



AT&T PACE NUMBER(s): MRKSL071270,MRKSL071377,MRKSL071558,MRKSL072913,MRKSL073771,MRKSL074119,MRKSL075821,MRKSL076228,MRKSL077009
AT&T IWM NUMBER(s): WSKSL0040816,WSKSL0040403,WSKSL0044133,WSKSL0042880,WSKSL0042168,WSKSL0039503,WSKSL0039772,WSKSL0043559,WSKSL0045732



ATC SITE NAME: WOODS CHAPEL
ATC SITE NUMBER: 306042
AT&T SITE ID: WSKSL0040816
AT&T FA CODE: 10000448
AT&T SITE NAME: WOODS CHAPEL
SITE ADDRESS: 1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064



BIRD WATCH SITE:
PLEASE CONTACT BIRD.WATCH@AMERICANTOWER.COM OR
AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE



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ATC SITE NUMBER:

306042

ATC SITE NAME:

WOODS CHAPEL

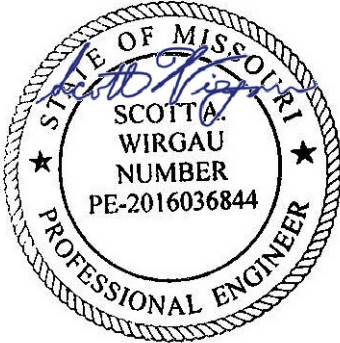
AT&T SITE NAME:

WOODS CHAPEL

SITE ADDRESS:

1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064

SEAL:



TITLE SHEET

SHEET NUMBER:

G-001

REVISION:

0



GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T "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 (PC)

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 AT&T 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 AT&T REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T 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 AT&T 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 AT&T 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 AT&T 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 AT&T 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 AT&T REP TO

- DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T 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 AT&T 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. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. 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.
31. 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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE 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.
32. 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 AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
33. 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.
34. AT&T FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T 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.
35. AT&T 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 AT&T OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION
ANTENNA INSTALLATION NOTES:

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

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND AT&T SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

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 GREEN 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)

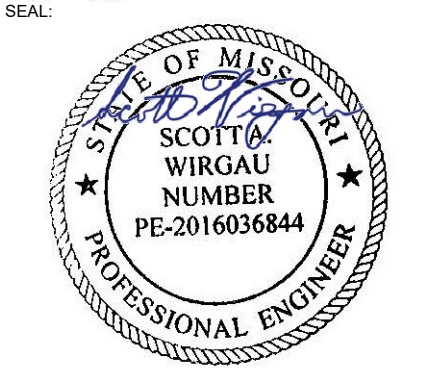
ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE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



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AP	10/01/24

ATC SITE NUMBER:
306042
ATC SITE NAME:
WOODS CHAPEL
AT&T SITE NAME:
WOODS CHAPEL
SITE ADDRESS:
1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064



Digitally Signed: 2024-10-01



ATC PROJ. #:	14863347_G0
CUST. ID:	WSKSL0040816
CUST. #:	10000448

GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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SITE PLAN NOTES:

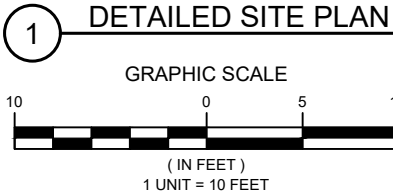
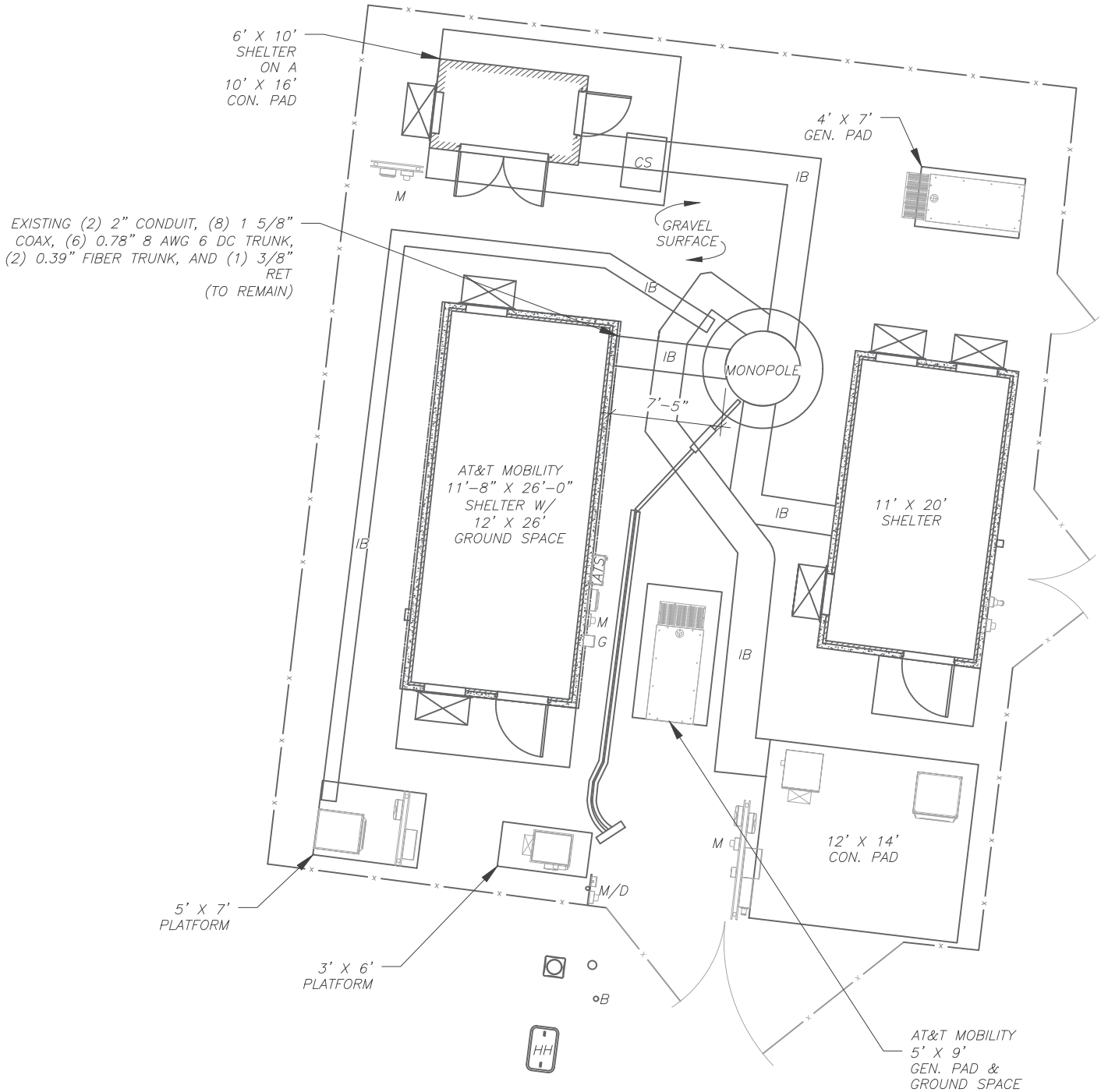
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE 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.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE AT&T 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.

GROUND SOW NOTES:

1. RETAIN (1) VERTIV STD -48VDC NETSURE 7100 PLANT 1000A
2. INSTALL (1) NEQ.53008 24 TO 58 RETRO FIT
3. RETAIN (10) VERTIV R48-2000E3 RECTIFIERS
4. INSTALL (7) VERTIV C48/58-1500P3 CONVERTERS
5. RETAIN (8) SBS190F BATTERIES
6. EXISTING (3) 200A BATTERY BREAKERS
7. BATTERY INSTALLATION DATE: 03/22/2022
8. REMOVE (1) DISTRIBUTION BOX
9. INSTALL (2) 6651S
10. INSTALL (1) 6601
11. INSTALL (1) 6610
12. INSTALL (1) XMU
13. INSTALL BREAKERS AS NEEDED PER ATT-CEM-18002

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
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



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2015011232

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AP	10/01/24

ATC SITE NUMBER:
306042

ATC SITE NAME:

WOODS CHAPEL

AT&T SITE NAME:

WOODS CHAPEL

SITE ADDRESS:
1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064

SEAL:



Digitally Signed: 2024-10-01



ATC PROJ. #: 14863347_G0
CUST. ID: WSKSL0040816
CUST. #: 10000448

DETAILED SITE PLAN

SHEET NUMBER:

C-101

REVISION:

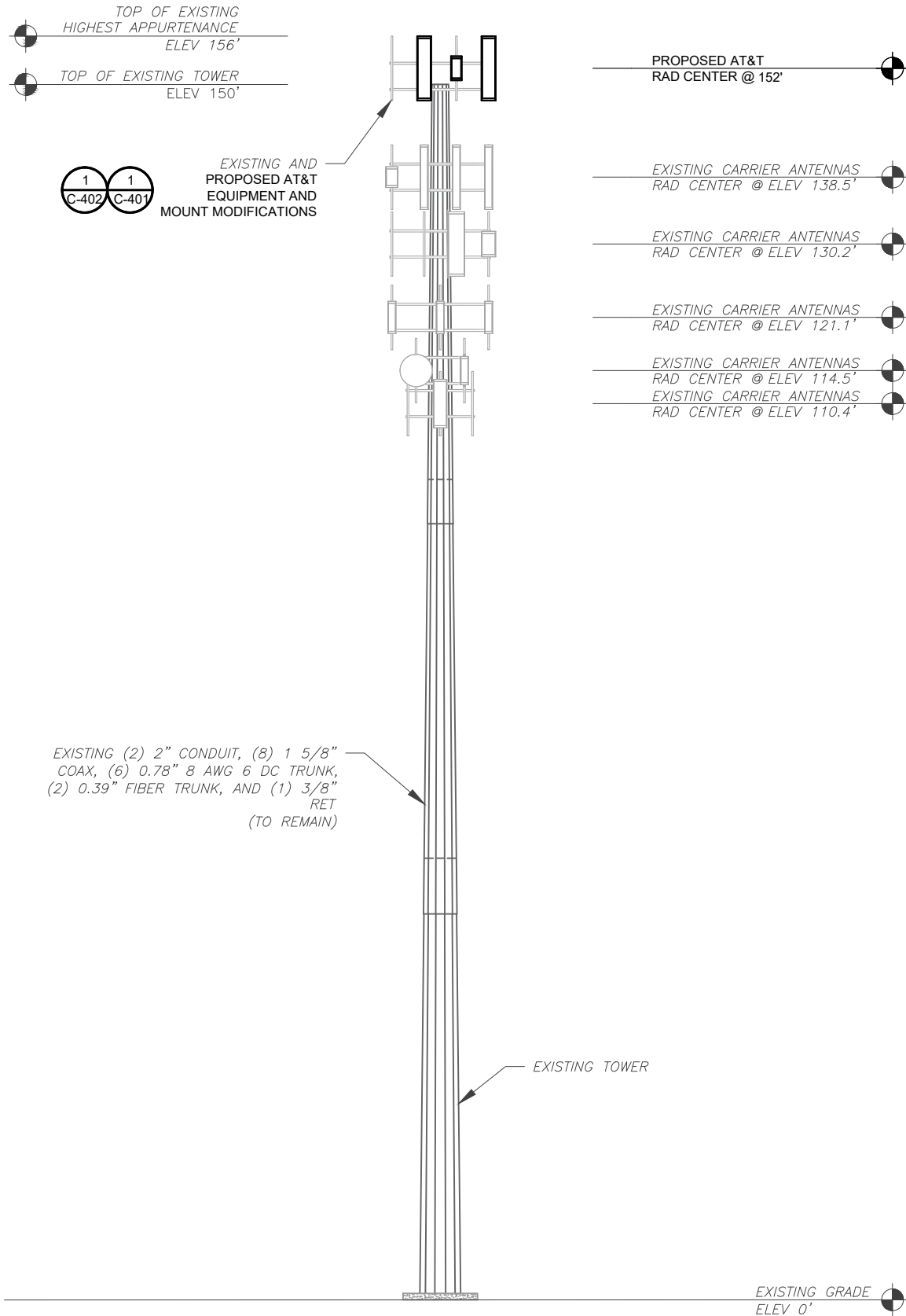
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EXISTING
(4) TPA65R-BU8D ANTENNAS
(TO REMAIN)

