE INFORMATION	
<b>SITE LOCATION</b>	
162 MATTIE RIDGELL LANE LILLINGTON, NC 27546	
LATITUDE (NAD83):	35° 22' 47.23" N
LONGITUDE (NAD83):	78° 49' 12.09" W
<b>PROPERTY INFORMATION</b>	
PARCEL ID:	100559 0090
PIN:	0559-33-7908.000
JURISDICTION:	HARNETT COUNTY
ZONING CLASS:	RA-20R
COUNTY:	HARNETT
<b>PROPERTY OWNER</b>	
ADAMS STEVE & ADAMS GAYLE P.O. BOX 794 ANGIER, NC 27501	
<b>TOWER OWNER</b>	
SBA COMMUNICATIONS CORPORATION 8051 CONGRESS AVENUE BOCA RATON, FL 33487	
<b>OCCUPANCY TYPE:</b>	
UNMANNED AND NOT FOR HUMAN HABITATION	

PROJECT TEAM	
<b>APPLICANT</b>	
T-MOBILE 2105 WATER RIDGE PARKWAY SUITE 400 CHARLOTTE, NC 28217 ALEX KRASNOV (919) 306-1512	
<b>SITE ACQUISITION:</b>	
DEWBERRY ENGINEERS INC. DOUGLAS FULCHER (919) 425-7611	
<b>ENGINEERING</b>	
DEWBERRY ENGINEERS INC. MATTHEW SELKIRK, PE (804) 205-3361	
<b>CONSTRUCTION MANAGEMENT:</b>	
DEWBERRY DESIGN-BUILDERS INC. JESSICA ROBBINS, PE (919) 636-6303	
<b>POWER PROVIDER:</b>	
DUKE ENERGY (800) 653-5307	



**DIRECTIONS:**  
FROM RALEIGH, NC, TAKE I-440 W/US-1 S TOWARD SANFORD. TAKE THE NC-55 EXIT, EXIT 95, TOWARD FUQUAY-VARINA/APEX/HOLLY SPRINGS. TURN LEFT ONTO E WILLIAMS ST/NC-55. NC-55 BECOMES NC-55 BYP. STAY STRAIGHT TO GO ONTO GB ALFORD HWY/NC-55 BYP. GB ALFORD HWY BECOMES BROAD ST/NC-55. TURN RIGHT ONTO N ENNIS ST/NC-55. TURN RIGHT ONTO N MAIN ST/US-401 S/NC-42. TURN RIGHT ONTO N MAIN ST/US-421 N/US-401 S/NC-27/NC-210. TURN RIGHT ONTO S MAIN ST/NC-210. TAKE THE 3RD LEFT ONTO MATTIE RIDGELL LN. SITE ACCESS ROAD IS ON THE RIGHT.

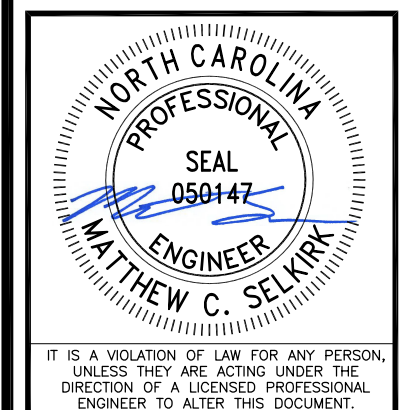
APPLICABLE CODES	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.	
<ol style="list-style-type: none"> <li>2018 NORTH CAROLINA BUILDING CODE</li> <li>2018 NORTH CAROLINA ENERGY CONSERVATION CODE</li> <li>2018 NORTH CAROLINA FIRE PREVENTION CODE</li> <li>2018 NORTH CAROLINA FUEL GAS CODE</li> <li>2018 NORTH CAROLINA MECHANICAL CODE</li> <li>2021 LIFE SAFETY CODE (NFPA 101)</li> <li>2017 NATIONAL ELECTRICAL CODE (NFPA 70)</li> <li>NFPA 780 - LIGHTNING PROTECTION CODE</li> <li>TIA-EIA-222-G.</li> <li>ANSI/TIA 607-B-COMMERCIAL BUILDING GROUNDING &amp; BONDING REQUIREMENTS FOR TELECOMMUNICATIONS</li> <li>LOCAL BUILDING CODE.</li> <li>CITY/COUNTY ORDINANCES.</li> </ol>	

PROJECT SCOPE	
THE INSTALLATION OF A 48KW AC DIESEL GENERATOR ON EXISTING CONCRETE PAD WITH ASSOCIATED CABLES/CONDUITS.	

SHEET INDEX	
SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
B-1	BUILDING CODE SUMMARY
C-1	GENERAL NOTES
C-2	OVERALL SITE PLAN
C-3	EQUIPMENT LAYOUT
C-4	EQUIPMENT DETAILS
C-5	CONSTRUCTION DETAILS
E-1	ELECTRICAL & GROUNDING PLAN
E-2	ELECTRICAL & GROUNDING DETAILS

CONSTRUCTION DRAWINGS		
REV	DATE	ISSUED FOR
A	09/08/21	REVIEW
0	09/23/21	CONSTRUCTION

DRAWN BY:	XH
REVIEWED BY:	KFM
CHECKED BY:	MCS
JOB NUMBER:	50142737



SITE ADDRESS  
162 MATTIE RIDGELL LANE  
LILLINGTON, NC 27546

SHEET TITLE  
TITLE SHEET

SHEET NUMBER  
T-1

APPROVALS	
THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO BE REVIEWED BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.	
T-MOBILE:	DATE:
OWNER:	DATE:
MUNICIPAL:	DATE:

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEERS IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.



**2018 APPENDIX B  
BUILDING CODE SUMMARY  
FOR ALL COMMERCIAL PROJECTS  
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)**  
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: **5RA0183A**  
 Address: **162 MATTIE RIDGELL LANE, LILLINGTON, NC** Zip Code: **27546**  
 Owner/Authorized Agent: **T-MOBILE** Phone # ( **919** ) **306** - **1512** E-Mail: **ALEXANDRA.KRASNOV@T-MOBILE.COM**  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City  County **HARNETT**  State

**CONTACT:**

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	N/A			( ) -	
Civil	DEWBERRY ENGINEERS INC.	MATTHEW C. SELKIRK, PE	050147	(864) 205-3361	MSELKIRK@DEWBERRY.COM
Electrical	N/A			( ) -	
Fire Alarm	N/A			( ) -	
Plumbing	N/A			( ) -	
Mechanical	N/A			( ) -	
Sprinkler-Standpipe	N/A			( ) -	
Structural	N/A			( ) -	
Retaining Walls >5' High	N/A			( ) -	
Other	N/A			( ) -	

(\*Others\* should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

**2018 NC CODE FOR:**  New Construction  Addition  Renovation  
 1<sup>st</sup> Time Interior Completion  
 Shell/Core  
 Phased Construction - Shell/Core  
 Renovation

**2018 NC EXISTING BUILDING CODE:**  Prescriptive  Repair  Chapter 14  
 Alteration:  Level I  Level II  Level III  Change of Use  
 Historic Property

**CONSTRUCTED:**(date) **ORIGINAL OCCUPANCY(S)** (Ch. 3): TELECOMMUNICATIONS  
**RENOVATED:** (date) **CURRENT OCCUPANCY(S)** (Ch. 3): TELECOMMUNICATIONS

**RISK CATEGORY (table 1604.5)** Current:  I  II  III  IV  
 Proposed:  I  II  III  IV

**BASIC BUILDING DATA**  
**Construction Type:**  I-A  II-A  III-A  IV  V-A  
 I-B  II-B  III-B  V-B  
**Sprinklers:**  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
**Standpipes:**  No  Yes Class  I  II  III  Wet  Dry  
**Fire District:**  No  Yes (Primary) **Flood Hazard Area:**  No  Yes  
 Special Inspections Required:  No  Yes

FLOOR	Gross Building Area:			SUB-TOTAL
	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ FT)	
6 <sup>th</sup> Floor				
5 <sup>th</sup> Floor				
4 <sup>th</sup> Floor				
3 <sup>rd</sup> Floor				
2 <sup>nd</sup> Floor				
Mezzanine				
1 <sup>st</sup> Floor	170	0		170
Basement				
TOTAL	170	0		170

**ALLOWABLE AREA**

**Primary Occupancy Classification: SELECT ONE**  
 Assembly  A-1  A-2  A-3  A-4  A-5  
 Business   
 Educational   
 Factory  F-1 Moderate  F-2 Low  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional  I-1 Condition  I-2  I-3 Condition  I-4  
 Mercantile   
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1 Moderate  S-2 Low  High-piled  
 Parking Garage  Open  Enclosed  Repair Garage  
 Utility and Miscellaneous

**Accessory Occupancy Classification(s):** \_\_\_\_\_  
**Incidental Uses (Table 509):** \_\_\_\_\_  
**Special Uses (Chapter 4 - List Code Sections):** \_\_\_\_\_  
**Special Provisions (Chapter 5 - List Code Sections):** \_\_\_\_\_  
**Mixed Occupancy:**  No  Yes Separation: \_\_\_\_\_ Hr. Exception: \_\_\_\_\_  
 Non-Separated Use (508.3)  
 The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.  
 Separated Use (508.4)  
 See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.  

