



# ANCHOR PHASE 3 PROJECT

**T-MOBILE Site #**  
**9KX0283A**  
**T-MOBILE Site Name**  
**SOUTH HILLS**  
**SBA Site #**  
**TN00324-B-09**

**Site Address**  
**1011 OLD MAIL RD**  
**CROSSVILLE, TN 38555**  
**SBA Site Name**  
**CROSSVILLE DOWNTOWN**

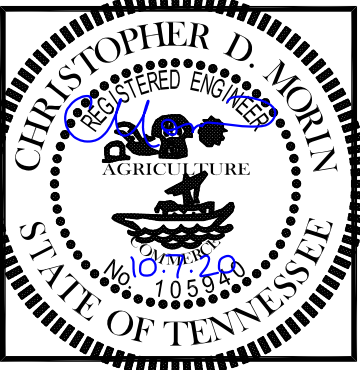
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 5661 COLUMBIA PIKE, SUITE 200  
 FALLS CHURCH, VA 22041-2868  
 TEL: (703) 671-6000  
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**SBA**  
 8051 CONGRESS AVENUE  
 BOCA RATON, FL 33487-1307

DRAWN BY: MP      CHECKED BY: SS  
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No.	Revision/Issue	Date	Initial
A	90% REVIEW	08/24/20	MP
0	FINALS	10/07/20	SS



**9KX0283A**  
**SOUTH HILLS**  
 1011 OLD MAIL RD  
 CROSSVILLE, TN 38555

TITLE SHEET

T-1

**SCOPE OF WORK**

THE SCOPE OF WORK CONSISTS OF:

1. INSTALLATION OF (3) NEW NOKIA AEHC ANTENNAS
2. INSTALLATION OF (3) NEW NOKIA AHFIG RRUS
3. REMOVAL OF (2) EXISTING FXFC RADIOS
4. INSTALLATION OF (2) NEW NOKIA HCS 2.0 JUNCTION BOXES @ TOWER
5. REMOVAL OF (1) EXISTING COVP @ TOWER
6. INSTALLATION OF (2) NEW NOKIA HCS 2.0 HYBRID TRUNKS (± 250')
7. REMOVAL OF (1) EXISTING HIGH CAP HYBRID
8. INSTALLATION OF (2) NEW ASIB MODULES, (2) NEW ASIK MODULES, (2) NEW ABIA SUBMODULES, (4) NEW ABIL SUBMODULES & (3) NEW ABIC SUBMODULES
9. INSTALLATION OF (2) NEW NOKIA HCS 2.0 JUNCTION BOXES @ GROUND
10. REMOVAL OF (1) EXISTING COVP @ GROUND

**DRIVING DIRECTIONS**

DRIVING DIRECTIONS FROM T-MOBILE OFFICE  
 AT: 5209 LINBAR DRIVE SUITE 625, TN 37211

1. TURN RIGHT ONTO LINBAR DR 486 FT
2. CONTINUE ONTO EZELL RD 0.4 MI
3. USE THE LEFT 2 LANES TO TURN LEFT ONTO HAYWOOD LN 0.3 MI
4. USE THE RIGHT LANE TO TAKE THE INTERSTATE 24 W RAMP 0.1 MI
5. MERGE ONTO I-24 W 5.3 MI
6. USE THE RIGHT 2 LANES TO TAKE EXIT 52B TO MERGE ONTO I-40 E TOWARD KNOXVILLE 109 MI
7. TAKE EXIT 322 FOR TN-101/PEAVINE RD TOWARD CROSSVILLE 0.2 MI
8. TURN RIGHT ONTO TN-101 S/PEAVINE RD 0.3 MI
9. CONTINUE ONTO TN-392 N/MILLER AVE 3.3 MI
10. TURN LEFT ONTO OLD MAIL RD 0.5 MI
11. TURN LEFT 0.2 MI

DESTINATION WILL BE ON THE LEFT  
 TOTAL TRAVEL ESTIMATE: 120 MI, 1 HR 50 MINUTES



**GENERAL NOTES:**  
 CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS AT THE PROJECT SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

FOR SITES WHERE A CRANE IS NECESSARY, THE CONTRACTOR SHALL CONFIRM AN UNOBSTRUCTED ROUTE FOR THE CRANE FROM PUBLIC ROAD TO TOWER SITE PRIOR TO CONSTRUCTION. NO AERIAL OBSTRUCTIONS UNDER FIFTEEN FEET ABOVE GRADE, INCLUDING AERIAL UTILITY LINES, ARE ALLOWED ALONG SAID CRANE ROUTE.

GC SHALL CONTACT THE A&E FIRM PRIOR TO BIDWALK AND CONSTRUCTION START TO CONFIRM THAT DRAWINGS ARE THE MOST RECENT SET.

**SHEET INDEX**

NO.	SHEET DESCRIPTION
T-1	TITLE SHEET
A-1	COMPOUND PLAN
A-1A	EXISTING & PROPOSED ENLARGED EQUIPMENT LAYOUT
A-2	ELEVATION & DETAILS
A-2A	EXISTING & PROPOSED ANTENNA PLANS
A-3	ANTENNA & CABLE SCHEDULE
A-3A	RFDS DIAGRAM
A-4	NEW EQUIPMENT SPECIFICATIONS
E-1	AC PANEL SCHEDULE & ONE LINE DIAGRAM
EG-1	PROPOSED SITE GROUNDING DIAGRAM
SP-1	GENERAL NOTES AND SPECIFICATIONS

**PROFESSIONAL LICENSURE**

I CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF THE GOVERNING LOCAL BUILDING CODE.

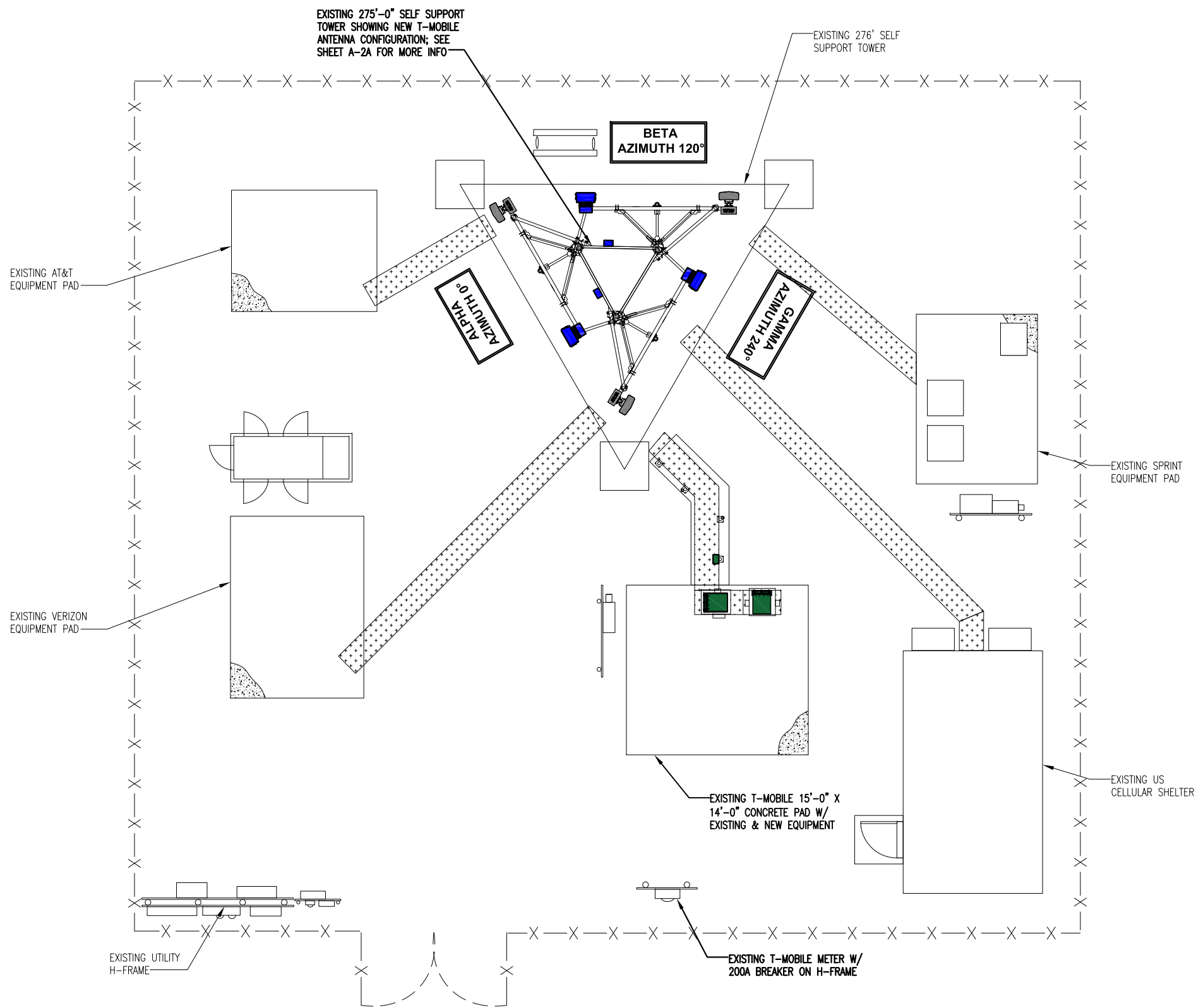
LICENSED PROFESSIONAL  
 EXPIRES: 11/30/21

