



GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
- A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)

B. AC/TELCO INTERFACE BOX (PPC)

C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)

D. TOWERS, MONOPOLES

E. TOWER LIGHTING

F. GENERATORS & LIQUID PROPANE TANK

G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING

H. ANTENNAS (INSTALLED BY OTHERS)

I. TRANSMISSION LINE

J. TRANSMISSION LINE JUMPERS

K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS

L. TRANSMISSION LINE GROUND KITS

M. HANGERS

N. HOISTING GRIPS

O. BTS EQUIPMENT
2. 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 COMPOUND 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 POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN 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 T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
- A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.

E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. 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 HELIAX 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.

F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS 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.

G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPlice WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF

COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



49030 Pontiac Trail, Suite 400  
Wixom, Michigan 48393  
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	HEG	03/14/22
0	FINAL CD	HEG	03/24/22

ATC SITE NUMBER:

36075

ATC SITE NAME:

LEE S SUMMIT 1B

SITE ADDRESS:

2200 LOWENSTEIN

LEES SIMMIT, MISSOURI 64081-1905

SEAL:



CONSISTENT WITH APPLICABLE LICENSING LAWS THIS SEAL CERTIFIES THAT THE ARCHITECTURAL DESIGN WORK WAS PREPARED EITHER PERSONALLY BY ME OR UNDER MY IMMEDIATE AND DIRECT SUPERVISION AND CONTROL.



DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

GENERAL NOTES

SHEET NUMBER:

G-002

REVISION:

0



SITE PLAN NOTES:

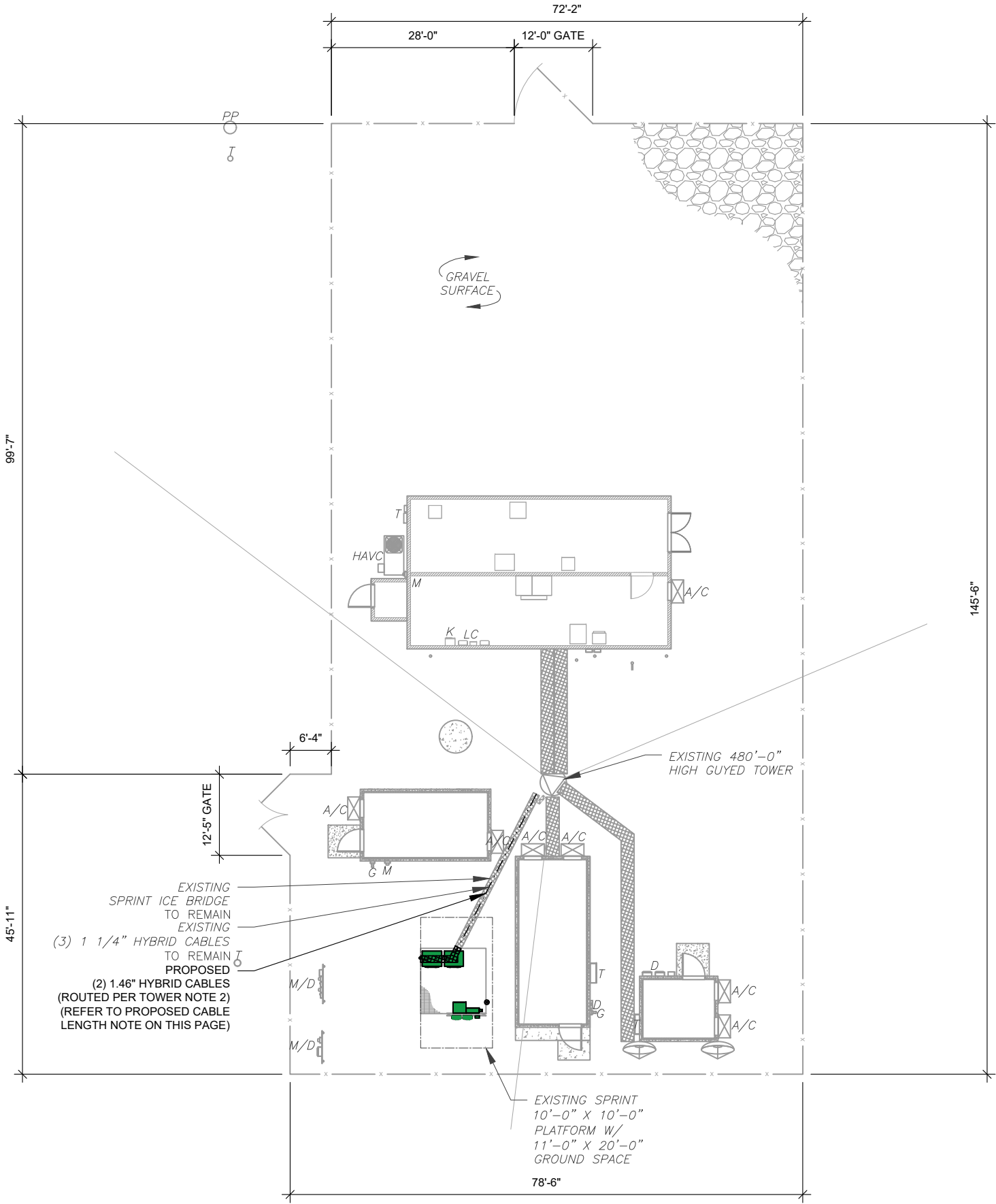
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

LEGEND

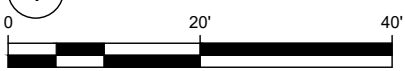
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK FENCE

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **244'-5"**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM EQUIPMENT LOCATION TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



1 DETAILED SITE PLAN



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	HEG	03/14/22
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C			
D			
E			

ATC SITE NUMBER:

36075

ATC SITE NAME:

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SITE ADDRESS:

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CUSTOMER #:	A5C0676A

DETAILED SITE PLAN

SHEET NUMBER:

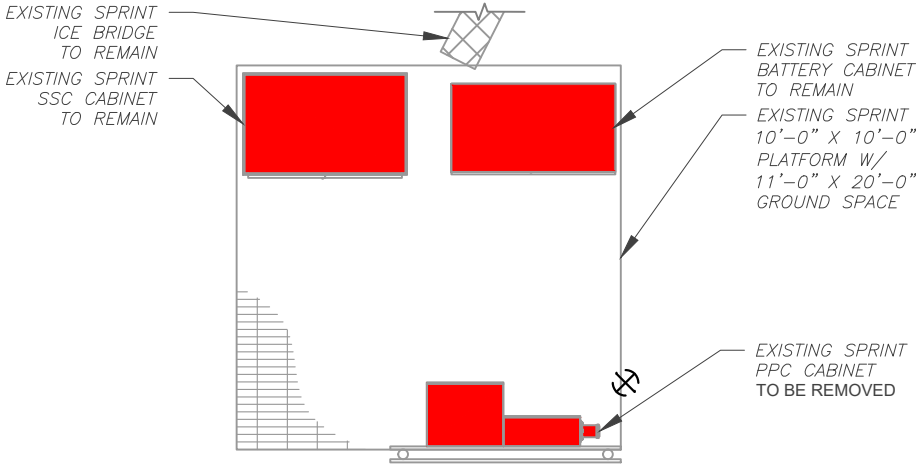
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REVISION:

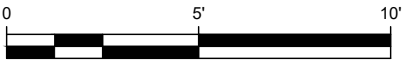
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SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.



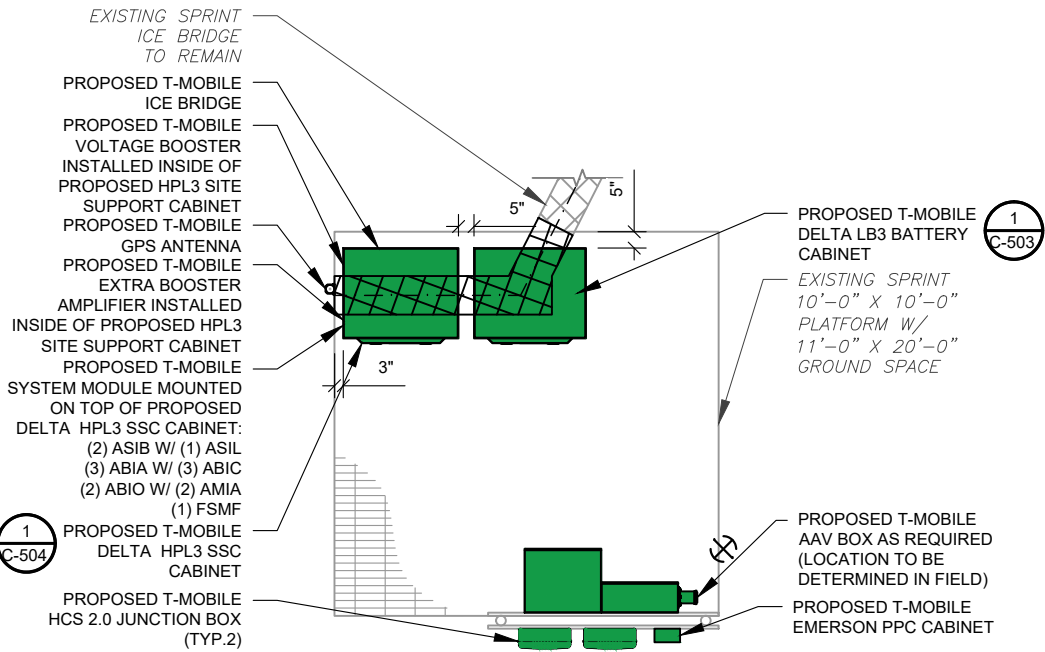
1 EXISTING GROUND EQUIPMENT LAYOUT



SCALE: 1"=5' (11X17)  
1"=2.5' (22X34)