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 <sup>4</sup> AREA	(C) AREA FOR FRONTAGE INCREASE <sup>1,2</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>3</sup>

1 Frontage area increases from Section 506.3 are calculated thus:  
 a. Perimeter which fronts a public way or open space having 20 or more feet of frontage (F)  
 b. Total Building Perimeter = \_\_\_\_\_ (P)  
 c. Ratio (F/P) = \_\_\_\_\_  
 d. W = Minimum width of public way or open space (ft) (W)  
 e. Percent of frontage increase =  $(F/P - 0.2) \times W/30 =$  \_\_\_\_\_ (%)

2 Unlimited area applicable to buildings having a maximum height of 50 feet (506.2).  
 3 Maximum Building Area is based on the building's x D (maximum 3 stories) (506.2).  
 4 The maximum area of open parking garages must comply with Table 406.5.4  
 5 Frontage increase is based on the perimeter of the building in Table 506.2.

**ALLOWABLE HEIGHT**

TABLE (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)		
Building Height in Stories (Table 504.4)		

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

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	PROVIDED (w/ REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction including supporting beams and joists							
Floor Ceiling Assembly							
Column Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Column Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

\* Indicate section number permitting reduction

**PERCENTAGE OF WALL OPENING CALCULATIONS**

FIRE SEPARATION DISTANCE (FEET FROM PROPERTY LINES)	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

**LIFE SAFETY SYSTEM REQUIREMENTS**

Emergency Lighting:  No  Yes  
 Exit Signs:  No  Yes  
 Fire Alarm:  No  Yes  
 Smoke Detection Systems:  No  Partial  Yes  
 Carbon Monoxide Detection:  No  Yes

**LIFE SAFETY SYSTEM REQUIREMENTS**

Life Safety Plan Sheet #: \_\_\_\_\_  
 Fire and/or smoke ramp (1007.2) (1006.3.2(1))  
 Assumed and real projections (1007.2) (1006.3.2(1))  
 Exterior wall opening area (1007.2) (1006.3.2(1))  
 Occupancy types for each area (1007.2) (1006.3.2(1))  
 Occupant loads for each area  
 Exit access travel distances (1017) (1006.3.2(1))  
 Common path of travel distances (1007.2) (1006.3.2(1))  
 Dead end lengths (1020.4)  
 Clear exit widths for each exit door  
 Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)

Actual occupant load for each exit door  
 A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.  
 Location of doors with panic hardware (1010.1.10)  
 Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)  
 Location of doors with electromagnetic egress locks (1010.1.10.9)  
 Location of doors equipped with hold-open devices  
 Location of emergency escape windows (1030)  
 The square footage of each fire area (202)  
 The square footage of each smoke compartment for Occupancy Classifications (407.5)  
 Note any code exceptions or table notes that have been used in this project above

**ACCESSIBLE UNITS**

Section/Table/Note	TOTAL UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	RECORD	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

**(SECTION 1106)**

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
			REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

**PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)**

SPACE	EXIST'G	WATERCLOSING FIXTURES		URINALS		LAVATORIES		SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE		REGULAR	ACCESSIBLE
REQ'D										

**ENERGY REQUIREMENTS:**  
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.  
 Existing building envelope complies with code:  No  Yes (The remainder of this section is not applicable)  
 Exempt Building:  No  Yes (Provide Code or Statutory reference): \_\_\_\_\_  
 Climate Zone:  3A  4A  5A  
 Method of Compliance: Energy Code  Performance  Prescriptive  
 ASHRAE 90.1  Performance  Prescriptive  
 (If "Other" specify source here) \_\_\_\_\_

**THERMAL ENVELOPE (Prescriptive method only)**

**Roof/Ceiling Assembly (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Skylights in each assembly: \_\_\_\_\_  
 U-Value of skylight: \_\_\_\_\_  
 Total square footage of skylights in each assembly: \_\_\_\_\_

**Exterior Walls (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Openings (windows, doors, etc.): \_\_\_\_\_  
 U-Value of opening: \_\_\_\_\_  
 Solar heat gain coefficient: \_\_\_\_\_  
 Projection factor: \_\_\_\_\_  
 Door R-Values: \_\_\_\_\_

**Walls below grade (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_

**Floors over unconditioned space (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_

**Floors slab on grade**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Horizontal/Vertical requirement: \_\_\_\_\_  
 Slab Heated: \_\_\_\_\_

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

**DESIGN LOADS:**

**Importance Factors:** Snow (I<sub>s</sub>) 1.0  
 Seismic (I<sub>e</sub>) 1.0

**Live Loads:** Roof 20 psf  
 Mezzanine N/A psf  
 Floor N/A psf

**Ground Snow Load:** 15 psf

**Wind Load:** Ultimate Wind Speed 117 mph (ASCE-7)  
 Exposure Category C

**SEISMIC DESIGN CATEGORY:**  A  B  C  D  
 Provide the following Seismic Design Parameters:  
 Risk Category (Table 1604.5)  I  II  III  IV  
 Spectral Response Acceleration S<sub>s</sub> 0.185 %g S<sub>1</sub> 0.087 %g  
 Site Classification (ASCE 7)  A  B  C  D  E  F  
 Data Source:  Field Test  Presumptive  Historical Data  
**Basic structural system**  
 Bearing Wall  Dual w/Special Moment Frame  
 Building Frame  Dual w/Intermediate R/C or Special Steel  
 Moment Frame  Inverted Pendulum  
 Simplified  Equivalent Lateral Force  Dynamic  
**Analysis Procedure:**  
 Architectural, Mechanical, Components anchored?  Yes  No

**LATERAL DESIGN CONTROL:** Earthquake  Wind   
**SOIL BEARING CAPACITIES:**  
 Field Test (provide copy of test report) \_\_\_\_\_ psf  
 Presumptive Bearing capacity 2000 psf  
 Pile size, type, and capacity \_\_\_\_\_

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

**MECHANICAL SUMMARY  
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT**

**Thermal Zone**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_

**Interior design conditions**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_  
 relative humidity: \_\_\_\_\_

**Building heating load:** \_\_\_\_\_  
**Building cooling load:** \_\_\_\_\_

**Mechanical Spacing Code**  
 Unitary description of unitary heating efficiency: \_\_\_\_\_  
 cooling efficiency: \_\_\_\_\_  
 size category of unit: \_\_\_\_\_  
 Boiler Size category. If oversized, state reason: \_\_\_\_\_  
 Chiller Size category. If oversized, state reason: \_\_\_\_\_

**List equipment efficiencies:** \_\_\_\_\_

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

**ELECTRICAL SUMMARY  
ELECTRICAL SYSTEM AND EQUIPMENT**

**Method of Compliance:** Energy Code  Prescriptive  Performance  
 ASHRAE 90.1  Prescriptive  Performance

**Lighting schedule (each fixture type)**  
 lamp type required in fixture \_\_\_\_\_  
 number of lamps in fixture \_\_\_\_\_  
 ballast type used in the fixture \_\_\_\_\_  
 number of ballasts in the fixture \_\_\_\_\_  
 total wattage permitted \_\_\_\_\_  
 total interior lighting power allowed (with building or space by space) \_\_\_\_\_  
 total exterior lighting power allowed \_\_\_\_\_

**Additional Efficiency Packages (When using the 2018 NCEC Code with ASHRAE 90.1)**  
 C406.2 More Efficient Electrical Equipment  
 C406.3 Reduced Lighting Power Density  
 C406.4 Enhanced Digital Lighting Controls  
 C406.5 On-Site Renewable Energy  
 C406.6 Dedicated Outdoor Air System  
 C406.7 Reduced Energy Use in Service Water Heating

**T-Mobile**  
 2105 WATER RIDGE PARKWAY, SUITE 400  
 CHARLOTTE, NC 28217

**5RA0183A**

**Dewberry®**  
 Dewberry Engineers Inc.  
 2610 WYCLIFF ROAD  
 SUITE 410  
 RALEIGH, NC 27607  
 PHONE: 919.881.9939  
 FAX: 919.881.9923  
 NCBELS # F-0929

**CONSTRUCTION DRAWINGS**

REV	DATE	ISSUED FOR
A	09/08/21	REVIEW
0	09/23/21	CONSTRUCTION

DRAWN BY: \_\_\_\_\_ XH  
 REVIEWED BY: \_\_\_\_\_ KFM  
 CHECKED BY: \_\_\_\_\_ MCS  
 JOB NUMBER: 50142737

**NORTH CAROLINA PROFESSIONAL ENGINEER SEAL**  
 050147  
 MATTHEW C. SELKIRK

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

SITE ADDRESS \_\_\_\_\_  
 162 MATTIE RIDGELL LANE  
 LILLINGTON, NC 27546  
 SHEET TITLE \_\_\_\_\_  
**BUILDING CODE SUMMARY**  
 SHEET NUMBER \_\_\_\_\_  
 B-1

## GENERAL CONSTRUCTION NOTES:

- ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH T-MOBILE SPECIFICATIONS.
- CONTRACTOR SHALL CONTACT "NORTH CAROLINA 811" (800-632-4949) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
- CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, ETC. BEFORE COMMENCING WORK.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
- ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
- WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, T-MOBILE PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
- CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
- CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
- CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
- CONTRACTOR SHALL FURNISH T-MOBILE WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH T-MOBILE PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY T-MOBILE. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
- CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
- CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- UNLESS OTHERWISE NOTED T-MOBILE SHALL PROVIDE ALL REQUIRED MATERIAL FOR CONTRACTOR TO INSTALL.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY T-MOBILE FOR INSTALLATION BY CONTRACTOR.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
- UPON COMPLETION OF THE CO-LOCATOR INSTALLATION, A RECORD DRAWING SHALL BE PROVIDED TO LOCAL JURISDICTION FOR REVIEW AND APPROVAL.

## GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES, O.S.H.A., NEC, T-MOBILE SPECIFICATIONS, AND THE SPECIFICATIONS DETAILED IN THESE PLANS.
- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT, AND DISCREPANCIES.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE. CONTRACTOR SHALL ENSURE THAT ACCESS TO EQUIPMENT IS MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND ALL APPLICABLE CODES.
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM, ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, IEEE, AND NFPA.
- ALL CONDUIT INSTALLED MAY BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- ALL "CONDUIT ONLY" (C.O.) INSTALLATIONS SHALL HAVE A 1/4" PULL WIRE OR ROPE.
- CONTRACTOR SHALL PROVIDE T-MOBILE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
- POWER WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.
- ALL CONDUCTORS LARGER THAN #10 AWG SHALL BE STRANDED COPPER WITH THWN 600V INSULATION, UNLESS NOTED OTHERWISE.
- ALL MATING SURFACES OF GROUND CONNECTIONS SHALL BE CLEANED SMOOTH AND COATED WITH ANTIOXIDANT PRIOR TO ATTACHMENT.
- ALL GROUND CONNECTIONS BELOW GRADE MUST BE EXOTHERMICALLY WELDED (CAD WELD OR APPROVED EQUAL)
- ALL EXTERIOR GROUNDING CONDUCTORS SHALL BE # 2 AWG SOLID TINNED BARE COPPER WIRE UNLESS NOTED OTHERWISE.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C. COORDINATE SHORT CIRCUIT REQUIREMENTS WITH UTILITY COMPANY.
- CONTRACTOR SHALL PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
- LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND, THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH ALL APPLICABLE CODES.
- ALL MATERIALS SHALL BE U.L. LISTED.

- CONDUIT:
  - RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
  - FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE GROUND WIRE.
  - CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ENGINEER PRIOR TO INSTALLING.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
- CONTRACTOR SHALL COORDINATE THE ELECTRICAL SERVICE WITH LANDLORD AND LOCAL UTILITY.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY NEC AND ALL APPLICABLE CODES.
- GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. CONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER ALL TEST REPORTS AND ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
- ALL EXPOSED GROUND WIRES ROUTED ALONG THE SIDE OF EQUIPMENT SHELTERS OR ROUTED OVER CONCRETE FOUNDATIONS OR OTHER EXISTING STRUCTURES SHALL BE INSTALLED IN PROPERLY ANCHORED 3/4" (MIN.) PVC CONDUIT.
- CONTRACTOR SHALL NOT DISTURB EXISTING GROUNDING SYSTEM. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST.
- ALL ELEMENTS OF CABLE BRIDGE AND T-MOBILE UTILITY BACKBOARD MUST BE BONDED AND JUMPERED TO GROUNDED COMPONENTS OF THESE SYSTEMS.
- ALL INTERIOR CABLES AND WIRING SHALL BE NEATLY ROUTED IN OVERHEAD LADDER RACK AND FASTENED TO LADDER RACK WITH PLASTIC CABLE TIES.
- ALL GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARDS FROM POINT OF ORIGIN TO TERMINATION POINT (GROUND BAR, GROUND RING, ETC).
- GROUNDING CONDUCTORS SHALL NOT REVERSE DIRECTION (EXCEPT HALO & BURIED GROUND RINGS). OTHER EXCEPTIONS NEED TO BE APPROVED BY T-MOBILE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- GROUNDING CONDUCTORS SHALL HAVE A MINIMUM BENDING RADIUS OF 8".
- ALL CONNECTIONS TO GROUND PLATES SHALL BE CAD WELDED TO THE CENTER OF THE PLATE. ALL DETAILS SHOWING CONNECTIONS TO GROUND RODS ARE ALSO VALID FOR SIMILAR CONNECTIONS TO GROUND PLATES.

## GENERAL GROUNDING NOTES

- ALL DOWN CONDUCTORS AND THE GROUND RING CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE AT A MINIMUM DEPTH BELOW GRADE OF 18 INCHES OR TO LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNLESS OTHERWISE NOTED.
- GROUND RODS SHALL BE 5/8" DIAMETER COPPER CLAD, HARGER, T&B, ERICO, OR EQUIVALENT. TOP OF ROD SHALL BE A MINIMUM OF 18" BELOW GRADE. IF LEDGE IS ENCOUNTERED, INSTALL GROUND ROD AT AN ANGLE. ELECTRICAL METER GROUND ROD EXCEPTED.
- WHERE MECHANICAL CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE, CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND RING.
- INSTALL GROUNDING KITS AT ANTENNA CENTERLINE, AND TOWER EXIT POINTS. GROUND COAX LINES. EXOTHERMICALLY WELD #2 DOWN CONDUCTOR TO PLATES, RUN DOWN TOWER, AND TIE INTO GROUNDING SYSTEM.
- ALL GROUNDING WORK SHALL COMPLY WITH T-MOBILE CONSTRUCTION CONTRACT STANDARDS. FOLLOWING COMPLETION OF WORK, GROUND SYSTEM MUST BE TESTED AND SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS SUBMIT AN INDEPENDENT "FALL POTENTIAL" TESTING REPORT.
- ALL GROUNDING CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE INSTALLED IN 3/4" SCH 40 PVC CONDUIT TO 12" BELOW GRADE. ATTACH PVC WITH GALVANIZED "C" CLAMPS.
- CONTRACTOR SHALL HAND-DIG IN AREAS AROUND EXISTING UTILITIES.
- NOTIFY CONSTRUCTION ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
- GROUNDING RING IS SHOWN AS SCHEMATIC ONLY. IT IS DESIGNED WITHOUT BENEFIT OF RESISTIVITY TESTING AND DOES NOT NECESSARILY REPRESENT A GROUNDING SYSTEM TO MEET ANY SPECIFIC GROUND RESISTANCE.
- PRIOR TO POURING CONCRETE, ALL REBAR LOCATED NEAR THE BOTTOM OF THE FOUNDATION SHALL BE BONDED TOGETHER TO FORM A SINGLE GROUNDING ELECTRODE, BY STEEL TIES OF OTHER EFFECTIVE MEANS APPROVED BY NEC 2011 AND STRUCTURAL ENGINEER, AND BONDED TO THE GROUND RING AS DETAILED IN THESE PLANS. (INSPECTION MAY BE REQUIRED PRIOR TO POURING CONCRETE AND MUST BE COORDINATED BY CONTRACTOR.)
- IN ACCORDANCE WITH NEC 2011 REQUIREMENTS, ALL GROUNDING ELECTRODES PRESENT ON SITE SHALL BE BONDED TOGETHER (REFERENCE 2011 NEC ARTICLE 250.50).
- CAULK AND SEAL ALL NON-FACILITY SHELTER PENETRATIONS.

### ELECTRICAL SYMBOLS

- EXOTHERMIC WELD
- COMPRESSION TYPE CONNECTION
- ▲ LUG CONNECTION/CONNECTION PER MANUFACTURERS SPECIFICATIONS
- ⊘ DISCONNECT SWITCH
- Ⓜ METER
- Ⓢ CIRCUIT BREAKER
- Ⓜ GEN GENERATOR
- Ⓢ GENERATOR RECEPTACLE
- Ⓜ AUTOMATIC TRANSFER SWITCH
- Ⓜ MANUAL TRANSFER SWITCH
- GROUNDING WIRE
- Ⓧ INDICATES CODED NUMBER

### ELECTRICAL ABBREVIATIONS

- |       |                                   |
|-------|-----------------------------------|
| AWG   | AMERICAN WIRE GAUGE               |
| BCW   | BARE COPPER WIRE                  |
| BTS   | BASE TRANSMISSION SYSTEM          |
| CIGBE | COAX ISOLATED GROUND BAR EXTERNAL |
| DIA   | DIAMETER                          |
| DWG   | DRAWING                           |
| EMT   | ELECTRICAL METALLIC TUBING        |
| GEN   | GENERATOR                         |
| GPS   | GLOBAL POSITIONING SYSTEM         |
| I     | WALKING BEAM INTERLOCK            |
| IGR   | INTERIOR GROUND RING (HALO)       |
| MIGB  | MASTER ISOLATED GROUND BAR        |
| PPC   | POWER PROTECTION CABINET          |
| RGS   | RIGID GALVANIZED STEEL            |
| RWY   | RACEWAY                           |
| SS    | STAINLESS STEEL                   |
| TYP.  | TYPICAL                           |
| AHJ   | AUTHORITY HAVING JURISDICTION     |
| UNO   | UNLESS NOTED OTHERWISE            |
| UG    | UNDERGROUND                       |
| UE    | UNDERGROUND ELECTRIC              |
| UT    | UNDERGROUND TELEPHONE             |