**PROJECT INFORMATION**

<p><b>SITE INFORMATION:</b></p> <p>LATITUDE: N 35° 55' 36.870" (NAD 83)</p> <p>LONGITUDE: W 85° 1' 21.750" (NAD 83)</p> <p>FCC#: 1253577</p> <p>SITE TYPE: SELF SUPPORT TOWER</p> <p>POWER: VOLUNTEER ELECTRIC</p> <p>TELCO: AT&amp;T</p>	<p>T-MOBILE PROJECT MANAGER: DARIN MILLER                  DARIN.MILLER2@T-MOBILE.COM                  (813)-965-0512</p> <p>ENGINEERING CONTACT: BRIAN M. QUINN, AIA                  5661 COLUMBIA PIKE, SUITE 200                  FALLS CHURCH, VA 22041                  (703)-671-6000</p> <p>LAND OWNER: DEBRA LYNN HEDGECOTH                  1213 OLD MAIL ROAD                  CROSSVILLE, TN 38555</p>	<p>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 CODES:</p> <p><b>CODES:</b></p> <ol style="list-style-type: none"> <li>1. INTERNATIONAL BUILDING CODE 2012</li> <li>2. NATIONAL ELECTRIC CODE (NEC) 2017</li> <li>3. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE</li> <li>4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION</li> <li>5. TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL TOWER AND ANTENNA SUPPORTING STRUCTURES</li> <li>6. TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS</li> </ol>
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 FOR UNDERGROUND UTILITIES PRIOR  
 TO DIGGING  
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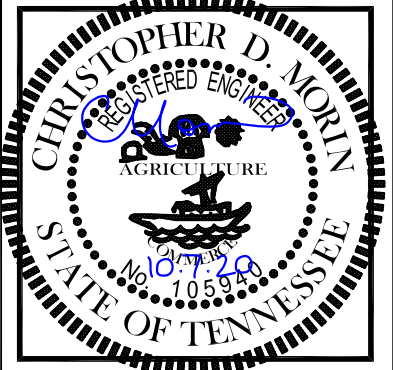
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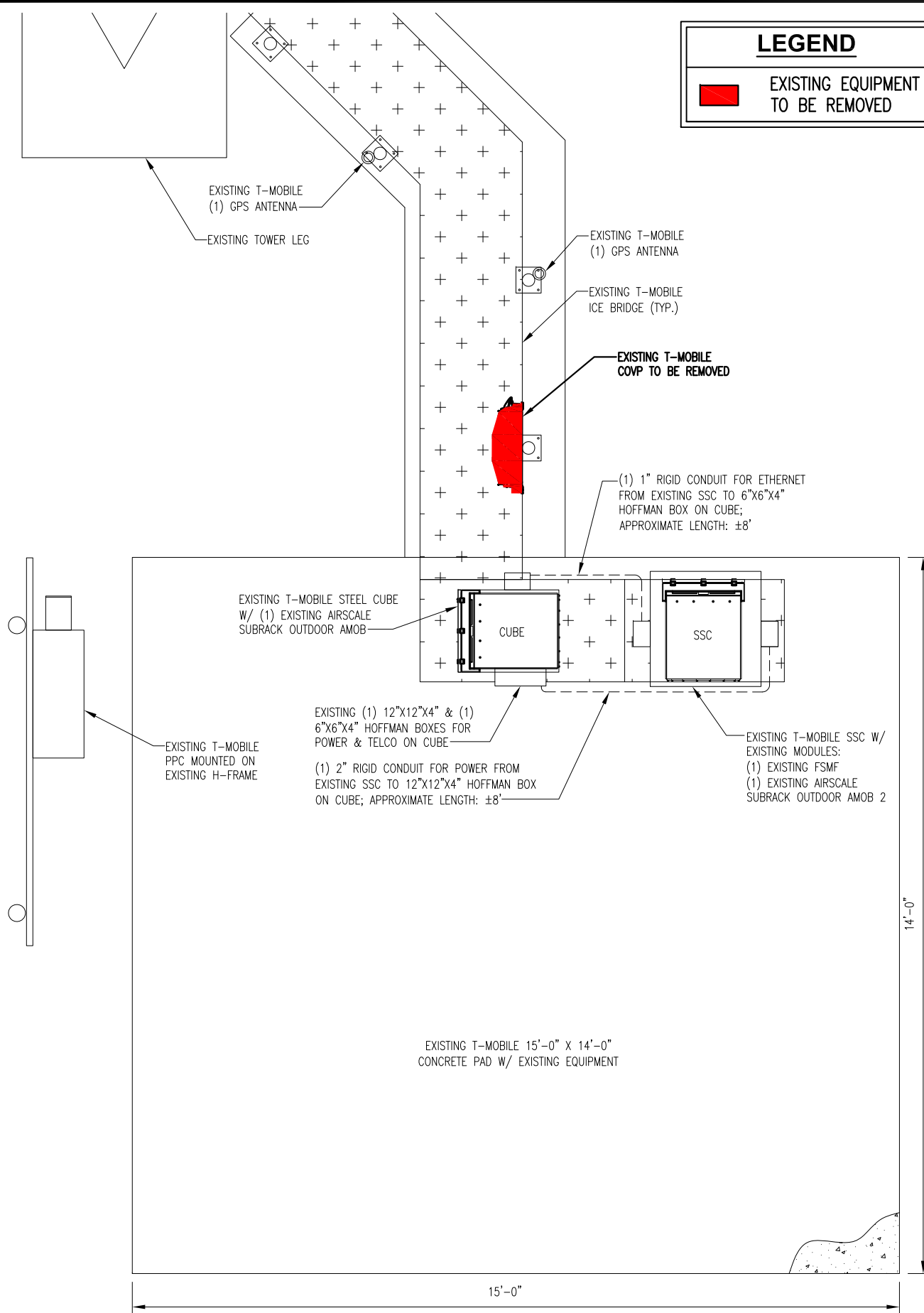
COMPOUND PLAN

A-1

**1** COMPOUND PLAN  
 SCALE: 1"=10' (1"=5' IF 24X36 SHEET SIZE)

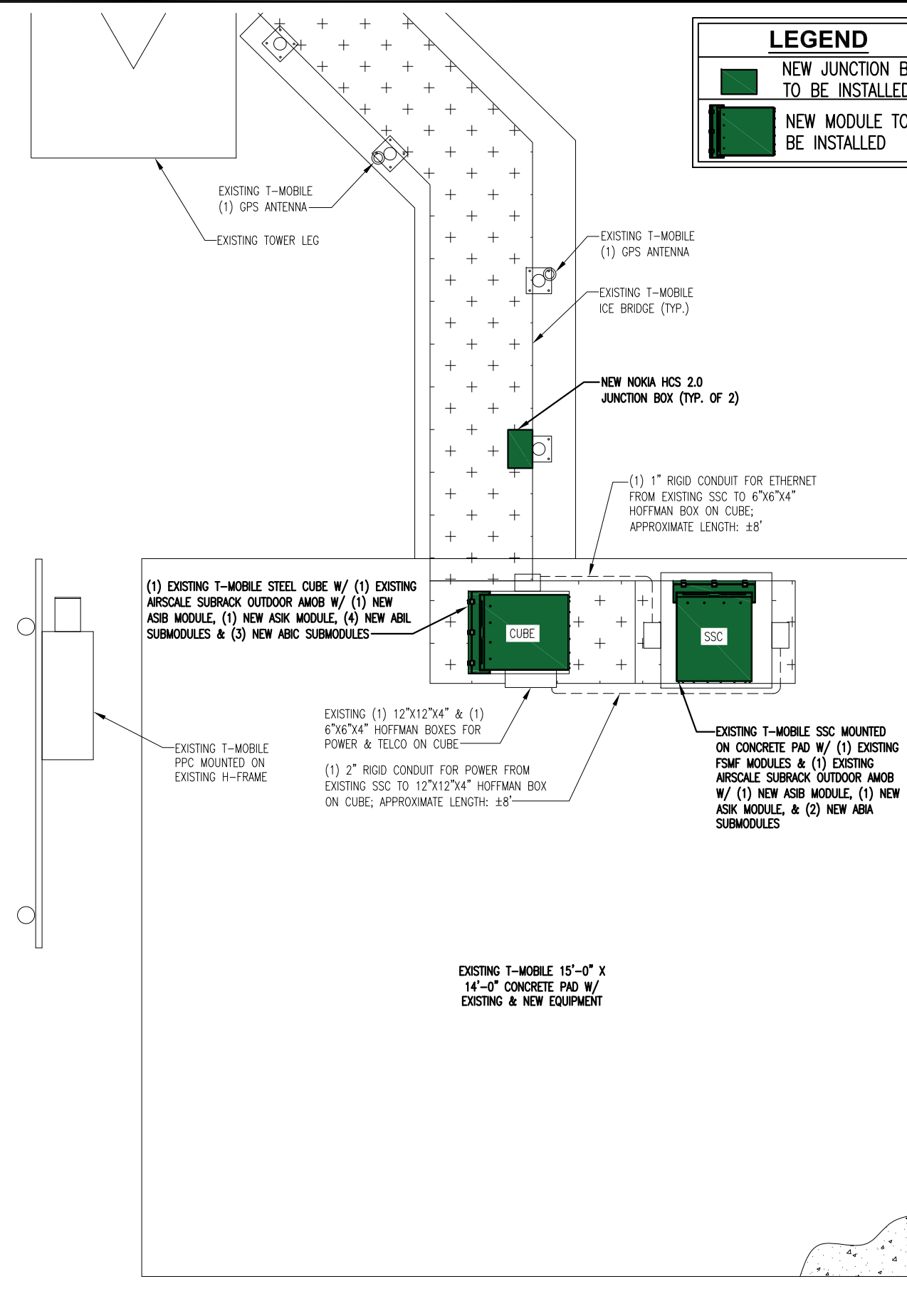


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**LEGEND**

■ EXISTING EQUIPMENT TO BE REMOVED



**LEGEND**

■ NEW JUNCTION BOX TO BE INSTALLED

■ NEW MODULE TO BE INSTALLED

1 EXISTING EQUIPMENT LAYOUT  
SCALE: 3/8"=1'-0" (3/4"=1'-0" IF 24X36 SHEET SIZE)

2 PROPOSED EQUIPMENT LAYOUT  
SCALE: 3/8"=1'-0" (3/4"=1'-0" IF 24X36 SHEET SIZE)

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**BC**  
architects  
engineers

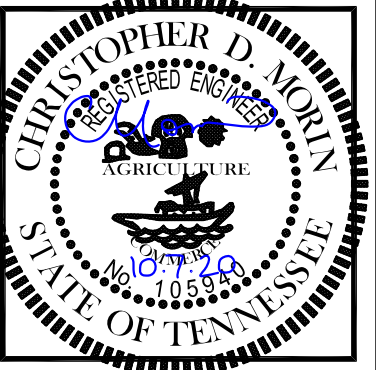
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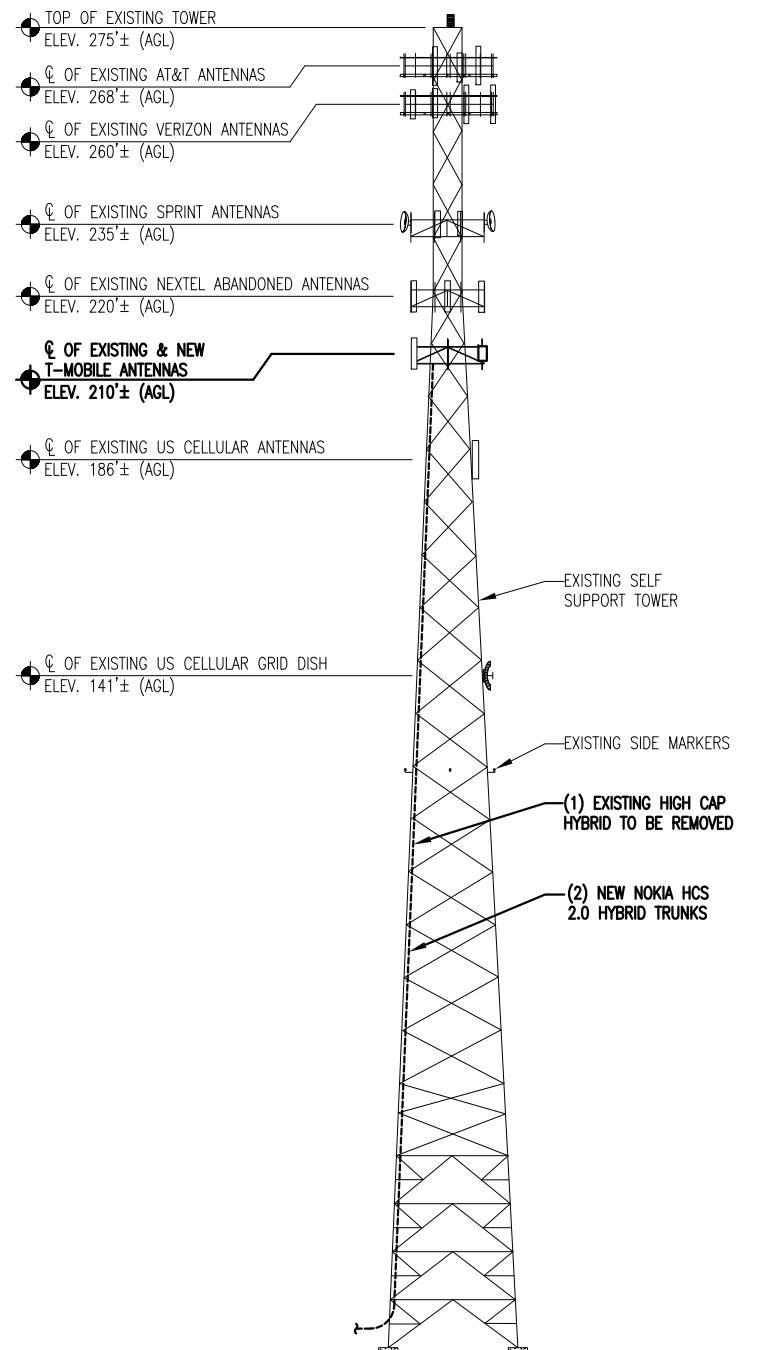


