

## SECOND AMENDMENT TO LICENSE AGREEMENT

THIS AMENDMENT TO LICENSE AGREEMENT (“Amendment”) is made and entered into by and between the City of Hartsville, South Carolina (“Landlord”), and T-Mobile South, LLC, as successor in interest to TRITON PCS PROPERTY COMPANY LLC, a Delaware limited liability company (“Tenant”).

### Recitals

The parties hereto recite, declare and agree as follows:

A. Landlord and Tenant (or as applicable, their respective predecessors in interest) entered into a License Agreement dated June 19, 2002, as amended by the First Amendment to License Agreement dated May, 12, 2020 (including any prior amendments, the “Lease”), with respect to Premises located at water tower (the Tower) on Poole Street.

B. Landlord and Tenant desire to enter into this Amendment in order to modify and amend certain provisions of the Lease.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant covenant and agree as follows:

1. Effective as of \_\_\_\_\_, 2022, (a) Tenant will have the right to modify its Antenna Facilities as described and depicted on Exhibit A-1, which is attached hereto and by this reference incorporated herein, and Landlord hereby consents to and approves of the modifications described and depicted on Exhibit A in all respects, and (b) the annual Rent that Tenant pays Landlord will be increased by Three Thousand Dollars (\$3,000.00), and (c) Tenant shall pay Landlord a one-time Administrative Fee of Three Thousand Dollars (\$3,000.00).

2. The terms and conditions of the Lease are incorporated herein by this reference, and capitalized terms used in this Amendment shall have the same meanings such terms are given in the Lease. Except as specifically set forth herein, this Amendment shall in no way modify, alter or amend the remaining terms of the Lease, all of which are ratified by the parties and shall remain in full force and effect. To the extent there is any conflict between the terms and conditions of the Lease and this Amendment, the terms and conditions of this Amendment will govern and control.

3. Landlord represents and warrants to Tenant that the consent or approval of no third party, including, without limitation, a lender, is required with respect to the execution of this Amendment, or if any such third party consent or approval is required, Landlord has obtained any and all such consents or approvals.

4. This Second Amendment may be executed in duplicate counterparts, each of which will be deemed an original.

IN WITNESS WHEREOF, the parties have executed this Amendment effective as of the date of execution by the last party to sign.

The City of Hartsville

T-Mobile South, LLC

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Exhibit A-1

T-MOBILE SITE ID: 8FL0441D  
 PROJECT TYPE: ANCHOR  
 PROJECT DESCRIPTION: EQUIPMENT INSTALLATION  
 TOWER TYPE: 132'-6" WATER TANK  
 JURISDICTION: CITY OF HARTSVILLE  
 PRESENT OCCUPANCY TYPE: WATER TANK / TELECOMMUNICATIONS FACILITY  
 CURRENT ZONING: B3 - BUSINESS  
 PIN: 056-10-02-011  
 TECHNOLOGY TYPE: ERICSSON/RFS  
 BACKHAUL TYPE: TELCO/FIBER



1001 PINNACLE POINT DR. STE 102  
 COLUMBIA, SC 29223

T-MOBILE SITE ID: 8FL0441D  
 T-MOBILE SITE NAME: HARTSVILLE

221 POOLE STREET  
 HARTSVILLE, SC 29550  
 (DARLINGTON COUNTY)

PLANS PREPARED BY:

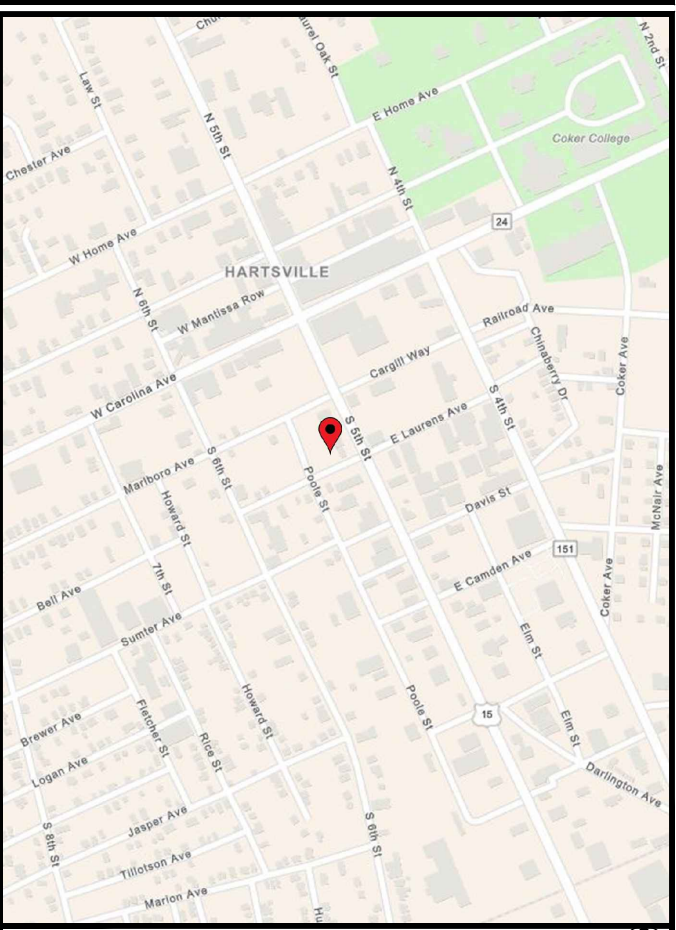
**TOWER ENGINEERING PROFESSIONALS**  
 326 TRYON ROAD  
 RALEIGH, NC 27603-3530  
 OFFICE: (919) 661-6351  
 www.tepgroup.net

**PROJECT INFORMATION**

LATITUDE N 34° 22' 21.00"  
 LONGITUDE W 80° 04' 23.00"  
 GROUND ELEVATION = 217'± (AMSL)\*

\*INFORMATION PROVIDED BY T-MOBILE

**TOWER COORDINATES**



**LOCATION MAP**

**LESSEE:**  
 NAME: T-MOBILE  
 ADDRESS: 1001 PINNACLE POINT DR. STE 102  
 CITY, STATE, ZIP: COLUMBIA, SC 29223  
 CONTACT: ALICIA MC PHERSON  
 PHONE: (410) 493-4614

**TOWER OWNER:**  
 NAME: CITY OF HARTSVILLE  
 ADDRESS: CITY HALL W. CAROLINA AVE.  
 CITY, STATE, ZIP: HARTSVILLE, SC 29550  
 CONTACT: CUSTOMER SERVICE  
 PHONE: (843) 383-3015

**PROPERTY OWNER:**  
 NAME: CITY OF HARTSVILLE  
 ADDRESS: CITY HALL W. CAROLINA AVE.  
 CITY, STATE, ZIP: HARTSVILLE, SC 29550  
 CONTACT: CUSTOMER SERVICE  
 PHONE: (843) 383-3015

**CIVIL ENGINEER:**  
 NAME: TOWER ENGINEERING PROFESSIONALS  
 ADDRESS: 326 TRYON ROAD  
 CITY, STATE, ZIP: RALEIGH, NC 27603-3530  
 CONTACT: SCOTT BRANTLEY  
 PHONE: (919) 661-6351

**ELECTRICAL ENGINEER:**  
 NAME: TOWER ENGINEERING PROFESSIONALS  
 ADDRESS: 326 TRYON ROAD  
 CITY, STATE, ZIP: RALEIGH, NC 27603-3530  
 CONTACT: MARK S. QUAKENBUSH, P.E.  
 PHONE: (919) 661-6351

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

- INTERNATIONAL BUILDING CODE (2018 EDITION) W/ SC AMENDMENTS
- SOUTH CAROLINA CODE COUNCIL
- ANSI/TIA-222-H
- 2017 NEC
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

**CODE COMPLIANCE**

THE PROPOSED PROJECT SCOPE OF WORK WILL CONSIST OF REMOVING ANTENNA MOUNTS, ANTENNAS, RADIOS, CABLES, AND RELATED EQUIPMENT AS WELL AS GROUND EQUIPMENT AND THE INSTALLATION OF ANTENNA, RADIOS, CABLES AND RELATED EQUIPMENT ON THE TOWER AS WELL AS RADIOS, CABINETS, UTILITIES AND ANCILLARY EQUIPMENT ON THE GROUND.

**PROJECT SCOPE OF WORK**

**UTILITIES:**  
 POWER COMPANY: DUKE ENERGY PROGRESS  
 CONTACT: CUSTOMER SERVICE  
 PHONE: (800) 343-3525  
 METER # NEAR SITE: 324 693 567

**FIBER COMPANY:**  
 CONTACT: BELL SOUTH  
 PHONE: CUSTOMER SERVICE  
 (800) 425-9822  
 PHONE # NEAR SITE: (843) 861-4708  
 PEDESTAL # NEAR SITE: F 224

**CONTACT INFORMATION**

SHEET	DESCRIPTION	REV
T1	TITLE SHEET	1
N1	PROJECT NOTES	1
C1	SITE PLAN	1
C1A	COMPOUND DETAIL	1
C1B	EQUIPMENT LAYOUT	1
C2	TOWER ELEVATION	1
C3	EXISTING AND PROPOSED ANTENNA PLAN	1
C4	EXISTING ANTENNA & CABLE SCHEDULE	1
C5	PROPOSED ANTENNA & CABLE SCHEDULE	1
C6	CABINET DETAILS	1
C7	SIGNAGE DETAILS	1
E1	ELECTRICAL NOTES	1
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**INDEX OF SHEETS**

REV	DATE	ISSUED FOR:
1	02-23-22	CONSTRUCTION
0	12-10-21	PRELIMINARY

DRAWN BY: DPB CHECKED BY: MJC

SEAL:

February 23, 2022

SEAL:

February 23, 2022


SHEET NUMBER: **T-1** REVISION: **1**  
 TEP#: 42131.61111

**PROJECT NOTES:**

1. ALL REFERENCES MADE TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED T-MOBILE 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 TO HAVE SUFFICIENT EXPERIENCE AND ABILITY, IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED, AND IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF SOUTH CAROLINA.
3. THE STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-H AND CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2018 EDITION WITH SC AMENDMENTS.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2018 EDITION WITH SC 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 ENSURE THE SAFETY OF THE STRUCTURE AND IT'S 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 VERIFICATION. 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. RENTAL CHARGES, SAFETY, PROTECTION AND MAINTENANCE OF RENTED EQUIPMENT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
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 LESSEE PROJECT MANAGER.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR/OWNER. CONTRACTOR/OWNER 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 SOFT 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. 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.

18. ANY BUILDINGS ON THIS SITE ARE INTENDED TO SHELTER EQUIPMENT WHICH WILL ONLY BE PERIODICALLY MAINTAINED AND ARE NOT INTENDED FOR HUMAN OCCUPANCY.
19. TEMPORARY FACILITIES FOR PROTECTION OF TOOLS AND EQUIPMENT SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
20. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CARRY LIABILITY INSURANCE IN THE AMOUNTS AND FORM IN ACCORDANCE WITH LESSEE SPECIFICATIONS. CERTIFICATES DEMONSTRATING PROOF OF COVERAGE SHALL BE PROVIDED TO LESSEE PRIOR TO THE START OF THE WORK ON THE PROJECT.
21. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES AND REQUIREMENTS FOR NEW UTILITY CONNECTIONS PRIOR TO EXCAVATING.
22. THE CONTRACTOR SHALL MAINTAIN THE JOB CLEAR OF TRASH AND DEBRIS. ALL WASTE MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO SUBSTANTIAL COMPLETION AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL FURNISH ONE 55 GALLON BARREL, AND TRASH BAGS, AND SHALL REMOVE TRASH, DEBRIS, ETC., ON A DAILY BASIS.
23. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS WITH THOSE AT THE SITE. ANY VARIATION WHICH REQUIRES PHYSICAL CHANGE SHALL BE BROUGHT TO THE ATTENTION OF THE T-MOBILE PROJECT ENGINEER FOR FACILITIES/CONSTRUCTION.
24. THE CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED ON THE PROJECT BY THE CONTRACTOR AND ANY OR ALL OF THE SUBCONTRACTORS WHO PERFORMED WORK FOR THE CONTRACTOR ON THIS PROJECT. THE GUARANTEE SHALL BE FOR A FULL YEAR FOLLOWING ISSUANCE OF THE FINAL PAYMENT OF RETAINAGE. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**


221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

PLANS PREPARED BY:



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

SEAL:



February 23, 2022

I	02-23-22	CONSTRUCTION
O	12-10-21	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: DPB    CHECKED BY: MJC

SHEET TITLE:

**PROJECT NOTES**

SHEET NUMBER: **N-1**      REVISION: **1**  
TEP#: 42131.61111

**NOTES:**

1. SITE PLAN SHOWN BELOW TAKEN FROM INFORMATION PROVIDED BY DARLINGTON COUNTY GIS & GOOGLE MAPS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE, OR INJURY THAT MIGHT OCCUR.
3. THE TOWER IS LOCATED IN AN ZONE "X," AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY #45031C0280C, DATED 02/06/2013.

