



October 20, 2016

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Street
New Britain, CT 06051

Regarding: Notice of Exempt Modification – Addition of Triplexers
Property Address: 60 North Eagleville Road, Mansfield, CT (the “Property”)

Applicant: AT&T Mobility (“AT&T”)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 287 foot guyed tower (“tower”) at the above-referenced address, latitude 41.8140481, longitude -72.2594431. AT&T’s facility consists of nine (9) wireless telecommunications antennas at 185 feet. The tower is controlled and owned by the University of Connecticut. The Assessor’s information is attached hereto.

AT&T desires to modify its existing telecommunications facility by adding (6) triplexers to the preexisting tower. The centerline height of said antennas is and will remain at 185 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor of Mansfield, the Town Manager of Mansfield, and the Director of Planning and Development of Mansfield. A copy of this letter is also being sent to The University of Connecticut, the owner of the structure that AT&T is located.

The planned modifications to AT&T’s facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T’s antennas, RRHs, and associated lines will be installed at 185 foot level of the 287 foot tall guyed lattice tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.



5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural analysis completed by Com Ex Consultants, LLC dated October 17, 2016).

For the foregoing reasons AT&T respectfully requests that the proposed triplexer installation be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Nicole Caplan
Site Acquisition Specialist
Empire Telecom

CC: The Honorable Paul Shapiro, Mayor, Town of Mansfield
Matthew W. Hart, Town Manager, Town of Mansfield
Linda M. Painter, Director of Planning and Development, Town of Mansfield
The University of Connecticut

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3906 Email: ncaplan@empiretelecomm.com



Town of Mansfield, Connecticut

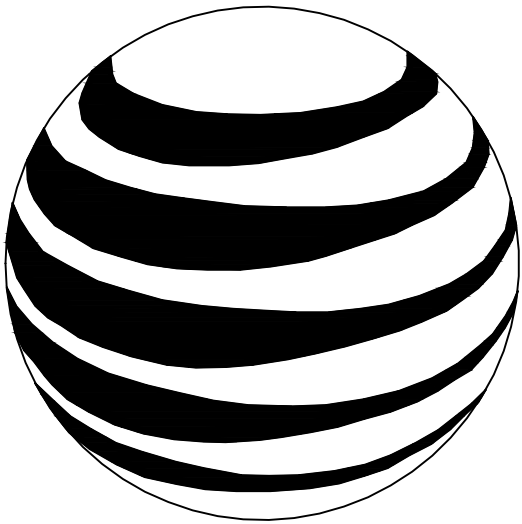
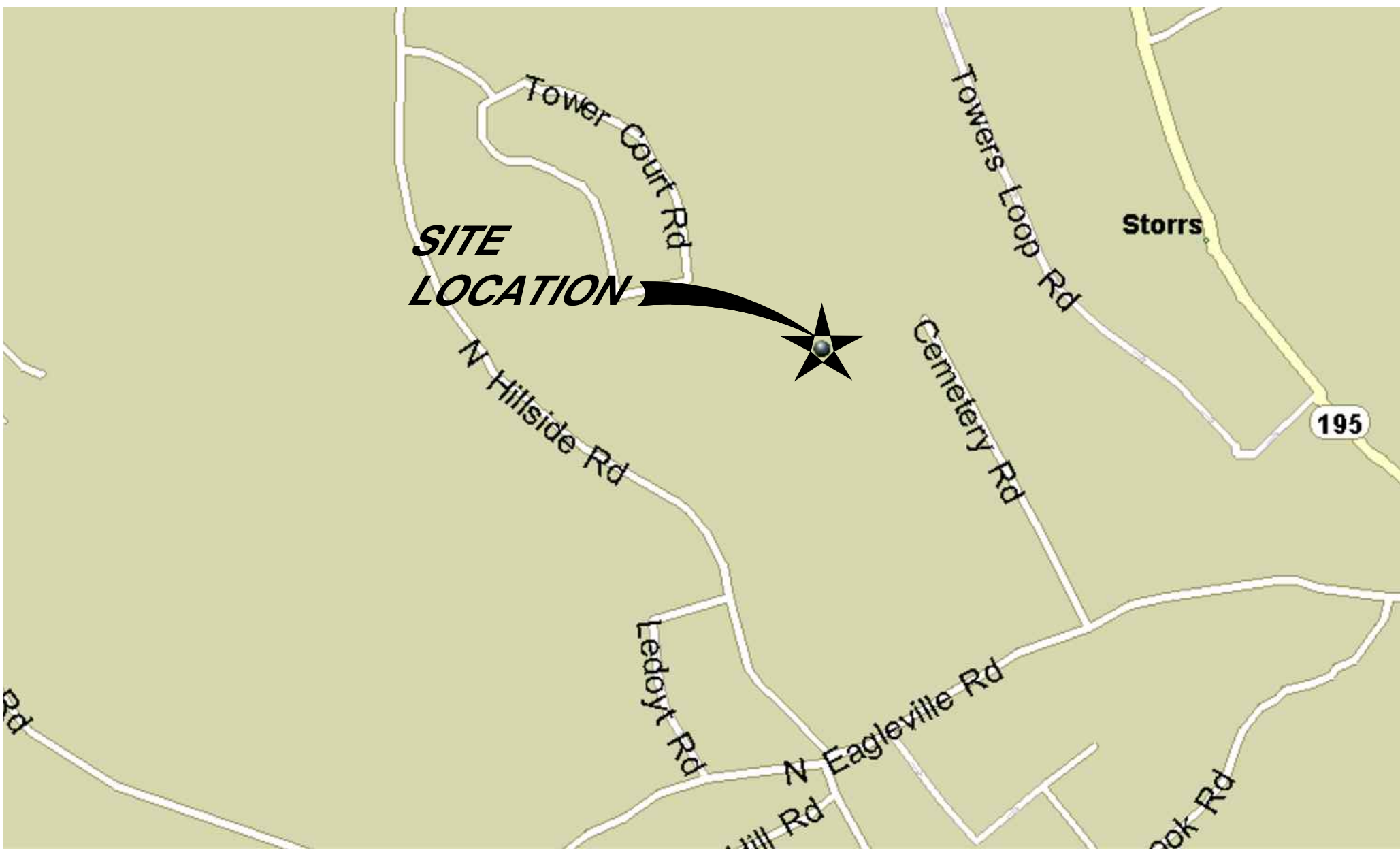

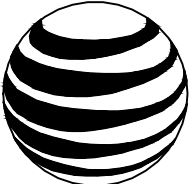

Printed on 6/21/2016 from <http://www.mainstreetmaps2.com/ct/mansfield/public.asp>

100 m
500 ft



MainStreetGIS
MainStreetGIS, LLC
www.mainstreetgis.com

This map is for informational purposes only. It is not for appraisal of, description of, or conveyance of land. The Town of Mansfield, Connecticut and MainStreetGIS, LLC assume no legal responsibility for the information contained herein.

PROJECT INFORMATION			<div></div> <div>at&t MOBILITY</div> <div>FA CODE: 10035012</div> <div>SITE NUMBER: CT1077</div> <div>SITE NAME: STORRS</div>			PROJECT TEAM																																																	
<div>SCOPE OF WORK:</div> <ul style="list-style-type: none">AT&T ANTENNAS: (3) EXISTING AT&T ANTENNA TO REMAIN PER SECTOR FOR A TOTAL OF (9) EXISTING ANTENNAS TO REMAINAT&T RRUs: (2) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (6) NEW RRUs AT GROUND LEVEL.AT&T TRIPLEXERS: (4) NEW TRIPLEXERS PER SECTOR FOR A TOTAL OF 12 NEW TRIPLEXERS, (2) AT ANTENNA LEVEL AND (2) AT GROUND PER SECTOR.GSM TECHNOLOGY TO BE DECOMMISSIONED AND DIPLEXERS ASSOCIATED WITH GSM TO BE REMOVED. <div>SITE ADDRESS: 1298 STORRS ROAD STORRS, CT 06268</div> <div>LATITUDE: 41.8140481 41° 48' 50.57316"N LONGITUDE: -72.2594431 72° 15' 33.99516"W</div> <div>USID: 59367</div> <div>TOWER OWNER: UNIVERSITY OF CONNECTICUT STORRS, CT 06269</div> <div>TYPE OF SITE: GUYED TOWER/INDOOR EQUIPMENT</div> <div>RAD CENTER: 185'–0"±</div> <div>CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY</div> <div>PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY</div>						<div>CLIENT REPRESENTATIVE</div> <div>COMPANY: EMPIRE TELECOM ADDRESS: 16 ESQUIRE ROAD BILLERICA, MA 01821 CONTACT: DAVID COOPER PHONE: 617–639–4908 EMAIL: dcooper@empiretelecomm.com</div> <div>SITE ACQUISITION:</div> <div>COMPANY: VERTICAL DEVELOPMENT, LLC ADDRESS: 20 COMMERCIAL STREET BRANFORD, CT 06405 CONTACT: PAUL SAGRISTANO PHONE: 917–841–0247 EMAIL: psagristano@verticaldevelopmentllc.com</div> <div>ZONING:</div> <div>COMPANY: VERTICAL DEVELOPMENT, LLC ADDRESS: 20 COMMERCIAL STREET BRANFORD, CT 06405 CONTACT: PAUL SAGRISTANO PHONE: 917–841–0247 EMAIL: psagristano@verticaldevelopmentllc.com</div> <div>ENGINEERING:</div> <div>COMPANY: COM–EX CONSULTANTS, LLC ADDRESS: 115 ROUTE 46 SUITE E39 MOUNTAIN LAKES, NJ 07046 CONTACT: NICHOLAS D. BARILE, P.E. PHONE: 862–209–4300 EMAIL: nbarile@comexconsultants.com</div>			<div>RF ENGINEER:</div> <div>COMPANY: AT&T MOBILITY – NEW ENGLAND ADDRESS: 550 COCHITUATE ROAD SUITE 550 13 & 14 FRAMINGHAM, MA 01701 CONTACT: CAMERON SYME PHONE: 508–596–7146 EMAIL: cs6970@att.com</div> <div>CONSTRUCTION MANAGEMENT:</div> <div>COMPANY: EMPIRE TELECOM ADDRESS: 16 ESQUIRE ROAD BILLERICA, MA 01821 CONTACT: GRZEGORZ "GREG" DORMAN PHONE: 484–683–1750 EMAIL: gdorman@empiretelecomm.com</div>																																														
DRAWING INDEX			REV.			VICINITY MAP			GENERAL NOTES																																														
T–1	TITLE SHEET	0	<div>1. DEPART 550 COCHITUATE RD, TOWN OF FRAMINGHAM, MA 01701 ON SR–30 [COCHITUATE RD] (WEST). 2. BEAR LEFT (SOUTH) ONTO SR–126 [CONCORD ST], TURN LEFT (SOUTH) ONTO CONCORD ST. 3. TURN RIGHT (WEST) ONTO SR–9 [WORCESTER RD], MERGE ONTO SR–30 [SR–9]. 4. KEEP STRAIGHT ONTO SR–9 [WORCESTER RD] TURN RIGHT ONTO RAMP, KEEP LEFT TO STAY ON RAMP *TOLL ROAD*. 5. MERGE ONTO I–90 [MASS PIKE] AT EXIT 9, TAKE RAMP (RIGHT) ONTO I–84. 6. ENTERING CONNECTICUT; AT EXIT 70, TAKE RAMP (RIGHT) ONTO SR–32 [RIVER RD]. 6. TURN LEFT (EAST) ONTO SR–195 [STORRS RD], TURN RIGHT (WEST) ONTO N EAGLEVILLE RD. 7. TURN RIGHT (NORTH) ONTO CEMETERY RD, TURN LEFT (WEST) ONTO NORTH CAMPUS RESIDENCE HALL PARKING LOT. FOLLOW TO BACK FOR ACCESS ROAD TO SITE.</div> <div></div>			<div>1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.</div> <div>2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.</div> <div>3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.</div>																																																	
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A–1	ROOF PLAN	0																																																					
A–2	EQUIPMENT LAYOUT	0																																																					
A–3	ANTENNA LAYOUTS & ELEVATION	0																																																					
A–4	DETAILS	0																																																					
G–1	GROUNDING DETAILS	0																																																					
APPROVALS			<div></div> <div>CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800–922–4455 OR DIAL 811</div>																																																				
THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR SITE MODIFICATIONS.																																																							
DISCIPLINE:	NAME:	DATE:																																																					
SITE ACQUISITION:																																																							
CONSTRUCTION MANAGER:																																																							
AT&T PROJECT MANAGER:																																																							
<div>COM–EX Consultants</div> <div>115 ROUTE 46 SUITE E39 MOUNTAIN LAKES, NJ 07046 PHONE: 862.209.4300 FAX: 862.209.4301</div>		<div>EMPIRE telecom</div> <div>16 ESQUIRE ROAD BILLERICA, MA 01821</div>		<div>SITE NUMBER: CT1077 SITE NAME: STORRS</div> <div>60 NORTH EAGLESVILLE ROAD MANSFIELD, CT 06269 TOLLAND COUNTY</div>		<div></div> <div>at&t MOBILITY</div> <div>550 COCHITUATE ROAD FRAMINGHAM, MA 01701</div>		<table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0</td><td>09/20/16</td><td colspan="2">ISSUED AS FINAL</td><td>NJM</td><td>NDB NDB</td></tr><tr><td>NO.</td><td>DATE</td><td colspan="2">REVISIONS</td><td>BY</td><td>CHK APP'D</td></tr><tr><td colspan="2">SCALE: AS SHOWN</td><td colspan="2">DESIGNED BY: NJM</td><td colspan="2">DRAWN BY: GR</td></tr></table>																				0	09/20/16	ISSUED AS FINAL		NJM	NDB NDB	NO.	DATE	REVISIONS		BY	CHK APP'D	SCALE: AS SHOWN		DESIGNED BY: NJM		DRAWN BY: GR		<div>SEAL:</div> <div></div> <div>PROFESSIONAL ENGINEER CT LICENSE NO. 26643</div>		<div>AT&T</div> <div>DRAWING TITLE:</div> <div>TITLE SHEET</div> <table><tr><td>JOB NUMBER</td><td>DRAWING NUMBER</td><td>REV</td></tr><tr><td>16043–EMP</td><td>T–1</td><td>0</td></tr></table>		JOB NUMBER	DRAWING NUMBER	REV	16043–EMP	T–1	0
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GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½” OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR – EMPIRE TELECOM

SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)

OWNER – AT&T MOBILITY

OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. INFORMATION SHOWN ON THIS SET OF DRAWINGS TAKEN FROM PLANS PREPARED BY CHA FOR AT&T DATED (04/20/11). CONTRACTOR TO NOTIFY ENGINEER IF DISCREPANCIES EXIST PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. SUBCONTRACTOR’S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
- INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS

• NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS

• FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
21. SUBCONTRACTOR’S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

• AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

• AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION

• AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM

• TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:

• TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

• OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA

• INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

• TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
22. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.
23. INFORMATION SHOWN ON THIS SET OF DRAWINGS TAKEN FROM PLANS PREPARED BY HUDSON DESIGN GROUP FOR AT&T DATED 4/18/12. CONTRACTOR TO NOTIFY ENGINEER IF DISCREPANCIES EXIST PRIOR TO COMMENCEMENT OF CONSTRUCTION.



SITE NUMBER: CT1077
SITE NAME: STORRS
60 NORTH EAGLESVILLE ROAD
MANSFIELD, CT 06269
TOLLAND COUNTY



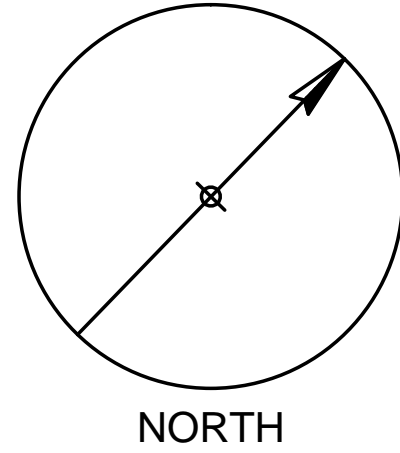
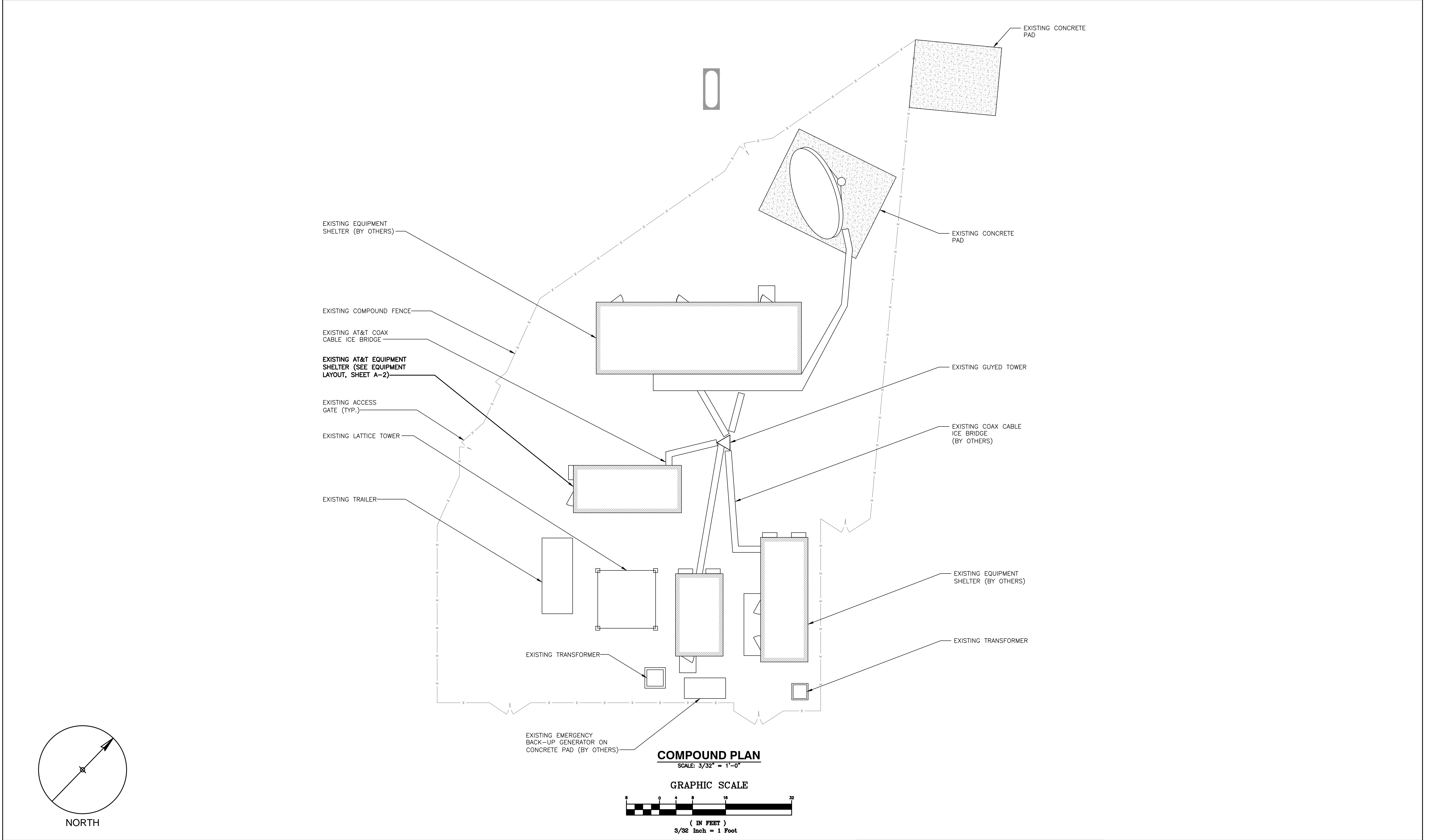
0	09/20/16	ISSUED AS FINAL		NJM	NDB NDB
NO.	DATE	REVISIONS		BY	CHK APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM		DRAWN BY: GR	

SEAL:



AT&T

DRAWING TITLE: GROUNDING NOTES & GENERAL NOTES		
JOB NUMBER 16043-EMP	DRAWING NUMBER GN-1	REV 0



COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

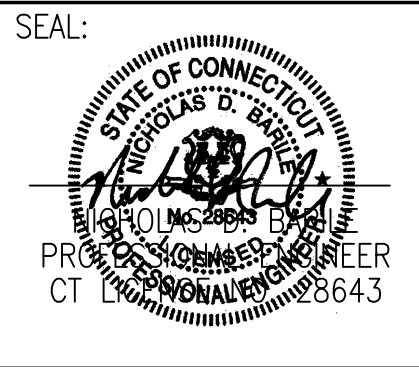
EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1077
SITE NAME: STORRS
60 NORTH EAGLESVILLE ROAD
MANSFIELD, CT 06269
TOLLAND COUNTY