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EXISTING & PROPOSED  
ENLARGED EQUIPMENT  
LAYOUT

**A-1A**

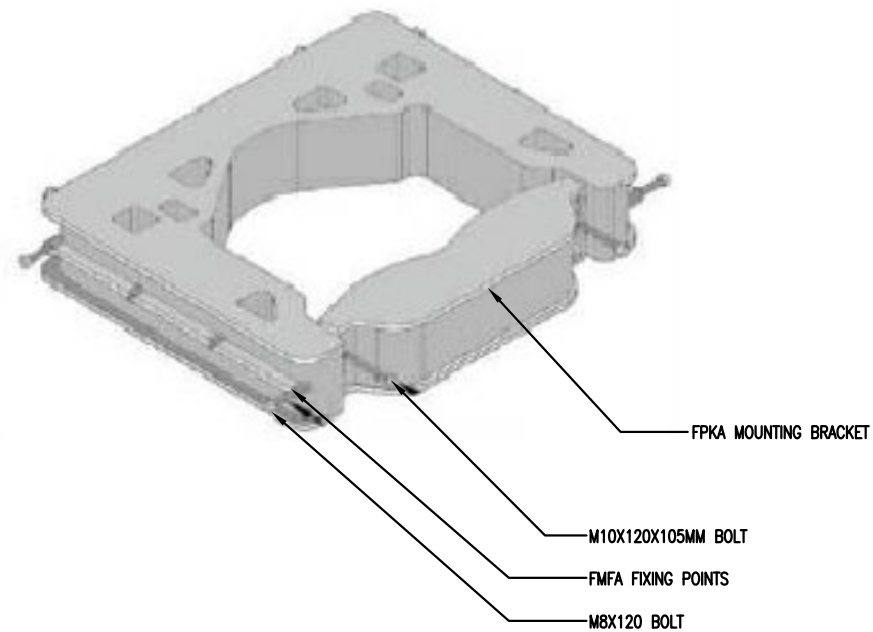
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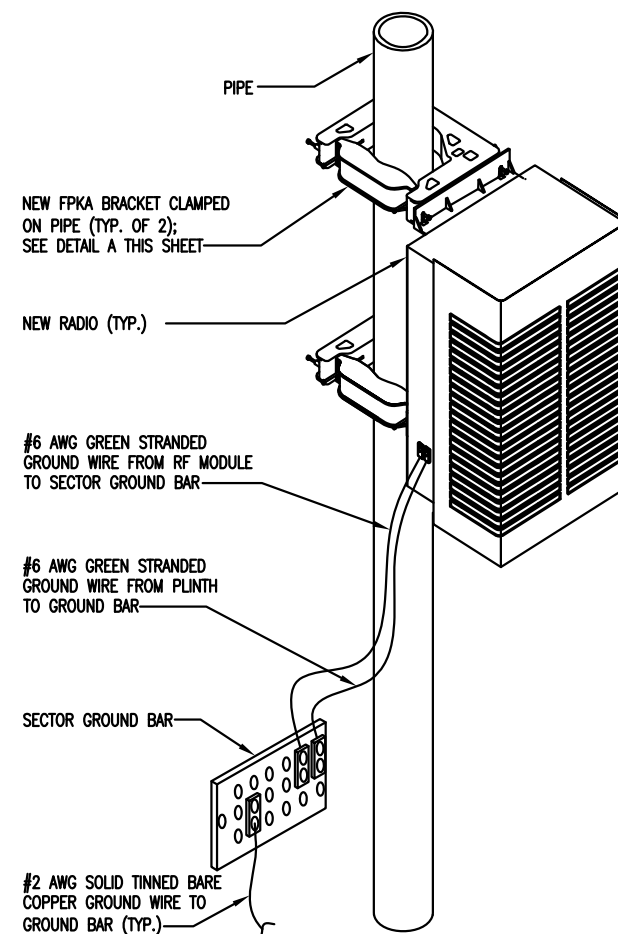
1 TOWER ELEVATION  
SCALE: 1"=40' (1"=20' IF 24X36 SHEET SIZE)

**SPECIAL NOTES**

- GC TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. GC SHALL NOTIFY T-MOBILE AND ENGINEER OF DISCREPANCIES IMMEDIATELY.
- STRUCTURAL/ DESIGN & ANALYSIS SHALL BE PERFORMED & APPROVED BY TOWER OWNER AND MANUFACTURER (STRUCTURAL ANALYSIS BY OTHERS)
- STRUCTURAL ANALYSIS PERFORMED BY OTHERS. CONTRACTOR TO THOROUGHLY REVIEW THE TOWER STRUCTURAL ANALYSIS FOR INFORMATION PERTAINING TO TOWER UPGRADES, MOUNTING TYPES, ANTENNA HEIGHTS, AND CABLE ROUTING, ANY OTHER DISCREPANCIES BETWEEN THE DRAWINGS, STRUCTURAL ANALYSIS, AND TOWER PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO BIDDING AND INSTALLATION.



2 FPKA BRACKET DETAIL  
N.T.S.



3 TYPICAL RADIO UNIT MOUNTING DETAIL  
N.T.S.

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**BC**

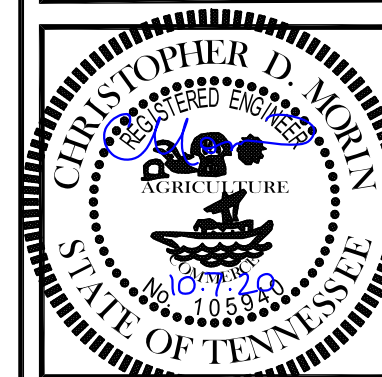
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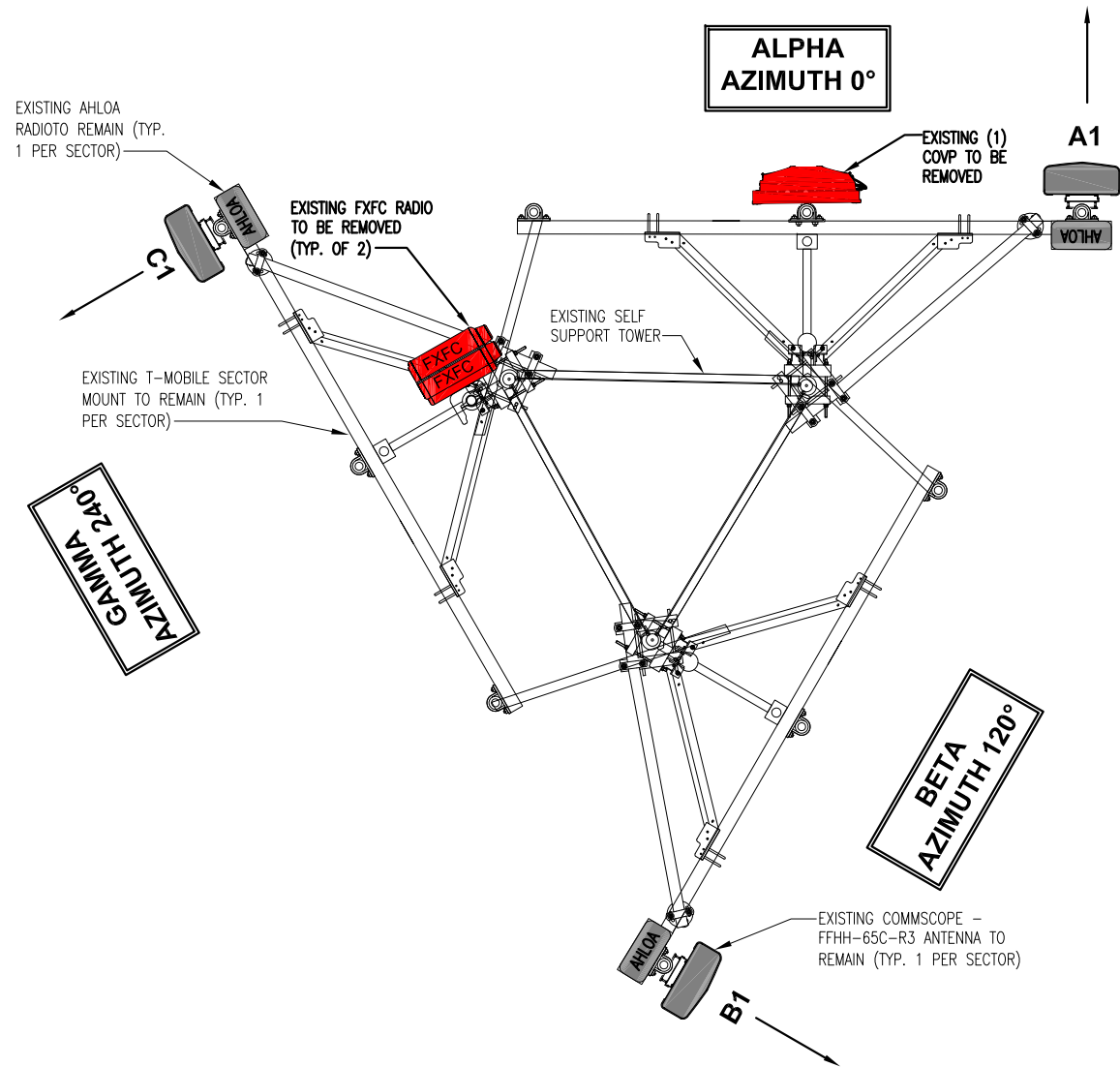
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ELEVATION & DETAILS