N/F  
HARTSVILLE COMMUNITY BANK  
PARCEL# 056-10-02-009

N/F  
HERITAGE COMMUNITY BANK  
PARCEL# 056-10-02-010

N/F  
CITY OF HARTSVILLE  
PARCEL# 056-10-02-011

N/F  
SOUTH FIFTH ST LLC  
PARCEL# 056-10-02-014

N/F  
TIMBERLAKE OLIVE  
PARCEL# 056-10-02-013

N/F  
CITY OF HARTSVILLE  
PARCEL# 056-10-02-079



PLANS PREPARED FOR:

**T-Mobile**

1001 PINNACLE POINT DR, STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

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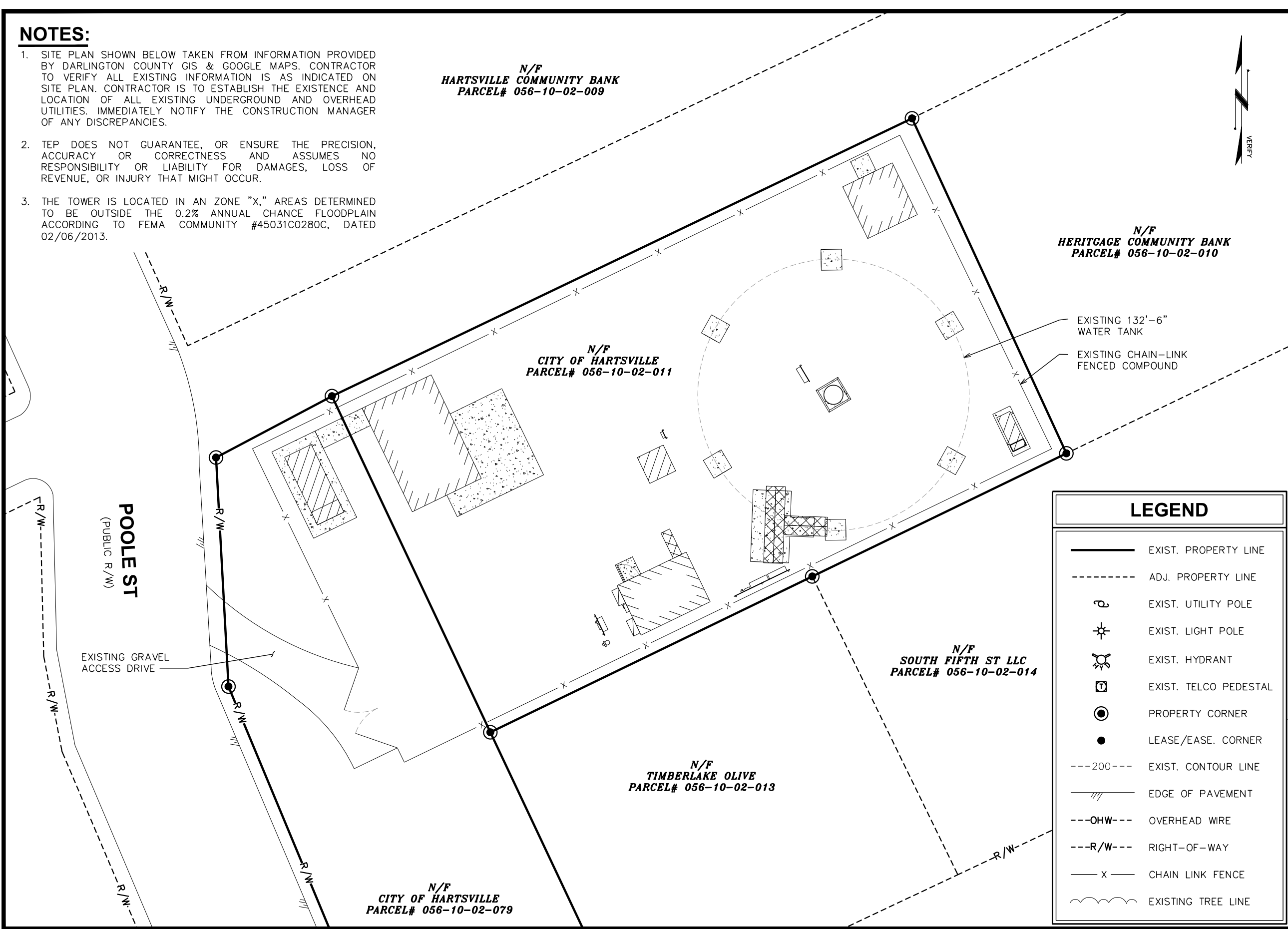
DRAWN BY: DPB    CHECKED BY: MJC

SHEET TITLE:

**SITE PLAN**

SHEET NUMBER: **C-1**    REVISION: **1**

TEP#: 42131.61111



**LEGEND**

- EXIST. PROPERTY LINE
- - - - - ADJ. PROPERTY LINE
- ⊕ EXIST. UTILITY POLE
- ⊙ EXIST. LIGHT POLE
- ⊕ EXIST. HYDRANT
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- LEASE/EASE. 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" = 20'

**NOTES:**

COMPOUND DETAIL SHOWN TAKEN FROM INFORMATION PROVIDED BY A SITE WALK PERFORMED BY TEP ON 11/08/2021. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.



PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D**  
**HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
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SHEET TITLE:

**COMPOUND  
DETAIL**

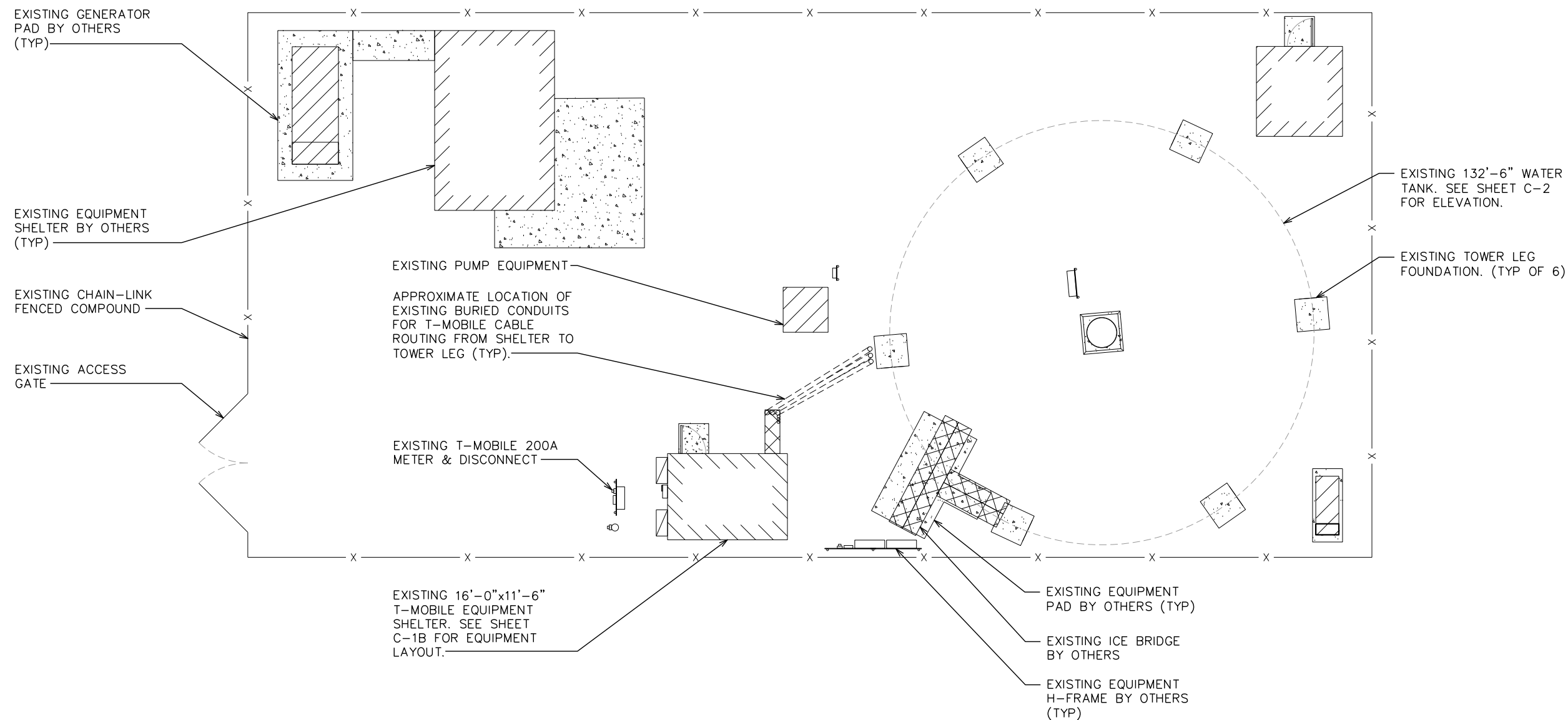
SHEET NUMBER: REVISION:

**C-1A** 1

TEP#: 42131.61111

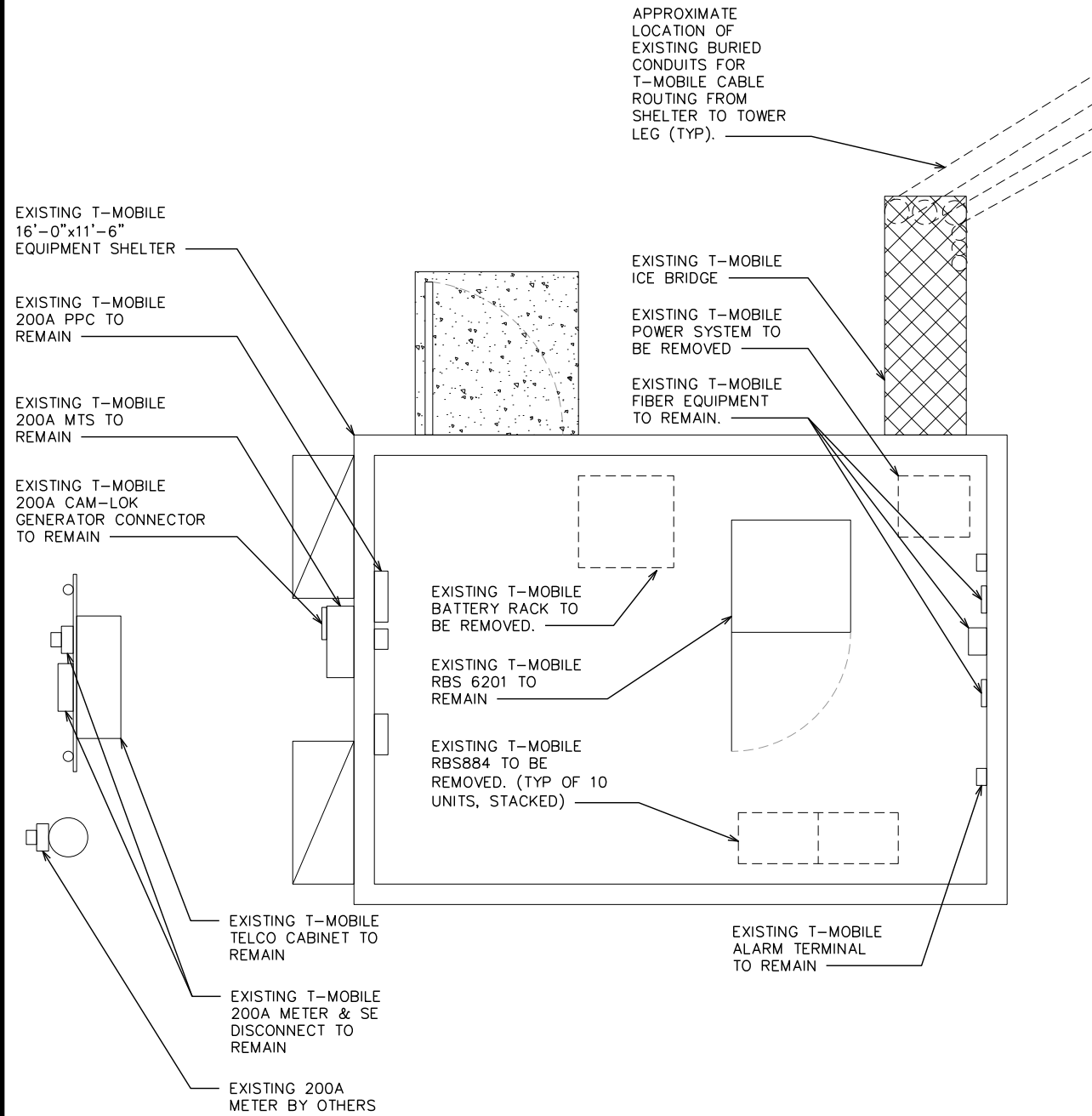
**COMPOUND DETAIL**

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



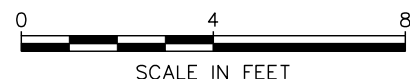
**NOTES:**

LAYOUT DETAIL SHOWN BELOW TAKEN FROM SITE WALK PERFORMED BY TEP DATED 11/08/2021. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.