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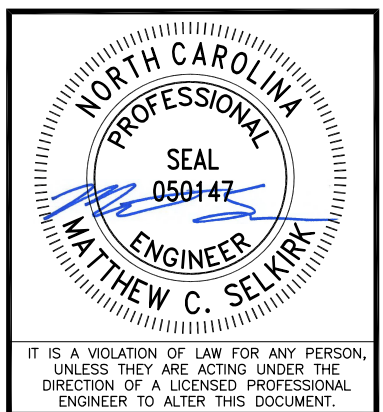
### Dewberry®

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RALEIGH, NC 27607  
PHONE: 919.881.9939  
FAX: 919.881.9923  
NCBELS # F-0929

### CONSTRUCTION DRAWINGS

REV	DATE	ISSUED FOR
A	09/08/21	REVIEW
0	09/23/21	CONSTRUCTION

DRAWN BY:	XH
REVIEWED BY:	KFM
CHECKED BY:	MCS
JOB NUMBER:	50142737



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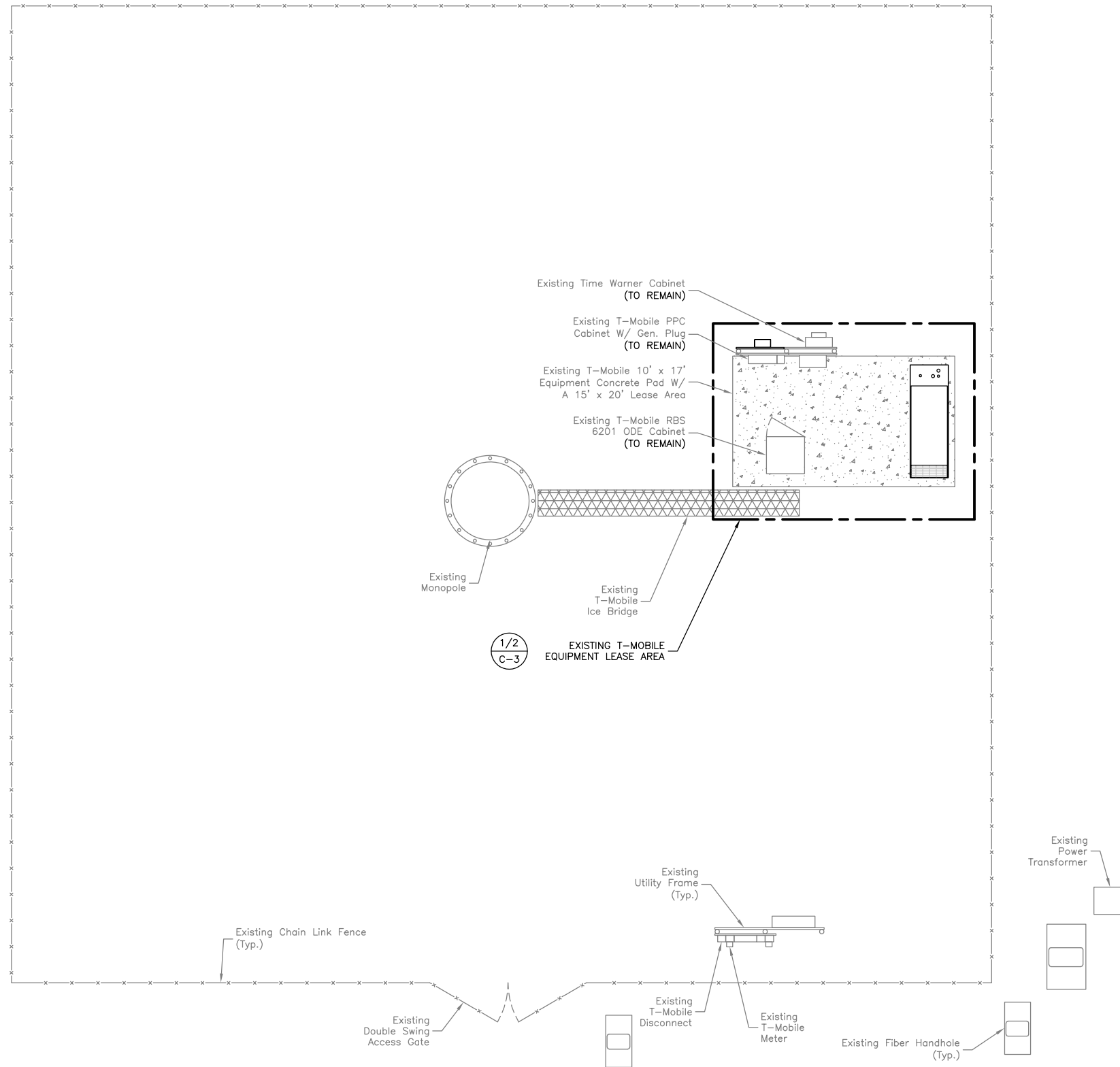
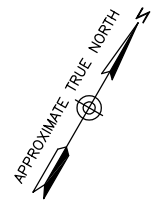
162 MATTIE RIDGELL LANE  
LILLINGTON, NC 27546

SHEET TITLE

## GENERAL NOTES

SHEET NUMBER

C-1



**OVERALL SITE PLAN**  
 SCALE: 1"=5' FOR 22"x34" PLOT  
 1"=10' FOR 11"x17" PLOT

- NOTES:**
- SOME EXISTING INFORMATION NOT SHOWN FOR CLARITY.
  - CONTRACTOR TO VERIFY ALL EXISTING SITE INFORMATION & NOTIFY T-MOBILE & DEWBERRY ENGINEERS OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
  - ALL PROPOSED EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS' RECOMMENDATIONS.