**at&t**
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

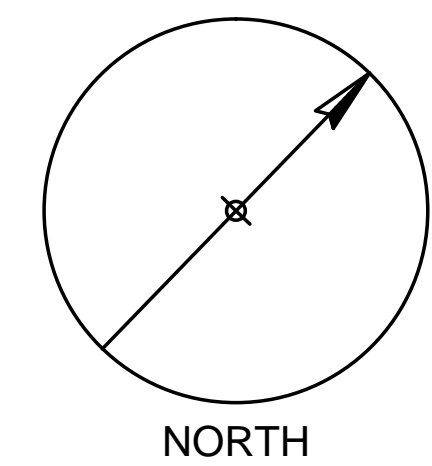
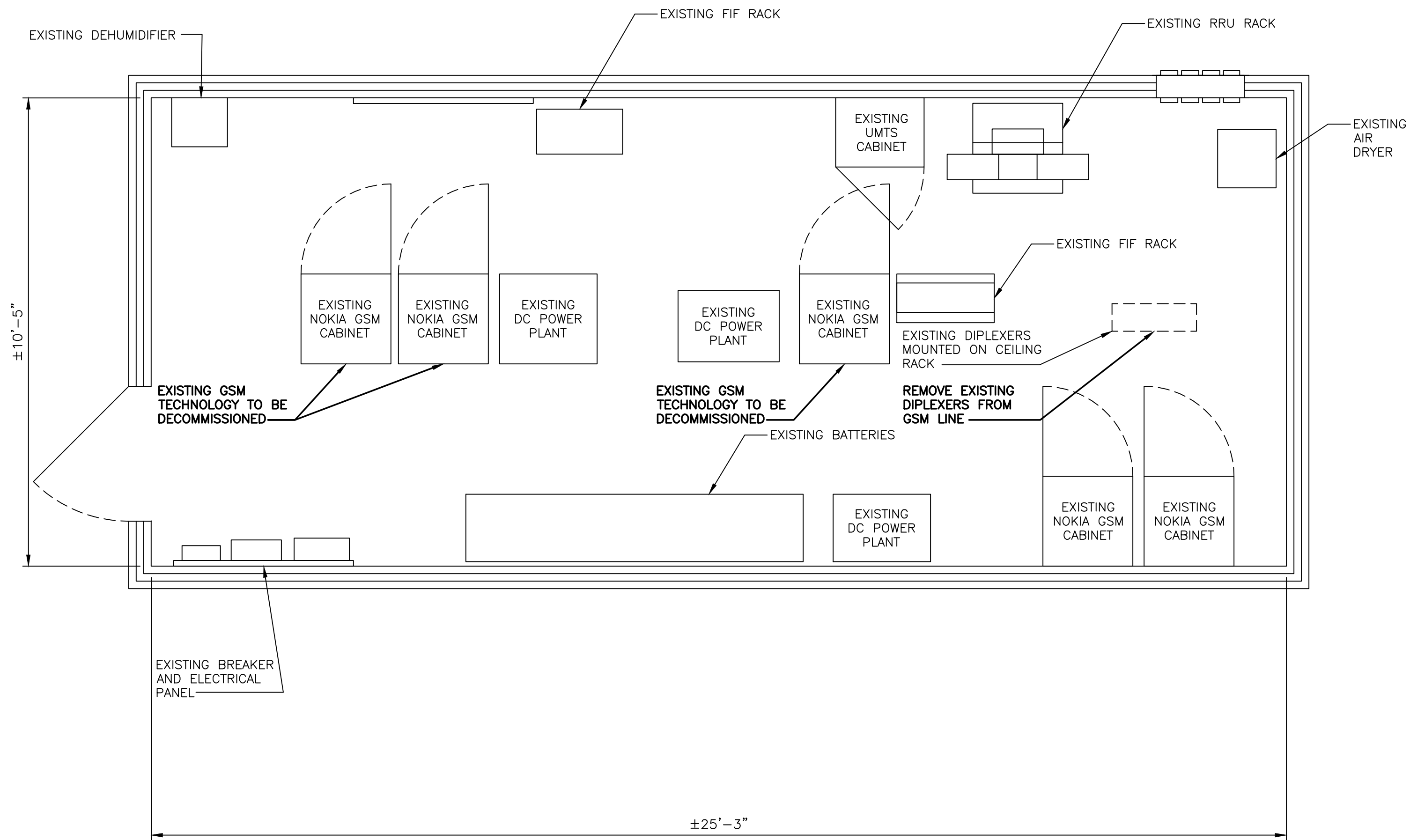
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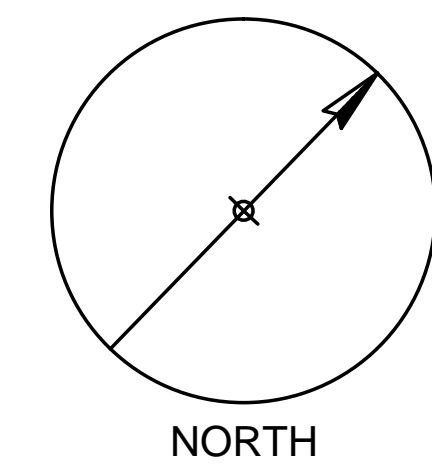
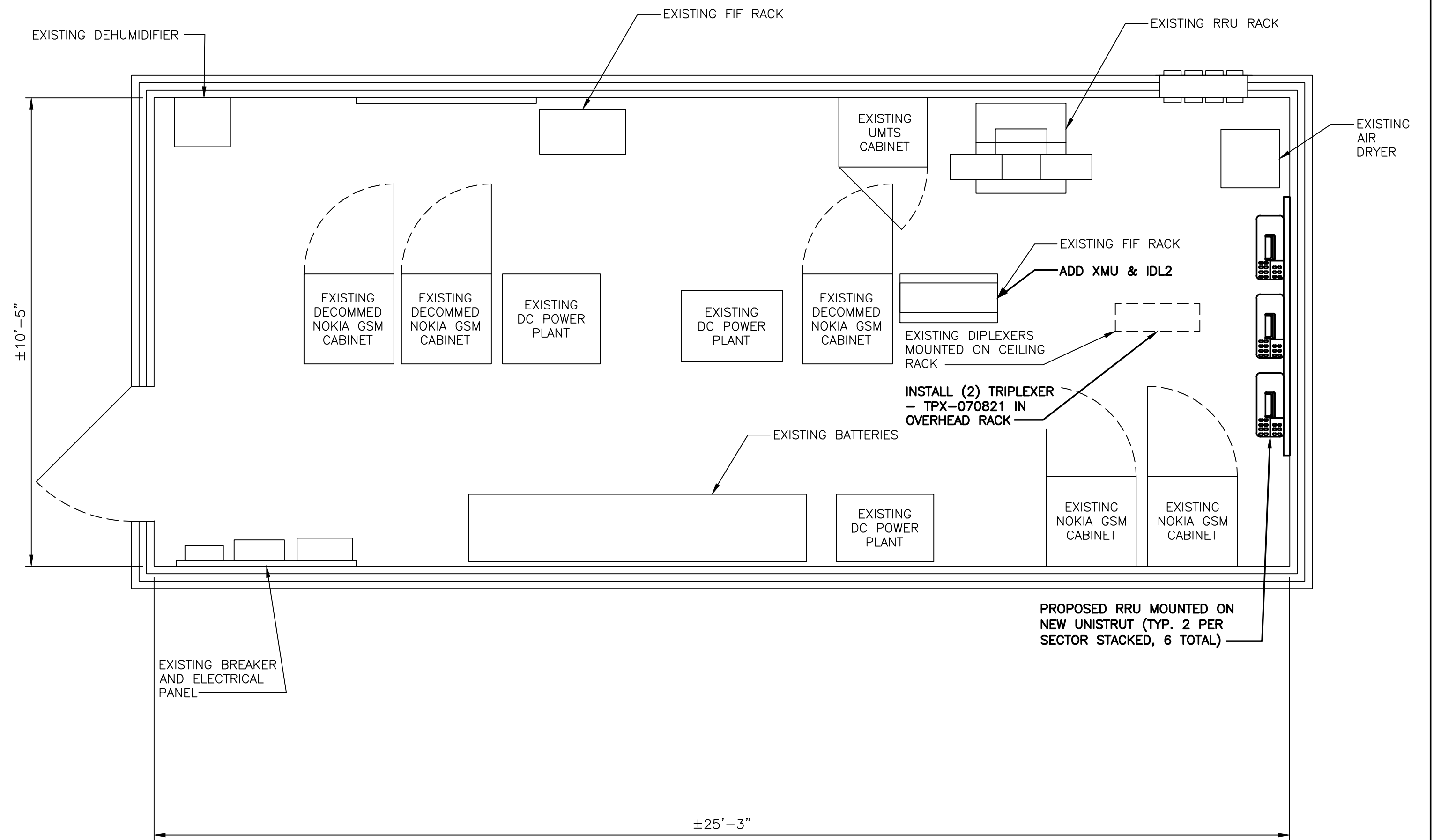


NICHOLAS D. BICKEL
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT
LICENSE NO. 26643

AT&T		
DRAWING TITLE:		
COMPOUND LAYOUT		
JOB NUMBER	DRAWING NUMBER	REV
16043-EMP	A-1	0



EXISTING EQUIPMENT LAYOUT
 SCALE: 1/2" = 1'-0"
 (IN FEET)
 1/2 Inch = 1 Foot



PROPOSED EQUIPMENT LAYOUT
 SCALE: 1/2" = 1'-0"
 (IN FEET)
 1/2 Inch = 1 Foot

COM-EX
 Consultants
 115 ROUTE 46
 SUITE E39
 MOUNTAIN LAKES, NJ 07046
 PHONE: 862.209.4300
 FAX: 862.209.4301

EMPIRE
 telecom
 16 ESQUIRE ROAD
 BILLERICA, MA 01821

SITE NUMBER: CT1077
SITE NAME: STORRS
 60 NORTH EAGLESVILLE ROAD
 MANSFIELD, CT 06269
 TOLLAND COUNTY

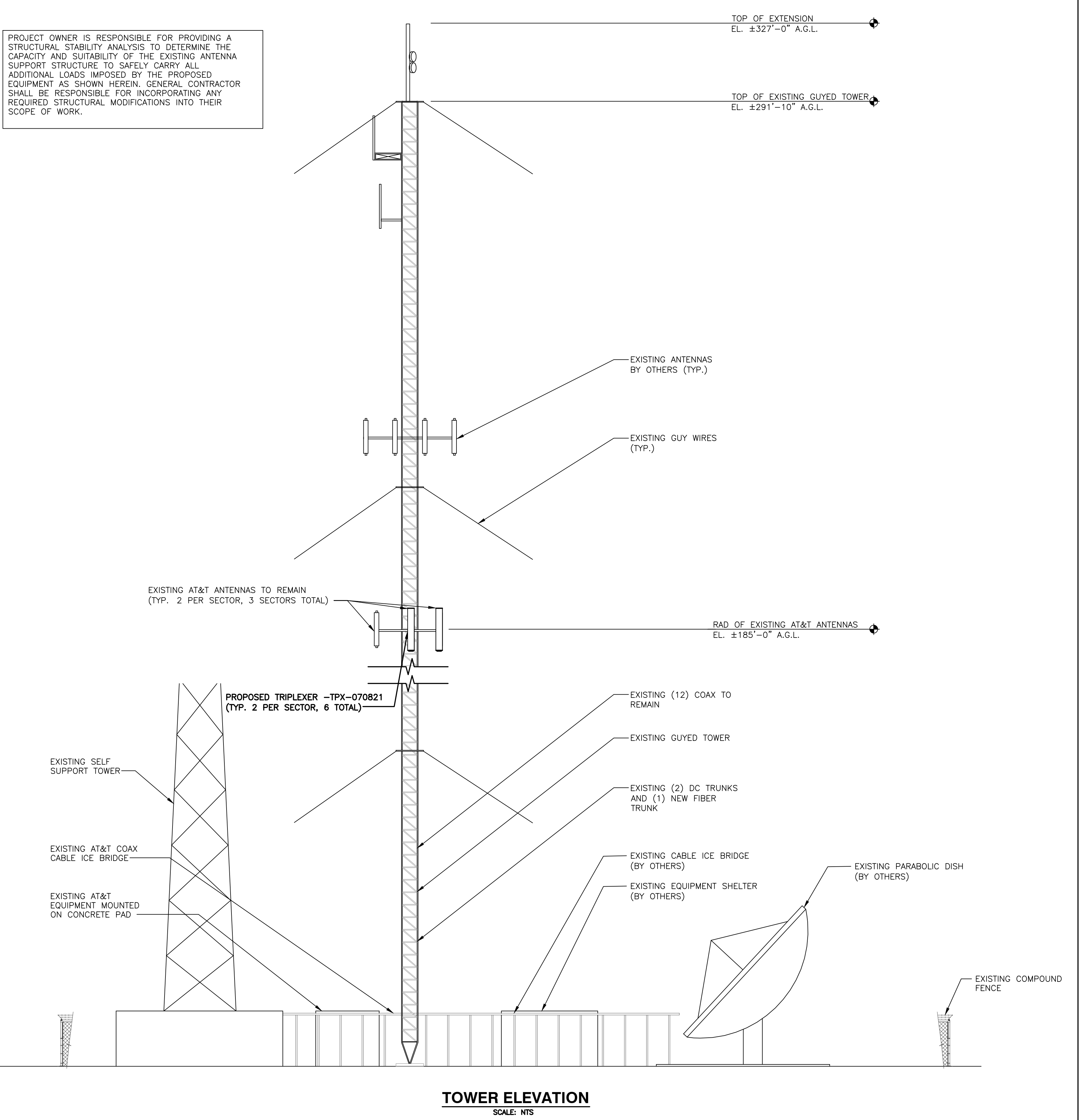
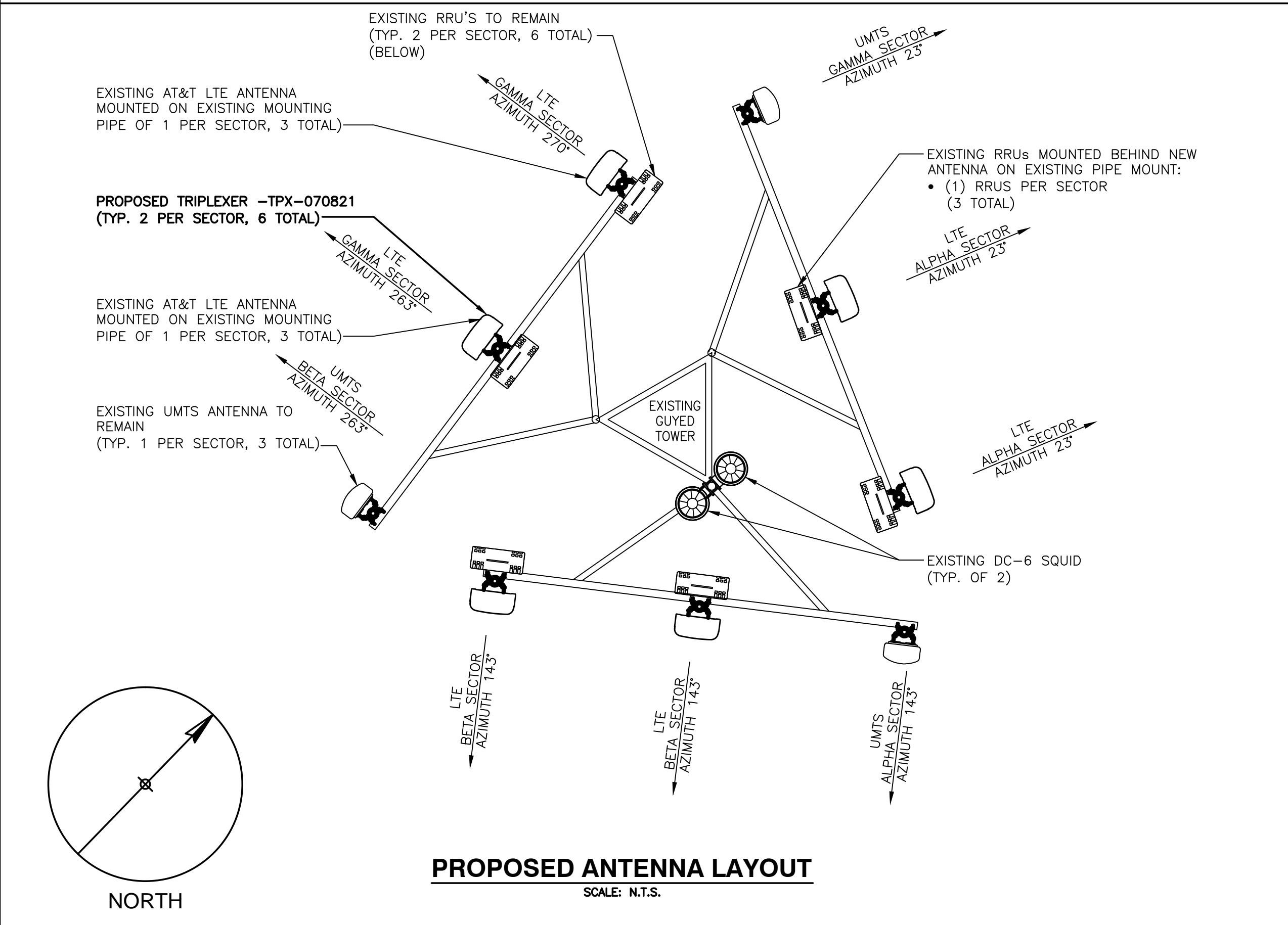
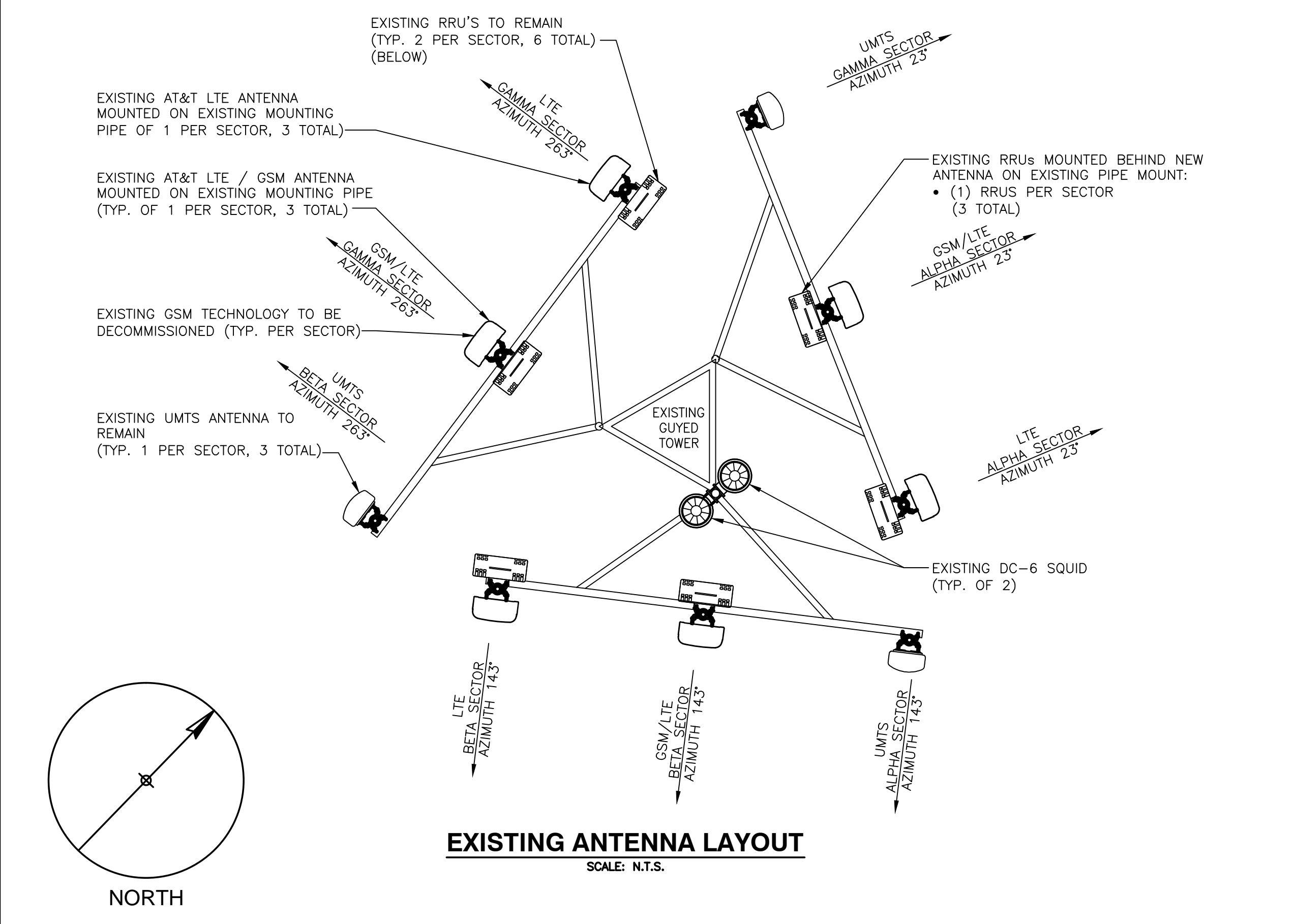
at&t
 MOBILITY
 550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: GR		

SEAL:

 NICHOLAS D. BICKEL
 PROFESSIONAL ENGINEER
 CT LICENSE NO. 26643

AT&T		
DRAWING TITLE: EQUIPMENT LAYOUT		
JOB NUMBER 16043-EMP	DRAWING NUMBER A-2	REV 0

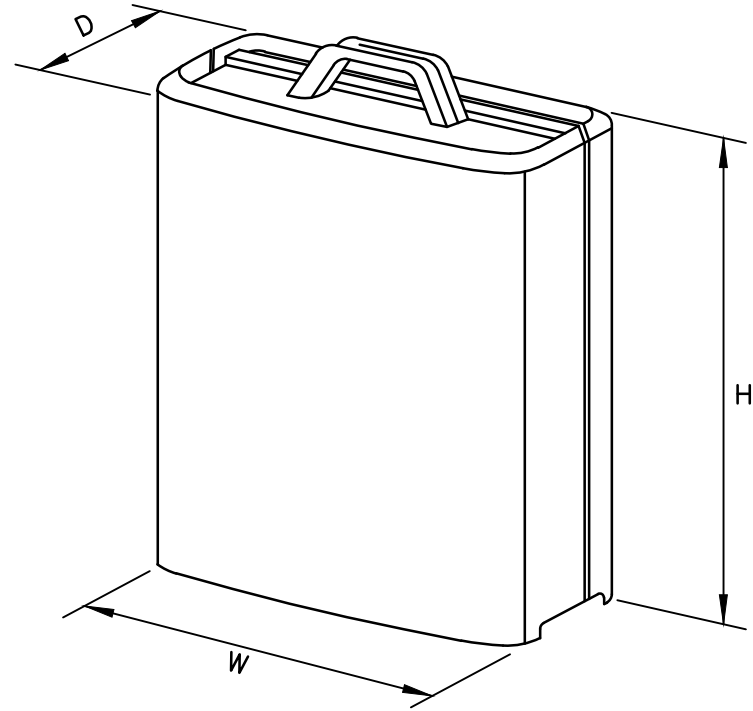


EXISTING ANTENNA SCHEDULE				
SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.10	55"x11"x5"
	A2	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
	A3	-	-	-
	A4	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4
BETA	B1	POWERWAVE	7770.00.850.08	55"x11"x5"
	B2	CCI	OPA-65R-LCUU-H6	72"x14.8"x7.4"
	B3	-	-	-
	B4	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
GAMMA	G1	POWERWAVE	7770.00.850.06	55"x11"x5"
	G2	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
	G3	-	-	-
	G4	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4

FINAL ANTENNA SCHEDULE				
SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.10	55"x11"x5"
	A2	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
	A3	-	-	-
	A4	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4
BETA	B1	POWERWAVE	7770.00.850.08	55"x11"x5"
	B2	CCI	OPA-65R-LCUU-H6	72"x14.8"x7.4"
	B3	-	-	-
	B4	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
GAMMA	G1	POWERWAVE	7770.00.850.06	55"x11"x5"
	G2	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
	G3	-	-	-
	G4	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4

PROPOSED RRH SCHEDULE					
SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-32 B2	27.2"x12.1"x7"		
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		
BETA	ERICSSON	RRUS-32 B2	27.2"x12.1"x7"		
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		
GAMMA	ERICSSON	RRUS-32 B2	27.2"x12.1"x7"		
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		

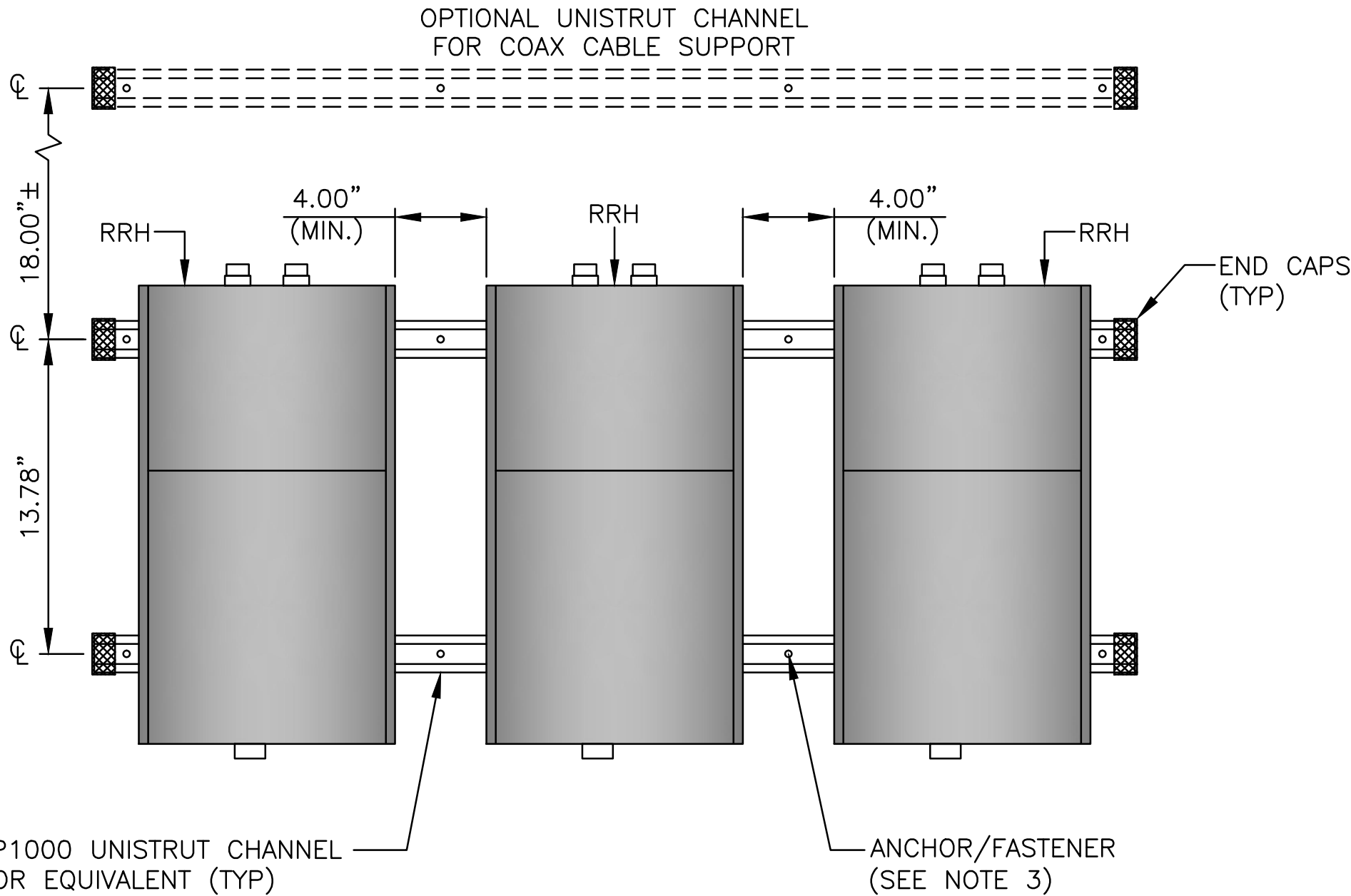
PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.



MODEL	L x W x H	WEIGHT
RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
*RRUS-32	29.9"x13.3"x9.5"	77 LBS
*RRUS-32 B2	27.2"x12.1"x7"	60 LBS

*DENOTES EXISTING.

RRUS DETAIL
SCALE: N.T.S.



