



T-Mobile South, LLC

MINGO SWAMP
5RA0613A
ANCHOR 2020 PROJECT

200 FARMVIEW RD
DUNN, NC 28334

DIRECTIONS TO THE SITE

FROM DOWNTOWN RALEIGH, NC
HEAD NORTH ON S WILMINGTON ST TOWARD NEW BERN PL (0.1 MILE). TURN LEFT ONTO S EDENTON ST (0.3 MILE). TURN LEFT ONTO US-401 S/US-70 EN DAWSON ST (2.1 MILE). USE THE LEFT 2 LANES TO TURN LEFT TO MERGE ONTO I-40 E/US-64 E (0.3 MILE). MERGE ONTO I-40 E/US-64 E (0.8 MILE). KEEP RIGHT AT THE FORK TO CONTINUE ON I-40 E. FOLLOW SIGNS FOR BENSON/WILMINGTON (0.4 MILE). TAKE EXIT 328A TO MERGE ONTO I-95 S TOWARD BENSON/FAYETTEVILLE (1.0 MILE). TAKE EXIT 79 FOR NC-50/STATE ROUTE 242 TOWARD STATE ROUTE 27/BENSON/NEWTON GROVE (0.2 MILE). TURN LEFT ONTO NC-50/SEE MAN ST (0.1 MILE). TURN RIGHT TOWARD NC-242 S/WALTON DR (0.7 MILE). TURN RIGHT ONTO MASSENGILL FARM RD (1.1 MILE). CONTINUE ONTO FARMVIEW RD (0.2). DESTINATION WILL BE ON THE LEFT.

SITE SUMMARY

PROJECT TYPE: ANCHOR 2020 PROJECT
STRUCTURE TYPE: MONOPOLE
TOWER LATITUDE: 35.350378 (NAD 83)
TOWER LONGITUDE: -78.550202 (NAD 83)
COUNTY: HARNETT
PARCEL PIN: 1538-42-2332-000
RAD CENTER: 199
JURISDICTION: HARNETT COUNTY
ZONING CLASSIFICATION: IND

ACCORDING TO FLOOD INSURANCE RATE MAP NUMBER 372015Z00K, EFFECTIVE DATE 206, 03 OCT. THIS SITE IS ZONED "X" AND IS NOT IN A 100-YEAR FLOOD PLAIN.

CONTRACTOR NOTE
CONTRACTOR TO VERIFY CONDITIONS OF THE EXISTING WIRELESS INSTALLATION PRIOR TO MODIFICATION. IF THE CONDITIONS ARE NOT AS PER THE ORIGINAL INSTALLATION OR THE SUPPORTING STRUCTURE HAS BEEN MODIFIED OR DETERIORATED, THE ENGINEER MUST BE NOTIFIED IMMEDIATELY.

PROJECT DIRECTORY

APPLICANT: T-MOBILE SOUTH, LLC
2105 WATER RIDGE PKWY, STE 400
CHARLOTTE, NC 28217
STEVE OLIVO
(201) 696-6963

SITE DESIGN: JACOBS TELECOMMUNICATIONS, INC
5449 BELLS FERRY ROAD
ACWORTH, GEORGIA 30102

OWNER: SKYWAY TOWERS
3837 MADACA LAKE
TAMPA, FL 33618
813-960-6217



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COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC - RED
GAS/OIL - YELLOW
TELECOM - ORANGE
WATER - BLUE

SEWER - GREEN
SURVEY - PINK
PROPOSED EXCAVATION - WHITE
RECLAIMED WATER - PURPLE

SHEET INDEX

SITE SPECIFIC SHEETS	REV.	DATE
T-1 TITLE SHEET	0	09/17/20
T-2 APPENDIX B CODE SUMMARY	0	09/17/20
T-3 APPENDIX C CODE SUMMARY	0	09/17/20
C-1 OVERALL SITE PLAN AND NOTES	0	09/17/20
C-2 ENLARGED EQUIPMENT PLAN & NOTES	0	09/17/20
S-1 TOWER ELEVATION & ANTENNA ORIENTATION	0	09/17/20
S-2 ANTENNA & CABLE SCHEDULE	0	09/17/20
E-1 GENERAL ELECTRICAL NOTES & SYMBOLS	0	09/17/20
E-2 GROUNDING NOTES & DIAGRAM	0	09/17/20
E-3 EQUIPMENT CABINET DETAILS	0	09/17/20

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

DESIGN CRITERIA
NORTH CAROLINA BUILDING CODE 2018 (NCBC 2018); BUILDING/SMELTING CODE INTERNATIONAL BUILDING CODE 2018 (IBC 2018); STRUCTURAL CODE MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10)

OPERATIONS	SIGNATURE _____	DATE _____
RF ENGINEER	SIGNATURE _____	DATE _____
CONSTRUCTION MANAGER	SIGNATURE _____	DATE _____
SITE ACQUISITION AGENT	SIGNATURE _____	DATE _____
LANDOWNER	SIGNATURE _____	DATE _____
PROGRAM MANAGER	SIGNATURE _____	DATE _____
ZONING/PERMITTING	SIGNATURE _____	DATE _____

PREPARED BY

JACOBS
Challenging today.
Reinventing tomorrow.
Jacobs Telecommunications, Inc.
5449 BELLS FERRY ROAD
ACWORTH, GA 30102
470-785-4050

DESIGN REVISIONS

NO.	DATE	ISSUED FOR	BY
0	09/17/20	ISSUED FOR CONSTRUCTION	VLH

NOT VALID WITHOUT SIGNATURE AND DATE

ENGINEER SEAL

PREPARED FOR

T-Mobile
185 FARMVIEW STREET
CHARLOTTE, NC 28402
PHONE: (919) 274-6301

SITE NUMBER: 5RA0613A
SITE NAME: MINGO SWAMP
SITE ADDRESS: 200 FARMVIEW RD, DUNN, NC 28334

APPROVED BY: K. KRATINA
DESIGNED BY: T. VIEH
PROJECT NO.: EUT1M0208
DATE: 07/29/2020

SHEET NAME: TITLE SHEET
SHEET NUMBER: T-1

ENERGY SUMMARY

ENERGY REQUIREMENTS
The following data shall be considered minimum and any special attributes required to meet the energy code shall also be provided. Each Designer shall submit the required portions of the proposed submission for the site data or any performance method, state the annual energy load for the standard reference design vs actual energy load for the proposed design.