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SHEET TITLE

OVERALL  
 SITE PLAN

SHEET NUMBER

C-2

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### CONSTRUCTION DRAWINGS

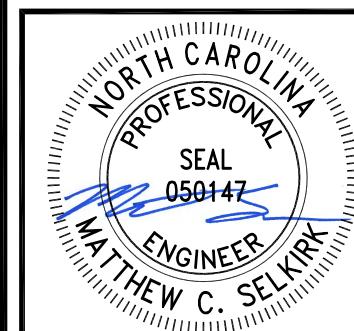
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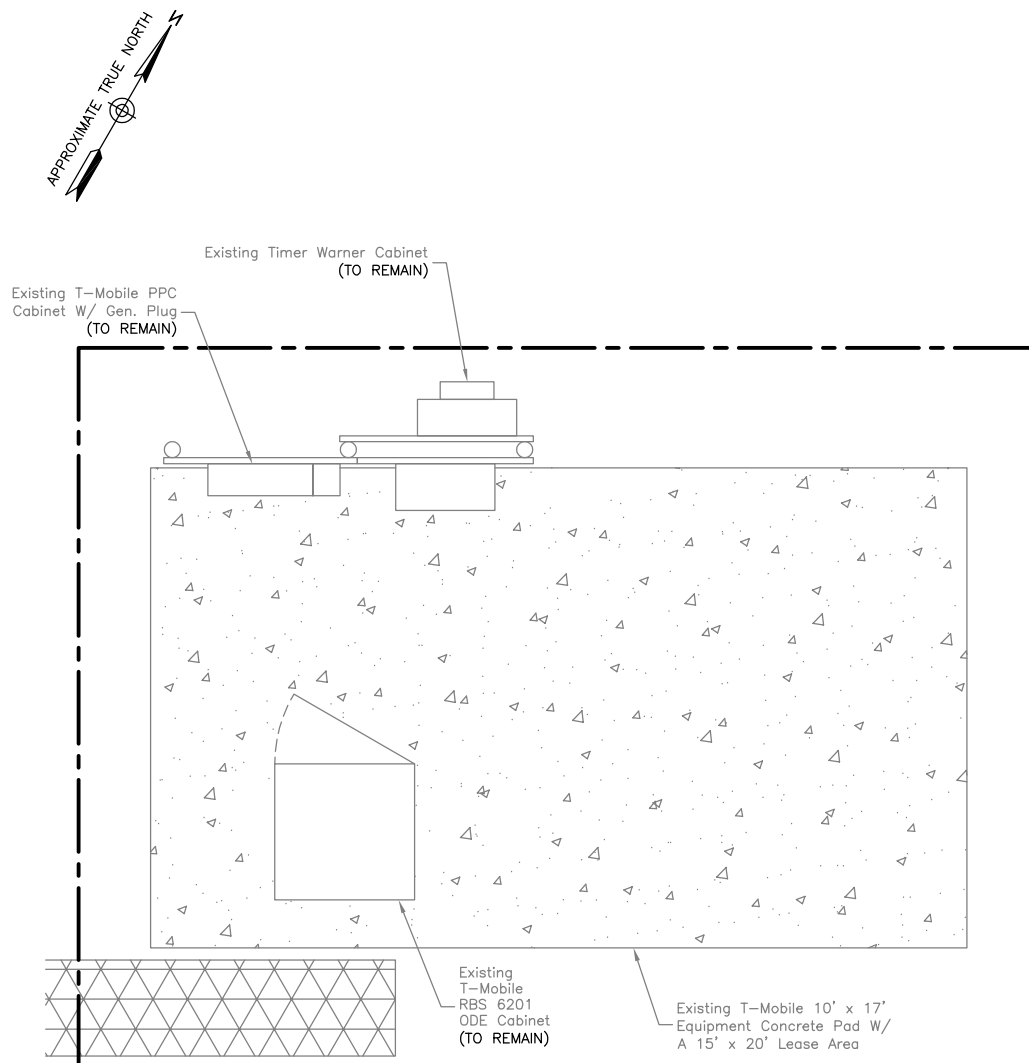
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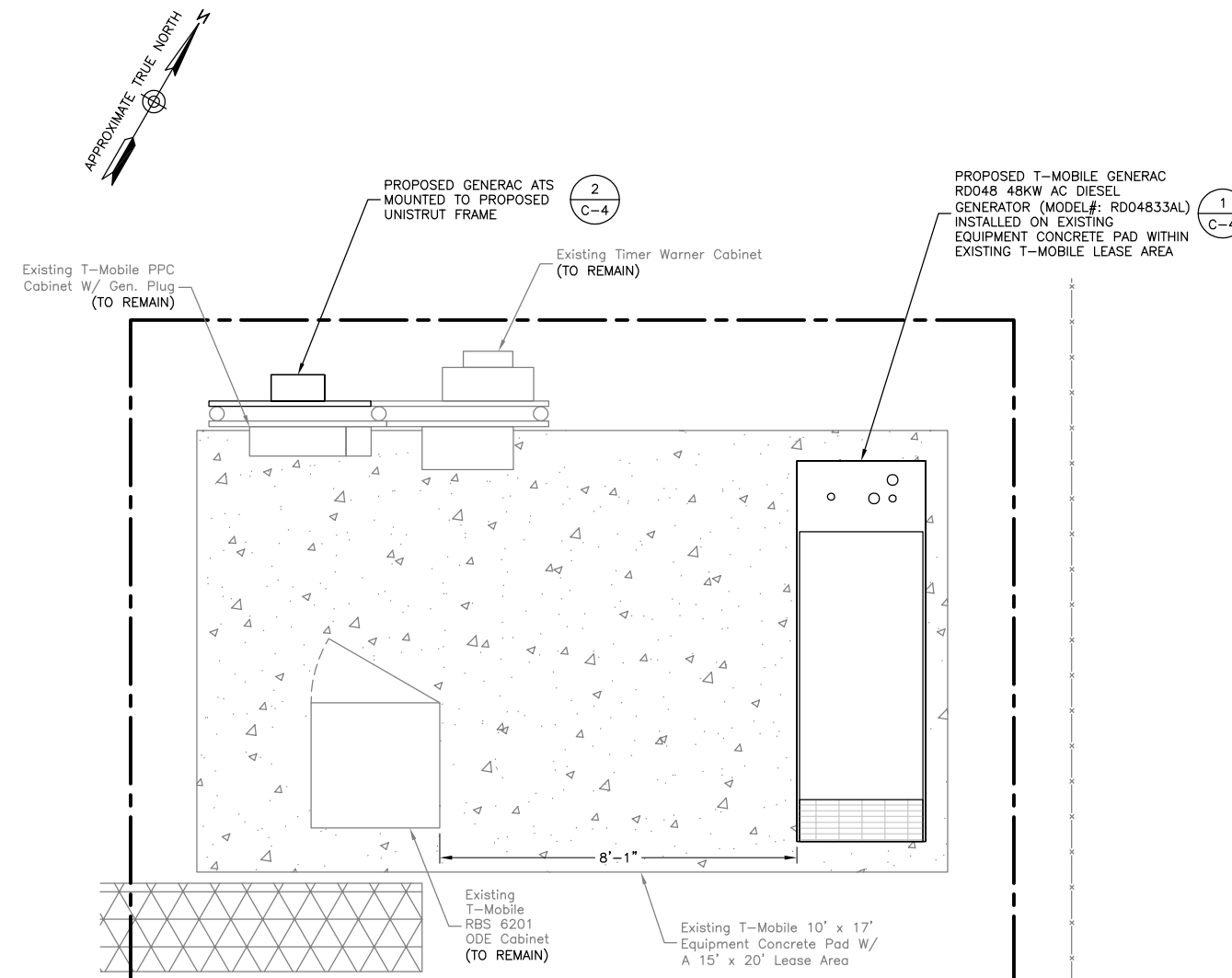
EQUIPMENT  
LAYOUT

SHEET NUMBER

C-3



**EXISTING EQUIPMENT LAYOUT** 1  
SCALE: 1"=2' FOR 22"x34" PLOT  
1"=4' FOR 11"x17" PLOT



**PROPOSED EQUIPMENT LAYOUT** 2  
SCALE: 1"=2' FOR 22"x34" PLOT  
1"=4' FOR 11"x17" PLOT

- NOTES:**
- SOME EXISTING INFORMATION NOT SHOWN FOR CLARITY.
  - CONTRACTOR TO VERIFY ALL EXISTING SITE INFORMATION & NOTIFY T-MOBILE & DEWBERRY ENGINEERS OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
  - ALL PROPOSED EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS' RECOMMENDATIONS.

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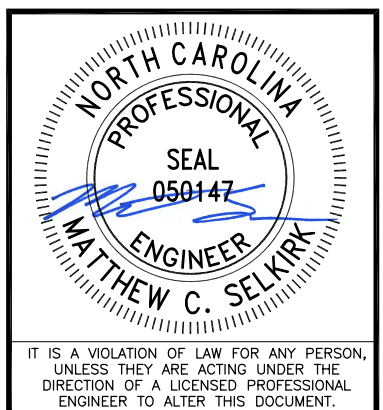


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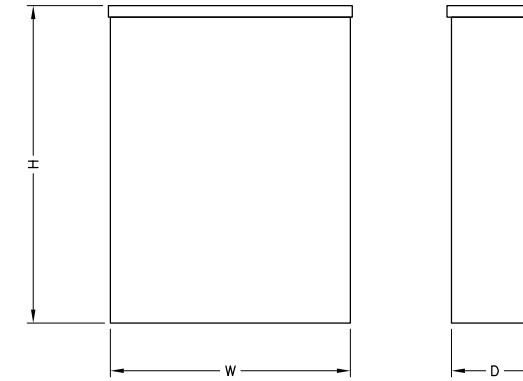
EQUIPMENT  
DETAILS

SHEET NUMBER

C-4

**AUTOMATIC TRANSFER SWITCH SPECIFICATIONS**

MODEL	RXSC200A3	UL RATING	UL/CUL
AMPS	200	LUG RANGE	250 MCM - #6
VOLTAGE	120/240, 1Ø	WEIGHT (LBS)	20.0
LOAD TRANSITION TYPE (AUTOMATIC)	OPEN TRANSITION	DIMENSIONS (IN) (H X W X D)	20.0 X 14.6 X 7.1
ENCLOSURE TYPE	NEMA/UL 3R	WITHSTAND RATING (AMPS)	10,000

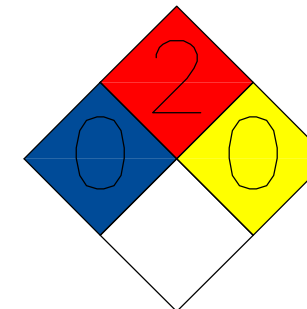


**AUTOMATIC TRANSFER SWITCH DETAILS**

SCALE: N.T.S.

2

NEPA 704 HAZARD IDENTIFICATION SYSTEM 15" DIAMOND



**DIESEL**

**COMBUSTIBLE**

**FLAMMABLE**

**NO SMOKING**

HAZARD RATINGS:

- NINE O'CLOCK - HEALTH
- TWELVE O'CLOCK - FLAMMABILITY
- THREE O'CLOCK - INSTABILITY
- SIX O'CLOCK - SPECIAL

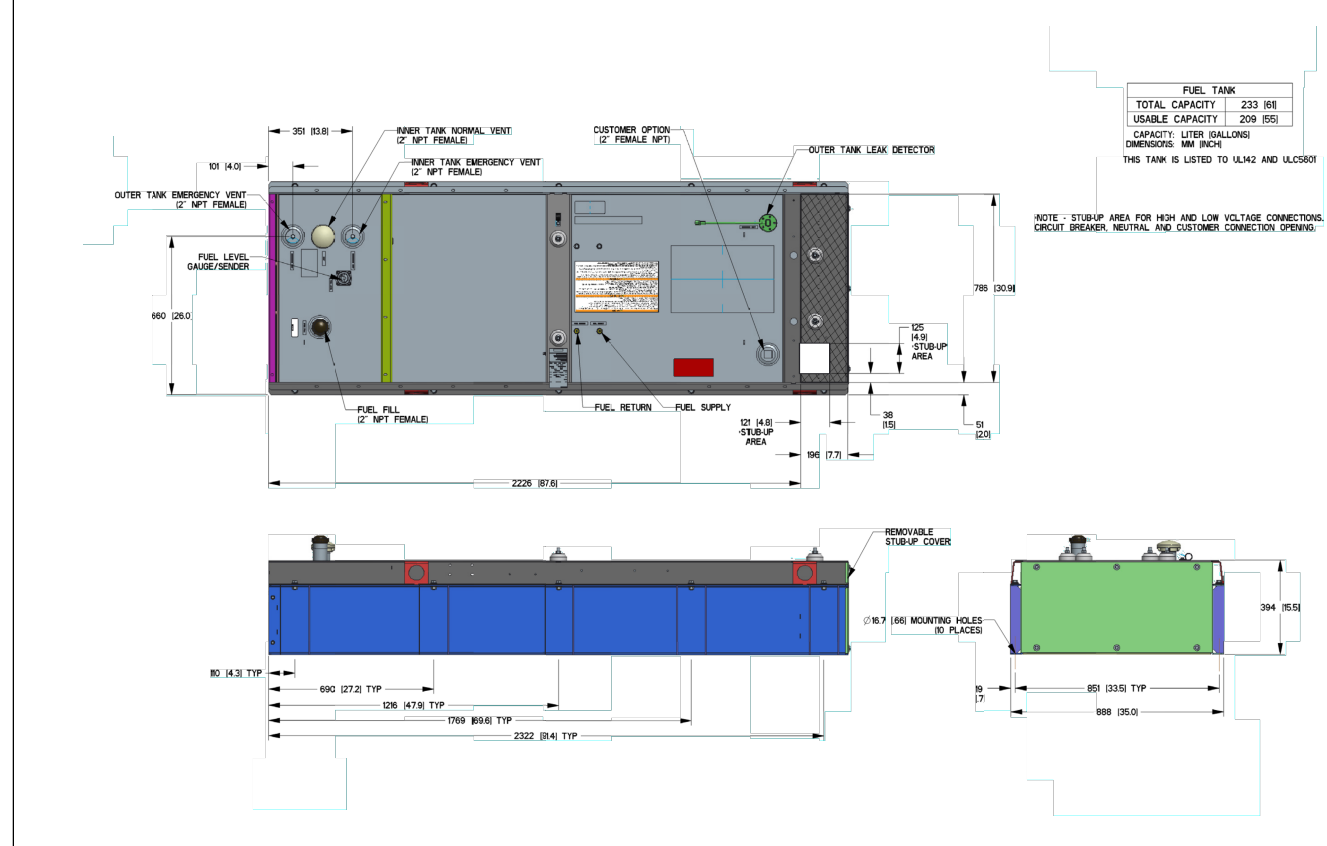
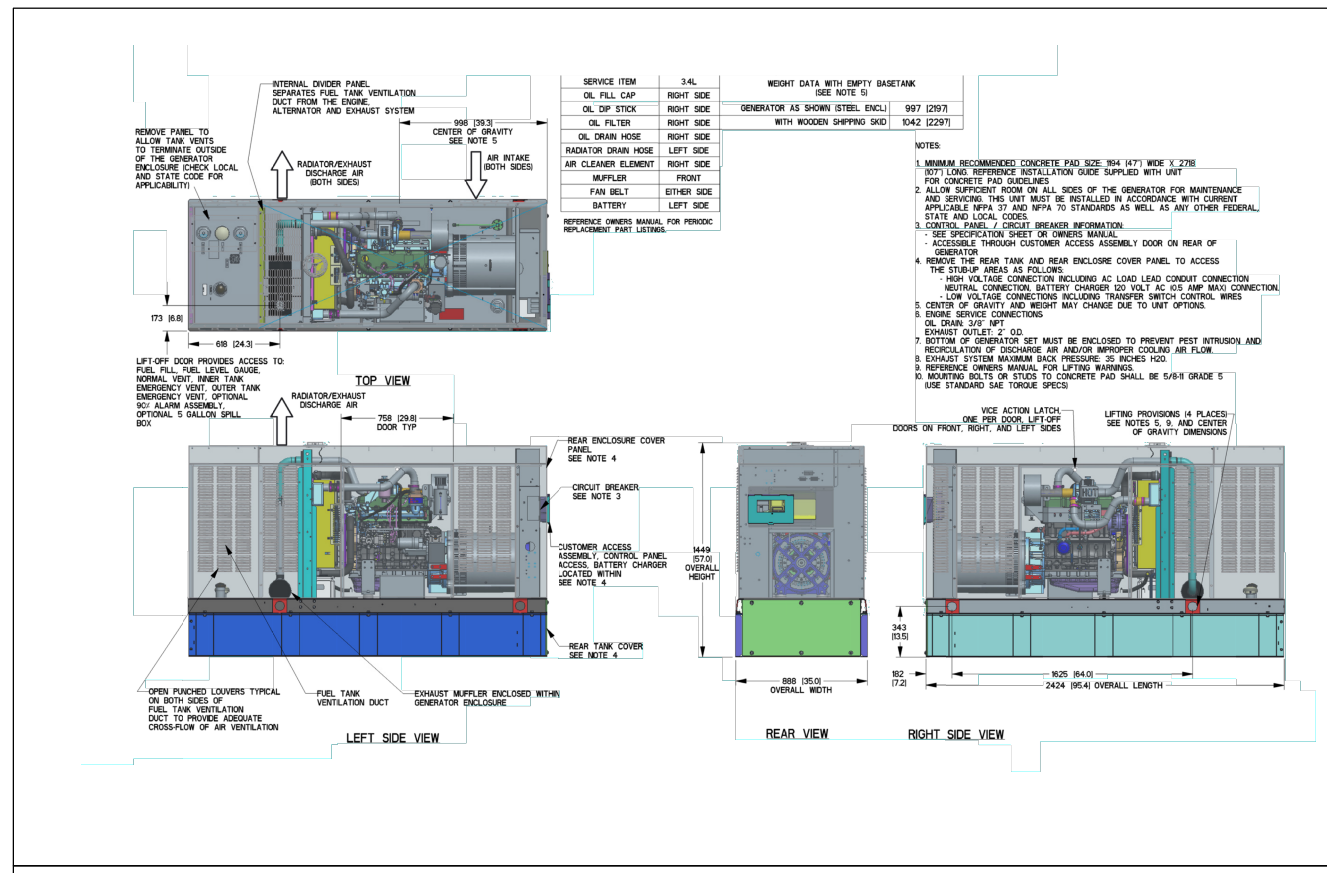
REFERENCES  
NEPA 704  
UFC 7901.9  
IFC 2703.5

**FUEL STORAGE SIGNAGE**

SCALE: N.T.S.

3

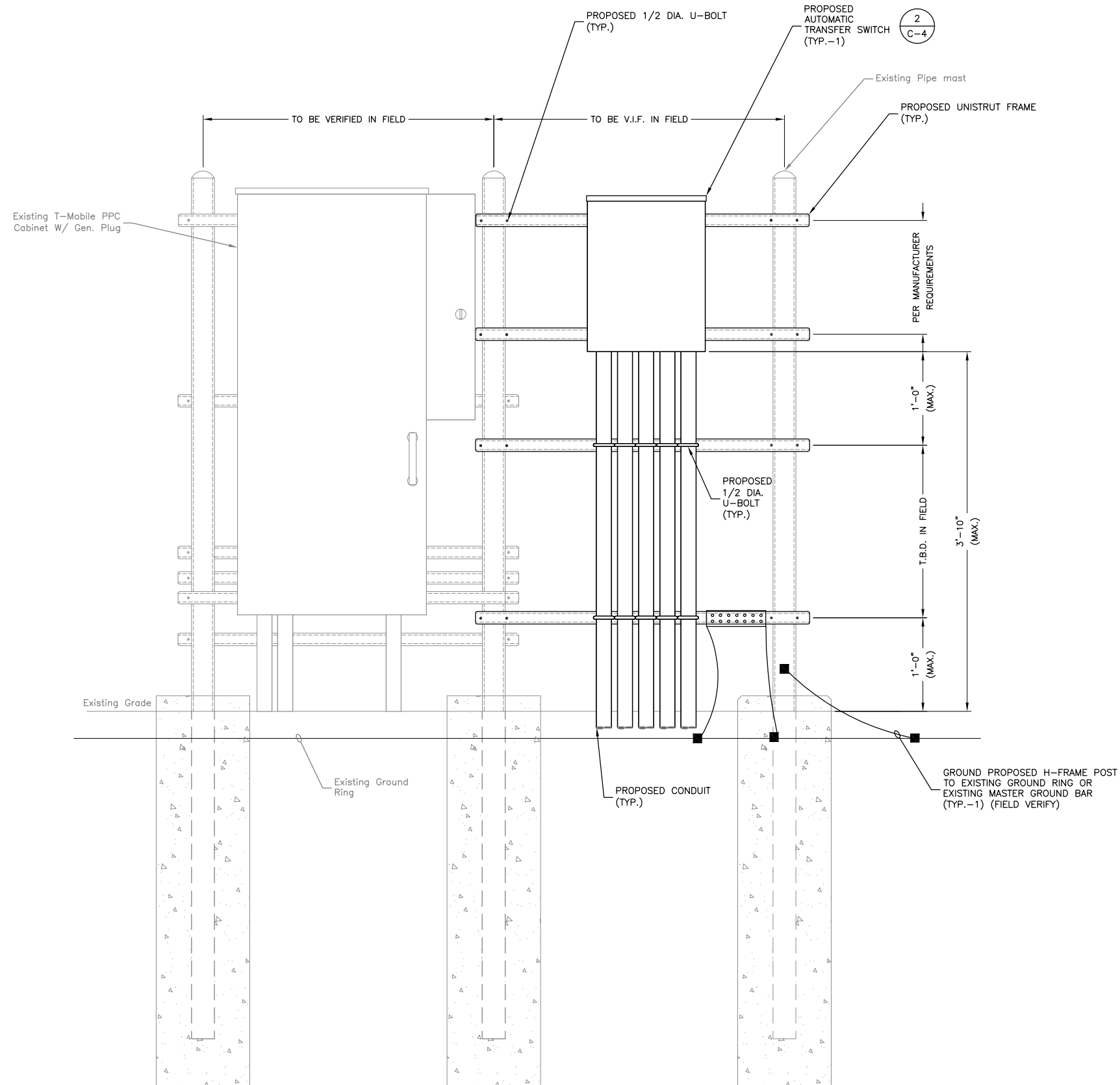
NOTE: THESE SHEETS WERE CREATED BY OTHERS AND ARE FOR REFERENCE ONLY.