A-2

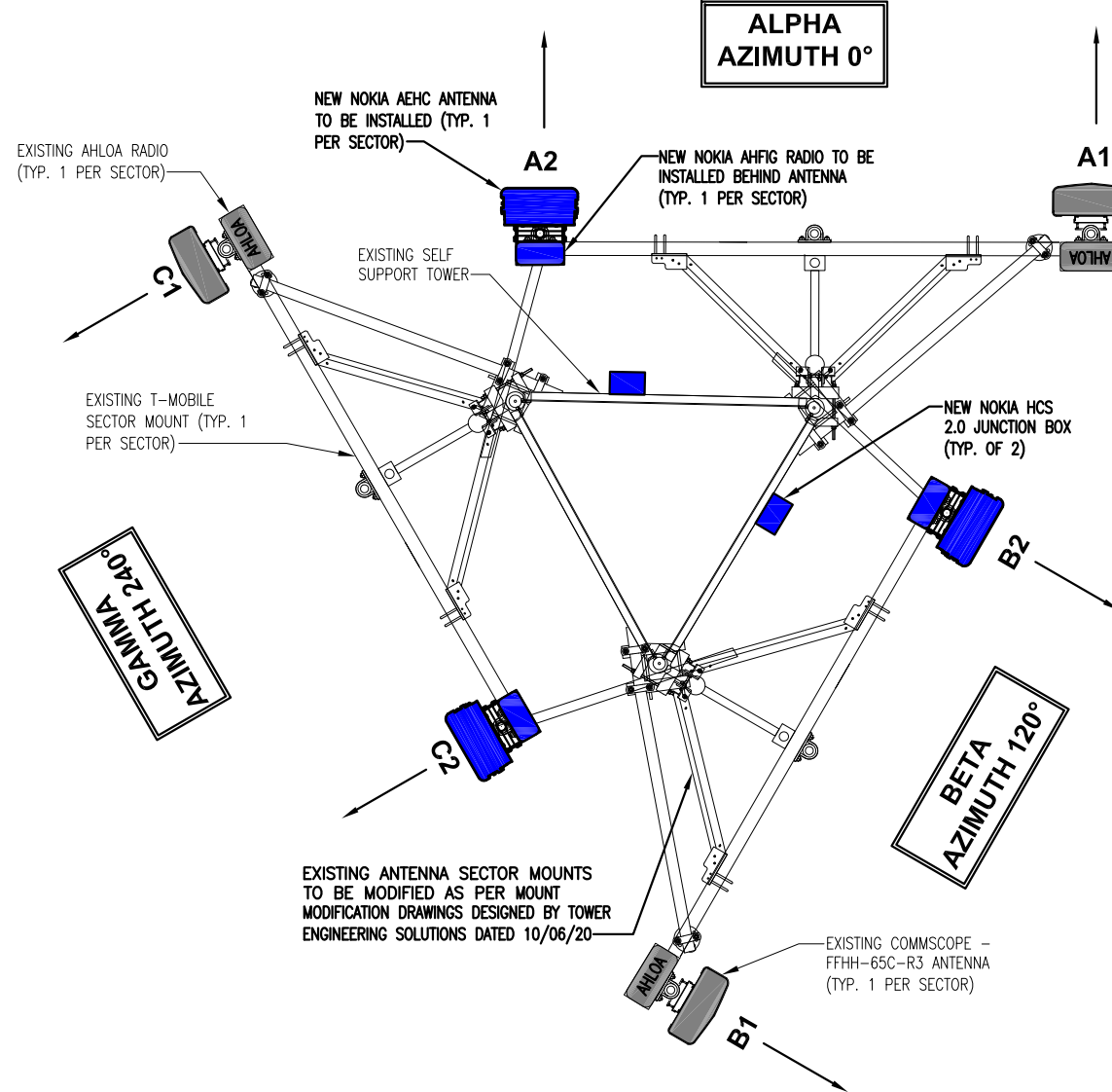
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LEGEND	
	EXISTING ANTENNA
	EXISTING COVP TO BE REMOVED
	EXISTING AHLOA RADIO
	EXISTING FXFC RADIO TO BE REMOVED



1 EXISTING T-MOBILE ANTENNA CONFIGURATION  
SCALE: 1/4"=1'-0" (1/2"=1'-0" IF 24X36 SHEET SIZE)

LEGEND	
	NEW AEHC ANTENNA
	NEW AHFIG RADIO
	NEW JUNCTION BOX



2 NEW T-MOBILE ANTENNA CONFIGURATION  
SCALE: 1/4"=1'-0" (1/2"=1'-0" IF 24X36 SHEET SIZE)

**SPECIAL NOTES:**  
STRUCTURAL ANALYSIS PERFORMED BY OTHERS.  
MOUNT ANALYSIS PERFORMED BY TOWER ENGINEERING SOLUTIONS DATED 10/02/20  
CONTRACTOR TO THOROUGHLY REVIEW THE TOWER & MOUNT STRUCTURAL ANALYSIS FOR INFORMATION PERTAINING TO MOUNT UPGRADES, MOUNTING TYPES, ANTENNA HEIGHTS, AND CABLE ROUTING, ANY OTHER DISCREPANCIES BETWEEN THE DRAWINGS, STRUCTURAL ANALYSIS, AND TOWER PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO BIDDING AND INSTALLATION.

**NOTE FOR GC:**  
REFER TO MOUNT MODIFICATION DRAWINGS DESIGNED BY TOWER ENGINEERING SOLUTIONS DATED 10/06/20

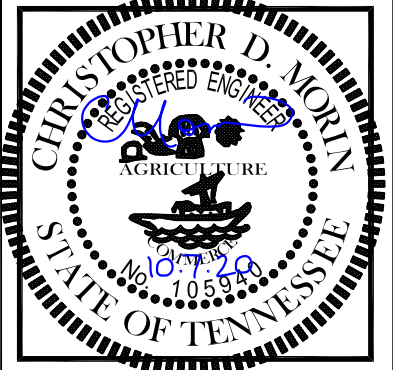
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EXISTING & PROPOSED  
ANTENNA PLANS

**A-2A**

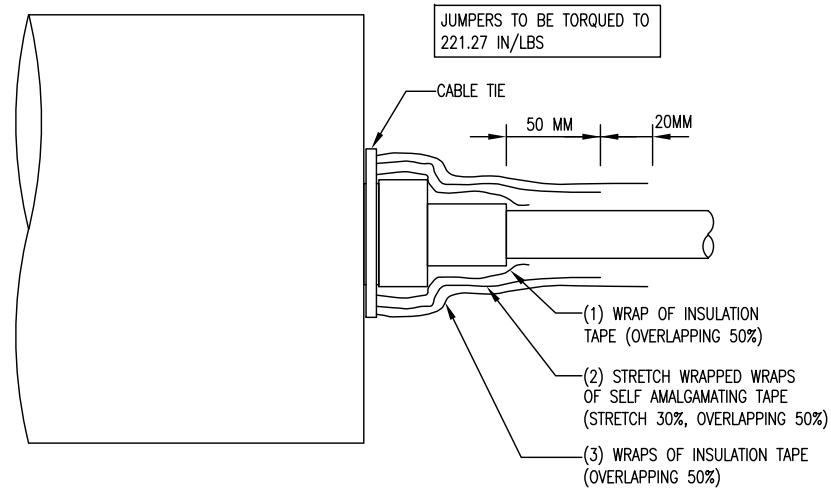
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NEW AND EXISTING ANTENNA AND CABLE SCHEDULE

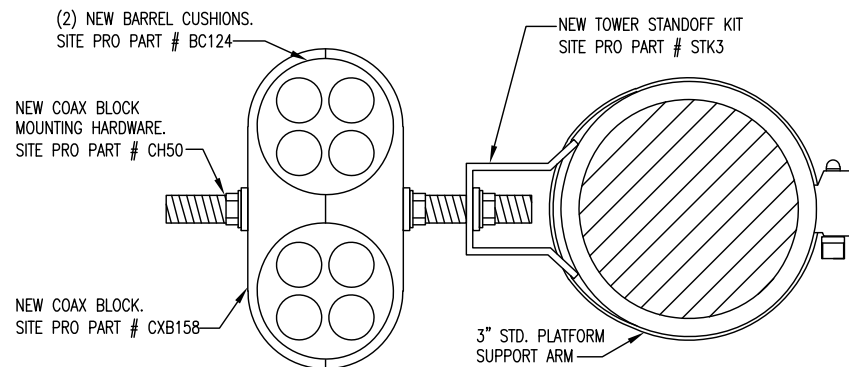
SECTOR	POS.	AZIMUTH	RAD CENTER	TECHNOLOGY	ANTENNA	STATUS	RRU TYPE	DIPLEXER / COMBINER	COVP	CABLE STATUS	COAX CABLE LENGTH	HCS FACTORY LENGTH	JUMPER LENGTH
ALPHA	A1	0'	210'	L600 / N600 / L2100 / L1900 / G1900	(1) EXISTING COMMSCOPE - FFHH-65C-R3	EXISTING	(1) AHLOA	-	(2) NEW NOKIA HCS 2.0 JUNCTION BOXES	(2) NEW NOKIA HCS 2.0 HYBRID TRUNKS & (1) EXISTING HYBRID TO BE REMOVED	-	± 250'	≤ 15'-0"
	A2	0'	210'	L2500 / N2500	(1) NEW NOKIA - AEHC	-	(1) AHFIG						≤ 15'-0"
BETA	B1	120'	210'	L600 / N600 / L2100 / L1900 / G1900	(1) EXISTING COMMSCOPE - FFHH-65C-R3	EXISTING	(1) AHLOA	-	(2) NEW NOKIA HCS 2.0 JUNCTION BOXES	(2) NEW NOKIA HCS 2.0 HYBRID TRUNKS & (1) EXISTING HYBRID TO BE REMOVED	-	± 250'	≤ 15'-0"
	B2	120'	210'	L2500 / N2500	(1) NEW NOKIA - AEHC	-	(1) AHFIG						≤ 15'-0"
GAMMA	C1	240'	210'	L600 / N600 / L2100 / L1900 / G1900	(1) EXISTING COMMSCOPE - FFHH-65C-R3	EXISTING	(1) AHLOA	-	(2) NEW NOKIA HCS 2.0 JUNCTION BOXES	(2) NEW NOKIA HCS 2.0 HYBRID TRUNKS & (1) EXISTING HYBRID TO BE REMOVED	-	± 250'	≤ 15'-0"
	C2	240'	210'	L2500 / N2500	(1) NEW NOKIA - AEHC	-	(1) AHFIG						≤ 15'-0"

(\*) SHARED WITH ALL SECTORS

IMPORTANT NOTE: PLEASE REFER TO LATEST RFDS SHEET FOR NSN CONFIGURATION. GC TO CAP ALL UNUSED PORTS.