Existing building envelope complies with code: No Yes (The remainder of this section is not applicable)

Envelope Building: No Yes (Provide load in separate worksheet)

Climate Zone: 4A 4B 4C

Method of Compliance: Energy Code Performance Prescriptive
ASHRAE 90.1 Performance Prescriptive
(If "Other" specify below)

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Springs in each assembly: _____
U-Value of skylight: _____
Total square footage of skylight in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Changing wallpans or doors with glazing: _____
Solar heat gain coefficient: _____
Projection factor: _____
Door: No Yes

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 and treated: _____

2018 NC Administrative Code and Policies

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

DESIGN LOADS

Importance Factors: Seismic (IS) _____
Seismic (IE) _____

Live Loads: Roof: NA psf
Mezzanine: NA psf
Floor: NA psf

Ground Snow Load: NA psf

Wind Load: Ultimate Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: A B C D
Provide the following Seismic Design Parameters:
Risk Category (Table 1504.4) S1 S2 S3 S4
Spectral Response Acceleration: S1 _____ % S2 _____ % S3 _____ % S4 _____ %
Site Classification (ASCE 7) F1 F2 F3 F4 F5 F6

Basic structural system: Bearing Wall Dual Universal Moment Frame Building Frame Dual Universal Moment Frame Moment Frame Inverted Pendulum Dynamic

Analysis Procedure: Simplified Equipment Label (Type) _____
Architectural, Mechanical, Components anchored? Yes No

LATERAL DESIGN CONTROL: Earthquake Vmax Vmin Vavg

SOL BEARING CAPACITIES:
Final Test Laboratory copy of test report: _____ psf
Manufacturer's Bearing Capacity: _____ psf
Plot size, type, and capacity: _____

2018 NC Administrative Code and Policies

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 envelope
Building code: _____
Building envelope: _____

Mechanical Heating/Cooling System

Unitary: _____
Description of unit: _____
Heating efficiency: _____
Cooling efficiency: _____
Size category of unit: _____
Solar: _____
Size category, if oversized, state reason: _____
Other: _____
Size category, if oversized, state reason: _____

Use equipment efficiencies: _____

2018 NC Administrative Code and Policies

PREPARED BY

Jacobs
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Reinventing tomorrow.
Jacobs Telecommunications, Inc.
5449 BELLS FERRY ROAD
KNCORTH, GA 30152
478-785-4050

DESIGN REVISIONS

0 08/17/20 ISSUED FOR CONSTRUCTION VLN

NO DATE REVISIONS BY

NOT VALID WITHOUT SIGNATURE AND DATE

ENGINEER SEAL

K. KRATZIA
PROFESSIONAL ENGINEER
SEAL 38528
1/27/20

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 Performance Prescriptive
ASHRAE 90.1 Performance Prescriptive

Lighting schedules (each fixture type): _____
into type (ASHRAE 90.1): _____
number of fixtures: _____
ballast type: _____
number of ballasts: _____
total wattage per fixture: _____
total interior wattage specified vs. allowed (whole building or space by space): _____
total exterior wattage specified vs. allowed: _____

Additional Efficiency Package Defines
(When using the 2018 NECCC, not required for ASHRAE M.1)
 C401.2 More Efficient HVAC Equipment Performance
 C401.3 Reduced Lighting Power Density
 C401.4 Enhanced Digital Lighting Controls
 C401.5 On-Site Renewable Energy
 C401.6 Demand Control of System
 C401.7 Reduced Energy Use in Service Water Heating

2018 NC Administrative Code and Policies

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

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2018 NC Administrative Code and Policies

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

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ELECTRICAL SYSTEM AND EQUIPMENT

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 C401.5 On-Site Renewable Energy
 C401.6 Demand Control of System
 C401.7 Reduced Energy Use in Service Water Heating

2018 NC Administrative Code and Policies

PREPARED FOR

Mobile
165 FARMVIEW STREET
PHONE: (919) 274-4207

SITE NUMBER: SR4013A

SITE NAME: MHGO SWAMP

SITE ADDRESS: 200 FARMVIEW RD
DUNN, NC 28534

PREPARED BY: K. KRATZIA
APPROVED BY: T. VIEHE
DESIGNED BY: T. VIEHE
PROJECT NO: EUM0008
DATE: 07/29/2020

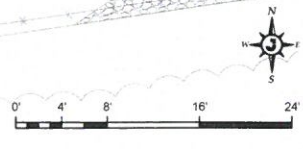
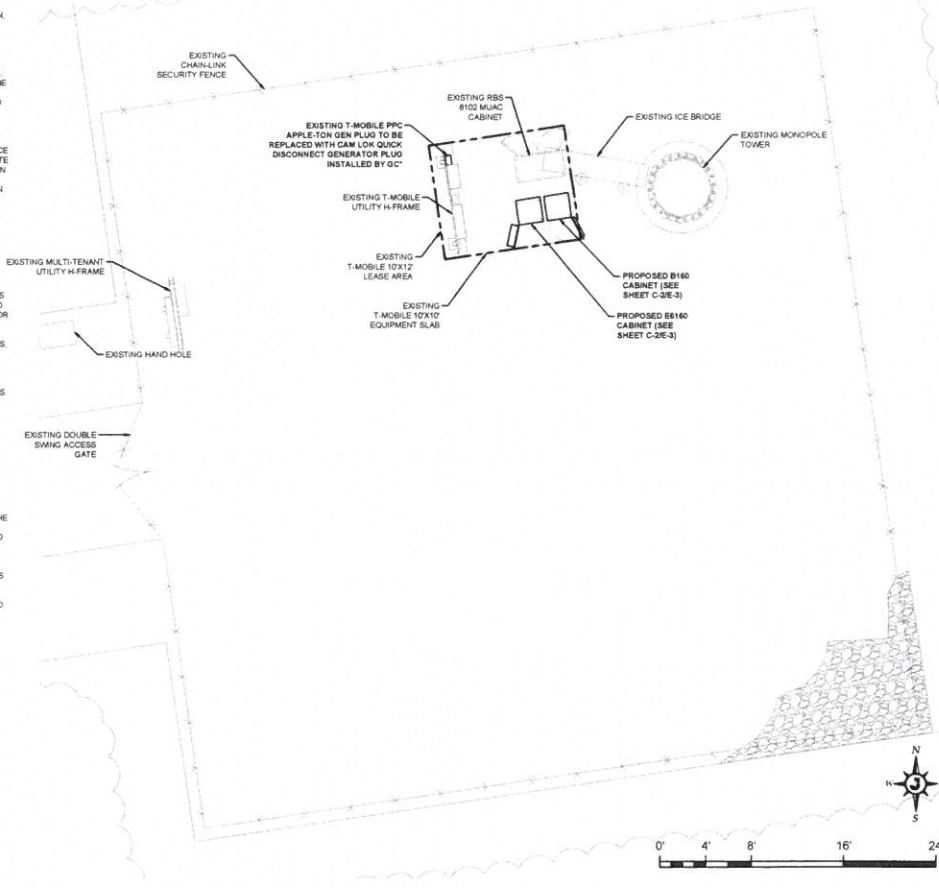
SHEET NAME: APPENDIX B CODE SUMMARY