ELEVATION

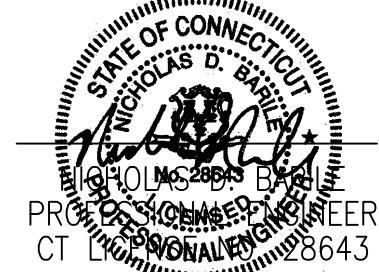
NOTES:

- ALCATEL-LUCENT (ALU) VIA AT&T SUPPLIES THE RRH. SUBCONTRACTOR SHALL SUPPLY ALL OTHER MATERIALS AND INSTALL ALL MOUNTING HARDWARE. ALU INSTALLS RRH AND MAKES CABLE TERMINATIONS.
- A SUPPORT FOR A SINGLE RRH SHALL HAVE A MINIMUM OF TWO ANCHORS/FASTENERS FOR EACH UNISTRUT CHANNEL.
- INSTALL ANCHORS/FASTENERS A MAXIMUM OF 2'-0" ON CENTERS.
 - WOOD STUDS - 1/4"Ø LAG BOLT W/ 2" EMBEDMENT IN WOOD.
 - CONCRETE - 1/2"Ø HILTI KWIK BOLT III W/ 2-1/4" EMBEDMENT OR EQUIVALENT.
 - THROUGH BOLT - 1/4"Ø A36/A307 THREADED ROD W/ NUTS AND WASHERS.
 - MASONRY - 1/2"Ø THREADED ROD WITH HILTI HY70 W/5" MINIMUM EMBEDMENT.ANCHORS AND UNISTRUT CHANNEL SHALL HAVE HOT-DIPPED GALVANIZED FINISH.
- MOUNT RRH TO UNISTRUT WITH 3/8"Ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER BRACKET. SUBCONTRACTOR SHALL SUPPLY.
- NO PAINTING OF THE RRH OR SOLAR SHIELD IS ALLOWED.

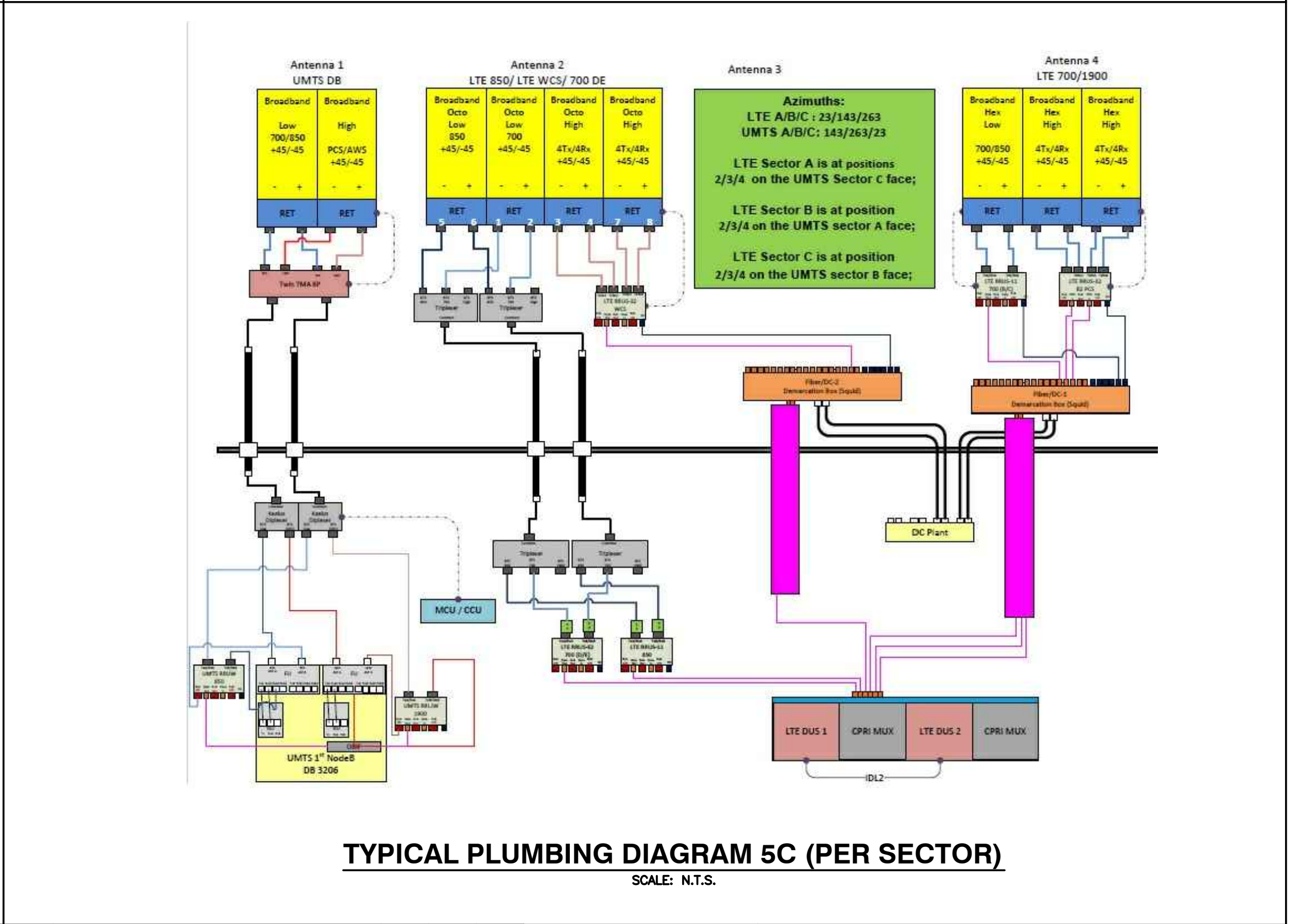
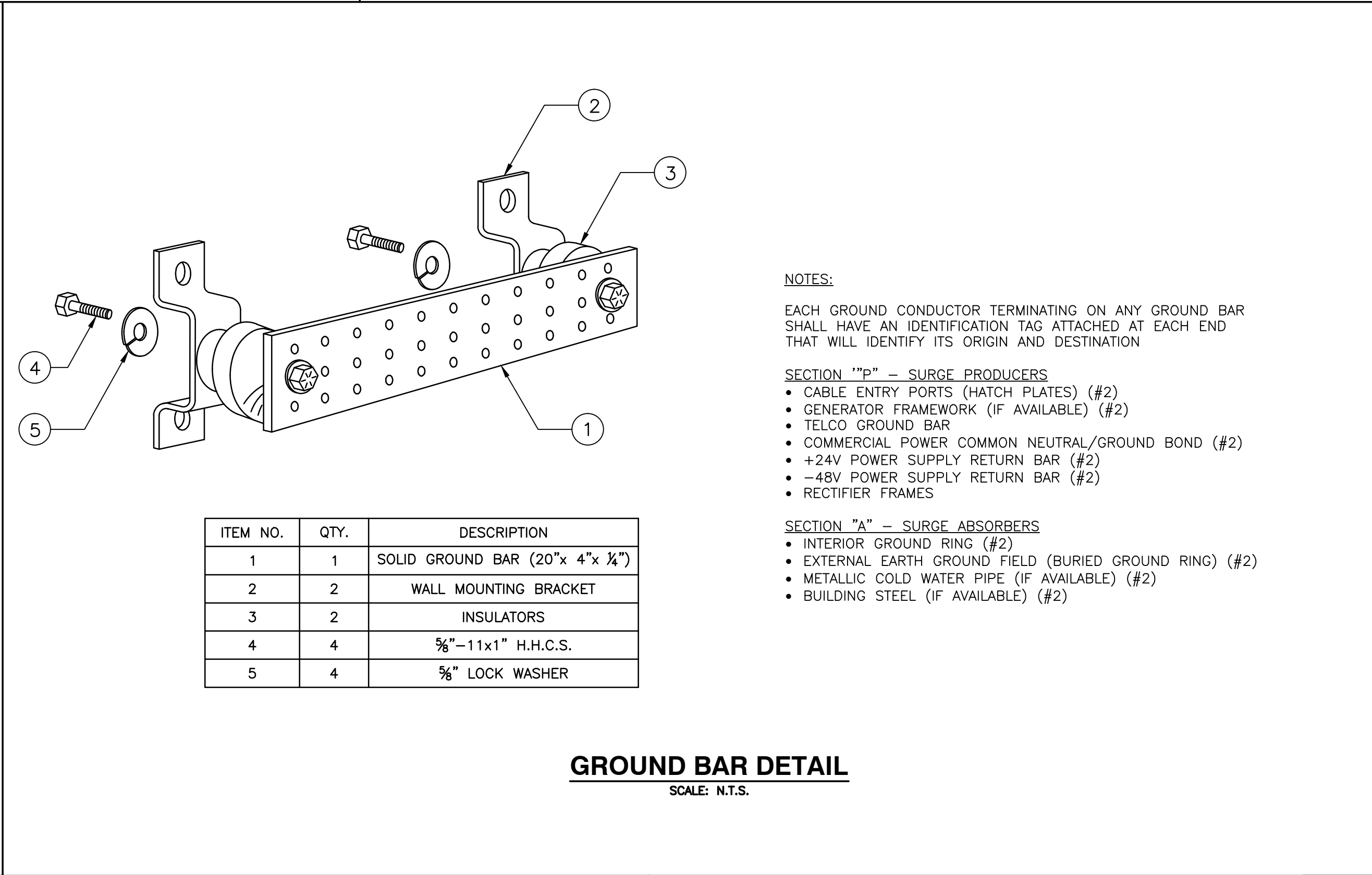
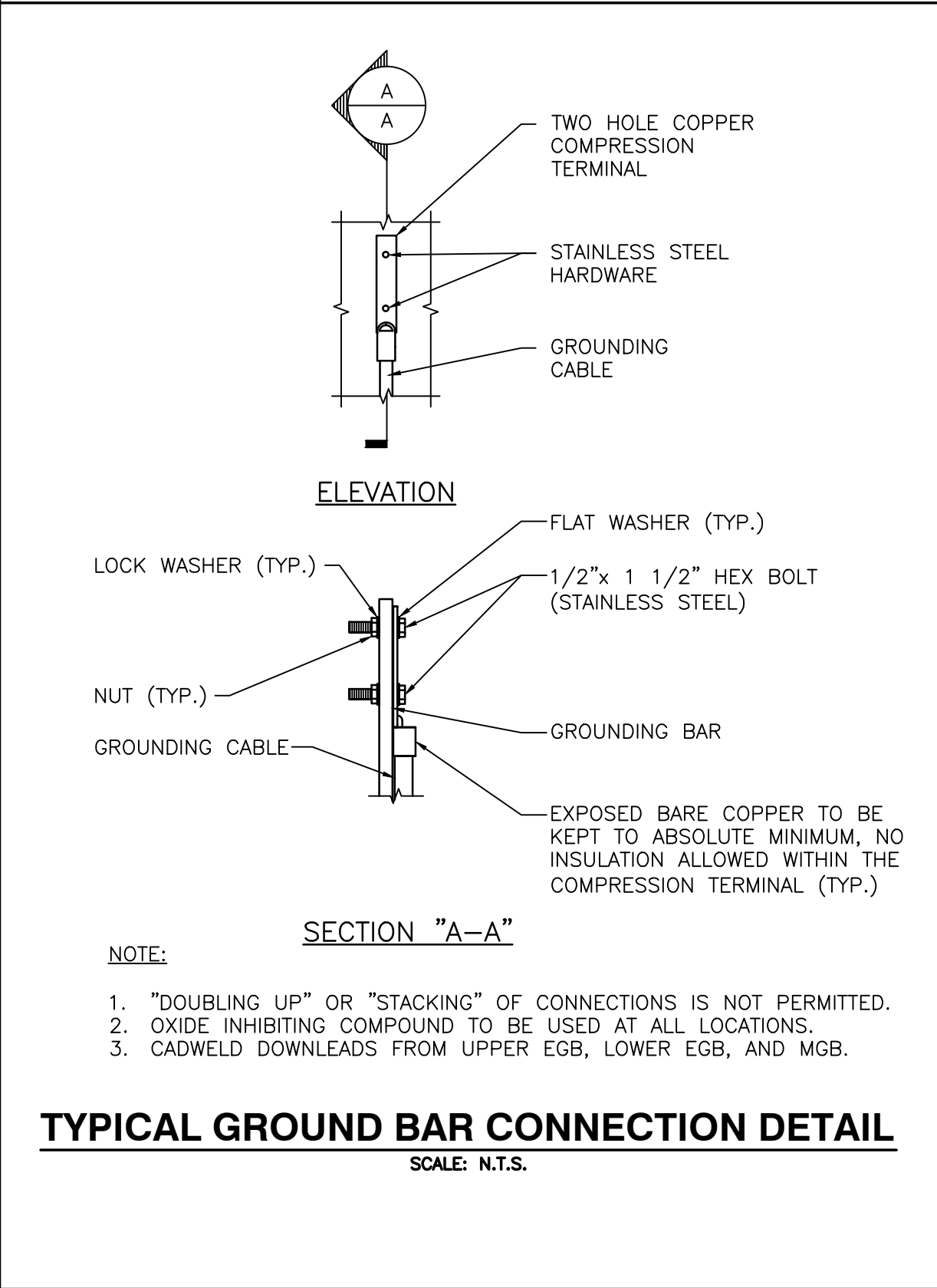
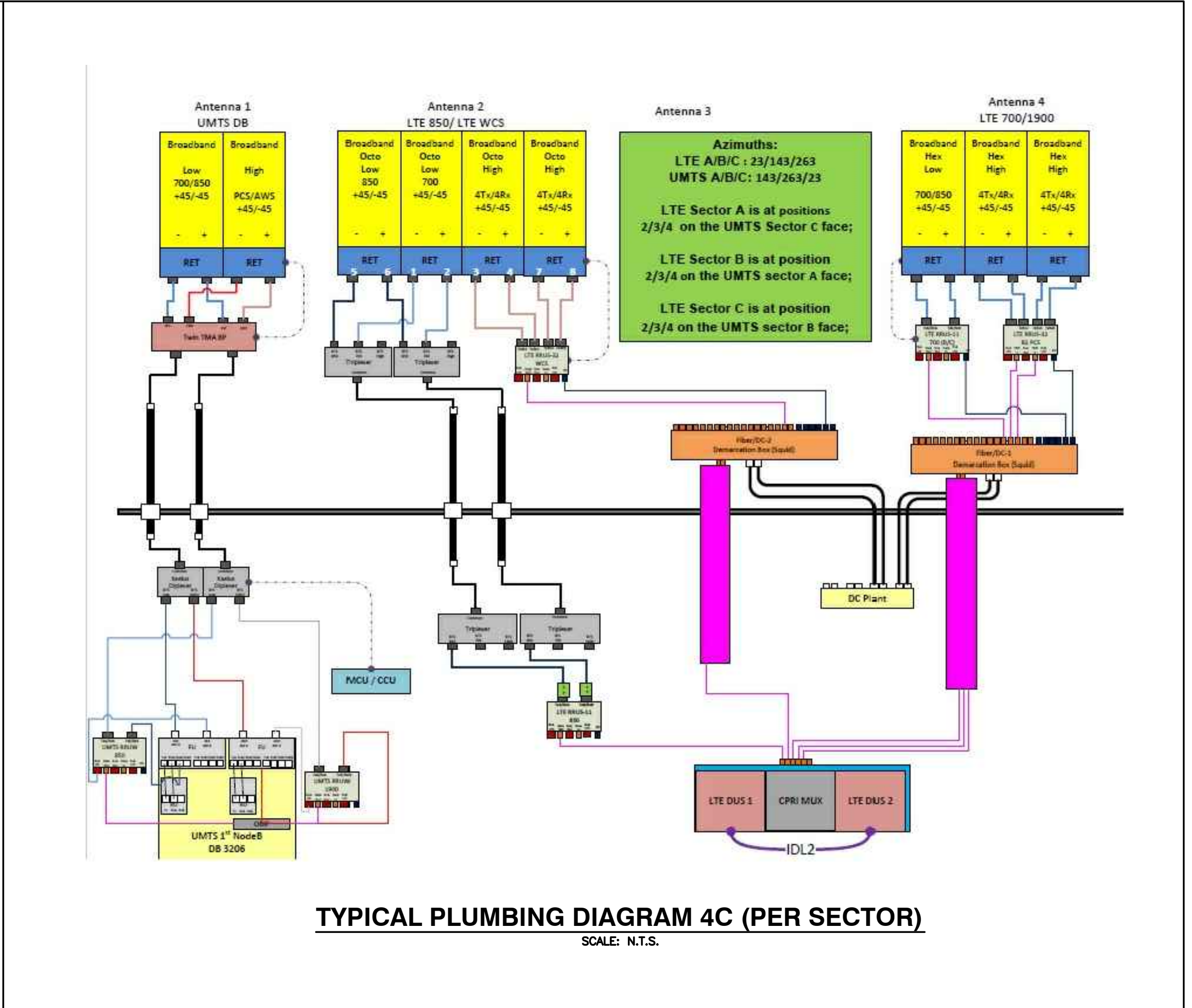
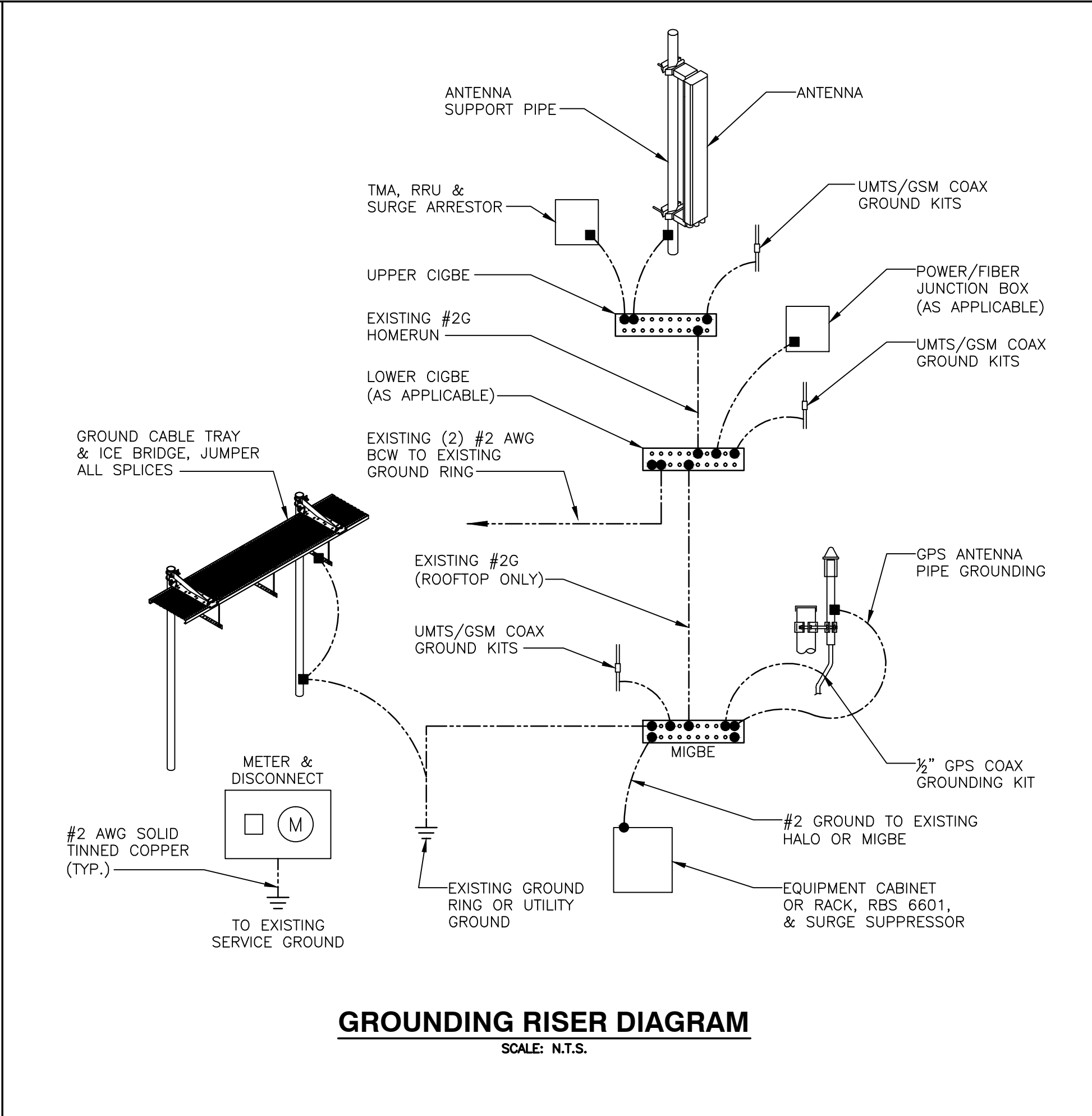
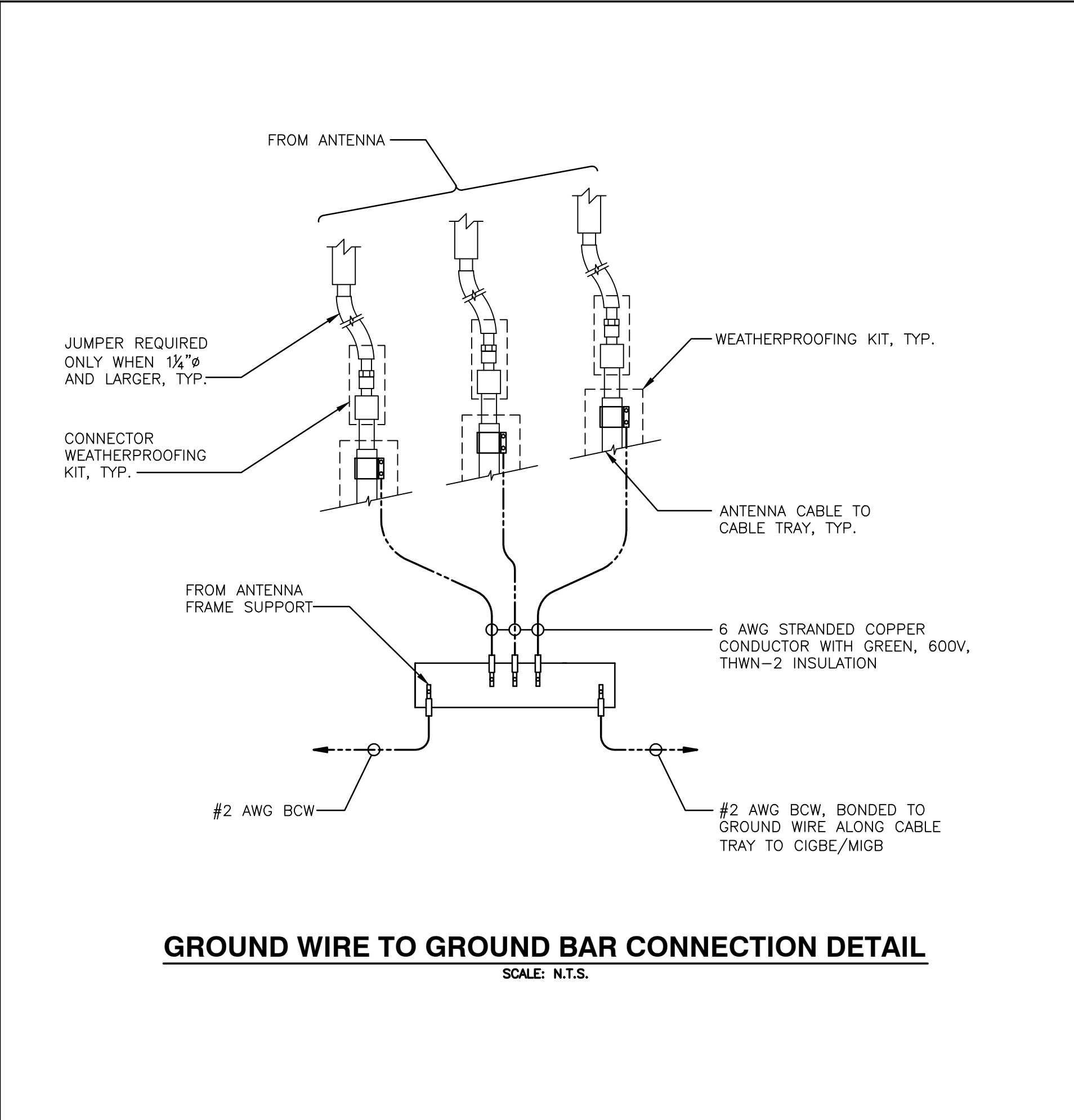
RRU MOUNTING DETAIL
SCALE: N.T.S.