1 RF JUMPER CONNECTION DETAIL  
N.T.S.

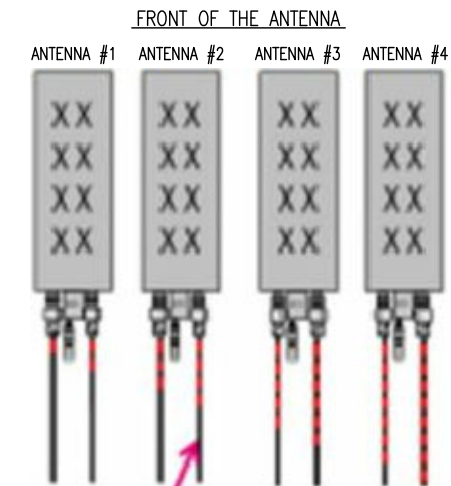


2 RF JUMPER MOUNTING DETAIL  
N.T.S.

COAX COLOR CODING

- ANTENNAS WILL BE LABELED (BACK OF ANTENNA VIEW) RIGHT TO LEFT 1-X PORTS
- COAX/JUMPER LINES WILL BE IDENTIFIED BY SECTOR COLOR AND BY NUMBER OF BANDS AROUND THE COAX/JUMPER

SECTOR A	RED
SECTOR B	GREEN
SECTOR C	BLUE
SECTOR D	YELLOW
SECTOR E	WHITE
SECTOR F	PURPLE
LMU	BROWN+SECTOR COLOR BANDS (1 & 2)
FIBER ID	GRAY
UNUSED COAX	PINK
MICROWAVE	ORANGE
DWE T-1'S + GPS DOWNLINK CABLE	ID W/LABEL MAKER



EXAMPLE: COAX WITH FOUR BANDS OF RED TAPE WILL REPRESENT ALPHA SECTOR AND THE 4TH PORT OF ANTENNA

ANTENNA AND COAXIAL CABLE SCHEDULE

- ALL ANTENNAS SHALL BE FURNISHED WITH DOWNTILT BRACKETS. CONTRACTOR SHALL COORDINATE REQUIRED MECHANICAL DOWNTILT FOR EACH ANTENNA WITH RF ENGINEER. ANTENNA DOWNTILT SHALL BE SET AND VERIFIED BY A SMART LEVEL. CONTRACTOR SHALL INSTALL COLOR CODE RINGS ON EACH OF THE HYBRID CABLES AND JUMPER CABLES WITH UV RESISTANT TAPE. ALL CABLE SHALL BE MARKED AT TOP AND BOTTOM WITH 2" COLOR TAPE OR STENCIL TAG. COLOR TAPE MAY BE OBTAINED FROM GRAYBAR ELECTRONICS.
- 

3 TAGGING COLOR AND NOTES  
N.T.S.

T-Mobile

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BC

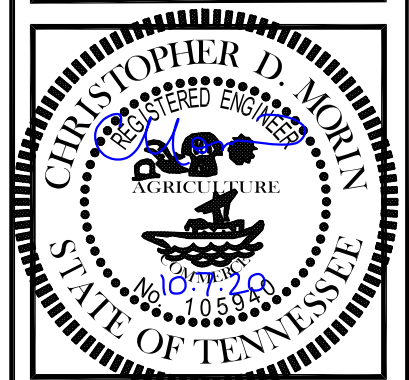
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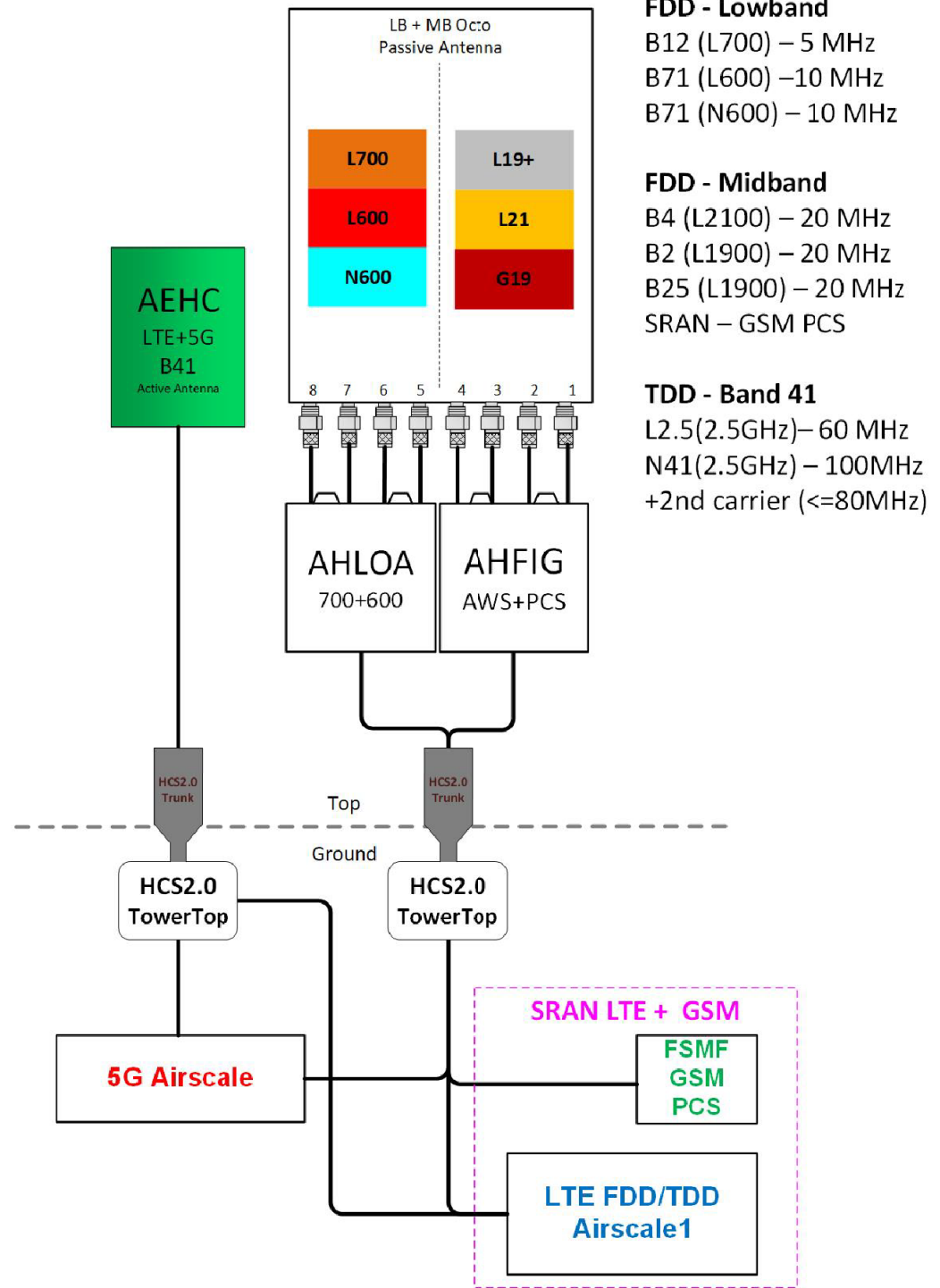
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ANTENNA & CABLE  
SCHEDULE

A-3

### Configuration 56790EZ\_SR

\* For 5G and LTE Airscale BB dimensioning refer to Fiber Port matrices.  
(Alpha, Beta & Gamma)



Notes:

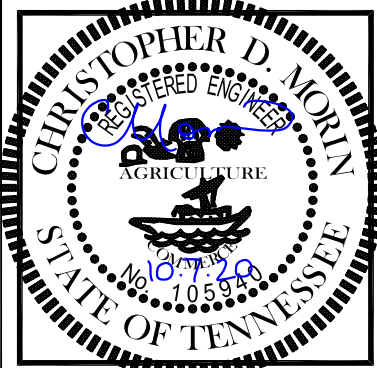
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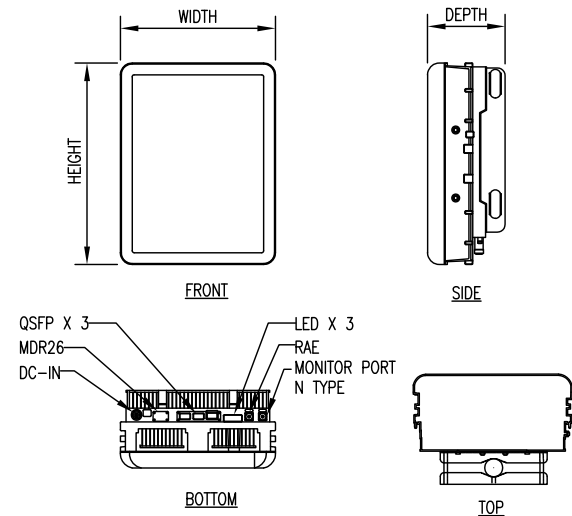


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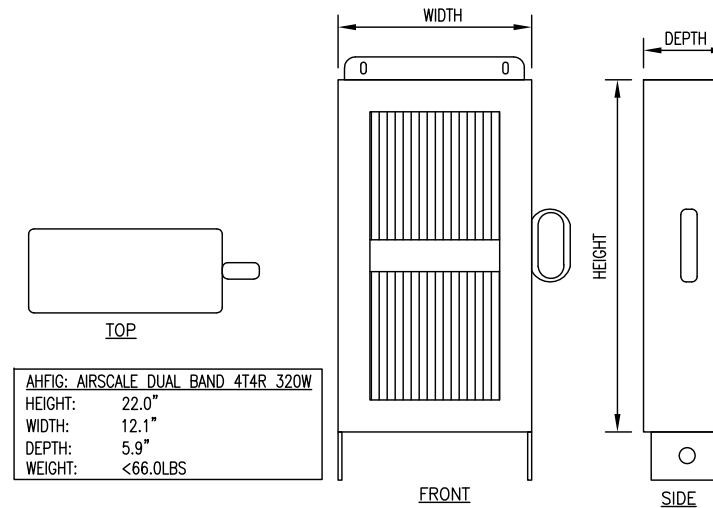
RFDS DIAGRAM

**A-3A**

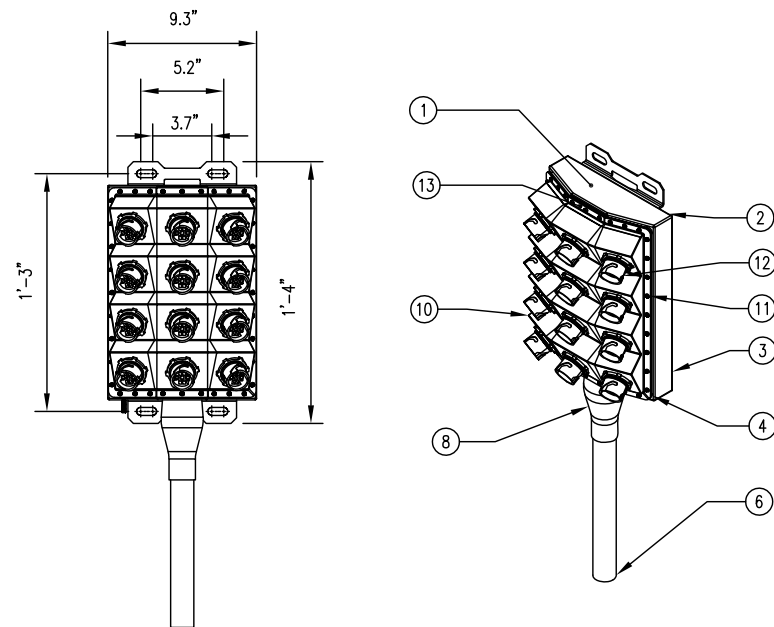
**NOKIA - AEHC ANTENNA**  
 HEIGHT: 35.4"  
 WIDTH: 22.8"  
 DEPTH: 8.3"  
 WEIGHT: 99.2 LBS