SHEET NUMBER: T-3

GENERAL NOTES:

1. SUBJECT PROPERTY IS KNOWN AS 1538-42-2332 000 AS SHOWN ON THE HARNETT COUNTY WEBSITE, AND IS SITUATED AT 200 FARMVIEW RD DUNN, NC.
2. THIS SITE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF AN AS-BUILT SURVEY. SLIGHT VARIATIONS MAY EXIST BETWEEN THIS SITE PLAN AND TRUE DIMENSIONS IN THE FIELD. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.
3. THE GENERAL CONTRACTOR MUST VERIFY ALL DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
4. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORM WORK, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL ORDINANCES. TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
5. THE CONTRACTOR SHALL USE ADEQUATE NUMBER OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.
6. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
7. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT, THEY SHALL GOVERN. GROUNDING SHALL BE COMPLETED BEFORE ERECTION OF A NEW TOWER.
8. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, PROPOSED CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION. IF TEMPORARY LIGHTING AND MARKING IS REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION (FAA), IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE NECESSARY LIGHTS AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A PROBLEM.
9. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL CODES OR ORDINANCES. THE MOST STRINGENT CODE WILL APPLY IN THE CASE OF DISCREPANCIES OR DIFFERENCES IN THE CODE REQUIREMENTS.
10. ANY DAMAGE TO ADJACENT PROPERTIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AMPLE NOTICE TO THE BUILDING INSPECTION DEPARTMENT TO SCHEDULE THE REQUIRED INSPECTIONS. A MINIMUM OF 24 HOURS OF NOTICE SHOULD BE GIVEN AND THE BUILDING INSPECTION DEPARTMENTS HAVE REQUESTED THAT GROUPS OF TWO OR THREE SITES BE SCHEDULED AT ONE TIME IF POSSIBLE.
12. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL PROPOSED UTILITIES WITHIN THE CONSTRUCTION LIMITS PRIOR TO CONSTRUCTION.
13. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES, SUBSTITUTIONS, ETC. BETWEEN THE WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DRAWINGS WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT.
14. PERMITS: THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES, FEES AND INSPECTIONS, ETC.

CONTRACTOR TO VERIFY ALL PROPOSED AND EXISTING ANTENNAS, MOUNTS AND CABLES WERE CONSIDERED AND PASSED A STRUCTURAL ANALYSIS PERFORMED BY A LICENSED ENGINEER PRIOR TO INSTALLATION.



OVERALL SITE PLAN

1/8" = 1'-0" 1

PREPARED BY
Jacobs
 Challenging today. Re inventing tomorrow.
 Jacobs Telecommunications, Inc.
 5449 BELLS FERRY ROAD
 ACONTH, GA 30102
 470-785-4050

DESIGN REVISIONS

0	08/17/20	ISSUED FOR CONSTRUCTION	VLH
NO.	DATE	REVISIONS BY	
NOT VALID WITHOUT SIGNATURE AND DATE			

ENGINEER SEAL

 K. R. KRATNA

PREPARED FOR
T-Mobile
 185 PARSONS STREET
 CHARLESTON, SC 29402
 PHONE: (843) 214-1401

SITE NUMBER: 5RA0813A
 SITE NAME: MINGO SWAMP
 SITE ADDRESS: 200 FARMVIEW RD DUNN, NC 28334

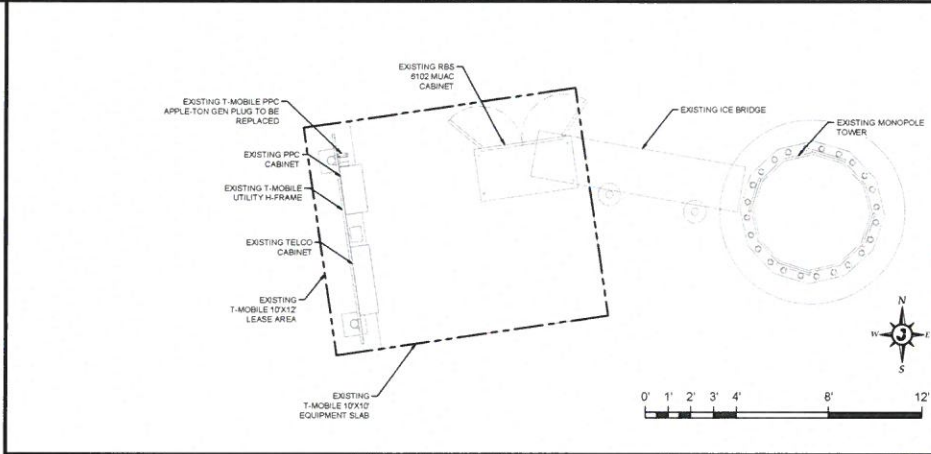
PREPARED BY: K. KRATNA
 DESIGNED BY: T. VIEH
 PROJECT NO: EUTM0208
 DATE: 07/20/2020