0	09/20/16	ISSUED AS FINAL	NJM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: GR		

SEAL:



AT&T		
DRAWING TITLE:		
DETAILS		
JOB NUMBER	DRAWING NUMBER	REV
16043-EMP	A-4	0



STRUCTURAL ANALYSIS REPORT – REV.3
GUYED TOWER



Prepared For:
Com-Ex Consultants, LLC
115 Route 46 – Suite E39
Mountain Lakes, NJ 07046

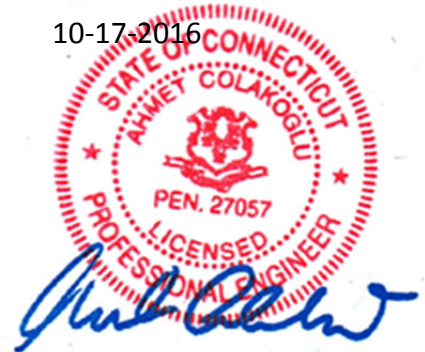


Structure Rating:

Guyed Tower:	Pass
Foundation:	Pass

Sincerely,
Destek Engineering, LLC

10-17-2016



Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

AT&T Site ID: CT1077
FA Number: 10035012
Site Name: STORRS-UCONN
60 NORTH EAGLESVILLE ROAD
MANSFIELD, CT 06269

CONTENTS

1.0 – SUBJECT AND REFERENCES

1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 - CODES AND LOADING

4.0 - STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

5.0 - ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDIX

A – SOFTWARE OUTPUT AND CALCULATIONS

1.0 **SUBJECT AND REFERENCES**

The purpose of this analysis is to evaluate the structural capacity of the existing telecommunication installation on the guyed tower at 60 North Eaglesville Road, Mansfield, CT 06269 for the additions and alterations proposed by AT&T.

The structural analysis is based on the following information provided to Destek Engineering, LLC (Destek):

- Construction Drawings prepared by Com-Ex Consultants, dated 09/16/2016.
- RFDS prepared by AT&T, dated 08/10/2016.
- Structural Analysis Report prepared by Destek, dated 07/29/2016.
- Structural Analysis Report prepared by AECOM, dated 03/16/2015.

1.1 **STRUCTURE AND EXISTING EQUIPMENT**

The structure is a 291'-10' tall guyed, structural steel lattice tower with a 35'-2" long, 10.75" diameter pipe extension, bringing the total height of the structure to approximately 327'-0", with a width of 3'-8" for the height of the lattice portion. Solid round legs are "K"-braced throughout the height of the lattice portion. The lattice portion is guyed at six (6) elevations above grade; 56.5 feet, 106.5 feet, 166.5 feet, 216.5 feet, 256.5 feet, and 285.8 feet, terminated 235 feet away from the centerline of the structure. Please refer to the software output in Appendix A, for tower geometry, member sizes, and other details.

2.0 **EXISTING AND PROPOSED APPURTENANCES**

Existing Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount	Cables
185.0	(3) Powerwave 7770 (2) CCI HPA-65R-BUU-H8 (1) CCI HPA-65R-BUU-H6 (2) CCI OPA-65R-LCUU-H8 (1) CCI OPA-65R-LCUU-H6 (3) RRUS-11 (3) RRUS-32 (3) RRUS-32 B2 (2) DC6-48-18-8F	(3) Sector Mounts	(12) 1-5/8" (2) DC Cable (1) Fiber Cable

Proposed and Final Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount	Cables
185.0	(3) Powerwave 7770 (2) CCI HPA-65R-BUU-H8 (1) CCI HPA-65R-BUU-H6 (2) CCI OPA-65R-LCUU-H8 (1) CCI OPA-65R-LCUU-H6 (6) RRUS-11 (3) RRUS-32 (3) RRUS-32 B2 (6) Triplexer TPX-070821 (2) DC6-48-18-8F	(3) Sector Mounts	(12) 1-5/8" (2) DC Cable (1) Fiber Cable

Existing Appurtenances by Others:

Rad. Center (ft)	Antenna & TMA	Mount	Cables
325	(1) Lightning Rod	Direct Mount	-
323	(1) Flash Beacon	Direct Mount	Rigid Conduit
305	(1) 2-Bay 6813 w/Radome	Flush Mount	(1) 7/8"
290	(3) 6' Dish w/Radome	Direct Mount	(3) WE65
277	(2) PD1110 Omni Antenna	(2) 3' Standoff	(2) 1/2" Coax
267	(1) OGT9-806, (1) DB810K Omni Antenna	(2) 3' Standoff	(2) 1-5/8" Coax
255	(2) AP14-850 Panel Antenna	(1) 3' Standoff w/ 8' Pipe Mount	(2) 1-5/8" Coax
250	(5) Sinclair SC479-HF1LDF Omni (2) 432-83H-01T TTA Unit (1) Sinclair SE419-SF3P4LDF Panel	Direct Mount	(6) 1-5/8" Coax (2) 1/2" Coax
250.0	(1) Kathrein OGT9-806 (1) DB-809T3 Omni	(1) 3' Standoff	(2) 1-5/8"
240	(5) Sinclair SC479-HF1LDF Omni (2) 432-83H-01T TTA Unit	Direct Mount	(5) 1-5/8" Coax (2) 1/2" Coax
211	(1) 1-Bay 6813 w/o Radome	(1) Side Arm	(1) 7/8" Coax
198	(1) 1-Bay 6813 w/o Radome (1) 6812 2-Bay Dipole Array	Direct Mount, (1) 3' Side Arm	(1) 7/8" Coax (1) 1/2" Coax
190	(1) 5 Element Yagi	Direct Mount	(1) 1/2" Coax
172	(1) 2'x1'x5" Panel (1) 8'x3" Dia. Omni	Direct Mount	(2) 7/8" Coax
171.5	(1) 5' Grid Dish	Direct Mount	(1) 1/2" Coax
158.8	(1) DB872 Panel	Direct Mount	(1) 1/2" Coax
157	(2) L-810 LED Beacons	Direct Mount	(1) DC Power Cable
124	(1) 6'x4' Ice Shield (1) 9'x10' Ice Shield	Direct Mount	-

116	(2) 6FT Dish	(2) Dish Mount	(2) EW63 Coax
112	(1) PD1108	(1) Side Arm	(1) 7/8" Coax"
104	(1) 6FT Dish	(1) Dish Mount	(1) EW63 Coax
94	(1) ASP-962, (1) PR-850	Direct Mount	(2) 1/2" Coax
84	(3) X7C-FRO-440 (3) RRH 2x40-700 (6) HBXX-6517DS-A2M (3) RRH 2x60-PCS (3) RRH 2x60-AWS (3) BXA-80063-4 (1) DB-T1-6Z-8AB-OZ	(1) Platform Mount	(12) 1-5/8" Coax
70	(1) DB-212 Dipole	Direct Mount	(1) 7/8" Coax"
18	(1) CL-24 6' Yagi	(1) 2' Standoff	(1) 1/2" Coax
13	(1) 1.2M Lightweight Satellite Dish	(1) 2' Standoff	(2) 1/2" Coax

3.0 CODES AND LOADING

This analysis has been performed in accordance with the 2016 Connecticut Building Code based upon an ultimate 3-second gust wind speed of 130 mph (Risk Category II) converted to a nominal 3-second gust wind speed of 101 mph per section 1609.3.1 as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. The following loading criteria were used in the analysis:

- Basic wind speed of 101 mph without ice (V)
- Basic wind speed of 50 mph concurrent with the design ice thickness of 1" (V_i and t_i)
- Exposure Category C, Topographic Category 1, Structure Class II ($I_w=1.0$)

The following load combinations were used with wind blowing at 0° , 60° , and 90° , measured from a line normal to the face of the tower:

- $1.2 D + 1.0 D_g + 1.6 W_o$
- $0.9 D + 1.0 D_g + 1.6 W_o$
- $1.2 D + 1.0 D_g + 1.0 D_i + 1.0 W_i + 1.0 T_i$

D : Dead load of structures and appurtenances, excluding guy assemblies

D_g : Dead load of guy assemblies

D_i : Weight of ice due to factored ice thickness (based upon t_i)

T_i : Load effects due to temperature

W_o : Wind load without ice (based upon V)

W_i : Weight of ice due to factored ice thickness (based upon V_i)

4.0 **STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES**

The analysis is based on the information provided to Destek and is assumed to be current and correct. Unless otherwise noted, the structure is assumed to be in good condition, free of defects, and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service lifespan. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis does not include a qualification of the antenna mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and placement, etc., will require Destek to generate an additional structural analysis. Additionally, the proposed linear appurtenances should be placed per recommendations of this report.

5.0 **ANALYSIS AND ASSUMPTIONS**

The tower was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

6.0 **RESULTS AND CONCLUSION**

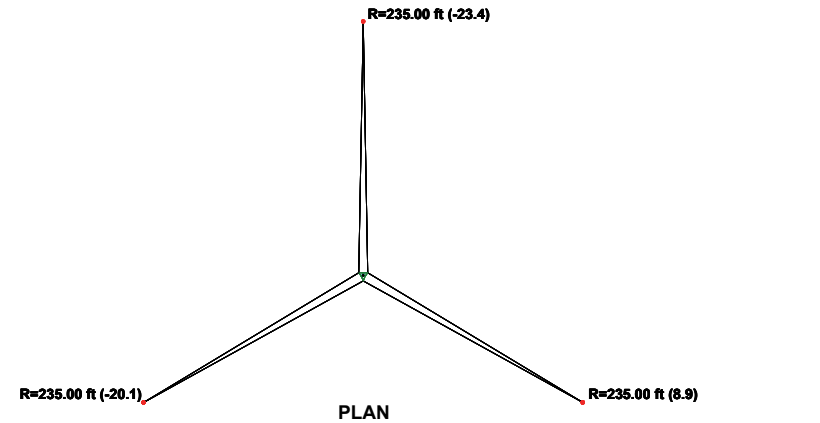
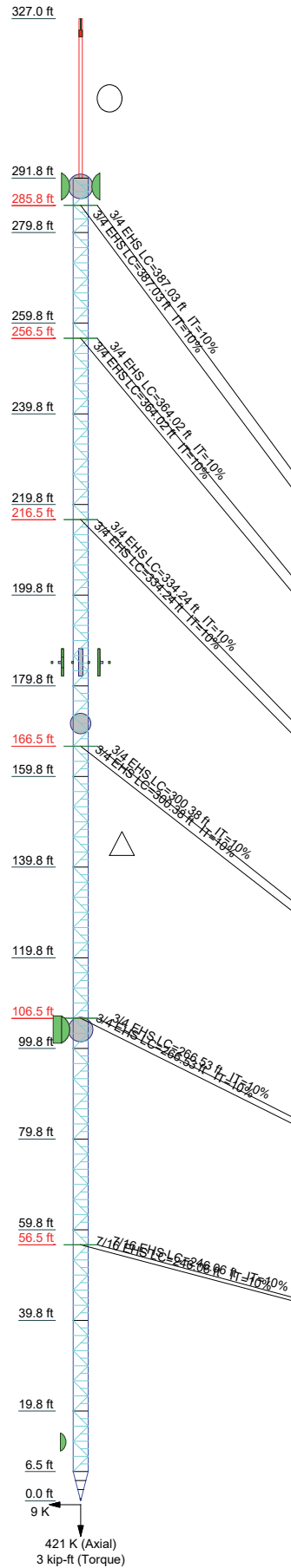
Based on an analysis per *T/A-222-G*, the existing tower is found to have **adequate** structural capacity for the proposed modifications by AT&T. For the aforementioned load combinations, tower leg between 0 and 6.5 feet are stressed to a maximum of **82.5%** of their allowable capacity. Tower guys, horizontals, diagonals, and the pole extension were found stressed to maximums of **64.1%**, **26.0%**, **43.6%**, and **13.1%** of their respective allowable capacities. The existing tower foundation is found to have **adequate** capacity for the proposed changes by AT&T. As maximum, the foundation is stressed to **100.5%** of capacity, below the industry wide accepted stress level of 105%.

Therefore, the proposed additions and alterations by AT&T **can** be implemented as intended with the conditions outlined in this report.

Should you have any questions about this report, please contact Ahmet Colakoglu at (770) 693-0835 or acolakoglu@destekengineering.com.

APPENDIX A
SOFTWARE OUTPUT AND CALCULATIONS

Section	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1	L1
Legs																	EXTEND 10.75X0.875
Leg Grade																	
Diagonals																	
Diagonal Grade																	N.A.
Top Girts																	N.A.
Mid Girts																	N.A.
Bottom Girts																	N.A.
Horizontals																	N.A.
Sec. Horizontals																	N.A.
Top Guy Pul-Offs																	N.A.
Face Width (ft)																	0.895833
# Panels @ (ft)																	4 @ 3
Weight (K)																	3.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8"x4"	325	(2) TPX-070821	185
Flash Beacon Lighting	323	(2) TPX-070821	185
6813 1-Bay (WHUS-34)	305	Commscope MTC3615/SF-QV12-4-96	185
PD1110 (WHUS-40)	305	7770.00 w/ Mount Pipe	185
6ft dish	290	7770.00 w/ Mount Pipe	185
6ft dish	290	7770.00 w/ Mount Pipe	185
PD1110 (WHUS-39)	277	24x12x45 panel	172
4' Standoff	277	3x8 omni	172
SC479-HF1LDF (CSP-12 Future)	271 - 256.5	5' grid dish	171.5
SC479-HF1LDF (CSP-13 Future)	271 - 256.5	16x12x3 TTA	166
SC479-HF1LDF (CSP-20 Future)	271 - 256.5	2x1x5 panel	158.8
SC479-HF1LDF (CSP-13 Future)	271 - 256.5	L-810 flashing beacon	157
DB810K (CSP-5)	267	L-810 flashing beacon	157
OGT9-840 (CSP-9)	267	2' Sidearm	125
AP14-850/105 (CSP-4)	261	6x4 ice shield	124
SC479-HF1LDF (CSP-17 Future Inverted)	256.5 - 242	2'6"x4" pipe mount	124
SC479-HF1LDF (CSP-18 Future Inverted)	256.5 - 242	9x10 ice shield	124
OTG9-840 (CSP-11 Inverted)	256.5 - 250	2'6"x4" pipe mount	124
OTG9-840 (CSP-7 Inverted)	256.5 - 250	PD1110	112
TTA 432-83H-01T (CSP-15 Future)	256.5	2' sidearm	112
TTA 432-83H-01T (CSP-19 Future)	256.5	6ft dish	104
SC479-HF1LDF (CSP-13 Future)	256.5 - 242	6ft dish	104
SC479-HF1LDF (CSP-13 Future)	256.5 - 242	6ft dish	104
SC479-HF1LDF (CSP-13 Future)	256.5 - 242	6"x4" pipe mount	104
SC479-HF1LDF (CSP-14 Future Inverted)	256.5 - 242	ASP-962	94
SE419-SF3P4LDF (CSP-16 Future)	256.5	PR-850	94
AP14-850/105 (CSP-6)	252	RRH 2X60-AWS	84
TTA 432-83H-01T (CSP-26 Future)	240	RRH 2X60-AWS	84
TTA 432-83H-01T (CSP-23 Future)	240	RRH 2X60-AWS	84
6813 1-Bay (WHUS-36)	211	X7C-FRO-440 w/pipe	84
6813 1-Bay (WHUS-34)	198	X7C-FRO-440 w/pipe	84
6812 (CPR-32 Future)	198	X7C-FRO-440 w/pipe	84
6' Yagi (CPR-33 Future)	190	RRH 2X40-07L-U	84
OPA-65R-LCUU-H8 w/ Mount Pipe	185	RRH 2X40-07L-U	84
OPA-65R-LCUU-H6 w/ Mount Pipe	185	RRH 2X40-07L-U	84
OPA-65R-LCUU-H8 w/ Mount Pipe	185	HBXX-6517DS-VTM	84
HPA-65R-BUU-H8 w/ Mount Pipe	185	HBXX-6517DS-VTM	84
HPA-65R-BUU-H6 w/ Mount Pipe	185	HBXX-6517DS-VTM	84
HPA-65R-BUU-H8 w/ Mount Pipe	185	HBXX-6517DS-VTM	84
RRUS 32 B2	185	PCS 1900 4X45W	84
RRUS 32 B2	185	PCS 1900 4X45W	84
RRUS 32 B2	185	PCS 1900 4X45W	84
RRUS-32	185	BXA-80063/4CF w/pipe	84
RRUS-32	185	BXA-80063/4CF w/pipe	84
RRUS-32	185	HBXX-6515DS-VTM	84
(2) RRUS-11	185	HBXX-6515DS-VTM	84
(2) RRUS-11	185	HBXX-6515DS-VTM	84
(2) RRUS-11	185	BXA-80063/4CF w/pipe	84
(2) DC6-48-60-18-8F	185	HBXX-6515DS-VTM	84
(2) TPX-070821	185	DB212-1 (CSP-10)	70
		2' Side arm	18
		6' Yagi	18
		2' Side arm	13
		1.2M	13

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	12x3/8	C	MC12x35
B	9x3/8	D	7 @ 1

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi



Destek Engineering, LLC
1281 Kennestone Circle, Suite 100
Marietta, GA 30066
Phone: (770) 693 0835
FAX:

Job: **CT1077 - Storrs-UConn Rev.2**

Project: **1629069**

Client: **Com-Ex Consultants** | Drawn by: **Ahmet Colakoglu** | App'd:

Code: **TIA/EIA-222-F** | Date: **09/16/16** | Scale: **NTS**

Path: **Z:\Projects\2016\29 - Com-Ex\069 - CT1077\09-2016\Tnx\CT1077 FINAL.eri** | Dwg No. **E-1**

tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:	Job	CT1077 - Storrs-UConn Rev.2	Page	1 of 73
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Tower Input Data

The main tower is a 3x guyed tower with an overall height of 327.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 3.67 ft at the top and tapered at the base.

An index plate is provided at the 3x guyed -tower connection.

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Tolland County, Connecticut.

Basic wind speed of 90 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 90 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 90 mph.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.0664.

Safety factor used in guy design is 2.

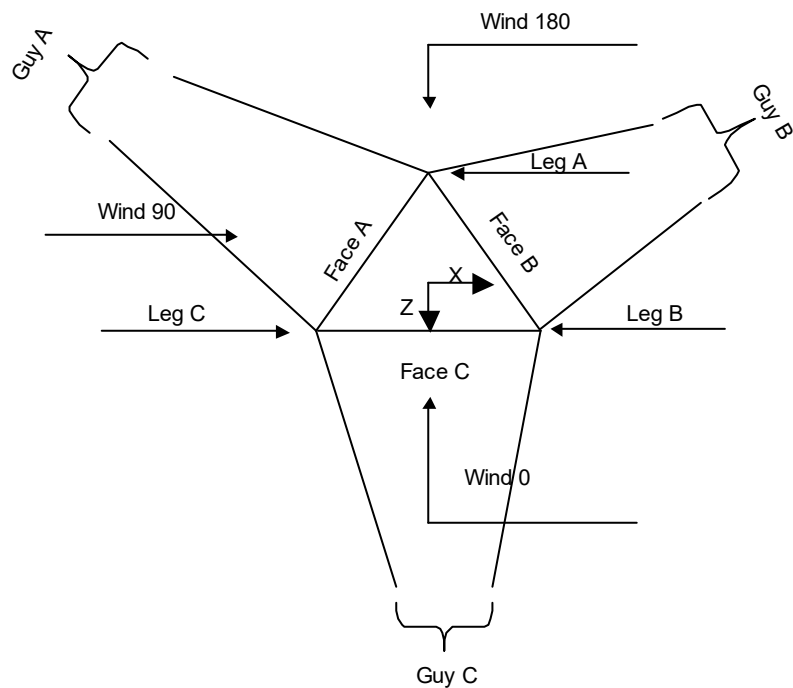
Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
√ SR Members Are Concentric		

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Face Guyed

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	327.00-291.84	35.16	EXTEND 10.75X0.875	A572-50 (50 ksi)	

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 327.00-291.84				1	1	1.05			

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Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	291.84-279.84			3.67	1	12.00
T2	279.84-259.84			3.67	1	20.00
T3	259.84-239.84			3.67	1	20.00
T4	239.84-219.84			3.67	1	20.00
T5	219.84-199.84			3.67	1	20.00
T6	199.84-179.84			3.67	1	20.00
T7	179.84-159.84			3.67	1	20.00
T8	159.84-139.84			3.67	1	20.00
T9	139.84-119.84			3.67	1	20.00
T10	119.84-99.84			3.67	1	20.00
T11	99.84-79.84			3.67	1	20.00
T12	79.84-59.84			3.67	1	20.00
T13	59.84-39.84			3.67	1	20.00
T14	39.84-19.84			3.67	1	20.00
T15	19.84-6.50			3.67	1	13.34
T16	6.50-0.00			3.67	1	6.50

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	291.84-279.84	3.00	K Brace Left	No	Yes+Steps	0.0000	0.0000
T2	279.84-259.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T3	259.84-239.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T4	239.84-219.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T5	219.84-199.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T6	199.84-179.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T7	179.84-159.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T8	159.84-139.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T9	139.84-119.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T10	119.84-99.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T11	99.84-79.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T12	79.84-59.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T13	59.84-39.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T14	39.84-19.84	3.33	K Brace Left	No	Yes+Steps	0.0000	0.0000
T15	19.84-6.50	3.34	K Brace Left	No	Yes+Steps	0.0000	0.0000
T16	6.50-0.00	1.00	K Brace Left	No	Yes	0.0000	6.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 291.84-279.84	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T2 279.84-259.84	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)

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<i>Tower Elevation ft</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
T3 259.84-239.84	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T4 239.84-219.84	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T5 219.84-199.84	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T6 199.84-179.84	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T7 179.84-159.84	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T8 159.84-139.84	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T9 139.84-119.84	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T10 119.84-99.84	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T11 99.84-79.84	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T12 79.84-59.84	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T13 59.84-39.84	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T14 39.84-19.84	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T15 19.84-6.50	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T16 6.50-0.00	Solid Round	3	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 291.84-279.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T2 279.84-259.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T3 259.84-239.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T4 239.84-219.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T5 219.84-199.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T6 199.84-179.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T7 179.84-159.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T8 159.84-139.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T9 139.84-119.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T10 119.84-99.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T11 99.84-79.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

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<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T12 79.84-59.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T13 59.84-39.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T14 39.84-19.84	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T15 19.84-6.50	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T16 6.50-0.00	Flat Bar	12x3/8	A36 (36 ksi)	Flat Bar	12x3/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T1 291.84-279.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T2 279.84-259.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T3 259.84-239.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T4 239.84-219.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T5 219.84-199.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T6 199.84-179.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T7 179.84-159.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T8 159.84-139.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T9 139.84-119.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T10 119.84-99.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T11 99.84-79.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T12 79.84-59.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T13 59.84-39.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T14 39.84-19.84	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T15 19.84-6.50	None	Flat Bar		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T16 6.50-0.00	2	Flat Bar	9x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry (cont'd)

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<i>Tower Elevation</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
<i>ft</i>						
T1 291.84-279.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T2 279.84-259.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T3 259.84-239.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T4 239.84-219.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T5 219.84-199.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T6 199.84-179.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T7 179.84-159.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T8 159.84-139.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T9 139.84-119.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T10 119.84-99.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T11 99.84-79.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T12 79.84-59.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T13 59.84-39.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T14 39.84-19.84	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T15 19.84-6.50	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T16 6.50-0.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals in</i>	<i>Double Angle Stitch Bolt Spacing Horizontals in</i>	<i>Double Angle Stitch Bolt Spacing Redundants in</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>							
T1 291.84-279.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T2 279.84-259.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 259.84-239.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 239.84-219.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 219.84-199.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 199.84-179.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 179.84-159.84	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000