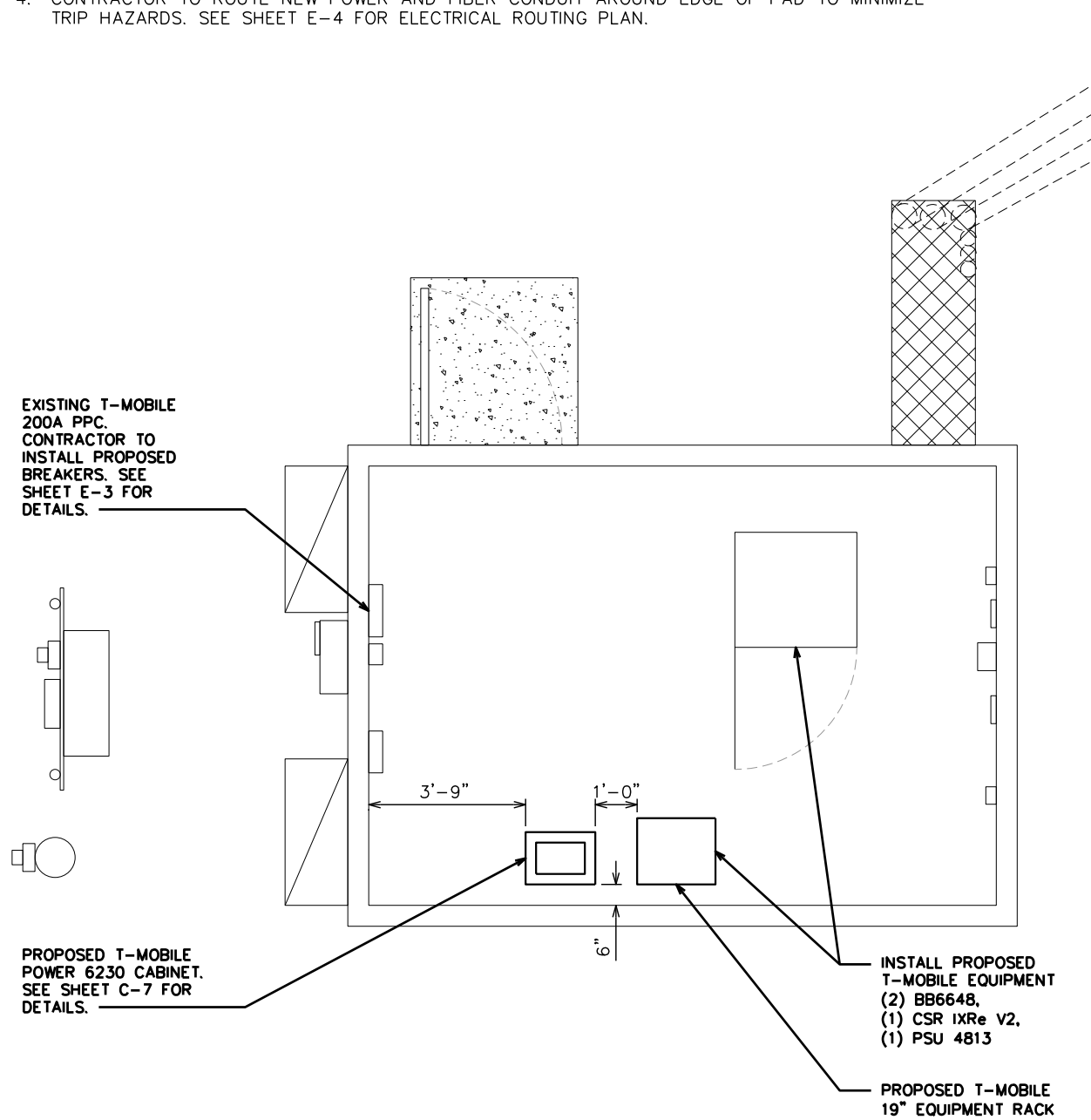
**EXISTING EQUIPMENT LAYOUT**

SCALE: 1/4" = 1'-0"



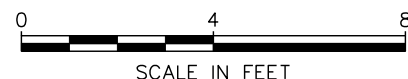
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- ALL RACKS AND EQUIPMENT CABINETS ARE TO HAVE TWO GROUNDING LEADS. ALL EQUIPMENT INSTALLED IN RACKS MUST HAVE A CHASSIS GROUND ATTACHED TO A COMMON BUS BAR ON THE RACK. COMMON BUS BAR MUST BE GROUNDED TO MAIN GROUND BAR. SEE G-1 FOR GROUNDING NOTES.
- CONTRACTOR TO FOLLOW THE LATEST VERSION OF T-MOBILE REGIONAL CONSTRUCTION STANDARDS. CONTACT T-MOBILE FOR DETAILS.
- CONTRACTOR TO ROUTE NEW POWER AND FIBER CONDUIT AROUND EDGE OF PAD TO MINIMIZE TRIP HAZARDS. SEE SHEET E-4 FOR ELECTRICAL ROUTING PLAN.



**PROPOSED EQUIPMENT LAYOUT**

SCALE: 1/4" = 1'-0"



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1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

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SHEET TITLE:

**EQUIPMENT  
LAYOUT**

SHEET NUMBER: REVISION:

**C-1B**

1  
TEP#: 42131.61111



**NOTES:**

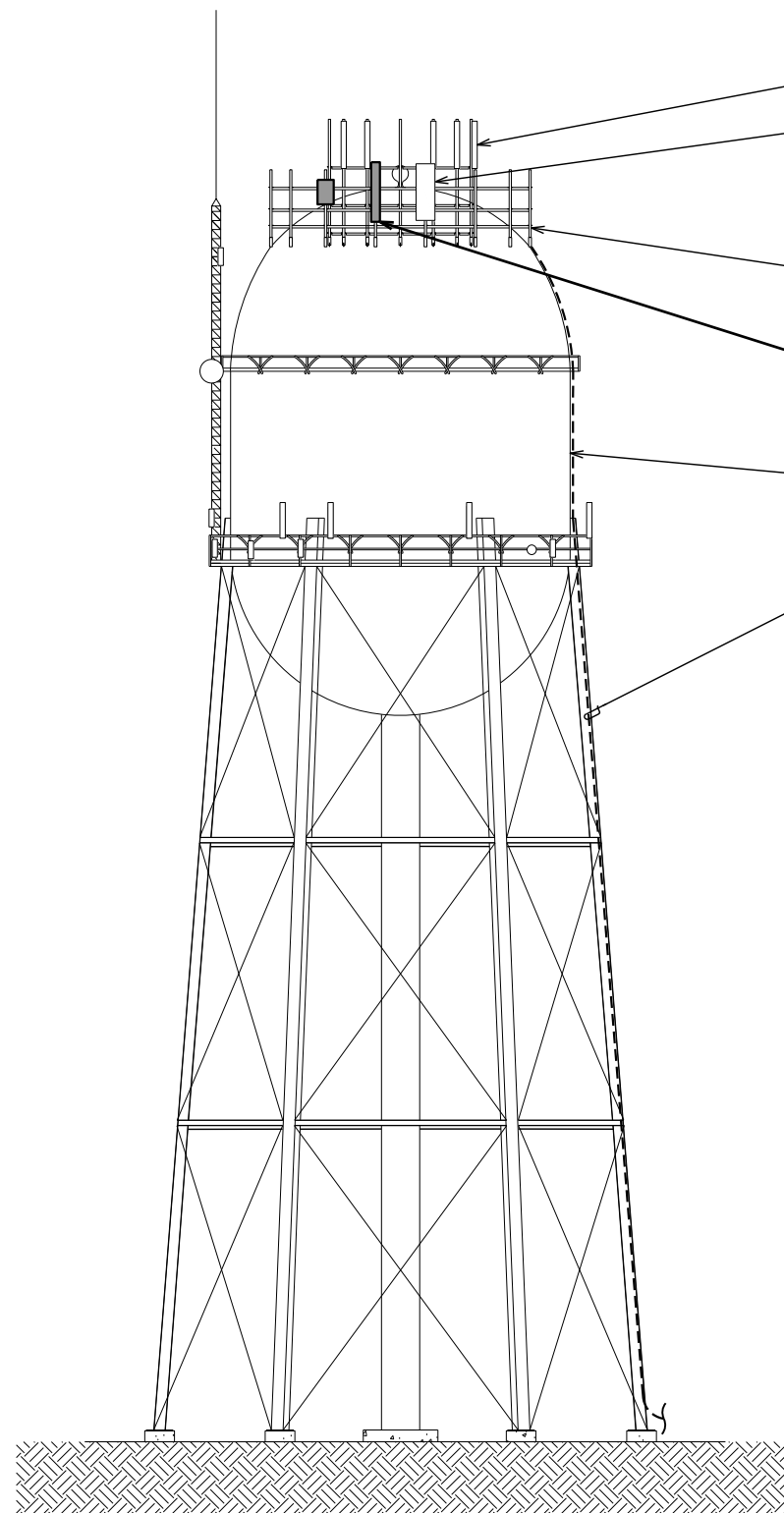
1. PROPOSED CABLES TO BE ROUTED PER SPECIFICATIONS OF PASSING STRUCTURAL ANALYSIS.
2. THE TOWER DRAWING IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. THE ACTUAL TOWER IN THE FIELD MAY VARY.
3. CONTRACTOR TO VERIFY PROPOSED LOADING AND ANY LOADING TO BE REMOVED WITH PASSING STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT T-MOBILE OR TOWER OWNER IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES.

149'-9"±  
T/APPURTENANCE

132'-6"±  
T/WATER TANK

132'-0"±  
℄/T-MOBILE ANTENNAS

0'-0" (REFERENCE)  
T/GRADE



EXISTING ANTENNA BY OTHERS (TYP)

EXISTING ANTENNA BY T-MOBILE (TYP OF 3). SEE SHEET C-3 FOR DETAILS.

EXISTING CORRAL MOUNT TO BE UTILIZED BY T-MOBILE

PROPOSED ANTENNA BY T-MOBILE (TYP OF 6). SEE SHEET C-3 FOR DETAILS.

EXISTING 132'-6" WATER TANK

(1) 6X12 HCS 4AWG 70m CABLE TO REMAIN, (6) 1 1/8"∅ COAX & (2) 6X12 HCS 6AWG 60m CABLES TO BE REMOVED, & (2) HYBRID TRUNK 6/24 4AWG 70m CABLES TO BE INSTALLED PER SPECIFICATIONS OF PASSING STRUCTURAL ANALYSIS

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SEAL:



February 23, 2022

REV	DATE	ISSUED FOR:
I	02-23-22	CONSTRUCTION
O	12-10-21	PRELIMINARY

DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**TOWER ELEVATION**

SHEET NUMBER: REVISION:

**C-2**

**1**

TEP#: 42131.61111

**TOWER ELEVATION**

SCALE: 1" = 20'



**NOTES:**

1. TEP DID NOT CONFIRM THE EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION.
2. ANTENNA POSITIONING SHOWN BELOW PER RFDS POSITIONING. ANTENNA LOCATIONS IN FIELD MAY VARY.



**NOTES:**

1. TEP DID NOT CONFIRM THE EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION. CONTRACTOR TO CONFIRM MOUNT IS SUFFICIENT FOR PROPOSED LESSEE EQUIPMENT (I.E. CONFIRM MOUNT PIPE IS OF SUFFICIENT LENGTH).
2. CONTRACTOR TO VERIFY PROPOSED LOADING WITH PASSING STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO ENSURE CLIMBING PATH AND SAFETY CLIMB IS UNOBSTRUCTED AT COMPLETION OF WORK.
4. ANTENNA POSITIONING SHOWN BELOW PER RFDS POSITIONING. ANTENNA LOCATIONS IN FIELD MAY VARY.



PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

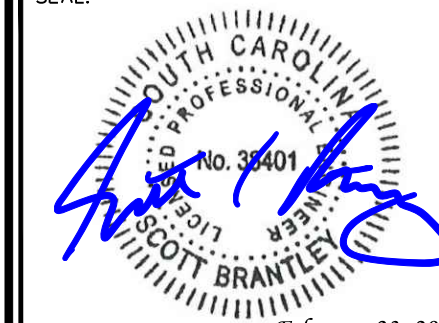
PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351

www.tepgroup.net

SEAL:



February 23, 2022

REV	DATE	ISSUED FOR:
1	02-23-22	CONSTRUCTION
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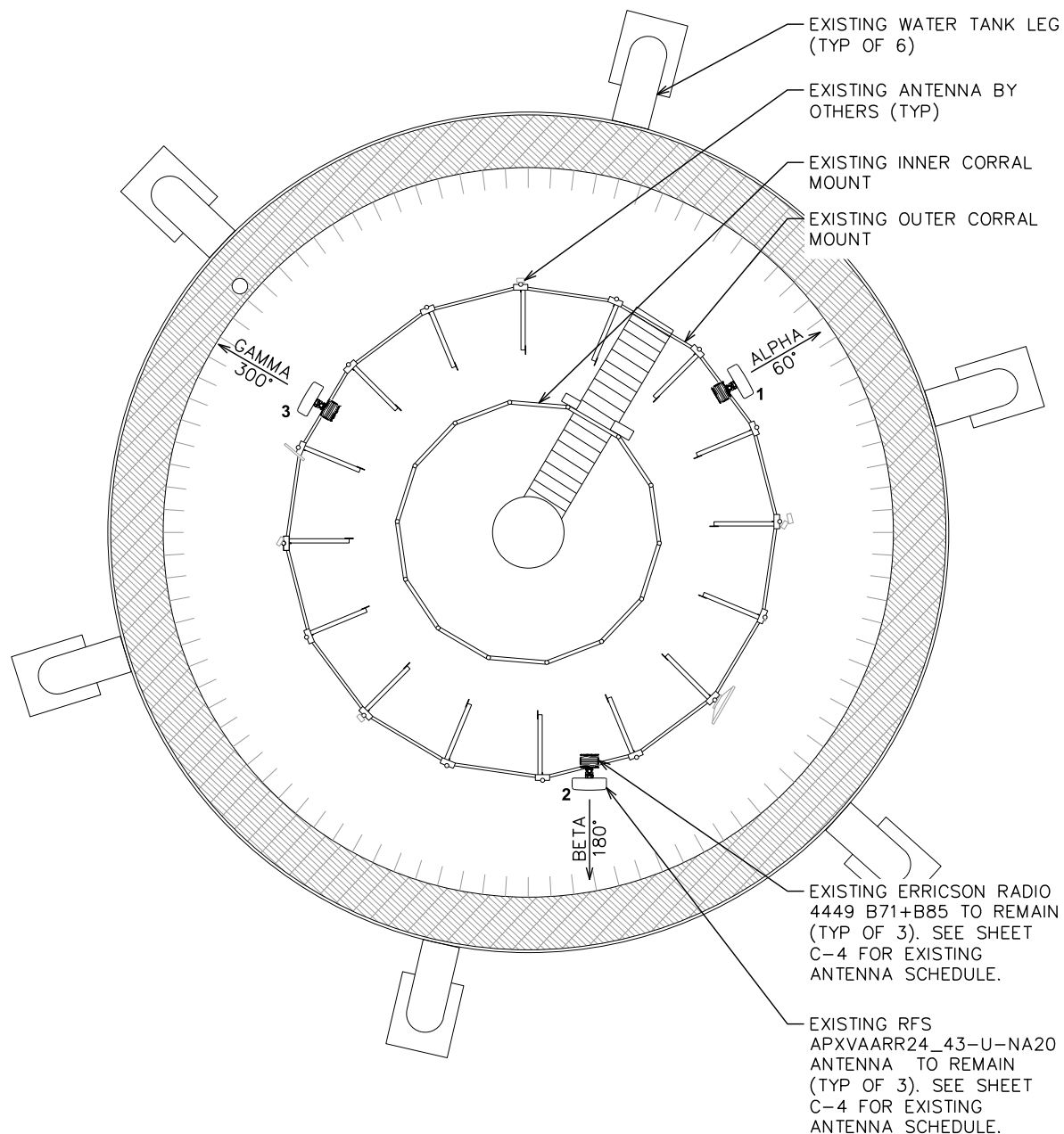
DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**ANTENNA PLAN**

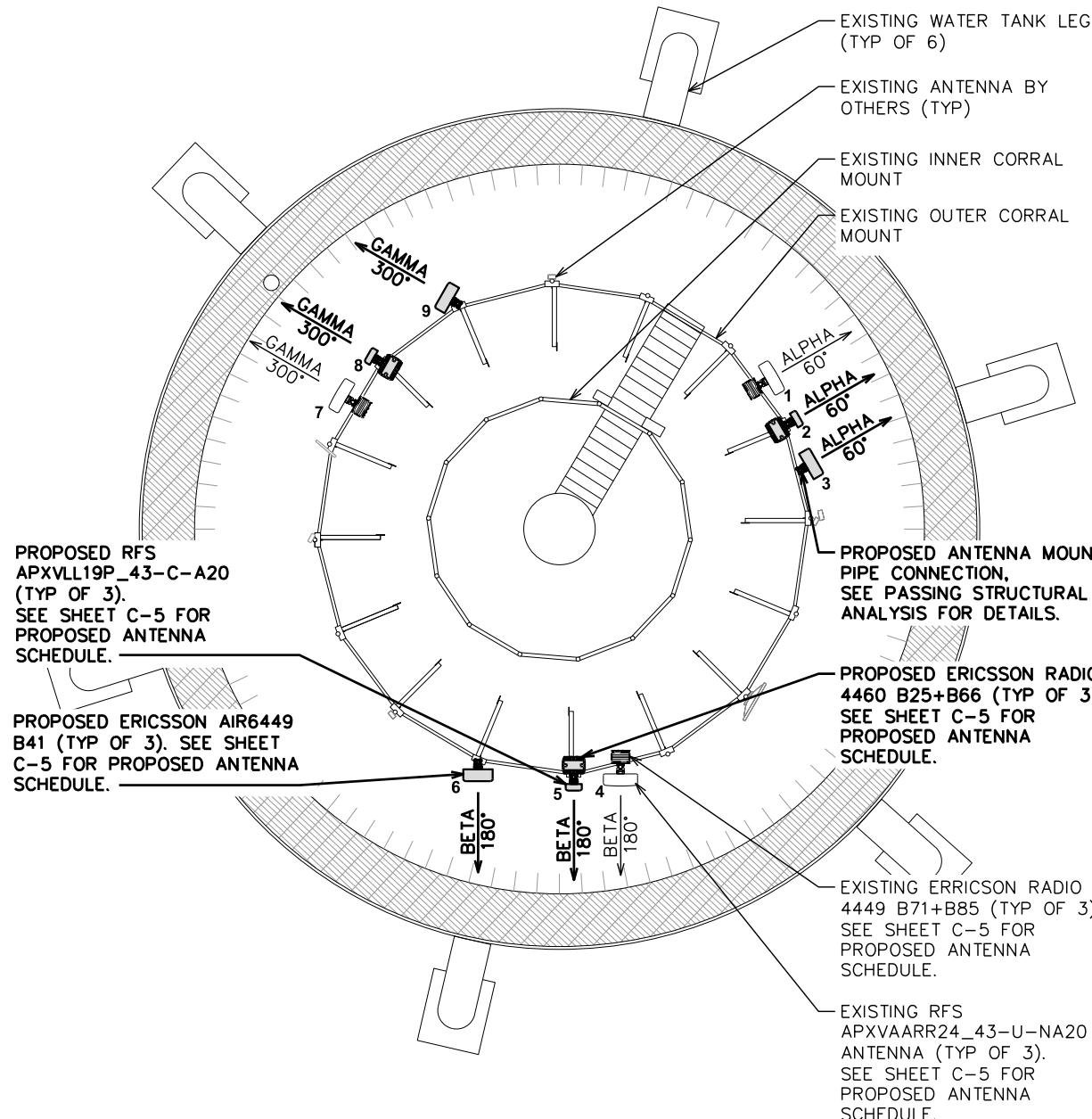
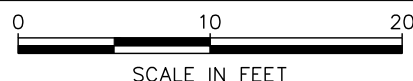
SHEET NUMBER: **C-3** REVISION: **1**

TEP#: 42131.61111



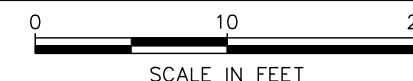
**EXISTING ANTENNA PLAN AT 132'-0"**

SCALE: 1" = 10'



**PROPOSED ANTENNA PLAN AT 132'-0"**

SCALE: 1" = 10'



PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D**  
**HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

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DRAWN BY: DPB    CHECKED BY: MJC

SHEET TITLE:

**EXISTING ANTENNA & CABLE SCHEDULE**

SHEET NUMBER:

**C-4**

REVISION:

**1**

TEP#: 42131.61111

**EXISTING ANTENNA/CABLE SCHEDULE**

POS.	SECTOR	MANUFACTURER (MODEL #)	MOUNTING HEIGHT	AZIMUTH (TN)	MECH. TILT	FEEDLINE SIZE	FEEDLINE LENGTH	RRU/ TMA [MODEL #]
1	ALPHA	RFS APXVAARR24_43-U-NA20 (OCTO)	Ⓢ @ 132'-0"	60°	0°	(1) 6x12 HCS 4AWG CABLE	70m	*(1) ERICSSON TMA [KRY 112 489/2]  (1) ERICSSON RRU [RADIO 4449 B71+B85]
2	BETA	RFS APXVAARR24_43-U-NA20 (OCTO)		180°	0°	*(2) 6x12 HCS 6AWG CABLE	60m	*(1) ERICSSON TMA [KRY 112 489/2]  (1) ERICSSON RRU [RADIO 4449 B71+B85]
3	GAMMA	RFS APXVAARR24_43-U-NA20 (OCTO)		300°	0°	*(6) 1 1/8" COAX CABLE	211ft	*(1) ERICSSON TMA [KRY 112 489/2]  (1) ERICSSON RRU [RADIO 4449 B71+B85]

\*EXISTING EQUIPMENT TO BE REMOVED

**EXISTING ANTENNA & CABLE SCHEDULE**

SCALE: N.T.S.

**NOTES:**

1. CONTRACTOR TO REFERENCE T-MOBILE ISSUED RFDS AND GIVE PRECEDENCE TO INFORMATION PROVIDED IN RFDS OVER INFORMATION PROVIDED IN THIS TABLE.
2. CONTRACTOR TO VERIFY PROPOSED LOADING AND ANY LOADING TO BE REMOVED WITH PASSING STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION AND CONTACT T-MOBILE IN THE EVENT OF ANY DISCREPANCIES.
3. IF STRUCTURAL ANALYSIS AND RFDS DO NOT MATCH, CONTRACTOR IS TO CONTACT T-MOBILE OR TOWER OWNER IMMEDIATELY.

PROPOSED EQUIPMENT IN BOLD

<p align="center"><b>PROPOSED ANTENNA/CABLE SCHEDULE: 67D5998E_1xAIR+1OP+1QP SITE CONFIGURATION</b></p>								
POS.	SECTOR	MANUFACTURER (MODEL #)	MOUNTING HEIGHT	AZIMUTH (TN)	MECH. TILT	FEEDLINE SIZE	FEEDLINE LENGTH	RRU [MODEL #]
1	ALPHA	RFS APXVAARR24_43-U-NA20 (OCTO)	<p align="center">Ⓢ @ 132'-0"</p>	60°	0°	(1) 6x12 HCS 4AWG CABLE  (2) HYBRID TRUNK 6/24 4AWG CABLE	70m       70m	(1) ERICSSON RRU [RADIO 4449 B71+B85]
2	ALPHA	RFS APXVLL19P_43-C-A20 (QUAD)		60°	0°			(1) ERICSSON RRU [RADIO 4460 B25+B66]
3	ALPHA	<b>ERICSSON AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)</b>		60°	0°			-
4	BETA	RFS APXVAARR24_43-U-NA20 (OCTO)		180°	0°			(1) ERICSSON RRU [RADIO 4449 B71+B85]
5	BETA	RFS APXVLL19P_43-C-A20 (QUAD)		180°	0°			(1) ERICSSON RRU [RADIO 4460 B25+B66]
6	BETA	<b>ERICSSON AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)</b>		180°	0°			-
7	GAMMA	RFS APXVAARR24_43-U-NA20 (OCTO)		300°	0°			(1) ERICSSON RRU [RADIO 4449 B71+B85]
8	GAMMA	RFS APXVLL19P_43-C-A20 (QUAD)		300°	0°			(1) ERICSSON RRU [RADIO 4460 B25+B66]
9	GAMMA	<b>ERICSSON AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)</b>		300°	0°			-

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

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

www.tepgroup.net

SEAL:



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DRAWN BY: DPB    CHECKED BY: MJC

SHEET TITLE:

**PROPOSED ANTENNA & CABLE SCHEDULE**

SHEET NUMBER:    REVISION:

**C-5**

**1**

TEP#: 42131.61111

**PROPOSED ANTENNA & CABLE SCHEDULE**

SCALE: N.T.S.