SHEET NAME: OVERALL SITE PLAN & NOTES
 SHEET NUMBER: C-1

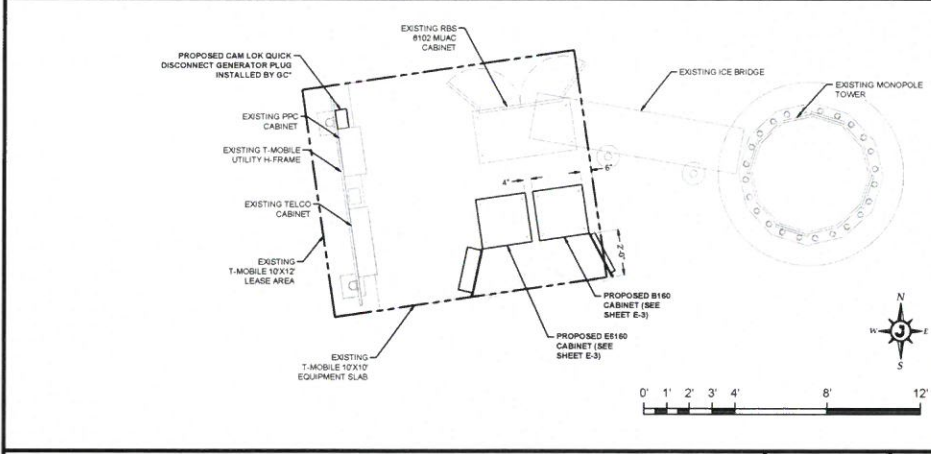
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EXISTING ENLARGED SITE PLAN 1/4" = 1'-0" 1



PROPOSED ENLARGED SITE PLAN 1/4" = 1'-0" 2

PREPARED BY
Jacobs
 Challenging today. Reinventing tomorrow.
 Jacobs Telecommunications, Inc.
 5449 BELLS FERRY ROAD
 A C W O R T H , G A 3 0 1 0 2
 4 7 0 - 7 8 5 - 4 0 5 0

DESIGN REVISIONS

0	09/17/20	ISSUED FOR CONSTRUCTION	VLH
NO.	DATE	REVISIONS BY	
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ENGINEER SEAL

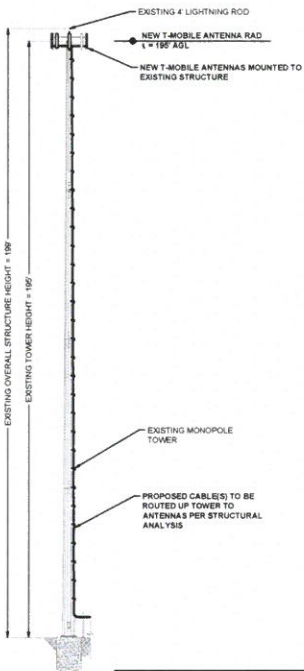
 K. R. KRATINA
 ENGINEER

PREPARED FOR
Mobile
 188 FARMFIELD STREET
 CHARLESTON, SC 29402
 PHONE: (803) 276-6501

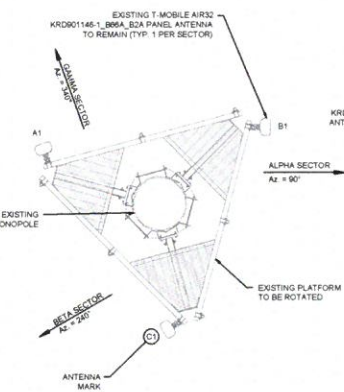
SITE NUMBER: 5RA0613A
 SITE NAME: MINGO SWAMP
 SITE ADDRESS: 200 FARMVIEW RD DUNN, NC 28534

PREPARED BY: APPROVED BY: K. KRATINA
 DESIGNED BY: T. VIEH
 PROJECT NO: EUTM008
 DATE: 07/29/2020

SHEET NAME: ENLARGED EQUIPMENT PLAN & NOTES
 SHEET NUMBER: C-2

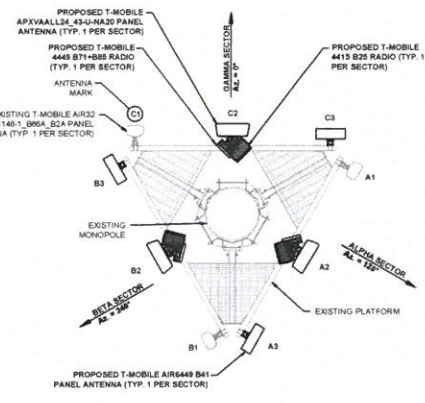


NOTE
THIS SITE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF AN AS-BUILT SURVEY. THE INFORMATION SHOWN IS NOT BASED ON AN ACTUAL FIELD SURVEY. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.



EXISTING VIEW

NOTE
THIS SITE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF AN AS-BUILT SURVEY. THE INFORMATION SHOWN IS NOT BASED ON AN ACTUAL FIELD SURVEY. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.



PROPOSED VIEW

NOTE
ANTENNA MOUNT TO BE VERIFIED WITH LATEST STRUCTURAL ANALYSIS

NOTES

1. CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF PROPOSED EQUIPMENT WITH EXISTING CONDITIONS ON SITE.
2. PROPOSED EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE FASTENERS SHALL BE HIGH STRENGTH (A325, A490).
3. DRILLING OF EXISTING STEEL MEMBERS IS NOT PERMITTED.
4. BOND PROPOSED EQUIPMENT TO EXISTING SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS. PROVIDE ADDITIONAL SECTOR GROUND BARS AS REQUIRED.
5. ALL ANTENNAS, CABLES, AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTURAL ANALYSIS REPORT.
6. THIS ANTENNA ORIENTATION PLAN IS SCHEMATIC. THE CONTRACTOR SHALL VERIFY TOWER ORIENTATION AND FIELD COORDINATE REQUIRED ADJUSTMENTS TO ACHIEVE THE DESIRED ANTENNA AZIMUTHS.
7. CONTRACTOR TO CONTACT T-MOBILE FOR UP-TO-DATE RF DESIGN DATA. NOTIFY ENGINEER IF CONFLICT EXISTS.