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<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals in</i>	<i>Double Angle Stitch Bolt Spacing Horizontals in</i>	<i>Double Angle Stitch Bolt Spacing Redundants in</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>							
159.84-139.84			(36 ksi)						
T9	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
139.84-119.84			(36 ksi)						
T10	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
119.84-99.84			(36 ksi)						
T11	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
99.84-79.84			(36 ksi)						
T12	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
79.84-59.84			(36 ksi)						
T13	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
59.84-39.84			(36 ksi)						
T14	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
39.84-19.84			(36 ksi)						
T15 19.84-6.50	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
T16 6.50-0.00	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Calc K Single Angles</i>	<i>Calc K Solid Rounds</i>	<i>K Factors¹</i>							
			<i>Legs</i>	<i>X Brace Diags</i>	<i>K Brace Diags</i>	<i>Single Diags</i>	<i>Girts</i>	<i>Horiz.</i>	<i>Sec. Horiz.</i>	<i>Inner Brace</i>
				<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>
<i>ft</i>										
T1	No	Yes	1	1	1	1	1	1	1	1
291.84-279.84				1	1	1	1	1	1	1
T2	No	Yes	1	1	1	1	1	1	1	1
279.84-259.84				1	1	1	1	1	1	1
T3	No	Yes	1	1	1	1	1	1	1	1
259.84-239.84				1	1	1	1	1	1	1
T4	No	Yes	1	1	1	1	1	1	1	1
239.84-219.84				1	1	1	1	1	1	1
T5	No	Yes	1	1	1	1	1	1	1	1
219.84-199.84				1	1	1	1	1	1	1
T6	No	Yes	1	1	1	1	1	1	1	1
199.84-179.84				1	1	1	1	1	1	1
T7	No	Yes	1	1	1	1	1	1	1	1
179.84-159.84				1	1	1	1	1	1	1
T8	No	Yes	1	1	1	1	1	1	1	1
159.84-139.84				1	1	1	1	1	1	1
T9	No	Yes	1	1	1	1	1	1	1	1
139.84-119.84				1	1	1	1	1	1	1
T10	No	Yes	1	1	1	1	1	1	1	1
119.84-99.84				1	1	1	1	1	1	1
T11	No	Yes	1	1	1	1	1	1	1	1
99.84-79.84				1	1	1	1	1	1	1
T12	No	Yes	1	1	1	1	1	1	1	1
79.84-59.84				1	1	1	1	1	1	1
T13	No	Yes	1	1	1	1	1	1	1	1
59.84-39.84				1	1	1	1	1	1	1
T14	No	Yes	1	1	1	1	1	1	1	1
39.84-19.84				1	1	1	1	1	1	1
T15	No	Yes	1	1	1	1	1	1	1	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
19.84-6.50				1	1	1	1	1	1	1
T16 6.50-0.00	No	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
291.84-279.84														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
279.84-259.84														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
259.84-239.84														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
239.84-219.84														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
219.84-199.84														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
199.84-179.84														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
179.84-159.84														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
159.84-139.84														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
139.84-119.84														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
119.84-99.84														
T11	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
99.84-79.84														
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
79.84-59.84														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
59.84-39.84														
T14	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
39.84-19.84														
T15 19.84-6.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 6.50-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
291.84-279.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
279.84-259.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
259.84-239.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
239.84-219.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
219.84-199.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
199.84-179.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
179.84-159.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
159.84-139.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
139.84-119.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
119.84-99.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	1.0000	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
99.84-79.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	1.3750	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
79.84-59.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	1.3750	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
59.84-39.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	1.3750	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
39.84-19.84		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15 19.84-6.50	Flange	1.3750	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16 6.50-0.00	Flange	1.3750	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L _u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
56.5067	EHS	A 7/16	2.08	10%	21000	0.399	245.87	235.00	0.0000	-23.40	100%
		B 7/16	2.08	10%	21000	0.399	237.36	235.00	0.0000	8.90	100%
		C 7/16	2.08	10%	21000	0.399	244.82	235.00	0.0000	-20.10	100%
106.507	EHS	A 3/4	5.83	10%	19000	1.155	266.30	235.00	0.0000	-23.40	100%
		B 3/4	5.83	10%	19000	1.155	252.15	235.00	0.0000	8.90	100%
		C 3/4	5.83	10%	19000	1.155	264.71	235.00	0.0000	-20.10	100%
166.507	EHS	A 3/4	5.83	10%	19000	1.155	300.12	235.00	0.0000	-23.40	100%
		B 3/4	5.83	10%	19000	1.155	280.83	235.00	0.0000	8.90	100%
		C 3/4	5.83	10%	19000	1.155	298.05	235.00	0.0000	-20.10	100%
216.507	EHS	A 3/4	5.83	10%	19000	1.155	333.96	235.00	0.0000	-23.40	100%
		B 3/4	5.83	10%	19000	1.155	311.60	235.00	0.0000	8.90	100%
		C 3/4	5.83	10%	19000	1.155	331.60	235.00	0.0000	-20.10	100%
256.507	EHS	A 3/4	5.83	10%	19000	1.155	363.71	235.00	0.0000	-23.40	100%
		B 3/4	5.83	10%	19000	1.155	339.52	235.00	0.0000	8.90	100%
		C 3/4	5.83	10%	19000	1.155	361.18	235.00	0.0000	-20.10	100%

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285.84	EHS	A	3/4	5.83	10%	19000	1.155	386.70	235.00	0.0000	-23.40	100%
		B	3/4	5.83	10%	19000	1.155	361.43	235.00	0.0000	8.90	100%
		C	3/4	5.83	10%	19000	1.155	384.07	235.00	0.0000	-20.10	100%

Guy Data(cont'd)

<i>Guy Elevation ft</i>	<i>Mount Type</i>	<i>Torque-Arm Spread ft</i>	<i>Torque-Arm Leg Angle °</i>	<i>Torque-Arm Style</i>	<i>Torque-Arm Grade</i>	<i>Torque-Arm Type</i>	<i>Torque-Arm Size</i>
56.5067	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
106.507	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
166.507	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
216.507	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
256.507	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
285.84	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35

Guy Data (cont'd)

<i>Guy Elevation ft</i>	<i>Diagonal Grade</i>	<i>Diagonal Type</i>	<i>Upper Diagonal Size</i>	<i>Lower Diagonal Size</i>	<i>Is Strap.</i>	<i>Pull-Off Grade</i>	<i>Pull-Off Type</i>	<i>Pull-Off Size</i>
56.51	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35
106.51	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35
166.51	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35
216.51	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35
256.51	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35
285.84	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Channel	MC12x35

Guy Data (cont'd)

<i>Guy Elevation ft</i>	<i>Cable Weight A K</i>	<i>Cable Weight B K</i>	<i>Cable Weight C K</i>	<i>Cable Weight D K</i>	<i>Tower Intercept A ft</i>	<i>Tower Intercept B ft</i>	<i>Tower Intercept C ft</i>	<i>Tower Intercept D ft</i>
56.5067	0.10	0.09	0.10		5.76	5.38	5.71	
106.507	0.31	0.29	0.31		4.1 sec/pulse 6.94	4.0 sec/pulse 6.24	4.1 sec/pulse 6.86	

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Guy Elevation	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
ft	K	K	K	K	ft	ft	ft	ft
166.507	0.35	0.32	0.34		4.5 sec/pulse 8.77	4.3 sec/pulse 7.70	4.5 sec/pulse 8.65	
216.507	0.39	0.36	0.38		5.1 sec/pulse 10.80	4.8 sec/pulse 9.43	5.1 sec/pulse 10.65	
256.507	0.42	0.39	0.42		5.7 sec/pulse 12.76	5.3 sec/pulse 11.16	5.6 sec/pulse 12.59	
285.84	0.45	0.42	0.44		6.2 sec/pulse 14.39	5.8 sec/pulse 12.61	6.1 sec/pulse 14.20	
					6.5 sec/pulse	6.1 sec/pulse	6.5 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
56.5067	No	No	1	1	1	1	1	1
106.507	No	No	1	1	1	1	1	1
166.507	No	No	1	1	1	1	1	1
216.507	No	No	1	1	1	1	1	1
256.507	No	No	1	1	1	1	1	1
285.84	No	No	1	1	1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
56.5067	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75
106.507	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75
166.507	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75
216.507	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75
256.507	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75
285.84	0.6250 A325N	5	0.0000	1	0.6250 A325N	5	0.0000	0.75	0.6250 A325N	2	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
56.5067	A	16.55	21	21	0.5000

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<i>Guy Elevation ft</i>	<i>Guy Location</i>	<i>z ft</i>	<i>q_z psf</i>	<i>q_z Ice psf</i>	<i>Ice Thickness in</i>
106.507	B	32.70	21	21	0.5000
	C	18.20	21	21	0.5000
	A	41.55	22	22	0.5000
	B	57.70	24	24	0.5000
166.507	C	43.20	22	22	0.5000
	A	71.55	26	26	0.5000
	B	87.70	27	27	0.5000
	C	73.20	26	26	0.5000
216.507	A	96.55	28	28	0.5000
	B	112.70	29	29	0.5000
	C	98.20	28	28	0.5000
	A	116.55	30	30	0.5000
256.507	B	132.70	31	31	0.5000
	C	118.20	30	30	0.5000
	A	131.22	31	31	0.5000
	B	147.37	32	32	0.5000
285.84	C	132.87	31	31	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

<i>Guy Elevation ft</i>	<i>Guy Location</i>	<i>Chord Angle °</i>	<i>Guy Tension Top Bottom K</i>	<i>F_x K</i>	<i>F_y K</i>	<i>F_z K</i>	<i>M_x kip-ft</i>	<i>M_y kip-ft</i>	<i>M_z kip-ft</i>
56.5067	A	18.9500	2.11	-0.03	0.73	-1.98	-1.69	8.00	-2.92
			2.08						
	A	18.9500	2.11	0.03	0.73	-1.98	-1.69	-8.00	2.92
			2.08						
	B	11.5610	2.10	1.79	0.47	0.99	2.15	8.27	0.00
			2.08						
	B	11.5610	2.10	1.75	0.47	1.05	-1.08	-8.27	-1.86
			2.08						
	C	18.2201	2.11	-1.71	0.70	1.02	-1.63	8.04	2.82
			2.08						
	C	18.2201	2.11	-1.74	0.70	0.97	3.25	-8.04	0.00
			2.08						
106.507	A	29.1702	Sum:	0.10	3.80	0.07	-0.67	0.00	0.95
			5.98	-0.09	3.03	-5.15	-7.00	20.82	-12.13
	A	29.1702	5.83						
			5.98	0.09	3.03	-5.15	-7.00	-20.82	12.13
	B	22.7536	5.94	4.75	2.42	2.63	11.19	21.92	0.00
			5.83						
	B	22.7536	5.94	4.65	2.42	2.79	-5.59	-21.92	-9.69
			5.83						
	C	28.5470	5.98	-4.44	2.97	2.67	-6.87	20.94	11.89
			5.83						
	C	28.5470	5.98	-4.53	2.97	2.51	13.73	-20.94	0.00
			5.83						
166.507	A	39.2149	Sum:	0.42	16.85	0.30	-1.54	0.00	2.21
			6.05	-0.08	3.93	-4.60	-9.07	18.58	-15.71
	A	39.2149	5.83						
			6.05	0.08	3.93	-4.60	-9.07	-18.58	15.71
	B	34.1068	5.83						
			6.01	4.29	3.48	2.38	16.08	19.80	0.00

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z	
ft		°		K	K	K	kip-ft	kip-ft	kip-ft	
216.507	C	38.7238	5.83							
			6.05	-3.97	3.89	2.38	-8.97	18.70	15.54	
	C	38.7238	5.83							
			6.05	-4.05	3.89	2.25	17.95	-18.70	0.00	
	A	45.8705	5.83							
			Sum:	0.47	22.59	0.33	-1.13	0.00	1.62	
	A	45.8705	6.11	-0.07	4.48	-4.15	-10.34	16.78	-17.91	
			5.83							
	B	41.7352	6.11	0.07	4.48	-4.15	-10.34	-16.78	17.91	
			5.83							
	B	41.7352	6.07	3.88	4.14	2.15	19.12	17.93	0.00	
			5.83							
256.507	B	41.7352	6.07	3.80	4.14	2.28	-9.56	-17.93	-16.56	
			5.83							
	C	45.4739	6.10	-3.59	4.44	2.15	-10.26	16.89	17.78	
			5.83							
	C	45.4739	6.10	-3.66	4.44	2.03	20.53	-16.89	0.00	
			5.83							
	A	50.2586	Sum:	0.44	26.12	0.31	-0.85	0.00	1.22	
			6.15	-0.07	4.82	-3.83	-11.12	15.46	-19.27	
	A	50.2586	5.83							
			6.15	0.07	4.82	-3.83	-11.12	-15.46	19.27	
	285.84	B	46.7746	5.83						
				6.12	3.58	4.55	1.98	21.01	16.52	0.00
B		46.7746	5.83							
			6.12	3.51	4.55	2.10	-10.50	-16.52	-18.19	
C		49.9242	5.83							
			6.15	-3.30	4.79	1.98	-11.07	15.57	19.17	
C		49.9242	5.83							
			6.15	-3.37	4.79	1.87	22.13	-15.57	0.00	
A		53.0360	Sum:	0.41	28.31	0.29	-0.68	0.00	0.97	
			6.19	-0.06	5.02	-3.61	-11.60	14.59	-20.09	
A		53.0360	5.83							
			6.19	0.06	5.02	-3.61	-11.60	-14.59	20.09	
	B	49.9582	5.83							
			6.15	3.37	4.79	1.87	22.14	15.56	0.00	
	B	49.9582	5.83							
			6.15	3.30	4.79	1.98	-11.07	-15.56	-19.18	
	C	52.7402	5.83							
			6.18	-3.12	5.00	1.87	-11.55	14.68	20.01	
	C	52.7402	5.83							
			6.18	-3.18	5.00	1.76	23.10	-14.68	0.00	
			Sum:	0.38	29.64	0.26	-0.58	0.00	0.83	

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
56.5067	A	18.9500	3.23	-0.05	1.16	-3.02	-2.67	12.19	-4.62

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<i>Guy Elevation</i>	<i>Guy Location</i>	<i>Chord Angle</i>	<i>Guy Tension Top Bottom K</i>	<i>F_x</i>	<i>F_y</i>	<i>F_z</i>	<i>M_x</i>	<i>M_y</i>	<i>M_z</i>
<i>ft</i>		<i>°</i>		<i>K</i>	<i>K</i>	<i>K</i>	<i>kip-ft</i>	<i>kip-ft</i>	<i>kip-ft</i>
106.507			3.15						
	A	18.9500	3.23	0.05	1.16	-3.02	-2.67	-12.19	4.62
			3.15						
	B	11.5610	3.21	2.73	0.75	1.51	3.48	12.60	0.00
			3.16						
	B	11.5610	3.21	2.67	0.75	1.61	-1.74	-12.60	-3.02
			3.16						
	C	18.2201	3.23	-2.60	1.12	1.56	-2.58	12.24	4.47
			3.16						
	C	18.2201	3.23	-2.65	1.12	1.47	5.16	-12.24	0.00
			3.16						
			Sum:	0.15	6.05	0.11	-1.02	0.00	1.45
	A	29.1702	8.34	-0.12	4.26	-7.17	-9.83	28.95	-17.03
			8.09						
166.507	A	29.1702	8.34	0.12	4.26	-7.17	-9.83	-28.95	17.03
			8.09						
	B	22.7536	8.28	6.60	3.41	3.66	15.74	30.49	0.00
			8.10						
	B	22.7536	8.28	6.47	3.41	3.89	-7.87	-30.49	-13.63
			8.10						
	C	28.5470	8.33	-6.18	4.18	3.71	-9.65	29.12	16.71
			8.09						
	C	28.5470	8.33	-6.30	4.18	3.50	19.29	-29.12	0.00
			8.09						
			Sum:	0.59	23.69	0.42	-2.15	0.00	3.07
	A	39.2149	8.44	-0.11	5.51	-6.39	-12.72	25.83	-22.03
			8.07						
	A	39.2149	8.44	0.11	5.51	-6.39	-12.72	-25.83	22.03
216.507			8.07						
	B	34.1068	8.38	5.96	4.88	3.30	22.56	27.51	0.00
			8.08						
	B	34.1068	8.38	5.84	4.88	3.51	-11.28	-27.51	-19.54
			8.08						
	C	38.7238	8.43	-5.51	5.45	3.31	-12.57	25.98	21.78
			8.07						
	C	38.7238	8.43	-5.62	5.45	3.12	25.15	-25.98	0.00
			8.07						
			Sum:	0.66	31.67	0.46	-1.58	0.00	2.25
	A	45.8705	8.51	-0.10	6.26	-5.76	-14.47	23.28	-25.05
			8.05						
	A	45.8705	8.51	0.10	6.26	-5.76	-14.47	-23.28	25.05
			8.05						
256.507	B	41.7352	8.46	5.39	5.80	2.99	26.79	24.90	0.00
			8.07						
	B	41.7352	8.46	5.28	5.80	3.17	-13.39	-24.90	-23.20
			8.07						
	C	45.4739	8.51	-4.97	6.22	2.99	-14.36	23.44	24.88
			8.05						
	C	45.4739	8.51	-5.07	6.22	2.81	28.73	-23.44	0.00
			8.05						
			Sum:	0.63	36.57	0.44	-1.17	0.00	1.68
	A	50.2586	8.57	-0.09	6.73	-5.30	-15.55	21.43	-26.93
			8.03						
	A	50.2586	8.57	0.09	6.73	-5.30	-15.55	-21.43	26.93
			8.03						
	B	46.7746	8.52	4.96	6.36	2.75	29.39	22.90	0.00
			8.05						
	B	46.7746	8.52	4.86	6.36	2.92	-14.69	-22.90	-25.45
			8.05						

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
285.84	C	49.9242	8.57 8.04	-4.58	6.70	2.75	-15.47	21.57	26.79
	C	49.9242	8.57 8.04	-4.67	6.70	2.59	30.94	-21.57	0.00
	A	53.0360	Sum: 8.62 8.02	0.57 -0.09	39.59 7.02	0.40 -5.00	-0.94 -16.21	0.00 20.19	1.34 -28.07
	A	53.0360	8.62 8.02	0.09	7.02	-5.00	-16.21	-20.19	28.07
	B	49.9582	8.57 8.04	4.67	6.70	2.59	30.95	21.56	0.00
	B	49.9582	8.57 8.04	4.58	6.70	2.75	-15.48	-21.56	-26.81
	C	52.7402	8.61 8.02	-4.31	6.99	2.59	-16.14	20.33	27.95
	C	52.7402	8.61 8.02	-4.40	6.99	2.44	32.28	-20.33	0.00
			Sum:	0.53	41.41	0.37	-0.80	0.00	1.15

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
56.5067	A	18.9500	2.11 2.08	-0.03	0.73	-1.98	-1.69	8.00	-2.92
	A	18.9500	2.11 2.08	0.03	0.73	-1.98	-1.69	-8.00	2.92
	B	11.5610	2.10 2.08	1.79	0.47	0.99	2.15	8.27	0.00
	B	11.5610	2.10 2.08	1.75	0.47	1.05	-1.08	-8.27	-1.86
	C	18.2201	2.11 2.08	-1.71	0.70	1.02	-1.63	8.04	2.82
	C	18.2201	2.11 2.08	-1.74	0.70	0.97	3.25	-8.04	0.00
106.507			Sum:	0.10	3.80	0.07	-0.67	0.00	0.95
	A	29.1702	5.98 5.83	-0.09	3.03	-5.15	-7.00	20.82	-12.13
	A	29.1702	5.98 5.83	0.09	3.03	-5.15	-7.00	-20.82	12.13
	B	22.7536	5.94 5.83	4.75	2.42	2.63	11.19	21.92	0.00
	B	22.7536	5.94 5.83	4.65	2.42	2.79	-5.59	-21.92	-9.69
	C	28.5470	5.98 5.83	-4.44	2.97	2.67	-6.87	20.94	11.89
	C	28.5470	5.98 5.83	-4.53	2.97	2.51	13.73	-20.94	0.00
			Sum:	0.42	16.85	0.30	-1.54	0.00	2.21
166.507	A	39.2149	6.05 5.83	-0.08	3.93	-4.60	-9.07	18.58	-15.71

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
216.507	A	39.2149	6.05 5.83	0.08	3.93	-4.60	-9.07	-18.58	15.71
	B	34.1068	6.01 5.83	4.29	3.48	2.38	16.08	19.80	0.00
	B	34.1068	6.01 5.83	4.20	3.48	2.52	-8.04	-19.80	-13.93
	C	38.7238	6.05 5.83	-3.97	3.89	2.38	-8.97	18.70	15.54
	C	38.7238	6.05 5.83	-4.05	3.89	2.25	17.95	-18.70	0.00
			Sum:	0.47	22.59	0.33	-1.13	0.00	1.62
	A	45.8705	6.11 5.83	-0.07	4.48	-4.15	-10.34	16.78	-17.91
	A	45.8705	6.11 5.83	0.07	4.48	-4.15	-10.34	-16.78	17.91
	B	41.7352	6.07 5.83	3.88	4.14	2.15	19.12	17.93	0.00
	B	41.7352	6.07 5.83	3.80	4.14	2.28	-9.56	-17.93	-16.56
	C	45.4739	6.10 5.83	-3.59	4.44	2.15	-10.26	16.89	17.78
	C	45.4739	6.10 5.83	-3.66	4.44	2.03	20.53	-16.89	0.00
			Sum:	0.44	26.12	0.31	-0.85	0.00	1.22
	A	50.2586	6.15 5.83	-0.07	4.82	-3.83	-11.12	15.46	-19.27
256.507	A	50.2586	6.15 5.83	0.07	4.82	-3.83	-11.12	-15.46	19.27
	B	46.7746	6.12 5.83	3.58	4.55	1.98	21.01	16.52	0.00
	B	46.7746	6.12 5.83	3.51	4.55	2.10	-10.50	-16.52	-18.19
	C	49.9242	6.15 5.83	-3.30	4.79	1.98	-11.07	15.57	19.17
	C	49.9242	6.15 5.83	-3.37	4.79	1.87	22.13	-15.57	0.00
			Sum:	0.41	28.31	0.29	-0.68	0.00	0.97
	A	53.0360	6.19 5.83	-0.06	5.02	-3.61	-11.60	14.59	-20.09
	A	53.0360	6.19 5.83	0.06	5.02	-3.61	-11.60	-14.59	20.09
	B	49.9582	6.15 5.83	3.37	4.79	1.87	22.14	15.56	0.00
	B	49.9582	6.15 5.83	3.30	4.79	1.98	-11.07	-15.56	-19.18
	C	52.7402	6.18 5.83	-3.12	5.00	1.87	-11.55	14.68	20.01
	C	52.7402	6.18 5.83	-3.18	5.00	1.76	23.10	-14.68	0.00
			Sum:	0.38	29.64	0.26	-0.58	0.00	0.83

Feed Line/Linear Appurtenances - Entered As Round Or Flat

<i>tnxTower</i> <i>Destek Engineering, LLC</i> <i>1281 Kennestone Circle, Suite 100</i> <i>Marietta, GA 30066</i> <i>Phone: (770) 693 0835</i> <i>FAX:</i>	Job	CT1077 - Storrs-UConn Rev.2	Page	18 of 73
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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF5-50A (7/8 FOAM) ***250***	A	Yes	Ar (CfAe)	211.00 - 5.00	0.0000	0.15	1	1	0.5000 0.0000	1.0900		0.33
LDF7-50A (1-5/8 FOAM) ***255***	A	Yes	Ar (CfAe)	250.00 - 211.00	0.0000	0.21	6	6	0.5000 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***267***	A	Yes	Ar (CfAe)	252.00 - 250.00	0.0000	0.31	4	4	0.5000 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***305***	A	Yes	Ar (CfAe)	267.00 - 5.00	0.0000	0.41	2	2	0.5000 0.0000	1.9800		0.82
LDF5-50A (7/8 FOAM) **** B **** ***18***	A	Yes	Ar (CfAe)	172.00 - 5.00	0.0000	0.49	1	1	0.5000 0.0000	1.0900		0.33
LDF4-50A (1/2 FOAM) ***13***	B	Yes	Ar (CfAe)	13.00 - 5.00	0.0000	0.3	10	10	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***94***	B	Yes	Ar (CfAe)	18.00 - 13.00	0.0000	0.3	9	9	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***159***	B	Yes	Ar (CfAe)	94.00 - 18.00	0.0000	0.3	7	7	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***190***	B	Yes	Ar (CfAe)	159.00 - 94.00	0.0000	0.3	5	5	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***198***	B	Yes	Ar (CfAe)	190.00 - 159.00	0.0000	0.3	4	4	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***277***	B	Yes	Ar (CfAe)	198.00 - 190.00	0.0000	0.3	3	3	0.6300 0.0000	0.6300		0.15
LDF4-50A (1/2 FOAM) ***291.8***	B	Yes	Ar (CfAe)	277.00 - 5.00	0.0000	0.3	2	2	0.6300 0.0000	0.6300		0.15
LDF5-50A (7/8 FOAM)	B	Yes	Ar (CfAe)	291.80 - 5.00	0.0000	0.45	1	1	0.5000 0.0000	1.0900		0.33
LDF4-50A (1/2 FOAM) **** C **** ***187.5***	B	Yes	Ar (CfAe)	291.80 - 5.00	0.0000	0.3	1	1	0.6300 0.0000	0.6300		0.15
LDF7-50A (1-5/8 FOAM) *** 84 ***	C	Yes	Ar (CfAe)	187.50 - 5.00	-0.5000	0	12	11	0.5000 0.0000	1.9800		0.82
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	84.00 - 5.00	0.0000	-0.45	3	1	0.5000 0.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	84.00 - 5.00	0.0000	-0.14	9	9	0.5000 0.0000	1.5500		0.66
1-5/8 hybrid	C	Yes	Ar (CfAe)	84.00 - 5.00	0.0000	0.43	1	1	0.5000 0.0000	1.6250		0.21

Feed Line/Linear Appurtenances - Entered As Area

<i>tnxTower</i> <i>Destek Engineering, LLC</i> <i>1281 Kennestone Circle, Suite 100</i> <i>Marietta, GA 30066</i> <i>Phone: (770) 693 0835</i> <i>FAX:</i>	Job	CT1077 - Storrs-UConn Rev.2	Page	19 of 73
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<i>Description</i>	<i>Face or Leg</i>	<i>Allow Shield</i>	<i>Component Type</i>	<i>Placement ft</i>	<i>Total Number</i>	<i>C_AA_A ft²/ft</i>	<i>Weight plf</i>