EXISTING
(3) AEQK ANTENNAS
(3) JAH4-65C-R4 ANTENNAS
(2) TPA65R-BU8D ANTENNAS
(3) RRH4X25-WCS RRUS
(3) AHLBBA RRUS
(3) AHFIB RRUS
(3) AHCA RRUS
(3) TT08-19DB111-001 TTAS
(TO BE REMOVED)

EXISTING
(1) DC6-48-60-18-8C SQUID
(1) DC6-48-60-18-8F SQUID
(1) DC6-48-60-0-8C SQUID
(TO BE RELOCATED)

PROPOSED
(3) AIR 6472 B77G B77M ANTENNAS
(2) TPA65R-BU8Dv2 ANTENNAS
(3) RADIO 4494 44B14 20B29 M01 RRUS
(3) RADIO 4471 B30 RRUS
(3) RRUS 4490 RRUS
(3) RRUS 4890 RRUS



1 TOWER ELEVATION

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 09/10/24, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



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ATC SITE NUMBER:

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ATC SITE NAME:

WOODS CHAPEL

AT&T SITE NAME:

WOODS CHAPEL

SITE ADDRESS:

1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064

SEAL:



Digitally Signed: 2024-10-01



ATC PROJ. #: 14863347_GO

CUST. ID: WSKSL0040816

CUST. #: 10000448

TOWER ELEVATION

SHEET NUMBER:

C-201

REVISION:

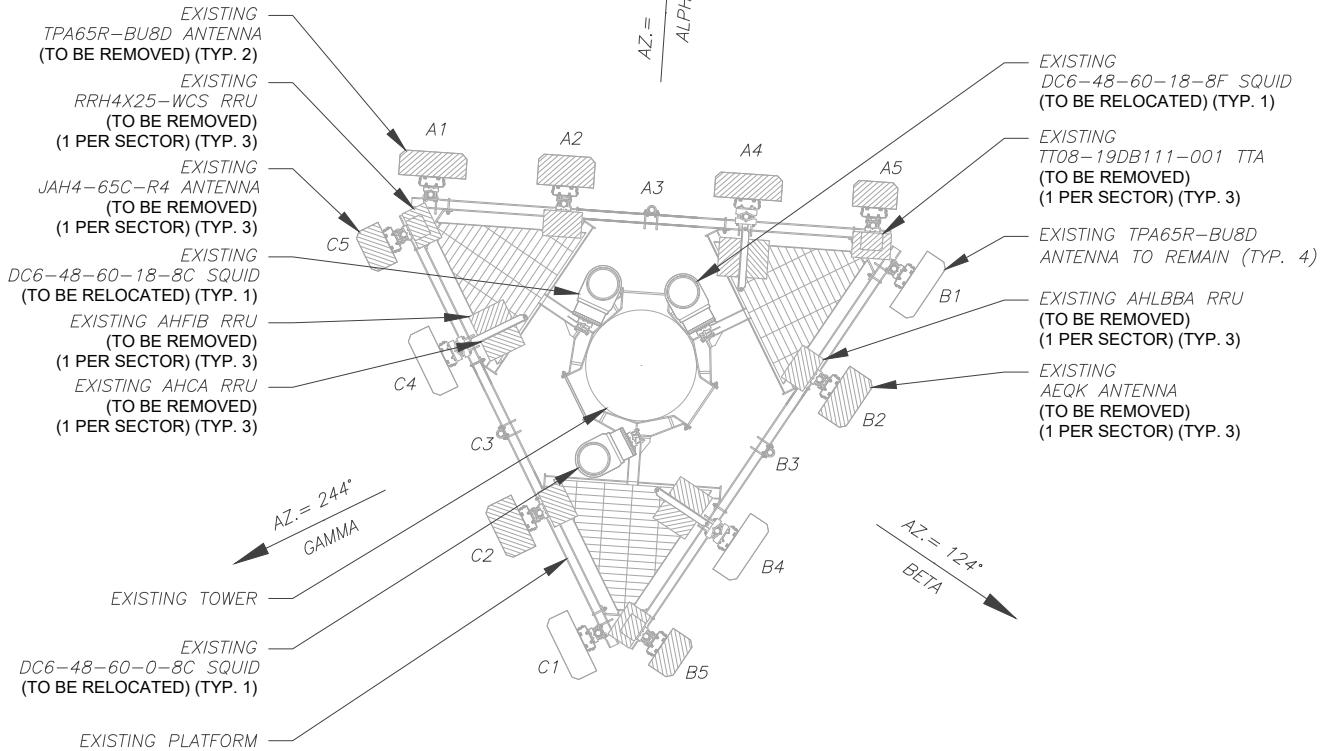
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ALL ELEVATIONS REFLECT ABOVE GROUND LEVEL (A.G.L.)

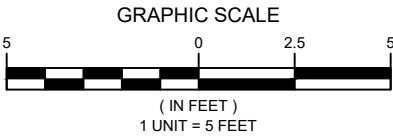
TOWER NOTE:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT 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.
- WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
- TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

EXISTING CONFIGURATIONS ARE BASED ON RFDS.
CONTRACTOR TO VERIFY EXISTING CONDITIONS.



1 CURRENT ANTENNA PLAN



STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

2 EQUIPMENT SCHEDULE

EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	149'	4°	A1	TPA65R-BU8D	-	RMV	-	-
			A2	AEQK	-	RMV	AHLBBA RRU	RMV
			A3	-	-	-	-	-
			A4	TPA65R-BU8D	-	RMV	AHCA RRU AHFIB RRU	RMV RMV
			A5	JAH4-65C-R4	-	RMV	RRH4X25-WCS RRU TT08-19DB111-001 TTA	RMV RMV
BETA	149'	124°	B1	TPA65R-BU8D	-	RMN	-	-
			B2	AEQK	-	RMV	AHLBBA RRU	RMV
			B3	-	-	-	-	-
			B4	TPA65R-BU8D	-	RMN	AHCA RRU AHFIB RRU	RMV RMV
			B5	JAH4-65C-R4	-	RMV	RRH4X25-WCS RRU TT08-19DB111-001 TTA	RMV RMV
GAMMA	149'	244°	C1	TPA65R-BU8D	-	RMN	-	-
			C2	AEQK	-	RMV	AHLBBA RRU	RMV
			C3	-	-	-	-	-
			C4	TPA65R-BU8D	-	RMN	AHCA RRU AHFIB RRU	RMV RMV
			C5	JAH4-65C-R4	-	RMV	RRH4X25-WCS RRU TT08-19DB111-001 TTA	RMV RMV

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PROPRIETARY OR TRADE SECRET
INFORMATION EXEMPT FROM
DISCLOSURE UNDER APPLICABLE LAW.

EXISTING SQUID SUMMARY	
MODEL NUMBER	STATUS
DC6-48-60-18-8C	REL
DC6-48-60-18-8F	REL
DC6-48-60-0-8C	REL

EXISTING CABLING SUMMARY	
CABLE QTY, SIZE, TYPE	STATUS
(2) 2" CONDUIT, (8) 1 5/8" COAX, (6) 0.78" 8 AWG 6 DC TRUNK, (2) 0.39" FIBER TRUNK, AND (1) 3/8" RET	RMN
-	-



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PHONE: (919) 468-0112
20150112332

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0	FOR CONSTRUCTION	AP	10/01/24

ATC SITE NUMBER:
306042
ATC SITE NAME:
WOODS CHAPEL
AT&T SITE NAME:
WOODS CHAPEL
SITE ADDRESS:
1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064



Digitally Signed: 2024-10-01



ATC PROJ. #:	14863347_GO
CUST. ID:	WSKSL0040816
CUST. #:	10000448

ANTENNA PLAN AND
SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 09/10/24, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.





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ATC TOWER SERVICES LLC
1 FENTON MAIN
SUITE 300
CARY, NC 27511
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2015011232

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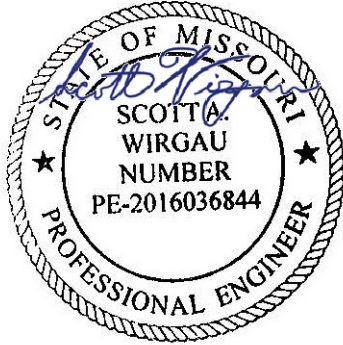
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306042
ATC SITE NAME:

WOODS CHAPEL

AT&T SITE NAME:
WOODS CHAPEL

SITE ADDRESS:
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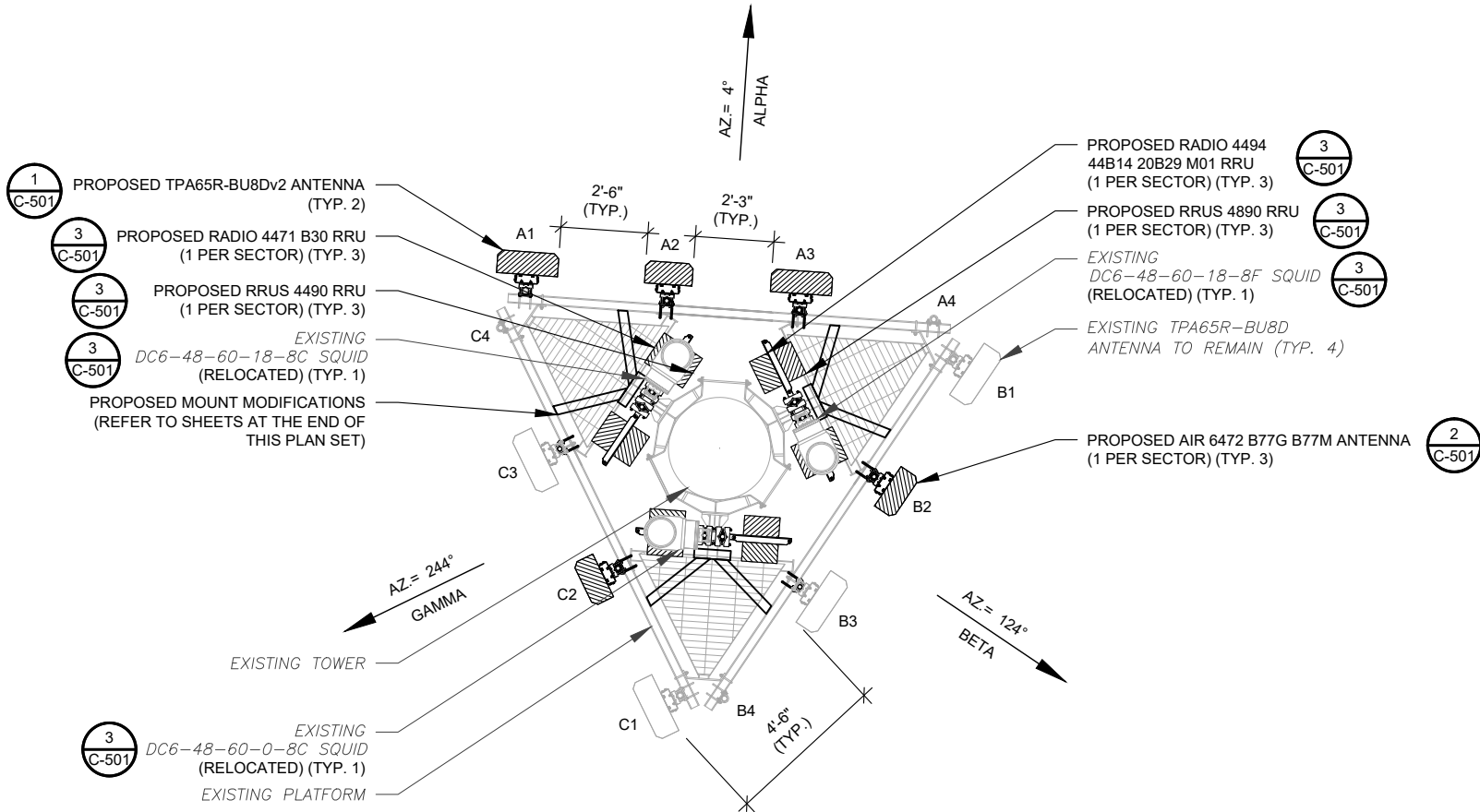
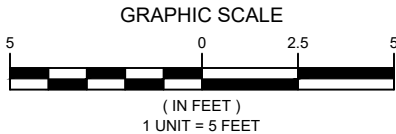


ATC PROJ. #: 14863347_G0
CUST. ID: WSKSL0040816
CUST. #: 10000448

ANTENNA PLAN AND SCHEDULE

SHEET NUMBER:
C-402
REVISION:
0

1 FINAL ANTENNA PLAN



PROPOSED RRUs MUST BE INSTALLED A MINIMUM OF 12" AWAY FROM ALL ANTENNAS

UNLESS NOTED OTHERWISE, MOUNT FACE AZIMUTHS MATCH ANTENNA AZIMUTHS.