**GENERATOR DETAILS**

SCALE: N.T.S.

1



**ATS MOUNTING DETAIL (TYP.)** 1  
SCALE: N.T.S.

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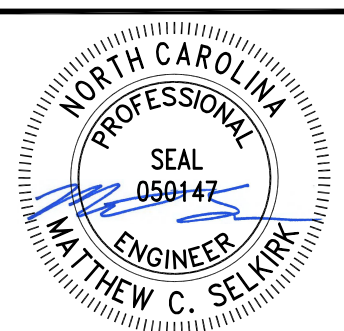
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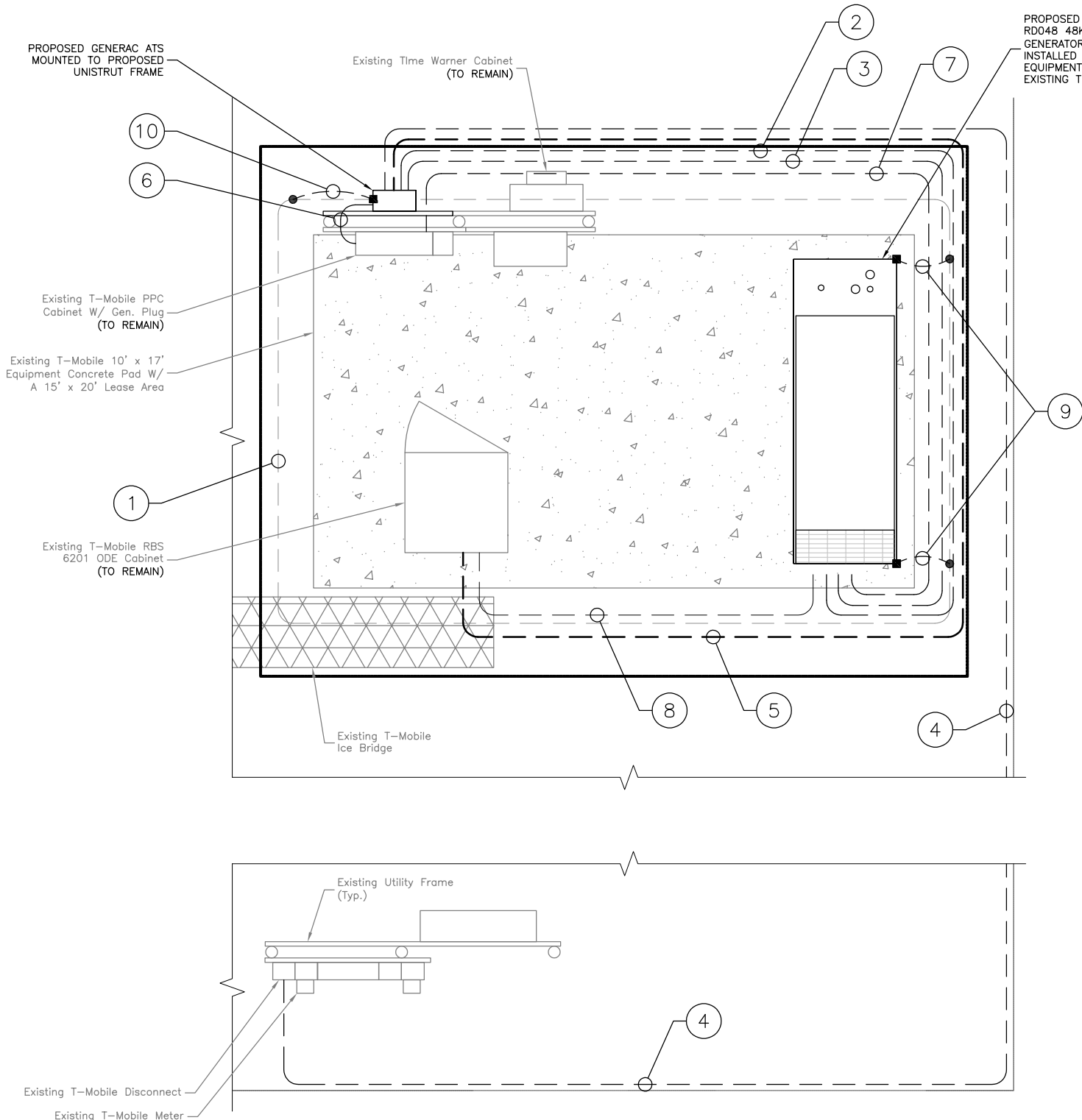
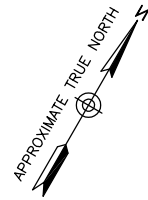
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SHEET TITLE

CONSTRUCTION  
DETAILS

SHEET NUMBER

C-5



**ANNOTATION NOTES:**

- ① EXISTING T-MOBILE EQUIPMENT GROUND RING (FIELD VERIFY EXACT LOCATION)
- ② PROPOSED (1) 2" CONDUIT W/ (3) 3/0 THHN & (1) #4 GROUND FROM PROPOSED GENERATOR TO PROPOSED ATS
- ③ PROPOSED (1) 1" CONDUIT FROM PROPOSED GENERATOR TO PROPOSED ATS FOR CONTROL WIRING
- ④ PROPOSED (1) 2" CONDUIT W/ (3) 3/0 THHN FROM EXISTING DISCONNECT TO PROPOSED ATS
- ⑤ PROPOSED (1) 1" CONDUIT W/ (1) CAT6 CABLE FROM PROPOSED ATS TO EXISTING ALARM BLOCK INSIDE EXISTING T-MOBILE RBS 6201 ODE CABINET
- ⑥ PROPOSED (1) 2" CONDUIT W/ (3) 3/0 THHN & (1) #4 GROUND FROM PROPOSED ATS TO EXISTING AC PANEL
- ⑦ PROPOSED (1) 1" CONDUIT W/ (4) #12 AWG & (2) #12 GROUND FROM EXISTING AC PANEL TO PROPOSED GENERATOR FOR BLOCK HEATER & BATTERY CHARGER
- ⑧ PROPOSED (1) 1" CONDUIT W/ (1) CAT6 CABLE FROM PROPOSED GENERATOR TO EXISTING ALARM BLOCK INSIDE EXISTING T-MOBILE RBS 6201 ODE CABINET
- ⑨ CONNECT PROPOSED GENERATOR TO EXISTING GROUND RING W/ (2) #2 AWG SOLID TINNED COPPER GROUND WIRE
- ⑩ CONNECT PROPOSED ATS TO EXISTING GROUND RING W/ (1) #2 AWG SOLID TINNED COPPER GROUND WIRE

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 NCBELS # F-0929

CONSTRUCTION DRAWINGS		
REV	DATE	ISSUED FOR
A	09/08/21	REVIEW
0	09/23/21	CONSTRUCTION

DRAWN BY:	XH
REVIEWED BY:	KFM
CHECKED BY:	MCS
JOB NUMBER:	50142737

CONDUIT USE TABLE		
CONDUIT TYPE	ABOVE GROUND	BELOW GROUND
PVC	N	Y
RGS	Y	Y
LMFC	Y	N
LFNC	Y (1/2" FOR GROUNDING ONLY)	Y

- INSTALLATION NOTES:**
- CONDUITS SHALL NOT IMPEDE INGRESS/EGRESS ROUTES.
  - CONDUITS SHALL NOT BE INSTALLED WITHIN EQUIPMENT WORKER MAINTENANCE AREAS.
  - CONDUIT BOXES SHALL NOT BE INSTALLED SUCH THAT THEY ARE BELOW OR FLUSH WITH GRADE.
  - ALL CONDUIT RUNS SHALL BE PROPERTY SUPPORTED AND SECURED.
  - EMT CONDUIT SHALL ONLY BE PERMITTED FOR INDOOR INSTALLATIONS.
  - ALL CONDUIT RUNS BENEATH AN ELEVATED PLATFORM SHALL BE SECURED TO THE PLATFORM. CONDUIT RUNS BENEATH AN ELEVATED PLATFORM SHALL NOT BE RUN ALONG GRADE.
  - CONTRACTOR TO ENSURE FITTINGS ARE OF THE SAME MATERIAL AS THE CONDUIT RUN.
  - PVC CONDUIT MUST TRANSITION TO RGS OR LFMC 12" BELOW GRADE MINIMUM.