**** A ****							
**** B ****							
**** C ****							

Feed Line/Linear Appurtenances Section Areas

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_A In Face ft²</i>	<i>C_AA_A Out Face ft²</i>	<i>Weight K</i>
L1	327.00-291.84	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T1	291.84-279.84	A	0.000	0.000	0.000	0.000	0.00
		B	1.714	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T2	279.84-259.84	A	2.363	0.000	0.000	0.000	0.01
		B	4.668	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T3	259.84-239.84	A	27.427	0.000	0.000	0.000	0.13
		B	4.967	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T4	239.84-219.84	A	45.000	0.000	0.000	0.000	0.31
		B	4.967	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T5	219.84-199.84	A	34.965	0.000	0.000	0.000	0.26
		B	4.967	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T6	199.84-179.84	A	28.666	0.000	0.000	0.000	0.22
		B	8.360	0.000	0.000	0.000	0.03
		C	13.903	0.000	0.000	0.000	0.08
T7	179.84-159.84	A	32.733	0.000	0.000	0.000	0.24
		B	9.167	0.000	0.000	0.000	0.03
		C	36.300	0.000	0.000	0.000	0.20
T8	159.84-139.84	A	35.333	0.000	0.000	0.000	0.24
		B	10.173	0.000	0.000	0.000	0.03
		C	36.300	0.000	0.000	0.000	0.20
T9	139.84-119.84	A	35.333	0.000	0.000	0.000	0.24
		B	10.217	0.000	0.000	0.000	0.03
		C	36.300	0.000	0.000	0.000	0.20
T10	119.84-99.84	A	41.223	0.000	0.000	0.000	0.27
		B	10.217	0.000	0.000	0.000	0.03
		C	36.300	0.000	0.000	0.000	0.20
T11	99.84-79.84	A	45.021	0.000	0.000	0.000	0.28
		B	11.703	0.000	0.000	0.000	0.03
		C	42.237	0.000	0.000	0.000	0.23
T12	79.84-59.84	A	45.944	0.000	0.000	0.000	0.29
		B	12.317	0.000	0.000	0.000	0.04
		C	64.842	0.000	0.000	0.000	0.36
T13	59.84-39.84	A	46.838	0.000	0.000	0.000	0.29
		B	12.317	0.000	0.000	0.000	0.04
		C	64.842	0.000	0.000	0.000	0.36
T14	39.84-19.84	A	46.838	0.000	0.000	0.000	0.29
		B	12.317	0.000	0.000	0.000	0.04
		C	64.842	0.000	0.000	0.000	0.36
T15	19.84-6.50	A	31.241	0.000	0.000	0.000	0.19

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	Client	Com-Ex Consultants	Designed by	Ahmet Colakoglu

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_AA_A</i> <i>In Face ft²</i>	<i>C_AA_A</i> <i>Out Face ft²</i>	<i>Weight</i> <i>K</i>
T16	6.50-0.00	B	9.764	0.000	0.000	0.000	0.03
		C	43.249	0.000	0.000	0.000	0.24
		A	3.513	0.000	0.000	0.000	0.02
		B	1.160	0.000	0.000	0.000	0.00
		C	4.863	0.000	0.000	0.000	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_AA_A</i> <i>In Face ft²</i>	<i>C_AA_A</i> <i>Out Face ft²</i>	<i>Weight</i> <i>K</i>
L1	327.00-291.84	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T1	291.84-279.84	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		3.708	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
T2	279.84-259.84	A	0.500	1.778	1.480	0.000	0.000	0.03
		B		8.531	1.802	0.000	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
T3	259.84-239.84	A	0.500	11.890	25.228	0.000	0.000	0.41
		B		8.917	2.100	0.000	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
T4	239.84-219.84	A	0.500	17.617	43.217	0.000	0.000	0.91
		B		8.917	2.100	0.000	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
T5	219.84-199.84	A	0.500	16.789	31.685	0.000	0.000	0.76
		B		8.917	2.100	0.000	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
T6	199.84-179.84	A	0.500	19.296	22.550	0.000	0.000	0.66
		B		11.383	6.980	0.000	0.000	0.13
		C		1.902	15.831	0.000	0.000	0.22
T7	179.84-159.84	A	0.500	25.368	23.908	0.000	0.000	0.72
		B		11.633	8.400	0.000	0.000	0.14
		C		4.967	41.333	0.000	0.000	0.58
T8	159.84-139.84	A	0.500	29.300	24.783	0.000	0.000	0.75
		B		11.633	10.412	0.000	0.000	0.16
		C		4.967	41.333	0.000	0.000	0.58
T9	139.84-119.84	A	0.500	29.300	24.783	0.000	0.000	0.75
		B		11.633	10.500	0.000	0.000	0.16
		C		4.967	41.333	0.000	0.000	0.58
T10	119.84-99.84	A	0.500	35.777	27.240	0.000	0.000	0.83
		B		11.633	10.500	0.000	0.000	0.16
		C		4.967	41.333	0.000	0.000	0.58
T11	99.84-79.84	A	0.500	41.364	27.824	0.000	0.000	0.88
		B		11.633	13.474	0.000	0.000	0.18
		C		7.645	47.019	0.000	0.000	0.68
T12	79.84-59.84	A	0.500	43.134	27.824	0.000	0.000	0.90
		B		11.633	14.700	0.000	0.000	0.19
		C		17.842	68.667	0.000	0.000	1.08
T13	59.84-39.84	A	0.500	44.847	27.824	0.000	0.000	0.91
		B		11.633	14.700	0.000	0.000	0.19
		C		17.842	68.667	0.000	0.000	1.08
T14	39.84-19.84	A	0.500	44.847	27.824	0.000	0.000	0.91
		B		11.633	14.700	0.000	0.000	0.19
		C		17.842	68.667	0.000	0.000	1.08
T15	19.84-6.50	A	0.500	29.913	18.558	0.000	0.000	0.61
		B		7.759	12.902	0.000	0.000	0.15

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	Client	Com-Ex Consultants	Designed by	Ahmet Colakoglu

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_A In Face ft²</i>	<i>C_AA_A Out Face ft²</i>	<i>Weight K</i>
T16	6.50-0.00	C	0.500	11.900	45.801	0.000	0.000	0.72
		A		3.364	2.087	0.000	0.000	0.07
		B		0.873	1.575	0.000	0.000	0.02
		C		1.338	5.150	0.000	0.000	0.08

Feed Line Shielding

<i>Section</i>	<i>Elevation ft</i>	<i>Face</i>	<i>A_R ft²</i>	<i>A_R Ice ft²</i>	<i>A_F ft²</i>	<i>A_F Ice ft²</i>
L1	327.00-291.84		0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000
T1	291.84-279.84	A	0.000	0.000	0.000	0.000
		B	0.120	0.496	0.143	0.309
		C	0.000	0.000	0.000	0.000
T2	279.84-259.84	A	0.169	0.424	0.000	0.000
		B	0.334	1.345	0.000	0.000
		C	0.000	0.000	0.000	0.000
T3	259.84-239.84	A	1.845	4.678	1.371	1.856
		B	0.334	1.389	0.248	0.551
		C	0.000	0.000	0.000	0.000
T4	239.84-219.84	A	3.215	7.921	0.000	0.000
		B	0.355	1.434	0.000	0.000
		C	0.000	0.000	0.000	0.000
T5	219.84-199.84	A	2.500	6.314	1.748	2.424
		B	0.355	1.435	0.248	0.551
		C	0.000	0.000	0.000	0.000
T6	199.84-179.84	A	1.927	5.272	0.000	0.000
		B	0.562	2.314	0.000	0.000
		C	1.108	2.677	0.000	0.000
T7	179.84-159.84	A	2.340	6.419	1.637	2.464
		B	0.655	2.610	0.458	1.002
		C	3.049	7.189	1.815	2.315
T8	159.84-139.84	A	2.524	7.042	0.000	0.000
		B	0.727	2.870	0.000	0.000
		C	3.047	7.186	0.000	0.000
T9	139.84-119.84	A	2.375	6.814	0.000	0.000
		B	0.687	2.789	0.000	0.000
		C	2.894	6.991	0.000	0.000
T10	119.84-99.84	A	2.947	8.209	2.061	3.151
		B	0.730	2.883	0.511	1.107
		C	3.049	7.189	1.815	2.315
T11	99.84-79.84	A	3.216	9.009	0.000	0.000
		B	0.836	3.269	0.000	0.000
		C	3.545	8.484	0.000	0.000
T12	79.84-59.84	A	3.088	8.940	0.000	0.000
		B	0.828	3.318	0.000	0.000
		C	5.169	13.062	0.000	0.000
T13	59.84-39.84	A	2.953	8.853	2.342	3.634
		B	0.777	3.208	0.616	1.317
		C	4.899	12.701	3.242	4.325
T14	39.84-19.84	A	3.148	9.156	0.000	0.000
		B	0.828	3.318	0.000	0.000
		C	5.169	13.062	0.000	0.000
T15	19.84-6.50	A	2.099	6.105	0.000	0.000
		B	0.656	2.602	0.000	0.000

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Section	Elevation	Face	A_R	$A_{R_{Ice}}$	A_F	$A_{F_{Ice}}$
	ft		ft ²	ft ²	ft ²	ft ²
T16	6.50-0.00	C	3.446	8.709	0.000	0.000
		A	0.000	0.229	1.356	2.123
		B	0.000	0.103	0.448	0.954
		C	0.000	0.273	1.877	2.528

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	$CP_{X_{Ice}}$	$CP_{Z_{Ice}}$
	ft	in	in	in	in
L1	327.00-291.84	0.0000	0.0000	0.0000	0.0000
T1	291.84-279.84	0.8738	0.3685	1.1653	0.4740
T2	279.84-259.84	1.8205	-0.4366	1.7858	0.3672
T3	259.84-239.84	-2.1636	-2.6125	-0.7739	-0.9172
T4	239.84-219.84	-4.9162	-3.2618	-2.5058	-1.4623
T5	219.84-199.84	-3.8393	-1.4865	-1.8891	-0.4025
T6	199.84-179.84	-2.9276	1.4956	-1.2621	1.4349
T7	179.84-159.84	-2.0892	2.5853	-0.9079	2.1146
T8	159.84-139.84	-2.3250	2.6251	-0.9205	2.0536
T9	139.84-119.84	-2.2909	2.5957	-0.9085	2.0404
T10	119.84-99.84	-2.4654	2.0233	-1.0372	1.7031
T11	99.84-79.84	-2.4417	2.5308	-1.0003	2.0920
T12	79.84-59.84	-1.4732	3.9927	-0.4016	3.2768
T13	59.84-39.84	-1.4335	3.6821	-0.4398	3.0566
T14	39.84-19.84	-1.5422	3.9661	-0.4956	3.2480
T15	19.84-6.50	-1.2819	3.9791	-0.1734	3.2777
T16	6.50-0.00	-0.2516	0.8350	0.0572	0.8141

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	$C_{AA_{Front}}$	$C_{AA_{Side}}$	Weight
			ft ft ft	°	ft	ft ²	ft ²	K
Lightning Rod 5/8"x4'	C	None		0.0000	325.00	No Ice 1/2" Ice	0.25 0.66	0.03 0.03
Flash Beacon Lighting	C	None		0.0000	323.00	No Ice 1/2" Ice	2.70 3.10	0.05 0.07
305 6813 1-Bay (WHUS-34)	C	From Leg	2.00 0.00 0.00	0.0000	305.00	No Ice 1/2" Ice	4.90 6.00	0.10 0.20
277 PD1110 (WHUS-40)	C	From Leg	0.00 0.00 0.00	0.0000	305.00	No Ice 1/2" Ice	3.06 5.10	0.03 0.06
PD1110 (WHUS-39)	C	From Leg	1.50 0.00 0.00	0.0000	277.00	No Ice 1/2" Ice	3.06 5.10	0.03 0.06

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight K</i>	
4' Standoff	C	None		0.0000	277.00	No Ice 1/2" Ice	3.42 3.67	3.42 3.67	0.11 0.15
267 OGT9-840 (CSP-9)	A	From Leg	3.00 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice	2.27 3.44	2.27 3.44	0.02 0.04
DB810K (CSP-5)	C	From Leg	3.00 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice	4.08 5.73	4.08 5.73	0.04 0.07
261 AP14-850/105 (CSP-4)	B	From Leg	3.00 0.00 0.00	0.0000	261.00	No Ice 1/2" Ice	10.61 11.25	5.64 6.28	0.03 0.08
252 AP14-850/105 (CSP-6)	B	From Leg	3.00 0.00 0.00	0.0000	252.00	No Ice 1/2" Ice	10.61 11.25	5.64 6.28	0.03 0.08
256.5 SE419-SF3P4LDF (CSP-16 Future)	A	From Leg	3.00 0.00 0.00	0.0000	256.50	No Ice 1/2" Ice	4.12 5.11	9.55 10.19	0.02 0.07
TTA 432-83H-01T (CSP-15 Future)	B	From Leg	3.00 0.00 0.00	0.0000	256.50	No Ice 1/2" Ice	1.63 1.81	0.95 1.09	0.03 0.04
TTA 432-83H-01T (CSP-19 Future)	C	From Leg	3.00 0.00 0.00	0.0000	256.50	No Ice 1/2" Ice	1.63 1.81	0.95 1.09	0.03 0.04
271-256.5 SC479-HF1LDF (CSP-12 Future)	A	From Leg	3.00 0.00 0.00	0.0000	256.50 - 271.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-13 Future)	B	From Leg	3.00 0.00 0.00	0.0000	256.50 - 271.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
256.5-242 SC479-HF1LDF (CSP-14 Future Inverted)	C	From Leg	3.00 0.00 0.00	0.0000	242.00 - 256.50	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-17 Future Inverted)	A	From Leg	3.00 0.00 0.00	0.0000	242.00 - 256.50	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-18 Future Inverted)	B	From Leg	3.00 0.00 0.00	0.0000	242.00 - 256.50	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
250-256.6 OTG9-840 (CSP-11 Inverted)	C	From Leg	3.00 0.00 0.00	0.0000	256.50 - 250.00	No Ice 1/2" Ice	2.27 3.44	2.27 3.44	0.02 0.04
OTG9-840 (CSP-7 Inverted)	B	From Leg	3.00 0.00 0.00	0.0000	256.50 - 250.00	No Ice 1/2" Ice	2.27 3.44	2.27 3.44	0.02 0.04
240 TTA 432-83H-01T (CSP-23 Future)	B	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	1.63 1.81	0.95 1.09	0.03 0.04
TTA 432-83H-01T (CSP-26 Future)	C	From Leg	3.00 0.00	0.0000	240.00	No Ice 1/2" Ice	1.63 1.81	0.95 1.09	0.03 0.04

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	Client	Com-Ex Consultants	Designed by	Ahmet Colakoglu

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight K</i>
271-256.5			0.00						
SC479-HF1LDF (CSP-20 Future)	A	From Leg	3.00 0.00 0.00	0.0000	256.50 - 271.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-13 Future)	B	From Leg	3.00 0.00 0.00	0.0000	256.50 - 271.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
242-256.5			0.00						
SC479-HF1LDF (CSP-13 Future)	C	From Leg	3.00 0.00 0.00	0.0000	256.50 - 242.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-13 Future)	A	From Leg	3.00 0.00 0.00	0.0000	256.50 - 242.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
SC479-HF1LDF (CSP-13 Future)	B	From Leg	3.00 0.00 0.00	0.0000	256.50 - 242.00	No Ice 1/2" Ice	5.06 6.54	5.06 6.54	0.03 0.07
211			0.00						
6813 1-Bay (WHUS-36)	C	From Leg	2.00 0.00 0.00	0.0000	211.00	No Ice 1/2" Ice	4.90 6.00	4.90 6.00	0.10 0.20
198			0.00						
6813 1-Bay (WHUS-34)	B	From Leg	2.00 0.00 0.00	0.0000	198.00	No Ice 1/2" Ice	4.90 6.00	4.90 6.00	0.10 0.20
6812 (CPR-32 Future)	A	From Leg	3.00 0.00 0.00	0.0000	198.00	No Ice 1/2" Ice	0.20 0.36	0.20 0.36	0.00 0.00
190			0.00						
6' Yagi (CPR-33 Future)	B	From Leg	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	0.00 0.00
185			0.00						
7770.00 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10
7770.00 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10
7770.00 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	6.12 6.63	4.25 5.01	0.06 0.10
OPA-65R-LCUU-H8 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	13.22 14.02	9.32 10.79	0.12 0.21
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	10.60 11.27	7.18 8.36	0.10 0.18
OPA-65R-LCUU-H8 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	13.22 14.02	9.32 10.79	0.12 0.21
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	13.53 14.34	9.58 11.05	0.10 0.20
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	185.00	No Ice 1/2" Ice	10.60 11.27	8.11 9.30	0.08 0.16

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight K</i>
2x1x5 panel	C	From Leg	1.00 0.00 0.00	0.0000	158.80	No Ice 1/2" Ice	2.80 3.04	1.17 1.36	0.01 0.03
157									
L-810 flashing beacon	A	From Leg	0.50 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice	0.20 0.28	0.20 0.28	0.00 0.01
L-810 flashing beacon	B	From Leg	0.50 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice	0.20 0.28	0.20 0.28	0.00 0.01
L-810 flashing beacon	C	From Leg	0.50 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice	0.20 0.28	0.20 0.28	0.00 0.01
125									
2' Sidearm	B	From Leg	1.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	3.50 4.20	3.50 4.20	0.09 0.12
124									
6x4 ice shield	C	From Leg	1.00 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	0.23 0.30	0.23 0.30	0.28 0.29
9x10 ice shield	A	From Leg	1.00 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	0.88 1.00	0.03 0.09	1.07 1.07
2'6"x4" pipe mount	C	From Leg	0.50 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	0.75 0.95	0.75 0.95	0.03 0.04
2'6"x4" pipe mount	A	From Leg	0.50 0.00 0.00	0.0000	124.00	No Ice 1/2" Ice	0.75 0.95	0.75 0.95	0.03 0.04
112									
PD1110	B	From Leg	2.00 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice	3.06 5.10	3.06 5.10	0.25 0.06
2' sidearm	B	From Leg	1.00 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice	3.90 4.40	3.90 4.40	0.09 0.10
104									
6'x4" pipe mount	C	From Leg	0.50 0.00 0.00	0.0000	104.00	No Ice 1/2" Ice	2.09 2.46	2.09 2.46	0.06 0.07
94									
PR-850	C	From Leg	0.50 0.00 0.00	0.0000	94.00	No Ice 1/2" Ice	6.35 11.43	6.35 11.43	0.04 0.05
ASP-962	B	From Leg	0.50 0.00 0.00	0.0000	94.00	No Ice 1/2" Ice	0.16 0.29	0.16 0.29	0.00 0.00
84									
BXA-80063/4CF w/pipe	A	From Leg	3.00 -3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	5.89 6.59	3.91 4.94	0.04 0.08
BXA-80063/4CF w/pipe	B	From Leg	3.00 -3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	5.89 6.59	3.91 4.94	0.04 0.08
BXA-80063/4CF w/pipe	C	From Leg	3.00 -3.00	0.0000	84.00	No Ice 1/2" Ice	5.89 6.59	3.91 4.94	0.04 0.08

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight K</i>
HBXX-6515DS-VTM	A	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
HBXX-6515DS-VTM	B	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
HBXX-6515DS-VTM	C	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
12' Platform	A	None		0.0000	84.00	No Ice 1/2" Ice	40.00 50.00	40.00 50.00	2.00 2.80
RRH 2X60-AWS	A	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	3.66 4.13	3.66 4.13	0.08 0.12
RRH 2X60-AWS	B	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	3.66 4.13	3.66 4.13	0.08 0.12
RRH 2X60-AWS	C	From Leg	0.00 3.00 -6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	3.66 4.13	3.66 4.13	0.08 0.12
X7C-FRO-440 w/pipe	A	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	9.42 9.92	9.42 9.92	0.06 0.12
X7C-FRO-440 w/pipe	B	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	9.42 9.92	9.42 9.92	0.06 0.12
X7C-FRO-440 w/pipe	C	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	9.42 9.92	9.42 9.92	0.06 0.12
RRH 2X40-07L-U	A	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.25 2.45	2.25 2.45	0.05 0.07
RRH 2X40-07L-U	B	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.25 2.45	2.25 2.45	0.05 0.07
RRH 2X40-07L-U	C	From Leg	0.00 3.00 3.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.25 2.45	2.25 2.45	0.05 0.07
HBXX-6517DS-VTM	A	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
HBXX-6517DS-VTM	B	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
HBXX-6517DS-VTM	C	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	8.74 9.31	6.97 7.80	0.08 0.15
PCS 1900 4X45W	A	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.73 2.95	2.61 2.83	0.06 0.09
PCS 1900 4X45W	B	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.73 2.95	2.61 2.83	0.06 0.09
PCS 1900 4X45W	C	From Leg	0.00 3.00 6.00 0.00	0.0000	84.00	No Ice 1/2" Ice	2.73 2.95	2.61 2.83	0.06 0.09

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
70									
DB212-1 (CSP-10)	C	From Leg	0.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice	4.40 8.42	4.40 8.42	0.03 0.07
18									
6' Yagi	C	From Leg	1.00 0.00 0.00	0.0000	18.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	0.00 0.00
2' Side arm	C	From Leg	1.00 0.00 0.00	0.0000	18.00	No Ice 1/2" Ice	3.89 4.15	3.89 4.15	0.00 41.00
13									
2' Side arm	C	From Leg	1.00 0.00 0.00	0.0000	13.00	No Ice 1/2" Ice	3.89 4.15	3.89 4.15	0.00 41.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
13										
1.2M	C	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	0.0000		13.00	4.00	No Ice 1/2" Ice	12.17 13.09 0.17 0.23
104										
6ft dish	C	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	-30.0000		104.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29
116										
6ft dish	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		104.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29
6ft dish	A	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	0.0000		104.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29
171.5										
5' grid dish	A	Grid	From Leg	1.00 0.00 0.00	0.0000		171.50	5.00	No Ice 1/2" Ice	19.63 20.29 0.10 0.20
290										
6ft dish	A	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	0.0000		290.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29
6ft dish	B	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	0.0000		290.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29
6ft dish	C	Paraboloid w/o Radome	From Leg	1.00 0.00	0.0000		290.00	6.00	No Ice 1/2" Ice	28.27 29.05 0.14 0.29

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
				0.00						

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice+Guy
3	Dead+Wind 30 deg - No Ice+Guy
4	Dead+Wind 60 deg - No Ice+Guy
5	Dead+Wind 90 deg - No Ice+Guy
6	Dead+Wind 120 deg - No Ice+Guy
7	Dead+Wind 150 deg - No Ice+Guy
8	Dead+Wind 180 deg - No Ice+Guy
9	Dead+Wind 210 deg - No Ice+Guy
10	Dead+Wind 240 deg - No Ice+Guy
11	Dead+Wind 270 deg - No Ice+Guy
12	Dead+Wind 300 deg - No Ice+Guy
13	Dead+Wind 330 deg - No Ice+Guy
14	Dead+Ice+Temp+Guy
15	Dead+Wind 0 deg+Ice+Temp+Guy
16	Dead+Wind 30 deg+Ice+Temp+Guy
17	Dead+Wind 60 deg+Ice+Temp+Guy
18	Dead+Wind 90 deg+Ice+Temp+Guy
19	Dead+Wind 120 deg+Ice+Temp+Guy
20	Dead+Wind 150 deg+Ice+Temp+Guy
21	Dead+Wind 180 deg+Ice+Temp+Guy
22	Dead+Wind 210 deg+Ice+Temp+Guy
23	Dead+Wind 240 deg+Ice+Temp+Guy
24	Dead+Wind 270 deg+Ice+Temp+Guy
25	Dead+Wind 300 deg+Ice+Temp+Guy
26	Dead+Wind 330 deg+Ice+Temp+Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	327 - 291.84	Pole	Max Tension	15	0.00	-0.00	-0.00
			Max. Compression	14	-4.01	0.44	-0.26
			Max. Mx	24	-4.01	27.52	0.01