## NOTES:

INFORMATION SHOWN PROVIDED BY T-MOBILE.  
CONTRACTOR TO REFERENCE CABINET MANUFACTURER'S  
SPECIFICATIONS FOR FURTHER DETAILS.

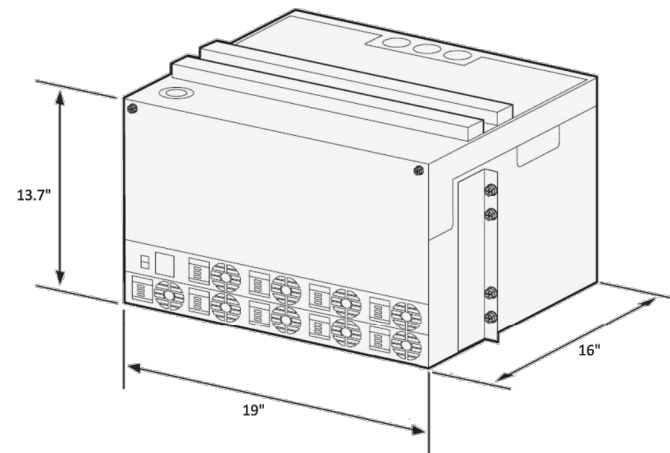


Figure 1

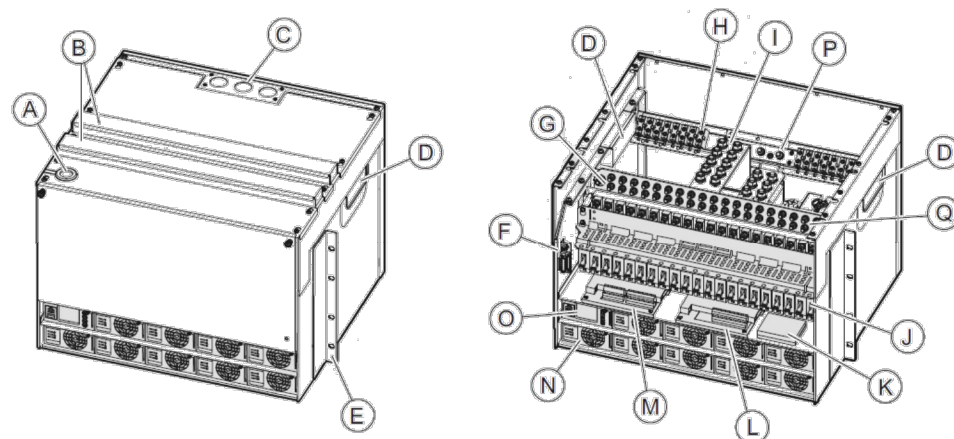


Figure 2

Feature	Unit
A	Alarm circuit breaker cable, temperature sensor, SCU power cable
B	Cable routing
C	AC cable interface
D	Battery cable inlet
E	Adaptor bracket for wall mounting kit
F	RTN alarm
G	0 V bus bar DC connection
H	AC input
I	0 V/RTN for battery cables
J	DC distribution circuit breaker
K	DC SPD
L	Extended interface board (EIB)
M	Interface board (IB2)
N	Rectifier
O	Power controller unit (PCU)
P	AC grounding
Q	-48 VDC distribution

The general specifications for the 6230 DC power system are as follows:

<b>Mechanical Specification</b>	
Weight	52.8 lbs.
Dimensions (H x W x D)	13.7" x 19" x 16"
Mounting position	On top of battery rack
Color	Gray, NCS 2002-B (RAL 7035)
<b>Power System</b>	
Input voltage	3W+N+PE: 346/200-415/240 VAC 2W+N+PE: 208/120-220/127 VAC 1W+N+PE: 200-250 VAC Range 85 – 300 VAC
Line frequency	45 – 65 Hz
Maximum input current	155 A (load and batteries) 103 A (load only)
Input power	<33 kW
Output load (-48 VDC)	24 kW
Total capacity (-48 VDC)	31.5 kW
DC Output voltage	Nominal: -48 VDC; Range: -42.3 to -57.6 VDC
DC Output power	24 kW to load, 7.5 kW to batteries
AC SPD	Class 2 / Type 2
PSU slots	9
Rectifier efficiency	96%
Priority load disconnect	8 circuit breakers
Low voltage disconnect 1	6 circuit breakers
Low voltage disconnect 2	6 circuit breakers
Avail Circuit breaker ratings	3A, 5A, 10A, 15A, 20A, 25A, 30A, 40A, 50A, 60A, 80A, 100A, 200A
Battery interface	2 circuit breakers
Battery circuit breaker rating	125 A 2 pol (200 A)
PSU capacity	3500 watts
<b>Operating Environmental</b>	
Operation	-40°C to +55°C; 0-90% non-condensing relative humidity
Transportation	-40°C to +70°C; 0-90% non-condensing relative humidity
Storage	-40°C to +55°C; 0-90% non-condensing relative humidity
<b>Acoustic Noise</b>	
Max @ +45°F ambient	< 65 dB
<b>Remote Management</b>	
External alarms	32
Fault management	Following alarms are sent to ENM: - Battery temperature sensors missing/faulty - AC mains failure per rectifier - Rectifier over temperature alarm - Battery circuit breaker trip - Load circuit breaker trip - Rectifier failure - Battery not possible to charge - External alarms - LVD/BLVD disconnect
<b>Performance Management</b>	
	Following data is sent to ENM: - System voltage - System current - System power - Total delivered energy - Battery temperature - Battery voltage - Battery current - Battery state of charge - Rectifier output voltage - Rectifier output current - Rectifier input voltage - Rectifier run time
<b>Configuration Management</b>	
	Following parameters can be set remotely from ENM: - Float charge voltage - Elevated charge voltage - Battery disconnect voltage - Load disconnect voltage - Temperature compensation - Battery capacity - Alarm limits for all analogue values - Rectifier current limit - Battery temperature sensors - State of health test - Compensation factor - Charging algorithm, float, temp comp, boost, equalization
<b>Inventory Management</b>	
	Inventory record in Cabinet Controller can be fetched remotely - Cabinet controller - Power controller - Rectifiers - Cabinet - Battery test record

PLANS PREPARED FOR:

**T-Mobile**

1001 PINNACLE POINT DR, STE 102  
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PROJECT INFORMATION:

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HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
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PLANS PREPARED BY:



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DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**POWER 6230  
DETAILS**

SHEET NUMBER:

**C-6**

REVISION:

**1**

TEP#: 42131.61111

**ERICSSON POWER 6230 DETAILS**

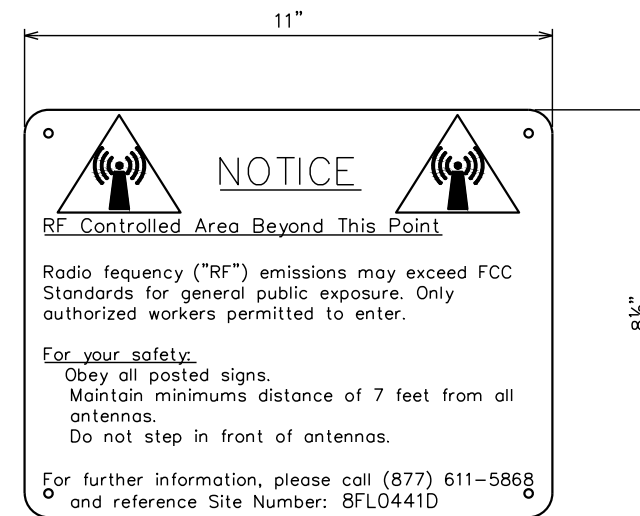
SCALE: N.T.S.

**NOTE:**

SIGNS TO BE MOUNTED ON THE OUTSIDE OF ACCESS GATE TO THE EXISTING COMPOUND



**EMERGENCY SIGN**  
(RED METAL SIGN W/ WHITE LETTERING)



**RF NOTICE SIGN**  
(WHITE METAL SIGN W/ BLACK LETTERING)

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D**  
**HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
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PLANS PREPARED BY:



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SHEET TITLE:

**SIGNAGE  
DETAILS**

SHEET NUMBER:

**C-7**

REVISION:

**1**

TEP#: 42131.61111

**SIGNAGE DETAILS**

SCALE: N.T.S.

# ELECTRICAL NOTES:

## SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

## CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
  - A. THE NATIONAL ELECTRICAL SAFETY CODE
  - B. THE NATIONAL ELECTRIC CODE – NFPA-70
  - C. REGULATIONS OF THE SERVING UTILITY COMPANY
  - D. LOCAL AND STATE AMENDMENTS
  - E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

## TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

## GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTY CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

## UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

## EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

## CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

## RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

## EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. WHERE INSTALLED ON EXTERIOR STRUCTURES OR EXPOSED TO DAMAGE, THE CONDUIT SHALL BE RIGID STEEL.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

## INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE PVC OR EMT.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

## EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

## CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
  - A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
  - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
  - C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
  - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

## UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

## GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

<b>ABBREVIATIONS AND LEGEND</b>															
A – AMPERE AFG – ABOVE FINISHED GRADE ATS – AUTOMATIC TRANSFER SWITCH AWG – AMERICAN WIRE GAUGE BCW – BARE COPPER WIRE BFG – BELOW FINISHED GRADE BKR – BREAKER C – CONDUIT CKT – CIRCUIT DISC – DISCONNECT EGR – EXTERNAL GROUND RING EMT – ELECTRIC METALLIC TUBING FSC – FLEXIBLE STEEL CONDUIT GEN – GENERATOR GPS – GLOBAL POSITIONING SYSTEM GRD – GROUND IGB – ISOLATED GROUND BAR IGR – INTERIOR GROUND RING (HALO) KW – KILOWATTS NEC – NATIONAL ELECTRIC CODE PCS – PERSONAL COMMUNICATION SYSTEM PH – PHASE PNL – PANEL	PNLBD – PANELBOARD PVC – RIGID NON-METALLIC CONDUIT RGS – RIGID GALVANIZED STEEL CONDUIT SW – SWITCH TGB – TOWER GROUND BAR UL – UNDERWRITERS LABORATORIES V – VOLTAGE W – WATTS XFMR – TRANSFORMER XMTR – TRANSMITTER  <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px dashed black;">----E----</td> <td style="width: 50%;">UNDERGROUND ELECTRICAL CONDUIT</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">----T----</td> <td>UNDERGROUND TELEPHONE CONDUIT</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">-----</td> <td>KILOWATT-HOUR METER</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">-----</td> <td>UNDERGROUND BONDING AND GROUNDING CONDUCTOR.</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">∅</td> <td>GROUND ROD</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">●</td> <td>CADWELD</td> </tr> <tr> <td style="border-bottom: 1px dashed black;">⊠</td> <td>GROUND ROD WITH INSPECTION WELL</td> </tr> </table> </div>	----E----	UNDERGROUND ELECTRICAL CONDUIT	----T----	UNDERGROUND TELEPHONE CONDUIT	-----	KILOWATT-HOUR METER	-----	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.	∅	GROUND ROD	●	CADWELD	⊠	GROUND ROD WITH INSPECTION WELL
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●	CADWELD														
⊠	GROUND ROD WITH INSPECTION WELL														

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

PLANS PREPARED BY:

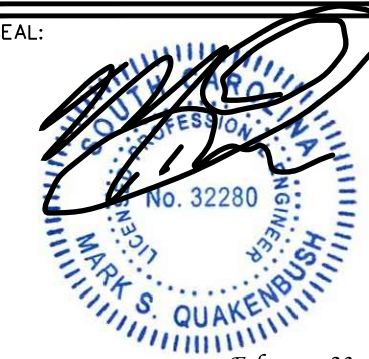


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OFFICE: (919) 661-6351

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SEAL:



February 23, 2022

REV	DATE	ISSUED FOR:
1	02-23-22	CONSTRUCTION
0	12-10-21	PRELIMINARY

DRAWN BY: DPB    CHECKED BY: MJC

SHEET TITLE:

**ELECTRICAL  
NOTES**

SHEET NUMBER: <b>E-1</b>	REVISION: <b>1</b>
TEP#: 42131.61111	

### ONE-LINE DIAGRAM NOTES:

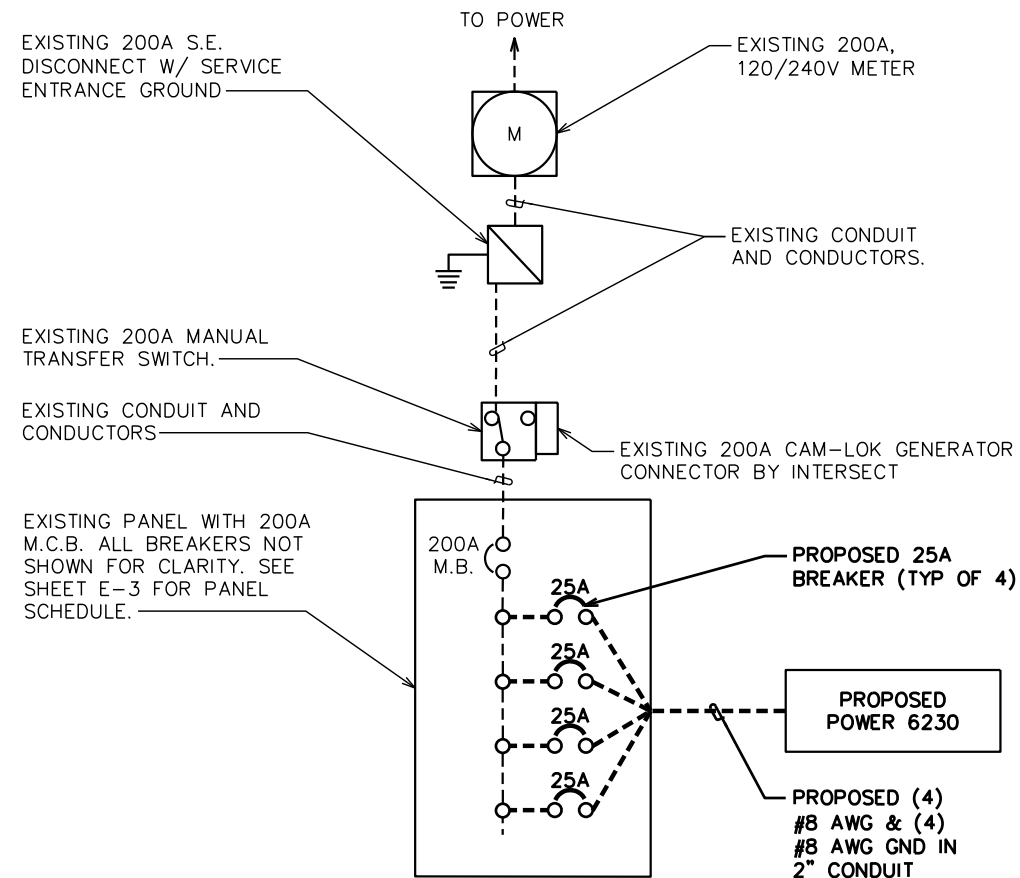
- ELECTRICAL SERVICE IS: 200A, 120/240V, 1Ø, 3W.
- FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.

### UTILITY NOTES:

- CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH POWER COMPANY AND ENSURE ALL ELECTRICAL EQUIPMENT IS SUITABLE FOR AVAILABLE FAULT CURRENT.
- CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY STANDARDS.
- ONE-LINE DIAGRAM IS FOR SCHEMATIC PURPOSES ONLY AND IS NOT INDICATIVE OF THE ACTUAL EQUIPMENT LAYOUT.
- ALL EQUIPMENT WILL HAVE A MINIMUM AIC OF 10 KA. CONTRACTOR TO DETERMINE AVAILABLE FAULT CURRENT BEFORE ENERGIZING EQUIPMENT. THE AMOUNT OF AVAILABLE FAULT CURRENT SHALL BE MARKED ON THE SERVICE EQUIPMENT PER NEC 110.24.
- CONTRACTOR SHALL NOTIFY UTILITY COMPANY OF CHANGES IN ELECTRICAL LOAD.
- CONTRACTOR TO VERIFY EXISTING CONDUIT(S) SIZE(S) PRIOR TO CONSTRUCTION AND MAY REUSE EXISTING CONDUIT(S) IF THEY MEET THE MINIMUM REQUIREMENTS PER NEC CODE.

### UL NOTE:

ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E.: LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY

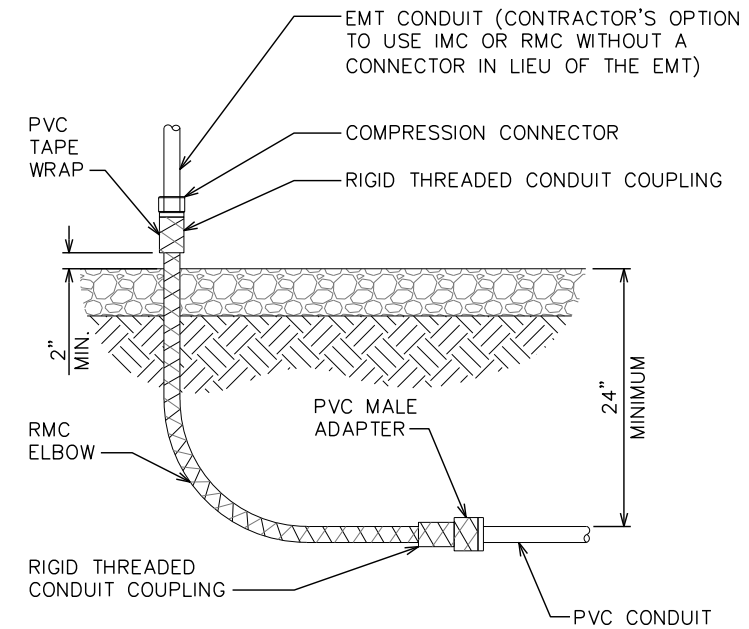


### ONE-LINE DIAGRAM

SCALE: N.T.S.

### NOTE:

ALL METAL CONDUIT INSTALLED IN DIRECT CONTACT WITH THE EARTH SHALL BE CONSIDERED TO BE INSTALLED IN A SEVERELY CORROSIVE ENVIRONMENT AND IS REQUIRED TO HAVE SUPPLEMENTAL PROTECTION AGAINST CORROSION (NEC ARTICLE 342.10(B) & 344.10(B)(1)). THIS PROTECTION SHALL EITHER BE AN APPROVED MANUFACTURER INSTALLED PROTECTIVE COATING ON THE CONDUIT OR SHALL BE (2) LAYERS OF 10 MIL PVC PIPE WRAP TAPE INSTALLED USING OPPOSING SPIRAL WRAPS. ON VERTICAL PIPE THE OUTSIDE LAYER OF TAPE SHALL BE WRAPPED SO AS TO PROVIDE SHEDDING OF WATER (I.E.. TAPE SHOULD WRAP IN AN UPWARD DIRECTION WITH LOWER WRAP BEING BENEATH THE WRAP ABOVE). SPIRAL WRAPS SHALL HAVE A MINIMUM OF 1/4" OVERLAP WITH THE PRECEDING TAPE WRAP. ANY OTHER METHODS OF CORROSION PROTECTION SHALL REQUIRE APPROVAL BY THE ENGINEER OF RECORD PRIOR TO BEING USED.



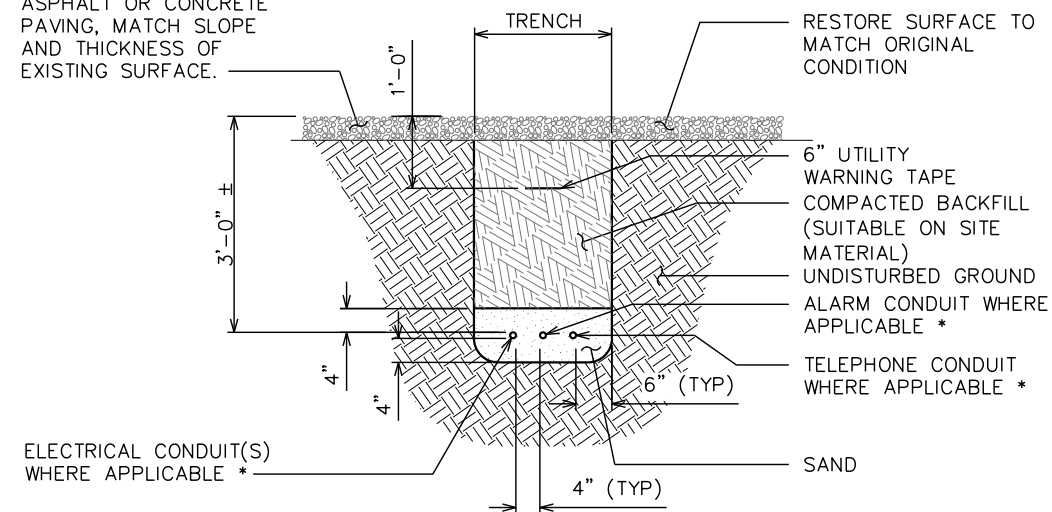
### UNDERGROUND CONDUIT STUB UP DETAIL

SCALE: N.T.S.

### TRENCHING NOTES:

- ACTUAL SEPARATION OF CONDUITS TO BE DETERMINED BY SITE SPECIFIC REQUIREMENTS.
- UNDERGROUND CONDUIT TRENCH TO BE LOCATED AS CLOSE TO COMPOUND FENCE AS POSSIBLE WITHOUT COMPROMISING THE INTEGRITY OF THE FENCE.
- PROVIDE PVC CONDUIT BELOW GRADE EXCEPT AS NOTED BELOW.
- PROVIDED RGS CONDUIT AND ELBOWS AT STUB-UP LOCATIONS (I.E. SERVICE POLES, EQUIPMENT, ETC.)
- PROVIDE RGS CONDUIT FOR INSTALLATIONS BELOW PARKING LOTS AND ROADWAYS.

FINISHED GRADE, ASPHALT OR CONCRETE PAVING, MATCH SLOPE AND THICKNESS OF EXISTING SURFACE.



\* SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS

### UNDERGROUND CONDUIT(S) TRENCHING DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

PLANS PREPARED BY:

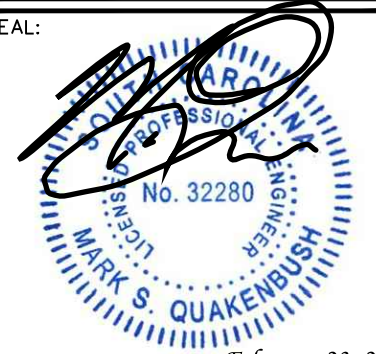


**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-3530  
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SEAL:



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DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**ONE-LINE DIAGRAM &  
ELECTRICAL DETAILS**

SHEET NUMBER:

**E-2**

REVISION:

**1**

TEP#: 42131.61111



**NOTE:**

LOAD CALCULATIONS TAKEN FROM INFORMATION PROVIDED BY T-MOBILE & CALCULATED USING THE T-MOBILE LOAD ANALYSIS TOOL. CONTRACTOR TO VERIFY LOADS WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO CONSTRUCTION.

**NOTE:**

LOAD CALCULATIONS TAKEN FROM INFORMATION PROVIDED BY T-MOBILE & CALCULATED USING THE T-MOBILE LOAD ANALYSIS TOOL. CONTRACTOR TO VERIFY LOADS WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO CONSTRUCTION.

PLANS PREPARED FOR:



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COLUMBIA, SC 29223

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DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**PANEL SCHEDULES**

SHEET NUMBER: <b>E-3</b>	REVISION: <b>1</b> TEP#: 42131.61111
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**EXISTING 200A M.C.B, 240/120 VAC, 1Ø, 3W PPC PANEL SCHEDULE**

LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
SPARE	-	-	-	1	A	2	-	-	-	SPARE
SURGE	-	100	60	3	B	4	30	-	1500	ACH#2
	100	-		5	A	6		1500	-	
ACH#1	-	1500	30	7	B	8	20	-	0	RECEPT EXT GFCI (OFF)
	1500	-		9	A	10		180	-	RECEPT INT GFCI
LIGHTS INT & EXT	-	500	20	11	B	12	20	-	0	*RECTIFIER #4 (OFF)
*RECTIFIER #1 (OFF)	0	-	20	13	A	14	20	0	-	*RECTIFIER #5 (OFF)
	-	0		15	B	16		0	0	
*RECTIFIER #2 (OFF)	0	-	20	17	A	18	20	0	-	*RECTIFIER #6 (OFF)
	-	0		19	B	20		0	0	
*RECTIFIER #3 (OFF)	0	-	20	21	A	22	20	0	-	*RECTIFIER #7 (OFF)
	-	0		23	B	24		0	0	
SMOKE DETECTOR (OFF)	0	-	15	25	A	26	15	0	-	*RECTIFIER #8 (OFF)
POWER FAIL RELAY (OFF)	-	0	15	27	B	28	15	-	0	*RECTIFIER #8 (OFF)
	0	-		29	A	30		0	-	
EXHAUST FAN	-	340	15	31	B	32	100	-	5900	RBS 6201 ODE
SPARE	-	-	-	33	A	34	-	5900	-	SPARE
SPARE	-	-	-	35	B	36	-	-	-	SPARE
SPARE	-	-	-	37	A	38	-	-	-	SPARE
SPARE	-	-	-	39	B	40	-	-	-	SPARE
VOLT AMPS	1600	2440						7580	7400	VOLT AMPS

L1 VOLT AMPERES	9180	9840	L2 VOLT AMPERES	9840
			MAX VOLT AMPERES	82
			MAX AMPS	123.3
			MAX AMPS x 125%	

\*EXISTING BREAKERS TO BE REMOVED.