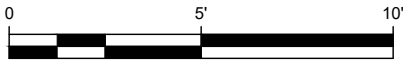


LEGEND	
<span style="color: red;">■</span>	EXISTING EQUIPMENT TO BE REMOVED



MIN (2) PROPOSED T-MOBILE  
WORK LIGHTS - LOCATION TO BE  
DETERMINED IN FIELD

2 PROPOSED GROUND EQUIPMENT LAYOUT



SCALE: 1"=5' (11X17)  
1"=2.5' (22X34)



LEGEND	
<span style="color: green;">■</span>	PROPOSED EQUIPMENT TO BE INSTALLED

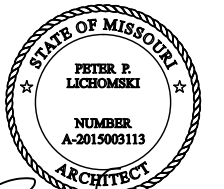


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**36075**  
ATC SITE NAME:  
**LEE S SUMMIT 1B**  
SITE ADDRESS:  
2200 LOWENSTEIN  
LEES SUMMIT, MISSOURI 64081-1905

SEAL:



*Peter P. Lichomski*

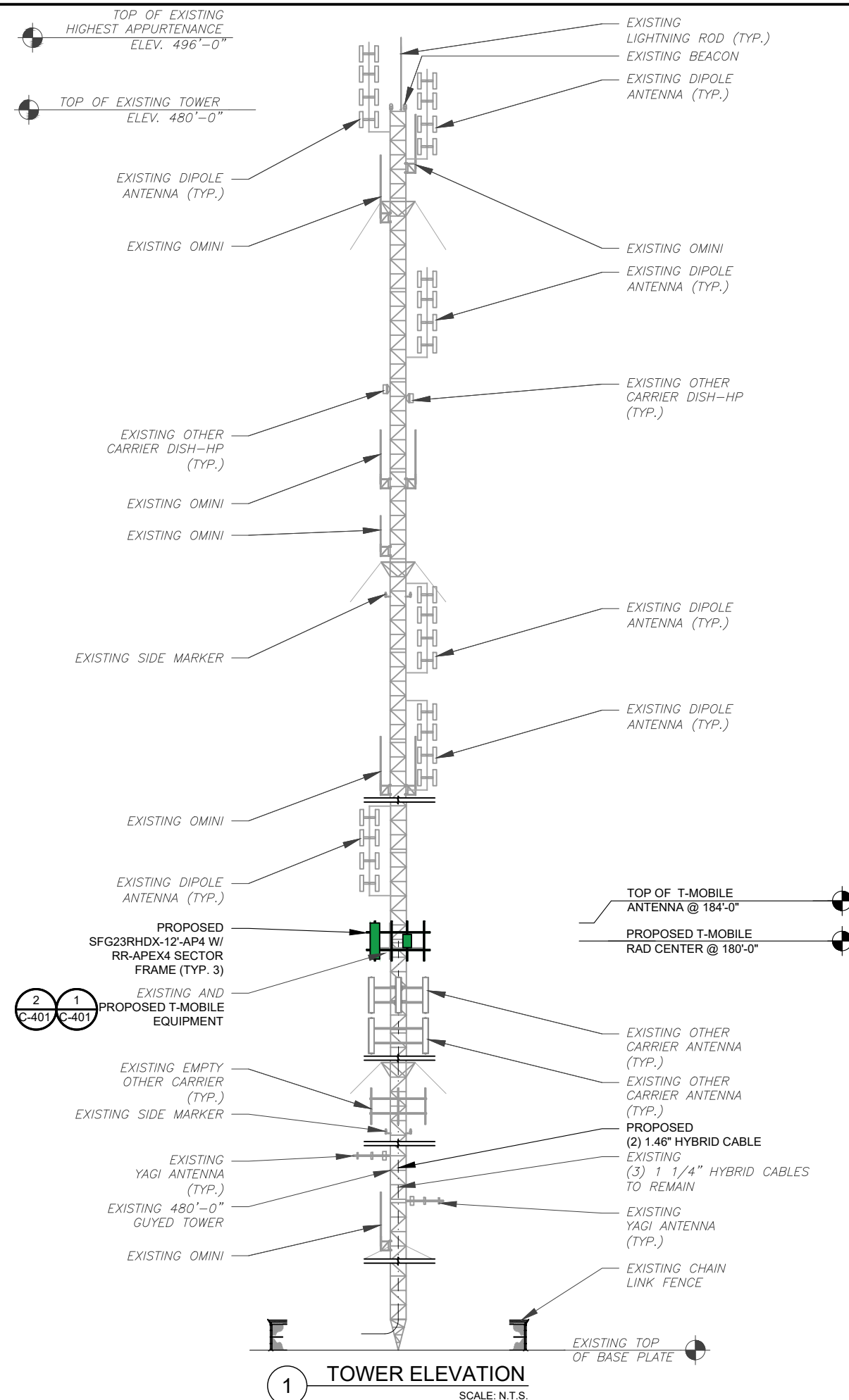
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**T-Mobile**

DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

DETAILED GROUND  
PLAN

SHEET NUMBER:	REVISION:
<b>C-102</b>	<b>0</b>



**NOTES:**  
THIS DRAWING IS FOR EXHIBIT AND  
LAYOUT PURPOSES ONLY.

PLEASE REFER TO STRUCTURAL  
DOCUMENTS (PREPARED BY  
OTHERS) FOR PROJECT  
STRUCTURAL CALCULATION AND  
RESULTS.

NO WORK IS TO BE DONE WITHOUT  
AN APPROVED STRUCTURAL  
ANALYSIS PROVIDED BY OTHERS.

SPECIAL NOTES:

1. GC TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. GC SHALL NOTIFY P.M. AND ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
2. STRUCTURAL/ DESIGN & ANALYSIS SHALL BE PERFORMED & APPROVED BY TOWER OWNER AND MANUFACTURER (STRUCTURAL ANALYSIS BY OTHERS)
3. 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.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
3. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

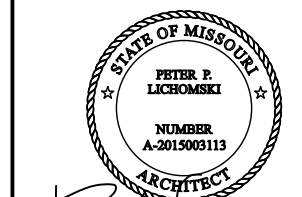


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**LEE S SUMMIT 1B**  
SITE ADDRESS:  
**2200 LOWENSTEIN**  
**LEES SUMMIT, MISSOURI 64081-1905**

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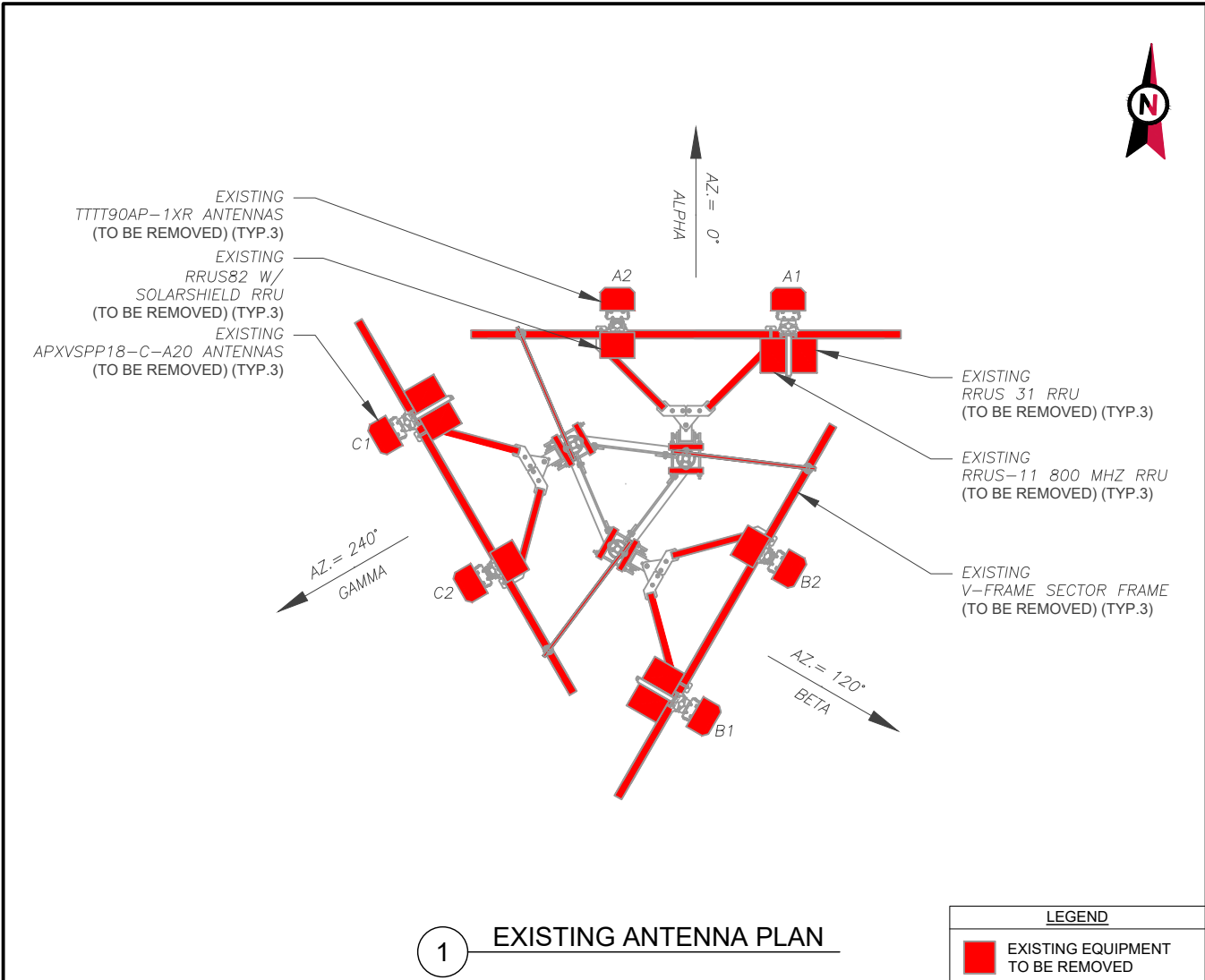
TOWER ELEVATION