1 NOKIA - AEHC ANTENNA DETAIL  
 N.T.S.



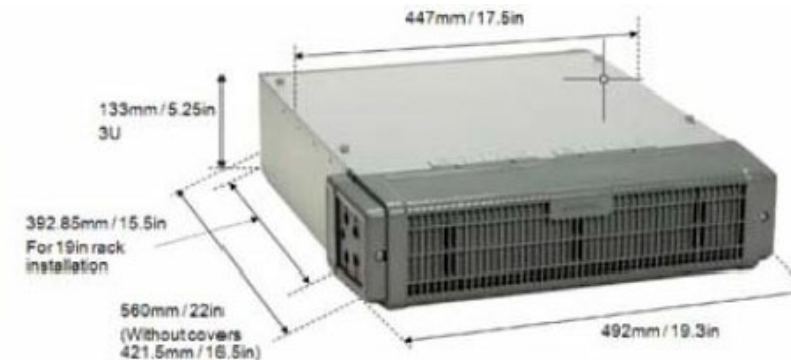
2 AHFIG (RRU) DETAIL  
 N.T.S.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AC-BMBX05-HICAP-24IP-CRS	BASED BOX SUB ASY	1
2	AC-GSK05-HICAP-BP	EPDM GASKET FOR BACK PLATE	1
3	AC-MBX05-HICAP-24IP-BDR-CRS	BACKING PLATE CLOSURE CRS	1
4	AC-GSK05-HICAP-HX-SHT REV 1	EPDM GASKET HEX	1
5	25056d36zu	CABLE GLAND-TRUNK	1
6	TRUNK CABLE	HYBRID TRUNK CABLE	A/R
7	240_5	LOCK NUT-CABLE GLAND	1
8	HEAT SHRINK AC-FB05-HICAP-FULLASY-CRS	HEAT SHRINK TUBE	1
10	AC-FB05-HICAP-HEXSHELL-SENK	POLYCARBONATE HEX SHELL-UV STABILIZED-SENKO CUTOUT	1
11	3GMRB06058	TAMPERED PROOF #6-32 SCREW	64
12	IP25-LC4-AS-D	U HYBRID 25, 4 X LC & 2 X 8AWG ADAPTER ASSEMBLY	12
13	AC-STRO5-HICAP-HX-GALV	GALV O-RING HEX	1
14	WASHER	WASHER	A/R

3 NOKIA HCS 2.0 JUNCTION BOX (HICAP HYBRID BREAKOUT CRS BOX)  
 N.T.S.

- < 15 liters
- < 15 kg
- 3 height units
- IP65
- 35 to +55 °C



4 NEW SYSTEM MODULE DETAIL (FSMF)  
 N.T.S.

**T-Mobile**

T-MOBILE  
 5209 LINBAR DRIVE  
 SUITE 625  
 NASHVILLE, TN 37211

**BC**

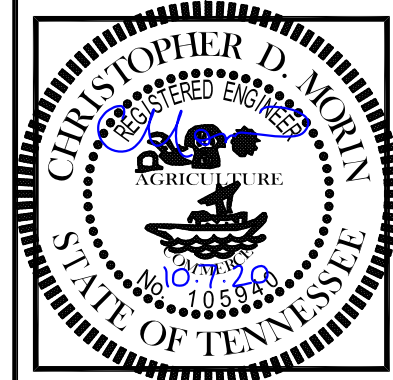
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 5661 COLUMBIA PIKE, SUITE 200  
 FALLS CHURCH, VA 22041-2868  
 TEL: (703) 671-6000  
 FAX: (703) 671-6300

**SBA**

8051 CONGRESS AVENUE  
 BOCA RATON, FL 33487-1307

DRAWN BY: MP	CHECKED BY: SS
CHECKED BY: SS	APPROVED BY: BMQ

No.	Revision/Issue	Date	Initial
A	90% REVIEW	08/24/20	MP
0	FINALS	10/07/20	SS

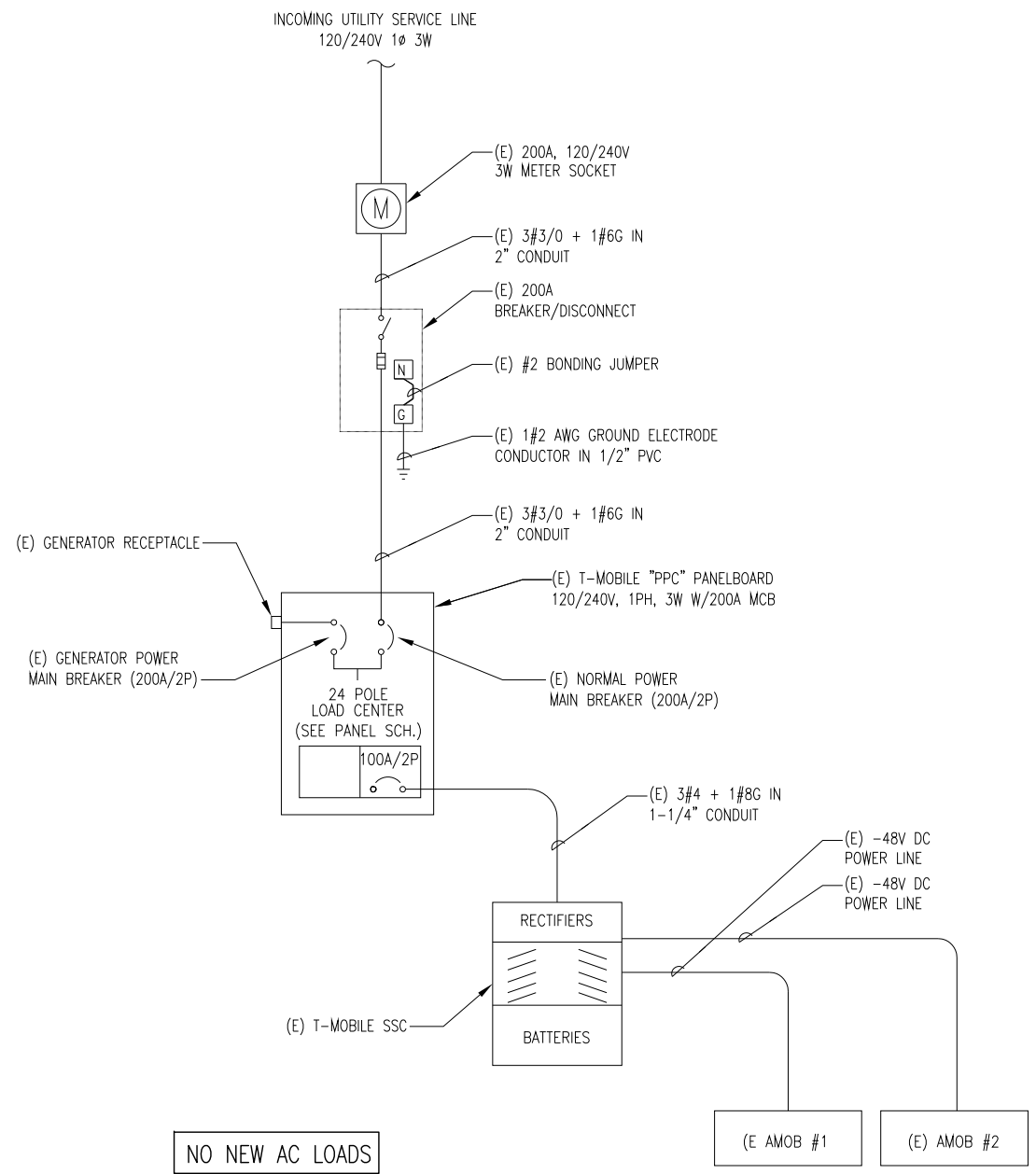


**9KX0283A**  
**SOUTH HILLS**  
 1011 OLD MAIL RD  
 CROSSVILLE, TN 38555

NEW EQUIPMENT  
 SPECIFICATIONS

A-4





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

200 A MCB Voltage: 240  
AC PANEL SCHEDULE 1 ϕ 3 W

Breaker Pos #	Description	State (On/Off)	Use *	Amp	Load	Phase A	Phase B	Load	Amp	State (On/Off)	Use *	Description	Breaker Pos #
1	TVSS	ON	2P	60	1	181		180	20	ON	1P	GFCI	2
3					1		181	180	20	ON	1P	GFCI	4
5	T MOBILE CABINET 1	OFF	2P	50	4800	5100		300	20	ON	1P	LIGHTS	6
7					4800		4800						8
9	SSC	ON	2P	100	9600	9600							10
11					9600		9600						12
13						0							14
15						0							16
17						0							18
19						0							20
21						0							22
23						0							24
					14881	14581							

NO NEW AC LOADS ADDED PANEL BOARD SHOWN FOR REFERENCE ONLY

CONNECTED LOAD (KVA):	29.46		
DEMAND CALCULATIONS:			
CONTINUOUS LOAD @ 125%	36.38		
NON CONTINUOUS LOAD @ 100%	0.36		
MECHANICAL LOADS @ 125%	0.00		
EXISTING LOADS @ 125%	0.00		
NEW LOADS @ 125%	0.00		
TOTAL PANEL CAPACITY (KVA)	48.00	200.00	TOTAL PANEL CAPACITY (A)
TOTAL LOADING ON PANEL (KVA)	36.74	153.07	TOTAL LOADING ON PANEL (A)
TOTAL SPARE CAPACITY (KVA)	11.26	46.93	TOTAL SPARE CAPACITY (A)

NOTE: PANEL BOARD IS NOT OVERLOADED.

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



T-MOBILE  
5209 LINBAR DRIVE  
SUITE 625  
NASHVILLE, TN 37211



architects  
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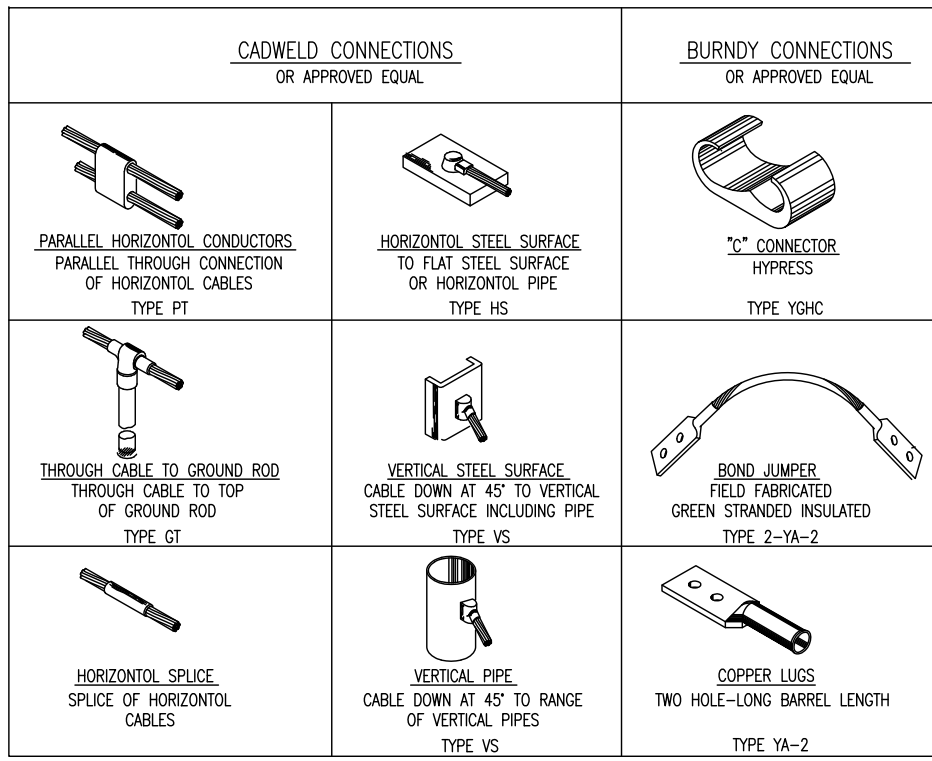
DRAWN BY: MP CHECKED BY: SS  
CHECKED BY: SS APPROVED BY: BMO