**PROPOSED 200A M.C.B, 240/120 VAC, 1Ø, 3W PPC PANEL SCHEDULE**

LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
SPARE	-	-	-	1	A	2	-	-	-	SPARE
SURGE	-	100	60	3	B	4	30	-	1500	ACH#2
	100	-		5	A	6		1500	-	
ACH#1	-	2500	30	7	B	8	20	-	0	RECEPT EXT GFCI (OFF)
	1500	-		9	A	10		180	-	RECEPT INT GFCI
LIGHTS INT & EXT	-	500	20	11	B	12	100	-	5900	RBS 6201 ODE
SMOKE DETECTOR (OFF)	0	-	15	13	A	14	15	5900	-	
POWER FAIL RELAY (OFF)	-	0	15	15	B	16	25	-	1930	POWER 6230 #1
	0	-		17	A	18		1930	-	
EXHAUST FAN	-	340	15	19	B	20	25	-	1930	POWER 6230 #2
SPARE	-	-	-	21	A	22	25	-	1930	POWER 6230 #3
SPARE	-	-	-	23	B	24	25	-	1930	POWER 6230 #3
SPARE	-	-	-	25	A	26	25	-	1930	POWER 6230 #4
SPARE	-	-	-	27	B	28	25	-	1930	POWER 6230 #4
SPARE	-	-	-	29	A	30	25	-	1930	POWER 6230 #4
SPARE	-	-	-	31	B	32	-	-	-	SPARE
SPARE	-	-	-	33	A	34	-	-	-	SPARE
SPARE	-	-	-	35	B	36	-	-	-	SPARE
SPARE	-	-	-	37	A	38	-	-	-	SPARE
SPARE	-	-	-	39	B	40	-	-	-	SPARE
VOLT AMPS	1600	2440						15300	15120	VOLT AMPS

L1 VOLT AMPERES	16900	17560	L2 VOLT AMPERES	17560
			MAX VOLT AMPERES	146.3
			MAX AMPS	182.9
			MAX AMPS x 125%	

NOTE - PROPOSED BREAKERS & LOADS IN BOLD. CONTRACTOR TO CONFIRM PROPOSED BREAKER SIZES AND LOCATIONS WITH T-MOBILE CM PRIOR TO CONSTRUCTION.

**EXISTING PANEL SCHEDULE**

SCALE: N.T.S.

**PROPOSED PANEL SCHEDULE**

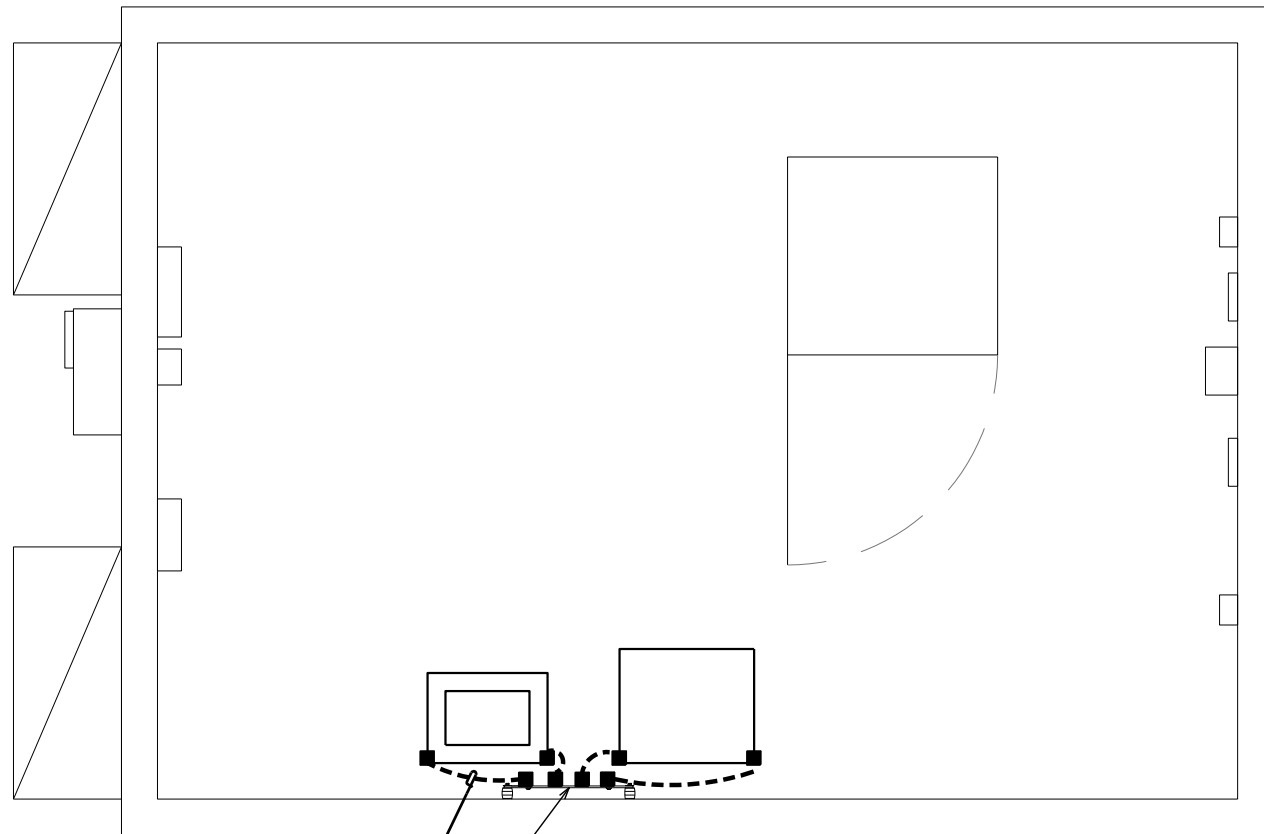
SCALE: N.T.S.

**GROUNDING NOTES:**

1. CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF EXISTING SITE GROUND SYSTEM.
2. CONTRACTOR SHALL VERIFY THAT GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING #2 AWG 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 (PROVIDE AND INSTALL AS REQUIRED. REQUIRED PER PLAN BELOW).
3. GROUNDING CONDUCTORS SHALL BE OF EQUAL LENGTH, MATERIAL, AND BONDING TECHNIQUE.
4. CONTRACTOR SHALL ENSURE GROUND RING IS WITHIN 12 TO 36 INCHES OF THE EQUIPMENT PAD. 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.
5. ALL DOWN CONDUCTORS MUST GO DOWN.

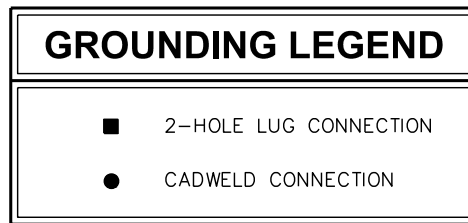
**NOTE:**

TYPICAL GROUNDING PLAN SHOWN IS FOR SCHEMATIC PURPOSES ONLY AND DOES NOT REFLECT EXISTING OR PROPOSED EQUIPMENT LOCATIONS



#2 TINNED SOLID COPPER GROUND WIRE FROM PROPOSED EQUIPMENT CABINET TO EXISTING EQUIPMENT GROUND RING (TYP OF 2 PER CABINET)

EXISTING T-MOBILE EQUIPMENT GROUND BAR. CONTRACTOR TO VERIFY LOCATION.

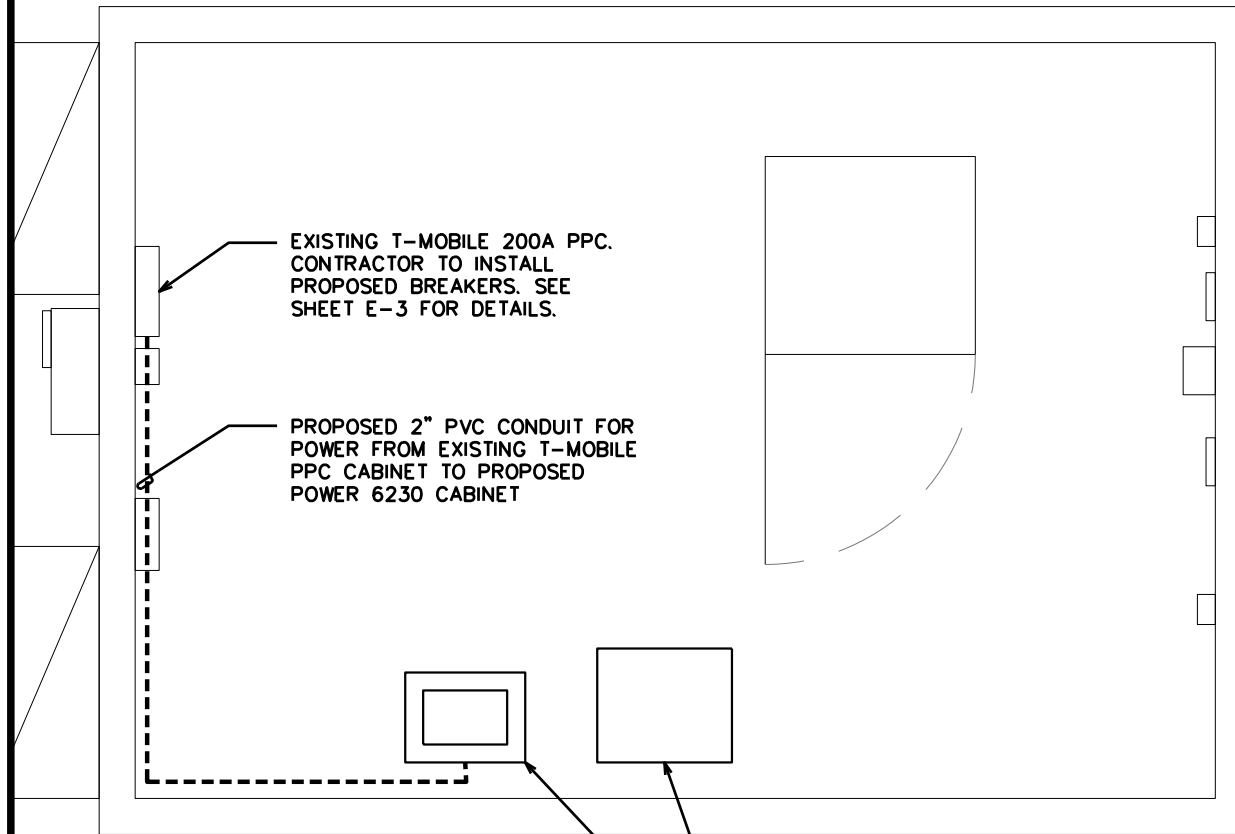


**TYPICAL EQUIPMENT GROUNDING PLAN**

SCALE: N.T.S.

**NOTE:**

CONTRACTOR TO REFERENCE SHEET C-1B FOR EXACT LOCATION AND ORIENTATION OF EQUIPMENT PAD



EXISTING T-MOBILE 200A PPC. CONTRACTOR TO INSTALL PROPOSED BREAKERS. SEE SHEET E-3 FOR DETAILS.

PROPOSED 2" PVC CONDUIT FOR POWER FROM EXISTING T-MOBILE PPC CABINET TO PROPOSED POWER 6230 CABINET

PROPOSED T-MOBILE 19" EQUIPMENT RACK

PROPOSED T-MOBILE POWER 6230 CABINET. SEE SHEET C-7 FOR DETAILS.

**ELECTRICAL ROUTING PLAN**

SCALE: N.T.S.

PLANS PREPARED FOR:



1001 PINNACLE POINT DR. STE 102  
COLUMBIA, SC 29223

PROJECT INFORMATION:

**TMO ID: 8FL0441D  
HARTSVILLE**

221 POOLE STREET  
HARTSVILLE, SC 29550  
(DARLINGTON COUNTY)

PLANS PREPARED BY:



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DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:  
**ROUTING PLAN &  
EQUIPMENT  
GROUNDING PLAN**

SHEET NUMBER: **E-4** REVISION: **1**  
TEP#: 42131.61111

## T-MOBILE GROUNDING NOTES:

ALL GROUNDS MUST ROUTE DOWNHILL FOR ENTIRE DURATION OF ROUTE

### ICE BRIDGE/ EQUIPMENT POST:

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO GROUND RING (BOTH ENDS), FINAL WELD COLD GALVANIZED, IN 1/2" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS.

### PEDESTALS, PLINTHS, SSC CABINET, FCOA CABINETS:

- #2 SOLID COPPER TINNED, 2 HOLE LUG WITH FLAT AND LOCK WASHER AT EQUIPMENT; EXOTHERMICALLY WELDED TO GROUND RING, FINAL WELD COLD GALVANIZED, IN 1/2" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS. EACH PART REQUIRES A SEPARATE DOWNLEAD, NO DAISY CHAINS.
- ALL COMPONENTS INSIDE FCOA CABINETS REQUIRE A DEDICATED GROUND.