SHEET NUMBER:

C-201

REVISION:

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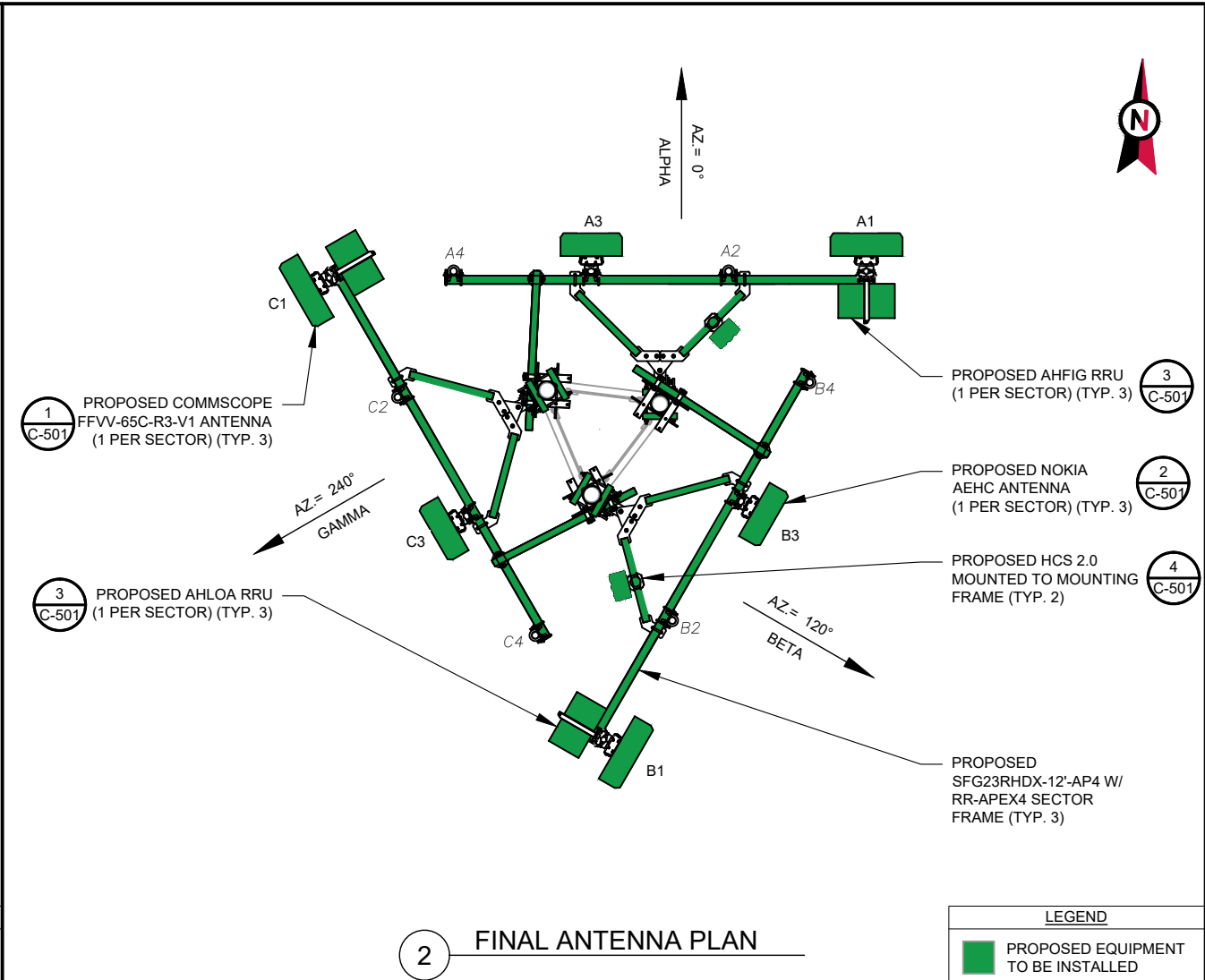


FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
LOCATION	MODEL NUMBER	COAX	HYBRID
TOWER	(2) HELIAX FIBERFEED 12 RRU PENDANT	-	(2) 1.46"
GROUND	(2) HCS 2.0	-	(3) 1 1/4"

CABLE LENGTHS FOR JUMPERS
JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

- NOTES**
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
  2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

**3 ANTENNA AND RF EQUIPMENT SCHEDULE**



FINAL ANTENNA SCHEDULE									
LOCATION				ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	
ALPHA	180°	0°	A1	COMMSCOPE FFVV-65C-R3-V1	L700/L600/N600/L2100/ L1900/G1900/LAWS3/ N2100/ N1900	0	6/6/3/3	NOKIA-AHLOA & NOKIA-AHFIG	
ALPHA	-	-	A2	-	-	-	-	-	
ALPHA	180°	0°	A3	NOKIA AEHC	L2500/N2500	0	4	-	
ALPHA	-	-	A4	-	-	-	-	-	
BETA	180°	120°	B1	COMMSCOPE FFVV-65C-R3-V1	L700/L600/N600/L2100/ L1900/G1900/LAWS3/ N2100/ N1900	0	6/6/3/3	NOKIA-AHLOA & NOKIA-AHFIG	
BETA	-	-	B2	-	-	-	-	-	
BETA	180°	120°	B3	NOKIA AEHC	L2500/N2500	0	4	-	
BETA	-	-	B4	-	-	-	-	-	
GAMMA	180°	240°	C1	COMMSCOPE FFVV-65C-R3-V1	L700/L600/N600/L2100/ L1900/G1900/LAWS3/ N2100/ N1900	0	6/6/3/3	NOKIA-AHLOA & NOKIA-AHFIG	
GAMMA	-	-	C2	-	-	-	-	-	
GAMMA	180°	240°	C3	NOKIA AEHC	L2500/N2500	0	4	-	
GAMMA	-	-	C4	-	-	-	-	-	

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PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	HEG	03/14/22
B	FINAL CD	HEG	03/24/22

ATC SITE NUMBER:  
**36075**

ATC SITE NAME:  
**LEE S SUMMIT 1B**

SITE ADDRESS:  
2200 LOWENSTEIN  
LEES SIMMIT, MISSOURI 64081-1905

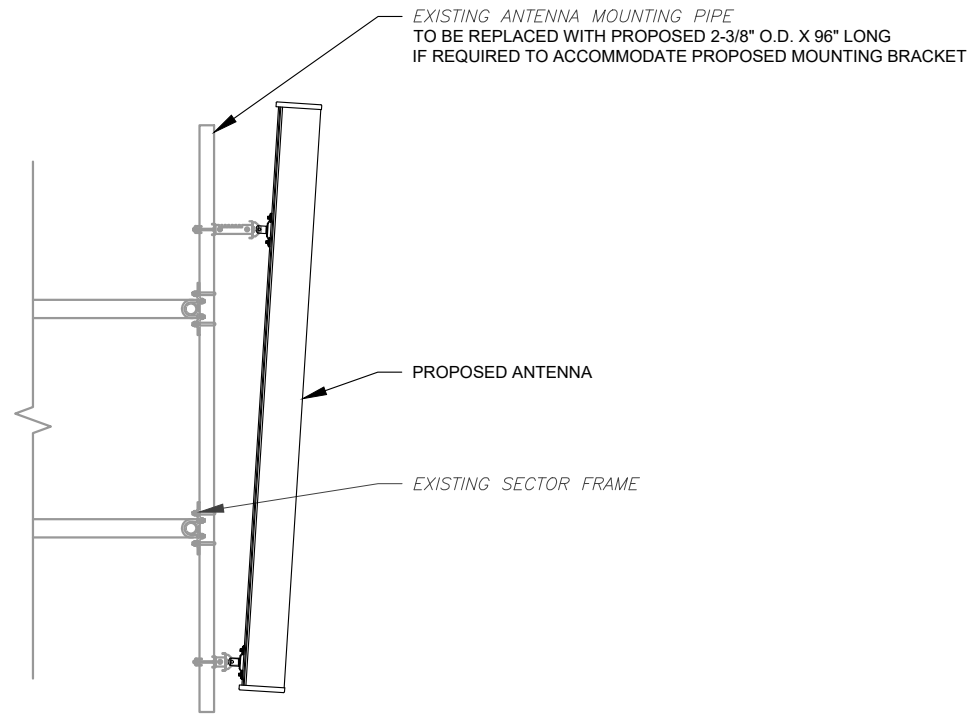
SEAL:

CONSISTENT WITH APPLICABLE LICENSING LAWS THIS SEAL CERTIFIES THAT THE ARCHITECTURAL DESIGN WORK WAS PREPARED EITHER PERSONALLY BY ME OR UNDER MY IMMEDIATE AND DIRECT SUPERVISION AND CONTROL.