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	291.84 - 279.84	Leg	Max. My	21	-4.00	0.47	-27.47
			Max. Vy	18	1.52	-26.61	0.10
			Max. Vx	21	1.52	0.47	-27.47
			Max. Torque	20			-0.72
			Max Tension	25	12.15	-0.50	-0.36
		Diagonal	Max. Compression	15	-27.23	-0.13	-0.22
			Max. Mx	17	11.68	-2.72	1.53
			Max. My	21	11.75	-0.00	-3.14
			Max. Vy	25	-1.18	0.75	0.29
			Max. Vx	21	1.34	-0.14	-0.83
			Max Tension	19	3.98	0.00	0.00
			Max. Compression	15	-4.19	0.00	0.00
			Max. Mx	25	2.67	0.01	0.00
			Max. My	18	-3.08	0.00	0.00
			Max. Vy	25	-0.01	0.00	0.00
		Horizontal	Max. Vx	18	-0.00	0.00	0.00
			Max Tension	26	1.51	0.00	0.00
			Max. Compression	18	-0.89	0.00	0.00
			Max. Mx	14	0.49	0.01	0.00
			Max. My	20	0.43	0.00	0.00
		Secondary Horizontal	Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Max Tension	16	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	18	0.00	-0.00	0.00
		Top Girt	Max. My	26	-0.00	-0.00	-0.00
			Max. Vy	18	0.00	-0.00	0.00
			Max. Vx	26	0.00	-0.00	-0.00
			Max Tension	21	0.00	0.00	0.00
			Max. Compression	21	-0.00	0.00	0.00
		Guy A	Max. Mx	19	0.00	0.01	0.00
			Max. My	18	0.00	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
			Bottom Tension	21	19.54		
			Top Tension	21	20.13		
			Top Cable Vert	21	16.60		
			Top Cable Norm	21	11.37		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-14.99		
			Bot Cable Norm	21	12.53		
			Bot Cable Tan	21	0.02		
		Guy B	Bottom Tension	25	18.87		
			Top Tension	25	19.40		
			Top Cable Vert	25	15.37		
			Top Cable Norm	25	11.84		
			Top Cable Tan	25	0.01		
		Guy C	Bot Cable Vert	25	-13.85		
			Bot Cable Norm	25	12.82		
			Bot Cable Tan	25	0.02		
			Bottom Tension	17	19.53		
			Top Tension	17	20.11		
			Top Cable Vert	17	16.53		
			Top Cable Norm	17	11.46		
			Top Cable Tan	17	0.01		
			Bot Cable Vert	17	-14.92		
			Bot Cable Norm	17	12.60		
		Top Guy Pull-Off	Bot Cable Tan	17	0.02		
			Max Tension	26	5.35	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	279.84 - 259.84	Torque Arm Top	Max. Compression	24	-4.63	0.00	0.00
			Max. Mx	14	0.16	0.08	0.00
			Max. My	18	-2.16	0.00	0.00
			Max. Vy	14	-0.08	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
			Max Tension	26	9.67	0.00	0.00
			Max. Compression	5	-1.15	0.00	0.00
			Max. Mx	21	-0.14	-65.85	0.00
			Max. My	18	1.22	-61.00	-0.00
			Max. Vy	21	16.53	-65.85	0.00
			Max. Vx	18	-0.00	-61.00	-0.00
			Max Tension	1	0.00	0.00	0.00
		Diagonal	Max. Compression	23	-34.39	0.10	0.14
			Max. Mx	25	-14.36	-0.50	-0.12
			Max. My	21	-13.66	0.04	0.54
			Max. Vy	24	0.34	0.26	-0.03
			Max. Vx	21	0.32	-0.05	-0.18
			Max Tension	21	2.38	0.00	0.00
			Max. Compression	15	-2.65	0.00	0.00
			Max. Mx	20	1.30	0.01	0.00
			Max. My	20	0.29	0.00	-0.00
			Max. Vy	20	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	0.60	0.00	0.00
		Horizontal	Max. Compression	23	-0.60	0.00	0.00
			Max. Mx	14	0.26	0.01	0.00
			Max. My	20	0.52	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Max Tension	16	0.00	-0.00	-0.00
		Secondary Horizontal	Max. Compression	26	-0.00	-0.00	-0.00
			Max. Mx	18	0.00	-0.00	0.00
			Max. My	21	-0.00	-0.00	0.00
			Max. Vy	18	0.00	-0.00	0.00
			Max. Vx	21	-0.00	0.00	0.00
			Max Tension	20	0.37	0.00	0.00
		Top Girt	Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.18	0.01	0.00
			Max. My	18	0.36	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
T3	259.84 - 239.84	Leg	Max. Compression	20	-50.69	0.14	0.23
			Max. Mx	17	-43.20	2.73	-1.17
			Max. My	21	-10.90	-0.16	-3.02
			Max. Vy	17	1.20	-0.94	0.10
			Max. Vx	21	1.25	0.25	-0.88
			Max Tension	24	4.54	0.00	0.00
		Diagonal	Max. Compression	18	-5.56	0.00	0.00
			Max. Mx	17	0.31	0.01	0.00
			Max. My	18	-2.58	0.00	0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
			Max Tension	20	0.88	0.00	0.00
		Horizontal	Max. Compression	23	-1.15	0.00	0.00
			Max. Mx	17	0.82	0.01	0.00
			Max. My	18	0.86	0.00	0.00
			Max. Vy	17	-0.01	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	239.84 - 219.84	Secondary Horizontal	Max. Vx	18	-0.00	0.00	0.00
			Max Tension	17	0.00	-0.00	-0.00
		Top Girt	Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	-0.00
			Max. My	26	-0.00	-0.00	-0.00
			Max. Vy	26	0.00	-0.00	-0.00
			Max. Vx	26	0.00	-0.00	-0.00
			Max Tension	15	0.91	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.39	0.01	0.00
			Max. My	18	0.80	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Guy A	Max. Vx	18	-0.00	0.00	0.00
			Bottom Tension	21	19.54		
			Top Tension	21	20.08		
			Top Cable Vert	21	15.93		
			Top Cable Norm	21	12.22		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-14.45		
			Bot Cable Norm	21	13.16		
			Bot Cable Tan	21	0.02		
		Guy B	Bottom Tension	25	18.80		
			Top Tension	25	19.27		
			Top Cable Vert	25	14.52		
			Top Cable Norm	25	12.67		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-13.14		
			Bot Cable Norm	25	13.44		
			Bot Cable Tan	25	0.01		
		Guy C	Bottom Tension	17	19.55		
			Top Tension	17	20.07		
			Top Cable Vert	17	15.85		
			Top Cable Norm	17	12.32		
			Top Cable Tan	17	0.01		
			Bot Cable Vert	17	-14.38		
			Bot Cable Norm	17	13.24		
			Bot Cable Tan	17	0.02		
		Top Guy Pull-Off	Max Tension	20	6.92	0.00	0.00
			Max. Compression	26	-5.79	0.00	0.00
			Max. Mx	19	1.49	0.08	0.00
			Max. My	24	-3.20	0.00	0.00
			Max. Vy	19	-0.08	0.00	0.00
		Torque Arm Top	Max. Vx	24	-0.00	0.00	0.00
			Max Tension	26	10.98	0.00	0.00
			Max. Compression	18	-2.31	-57.55	0.00
			Max. Mx	21	-1.01	-62.82	0.00
			Max. My	20	1.10	-58.27	0.00
		Leg	Max. Vy	21	15.78	-62.82	0.00
			Max. Vx	20	0.00	-58.27	0.00
			Max Tension	1	0.00	0.00	0.00
		Diagonal	Max. Compression	23	-58.91	-0.05	-0.34
			Max. Mx	25	-32.38	-0.60	-0.01
			Max. My	21	-31.22	0.31	0.55
			Max. Vy	25	0.31	0.30	-0.16
			Max. Vx	15	0.31	0.04	0.35
			Max Tension	26	4.71	0.00	0.00
			Max. Compression	20	-6.08	0.00	0.00
			Max. Mx	17	2.70	0.01	0.00
			Max. My	20	-1.79	0.00	-0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	219.84 - 199.84	Horizontal	Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	1.02	0.00	0.00
			Max. Compression	23	-1.02	0.00	0.00
			Max. Mx	25	0.93	0.01	0.00
			Max. My	20	0.92	0.00	0.00
			Max. Vy	25	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	-0.00
			Max. My	21	-0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	-0.00
			Max. Vx	21	-0.00	0.00	0.00
			Max Tension	21	0.61	0.00	0.00
			Max. Compression	15	-0.07	0.00	0.00
		Top Girt	Max. Mx	14	0.19	0.01	0.00
			Max. My	18	0.32	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-77.30	-0.30	-0.47
			Max. Mx	17	-57.59	2.64	-0.86
			Max. My	21	-26.44	-0.36	-2.86
			Max. Vy	17	1.08	-0.91	-0.09
			Max. Vx	21	1.07	0.54	-0.76
		Diagonal	Max Tension	16	6.10	0.00	0.00
			Max. Compression	18	-7.53	0.00	0.00
			Max. Mx	17	-3.18	0.02	0.00
			Max. My	20	-2.22	0.00	-0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Horizontal	Max Tension	17	1.34	0.00	0.00
			Max. Compression	17	-1.34	0.00	0.00
			Max. Mx	23	1.21	0.01	0.00
			Max. My	20	1.26	0.00	0.00
			Max. Vy	23	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	-0.00
			Max. My	21	-0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	-0.00
			Max. Vx	26	0.00	-0.00	-0.00
		Top Girt	Max Tension	21	0.95	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.51	0.01	0.00
			Max. My	20	0.70	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	19.97		
			Top Tension	21	20.43		
			Top Cable Vert	21	15.10		
			Top Cable Norm	21	13.76		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-13.81		
			Bot Cable Norm	21	14.42		
			Bot Cable Tan	21	0.01		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T6	199.84 - 179.84	Guy B	Bottom Tension	25	18.86		
			Top Tension	25	19.26		
			Top Cable Vert	25	13.24		
			Top Cable Norm	25	13.98		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-12.06		
			Bot Cable Norm	25	14.50		
			Bot Cable Tan	25	0.01		
		Guy C	Bottom Tension	17	19.92		
			Top Tension	17	20.37		
			Top Cable Vert	17	14.95		
			Top Cable Norm	17	13.82		
			Top Cable Tan	17	0.01		
			Bot Cable Vert	17	-13.68		
			Bot Cable Norm	17	14.47		
			Bot Cable Tan	17	0.01		
		Top Guy Pull-Off	Max Tension	20	10.12	0.00	0.00
			Max. Compression	18	-8.51	0.00	0.00
			Max. Mx	19	1.44	0.08	0.00
			Max. My	20	-4.37	0.00	0.00
			Max. Vy	19	-0.08	0.00	0.00
		Torque Arm Top	Max. Vx	20	-0.00	0.00	0.00
			Max Tension	16	13.07	0.00	0.00
			Max. Compression	18	-4.23	0.00	0.00
			Max. Mx	21	-2.25	-58.94	0.00
			Max. My	20	0.60	-54.35	0.00
		Leg	Max. Vy	21	14.81	-58.94	0.00
			Max. Vx	20	0.00	-54.35	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-85.57	-0.20	0.85
			Max. Mx	18	-71.93	1.73	0.01
		Diagonal	Max. My	15	-76.54	0.27	-1.65
			Max. Vy	24	1.87	1.17	-0.02
			Max. Vx	15	1.80	-0.23	1.10
			Max Tension	22	7.84	0.00	0.00
			Max. Compression	20	-9.57	0.00	0.00
		Horizontal	Max. Mx	17	6.00	0.01	0.00
			Max. My	20	-2.18	0.00	-0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	2.76	0.00	0.00
		Secondary Horizontal	Max. Compression	15	-1.80	0.00	0.00
			Max. Mx	16	1.26	0.01	0.00
			Max. My	20	2.04	0.00	-0.00
			Max. Vy	16	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Top Girt	Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	0.00
			Max. My	21	0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
		Leg	Max. Vx	21	-0.00	-0.00	0.00
			Max Tension	17	0.86	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.34	0.01	0.00
			Max. My	20	0.74	0.00	0.00
T7	179.84 -	Leg	Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00

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<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Force K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
	159.84						
		Diagonal	Max. Compression	23	-108.19	0.29	0.66
			Max. Mx	18	-41.04	-2.63	0.33
			Max. My	21	-33.63	0.49	-2.72
			Max. Vy	18	1.05	-2.63	0.33
			Max. Vx	21	1.00	0.49	-2.72
			Max Tension	20	9.73	0.00	0.00
			Max. Compression	22	-11.12	0.00	0.00
			Max. Mx	21	6.55	0.02	0.00
			Max. My	20	-5.55	0.00	-0.00
			Max. Vy	21	-0.01	0.00	0.00
		Horizontal	Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	1.87	0.00	0.00
			Max. Compression	23	-1.87	0.00	0.00
			Max. Mx	23	1.17	0.01	0.00
			Max. My	20	1.58	0.00	-0.00
		Secondary Horizontal	Max. Vy	23	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	0.00
		Top Girt	Max. My	21	0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	21	-0.00	-0.00	0.00
			Max Tension	17	0.67	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Guy A	Max. Mx	23	0.45	0.01	0.00
			Max. My	20	0.64	0.00	-0.00
			Max. Vy	23	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Bottom Tension	21	20.55		
		Guy B	Top Tension	21	20.91		
			Top Cable Vert	21	13.59		
			Top Cable Norm	21	15.90		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-12.55		
		Guy C	Bot Cable Norm	21	16.27		
			Bot Cable Tan	21	0.01		
			Bottom Tension	25	19.15		
			Top Tension	25	19.45		
			Top Cable Vert	25	11.25		
		Top Guy Pull-Off	Top Cable Norm	25	15.86		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-10.33		
			Bot Cable Norm	25	16.12		
			Bot Cable Tan	25	0.01		
			Bottom Tension	17	20.29		
			Top Tension	17	20.64		
			Top Cable Vert	17	13.28		
			Top Cable Norm	17	15.80		
			Top Cable Tan	17	0.01		
			Bot Cable Vert	17	-12.25		
			Bot Cable Norm	17	16.17		
			Bot Cable Tan	17	0.01		
			Max Tension	22	13.95	0.00	0.00
			Max. Compression	20	-12.06	0.00	0.00
			Max. Mx	23	-11.11	0.08	0.00
			Max. My	20	5.87	0.00	-0.00
			Max. Vy	23	-0.08	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T8	159.84 - 139.84	Torque Arm Top	Max Tension	22	16.14	0.00	0.00
			Max. Compression	19	-6.91	0.00	0.00
			Max. Mx	21	-4.27	-52.66	0.00
			Max. My	20	-1.96	-28.09	0.00
			Max. Vy	21	13.24	-52.66	0.00
			Max. Vx	20	0.00	-28.09	0.00
		Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-98.71	0.36	0.55
			Max. Mx	25	-87.59	0.71	0.02
			Max. My	21	-98.56	-0.32	-0.67
			Max. Vy	17	0.44	-0.69	-0.02
			Max. Vx	21	-0.42	-0.32	-0.67
		Diagonal	Max Tension	19	4.55	0.00	0.00
			Max. Compression	24	-5.74	0.00	0.00
			Max. Mx	21	-2.67	0.01	0.00
			Max. My	20	-1.69	0.00	-0.00
			Max. Vy	21	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Horizontal	Max Tension	21	1.71	0.00	0.00
			Max. Compression	21	-1.71	0.00	0.00
			Max. Mx	14	0.93	0.01	0.00
			Max. My	20	1.46	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	26	0.00	-0.00	0.00
			Max. My	21	0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	21	-0.00	-0.00	0.00
T9	139.84 - 119.84	Top Girt	Max Tension	17	0.99	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.55	0.01	0.00
			Max. My	20	0.66	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.55	0.38	0.67
			Max. Mx	25	-94.78	0.81	-0.04
			Max. My	25	-96.62	0.38	0.69
			Max. Vy	25	0.47	0.76	-0.03
			Max. Vx	16	0.46	-0.37	0.65
		Diagonal	Max Tension	26	2.75	0.00	0.00
			Max. Compression	20	-5.11	0.00	0.00
			Max. Mx	16	1.34	0.01	0.00
			Max. My	20	0.15	0.00	-0.00
			Max. Vy	16	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Horizontal	Max Tension	26	1.69	0.00	0.00
			Max. Compression	26	-1.69	0.00	0.00
			Max. Mx	20	1.65	0.01	0.00
			Max. My	20	1.65	0.00	0.00
			Max. Vy	20	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	17	0.00	-0.00	-0.00
			Max. Compression	17	-0.00	0.00	0.00
			Max. Mx	26	0.00	-0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	119.84 - 99.84	Top Girt	Max. My	26	0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	26	-0.00	-0.00	0.00
			Max Tension	17	0.94	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.47	0.01	0.00
		Leg	Max. My	20	0.45	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-115.75	-0.83	-0.11
			Max. Mx	17	-59.60	-2.39	0.48
		Diagonal	Max. My	21	-47.21	0.64	-2.55
			Max. Vy	17	1.63	-1.14	-0.07
			Max. Vx	16	-1.88	-0.05	1.26
			Max Tension	22	16.82	0.00	0.00
			Max. Compression	24	-19.04	0.00	0.00
			Max. Mx	16	2.63	0.02	0.00
		Horizontal	Max. My	20	-13.19	0.00	-0.00
			Max. Vy	16	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	17	2.54	0.00	0.00
			Max. Compression	25	-2.00	0.00	0.00
			Max. Mx	17	1.91	0.01	0.00
		Secondary Horizontal	Max. My	20	1.91	0.00	0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Max Tension	25	0.00	-0.00	-0.00
			Max. Compression	25	-0.00	0.00	0.00
			Max. Mx	26	0.00	-0.00	0.00
		Top Girt	Max. My	20	0.00	-0.00	-0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	20	0.00	-0.00	-0.00
			Max Tension	17	1.03	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.52	0.01	0.00
		Guy A	Max. My	20	0.80	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Bottom Tension	21	22.59		
			Top Tension	21	22.84		
			Top Cable Vert	21	11.41		
		Guy B	Top Cable Norm	21	19.79		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-10.67		
			Bot Cable Norm	21	19.92		
			Bot Cable Tan	21	0.00		
			Bottom Tension	25	21.09		
		Guy C	Top Tension	25	21.28		
			Top Cable Vert	25	8.49		
			Top Cable Norm	25	19.51		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-7.85		
			Bot Cable Norm	25	19.58		
			Bot Cable Tan	25	0.00		
			Bottom Tension	17	20.55		
			Top Tension	17	20.79		
			Top Cable Vert	17	10.22		
			Top Cable Norm	17	18.11		
			Top Cable Tan	17	0.01		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T11	99.84 - 79.84	Top Guy Pull-Off	Bot Cable Vert	17	-9.48		
			Bot Cable Norm	17	18.23		
			Bot Cable Tan	17	0.00		
			Max Tension	22	19.65	0.00	0.00
		Torque Arm Top	Max. Compression	20	-16.29	0.00	0.00
			Max. Mx	17	15.38	0.08	0.00
			Max. My	20	12.04	0.00	0.00
			Max. Vy	17	-0.08	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
			Max Tension	22	21.32	-6.16	-0.00
			Max. Compression	22	-10.26	-41.73	0.00
			Max. Mx	21	-8.15	-44.25	-0.00
			Max. My	20	-8.44	-38.95	0.00
			Max. Vy	21	11.14	-44.25	-0.00
			Max. Vx	20	0.00	-38.95	0.00
		Leg	Max Tension	6	0.39	0.02	-0.43
			Max. Compression	21	-171.54	1.18	0.24
			Max. Mx	24	-109.26	-1.40	0.12
			Max. My	15	-122.67	-0.55	-1.35
			Max. Vy	18	1.89	-1.14	0.08
			Max. Vx	21	1.88	0.29	-1.04
		Diagonal	Max Tension	24	12.67	0.00	0.00
			Max. Compression	24	-16.16	0.00	0.00
			Max. Mx	18	-2.62	0.01	0.00
			Max. My	20	-5.24	0.00	-0.00
		Horizontal	Max. Vy	18	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	3.08	0.00	0.00
			Max. Compression	21	-2.97	0.00	0.00
			Max. Mx	24	2.72	0.01	0.00
			Max. My	20	1.75	0.00	0.00
			Max. Vy	24	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
T12	79.84 - 59.84	Secondary Horizontal	Max Tension	18	0.00	-0.00	-0.00
			Max. Compression	18	-0.00	0.00	0.00
			Max. Mx	26	0.00	-0.00	0.00
			Max. My	18	0.00	-0.00	-0.00
		Top Girt	Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	19	0.00	-0.00	-0.00
			Max Tension	17	1.26	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	17	0.92	0.01	0.00
			Max. My	20	0.95	0.00	0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Leg	Max Tension	6	3.09	0.29	-0.29
			Max. Compression	21	-183.28	-1.26	0.03
			Max. Mx	21	-183.28	-1.26	0.03
			Max. My	22	-112.69	-0.49	1.16
			Max. Vy	21	-0.73	1.17	0.40
			Max. Vx	23	0.67	0.22	-0.93
		Diagonal	Max Tension	19	3.42	0.00	0.00
			Max. Compression	16	-6.35	0.00	0.00
			Max. Mx	18	2.74	0.01	0.00
			Max. My	20	-1.93	0.00	-0.00
		Horizontal	Max. Vy	18	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	3.17	0.00	0.00
			Max. Compression	21	-3.17	0.00	0.00
			Max. Mx	14	1.43	0.01	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T13	59.84 - 39.84	Secondary Horizontal	Max. My	20	2.91	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	18	0.00	-0.00	-0.00
		Top Girt	Max. Compression	23	-0.00	-0.00	0.00
			Max. Mx	26	-0.00	-0.00	0.00
			Max. My	15	0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	15	-0.00	-0.00	0.00
			Max Tension	23	1.26	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	20	1.24	0.01	0.00
		Leg	Max. My	20	0.95	0.00	-0.00
			Max. Vy	20	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	14.61	0.13	0.66
			Max. Compression	21	-202.88	-1.38	0.06
			Max. Mx	20	-165.52	-1.45	-0.57
			Max. My	25	-183.72	0.32	-1.45
			Max. Vy	20	0.80	1.20	0.29
			Max. Vx	22	-0.90	0.02	-1.09
			Max Tension	24	5.86	0.00	0.00
		Diagonal	Max. Compression	21	-8.24	0.00	0.00
			Max. Mx	22	-4.87	0.01	0.00
			Max. My	20	-1.73	0.00	-0.00
			Max. Vy	22	-0.01	0.00	0.00
		Horizontal	Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	3.51	0.00	0.00
			Max. Compression	21	-3.51	0.00	0.00
			Max. Mx	14	1.67	0.01	0.00
		Secondary Horizontal	Max. My	20	3.23	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	18	0.00	-0.00	-0.00
		Top Girt	Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	26	-0.00	-0.00	0.00
			Max. My	21	-0.00	-0.00	0.00
			Max. Vy	26	0.00	-0.00	0.00
			Max. Vx	21	-0.00	-0.00	0.00
			Max Tension	24	1.41	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	25	0.74	0.01	0.00
			Max. My	20	1.17	0.00	-0.00
			Max. Vy	25	-0.01	0.00	0.00
		Guy A	Max. Vx	20	0.00	0.00	0.00
			Bottom Tension	21	9.02		
			Top Tension	21	9.10		
			Top Cable Vert	21	3.09		
			Top Cable Norm	21	8.56		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-2.77		
			Bot Cable Norm	21	8.59		
			Bot Cable Tan	21	0.00		
		Guy B	Bottom Tension	25	8.58		
			Top Tension	25	8.62		
			Top Cable Vert	25	1.85		
			Top Cable Norm	25	8.42		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-1.59		

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T14	39.84 - 19.84	Guy C	Bot Cable Norm	25	8.43		
			Bot Cable Tan	25	0.00		
			Bottom Tension	17	7.24		
			Top Tension	17	7.31		
			Top Cable Vert	17	2.43		
			Top Cable Norm	17	6.90		
			Top Cable Tan	17	0.00		
			Bot Cable Vert	17	-2.11		
			Bot Cable Norm	17	6.92		
			Bot Cable Tan	17	0.00		
		Top Guy Pull-Off	Max Tension	20	7.71	0.00	0.00
			Max. Compression	23	-5.65	0.00	0.00
			Max. Mx	19	-2.73	0.08	0.00
			Max. My	20	-1.33	0.00	-0.00
			Max. Vy	19	-0.08	0.00	0.00
		Torque Arm Top	Max. Vx	20	0.00	0.00	0.00
			Max Tension	22	8.92	0.00	0.00
			Max. Compression	22	-4.01	0.00	0.00
			Max. Mx	21	-2.65	-12.34	0.00
			Max. My	20	-0.70	-6.40	0.00
			Max. Vy	21	3.17	-12.34	0.00
			Max. Vx	20	0.00	-6.40	0.00
			Max Tension	23	20.08	0.11	0.66
			Max. Compression	21	-206.77	-1.42	0.03
			Max. Mx	21	-197.30	-1.42	0.02
			Max. My	22	-138.44	-0.47	1.24
			Max. Vy	21	0.79	1.21	0.32
			Max. Vx	24	-0.73	0.26	-1.13
		Diagonal	Max Tension	17	4.55	0.00	0.00
			Max. Compression	17	-7.92	0.00	0.00
			Max. Mx	22	-0.12	0.01	0.00
			Max. My	20	-3.38	0.00	-0.00
			Max. Vy	22	-0.01	0.00	0.00
		Horizontal	Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	3.58	0.00	0.00
			Max. Compression	21	-3.58	0.00	0.00
			Max. Mx	17	2.00	0.01	0.00
			Max. My	20	3.33	0.00	-0.00
		Secondary Horizontal	Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	18	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	20	0.00	-0.00	0.00
			Max. My	21	-0.00	-0.00	0.00
			Max. Vy	20	0.00	-0.00	0.00
			Max. Vx	21	-0.00	-0.00	0.00
			Max Tension	24	1.51	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Top Girt	Max. Mx	15	1.19	0.01	0.00
			Max. My	20	0.95	0.00	-0.00
			Max. Vy	15	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	13.56	-0.52	-0.48
T15	19.84 - 6.5	Leg	Max. Compression	21	-195.59	1.21	0.28
			Max. Mx	25	-123.81	1.54	0.02
			Max. My	26	-151.63	-0.49	1.51
			Max. Vy	18	-1.00	-0.57	-1.04
			Max. Vx	21	-1.47	-0.51	-0.78
		Diagonal	Max Tension	19	9.20	0.00	0.00
			Max. Compression	16	-10.94	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T16	6.5 - 0	Horizontal	Max. Mx	22	5.59	0.01	0.00
			Max. My	20	-6.37	0.00	-0.00
			Max. Vy	22	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	21	3.39	0.00	0.00
			Max. Compression	21	-3.39	0.00	0.00
			Max. Mx	17	2.17	0.01	0.00
			Max. My	20	3.20	0.00	-0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	24	0.00	0.00	0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	20	0.00	-0.00	0.00
			Max. My	24	-0.00	-0.00	-0.00
			Max. Vy	20	0.00	-0.00	0.00
			Max. Vx	24	0.00	-0.00	-0.00
			Max Tension	21	1.69	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	17	1.01	0.01	0.00
			Max. My	20	1.05	0.00	-0.00
		Top Girt	Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-173.93	-0.02	0.21
			Max. Mx	19	-125.87	2.68	-0.55
			Max. My	20	-159.80	-0.37	1.42
			Max. Vy	19	8.53	-1.80	0.88
			Max. Vx	20	-4.69	-1.72	1.20
			Max Tension	17	30.95	-0.81	-0.05
			Max. Compression	1	0.00	0.00	0.00
		Bottom Girt	Max. Mx	20	25.97	-1.23	-0.12
			Max. My	20	25.97	-1.23	-0.12
			Max. Vy	20	-0.57	-1.23	-0.12
			Max. Vx	20	-0.07	-1.23	-0.12
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-5.12	-3.30	-0.05
			Max. Mx	20	-4.93	-3.66	-0.06
			Max. My	20	-4.93	-3.66	-0.06
			Max. Vy	19	-16.82	-3.39	-0.04
			Max. Vx	20	-0.41	-3.66	-0.06
		Mid Girt	Max Tension	17	0.47	0.00	0.00
			Max. Compression	17	-0.32	0.00	0.00
			Max. Mx	14	0.30	0.01	0.00
			Max. My	20	0.42	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	21	421.09	-3.16	-2.74
	Max. H _x	36	216.52	5.96	-0.03
	Max. H _z	15	398.72	-3.52	6.59
	Max. M _x	1	0.00	-0.02	0.02