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9KX0283A  
SOUTH HILLS  
1011 OLD MAIL RD  
CROSSVILLE, TN 38555

AC PANEL SCHEDULE  
& ONE LINE DIAGRAM



CADWELD DETAILS

- GROUNDING NOTES:**
- 1.) UNDERGROUND AND OVERHEAD UTILITY LENGTHS TO BE DETERMINED FROM SITE PLAN.
  - 2.) SEE ELECTRICAL SPECIFICATIONS SECTION 16000 FOR ALL ELECTRICAL AND GROUNDING INSTALLATION REQUIREMENTS.
  - 3.) FOR ORIENTATION OF SITE LAYOUT SEE SITE PLAN, DRAWING.
  - 4.) UDA CABINET FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
  - 5.) GROUND KITS PROVIDED BY OWNER SHALL BE RETROFITTED TO ACCOMMODATE 2 HOLE LUG CONNECTION AND APPROPRIATE LENGTH.
  - 6.) CONTRACTOR RESPONSIBLE TO PROVIDE OWNER CERTIFICATION OF RESISTIVITY TESTING.
  - 7.) GROUND RODS TO BE INSTALLED AT 10' CENTERS.
  - 8.) ALL GROUND LEADS TO BE SLEEVED IN 3/4" SCHEDULE 40 PVC CONDUIT AND SEALED W/ SILICON.
  - 9.) GROUND BARS SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR.
  - 10.) ALL BENDS IN GROUNDING SYSTEM MUST BE SMOOTH AND WELL ROUNDED AND MAINTAIN BENDING RADIUS.
  - 11.) SEE SITE PLAN FOR COAXIAL ROUTING THIS SHEET IS INTENDED FOR GROUNDING CLARITY ONLY AND IS SCHEMATIC IN DETAIL.
  - 12.) GROUND KITS SHALL BE INSTALLED BETWEEN 8"-18" OF ALL CONNECTORS.
  - 13.) TOWER FOUNDATION DESIGN BY OWNER, INSTALLED BY CONTRACTOR.
  - 14.) ADDITIONAL GROUND KITS TO BE PLACED AT 100' WHEN ANTENNA CENTERLINE IS 200' OR ABOVE.
  - 15.) ALL CONDUITS TO BE SEALED W/ SILICONE TO PROVIDE A WATER TIGHT SEAL.

**KEY NOTES:**

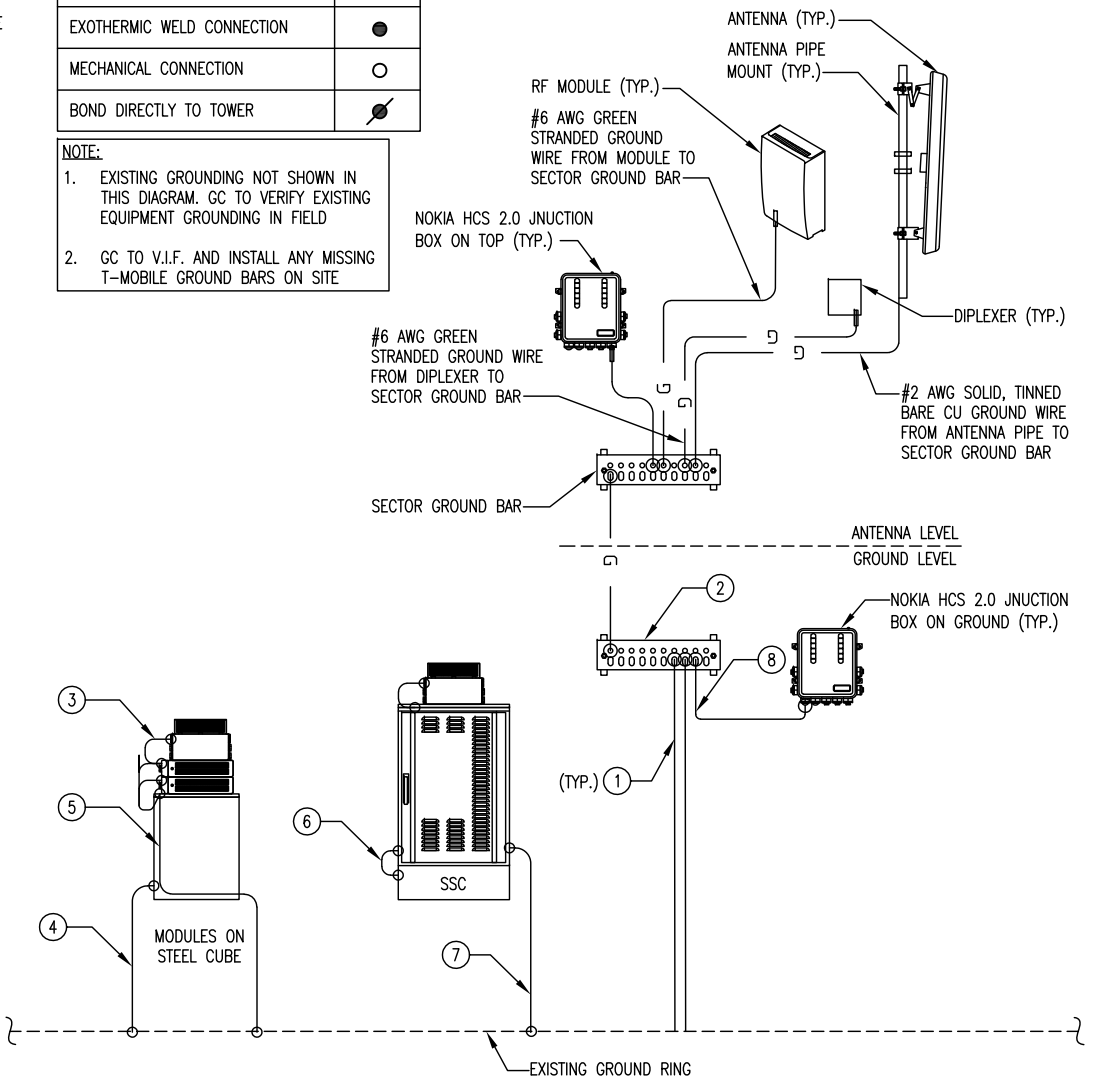
1. #2 SOLID, TINNED BARE COPPER GROUND WIRE FROM GROUND BAR TO GROUND RING (2 REQUIRED).
2. EXISTING GROUND BAR
3. #6 AWG GREEN STRANDED GROUND CU WIRE FROM NEW MODULES TO PLINTH
4. #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM STEEL CUBE W/ MODULES TO GROUND RING
5. #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM MODULES PLINTH TO GROUND RING
6. #6 AWG GREEN STRANDED GROUND CU WIRE FROM SSC TO SSC PLINTH
7. #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM SSC TO GROUND RING
8. #2 AWG GREEN STRANDED CU GROUND WIRE FROM NEW JUNCTION BOX TO GROUND BAR

**SYMBOLS LEGEND:**

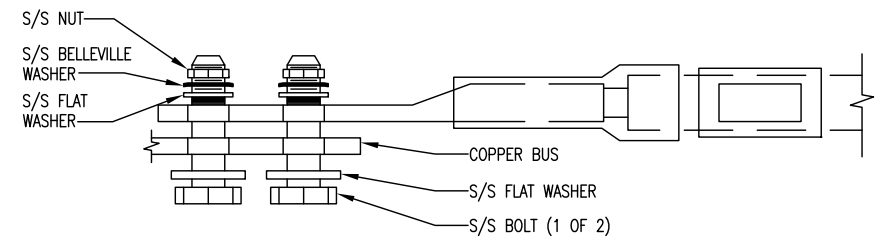
GROUND BAR	
EXOTHERMIC WELD CONNECTION	
MECHANICAL CONNECTION	
BOND DIRECTLY TO TOWER	

**NOTE:**

1. EXISTING GROUNDING NOT SHOWN IN THIS DIAGRAM. GC TO VERIFY EXISTING EQUIPMENT GROUNDING IN FIELD
2. GC TO V.I.F. AND INSTALL ANY MISSING T-MOBILE GROUND BARS ON SITE

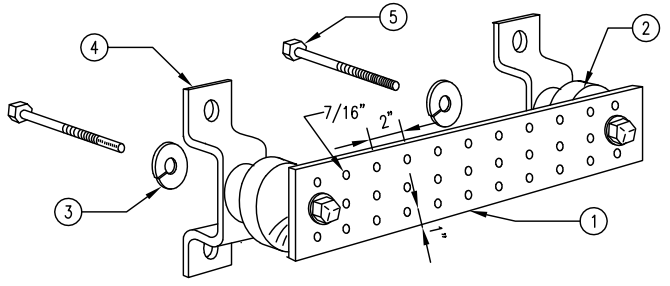


1 TYPICAL GROUNDING DIAGRAM  
SCALE: N.T.S.



- NOTES:**
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
  2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.

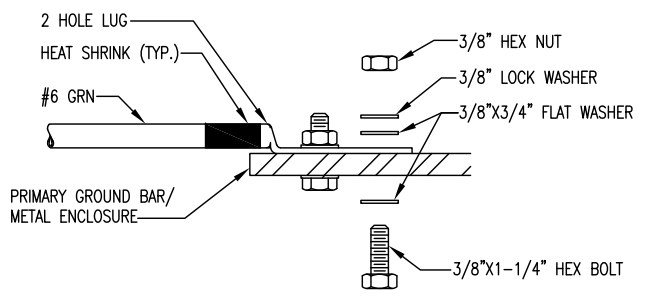
2 STANDARD LUG CONNECTION OF GROUND LEADS TO GROUND BAR DETAIL  
SCALE: N.T.S.



**LEGEND:**

1. GROUND BAR, 4"x 20"x1/4", CONFIRM W/T-MOBILE PROJECT MANAGER THE APPROVED BUSS MFR. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2. INSULATORS, CONFIRM THE APPROVED BUSS MFR. W/T-MOBILE
3. 5/8" LOCKWASHERS, CONFIRM W/T-MOBILE THE APPROVED BUSS MFR. (NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT)
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR APPROVED EQUIVALENT (CONFIRM W/T-MOBILE THE APPROVED BUSS MFR.)
5. 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR APPROVED EQUIVALENT (CONFIRM W/T-MOBILE THE APPROVED BUSS MFR.)

3 GROUNDING-STANDARD GROUND BAR DETAIL  
SCALE: N.T.S.



**INSTALLATION NOTES:**

1. SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS.
2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT AND REMOVE OXIDATION FROM OUTDOOR WEATHERED BARS.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.
4. USE SOLID COPPER WIRE AND MECHANICAL 2-HOLE LUG FOR ALL EXTERIOR GROUNDING.