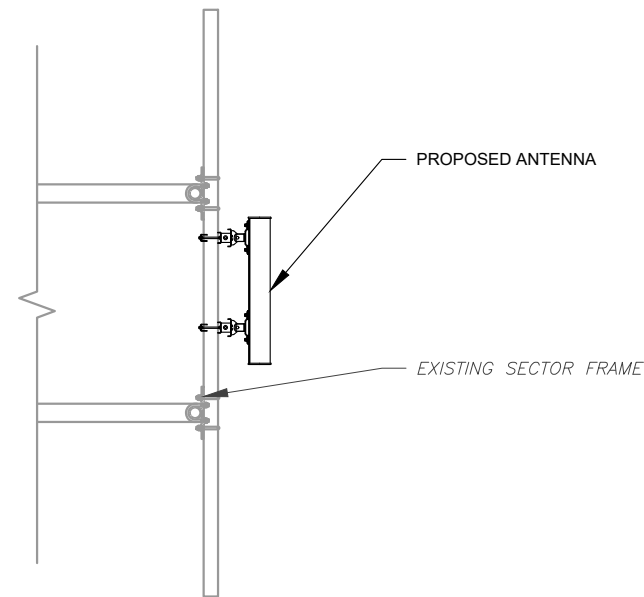
DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

RF SCHEDULE AND ANTENNA INSTALLATION

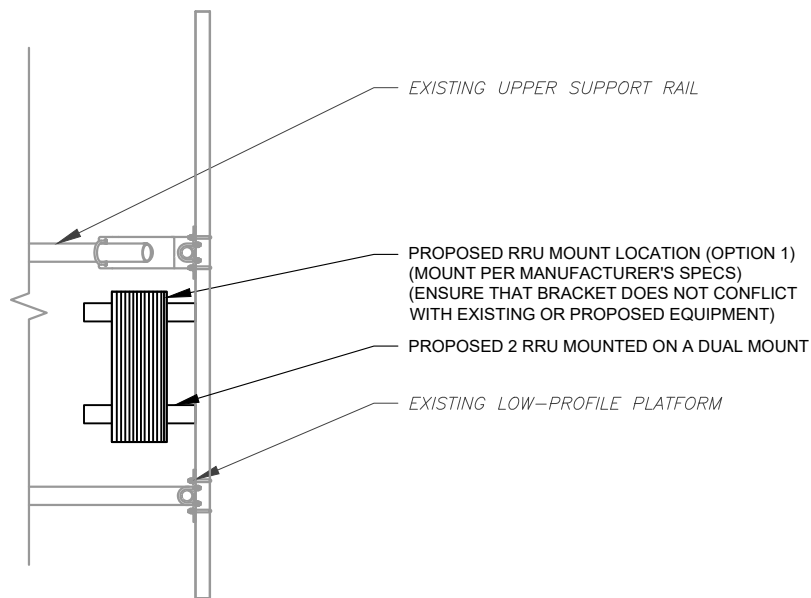
SHEET NUMBER: <b>C-401</b>	REVISION: <b>0</b>
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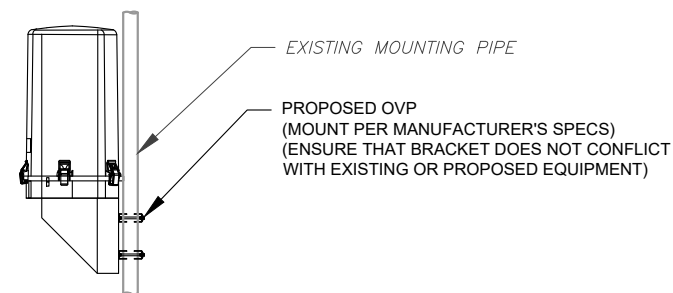
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



4 PROPOSED OVP MOUNTING  
SCALE: N.T.S.

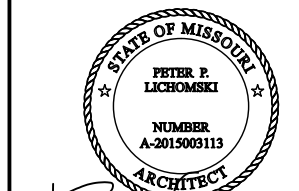


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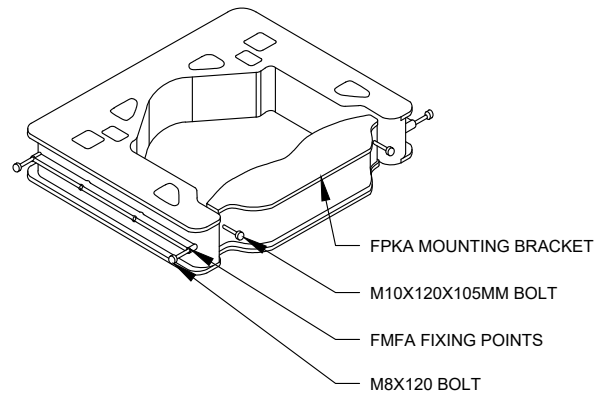


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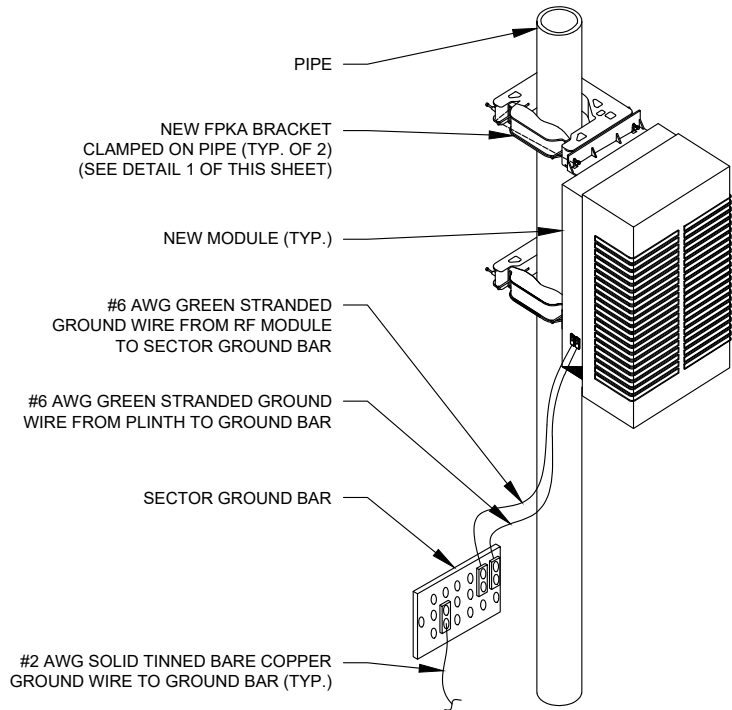
CONSTRUCTION  
DETAILS

SHEET NUMBER:	REVISION:
<b>C-501</b>	<b>0</b>

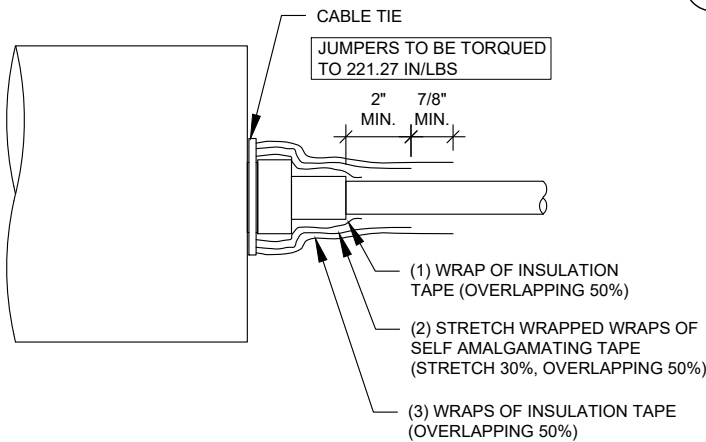




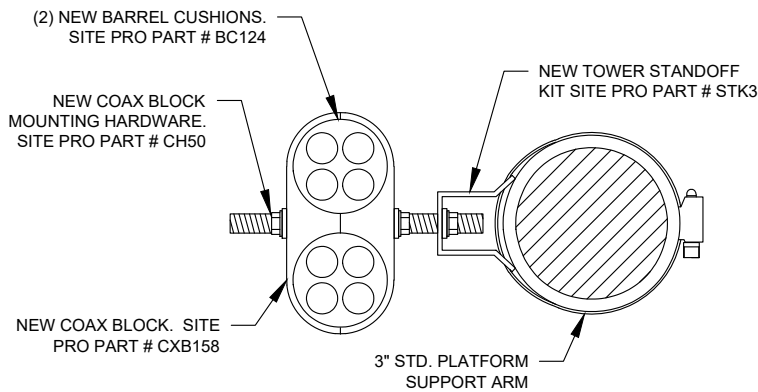
1 FPKA BRACKET DETAIL  
SCALE: N.T.S.



2 TYPICAL AHLOA UNIT MOUNTING DETAIL  
SCALE: N.T.S.



4 RF JUMPER CONNECTION DETAIL  
SCALE: N.T.S.



5 RF JUMPER MOUNTING DETAIL  
SCALE: N.T.S.

COAX COLOR CODING

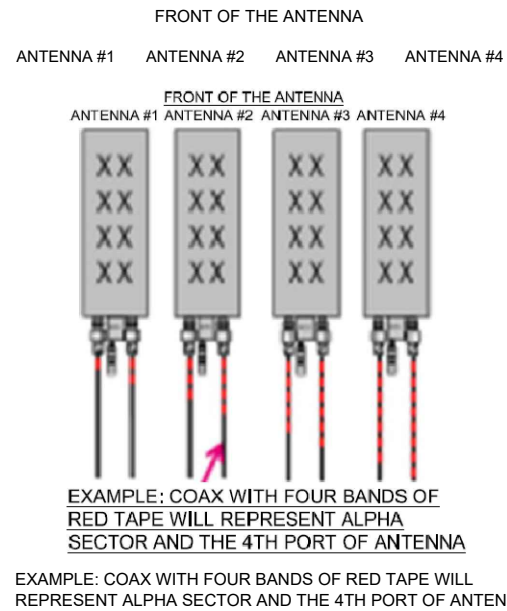
- ANTENNAS WILL BE LABELED (BACK OF ANTENNA VIEW) RIGHT TO LEFT 1-X PORTS
- COAX/JUMPER LINES WILL BE IDENTIFIED BY SECTOR COLOR AND BY NUMBER OF BANDS AROUND THE COAX/JUMPER

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

#### ANTENNA AND COAXIAL CABLE SCHEDULE

1. 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.
2. 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.