TOWER ELEVATION	1" = 20'-0"	1	PROPOSED ANTENNA ORIENTATION	3/16" = 1'-0"	2
-----------------	-------------	---	------------------------------	---------------	---

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5449 BELLS FERRY ROAD
ACWORTH, GA 30107
470-785-4050

DESIGN REVISIONS

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ENGINEER SEAL
NORTH CAROLINA
SEAL
38523
ENGINEER
R. L. KRATNA
1/17/20

PREPARED FOR
T-Mobile
185 FARMCHURCH STREET
CHARLESTON, SC 29402
PHONE: (803) 214-4301

SITE NUMBER: 5RA0813A
SITE NAME: MINGO SWAMP
SITE ADDRESS: 200 FARMVIEW RD DUNN, NC 28334

APPROVED BY: K. KRATNA
DESIGNED BY: T. VIEH
PROJECT NO: EUTM2008
DATE: 07/09/2020

SHEET NAME: TOWER ELEVATION & ANTENNA ORIENTATION
SHEET NUMBER: S-1

67D5A997DB MUAC - TOWER TOP EQUIPMENT SCHEDULE (RE: 5RA0613A_ANCHOR_3)										
ANTENNA NUMBER (FROM L TO R)	ANTENNA MODEL	ANTENNA AZIMUTH	MECH TILT	ELEC TILT	ANTENNA CENTERLINE FROM GROUND	TMA/RRUS MODEL	TMA/RRUS QUANTITY	COAX/HYBRID CABLE		
								TYPE	QTY	LENGTH
A1	AIR32 KR0901146-1_B86A_BZA	120°	0°	2'	195'	-	-	-	-	-
A2	APXVAALL24_43-U-NA20	120°	0°	2'	195'	4449 B71+B85 4415 B25	02	6x12 HCS 4AWG	1	70M
A3	AIR0449 B41	120°	0°	2'	195'	-	-	-	-	-
B1	AIR32 KR0901146-1_B86A_BZA	240°	0°	2'	195'	-	-	-	-	-
B2	APXVAALL24_43-U-NA20	240°	0°	2'	195'	4449 B71+B85 4415 B25	02	6x12 HCS 4AWG	1	70M
B3	AIR0449 B41	240°	0°	2'	195'	-	-	-	-	-
C1	AIR32 KR0901146-1_B86A_BZA	0°	0°	2'	195'	-	-	-	-	-
C2	APXVAALL24_43-U-NA20	0°	0°	2'	195'	4449 B71+B85 4415 B25	02	6x12 HCS 4AWG	1	70M
C3	AIR0449 B41	0°	0°	2'	195'	-	-	-	-	-

EQUIPMENT NOTES

- CABLE LENGTHS SHOW ARE ONLY AN ESTIMATE AND SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED CABLE LENGTHS WITH T-MOBILE PRIOR TO ORDERING OR INSTALLATION.
- THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE WITH T-MOBILE STANDARDS AND SUPPLY THE RESULTS TO T-MOBILE WHEN INSTALLED.
- THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE WITH THE FINAL T-MOBILE RFDS PRIOR TO INSTALLATION.
- ALL PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T-MOBILE STANDARDS.
- REFER TO EQUIPMENT INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION.
- REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

67D5A997DB MUAC - TOWER LOADING SUMMARY				
EQUIPMENT TYPE	EXISTING QUANTITY	QUANTITY REMOVED	QUANTITY ADDED	TOTAL QUANTITY
PANEL ANTENNA	3	0	6	9
COAX CABLE	0	0	0	0
HYBRID CABLE	1	0	2	3
RRUS	0	0	6	6
TMA	0	0	0	0

ANTENNA & COAXIAL CABLE SCHEDULE

SCALE: N/A

1

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PREPARED FOR
T-Mobile
186 FARMFIELD STREET
CHARLESTON, SC 29402
PHONE: (803) 270-0201

SITE NUMBER: 5RA0613A
SITE NAME: MINGO SWAMP
SITE ADDRESS: 200 FARMVIEW RD, DUNN, NC 28334

PREPARED BY: K. KRATNA
DESIGNED BY: T. VIEH
PROJECT NO.: EUM2005
DATE: 07/28/2020

SHEET NAME: ANTENNA & CABLE SCHEDULE

SHEET NUMBER: **S-2**

GENERAL ELECTRICAL NOTES:

1. SCOPE: PROVIDE LABOR, MATERIALS, AND EQUIPMENT, ETC., REQUIRED TO COMPLETE THE INSTALLATION SHOWN ON THE DRAWINGS.
2. CODES AND STANDARDS: INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND ORDINANCES, UTILITY COMPANY REGULATIONS, AND APPLICABLE REQUIREMENTS OF LATEST EDITIONS OF
 - A. NFC - NATIONAL FIRE CODES
 - B. UL - UNDERWRITERS LABORATORIES
 - C. NEC - NATIONAL ELECTRICAL CODE
 - D. NEMA - NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
 - E. OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT
 - F. SBC - STANDARD BUILDING CODE
3. PERMITS: OBTAIN AND PAY FOR REQUIRED PERMITS, LICENSES, FEES, INSPECTIONS, ETC.
4. COORDINATION: COORDINATE WORK WITH OTHER TRADES.
5. SUBMITTALS: SUBMIT BROCHURES FOR APPROVAL ON SERVICE DISCONNECTING MEANS AND OTHER MAJOR SYSTEM COMPONENTS.
6. EXISTING SERVICES: DO NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
7. EQUIPMENT: CONNECT ELECTRICALLY OPERATED EQUIPMENT.
8. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES & SUBSTITUTIONS BETWEEN WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DOCUMENTS WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT.
9. IDENTIFICATION: IDENTIFY SERVICE DISCONNECTING MEANS WITH PERMANENT NAMEPLATE.
10. GUARANTEE/WARRANTY: GUARANTEE INSTALLATION TO BE FREE OF DEFECTS, SHORTS, GROUNDS, ETC., FOR A PERIOD OF ONE YEAR. FURNISH WARRANTY SO THE DEFECTIVE MATERIAL AND/OR WORKMANSHIP WILL BE REPAIRED IMMEDIATELY UPON NOTIFICATION AT NO COST TO THE OWNER FOR PERIOD OF WARRANTY.
11. CUTTING AND PATCHING: PROVIDE CUTTING REQUIRED TO DO THE WORK. DO NOT CUT MAJOR STRUCTURAL ELEMENTS WITHOUT APPROVAL. PATCHING SHALL BE OF QUALITY EQUAL TO AND OF MATCHING APPEARANCE WITH EXISTING CONSTRUCTION.
12. DITCHING AND BACKFILL: PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES.
13. RACEWAYS: UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC CONDUIT (MEET NEMA TC2, 1866). EXPOSED CONDUIT SHALL BE RIGID GALVANIZED STEEL CONDUIT BEFORE RISING ABOVE GRADE. PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LB. TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 24" RADIUS. RGS CONDUITS, WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT.
14. SUPPORTS: AS REQUIRED BY THE NEC.
15. CONDUCTORS: USE 99% CONDUCTIVITY COPPER WITH TYPE XHHW-2 INSULATION, 600 VOLT, COLOR CODED. USE SOLID CONDUCTORS FOR WIRE UP TO AND INCLUDING NO. 8 AWG. USE STRANDED CONDUCTORS FOR WIRE ABOVE NO. 8 AWG.
16. CONNECTORS FOR POWER CONDUCTORS: USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR #10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR #8 AWG AND LARGER.
17. SERVICE: 240/120V, SINGLE PHASE, 3 WIRE CONNECTION AVAILABLE FROM UTILITY COMPANY. COORDINATE AND PAY ALL FEES.
18. TELEPHONE SERVICE: PROVIDE EMPTY CONDUITS WITH PULL WIRES AS INDICATED ON DRAWINGS.
19. UTILITY FRAME METER CENTER (AS REQUIRED): PROVIDED BY OWNER, INSTALLED BY CONTRACTOR. THE ELECTRICAL DESIGN ON THESE DRAWINGS IS BASED ON A METER CENTER CONFIGURED AS FOLLOWS:
 - A. A NEMA 3R ENCLOSURE MOUNTED ON THE FRONT SIDE OF AN EQUIPMENT FRAME INCORPORATING 120/240V, 20A METER SOCKETS AND CIRCUIT BREAKER HOUSINGS. EACH METER/CIRCUIT BREAKER COMBINATION SHALL PROVIDE SERVICE TO ONE (1) CARRIER (OR TOWER LIGHTING AS REQUIRED). METERS ARE TO BE PROVIDED BY LOCAL POWER COMPANY.
 - B. TOWERS REQUIRING FAA LIGHTING SHALL BE ALLOCATED ONE METER SOCKET AND CIRCUIT BREAKER HOUSING IN THE METER BANK. CIRCUIT BREAKER TO BE SIZED AS REQUIRED FOR TOWER LIGHTING EQUIPMENT. METER IS TO BE PROVIDED BY LOCAL POWER COMPANY.
20. UTILITY FRAME TELCO CABINET (AS REQUIRED): PROVIDED BY OWNER, INSTALLED BY CONTRACTOR. THE ELECTRICAL DESIGN ON THESE DRAWINGS IS BASED ON A TELCO CABINET CONFIGURED AS FOLLOWS:
 - A. A NEMA 3R ENCLOSURE SHALL INCLUDE A 3/4" THICK PLYWOOD BACKBOARD SIZED TO FIT CABINET. A PREWIRED 20A, 120V, GFCI DUPLEX RECEPTACLE, SURGE PROTECTORS, AND A GROUND BAR. TELCO CABINET SHALL BE MOUNTED TO THE UTILITY SERVICE FRAME.
 - B. THE TELEPHONE CABINET SHALL ACCOMMODATE ALL TELEPHONE LINES (PROPOSED AND FUTURE) AND CONNECTIONS FOR THEM.
21. PPC CABINET: PPC CABINET SHALL BE MOUNTED TO THE EQUIPMENT SLED SERVICE FRAME. THE ENCLOSURE DESIGN ON THESE DRAWINGS IS BASED ON A NORTHERN TECHNOLOGIES PPC CABINET CONFIGURED AS FOLLOWS:
 - A. PPC CABINET SHALL BE NEMA 3R RATED AND HAVE A DOOR TO ALLOW ACCESS TO INTERNAL COMPONENTS.
 - B. THE PPC ENCLOSURE SHALL INCLUDE A 120/240V, 1 PHASE, 20A MAIN BREAKER ELECTRICAL PANEL WITH SURGE PROTECTION AND WITH CIRCUIT BREAKERS AS REQUIRED FOR SLED ELECTRICAL LOADS. SURGE PROTECTION AN INTERIOR 20A/120V DUPLEX RECEPTACLE, AND EXTERIOR WEATHERPROOF 20A/120V DUPLEX RECEPTACLE SHALL ALSO BE INCLUDED.
 - C. PROVIDE A GROUND WIRE SIZED PER NEC IN ALL CIRCUITS OVER 20 AMPS AND IN ALL CIRCUIT RUNS IN PVC.
 - D. PPC ENCLOSURE SHALL INCLUDE A 3/4" THICK PLYWOOD BACKBOARD SIZED TO FIT CABINET AND SHALL ACCOMMODATE ALL TELEPHONE LINES (PROPOSED AND FUTURE) AND CONNECTIONS FOR THEM. IT SHALL ALSO INCLUDE 2 TELCO GROUND BARS AND PROVIDE MOUNTING SPACE FOR ALARM EQUIPMENT.