### COVP's:

#6 THHN STRANDED (GREEN JACKET), CONNECTED AT EQUIPMENT SIDE USING OVP TERMINAL BLOCK CONNECTION; MECHANICALLY CONNECTED TO GROUND REFERENCE AT MASTER BUSS BAR USING 2 HOLE LUG WITH FLAT AND LOCK WASHER, IN 1/2" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, AND ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD.

### ANTENNA/ COVP/ RRU MAST PIPES:

- ALL VERTICAL MAST PIPES: #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO TOP OF PIPE (PIPE, DOWN MOLD), FINAL WELD COLD GALVANIZED, BONDED TO TOP BUSS BAR WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.
- EXISTING/REUSED PIPES: #2 SOLID COPPER TINNED, BONDED WITH COLD WATER CLAMP TO TOP OF PIPE, BONDED TO TOP BUSS WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER

### AIR TERMINALS:

TO BE INSTALLED, ONLY IF REQUIRED

### TMA's, DIPLEXERS AND TRIPLEXERS:

- #6 THHN, WITH PROPER COPPER COMPRESSION LUG, FLATS AND LOCK WASHERS
- ALL GROUND LUGS ON TMA MUST BE GROUNDED WITH SEPARATE DOWNLEAD TO BUSS BAR (NO DAISY CHAINS)

### ELEVATED STEEL PLATFORMS WITH LUNAR FEET:

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (FLAT PLATE MOLD) TO OUTSIDE PERIMETER BEAMS IN FOUR (4) PLACES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.

### STEEL CANOPY (STEEL PLATFORM OR CONCRETE PAD):

- #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, DOWN MOLD) TO BOTTOM OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.
- #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, UP MOLD) TO TOP OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED UP TO CANOPY GRIP-STRUT USING 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.

### RRU:

#6 THHN, WITH PROPER COPPER COMPRESSION LUG, ANTI-OXIDANT TO SECTOR BUSS BAR

### FSBE ALARM BOX:

#6 THHN WITH ONE HOLE LUG BONDED TO PREVIOUSLY GROUNDED FCOA, PLINTH OR BUSS BAR.

### SURGE SUPPRESSORS:

#6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS

### FYGA/FYGB BRACKET:

- #6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS
- THROUGH BOLTS WITH FLAT, LOCK ON BRACKET

### BUSS BARS:

- PLATFORM / PAD BUSS BAR SHOULD BE MINIMUM 12" TINNED COPPER WITH INSULATORS, AND SHOULD HAVE TWO (2) EXOTHERMICALLY WELDED DOWN LEADS DIRECTLY TO GROUND RING USING #2 SOLID COPPER TINNED WIRE.
- SECTOR BUSS BAR SHOULD BE PROPERLY SIZED TO ACCOMMODATE NECESSARY GROUNDING FOR EQUIPMENT ON EACH MOUNT, AND MAY BE SOLID COPPER (TINNED NOT REQUIRED). DO NOT USE INSULATORS ON SECTOR BUSS BARS ATTACH DIRECTLY TO TOWER MOUNT STEEL.

### GENERAL:

- NO GROUND KITS ON HYBRID TRUNKS (TOP OR BOTTOM)
- NO GROUND KITS ON MICROWAVE IF CABLES (TOP OR BOTTOM)
- MICROWAVE SURGE SUPPRESSORS ARE NOT TO BE INSTALLED UPSTAIRS ON TOWER, DOWNSTAIRS ONLY (BULKHEAD PREFERRED)
- MICROWAVE ODU MUST BE GROUNDED TO TOWER TOP SECTOR OR COLLECTOR BUSS BAR
- ALL TMA'S AND DIPLEXERS MUST BE GROUNDED TO BUSS BAR. NO DAISY CHAIN ON TWIN/DUAL TMA
- ALL LUGS SHOULD BE PROPERLY SIZED FOR CONDUCTOR, BURNDY TINNED COPPER COMPRESSION STYLE
  - INDOOR (OR INSIDE CABINET) SHOULD HAVE WINDOW
  - OUTDOOR SHOULD NOT HAVE WINDOW

PLANS PREPARED FOR:

**T-Mobile**

1001 PINNACLE POINT DR. STE 102  
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PROJECT INFORMATION:

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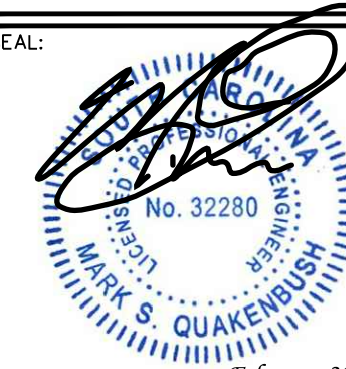


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SHEET TITLE:

**T-MOBILE GROUNDING  
NOTES**

SHEET NUMBER:

**G-1**

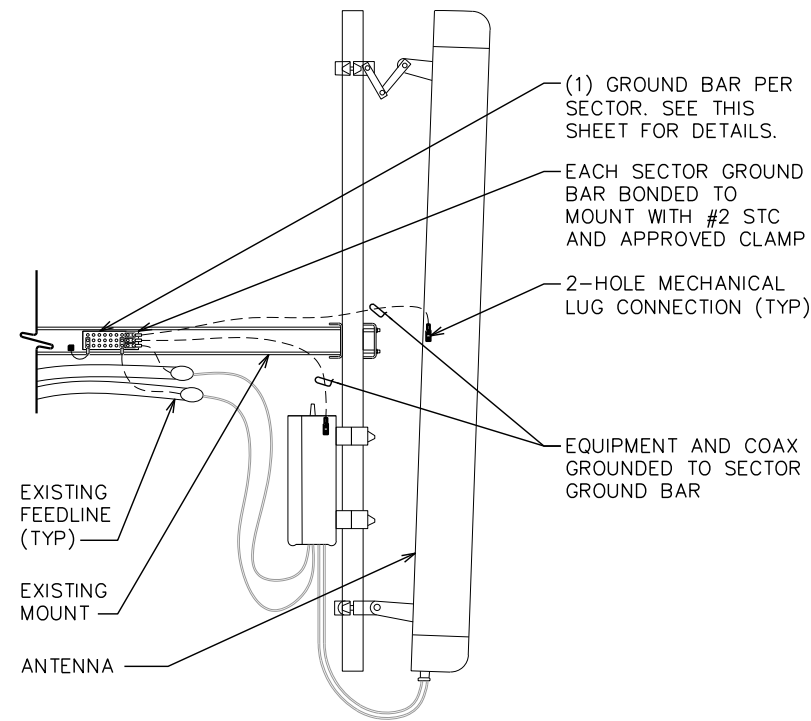
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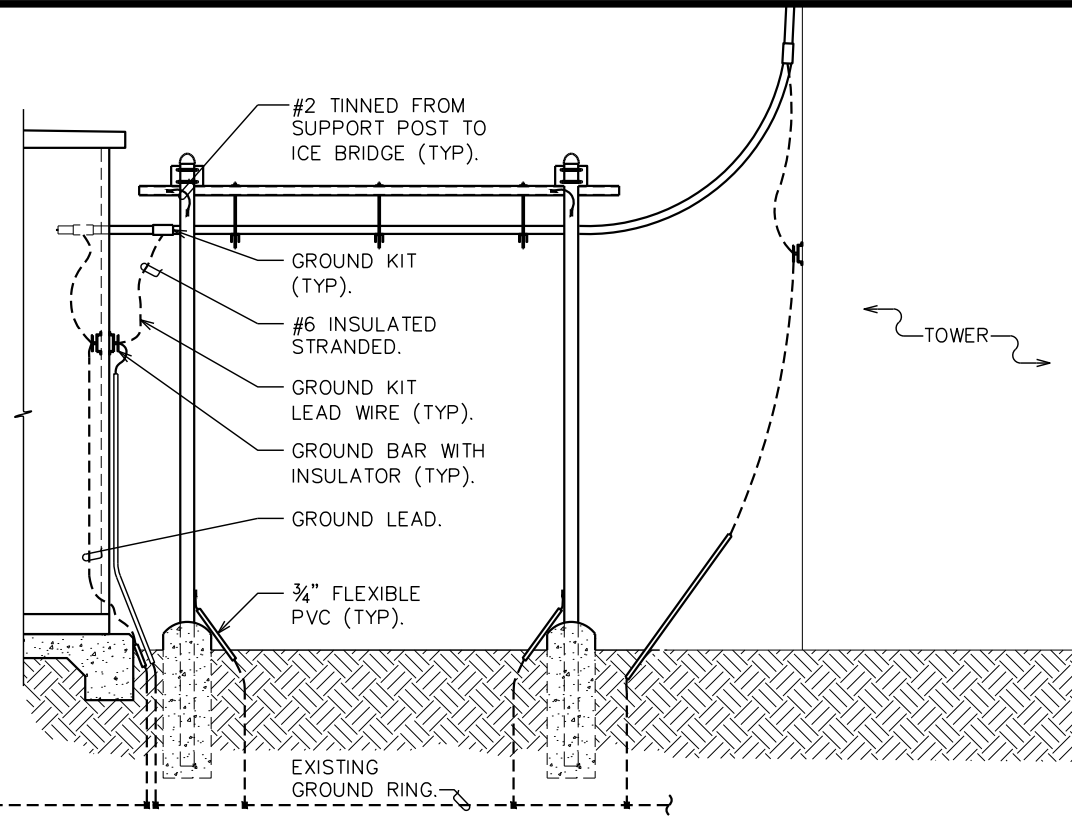
**NOTE:**

DRAWING SHOWN BELOW FOR SCHEMATIC PURPOSES ONLY



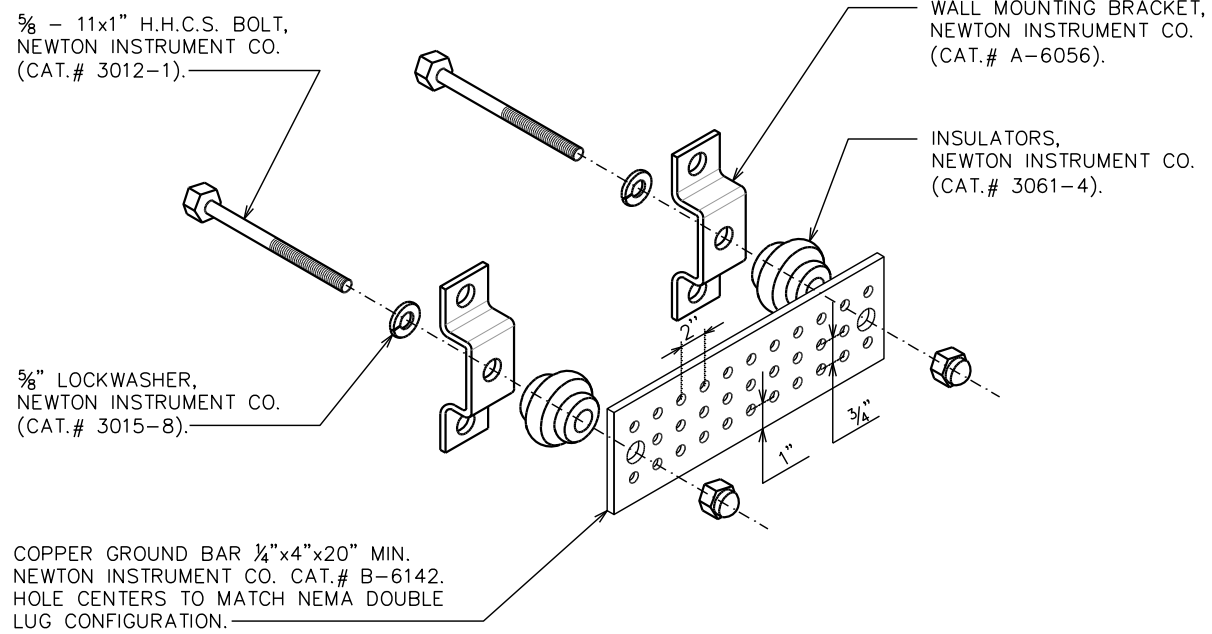
**ANTENNA & EQUIPMENT GROUNDING DETAIL**

SCALE: N.T.S.



**ICE BRIDGE/COAX/GROUNDING BAR ELEVATION**

SCALE: N.T.S.



**NOTE:**

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

**STANDARD GROUND BAR DETAILS**

SCALE: N.T.S.

PLANS PREPARED FOR:



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DRAWN BY: DPB CHECKED BY: MJC

SHEET TITLE:

**GROUNDING  
DETAILS**

SHEET NUMBER:

**G-2**

REVISION:

**1**

TEP#: 42131.61111