# VIEWNAME  
VPSCALE



**LAB**  
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PHONE: (248) 705-9212

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C			
D			
E			

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**T-Mobile**

DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

**CABLE AND MOUNTING DETAILS**

SHEET NUMBER:	REVISION:
<b>C-502</b>	<b>0</b>





# Large Battery 3 Cabinet

## Product Features

Compact design for battery strings:

- Direct air cooling solution
- Supports four strings of -48V VRLA batteries up to 210Ah
- 600A rated bus bar with 200A breaker per string
- Bulk Input / Output with ability to daisy chain cabinets
- Front to Front Air Flow
- Corrosion resistant aluminum construction
- Powder coated high gloss finish
- Designed to meet GR-487

www.deltaww.com



## Specifications

Model	LB3 (Large Battery 3 Cabinet)
<strong>1. General</strong>	
Construction	Aluminium enclosure
Dimensions (W x H x D)	30 x 72 x 35 in. (381 x 1829x 889mm), Depth with Door: 41.2 in. (1047mm)
Weight	~540 lbs (~245kg) (without batteries)
Internal rack dimension	4 battery trays to support up to 4 strings 210Ah batteries
Mounting options	Pad-mount, plinth option
Finish	Polyester Power Paint (Tan)
Safety	UL Listed, IEC / EN 60950
<strong>2. Environment</strong>	
Operating temperature	-40°C to +50°C (-40°F to +122°F) with solar load
Protection class	IP55 designed to GR-487
Acoustics	65dBA
Humidity (relative)	95%, non-condensing (Max.)
<strong>3. Thermal Management</strong>	
Cooling Equipment:	Direct Air Cooling
Heating Equipment:	Forced air heating (1) 1000W AC heaters
<strong>4. Equipment</strong>	
Cable entry	Knock-out plate on each upper side wall Additional knockouts each side
Door latch	3 point latching, 5/16 nut driver tool, pad-locking capability
Primary ground	10 double-hole 1/4"-20 threaded holes on 5/8" center ground bar
Lifting Ears	4 Lifting Tabs
Plinth	Optional 6" plinth available
AC Load Center:	
30A heater breaker	
Left or Right side AC entry options	
AC Surge Protection (option)	
DC Load Center:	
600A bulk feed bus bar	
(4) 200A bolt in battery breakers	
(4) 2-hole lug landings (2 output/2 input from second battery cabinet)	
Temp Probes	
Battery Trays:	
(4) battery trays	
(4) -48V battery strings (210Ah max each)	
Connection kit:	
(1) DC 10A Breaker supplied (install onto HPL3 Power Cabinet)	
LED interior cabinet light	
(2) DC powered Axial fans with (1) F5 Filters	
Door intrusion alarm	
(1) 1000W AC powered heaters	
<strong>5. Ordering information</strong>	
Cabinet	ESOF015-ECV04 Large Battery 3 (LB3) Cabinet
Plinth, 6"	37993318816900-S Plinth for V1/V2, HPL2, HPL3, LB2 and LB3

\*All specifications are subject to change without prior notice.

Delta Group Website:  
[www.deltaww.com](http://www.deltaww.com)

Product Website:  
[www.deltapowersolutions.com](http://www.deltapowersolutions.com)

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Plano, TX (Texas) 75074

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[DEUSTPS.Orders@deltaww.com](mailto:DEUSTPS.Orders@deltaww.com)

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(877-335-8208 option 3)  
[DEUSTPS.Support@deltaww.com](mailto:DEUSTPS.Support@deltaww.com)

Installation Services:  
[DEUSTPS.Services@deltaww.com](mailto:DEUSTPS.Services@deltaww.com)

RMA:  
[DEUSTPS.RMA@deltaww.com](mailto:DEUSTPS.RMA@deltaww.com)

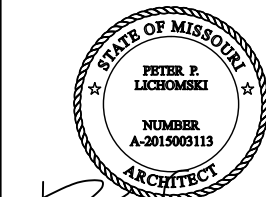


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**T-Mobile**

DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

**LARGE BATTERY 3  
CABINET  
MANUFACTURER DETAIL**

SHEET NUMBER:	REVISION:
<b>C-503</b>	<b>0</b>



# HP-Large 3 Power Cabinet

## Product Features

- Compact design for equipment, power and battery:
- 30RU supports 3 radios and transport equipment
  - 600A @ -48V power system
  - Slimline high efficiency rectifier
  - ORION Touch screen Controller
  - Rear Access Hatch

Direct air cooling solution, 6000W capacity, 5°C delta T  
Easy slide-in filter replacement for Merv-13 or Gore  
filter connects with:

- SB3, 2-string battery cabinet
- LB3, 4-string battery cabinet
- V2, Expansion equipment and battery cabinet

Designed to GR-487 specifications

www.deltaww.com



## Specifications

Model	HP-Large 3 Power Cabinet
<b>1. General</b>	
Construction	Aluminum enclosure
Dimensions (W x H x D)	30 x 72 x 36 in. (762 x 1828 x 914mm), Depth with door: 43 in. (1092mm)
Weight	~551 lbs (~270kg) (without customer equipment or batteries)
Internal rack dimension	Total Equipment space, 30RU: Horizontal rack: 19" x 27RU Vertical rack: 19" x 3RU  Power System space: 23" x 12RU
Mounting options	Pad-mount, plinth option
Finish	Polyester Powder Paint (Tan)
Safety	UL Listed, IEC / EN 60950
<b>2. Environment</b>	
Operating temperature	-40°C to +50°C (-40°F to +122°F) with solar load, IP55
Protection class	designed to GR-487
Acoustics	5°C delta T: 70 dBA @ 6000W, 85dBA @ 5000W heat load
Humidity (relative)	95%, non-condensing (Max.)
<b>3. Thermal management</b>	
Cooling Equipment:	Direct Air Cooling, 6000W capacity, 5°C delta T (6) centrifugal redundant fans, (3) Merv-13 or optional GORE filters front door (3) Merv-13 filters Rear hatch
Heating Equipment:	Forced air heating (2) 1000W AC heaters
<b>4. Equipment</b>	
Cable Entry	Knock-out plate on each upper side wall Additional knockouts each side (1) 3" conduit hole with hole plug
Door latch	3 point latching, 5/16 nut driver tool, pad-locking capability
Primary ground	10 double-hole 1/2"-20 threaded holes on 5/8" center ground bar
Lifting Ears	4 Lifting Tabs
Standard equipment	AC Load Center: 240V split phase, dual feed / (1) 200A + (1) 100A 208V 3-phase, single feed / (1) 200A  AC Surge Protection for each breaker feed GFCI Receptacle 120V (6 form-C) Alarm Termination block (1) Thermal Probe 605A/ 54V (338kW) redundant Power System with DIN rail distribution: 12 rectifier positions (3x55A DPR3000 rectifiers included) 52 poles for load (2x10A, 3x50A, and 8x100A load breakers included) 16 poles for battery (2) SB350 generator connector LVD over-ride switch (2) SB175 Battery connections (2) SB350 Battery connections  Front Door: (6) DC powered centrifugal fans with (3) MERV-13 filters, (GORE option) Clogged Filter alarm pressure switch Door intrusion alarm (2) 1000W AC powered heaters LED interior cabinet light  Rear Hatch: Exhaust vent with (3) MERV-13 filters
<b>5. Ordering information</b>	
Cabinet	ESOA600-HCU01 HP-Large 3 600A Power / Equipment Cabinet
Rectifier	ESR-48/60A A-T 48V / 56A 3000W, 96.4%, CAN communication
Controller (Spare)	TPS1020028AU17 Orion TOUCH Controller
Plinth, 6"	37993318816900-S Plinth for V1/V2, HPL2, HPL3, LB2 and LB3 cabinets

Delta Group Website:  
www.deltaww.com

Product Website:  
www.deltapowersolutions.com

United States of America & Canada:  
Delta Electronics U.S. Inc.  
2925 E. Plano Parkway  
Plano, TX (Texas) 75074

Sales and Support:  
Sales: DEUSTPS.Sales@deltaww.com  
Orders: DEUSTPS.Orders@deltaww.com  
  
Field Support:  
1-877-DELTA-08 option 3  
(877-335-8208 option 3)  
DEUSTPS.Support@deltaww.com

Installation Services:  
DEUSTPS.Services@deltaww.com

RMA:  
DEUSTPS.RMA@deltaww.com

env0.5A



Front Door and Rear Hatch Open

\*All specifications are subject to change without prior notice.