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 478-785-4055

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PREPARED FOR

T-Mobile
 185 ARCHBOLD STREET
 CHARLOTTE, NC 28262
 PHONE: (843) 714-4301

SITE NUMBER: SRA0813A

SITE NAME: MINGO SWAMP

SITE ADDRESS: 200 FARMVIEW RD, DUNN, NC 28534

APPROVED BY: K. KRATINA
 DESIGNED BY: T. VIEHE
 PROJECT NO: EUTM0208
 DATE: 07/26/2020

SHEET NAME: GENERAL ELECTRICAL NOTES & SYMBOLS

SHEET NUMBER: E-1

GENERAL ELECTRICAL NOTES

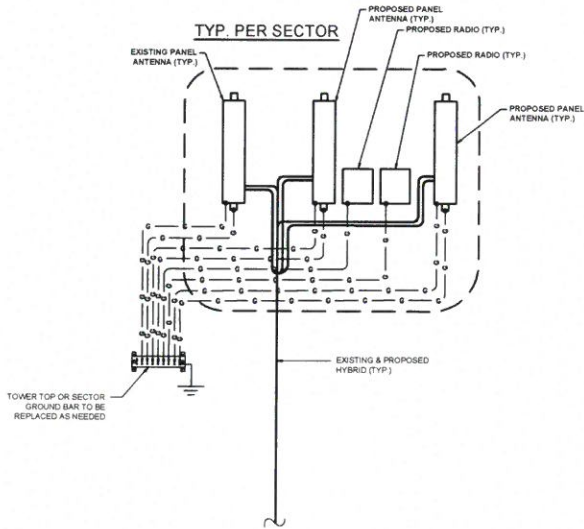
SCALE: N/A

1

GENERAL GROUNDING NOTES:

1. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.
2. GROUND RODS:
 - A. 5/8" x 10' LONG COPPER CLAD STEEL
 - B. STANDARD SPACING: 10'
 - C. TOP SHALL BE A MINIMUM OF 2'-8" BELOW BASE OF GRAVEL.
3. GROUND CONDUCTORS:
 - A. #2 BARE THINNED SOLID COPPER UNLESS INDICATED OTHERWISE
 - B. WHEN DIRECTION OF CONDUCTOR CHANGES, IT SHALL BE DONE GRADUALLY
 - C. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH CONCRETE SLABS
 - D. GROUND RINGS SHALL BE BURIED A MINIMUM OF 2'-8" BELOW BASE OF GRAVEL. GROUND RINGS SHALL BE LOCATED A MINIMUM OF 2'-0" FROM OUTSIDE EDGE OF CABINETS, TOWER FOUNDATION, AND OTHER SITE OBJECTS
4. GROUND CONNECTIONS:
 - A. ALL CONNECTIONS SHALL BE EXOTHERMIC (CADWELD OR EQUIVALENT) UNLESS INDICATED OTHERWISE
 - B. ALL MATERIALS USED SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS
 - C. CONNECTIONS AT GROUND BARS AND SERVICE DISCONNECTING MEANS SHALL CONSIST OF LUGS CADWELDED TO GROUND CONDUCTORS UNLESS INDICATED OTHERWISE. LUGS SHALL BE ATTACHED TO GROUND BARS USING STAINLESS STEEL OR HOT-DIPPED GALVANIZED STEEL BOLTS, NUTS, AND LOCKWASHERS
5. COAXIAL TRANSMISSION LINE GROUNDING:
 - A. VERTICAL RUNS THAT ARE 200' OR LESS SHALL REQUIRE A GROUNDING KIT AT THE TOP AND BOTTOM OF TOWER
 - B. VERTICAL RUNS THAT ARE GREATER THAN 200' SHALL REQUIRE A GROUNDING KIT (IN ADDITION TO THE ABOVE) FROM THE TOP EVERY 150' TOWARDS THE GROUND UNTIL THE DISTANCE IS LESS THAN 150' FROM THE GROUND (NOT FOR MONOPOLES)
 - C. SURGE ARRESTOR IS PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL CONNECTIONS REQUIRED FOR INSTALLATION
 - D. ALL GROUNDING KITS SHALL BE PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR
6. MISCELLANEOUS ITEMS TO BE CONNECTED TO THE GROUNDING SYSTEM:
 - A. ANY METAL FENCE POST WITHIN 6' OF THE GROUND RING
 - B. TRANSMISSION LINE ENTRANCE HATCH
 - C. METAL CABINET PARTS NOT GROUNDED BY THE INTERNAL GROUND RING
 - D. METAL FUEL STORAGE TANKS
 - E. ANY SIGNIFICANT METAL OBJECT WITHIN 6' OF THE EXTERNAL GROUNDING SYSTEM OR ANY OTHER GROUNDED OBJECT
 - F. EXTERIOR ICE SHIELDS
 - G. GENERATOR AND SUPPORT SKID OR BASE AND SWITCH
7. INSTALLATION AND TESTING:
 - A. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IMMEDIATELY IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO FIELD CONDITIONS
 - B. CONTRACTOR SHALL NOT COVER UP GROUND RING AND CONNECTIONS UNTIL AN INSPECTION HAS BEEN PERFORMED. COORDINATE INSPECTION WITH CONSTRUCTION MANAGER
 - C. PROVIDE TESTING OF GROUNDING SYSTEM AS DIRECTED BY CONSTRUCTION MANAGER
8. THE MAXIMUM ALLOWABLE RESISTANCE READING SHALL BE 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE GROUNDING SYSTEM AS MEASURED AT THE ARRESTOR BRACKET EXCEEDS 5.0 OHMS, THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHALL BE NOTIFIED SO THAT ADDITIONAL GROUND LOCATIONS CAN BE UTILIZED.
9. ALL EXPOSED GROUND LEADS TO GROUND RING, PLACED IN CONCRETE, SHALL BE ENCASED IN 3/4" FLEXIBLE CONDUIT, SEAL TYPE OR SIMILAR.
10. ALL GROUND WIRE CONNECTIONS TO EQUIPMENT GROUND RING THAT ARE RUNNING ABOVE GROUND SHALL BE RUN INSIDE SEALED TIGHT FLEX CONDUIT.
11. ALL CONNECTIONS ABOVE GROUND EXCEPT CONNECTIONS TO GROUND BARS OR ARRESTOR BRACKET SHALL BE WITH DOUBLE LUG CONNECTORS. CONNECTIONS TO GROUND BARS & ARRESTORS SHALL BE CADWELDED.
12. COMPACT BACKFILL OF ALL TRENCHES FOR GROUNDING RING. SITE SOIL OR #1 STONE MAY BE USED FOR BACKFILL MATERIALS. CONTRACTOR SHALL OBTAIN APPROVAL FOR BACKFILL MATERIALS TO BE USED FROM CONSTRUCTION MANAGER.
13. CONTRACTOR SHALL PROVIDE 5 S FLAT & LOCK WASHERS AS REQUIRED FOR COMPLETE INSTALLATION OF GROUND LEADS AT GROUND BUS.