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

THIS PAGE CONTAINS CONFIDENTIAL, PROPRIETARY OR TRADE SECRET INFORMATION EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW.

NOTES

- GC TO VERIFY THE FINAL RFDS MATCHES THE FINAL CONSTRUCTION DRAWINGS. GC TO NOTIFY ATC PM OF ANY DISCREPANCY PRIOR TO INSTALLING THE EQUIPMENT.
- GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
- THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES.
- CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH AT&T'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

2 EQUIPMENT SCHEDULE

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY			
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	RRU VOLTAGE	DC TRUNK SIZE	STATUS
ALPHA	152'	4°	A1	TPA65R-BU8DV2	LTE 700/850/2300	ADD	RADIO 4471 B30 RRU	-48V	8 AWG	ADD
			A2	AIR 6472 B77G B77M	5G CBAND/DOD	ADD	RRUS 4490 RRU	-58V	8 AWG	ADD
			A3	TPA65R-BU8DV2	LTE 700/1900/2100	ADD	RADIO 4494 44B14 20B29 M01 RRU	-48V	8 AWG	ADD
			A4	-	-	-	RRUS 4890 RRU	-58V	8 AWG	ADD
BETA	152'	124°	B1	TPA65R-BU8D	LTE 700/850/2300	RMN	RADIO 4471 B30 RRU	-48V	8 AWG	ADD
			B2	AIR 6472 B77G B77M	5G CBAND/DOD	ADD	RRUS 4490 RRU	-58V	8 AWG	ADD
			B3	TPA65R-BU8D	LTE 700/1900/2100	RMN	RADIO 4494 44B14 20B29 M01 RRU	-48V	8 AWG	ADD
			B4	-	-	-	RRUS 4890 RRU	-58V	8 AWG	ADD
GAMMA	152'	244°	C1	TPA65R-BU8D	LTE 700/850/2300	RMN	RADIO 4471 B30 RRU	-48V	8 AWG	ADD
			C2	AIR 6472 B77G B77M	5G CBAND/DOD	ADD	RRUS 4490 RRU	-58V	8 AWG	ADD
			C3	TPA65R-BU8D	LTE 700/1900/2100	RMN	RADIO 4494 44B14 20B29 M01 RRU	-48V	8 AWG	ADD
			C4	-	-	-	RRUS 4890 RRU	-58V	8 AWG	ADD

FINAL SQUID SUMMARY

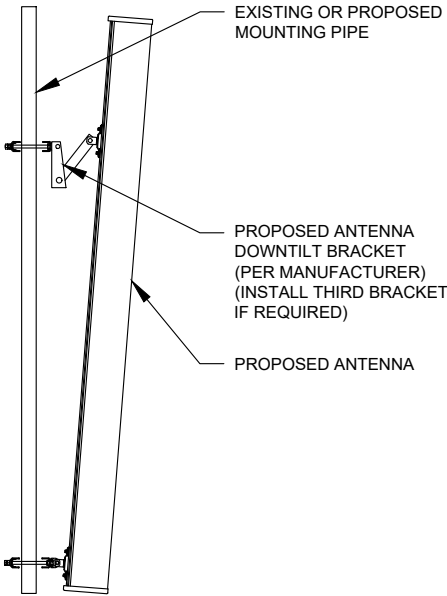
MODEL NUMBER	STATUS
DC6-48-60-18-8C	REL
DC6-48-60-18-8F	REL
DC6-48-60-0-8C	REL

FINAL CABLING SUMMARY

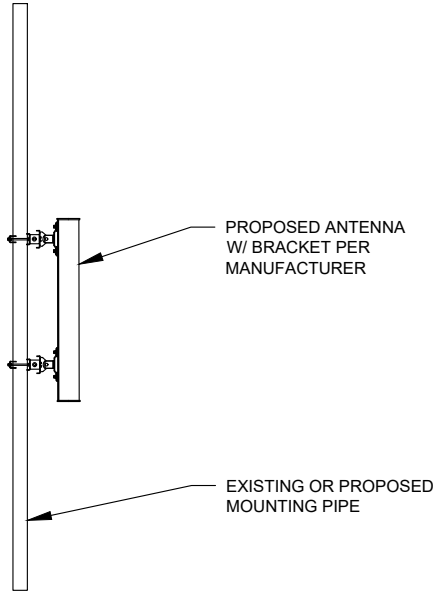
CABLE QTY, SIZE, TYPE	STATUS
(2) 2" CONDUIT, (8) 1 5/8" COAX, (6) 0.78" 8 AWG 6 DC TRUNK, (2) 0.39" FIBER TRUNK, AND (1) 3/8" RET	RMN
-	-

EXISTING/PROPOSED MOUNTS AND/OR MOUNT MODIFICATIONS NOT SHOWN FOR CLARITY. REFER TO ANTENNA PLANS, MOUNT ANALYSES AND/OR MOUNT MODIFICATION DOCUMENTS FOR ADDITIONAL DETAIL.

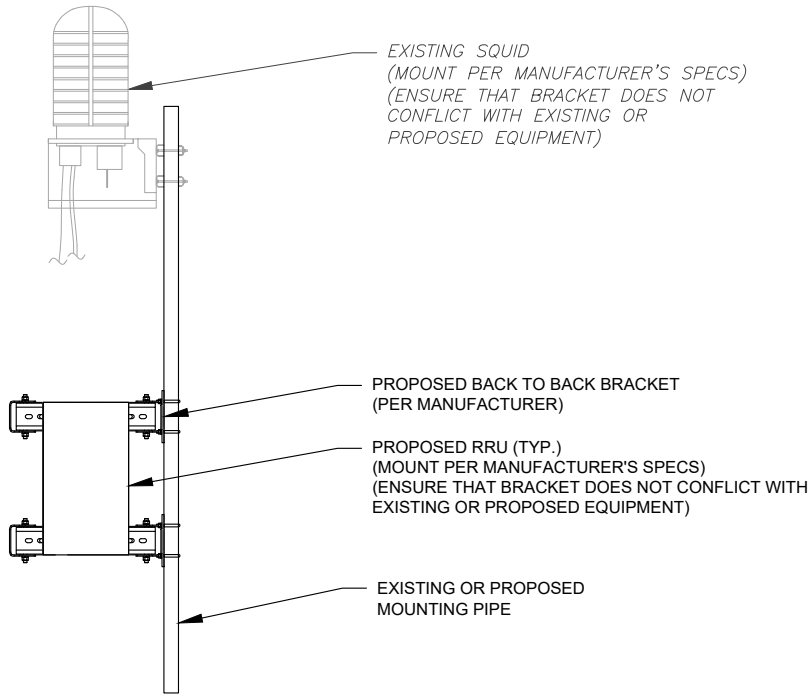
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1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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



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

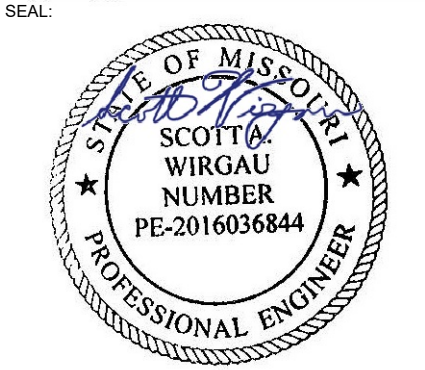


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ATC SITE NUMBER:
306042
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WOODS CHAPEL
AT&T SITE NAME:
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SITE ADDRESS:
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LEES SUMMIT, MO 64064



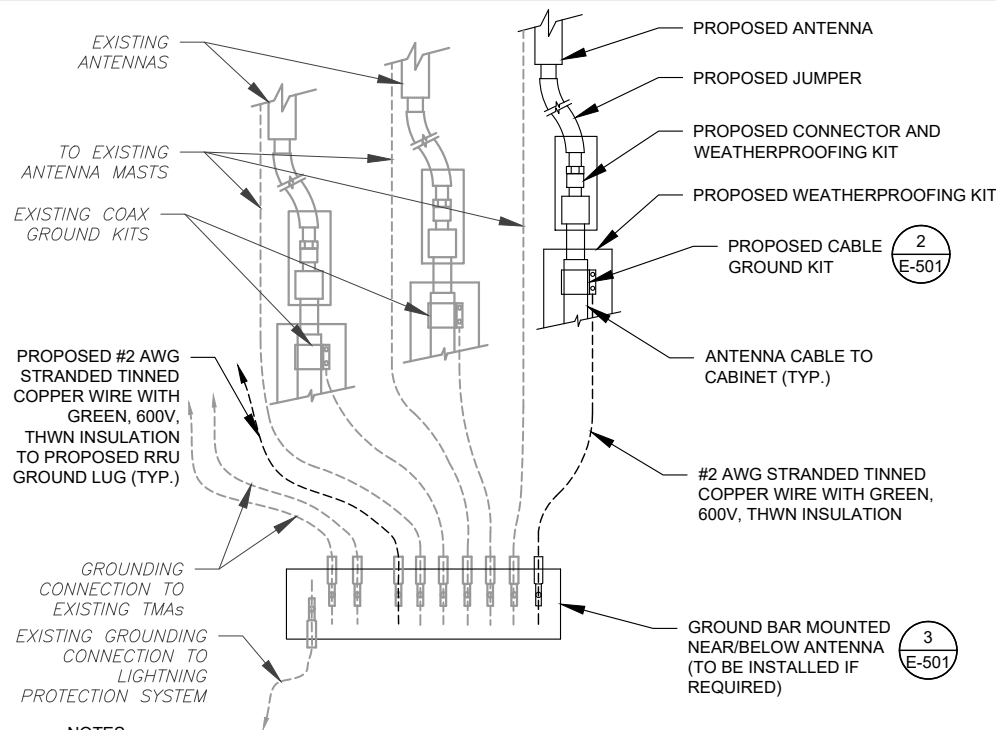
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ATC PROJ. #:	14863347_G0
CUST. ID:	WSKSL0040816
CUST. #:	10000448

CONSTRUCTION
DETAILS

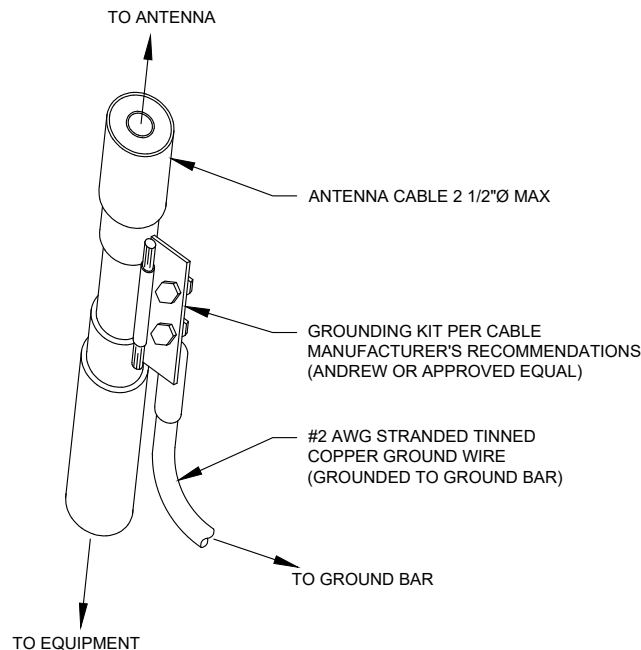
SHEET NUMBER:	REVISION:
C-501	0



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 AT&T GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

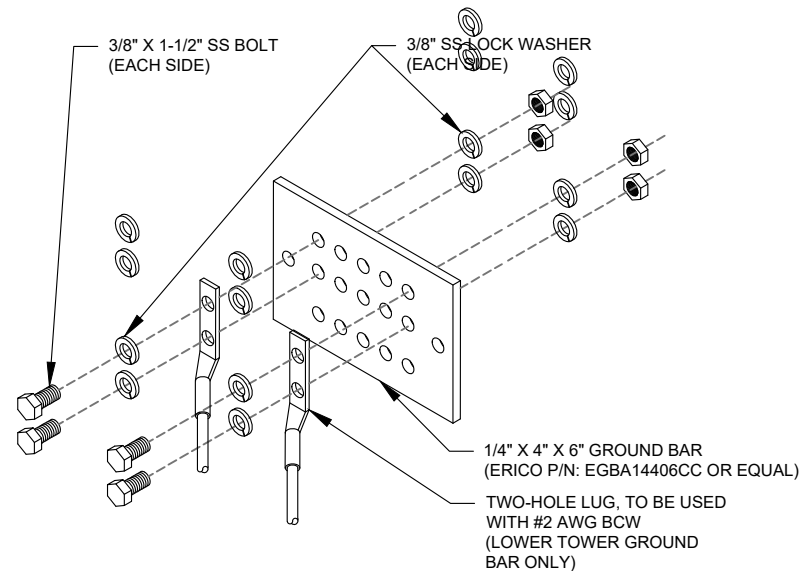
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



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.