**ELECTRICAL SYMBOLS**

- EXOTHERMIC WELD
- COMPRESSION TYPE CONNECTION
- ▲ LUG CONNECTION/CONNECTION PER MANUFACTURERS' SPECIFICATIONS
- ⊞ DISCONNECT SWITCH
- Ⓜ METER
- ⊞ CIRCUIT BREAKER
- Ⓜ GENERATOR
- Ⓜ GENERATOR RECEPTACLE
- Ⓜ AUTOMATIC TRANSFER SWITCH
- Ⓜ MANUAL TRANSFER SWITCH
- GROUNDING WIRE
- Ⓜ INDICATES CODED NUMBER

**ELECTRICAL ABBREVIATIONS**

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BTS	BASE TRANSMISSION SYSTEM
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
DIA	DIAMETER
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
I	WALKING BEAM INTERLOCK
IGR	INTERIOR GROUND RING (HALO)
MIGB	MASTER ISOLATED GROUND BAR
PPC	POWER PROTECTION CABINET
RGS	RIGID GALVANIZED STEEL RACEWAY
RWY	RACEWAY
SS	STAINLESS STEEL
TYP.	TYPICAL
AHJ	AUTHORITY HAVING JURISDICTION
UNO	UNLESS NOTED OTHERWISE
UG	UNDERGROUND
UE	UNDERGROUND ELECTRIC
UT	UNDERGROUND TELEPHONE

**GENERAL NOTES**

- CONTRACTOR SHALL FURNISH AND INSTALL CONDUITS AND POWER CONDUCTORS AS INDICATED FROM PROPOSED GENERATOR TO EXISTING CABINET.
- CONTRACTOR SHALL REFER TO CABINET SPECIFICATIONS FOR ALARM WIRING TO PROPOSED GENERATOR. INTERIOR ALARMS ARE PRE-WIRED.
- ALL CONDUITS TO HAVE A PULL-STRING INSTALLED. PLUG AND CAP EACH END OF SPARE/EMPTY CONDUIT.

**ELECTRICAL & GROUNDING PLAN**  
 SCALE: 1"=2' FOR 22"X34" PLOT  
 1"=4' FOR 11"X17" PLOT



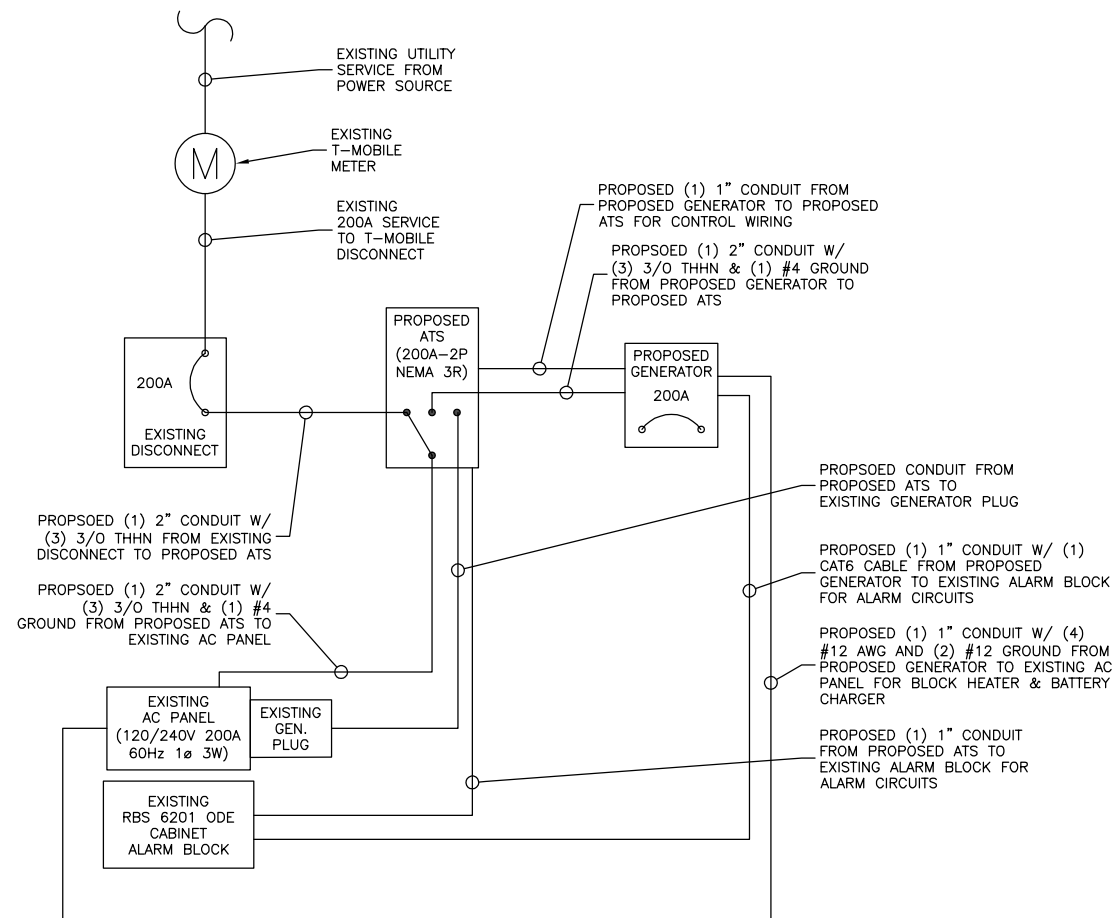
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

SITE ADDRESS  
 162 MATTIE RIDGELL LANE  
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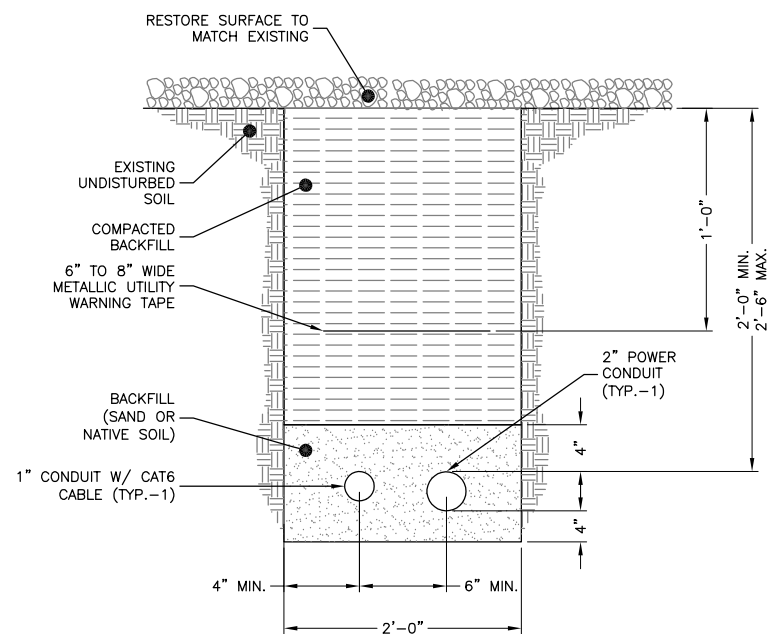
SHEET TITLE  
**ELECTRICAL & GROUNDING PLAN**

SHEET NUMBER  
 E-1





**ONE-LINE DIAGRAM** 1  
SCALE: N.T.S.



**UTILITY TRENCH DETAIL** 3  
SCALE: N.T.S.

AC POWER PANEL  
120/240V 200A 1Ø 3W

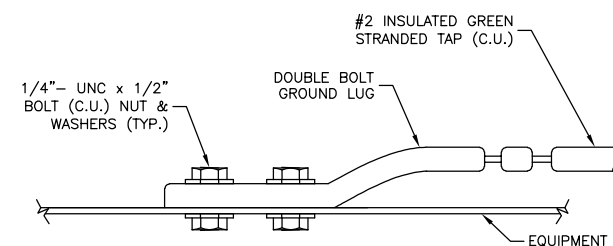
MAIN BREAKER RATING: 200A		SYSTEM VOLTAGE: 240V			
DESCRIPTION	BREAKER	POS.	POS.	BREAKER	DESCRIPTION
SURGE SUPPRESSOR	60	1	2	20	GFI
		3	4	20	LIGHT
RBS 6201	60	5	6	20	BLOCK HEATER
		7	8	20	BATTERY CHARGER
		9	10		
		11	12		
		13	14		
		15	16		
		17	18		
		19	20		
		21	22		
		23	24		

**AC PANEL SCHEDULE** 2  
SCALE: N.T.S.

CONDUIT USE TABLE

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LMFC	Y	N
LFNC	Y (1/2" FOR GROUNDING ONLY)	Y

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**CONNECTION TO EQUIPMENT DETAIL** 4  
SCALE: N.T.S.

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CONSTRUCTION DRAWINGS

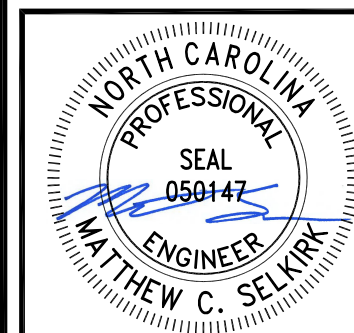
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SHEET TITLE

ELECTRICAL &  
GROUNDING  
DETAILS

SHEET NUMBER

E-2