4 MECHANICAL GROUND CONNECTION  
SCALE: N.T.S.

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5209 LINBAR DRIVE  
SUITE 625  
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**CHRISTOPHER D. MORIN**  
REGISTERED ENGINEER  
AGRICULTURE

10/27/20  
No. 105940

STATE OF TENNESSEE

**9KX0283A**  
**SOUTH HILLS**  
1011 OLD MAIL RD  
CROSSVILLE, TN 38555

**PROPOSED SITE  
GROUNDING DIAGRAM**

**EG-1**

### GENERAL NOTES:

- OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL:
  - BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - AC/TELCO INTERFACE BOX(PPC)
  - ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - TOWERS, MONOPOLE
  - TOWER LIGHTING
  - GENERATORS & LIQUID PROPANE TANK
  - ANTENNA STANDARD BRACKETS, FRAMES, AND PIPES FOR MOUNTING.
  - ANTENNAS (INSTALLED BY OTHERS)
  - TRANSMISSION LINE
  - TRANSMISSION LINE JUMPERS
  - TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - TRANSMISSION LINE GROUND KITS
  - HANGERS
  - HOISTING GRIPS
  - BTS EQUIPMENT
- CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING:  
  
 THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUNDS STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS.  
  
 IT IS THE RESPONSIBILITY OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
- T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED, INSURED, STORED, UNCRATED, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL THE APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING UP.
- ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS NOTED OTHERWISE. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- ALL WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT WHERE OTHERWISE NOTED) AND SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITERS' LABORATORIES (U.L.) AND BEAR THE U.L. LABEL.
- T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO THE OWNER OR HIS ARCHITECT/ENGINEER.
- THE CONTRACTOR SHALL SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION.
- THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF THE WORK TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED BY THE GOVERNING AUTHORITIES. ANY WORK THAT IS ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST SHALL BE UNCOVERED AT THE CONTRACTOR'S EXPENSE; AFTER IT HAS BEEN INSPECTED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITION AT HIS OWN EXPENSE.
- ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT/ENGINEER AND OWNER (T-MOBILE) ASSUME NO RESPONSIBILITY WHATEVER AS TO THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL SAID UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING AFFECTED UTILITIES
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE

### GENERAL NOTES (CONT'D):

- PROJECT MANAGER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS OWN RISK AND EXPENSE.
- CONTRACTORS SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO PAPERS, TRASH, DEBRIS, WEEDS, BRUSH, OR ANY OTHER DEPOSITS REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE PROPERLY DISPOSED OF OFF-SITE BY THE CONTRACTOR.
  - ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY THE CONTRACTOR WITH LOCAL GAS, ELECTRIC, TELEPHONE, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.
  - DURING CONSTRUCTION, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE UTILITIES OF THE BUILDING/SITE WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT ANY SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE BUILDING/PROPERTY OWNER FOR SUCH INTERRUPTION, AT LEAST 72 HOURS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH A MINIMUM AMOUNT OF INCONVENIENCE TO THE BUILDING/PROPERTY OWNER AND ANY SUCH SHUTDOWN TIME SHALL BE COORDINATED WITH THE BUILDING/PROPERTY OWNER.
  - CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION.
  - CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS BUILT DRAWINGS TO T-MOBILE'S PROJECT ENGINEER.
  - GC WILL NOT START THE CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE-CONSTRUCTION PACKAGE AND HAVE A PRE-CONSTRUCTION WALK WITH THE PROJECT MANAGER.

### DIVISION 2 – SITE WORK:

- THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.  
  
 ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE PROJECT MANAGER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT LIMITED TO:
    - FALL PROTECTION
    - CONFINED SPACE
    - ELECTRICAL SAFETY
    - TRENCHING AND EXCAVATION
  - REMOVE FROM SITE/OWNER'S PROPERTY ALL WASTE MATERIALS, UNUSED EXCAVATED MATERIAL INCLUDING MATERIAL CLASSIFIED UNSATISFACTORY, CONTAMINATED OR DANGEROUS TRASH AND DEBRIS, AND DISPOSE OF IN A LEGAL MANNER.
  - ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
  - THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH .
  - CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, AS REQUIRED DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND CONSTRUCTION STAKING. CONTRACTOR SHALL ESTABLISH GRADE AND LINE STAKES PRIOR TO CONSTRUCTION.

BC ARCHITECTS ENGINEERS DOES NOT GUARANTEE OR WARRANT THAT THE AFOREMENTIONED EASEMENTS ARE SUFFICIENT FOR CONSTRUCTION TRAFFIC. GC SHALL CONSULT WITH A T-MOBILE REPRESENTATIVE AND LANDLORD WITH EXACT LOGISTICS TO FACILITATE CONTRACTIBILITY OF THE SITE AND DELIVERY OF CRITICAL MATERIALS SUCH AS THE TOWER, STEEL, CONCRETE AND CRANES TO THE PROPOSED LEASE AREA. GC SHALL RESTORE SITE TO ORIGINAL CONDITIONS AND REPLACE ANY AND ALL DISTURBED TREES OR LANDSCAPING.

BC ARCHITECTS ENGINEERS IS NOT RESPONSIBLE FOR THE MAINTENANCE AND/OR OPERATIONAL FEASIBILITY.

SCOPE OF WORK FOR THESE PLANS DOES NOT INVOLVE VALUE ENGINEERING AS WELL AS MAINTAINABILITY OPERATIONS OF THE SITE, ACCESS OR UTILITIES.

### DIVISION 3 – CONCRETE:

- MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS METHODS STANDARDS ASTM C172, ASTM C31 AND ASTM C39 UNLESS OTHERWISE NOTED.
- CONCRETE FOR ALL FOUNDATIONS: 540 LBS PER CUBIC YARD OF CONCRETE. MINIMUM CEMENT CONTENT FOR 1-INCH MAXIMUM SIZE AGGREGATE, SLUMP RANGE 3 INCHES TO 5 INCHES, TOTAL AIR CONTENT 4 PERCENT TO 7 PERCENT BY VOLUME. AIR ENTRAINING ADMIXTURE REQUIRED TO CONTROL TOTAL AIR CONTENT, WATER REDUCING ADMIXTURE PERMITTED TO OBTAIN SLUMP OVER 3-INCHES.
- ALL CONCRETE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI 318) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND (ACI 301) STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE.
- REBAR SHALL BE ASTM A-615 DEFORMED TYPE WITH MINIMUM YIELD STRENGTH OF 60,000 PSI (40,000 PSI GRADE MAY BE USED FOR TIES & STIRRUPS).  
  
 WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185
- DETAILING SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OF DETAILING REINFORCED CONCRETE STRUCTURES (ACI STD-315 LATEST EDITION).
- CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SECURED IN POSITION. LOCATION OF REINFORCEMENT SHALL BE INDICATED ON THE DRAWINGS. THE FOLLOWING MINIMUM COVER (INCHES) FOR REINFORCEMENT SHALL BE PROVIDED, EXCEPT AS NOTED ON DRAWINGS.
 

MINIMUM COVER (INCHES)
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.... 3"
EXPOSED TO EARTH OR WEATHER:
#6 THROUGH #18....2"
#5 BAR AND SMALLER....1-1/2"
- TESTS  
 CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS THE WORK PROGRESSES. FAILURE TO DETECT ANY DEFECTIVE WORK OR MATERIAL SHALL NOT IN ANY WAY PREVENT LATER REJECTION WHEN SUCH DEFECT IS DISCOVERED NOR SHALL IT OBLIGATE THE ENGINEER FOR FINAL ACCEPTANCE.
  - FIVE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION. TWO SHALL BE TESTED @ THREE DAYS, TWO @ TWENTY-EIGHT DAYS. THE FIFTH CYLINDER SHALL BE KEPT SEPARATELY, IF REQUIRED TO BE USED IN THE FUTURE.
  - ONE ADDITIONAL TEST CYLINDER SHALL BE TAKEN DURING COLD WEATHER AND CURED ON SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
  - ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.
- PLACING CONCRETE
  - THE ENGINEER SHALL BE NOTIFIED NOT LESS THAT 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT, UNLESS INSPECTION IS WAIVED IN EACH CASE, PLACING OF CONCRETE SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER. CONCRETE SHALL NOT BE PLACED UNTIL ALL FORMWORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES AND JOINTS INVOLVED IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE T-MOBILE REPRESENTATIVE HAVE BEEN PROVIDED AND MADE READY FOR ACCOMPLISHMENT OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND T-MOBILE HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.
  - PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301.
- PROTECTION
  - IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.
  - CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
  - ALL CONCRETE SHALL BE WATER CURED BY CONTINUOUS (NOT PERIODIC) FINE MIST SPRAYING OR SPRINKLING ALL EXPOSED SURFACES. WATER SHALL BE CLEAN AND FREE FROM ACID, ALKALI, SALTS, OIL SEDIMENT, AND ORGANIC MATTER. SUCCESSFUL CURING SHALL BE OBTAINED BY USE OF AN AMPLE WATER SUPPLY UNDER PRESSURE IN PIPES, WITH ALL NECESSARY APPLIANCES OF SPRINKLERS, AND SPRAYING DEVICES.

### ELECTRICAL NOTES:

- ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.
- ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS,

### ELECTRICAL NOTES (CONT'D):

- IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF BC ARCHITECTS ENGINEERS. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

### DIVISION 5 – STRUCTURAL STEEL:

- DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE LATEST AISC MANUAL OF STEEL CONSTRUCTION (ASD), AWS D1.1, AND THE BASIC BUILDING CODE. STRUCTURAL STEEL SHALL BE AS FOLLOWS:
  - ASTM A36, GRADE 36; ROLLED STEEL, RODS, PLATES, U-BOLTS AND ANCHOR BOLTS.
  - ASTM A325 BOLTS, BEARING TYPE
  - ALL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.
- ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND T-MOBILE PROJECT MANAGER IN WRITING
- TIGHTEN HIGH STRENGTH BOLTS TO A SNUG TIGHT CONDITION WHERE ALL PLYS IN A JOINT ARE IN FIRM CONTACT BY EITHER
  - A FEW IMPACTS OF AN IMPACT WRENCH
  - THE FULL EFFORT OF A PERSON USING A SPUD WRENCH
- WELDING
  - ALL WELDING SHALL BE DONE BY A CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.
  - WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM A-233, E70 SERIES. BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.
  - FIELD WELDING SHALL BE DONE AS PER AWS D1.1 REQUIREMENTS VISUAL INSPECTION IS ACCEPTABLE.
- PROTECTION
  - UPON COMPLETION OF ERECTION INSPECT ALL GALVANIZED STEEL AND PAINT ANY FIELD CUTS, WELDS, OR GALVANIZED BREAKS WITH ZINC BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

### DIVISION 13 – SPECIAL CONSTRUCTION ANTENNA INSTALLATION

- WORK INCLUDED:
- ANTENNAS AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR INTERMS OF COORDINATION AND SITE ACCESS. ERECTION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL
  - INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
  - INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
  - INSTALL FURNISHED GALVANIZED STEEL OR ALUMINIUM WAVEGUIDE.
  - CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYSER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER (FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED. FOR ANTENNA AND HELIX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
  - INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
  - ANTENNA AND COAXIAL CABLE GROUNDING:
    - ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONECTOR/SPICE WEATHER PROOFING KIT #221213 OR EQUAL.
    - ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

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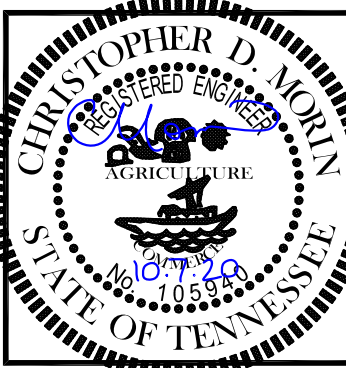
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GENERAL NOTES  
 & SPECIFICATIONS

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