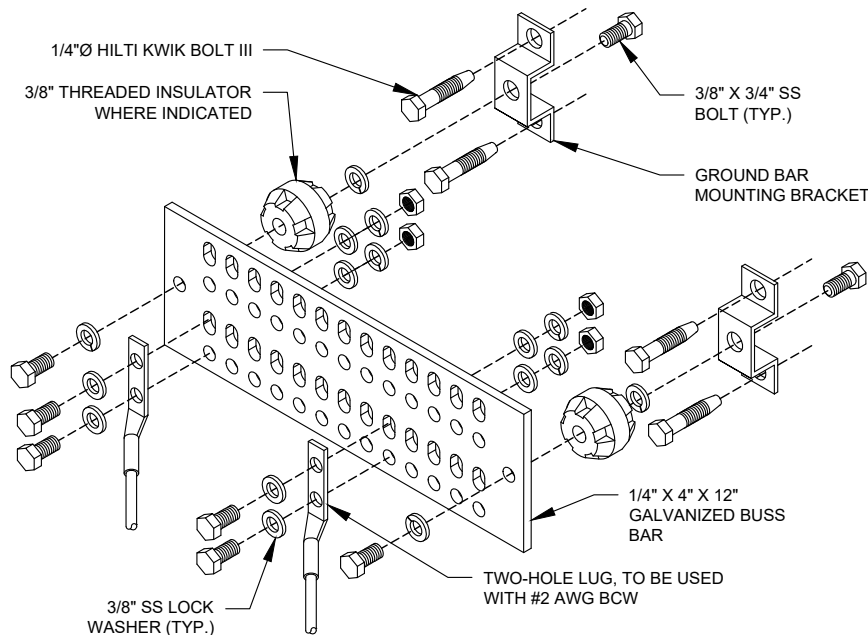
2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



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.

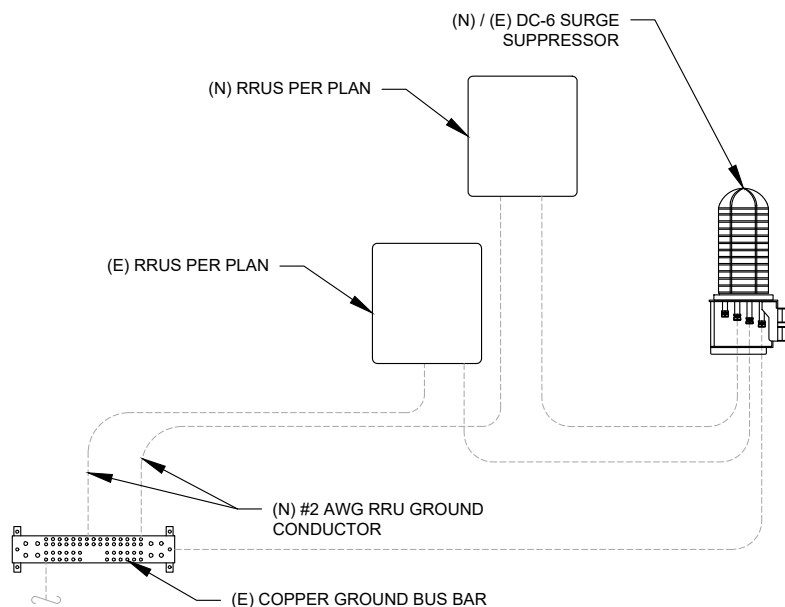
3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.



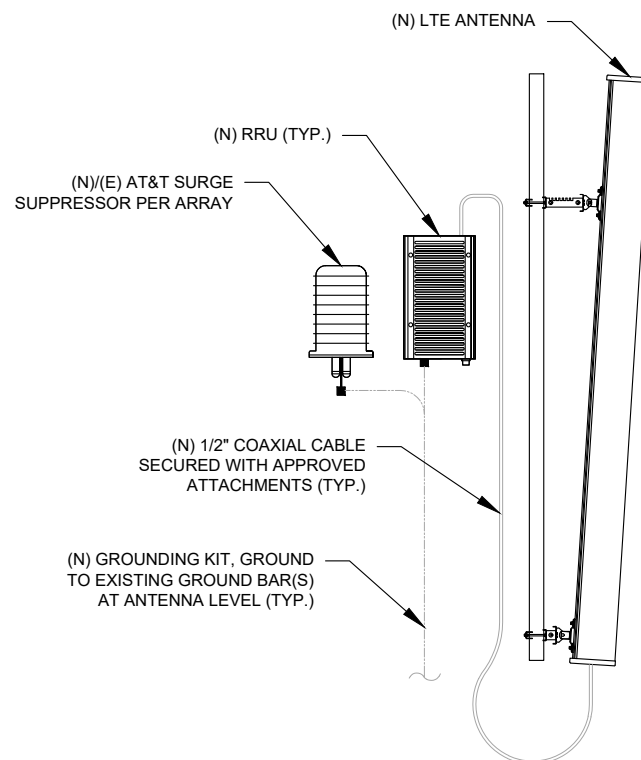
GROUND BAR NOTES

- GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
- GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

4 MAIN GROUND BAR DETAIL
SCALE: N.T.S.



5 RRU GROUNDING
SCALE: N.T.S.



6 ANTENNA/RRU GROUNDING
SCALE: N.T.S.

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ATC SITE NUMBER:

306042

ATC SITE NAME:

WOODS CHAPEL

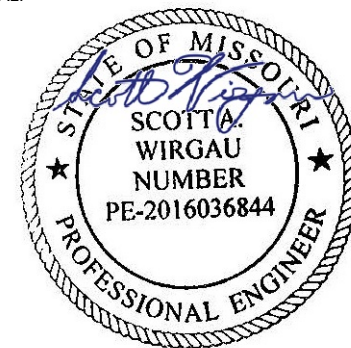
AT&T SITE NAME:

WOODS CHAPEL

SITE ADDRESS:

1204 N.E. WOODS CHAPEL RD
LEES SUMMIT, MO 64064

SEAL:



Digitally Signed: 2024-10-01



ATC PROJ. #: 14863347_GO

CUST. ID: WSKSL0040816

CUST. #: 10000448

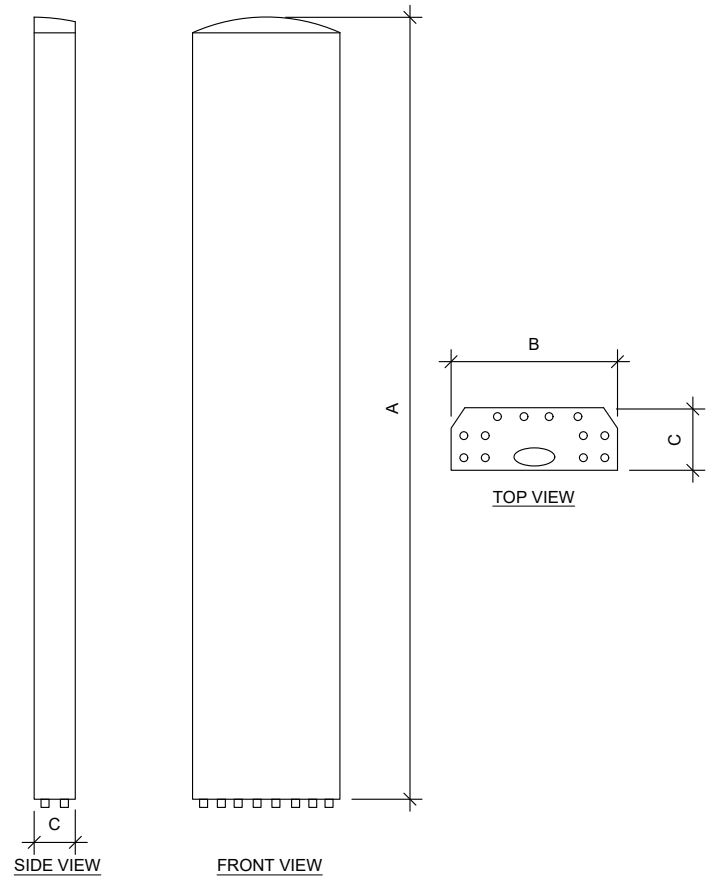
GROUNDING DETAILS

SHEET NUMBER:

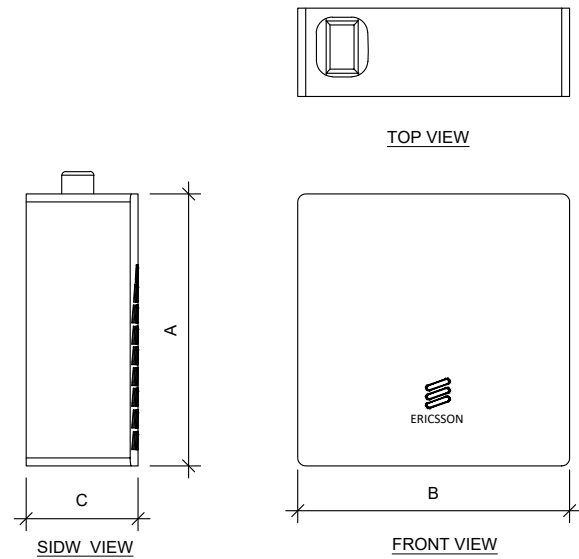
E-501

REVISION:

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ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
TPA65R-BU8Dv2	96.0"	20.7"	7.7"	88.0
AIR 6472 B77G B77M	36.4"	16.1"	7.5"	92.6



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4494 44B14 20B29 M01 RRU	17.5"	15.1"	5.6"	57.3
RADIO 4471 B30 RRU	14.2"	10.3"	5.1"	28.7
RRUS 4490 RRU	20.6"	15.7"	7.0"	68.4
RRUS 4890 RRU	20.6"	15.7"	7.2"	69.5

7. Antenna Separation Guidelines (Our Own Antennas)

7.1 MIMO or 4T4R Antenna Separation (excluding 700 MHz B/C or D/E or B14-FirstNet antennas)

For MIMO (Multiple-Input Multiple-Output), the relationship between antenna correlation and performance is more complicated due to different MIMO operation modes. Depending SNR, several operation modes will be implemented in MIMO: transmit diversity-based space frequency block coding (SFBC), rank-based spatial multiplexing and beamforming. A cross-polarization antenna with single antenna array can support 2x2 MIMO or 2T2R. There are two options to support 4T4R operation: using an antenna with two antenna arrays or use two single-array antennas.