NOTE:
THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE T-MOBILE CM OF ANY CONFLICTS.



GROUNDING NOTES

SCALE: N/A 1

GROUNDING DIAGRAM

SCALE: N/A 2

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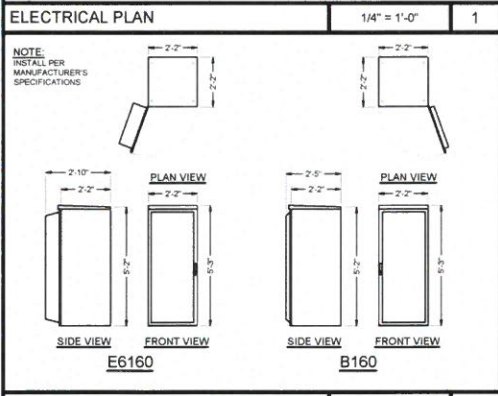
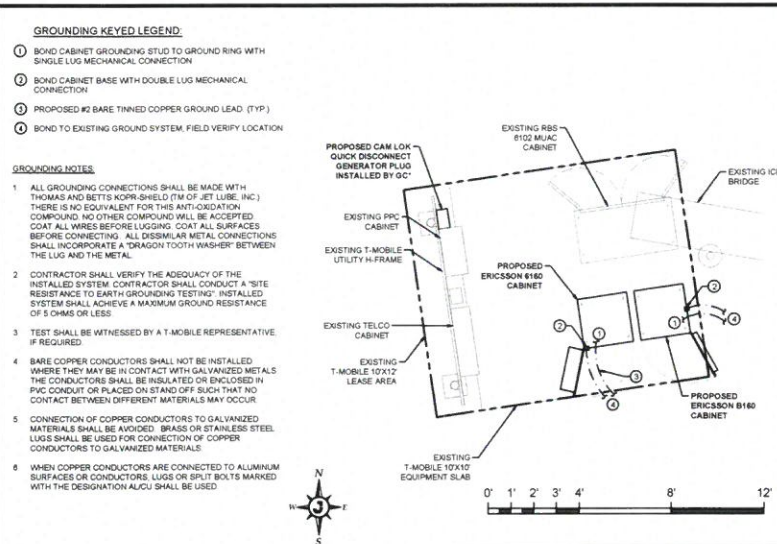
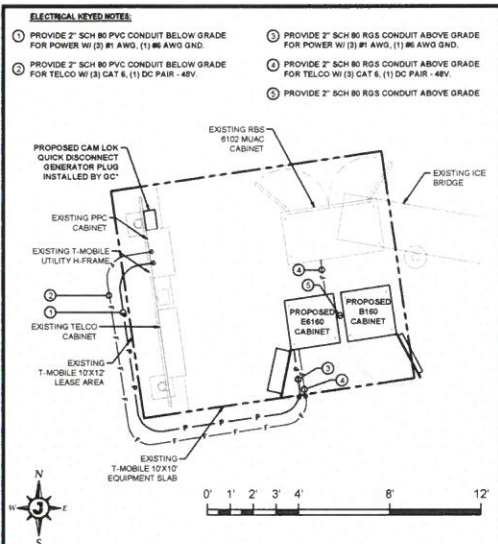
ENGINEER SEAL
NORTH CAROLINA PROFESSIONAL SEAL
38528
K. R. KRATHA
ENGINEER
07/27/20

PREPARED FOR
Mobile
160 FARMVIEW STREET
CHARLESTON, SC 29405
PHONE: (803) 778-4801

SITE NUMBER: 5RA013A
SITE NAME: MINGO SWAMP
SITE ADDRESS: 200 FARMVIEW RD
DUNN, NC 28334

PREPARED BY: K. KRATHA
APPROVED BY: T. VIEHE
DESIGNED BY: T. VIEHE
PROJECT NO: EUTM006
DATE: 07/28/2020

SHEET NAME: GROUNDING NOTES & DIAGRAM
SHEET NUMBER: E-2



GROUNDING PLAN 1/4" = 1'-0" 2

PPC SCHEDULE									
PANEL DESIGNATION "A" WITH SEPARATE GROUND BUSS		120/240 VOLTS 1 PHASE				3 WIRE SURFACE MOUNTED		200A 2 POLE MAIN BREAKER	
NO.	LOAD SERVED	ØA VA	ØB VA	AMP/POLE	ØB AMP/POLE	ØA VA	ØB VA	LOAD SERVED	CKT #
1	RADIO CABINET #1 (W/O)	11500	-	125/2	30/2	-	-	SUPPRESSOR	7
2	-	-	11500	-	-	-	-	-	8
3	RADIO CABINET #2	7000	-	100/2	15/1	150	-	GFI	9
4	-	-	7000	-	-	-	-	SPARE	10
5	LIGHT	500	-	20/1	-	-	-	SPARE	11
6	FAN	-	200	20/1	-	-	-	SPARE	12
VOLT AMPS		16000	18700	37850		150		TOTAL VOLT AMPERES DEMAND VA (TOTAL VA x 1.25)	
				47313					

NOTES:
1. PANEL IS INTEGRAL TO PPC (PROVIDED BY T-MOBILE). INFORMATION SHOWN PROVIDED BY MANUFACTURER

ERICSSON RBS 6160 & B160 CABINET SCALE: N.T.S. 3

PPC SCHEDULE SCALE: N/A 4

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DESIGNED BY

SEAL
38578
K. R. KRATINA
ENGINEER
4/2/20

PREPARED FOR

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PHONE: (843) 214-4301

SITE NUMBER: SRAD013A

SITE NAME: MINGO SWAMP

SITE ADDRESS: 200 FARMVIEW RD DUNN, NC 28334

PREPARED BY: K. KRATINA
DESIGNED BY: T. VIEHE
PROJECT NO.: EUTM0206
DATE: 07/26/2020

SHEET NAME: EQUIPMENT CABINET DETAILS

SHEET NUMBER: **E-3**