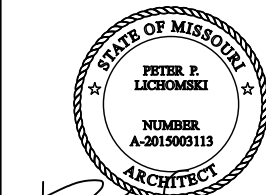


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SITE ADDRESS:  
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LEES SUMMIT, MISSOURI 64081-1905

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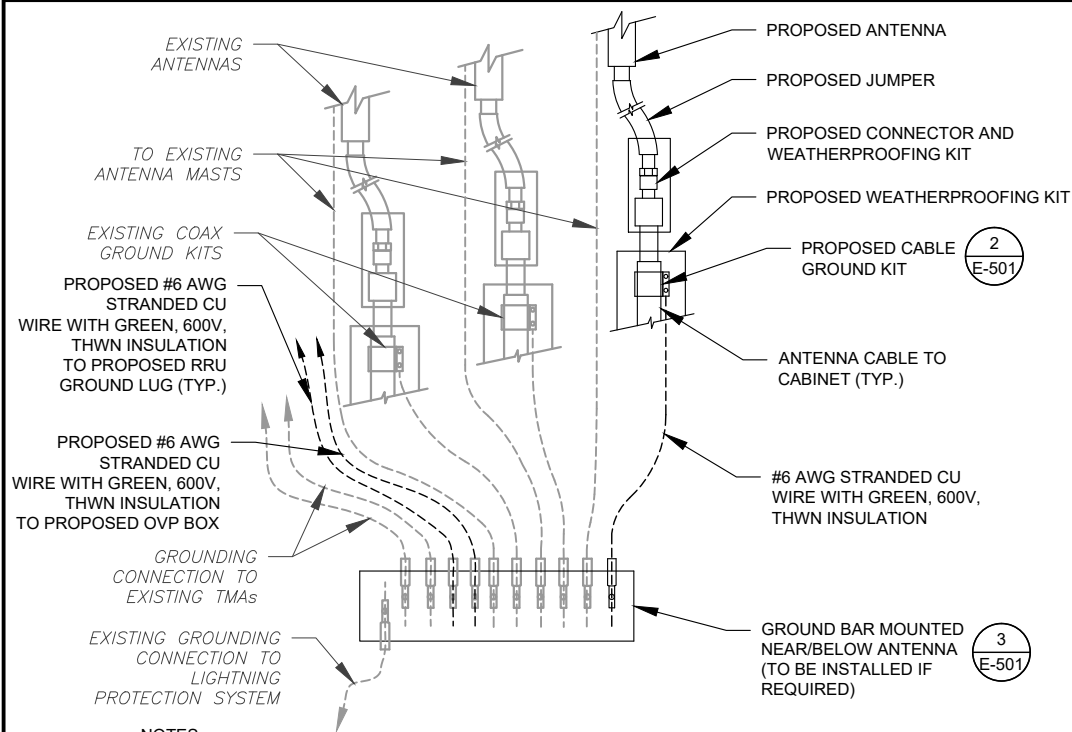
**T-Mobile**

DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

**HP-LARGE 3 POWER  
CABINET  
MANUFACTURER DETAIL**

SHEET NUMBER:	REVISION:
<b>C-504</b>	<b>0</b>





NOTES:

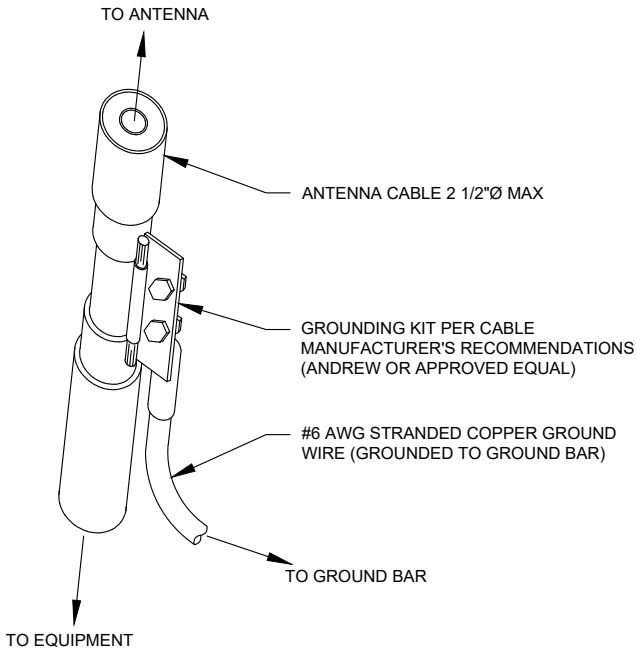
- THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
- SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

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

ELECTRICAL NOTES:

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
- ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
- FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

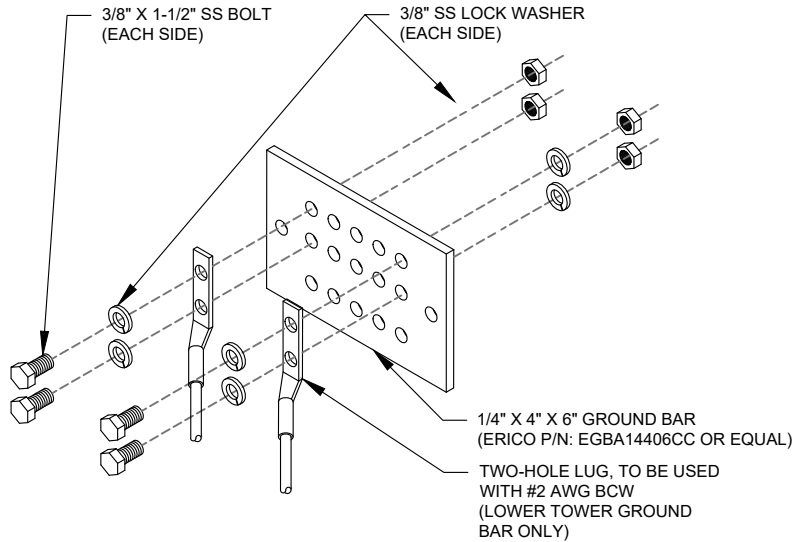
OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"



GROUND KIT NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL  
SCALE: N.T.S.



GROUND BAR NOTES:

- GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
- GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL  
SCALE: N.T.S.



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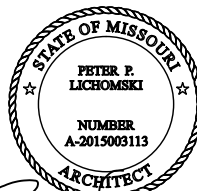
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*Peter P. Lichomski*

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T-Mobile

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GROUNDING DETAILS

SHEET NUMBER:

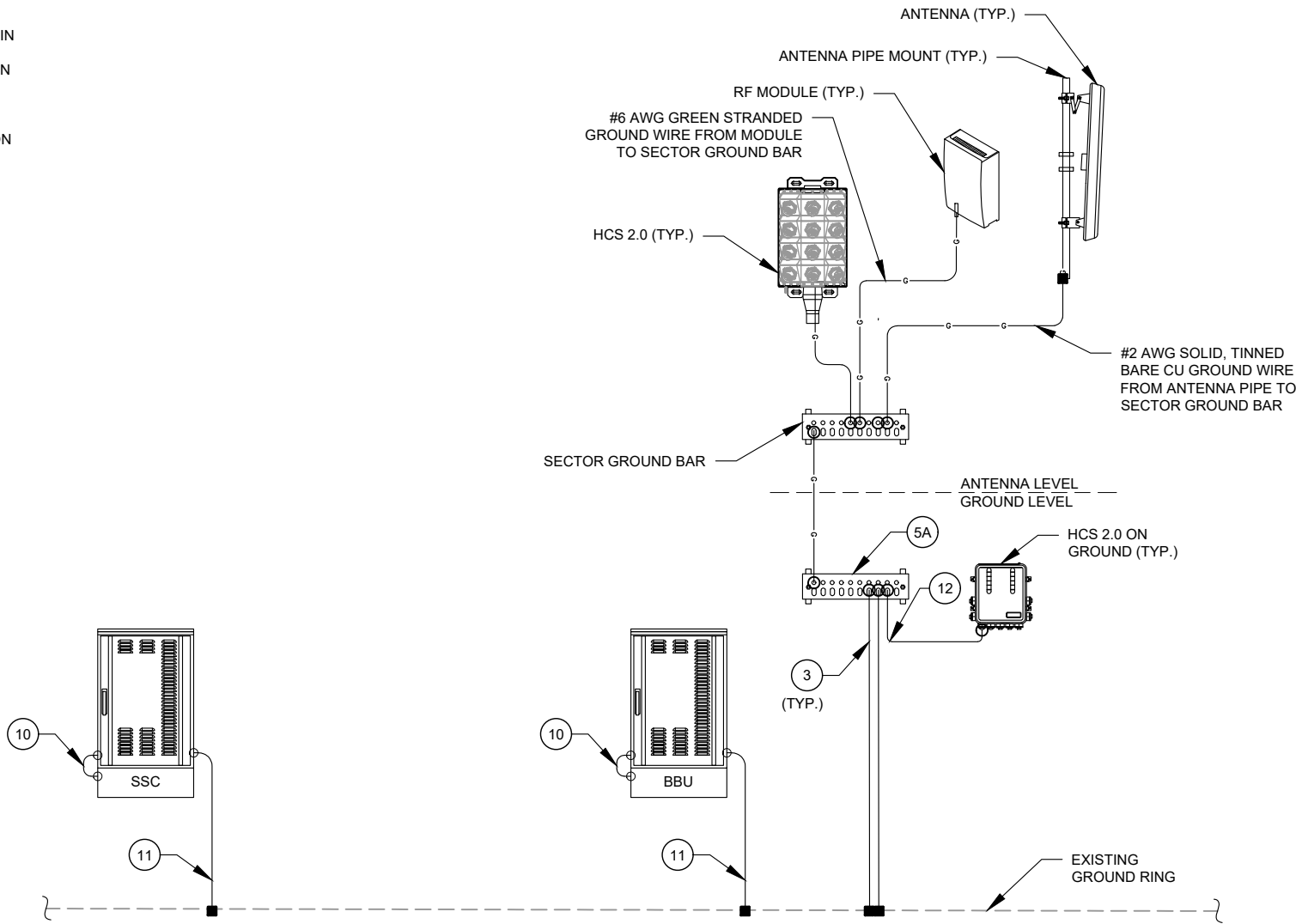
E-501

REVISION:

0

NOTE:

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



1 EQUIPMENT POWER, TELCO AND GROUNDING DIAGRAM  
SCALE: N.T.S.

KEY NOTES:

- |    |   |    |   |
|----|---|----|---|
| 1  | #2 SOLID, TINNED BARE COPPER GROUND WIRE FROM ICE BRIDGE TO ICE BRIDGE POST.                              | 10 | #6 AWG GREEN STRANDED GROUND CU WIRE FROM SSC TO SSC PLINTH                                 |
| 2  | #2 SOLID, TINNED BARE COPPER GROUND WIRE, BOND ICE BRIDGE POST W/ VS TYPE CADWELD. (1 PER POST REQUIRED). | 11 | #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM SSC TO GROUND RING                             |
| 3  | #2 SOLID, TINNED BARE COPPER GROUND WIRE FROM GROUND BAR TO GROUND RING (2 REQUIRED).                     | 12 | #2 AWG GREEN STRANDED CU GROUND WIRE FROM NEW COVP TO GROUND BAR                            |
| 4  | #2 SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW POST TO EXISTING GROUND RING                            | 13 | #2 AWG GREEN STRANDED CU GROUND WIRE FROM NEW ALARM BOX TO GROUND BAR                       |
| 5  | NEW GROUND BAR  | 14 | #6 AWG GREEN STRANDED CU GROUND WIRE FROM NEW HYBRID CABLE TO GROUND BAR                    |
| 5A | EXISTING GROUND BAR   | 15 | #2 AWG GREEN STRANDED GROUND WIRE FROM NEW RF MODULE TO GROUND BAR                          |
| 6  | #6 AWG GREEN STRANDED GROUND CU WIRE FROM NEW MODULES TO PLINTH   | 16 | #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW GROUND BAR TO EXISTING GROUND RING/ROD    |
| 7  | #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM STEEL CUBE W/ MODULES TO GROUND RING                         | 17 | #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM FCOA CABINET TO EXISTING GROUND RING/BAR      |
| 7A | #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM MODULES PLINTH TO GROUND RING                                | 18 | #6 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW DIPLEXER/TRIPLEXER TO EXISTING GROUND BAR |
| 8  | #6 AWG GREEN STRANDED GROUND CU WIRE FROM MODULES TO PLINTH   | 19 | #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM BATTERY CABINET TO GROUND RING                 |
| 9  | #2 AWG SOLID TINNED BARE GROUND CU WIRE FROM MODULE'S PLINTH TO GROUND RING                               |    |   |

GROUNDING PLAN LEGEND:

- EXISTING GROUND WIRE  
— G — GROUND WIRE  
■ EXOTHERMIC WELD  
○ MECHANICAL WELD  
[000000000000] GROUND BAR

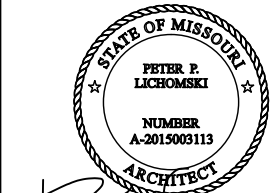


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LEES SIMMIT, MISSOURI 64081-1905

SEAL:



CONSISTENT WITH APPLICABLE LICENSING LAWS THIS SEAL CERTIFIES THAT THE ARCHITECTURAL DESIGN WORK WAS PREPARED EITHER PERSONALLY BY ME OR UNDER MY IMMEDIATE AND DIRECT SUPERVISION AND CONTROL.

**T-Mobile**

DATE DRAWN:	03/24/2022
ATC JOB NO:	13958500
CUSTOMER #:	A5C0676A

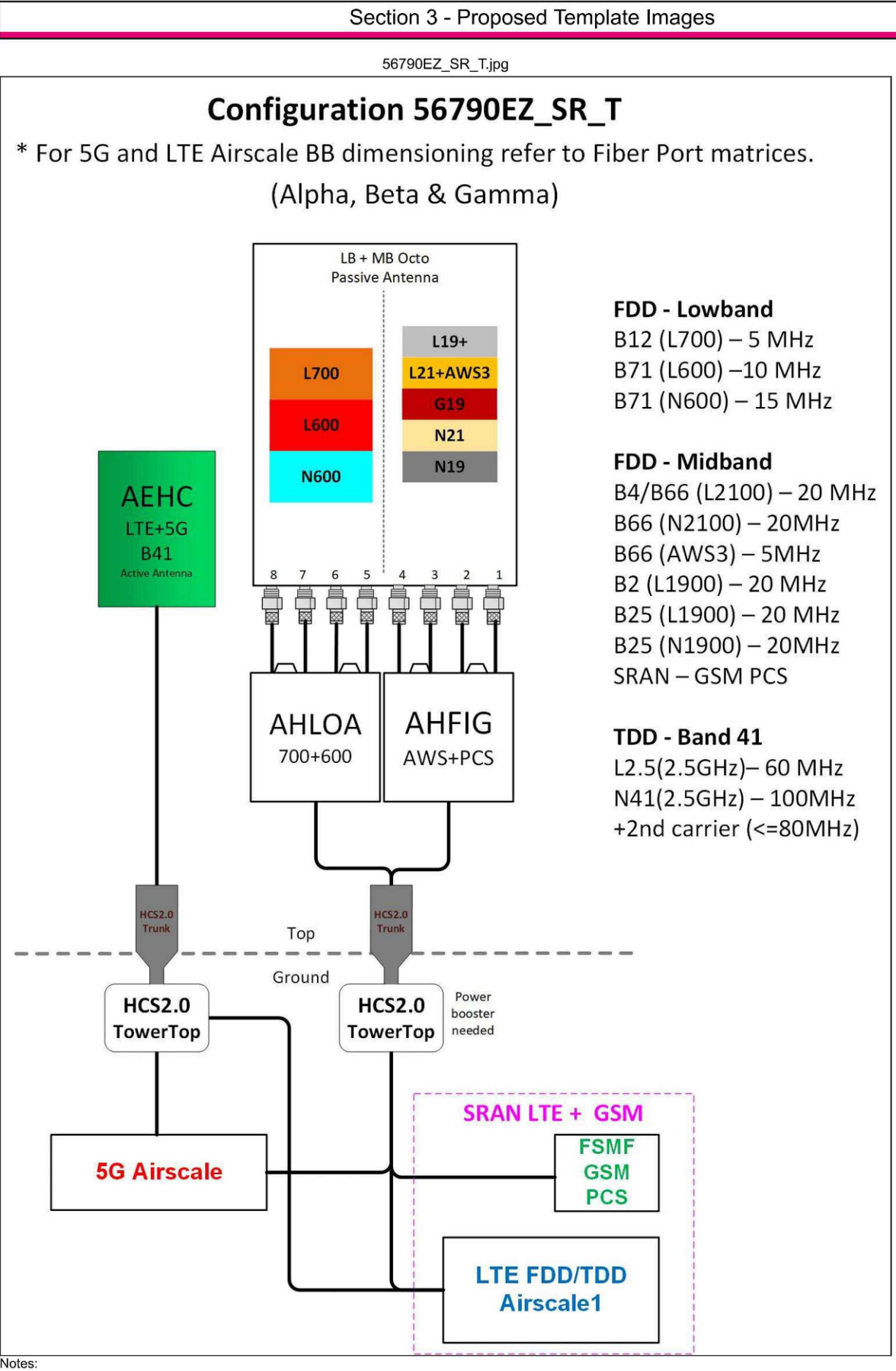
**ELECTRICAL ONE-LINE  
DIAGRAM**

SHEET NUMBER:	REVISION:
<b>E-601</b>	<b>0</b>



Proposed RAN Equipment				
Template: 56790EZ_SR_T				
Enclosure	1	2	3	4
Enclosure Type	Delta HPL3 600A DC plant	Tower Top Mount (Nokia)	Ancillary Equipment (Nokia)	Delta LB3 Battery Cabinet (4 strings)
Baseband	ASIB L700 L600 L2100 L1900 LAWS3 ASIB L2500 ASIL N2500 N600 N2100 N1900 FSMF G1900			
Baseband Submodule	ABIA (x 2) L2100 L1900 LAWS3 ABIO N600 N2100 N1900 ABIA L700 L600 ABIC (x 3) L2500 ABIO N2500			
Baseband Subrack	AMIA (x 2)			
Hybrid Cable System	Voltage Booster needed if hybrid under 250' Extra Booster Amplifier needed if hybrid under 250'		Nokia HCS 2.0 Trunk *Select Length* (x 2)	
Junction Box			Nokia HCS 2.0 Tower Junction Box (x 2)	
Power subsystem	Rectifier Shelf *Select size* Breakers *Select size*			Batteries *Select size*
Radio		AHLOA (x 3) L700 L600 N600 AHFIG (x 3) L2100 L1900 G1900 LAWS3 N2100 N1900		
Transport System	CSR IXRe V2 (Gen2)			
RAN Scope of Work:				
Sprint Consolidation - N2500, L2500, N600, L600, L700, LAWS3, N2100, L2100, N1900, L1900, & GSM				
Install (3) AEHC Install (3) AHLOA Install (3) AHFIG Install (3) Commscope - FFVV-65C-R3-V1 Antennas				
Install (2) HCS 2.0 Hybrid Trunk Cables with Breakout Feature Install (2) HCS 2.0 Junction Boxes at the BTS. Raycap RTMDC-5634-PF-48				
(3) ABIAs ***** A5C0133A & KC25XC198 are being Consolidated				