- There are two architectures for antennas with two same band arrays:
 - horizontal side-by-side arrays architecture, the antenna may be wider if it consists of two LO arrays.
 - vertical stacking arrays architecture, the trade-off is the gain reduction due to limited antenna elements can be implemented.
- When use two single-array antennas to support 4T4R operation, the horizontal spacing between two antennas can be any distance and no need to be very close to each other. The antennas can be installed at the standard positions. Several antenna vendors also offer dual-antenna bracket option, it is noted that the total weight (two antennas plus bracket) can be more than 200 lbs and possible wind load impact if the antennas are too close.

It is noted that 4T4R operation the same azimuth and tilting for both antennas/arrays must be maintained. Those antennas/arrays may be controlled by different actuators.

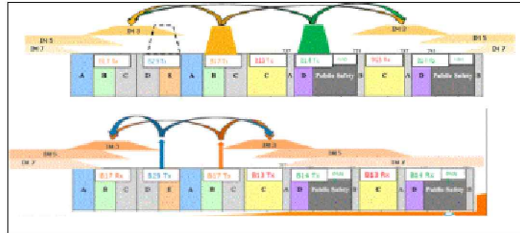
7.2 Integrated Antenna Separation

Integrated Antenna (IA) like ALU AAS or Ericsson AIR consists of radios integrated with the antenna. Adequate free space is required between Integrated Antennas installed side by side. Please refer to OEM product description or installation documents for required free space. Sufficient air flow is needed to cool the integrated radio when Integrated Antenna is installed inside an FRP (Fiber Reinforced Panel) enclosure.

7.3 700 MHz B/C (B17), 700 MHz D/E (B29) and B14-FirstNet Antennas Separation

Due to 700 MHz B/C (Band 17) and 700 MHz D/E (Band 29) are adjacent each other, LTE transmitter in 700 MHz D/E block must be isolated (via filtering and antenna separation) from adjacent 700 B/C receiver. The two main concerns are out-of-band emission (OOBE) and receiver blocking/desensitization.

- B14 + B17 will have 3rd order IM (2A-B) in B17 RX or B14 RX
- B14 + B29 will have 3rd order IM (2A-B) in B14 RX



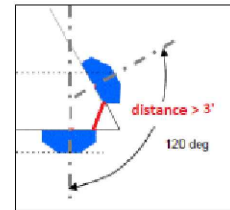
- 700 MHz B/C (B17), 700 MHz D/E (B29) and FirstNet (B14) operation all should have their own antennas. No antenna sharing unless certain dual band or tri-band radios are used.
- At least 6' horizontal separation between 700 MHz D/E (B29) and 700 MHz B/C (B17) antennas within the same sector/face.
 - About 40 dB isolation can be achieved for 65° HBW antennas.
 - More separation is required for wide HBW antennas. The horizontal separation will increase proportionally as the HBW increases, e.g., 50% more horizontal separation for 65° or 90° HBW antennas.
 - Based on measurement data, isolation between 700 B/C and D/E will not be compromised if the azimuth variation is less than $\pm 6^\circ$ for the antennas within the same sector as shown in the following figure. Please note a maximum aiming/alignment accuracy of $\pm 3^\circ$ is required for all panel (directional) antennas [14].



- At least 3' horizontal separation (edge to edge) between FirstNet (B14) antenna from either 700 MHz D/E (B29) or 700 MHz B/C (B17). More separation between B14 and B17 antennas is recommended such as they are not in adjacent position if possible.
- Considering the vertical or diagonal separation (sections 4.3.1 & 4.3.3) if possible. Good isolation can be easily achieved with more than 3' vertical antenna

separation (distances between the tips of the antennas, i.e., the distance from the tip of the bottom antenna to the bottom of the top one).

- Isolation between 700 MHz antennas in different faces may be an issue if they are close to each other in the corner as shown in the following figure. The distance between the edge of the antenna backplanes should be at least 6' if possible, 3' is minimum.



If the above recommended separation cannot be obtained, exception review is required so alternative solutions can be provided. For example,

- Tolerate additional uplink performance degradation at reduced horizontal antenna separation.
- Reduce radio transmit power.
- Adjust antenna tilting or azimuth or relocate antennas.

The following figures illustrate possible antenna separation between 700 B/C and 700 D/E antennas (shown in green or gray colors). The inter-antenna distance depends upon the sector platform or antenna boom/frame size and the number of antennas positions can be mounted on. The following table lists acceptable antenna positions for typical platform with 10'-14' sector width. Antenna position shall be consistent in all faces and back-to-back separation @ corner > 3'.

# of antenna positions per sector/face	3 antenna positions	4 antenna positions	5 antenna positions
10' platform or antenna boom	(3-B)	(4-A) to (4-C)	(5-B), (5-C), (5-E)
12' platform or antenna boom	(3-A) and (3-B)	(4-A) to (4-C)	(5-A) to (5-F)
14' platform or antenna boom	(3-A) and (3-B)	(4-A) to (4-C)	(5-A) to (5-F)

SUPPLEMENTAL

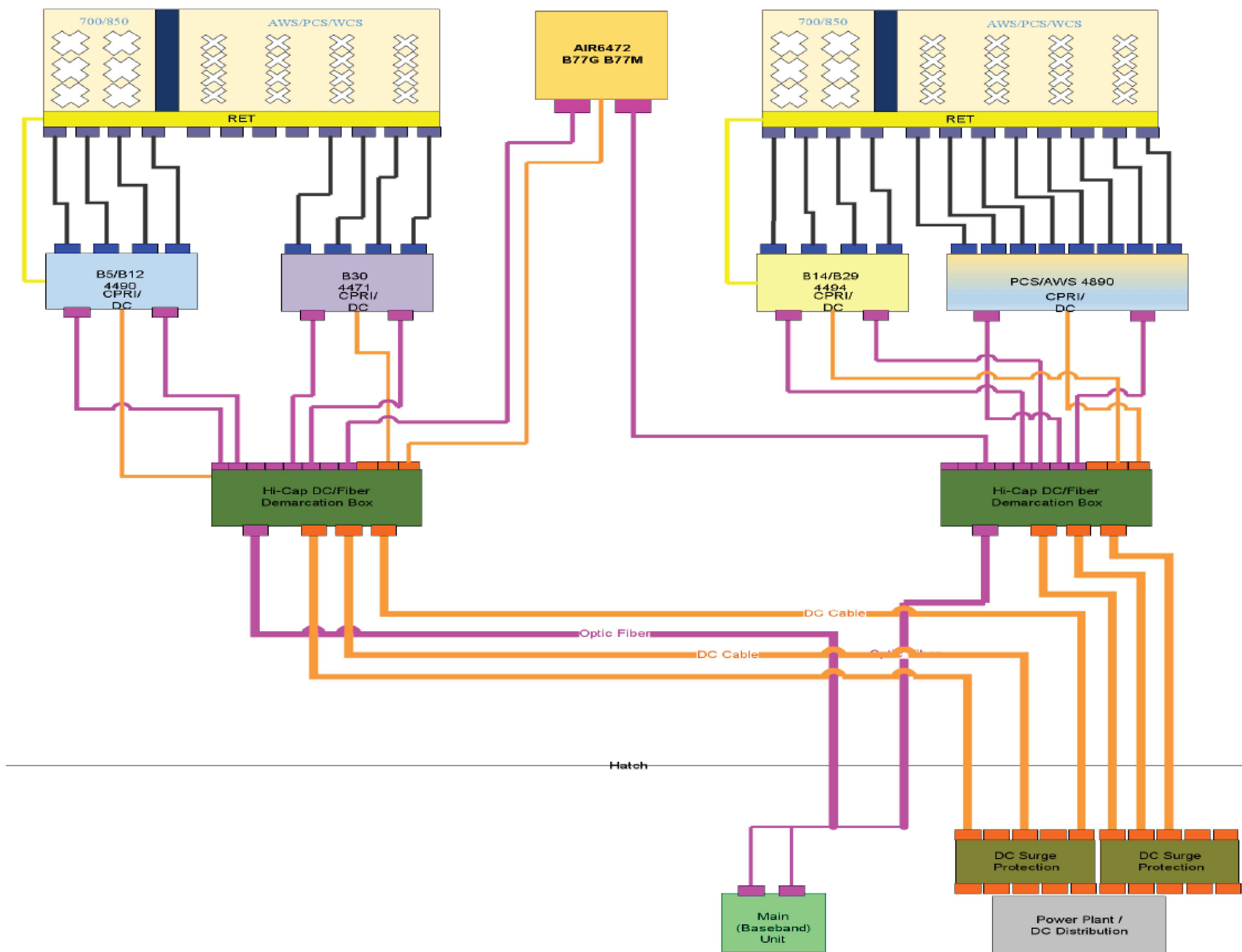
SHEET NUMBER:

R-602

REVISION:

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Post Modification Mount Analysis Report

Mount Type : 12.5 ft Platform w/ Handrails
ATC Asset Name : Woods Chapel
ATC Asset Number : 306042
Engineering Number : 14863347_C9_04
Mount Elevation : 150.5 ft
Proposed Carrier : AT&T Mobility
Carrier Site Name : WOODS CHAPEL
Carrier Site Number : WSKSL0040816
Site Location : 1204 N.e. Woods Chapel Road
Lees Summit, MO 64064-1989
38.9834, -94.3498
County : Jackson
Date : September 5, 2024
Max Usage : 48%
Analysis Result : Contingent Pass

Prepared By:
Brittany Hucks
Structural Engineer I



Digitally Signed: 2024-09-10

COA: 2006031326

Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 150.5 ft.

Supporting Documents

Specifications Sheet:	Site Pro 1 RMQP, dated July 7, 2015
Previous Analysis:	POD Project #13618801_C8_01, dated May 22, 2021
Radio Frequency Data Sheet:	RFDS ID #10000448, dated July 22, 2024
Reference Photos:	Site photos from 2023

Analysis

This mount was analyzed using American Tower Corporation’s Mount Analysis Program and RISA-3D

Basic Wind Speed:	109 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1.50" radial ice concurrent
Codes:	ANSI/TIA-222-H / 2018 IBC
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.099, S1 = 0.068
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*Live Load(s) reduction is confirmed to either not govern or not be applicable
* Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install modification per ATC Drawing #14863347_C9_04

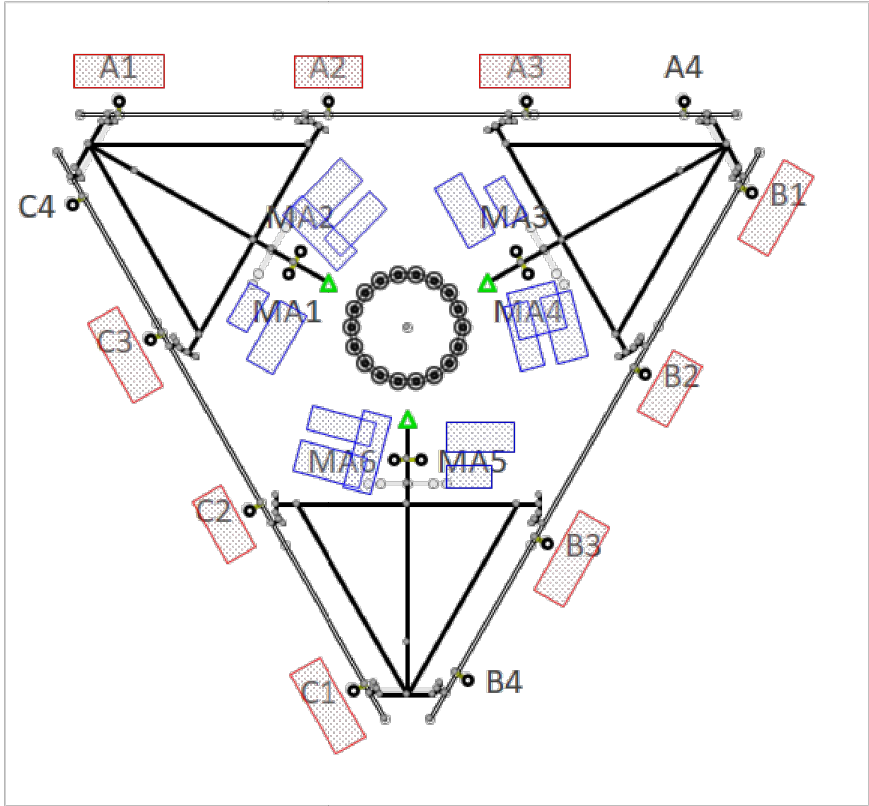
If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact MountAnalysis@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL



Mount Layout



Equipment Position Table

MP	RAD Center (ft)	Qty.	Antenna Model	Max Width (in)	Left (in)	Right (in)
A1	152.0	1	CCI TPA65R-BU8Dv2	20.7	51.27	29.6
A2	152.0	1	Ericsson AIR 6472 B77G B77M (92.6lbs)	16.1	29.6	26.6
A3	152.0	1	CCI TPA65R-BU8Dv2	20.7	26.6	26.6
A4	-	-	Empty	-	26.6	92.29
B1	152.0	1	CCI TPA65R-BU8D	21	92.29	29.45
B2	152.0	1	Ericsson AIR 6472 B77G B77M (92.6lbs)	16.1	29.45	26.45
B3	152.0	1	CCI TPA65R-BU8D	21	26.45	51.29
B4	-	-	Empty	-	-	-
C1	152.0	1	CCI TPA65R-BU8D	21	51.29	29.45
C2	152.0	1	Ericsson AIR 6472 B77G B77M (92.6lbs)	16.1	29.45	26.45

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Equipment Position Table Cont.

MP	RAD Center (ft)	Qty.	Antenna Model	Max Width (in)	Left (in)	Right (in)
C3	152.0	1	CCI TPA65R-BU8D	21	26.45	51.27
C4	-	-	Empty	-	-	-
MA1	152.0	1	Ericsson Radio 4471 B30	-	-	-
	152.0	1	Ericsson RRUS 4490			
MA2	152.0	1	Ericsson Radio 4494 44B14 20B29 M01	-	-	-
	152.0	1	Ericsson RRUS 4890			
	151.0	1	Raycap DC6-48-60-0-8C			
MA3	152.0	1	Ericsson Radio 4471 B30	-	-	-
	152.0	1	Ericsson RRUS 4490			
MA4	152.0	1	Ericsson Radio 4494 44B14 20B29 M01	-	-	-
	152.0	1	Ericsson RRUS 4890			
	151.0	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
MA5	152.0	1	Ericsson Radio 4471 B30	-	-	-
	152.0	1	Ericsson RRUS 4490			
MA6	152.0	1	Ericsson Radio 4494 44B14 20B29 M01	-	-	-
	152.0	1	Ericsson RRUS 4890			
	150.0	1	Raycap DC6-48-60-18-8C			

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NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:

R-605

REVISION:

0



AMERICAN TOWER®
SITE NAME: WOODS CHAPEL
SITE NUMBER: 306042
ATC PROJECT NUMBER: 14863347_C9_04
SITE ADDRESS: 1204 N.E. WOODS CHAPEL ROAD
LEES SUMMIT, MO 64064



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REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	TMR	09/09/24

ATC SITE NUMBER:
306042
ATC SITE NAME:
WOODS CHAPEL
MISSOURI

SITE ADDRESS:
1204 N.E. WOODS CHAPEL ROAD
LEES SUMMIT, MO 64064



DRAWN BY: TMR
APPROVED BY: BGH
DATE DRAWN: 09/09/24
ATC JOB NO.: 14863347_C9_04

COVER

SHEET NUMBER:
G-001
REVISION:
0

GENERAL

- ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL, CODES AND ORDINANCES AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ADHERING TO ALL REQUIRED PERMITS.
- ALL WORK REQUIRED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING UTILITIES. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL, CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER AMERICAN TOWER AND AMERICAN TOWER, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTORS PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- ALL W-SHAPES: ASTM A572, GRADE 50, UNLESS NOTED OTHERWISE.
- ALL OTHER ROLLED SHAPES: ASTM A572, GRADE 50, UNLESS NOTED OTHERWISE.
- HSS SECTION (SQUARE, RECTANGULAR, AND ROUND): ASTM A513, GRADE B, UNLESS NOTED OTHERWISE.
- ALL BOLTER CONNECTING STRUCTURAL MEMBERS: ASTM A312S GRADE A325, TYPE 30, OR N, UNLESS NOTED OTHERWISE.
- ALL ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.
- ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A153. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR 8895.
- ALL LOCKS SHALL BE ASTM A308 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GRIND SMOOTH.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZINC GALVATE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
- ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYURETHANE CASI MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYURETHANE 60 WRAP IS NOT ESSENTIAL.
- CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACEMENTS ONCE ONE (1) BOLTER MEMBER AT A TIME.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC SPECIFICATIONS.
- ALL BOLTS IN WARE AREAS ARE INSTALLED VERTICALLY, UNLESS OTHERWISE NOTED. SHALL BE INSTALLED AND TIGHTENED PER SECTION 8.2.1 THROUGH 8.2.4 OF THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" PER THE FOLLOWING GUIDELINES:
 - DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS SHALL BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
 - FOR ASIS BOLTS EXCEEDING 1" DIAMETER AND ALL OTHER HIGH STRENGTH BOLTS, ONE OF THE FOLLOWING METHODS SHALL BE USED:
 - DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS SHALL BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.

MODIFICATION INSPECTION NOTES

- THE MOUNT MODIFICATION INSPECTION (MMI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.
- TO ENSURE THAT THE REQUIREMENTS OF THE MMI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR SUBMIT ALL REQUIRED PHOTOGRAPHS AND DRAWINGS TO AMERICAN TOWER CORPORATION (ATC).

GENERAL CONTRACTOR

- REVIEW THE REQUIREMENTS OF THE MMI CHECKLIST.
- UNDERSTAND ALL INSPECTION REQUIREMENTS.

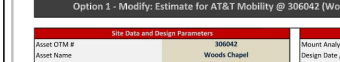
INSPECTION DOCUMENT

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY
ON-SITE COLD GALVANIZING VERIFICATION	PHOTOGRAPHIC EVIDENCE OF COLD GALVANIZATION TYPE AND APPLICATION IN ALL APPLICABLE LOCATIONS TO BE INCLUDED WITHIN THE MMI REPORT	✓	GC
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	"AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO MM FOR APPROVAL/REVIEW AND INCLUSION IN MMI REPORT	✓	GC
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF MOUNT MODIFICATION INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRED FOLLOW UP TO BE INCLUDED WITHIN THE MMI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN MMI REPORT.	✓	GC

TABLE KEY:

GC - GENERAL CONTRACTOR
ATC - AMERICAN TOWER CORPORATION

MAXIMUM ALLOWABLE ANGLE CLIP



TOLERANCES

- TOLERANCES ON ALL INSTALLATIONS ARE ±1", UNLESS NOTED OTHERWISE.
- TOLERANCES ON FABRICATION DIMENSIONS ARE ±0.02" FOR MACHINING AND ±0.06" FOR STRUCTURAL, UNLESS NOTED OTHERWISE.

WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL WELDS SHALL BE INSPECTED VISUALLY IF DIRECTED BY ENGINEER OF RECORD. 25% OF WELDS SHALL BE INSPECTED WITH EITHER ULTRASONIC OR MAGNETIC PARTICLE METHODS (100% IF REJECTABLE DEFECTS ARE FOUND TO MEET THE ACCEPTABLE CRITERIA OF AWS D1.1, REPAIR ALL WELDS AS NECESSARY. 100% OF ALL FULL PENETRATION WELDS SHALL BE INSPECTED WITH EITHER ULTRASONIC OR MAGNETIC PARTICLE METHODS.
- INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER AND/OR BASE METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
- IN CASES WHERE BASE METAL GRADE IS UNKNOWN, ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES. ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E60XX ELECTRODES, UNLESS NOTED OTHERWISE.
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING UP BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZINC GALVATE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL, ACCORDING TO FAA ADVISORY CIRCULAR AC 7070-1L.

BOLT TIGHTENING PROCEDURE

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC SPECIFICATIONS.
- ALL BOLTS IN WARE AREAS ARE INSTALLED VERTICALLY, UNLESS OTHERWISE NOTED. SHALL BE INSTALLED AND TIGHTENED PER SECTION 8.2.1 THROUGH 8.2.4 OF THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" PER THE FOLLOWING GUIDELINES:
 - DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS SHALL BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
 - FOR ASIS BOLTS EXCEEDING 1" DIAMETER AND ALL OTHER HIGH STRENGTH BOLTS, ONE OF THE FOLLOWING METHODS SHALL BE USED:
 - DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS SHALL BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.

BOLT TIGHTENING PROCEDURE (CONT'D)

- RCSC "TURN-OF-THE-NUT" METHOD: PRIOR TO APPLICATION OF TURN-OF-NUT PRE-TENSIONING, ALL BOLTS IN THE CONNECTION SHALL BE BROUGHT TO A SLUG TIGHT CONDITION AS DEFINED IN RCSC SECTION 8.1, AND MATCH-MARKING OF THE NUTS AND WELDING END OF THE BOLTS MUST BE IMPLEMENTED FOR ALL BOLTS IN THE CONNECTION.
- SUBSEQUENTLY, ALL BOLTS SHALL BE ROTATED BEYOND SLUG TIGHT CONDITION USING THE CHART BELOW:

OF BOLT PRE-TENSION.	
1/2"	BOLTS 2.75 TO 3.0 INCH LENGTH
3/4"	BOLTS 3.0 TO 3.5 INCH LENGTH
1"	BOLTS 3.5 TO 4.0 INCH LENGTH
1 1/4"	BOLTS 4.0 TO 4.5 INCH LENGTH
1 1/2"	BOLTS 4.5 TO 5.0 INCH LENGTH
1 3/4"	BOLTS 5.0 TO 5.5 INCH LENGTH
2"	BOLTS 5.5 TO 6.0 INCH LENGTH
2 1/4"	BOLTS 6.0 TO 6.5 INCH LENGTH
2 1/2"	BOLTS 6.5 TO 7.0 INCH LENGTH
2 3/4"	BOLTS 7.0 TO 7.5 INCH LENGTH
3"	BOLTS 7.5 TO 8.0 INCH LENGTH
3 1/4"	BOLTS 8.0 TO 8.5 INCH LENGTH
3 1/2"	BOLTS 8.5 TO 9.0 INCH LENGTH
3 3/4"	BOLTS 9.0 TO 9.5 INCH LENGTH
4"	BOLTS 9.5 TO 10.0 INCH LENGTH
4 1/4"	BOLTS 10.0 TO 10.5 INCH LENGTH
4 1/2"	BOLTS 10.5 TO 11.0 INCH LENGTH
4 3/4"	BOLTS 11.0 TO 11.5 INCH LENGTH
5"	BOLTS 11.5 TO 12.0 INCH LENGTH
5 1/4"	BOLTS 12.0 TO 12.5 INCH LENGTH
5 1/2"	BOLTS 12.5 TO 13.0 INCH LENGTH
5 3/4"	BOLTS 13.0 TO 13.5 INCH LENGTH
6"	BOLTS 13.5 TO 14.0 INCH LENGTH
6 1/4"	BOLTS 14.0 TO 14.5 INCH LENGTH
6 1/2"	BOLTS 14.5 TO 15.0 INCH LENGTH
6 3/4"	BOLTS 15.0 TO 15.5 INCH LENGTH
7"	BOLTS 15.5 TO 16.0 INCH LENGTH
7 1/4"	BOLTS 16.0 TO 16.5 INCH LENGTH
7 1/2"	BOLTS 16.5 TO 17.0 INCH LENGTH
7 3/4"	BOLTS 17.0 TO 17.5 INCH LENGTH
8"	BOLTS 17.5 TO 18.0 INCH LENGTH
8 1/4"	BOLTS 18.0 TO 18.5 INCH LENGTH
8 1/2"	BOLTS 18.5 TO 19.0 INCH LENGTH
8 3/4"	BOLTS 19.0 TO 19.5 INCH LENGTH
9"	BOLTS 19.5 TO 20.0 INCH LENGTH
9 1/4"	BOLTS 20.0 TO 20.5 INCH LENGTH
9 1/2"	BOLTS 20.5 TO 21.0 INCH LENGTH
9 3/4"	BOLTS 21.0 TO 21.5 INCH LENGTH
10"	BOLTS 21.5 TO 22.0 INCH LENGTH
10 1/4"	BOLTS 22.0 TO 22.5 INCH LENGTH
10 1/2"	BOLTS 22.5 TO 23.0 INCH LENGTH
10 3/4"	BOLTS 23.0 TO 23.5 INCH LENGTH
11"	BOLTS 23.5 TO 24.0 INCH LENGTH
11 1/4"	BOLTS 24.0 TO 24.5 INCH LENGTH
11 1/2"	BOLTS 24.5 TO 25.0 INCH LENGTH
11 3/4"	BOLTS 25.0 TO 25.5 INCH LENGTH
12"	BOLTS 25.5 TO 26.0 INCH LENGTH
12 1/4"	BOLTS 26.0 TO 26.5 INCH LENGTH
12 1/2"	BOLTS 26.5 TO 27.0 INCH LENGTH
12 3/4"	BOLTS 27.0 TO 27.5 INCH LENGTH
13"	BOLTS 27.5 TO 28.0 INCH LENGTH
13 1/4"	BOLTS 28.0 TO 28.5 INCH LENGTH
13 1/2"	BOLTS 28.5 TO 29.0 INCH LENGTH
13 3/4"	BOLTS 29.0 TO 29.5 INCH LENGTH
14"	BOLTS 29.5 TO 30.0 INCH LENGTH
14 1/4"	BOLTS 30.0 TO 30.5 INCH LENGTH
14 1/2"	BOLTS 30.5 TO 31.0 INCH LENGTH
14 3/4"	BOLTS 31.0 TO 31.5 INCH LENGTH
15"	BOLTS 31.5 TO 32.0 INCH LENGTH
15 1/4"	BOLTS 32.0 TO 32.5 INCH LENGTH
15 1/2"	BOLTS 32.5 TO 33.0 INCH LENGTH
15 3/4"	BOLTS 33.0 TO 33.5 INCH LENGTH
16"	BOLTS 33.5 TO 34.0 INCH LENGTH
16 1/4"	BOLTS 34.0 TO 34.5 INCH LENGTH
16 1/2"	BOLTS 34.5 TO 35.0 INCH LENGTH
16 3/4"	BOLTS 35.0 TO 35.5 INCH LENGTH
17"	BOLTS 35.5 TO 36.0 INCH LENGTH
17 1/4"	BOLTS 36.0 TO 36.5 INCH LENGTH
17 1/2"	BOLTS 36.5 TO 37.0 INCH LENGTH
17 3/4"	BOLTS 37.0 TO 37.5 INCH LENGTH
18"	BOLTS 37.5 TO 38.0 INCH LENGTH
18 1/4"	BOLTS 38.0 TO 38.5 INCH LENGTH
18 1/2"	BOLTS 38.5 TO 39.0 INCH LENGTH
18 3/4"	BOLTS 39.0 TO 39.5 INCH LENGTH
19"	BOLTS 39.5 TO 40.0 INCH LENGTH
19 1/4"	BOLTS 40.0 TO 40.5 INCH LENGTH
19 1/2"	BOLTS 40.5 TO 41.0 INCH LENGTH
19 3/4"	BOLTS 41.0 TO 41.5 INCH LENGTH
20"	BOLTS 41.5 TO 42.0 INCH LENGTH
20 1/4"	BOLTS 42.0 TO 42.5 INCH LENGTH
20 1/2"	BOLTS 42.5 TO 43.0 INCH LENGTH
20 3/4"	BOLTS 43.0 TO 43.5 INCH LENGTH
21"	BOLTS 43.5 TO 44.0 INCH LENGTH
21 1/4"	BOLTS 44.0 TO 44.5 INCH LENGTH
21 1/2"	BOLTS 44.5 TO 45.0 INCH LENGTH
21 3/4"	BOLTS 45.0 TO 45.5 INCH LENGTH
22"	BOLTS 45.5 TO 46.0 INCH LENGTH
22 1/4"	BOLTS 46.0 TO 46.5 INCH LENGTH
22 1/2"	BOLTS 46.5 TO 47.0 INCH LENGTH
22 3/4"	BOLTS 47.0 TO 47.5 INCH LENGTH
23"	BOLTS 47.5 TO 48.0 INCH LENGTH
23 1/4"	BOLTS 48.0 TO 48.5 INCH LENGTH
23 1/2"	BOLTS 48.5 TO 49.0 INCH LENGTH
23 3/4"	BOLTS 49.0 TO 49.5 INCH LENGTH
24"	BOLTS 49.5 TO 50.0 INCH LENGTH
24 1/4"	BOLTS 50.0 TO 50.5 INCH LENGTH
24 1/2"	BOLTS 50.5 TO 51.0 INCH LENGTH
24 3/4"	BOLTS 51.0 TO 51.5 INCH LENGTH
25"	BOLTS 51.5 TO 52.0 INCH LENGTH
25 1/4"	BOLTS 52.0 TO 52.5 INCH LENGTH
25 1/2"	BOLTS 52.5 TO 53.0 INCH LENGTH
25 3/4"	BOLTS 53.0 TO 53.5 INCH LENGTH
26"	BOLTS 53.5 TO 54.0 INCH LENGTH
26 1/4"	BOLTS 54.0 TO 54.5 INCH LENGTH
26 1/2"	BOLTS 54.5 TO 55.0 INCH LENGTH
26 3/4"	BOLTS 55.0 TO 55.5 INCH LENGTH
27"	BOLTS 55.5 TO 56.0 INCH LENGTH
27 1/4"	BOLTS 56.0 TO 56.5 INCH LENGTH
27 1/2"	BOLTS 56.5 TO 57.0 INCH LENGTH
27 3/4"	BOLTS 57.0 TO 57.5 INCH LENGTH
28"	BOLTS 57.5 TO 58.0 INCH LENGTH
28 1/4"	BOLTS 58.0 TO 58.5 INCH LENGTH
28 1/2"	BOLTS 58.5 TO 59.0 INCH LENGTH
28 3/4"	BOLTS 59.0 TO 59.5 INCH LENGTH
29"	BOLTS 59.5 TO 60.0 INCH LENGTH
29 1/4"	BOLTS 60.0 TO 60.5 INCH LENGTH
29 1/2"	BOLTS 60.5 TO 61.0 INCH LENGTH
29 3/4"	BOLTS 61.0 TO 61.5 INCH LENGTH
30"	BOLTS 61.5 TO 62.0 INCH LENGTH
30 1/4"	BOLTS 62.0 TO 62.5 INCH LENGTH
30 1/2"	BOLTS 62.5 TO 63.0 INCH LENGTH
30 3/4"	BOLTS 63.0 TO 63.5 INCH LENGTH
31"	BOLTS 63.5 TO 64.0 INCH LENGTH
31 1/4"	BOLTS 64.0 TO 64.5 INCH LENGTH
31 1/2"	BOLTS 64.5 TO 65.0 INCH LENGTH
31 3/4"	BOLTS 65.0 TO 65.5 INCH LENGTH
32"	BOLTS 65.5 TO 66.0 INCH LENGTH
32 1/4"	BOLTS 66.0 TO 66.5 INCH LENGTH
32 1/2"	BOLTS 66.5 TO 67.0 INCH LENGTH
32 3/4"	BOLTS 67.0 TO 67.5 INCH LENGTH
33"	BOLTS 67.5 TO 68.0 INCH LENGTH
33 1/4"	BOLTS 68.0 TO 68.5 INCH LENGTH
33 1/2"	BOLTS 68.5 TO 69.0 INCH LENGTH
33 3/4"	BOLTS 69.0 TO 69.5 INCH LENGTH
34"	BOLTS 69.5 TO 70.0 INCH LENGTH
34 1/4"	BOLTS 70.0 TO 70.5 INCH LENGTH
34 1/2"	BOLTS 70.5 TO 71.0 INCH LENGTH
34 3/4"	BOLTS 71.0 TO 71.5 INCH LENGTH
35"	BOLTS 71.5 TO 72.0 INCH LENGTH
35 1/4"	BOLTS 72.0 TO 72.5 INCH LENGTH
35 1/2"	BOLTS 72.5 TO 73.0 INCH LENGTH
35 3/4"	BOLTS 73.0 TO 73.5 INCH LENGTH
36"	BOLTS 73.5 TO 74.0 INCH LENGTH
36 1/4"	BOLTS 74.0 TO 74.5 INCH LENGTH
36 1/2"	BOLTS 74.5 TO 75.0 INCH LENGTH
36 3/4"	BOLTS 75.0 TO 75.5 INCH LENGTH
37"	BOLTS 75.5 TO 76.0 INCH LENGTH
37 1/4"	BOLTS 76.0 TO 76.5 INCH LENGTH
37 1/2"	BOLTS 76.5 TO 77.0 INCH LENGTH
37 3/4"	BOLTS 77.0 TO 77.5 INCH LENGTH
38"	BOLTS 77.5 TO 78.0 INCH LENGTH
38 1/4"	BOLTS 78.0 TO 78.5 INCH LENGTH
38 1/2"	BOLTS 78.5 TO 79.0 INCH LENGTH
38 3/4"	BOLTS 79.0 TO 79.5 INCH LENGTH
39"	BOLTS 79.5 TO 80.0 INCH LENGTH
39 1/4"	BOLTS 80.0 TO 80.5 INCH LENGTH
39 1/2"	BOLTS 80.5 TO 81.0 INCH LENGTH
39 3/4"	BOLTS 81.0 TO 81.5 INCH LENGTH
40"	BOLTS 81.5 TO 82.0 INCH LENGTH
40 1/4"	BOLTS 82.0 TO 82.5 INCH LENGTH
40 1/2"	BOLTS 82.5 TO 83.0 INCH LENGTH
40 3/4"	BOLTS 83.0 TO 83.5 INCH LENGTH
41"	BOLTS 83.5 TO 84.0 INCH LENGTH
41 1/4"	BOLTS 84.0 TO 84.5 INCH LENGTH
41 1/2"	BOLTS 84.5 TO 85.0 INCH LENGTH
41 3/4"	BOLTS 85.0 TO 85.5 INCH LENGTH
42"	BOLTS 85.5 TO 86.0 INCH LENGTH
42 1/4"	BOLTS 86.0 TO 86.5 INCH LENGTH
42 1/2"	BOLTS 86.5 TO 87.0 INCH LENGTH
42 3/4"	BOLTS 87.0 TO 87.5 INCH LENGTH
43"	BOLTS 87.5 TO 88.0 INCH LENGTH
43 1/4"	BOLTS 88.0 TO 88.5 INCH LENGTH
43 1/2"	BOLTS 88.5 TO 89.0 INCH LENGTH
43 3/4"	BOLTS 89.0 TO 89.5 INCH LENGTH
44"	BOLTS 89.5 TO 90.0 INCH LENGTH
44 1/4"	BOLTS 90.0 TO 90.5 INCH LENGTH
44 1/2"	BOLTS 90.5 TO 91.0 INCH LENGTH
44 3/4"	BOLTS 91.0 TO 91.5 INCH LENGTH