1 CABINET CONFIGURATION  
SCALE: NOT TO SCALE



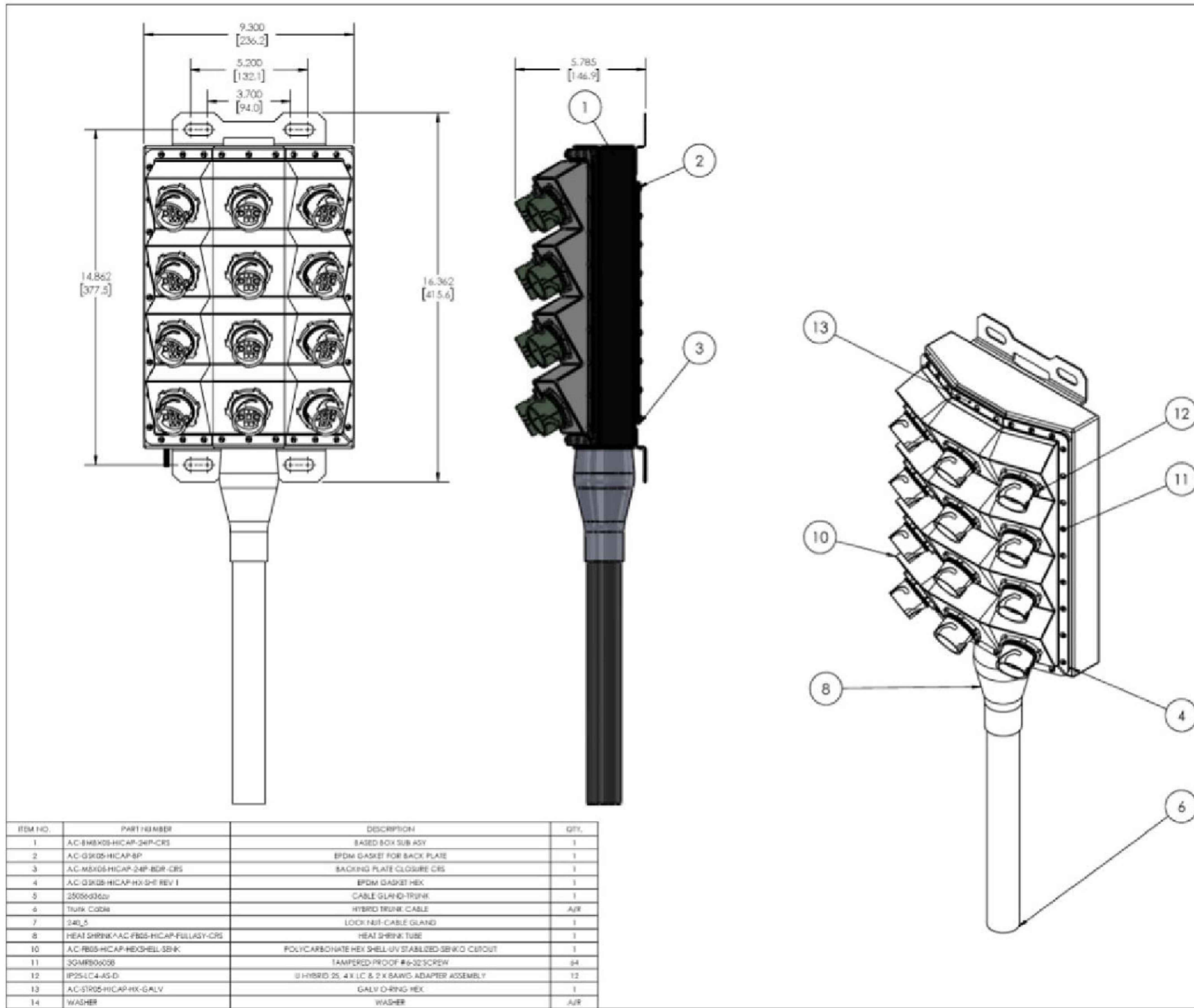
2 ANTENNA CONFIGURATION  
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:  
R-601

REVISION:  
0



HICAP HYBRID BREAKOUT CRS BOX  
(FULL ASSEMBLY)

CUSTOMER APPROVAL


NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

1	RELEASED FOR PRODUCTION	20180530
REV.	DESCRIPTION	DATE

REVISIONS



ALLIANCE CORPORATION  
THE POWER OF BEING CONNECTED.

SIGNATURE CYCLE		DATE
DRAWN:	MLE	20180525
CHECKED:	DOB	20180529
APPROVED:	DOB	20180530

DIM: ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.

DESCRIPTION:  
HICAP HYBRID BREAKOUT CRS BOX  
(FULL ASSEMBLY)

MATERIAL: CR STEEL A1008 CS

WEIGHT 8.76

FINISH: POWDER COATED

COLOUR: BLACK

SHEET NO: 1 OF 1

DWG NO:  
AC-FB05-HICAP-FULLASY-CRS

SCALE:

TOLERANCE:	X.X	± 0.020"
	X.XX	± 0.010"
	X.XXX	± 0.005"

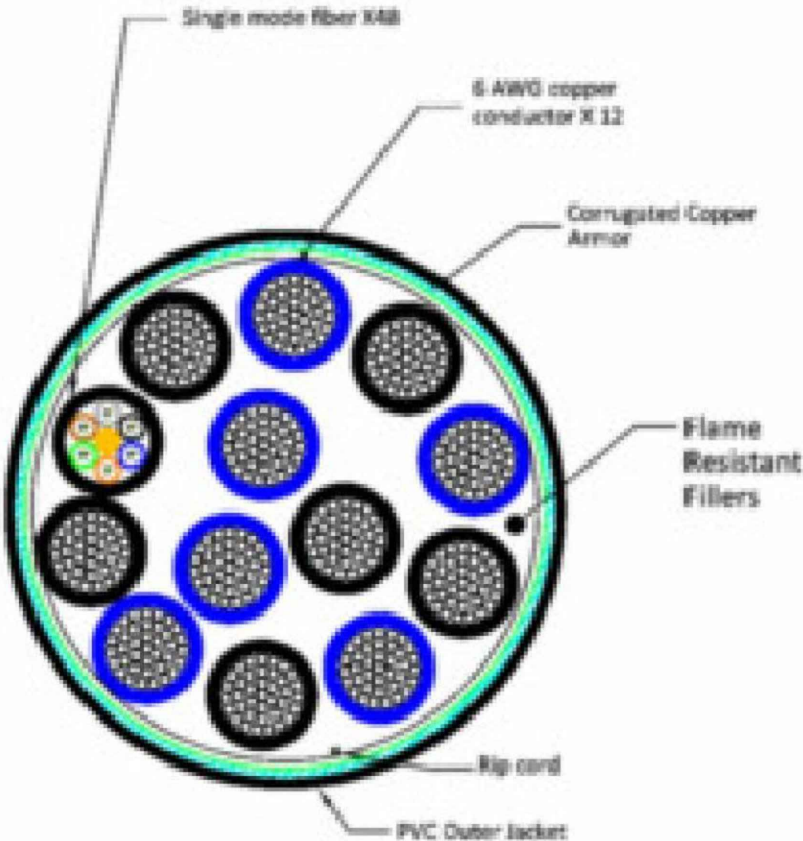
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SUPPLEMENTAL

SHEET NUMBER: <b>R-602</b>	REVISION: <b>0</b>
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MECHANICAL	JACKET COLOR	BLACK
	OUTER DIAMETER (IN)	1.46
	MIN BENDING RADIUS(IN), MULTIPLE BENDS, LOADED	29.2
	MIN BENDING RADIUS(IN), MULTIPLE BENDS, UNLOADED	14.6
	MIN BENDING RADIUS(IN), SINGLE BEND, UNLOADED	10.22
	MIN BENDING RADIUS(IN), FURCATION	1.2
	ARMOR	CORRUGATED COPPER
	WEIGHT(lb/kft)	1610
	COMPRESSION(lb/IN)	250
	TENSILE LOAD, LONG TERM(lbf)	180
ELECTRICAL	TENSILE LOAD, SHORT TERM(lbf)	600
	CONDUCTOR MATERIAL	COPPER
	CONDUCTOR CONSTRUCTION	STRAND
	CONDUCTOR COLOR	BLUE/BLACK
	RESISTIVITY(nΩ @20°C)	16.78 nohm-M
	CONDUCTORS, QTY	12
	CONDUCTOR SIZE(AWG)	6
	EMI SHIELD	YES
	UL RATING	UL TC-OF-ER
	FIBER TYPE	SINGLE MODE (G.657.A2)
OPTICAL	FIBERS, QTY	48
	ATTENUATION(dB/km), MAX, 1550/1285-1330 nm	0.5
	DISPERSION, MAX, 1550/1285-1330 nm	18 ps/3.5 ps
	RETURN LOSS(dB)	>50
	INSERTION LOSS(dB), POST ENVIRONMENTAL	REDUCTION < 0.65
	RETURN LOSS(dB), POST ENVIRONMENTAL	REDUCTION < 5
	CUTOFF WAVELENGTH(nm)	1260
	PIGTAIL TERMINATION	LC PAIR, STRAIGHT
	OPERATING TEMP(*F)	-40 TO +167
	STORAGE TEMP(*F)	-40 TO +167
ENVIRON	UV	IEC 60068-2-5
	THERMAL CYCLE	IEC 60068-2-14
	VIBRATION	IEC 60068-2-64
	IMPACT(ft lb)	4.4 NM PER ICEA696



NOTE: CABLE CROSS-SECTION NOT DRAWN TO SCALE

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SUPPLEMENTAL

SHEET NUMBER:

R-603

REVISION:

0



# SFG23-12-4-96



G23 High Capacity Sector Frame, 12.5 ft face, includes four 96 in pipes;  
For patents, see [www.cs-pat.com](http://www.cs-pat.com)

OBSOLETE

## Product Classification

**Product Type** High capacity Tower sector frame

## General Specifications

**Application** 4G LTE antenna/radio mount  
**Mounting** Angle 60°, 203.2 mm (8 in) | Straight or tapered legs up to 203.2 mm (8 in) OD  
**Patent Number** Patent pending  
**Pipe, quantity** 4  
**Tower Taper** Non-tapered | Tapered

## Dimensions

**Height** 2,438.4 mm | 96 in  
**Face Width** 3.81 m | 12.5 ft  
**Pipe Length** 2,438.4 mm | 96 in  
**Mounting Diameter, maximum** 218.44 mm | 8.6 in  
**Mounting Diameter, minimum** 38.1 mm | 1.5 in  
**Pipe Outer Diameter** 60.96 mm | 2.4 in  
**Stand-off Distance** 1,226.82 mm | 48.3 in

## Material Specifications

**Material Type** Hot dip galvanized steel

## Mechanical Specifications

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SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

0