45"	BOLTS 91.5 TO 92.0 INCH LENGTH
45 1/4"	BOLTS 92.0 TO 92.5 INCH LENGTH
45 1/2"	BOLTS 92.5 TO 93.0 INCH LENGTH
45 3/4"	BOLTS 93.0 TO 93.5 INCH LENGTH
46"	BOLTS 93.5 TO 94.0 INCH LENGTH
46 1/4"	BOLTS 94.0 TO 94.5 INCH LENGTH
46 1/2"	BOLTS 94.5 TO 95.0 INCH LENGTH
46 3/4"	BOLTS 95.0 TO 95.5 INCH LENGTH
47"	BOLTS 95.5 TO 96.0 INCH LENGTH
47 1/4"	BOLTS 96.0 TO 96.5 INCH LENGTH
47 1/2"	BOLTS 96.5 TO 97.0 INCH LENGTH
47 3/4"	BOLTS 97.0 TO 97.5 INCH LENGTH
48"	BOLTS 97.5 TO 98.0 INCH LENGTH
48 1/4"	BOLTS 98.0 TO 98.5 INCH LENGTH
48 1/2"	BOLTS 98.5 TO 99.0 INCH LENGTH
48 3/4"	BOLTS 99.0 TO 99.5 INCH LENGTH
49"	BOLTS 99.5 TO 100.0 INCH LENGTH
49 1/4"	BOLTS 100.0 TO 100.5 INCH LENGTH
49 1/2"	BOLTS 100.5 TO 101.0 INCH LENGTH
49 3/4"	BOLTS 101.0 TO 101.5 INCH LENGTH
50"	BOLTS 101.5 TO 102.0 INCH LENGTH
50 1/4"	BOLTS 102.0 TO 102.5 INCH LENGTH
50 1/2"	BOLTS 102.5 TO 103.0 INCH LENGTH
50 3/4"	BOLTS 103.0 TO 103.5 INCH LENGTH
51"	BOLTS 103.5 TO 104.0 INCH LENGTH
51 1/4"	BOLTS 104.0 TO 104.5 INCH LENGTH
51 1/2"	BOLTS 104.5 TO 105.0 INCH LENGTH
51 3/4"	BOLTS 105.0 TO 105.5 INCH LENGTH
52"	BOLTS 105.5 TO 106.0 INCH LENGTH
52 1/4"	BOLTS 106.0 TO 106.5 INCH LENGTH
52 1/2"	BOLTS 106.5 TO 107.0 INCH LENGTH
52 3/4"	BOLTS 107.0 TO 107.5 INCH LENGTH
53"	BOLTS 107.5 TO 108.0 INCH LENGTH
53 1/4"	BOLTS 108.0 TO 108.5 INCH LENGTH
53 1/2"	BOLTS 108.5 TO 109.0 INCH LENGTH
53 3/4"	BOLTS 109.0 TO 109.5 INCH LENGTH
54"	BOLTS 109.5 TO 110.0 INCH LENGTH
54 1/4"	BOLTS 110.0 TO 110.5 INCH LENGTH
54 1/2"	BOLTS 110.5 TO 111.0 INCH LENGTH
54 3/4"	BOLTS 111.0 TO 111.5 INCH LENGTH
55"	BOLTS 111.5 TO 112.0 INCH LENGTH
55 1/4"	BOLTS 112.0 TO 112.5 INCH LENGTH
55 1/2"	BOLTS 112.5 TO 113.0 INCH LENGTH
55 3/4"	BOLTS 113.0 TO 113.5 INCH LENGTH
56"	BOLTS 113.5 TO 114.0 INCH LENGTH
56 1/4"	BOLTS 114.0 TO 114.5 INCH LENGTH
56 1/2"	BOLTS 114.5 TO 115.0 INCH LENGTH
56 3/4"	BOLTS 115.0 TO 115.5 INCH LENGTH
57"	BOLTS 115.5 TO 116.0 INCH LENGTH
57 1/4"	BOLTS 116.0 TO 116.5 INCH LENGTH
57 1/2"	BOLTS 116.5 TO 117.0 INCH LENGTH
57 3/4"	BOLTS 117.0 TO 117.5 INCH LENGTH
58"	BOLTS 117.5 TO 118.0 INCH LENGTH
58 1/4"	BOLTS 118.0 TO 118.5 INCH LENGTH
58 1/2"	BOLTS 118.5 TO 119.0 INCH LENGTH
58 3/4"	BOLTS 119.0 TO 119.5 INCH LENGTH
59"	BOLTS 119.5 TO 120.0 INCH LENGTH
59 1/4"	BOLTS 120.0 TO 120.5 INCH LENGTH
59 1/2"	BOLTS 120.5 TO 121.0 INCH LENGTH
59 3/4"	BOLTS 121.0 TO 121.5 INCH LENGTH
60"	BOLTS 121.5 TO 122.0 INCH LENGTH
60 1/4"	BOLTS 122.0 TO 122.5 INCH LENGTH
60 1/2"	BOLTS 122.5 TO 123.0 INCH LENGTH
60 3/4"	BOLTS 123.0 TO 123.5 INCH LENGTH
61"	BOLTS 123.5 TO 124.0 INCH LENGTH
61 1/4"	BOLTS 124.0 TO 124.5 INCH LENGTH
61 1/2"	BOLTS 124.5 TO 125.0 INCH LENGTH
61 3/4"	BOLTS 125.0 TO 125.5 INCH LENGTH
62"	BOLTS 125.5 TO 126.0 INCH LENGTH
62 1/4"	BOLTS 126.0 TO 126.5 INCH LENGTH
62 1/2"	BOLTS 126.5 TO 127.0 INCH LENGTH
62 3/4"	BOLTS 127.0 TO 127.5 INCH LENGTH
63"	BOLTS 127.5 TO 128.0 INCH LENGTH
63 1/4"	BOLTS 128.0 TO 128.5 INCH LENGTH
63 1/2"	BOLTS 128.5 TO 129.0 INCH LENGTH
63 3/4"	BOLTS 129.0 TO 129.5 INCH LENGTH
64"	BOLTS 129.5 TO 130.0 INCH LENGTH
64 1/4"	BOLTS 130.0 TO 130.5 INCH LENGTH
64 1/2"	BOLTS 130.5 TO 131.0 INCH LENGTH
64 3/4"	BOLTS 131.0 TO 131.5 INCH LENGTH
65"	BOLTS 131.5 TO 132.0 INCH LENGTH
65 1/4"	BOLTS 132.0 TO 132.5 INCH LENGTH
65 1/2"	BOLTS 132.5 TO 133.0 INCH LENGTH
65 3/4"	BOLTS 133.0 TO 133.5 INCH LENGTH
66"	BOLTS 133.5 TO 134.0 INCH LENGTH
66 1/4"	BOLTS 134.0 TO 134.5 INCH LENGTH
66 1/2"	BOLTS 134.5 TO 135.0 INCH LENGTH
66 3/4"	BOLTS 135.0 TO 135.5 INCH LENGTH
67"	BOLTS 135.5 TO 136.0 INCH LENGTH
67 1/4"	BOLTS 136.0 TO 136.5 INCH LENGTH
67 1/2"	BOLTS 136.5 TO 137.0 INCH LENGTH
67 3/4"	BOLTS 137.0 TO 137.5 INCH LENGTH
68"	BOLTS 137.5 TO 138.0 INCH LENGTH
68 1/4"	BOLTS 138.0 TO 138.5 INCH LENGTH
68 1/2"	BOLTS 138.5 TO 139.0 INCH LENGTH
68 3/4"	BOLTS 139.0 TO 139.5 INCH LENGTH
69"	BOLTS 139.5 TO 140.0 INCH LENGTH
69 1/4"	BOLTS 140.0 TO 140.5 INCH LENGTH
69 1/2"	BOLTS 140.5 TO 141.0 INCH LENGTH
69 3/4"	BOLTS 141.0 TO 141.5 INCH LENGTH
70"	BOLTS 141.5 TO 142.0 INCH LENGTH
70 1/4"	BOLTS 142.0 TO 142.5 INCH LENGTH
70 1/2"	BOLTS 142.5 TO 143.0 INCH LENGTH
70 3/4"	BOLTS 143.0 TO 143.5 INCH LENGTH
71"	BOLTS 143.5 TO 144.0 INCH LENGTH
71 1/4"	BOLTS 144.0 TO 144.5 INCH LENGTH
71 1/2"	BOLTS 144.5 TO 145.0 INCH LENGTH
71 3/4"	BOLTS 145.0 TO 145.5 INCH LENGTH
72"	BOLTS 145.5 TO 146.0 INCH LENGTH
72 1/4"	BOLTS 146.0 TO 146.5 INCH LENGTH
72 1/2"	BOLTS 146.5 TO 147.0 INCH LENGTH
72 3/4"	BOLTS 147.0 TO 147.5 INCH LENGTH
73"	BOLTS 147.5 TO 148.0 INCH LENGTH
73 1/4"	BOLTS 148.0 TO 148.5 INCH LENGTH
73 1/2"	BOLTS 148.5 TO 149.0 INCH LENGTH
73 3/4"	BOLTS 149.0 TO 149.5 INCH LENGTH
74"	BOLTS 149.5 TO 150.0 INCH LENGTH
74 1/4"	BOLTS 150.0 TO 150.5 INCH LENGTH
74 1/2"	BOLTS 150.5 TO 151.0 INCH LENGTH
74 3/4"	BOLTS 151.0 TO 151.5 INCH LENGTH
75"	BOLTS 151.5 TO 152.0 INCH LENGTH
75 1/4"	BOLTS 152.0 TO 152.5 INCH LENGTH
75 1/2"	BOLTS 152.5 TO 153.0 INCH LENGTH
75 3/4"	BOLTS 153.0 TO 153.5 INCH LENGTH
76"	BOLTS 153.5 TO 154.0 INCH LENGTH
76 1/4"	BOLTS 154.0 TO 154.5 INCH LENGTH
76 1/2"	BOLTS 154.5 TO 155.0 INCH LENGTH
76 3/4"	BOLTS 155.0 TO 155.5 INCH LENGTH
77"	BOLTS 155.5 TO 156.0 INCH LENGTH
77 1/4"	BOLTS 156.0 TO 156.5 INCH LENGTH
77 1/2"	BOLTS 156.5 TO 157.0 INCH LENGTH
77 3/4"	BOLTS 157.0 TO 157.5 INCH LENGTH
78"	BOLTS 157.5 TO 158.0 INCH LENGTH
78 1/4"	BOLTS 158.0 TO 158.5 INCH LENGTH
78 1/2"	BOLTS 158.5 TO 159.0 INCH LENGTH
78 3/4"	BOLTS 159.0 TO 159.5 INCH LENGTH
79"	BOLTS 159.5 TO 160.0 INCH LENGTH
79 1/4"	BOLTS 160.0 TO 160.5 INCH LENGTH
79 1/2"	BOLTS 160.5 TO 161.0 INCH LENGTH
79 3/4"	BOLTS 161.0 TO 161.5 INCH LENGTH
80"	BOLTS 161.5 TO 162.0 INCH LENGTH
80 1/4"	BOLTS 162.0 TO 162.5 INCH LENGTH
80 1/2"	BOLTS 162.5 TO 163.0 INCH LENGTH
80 3/4"	BOLTS 163.0 TO 163.5 INCH LENGTH
81"	BOLTS 163.5 TO 164.0 INCH LENGTH
81 1/4"	BOLTS 164.0 TO 164.5 INCH LENGTH
81 1/2"	BOLTS 164.5 TO 165.0 INCH LENGTH
81 3/4"	BOLTS 165.0 TO 165.5 INCH LENGTH
82"	BOLTS 165.5 TO 166.0 INCH LENGTH
82 1/4"	BOLTS 166.0 TO 166.5 INCH LENGTH
82 1/2"	BOLTS 166.5 TO 167.0 INCH LENGTH
82 3/4"	BOLTS 167.0 TO 167.5 INCH LENGTH
83"	BOLTS 167.5 TO 168.0 INCH LENGTH
83 1/4"	BOLTS 168.0 TO 168.5 INCH LENGTH
83 1/2"	BOLTS 168.5 TO 169.0 INCH LENGTH
83 3/4"	BOLTS 169.0 TO 169.5 INCH LENGTH
84"	BOLTS 169.5 TO 170.0 INCH LENGTH
84 1/4"	BOLTS 170.0 TO 170.5 INCH LENGTH
84 1/2"	BOLTS 170.5 TO 171.0 INCH LENGTH
84 3/4"	BOLTS 171.0 TO 171.5 INCH LENGTH
85"	BOLTS 171.5 TO 172.0 INCH LENGTH
85 1/4"	BOLTS 172.0 TO 172.5 INCH LENGTH
85 1/2"	BOLTS 172.5 TO 173.0 INCH LENGTH
85 3/4"	BOLTS 173.0 TO 173.5 INCH LENGTH
86"	BOLTS 173.5 TO 174.0 INCH LENGTH
86 1/4"	BOLTS 174.0 TO 174.5 INCH LENGTH
86 1/2"	BOLTS 174.5 TO 175.0 INCH LENGTH
86 3/4"	BOLTS 175.0 TO 175.5 INCH LENGTH
87"	BOLTS 175.5