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 235 ft Elev -20.1 ft Azimuth 240 deg	Max. M _z	1	0.00	-0.02	0.02
	Max. Torsion	26	2.61	-0.49	5.70
	Min. Vert	1	182.84	-0.02	0.02
	Min. H _x	18	410.67	-8.27	2.47
	Min. H _z	8	224.80	0.01	-5.66
	Min. M _x	1	0.00	-0.02	0.02
	Min. M _z	1	0.00	-0.02	0.02
	Min. Torsion	20	-2.13	-5.28	-2.04
	Max. Vert	10	-13.30	-10.50	6.06
	Max. H _x	35	-13.30	-10.50	6.06
	Max. H _z	17	-133.31	-140.91	81.36
	Min. Vert	17	-133.31	-140.91	81.36
	Min. H _x	17	-133.31	-140.91	81.36
	Min. H _z	10	-13.30	-10.50	6.06
Guy B @ 235 ft Elev 8.9 ft Azimuth 120 deg	Max. Vert	6	-10.09	9.74	5.63
	Max. H _x	25	-116.91	145.64	84.02
	Max. H _z	25	-116.91	145.64	84.02
	Min. Vert	25	-116.91	145.64	84.02
	Min. H _x	6	-10.09	9.74	5.63
	Min. H _z	6	-10.09	9.74	5.63
Guy A @ 235 ft Elev -23.4 ft Azimuth 0 deg	Max. Vert	2	-13.73	-0.01	-12.24
	Max. H _x	24	-81.91	9.79	-96.10
	Max. H _z	2	-13.73	-0.01	-12.24
	Min. Vert	21	-137.56	0.06	-168.17
	Min. H _x	18	-77.36	-9.78	-89.71
	Min. H _z	21	-137.56	0.06	-168.17

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	182.84	0.02	-0.02	0.00	0.00	-0.18
Dead+Wind 0 deg - No Ice+Guy	210.59	0.26	-6.41	0.00	0.00	-1.06
Dead+Wind 30 deg - No Ice+Guy	219.29	3.07	-5.16	0.00	0.00	-0.32
Dead+Wind 60 deg - No Ice+Guy	224.43	5.14	-2.96	0.00	0.00	0.20
Dead+Wind 90 deg - No Ice+Guy	220.32	6.05	-0.07	0.00	0.00	0.63
Dead+Wind 120 deg - No Ice+Guy	214.31	5.71	2.90	0.00	0.00	1.29
Dead+Wind 150 deg - No Ice+Guy	220.83	3.03	4.94	0.00	0.00	1.51
Dead+Wind 180 deg - No Ice+Guy	224.80	-0.01	5.66	0.00	0.00	0.94
Dead+Wind 210 deg - No Ice+Guy	219.57	-3.03	5.01	0.00	0.00	-0.00
Dead+Wind 240 deg - No Ice+Guy	210.86	-5.56	3.13	0.00	0.00	-0.84

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 270 deg - No Ice+Guy	216.52	-5.96	0.03	0.00	0.00	-1.43
Dead+Wind 300 deg - No Ice+Guy	220.53	-5.03	-2.90	0.00	0.00	-1.79
Dead+Wind 330 deg - No Ice+Guy	216.81	-2.88	-5.09	0.00	0.00	-1.76
Dead+Ice+Temp+Guy	322.18	3.29	-1.92	0.00	0.00	-0.29
Dead+Wind 0 deg+Ice+Temp+Guy	398.72	3.52	-6.59	0.00	0.00	-1.70
Dead+Wind 30 deg+Ice+Temp+Guy	409.55	6.21	-5.85	0.00	0.00	-0.52
Dead+Wind 60 deg+Ice+Temp+Guy	418.92	7.83	-4.49	0.00	0.00	0.04
Dead+Wind 90 deg+Ice+Temp+Guy	410.67	8.27	-2.47	0.00	0.00	0.56
Dead+Wind 120 deg+Ice+Temp+Guy	402.60	7.66	0.01	0.00	0.00	1.79
Dead+Wind 150 deg+Ice+Temp+Guy	411.92	5.28	2.04	0.00	0.00	2.13
Dead+Wind 180 deg+Ice+Temp+Guy	421.09	3.16	2.74	0.00	0.00	1.25
Dead+Wind 210 deg+Ice+Temp+Guy	412.80	1.02	2.15	0.00	0.00	-0.06
Dead+Wind 240 deg+Ice+Temp+Guy	402.57	-1.05	0.33	0.00	0.00	-1.02
Dead+Wind 270 deg+Ice+Temp+Guy	407.08	-1.75	-2.21	0.00	0.00	-1.72
Dead+Wind 300 deg+Ice+Temp+Guy	413.42	-1.21	-4.35	0.00	0.00	-2.41
Dead+Wind 330 deg+Ice+Temp+Guy	405.29	0.49	-5.70	0.00	0.00	-2.61
Dead+Wind 0 deg - Service+Guy	210.59	0.26	-6.41	0.00	0.00	-1.06
Dead+Wind 30 deg - Service+Guy	219.29	3.07	-5.16	0.00	0.00	-0.32
Dead+Wind 60 deg - Service+Guy	224.43	5.14	-2.96	0.00	0.00	0.20
Dead+Wind 90 deg - Service+Guy	220.32	6.05	-0.07	0.00	0.00	0.63
Dead+Wind 120 deg - Service+Guy	214.31	5.71	2.90	0.00	0.00	1.29
Dead+Wind 150 deg - Service+Guy	220.83	3.03	4.94	0.00	0.00	1.51
Dead+Wind 180 deg - Service+Guy	224.80	-0.01	5.66	0.00	0.00	0.94
Dead+Wind 210 deg - Service+Guy	219.57	-3.03	5.01	0.00	0.00	-0.00
Dead+Wind 240 deg - Service+Guy	210.86	-5.56	3.13	0.00	0.00	-0.84
Dead+Wind 270 deg - Service+Guy	216.52	-5.96	0.03	0.00	0.00	-1.43
Dead+Wind 300 deg - Service+Guy	220.53	-5.03	-2.90	0.00	0.00	-1.79
Dead+Wind 330 deg - Service+Guy	216.81	-2.88	-5.09	0.00	0.00	-1.76

Solution Summary

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-67.32	0.00	0.00	67.32	0.00	0.002%
2	1.65	-68.11	-83.91	-1.65	68.11	83.91	0.002%
3	43.07	-67.30	-71.59	-43.07	67.30	71.59	0.005%
4	71.90	-66.50	-42.49	-71.90	66.50	42.49	0.002%
5	82.47	-67.52	-2.62	-82.47	67.52	2.63	0.002%
6	71.80	-68.51	41.68	-71.80	68.51	-41.68	0.003%
7	39.65	-67.54	72.12	-39.64	67.54	-72.12	0.002%
8	-0.45	-66.54	83.15	0.45	66.54	-83.15	0.002%
9	-40.50	-67.34	72.64	40.50	67.34	-72.64	0.005%
10	-71.89	-68.14	42.85	71.88	68.14	-42.85	0.002%
11	-81.76	-67.12	-0.58	81.76	67.12	0.58	0.004%
12	-71.09	-66.14	-40.71	71.09	66.14	40.72	0.006%
13	-41.06	-67.10	-71.24	41.06	67.10	71.24	0.004%
14	0.00	-182.32	0.00	-0.00	182.32	0.00	0.000%
15	1.91	-184.21	-127.93	-1.91	184.21	127.92	0.002%
16	64.01	-182.27	-107.77	-64.01	182.27	107.76	0.004%
17	107.06	-180.34	-63.15	-107.06	180.34	63.15	0.001%
18	123.53	-182.81	-2.77	-123.52	182.81	2.77	0.002%
19	109.26	-185.19	64.39	-109.25	185.19	-64.38	0.004%
20	59.83	-182.86	108.53	-59.83	182.86	-108.53	0.002%
21	-0.67	-180.43	124.52	0.67	180.43	-124.52	0.001%
22	-61.03	-182.37	109.43	61.02	182.36	-109.43	0.002%
23	-109.50	-184.29	65.93	109.49	184.29	-65.92	0.003%
24	-122.79	-181.82	-0.48	122.79	181.82	0.48	0.002%
25	-106.06	-179.44	-60.99	106.05	179.44	60.99	0.002%
26	-61.62	-181.78	-107.05	61.62	181.78	107.04	0.003%
27	1.65	-68.11	-83.91	-1.65	68.11	83.91	0.002%
28	43.07	-67.30	-71.59	-43.07	67.30	71.59	0.005%
29	71.90	-66.50	-42.49	-71.90	66.50	42.49	0.002%
30	82.47	-67.52	-2.62	-82.47	67.52	2.63	0.002%
31	71.80	-68.51	41.68	-71.80	68.51	-41.68	0.003%
32	39.65	-67.54	72.12	-39.64	67.54	-72.12	0.002%
33	-0.45	-66.54	83.15	0.45	66.54	-83.15	0.002%
34	-40.50	-67.34	72.64	40.50	67.34	-72.64	0.005%
35	-71.89	-68.14	42.85	71.88	68.14	-42.85	0.002%
36	-81.76	-67.12	-0.58	81.76	67.12	0.58	0.004%
37	-71.09	-66.14	-40.71	71.09	66.14	40.72	0.006%
38	-41.06	-67.10	-71.24	41.06	67.10	71.24	0.004%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00005754
2	Yes	13	0.00000001	0.00005493
3	Yes	12	0.00009893	0.00012808
4	Yes	11	0.00012097	0.00009234
5	Yes	13	0.00000001	0.00006007
6	Yes	13	0.00000001	0.00009387
7	Yes	13	0.00000001	0.00006539
8	Yes	11	0.00008401	0.00006451
9	Yes	12	0.00010398	0.00013306
10	Yes	13	0.00000001	0.00005762
11	Yes	12	0.00009503	0.00008785
12	Yes	9	0.00013494	0.00012505
13	Yes	12	0.00009256	0.00009400

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14	Yes	10	0.00000001	0.00004570
15	Yes	14	0.00010731	0.00006816
16	Yes	13	0.00010629	0.00007532
17	Yes	12	0.00011521	0.00008493
18	Yes	14	0.00006555	0.00004717
19	Yes	14	0.00014525	0.00007840
20	Yes	14	0.00006510	0.00004359
21	Yes	13	0.00008767	0.00009502
22	Yes	14	0.00005221	0.00008647
23	Yes	14	0.00009345	0.00010122
24	Yes	14	0.00000001	0.00006091
25	Yes	12	0.00010338	0.00011508
26	Yes	13	0.00013823	0.00006407
27	Yes	13	0.00000001	0.00005493
28	Yes	12	0.00009893	0.00012808
29	Yes	11	0.00012097	0.00009234
30	Yes	13	0.00000001	0.00006007
31	Yes	13	0.00000001	0.00009387
32	Yes	13	0.00000001	0.00006539
33	Yes	11	0.00008401	0.00006451
34	Yes	12	0.00010398	0.00013306
35	Yes	13	0.00000001	0.00005762
36	Yes	12	0.00009503	0.00008785
37	Yes	9	0.00013494	0.00012505
38	Yes	12	0.00009256	0.00009400

Maximum Tower Deflections - Service Wind

Section No.	Elevation <i>ft</i>	Horz. Deflection <i>in</i>	Gov. Load Comb.	Tilt <i>°</i>	Twist <i>°</i>
L1	327 - 291.84	11.041	33	0.4134	0.1267
T1	291.84 - 279.84	8.455	33	0.1872	0.1605
T2	279.84 - 259.84	8.026	33	0.1571	0.1616
T3	259.84 - 239.84	7.452	33	0.1085	0.1671
T4	239.84 - 219.84	7.075	33	0.0897	0.1677
T5	219.84 - 199.84	6.726	33	0.0688	0.1434
T6	199.84 - 179.84	6.543	33	0.0699	0.1676
T7	179.84 - 159.84	6.192	33	0.1104	0.1763
T8	159.84 - 139.84	5.747	33	0.0753	0.2035
T9	139.84 - 119.84	5.589	34	0.0887	0.2507
T10	119.84 - 99.84	5.746	31	0.0906	0.2910
T11	99.84 - 79.84	6.115	31	0.0935	0.3287
T12	79.84 - 59.84	6.304	31	0.0602	0.3482
T13	59.84 - 39.84	5.741	31	0.2200	0.3382
T14	39.84 - 19.84	4.476	31	0.3879	0.3673
T15	19.84 - 6.5	2.480	31	0.5382	0.3862
T16	6.5 - 0	0.832	31	0.5948	0.3714

Critical Deflections and Radius of Curvature - Service Wind

Elevation <i>ft</i>	Appurtenance	Gov. Load Comb.	Deflection <i>in</i>	Tilt <i>°</i>	Twist <i>°</i>	Radius of Curvature <i>ft</i>
325.00	Lightning Rod 5/8"x4'	33	10.865	0.3974	0.1569	34996
323.00	Flash Beacon Lighting	33	10.691	0.3815	0.1572	34996

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>						
305.00	6813 1-Bay (WHUS-34)	33	9.233	0.2508	0.1592	7953
290.00	6ft dish	33	8.375	0.1817	0.1606	6026
285.84	Guy	33	8.219	0.1712	0.1610	9771
277.00	PD1110 (WHUS-39)	33	7.937	0.1492	0.1621	56097
271.00	SC479-HF1LDF (CSP-12 Future)	33	7.754	0.1327	0.1634	24811
267.00	OGT9-840 (CSP-9)	33	7.638	0.1227	0.1645	17799
263.75	SC479-HF1LDF (CSP-12 Future)	33	7.549	0.1154	0.1656	14490
261.00	AP14-850/105 (CSP-4)	33	7.480	0.1103	0.1666	13016
256.51	Guy	33	7.379	0.1037	0.1684	14373
256.50	SE419-SF3P4LDF (CSP-16 Future)	33	7.379	0.1037	0.1684	14378
253.25	OTG9-840 (CSP-11 Inverted)	33	7.314	0.1000	0.1696	18049
252.00	AP14-850/105 (CSP-6)	33	7.290	0.0989	0.1700	20055
250.00	OTG9-840 (CSP-11 Inverted)	33	7.254	0.0973	0.1704	24390
249.25	SC479-HF1LDF (CSP-14 Future Inverted)	33	7.240	0.0967	0.1705	26541
242.00	SC479-HF1LDF (CSP-14 Future Inverted)	33	7.113	0.0915	0.1692	61765
240.00	TTA 432-83H-01T (CSP-23 Future)	33	7.078	0.0899	0.1678	50987
216.51	Guy	33	6.688	0.0662	0.1474	11826
211.00	6813 1-Bay (WHUS-36)	33	6.640	0.0630	0.1546	23098
198.00	6813 1-Bay (WHUS-34)	33	6.521	0.0685	0.1689	17126
190.00	6' Yagi (CPR-33 Future)	33	6.399	0.0876	0.1723	20718
185.00	7770.00 w/ Mount Pipe	33	6.304	0.1020	0.1731	23346
172.00	24x12x45 panel	33	6.007	0.1045	0.1859	32821
171.50	5' grid dish	33	5.995	0.1036	0.1865	30269
166.51	Guy	33	5.880	0.0920	0.1928	17037
166.00	16x12x3 TTA	33	5.869	0.0907	0.1935	16313
158.80	2x1x5 panel	33	5.729	0.0755	0.2055	12104
157.00	L-810 flashing beacon	33	5.701	0.0787	0.2092	13125
125.00	2' Sidearm	31	5.658	0.0882	0.2812	21867
124.00	6x4 ice shield	31	5.675	0.0884	0.2831	20360
112.00	PD1110	31	5.888	0.0992	0.3062	17544
106.51	Guy	31	5.991	0.1023	0.3167	19011
104.00	6ft dish	31	6.038	0.1011	0.3213	19780
94.00	PR-850	31	6.216	0.0706	0.3378	15216
84.00	BXA-80063/4CF w/pipe	31	6.314	0.0470	0.3475	6214
70.00	DB212-1 (CSP-10)	31	6.126	0.1233	0.3422	6063
56.51	Guy	31	5.577	0.2519	0.3402	7443
18.00	6' Yagi	31	2.263	0.5478	0.3851	9156
13.00	1.2M	31	1.654	0.5697	0.3799	14551

Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation ft</i>	<i>Horz. Deflection in</i>	<i>Gov. Load Comb.</i>	<i>Tilt °</i>	<i>Twist °</i>
L1	327 - 291.84	17.951	21	0.5038	0.2001
T1	291.84 - 279.84	14.728	21	0.2375	0.2762
T2	279.84 - 259.84	14.173	21	0.2092	0.2367
T3	259.84 - 239.84	13.352	21	0.1719	0.2375
T4	239.84 - 219.84	12.673	21	0.1715	0.2366
T5	219.84 - 199.84	11.923	21	0.1570	0.2306
T6	199.84 - 179.84	11.359	21	0.1589	0.2397
T7	179.84 - 159.84	10.600	21	0.2228	0.2741
T8	159.84 - 139.84	9.812	21	0.1746	0.3006
T9	139.84 - 119.84	9.554	22	0.1593	0.3462

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T10	119.84 - 99.84	9.455	22	0.1539	0.3854
T11	99.84 - 79.84	9.730	23	0.1340	0.4309
T12	79.84 - 59.84	9.930	23	0.2181	0.4659
T13	59.84 - 39.84	9.134	23	0.3461	0.4739
T14	39.84 - 19.84	7.318	23	0.5909	0.5418
T15	19.84 - 6.5	4.174	23	0.9135	0.6154
T16	6.5 - 0	1.398	23	1.0119	0.6014

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
325.00	Lightning Rod 5/8"x4'	21	17.734	0.4848	0.2749	28813
323.00	Flash Beacon Lighting	21	17.517	0.4660	0.2782	28813
305.00	6813 1-Bay (WHUS-34)	21	15.705	0.3118	0.2953	6548
290.00	6ft dish	21	14.627	0.2311	0.2703	5091
285.84	Guy	21	14.427	0.2195	0.2554	9171
277.00	PD1110 (WHUS-39)	21	14.054	0.2044	0.2316	56097
271.00	SC479-HF1LDF (CSP-12 Future)	21	13.799	0.1920	0.2288	24811
267.00	OGT9-840 (CSP-9)	21	13.632	0.1835	0.2309	17799
263.75	SC479-HF1LDF (CSP-12 Future)	21	13.501	0.1774	0.2338	14490
261.00	AP14-850/105 (CSP-4)	21	13.395	0.1733	0.2365	13016
256.51	Guy	21	13.233	0.1700	0.2400	14373
256.50	SE419-SF3P4LDF (CSP-16 Future)	21	13.233	0.1700	0.2400	14378
253.25	OTG9-840 (CSP-11 Inverted)	21	13.123	0.1696	0.2416	18049
252.00	AP14-850/105 (CSP-6)	21	13.081	0.1697	0.2419	20055
250.00	OTG9-840 (CSP-11 Inverted)	21	13.016	0.1700	0.2422	24390
249.25	SC479-HF1LDF (CSP-14 Future Inverted)	21	12.991	0.1702	0.2422	26541
242.00	SC479-HF1LDF (CSP-14 Future Inverted)	21	12.749	0.1716	0.2388	17020
240.00	TTA 432-83H-01T (CSP-23 Future)	21	12.678	0.1715	0.2368	15761
216.51	Guy	21	11.820	0.1535	0.2333	11826
211.00	6813 1-Bay (WHUS-36)	21	11.668	0.1492	0.2351	23098
198.00	6813 1-Bay (WHUS-34)	21	11.300	0.1643	0.2417	11180
190.00	6' Yagi (CPR-33 Future)	21	11.015	0.1952	0.2549	14608
185.00	7770.00 w/ Mount Pipe	21	10.816	0.2131	0.2648	18597
172.00	24x12x45 panel	21	10.267	0.2131	0.2845	22092
171.50	5' grid dish	21	10.246	0.2117	0.2851	20655
166.51	Guy	21	10.045	0.1958	0.2909	12519
166.00	16x12x3 TTA	21	10.026	0.1941	0.2916	12038
158.80	2x1x5 panel	21	9.781	0.1720	0.3025	8975
157.00	L-810 flashing beacon	21	9.729	0.1681	0.3060	9567
125.00	2' Sidearm	22	9.467	0.1611	0.3754	13981
124.00	6x4 ice shield	22	9.464	0.1602	0.3773	13047
112.00	PD1110	23	9.513	0.1359	0.4024	11205
106.51	Guy	23	9.605	0.1305	0.4151	12038
104.00	6ft dish	23	9.651	0.1318	0.4211	12470
94.00	PR-850	23	9.842	0.1378	0.4442	14838
84.00	BXA-80063/4CF w/pipe	23	9.950	0.1903	0.4619	4730
70.00	DB212-1 (CSP-10)	23	9.673	0.2833	0.4677	4452
56.51	Guy	23	8.906	0.3684	0.4801	5080
18.00	6' Yagi	23	3.813	0.9323	0.6160	4044
13.00	1.2M	23	2.788	0.9712	0.6117	7281

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Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	291.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	1.07	6.44	0.166	1.333	Bolt Shear
		Pull-Off@285.84	A325N	0.6250	5	1.93	6.44	0.300	1.333	Bolt Shear
		Torque Arm Top@285.84	A325N	0.6250	5	1.93	6.44	0.300	1.333	Bolt Shear
T2	279.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
T3	259.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	1.38	6.44	0.215	1.333	Bolt Shear
		Pull-Off@256.507	A325N	0.6250	5	2.20	6.44	0.341	1.333	Bolt Shear
		Torque Arm Top@256.507	A325N	0.6250	5	2.20	6.44	0.341	1.333	Bolt Shear
T4	239.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
T5	219.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	2.02	6.44	0.314	1.333	Bolt Shear
		Pull-Off@216.507	A325N	0.6250	5	2.61	6.44	0.406	1.333	Bolt Shear
		Torque Arm Top@216.507	A325N	0.6250	5	2.61	6.44	0.406	1.333	Bolt Shear
T6	199.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
T7	179.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	2.79	6.44	0.433	1.333	Bolt Shear
		Pull-Off@166.507	A325N	0.6250	5	3.23	6.44	0.501	1.333	Bolt Shear
		Torque Arm Top@166.507	A325N	0.6250	5	3.23	6.44	0.501	1.333	Bolt Shear
T8	159.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
T9	139.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
T10	119.84	Leg	A325N	1.0000	4	0.00	34.56	0.000	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	3.93	6.44	0.610	1.333	Bolt Shear
		Pull-Off@106.507	A325N	0.6250	5	4.26	6.44	0.662	1.333	Bolt Shear
		Torque Arm Top@106.507	A325N	0.6250	5	4.26	6.44	0.662	1.333	Bolt Shear
T11	99.84	Leg	A325N	1.0000	4	0.10	34.56	0.003	1.333	Bolt Tension
T12	79.84	Leg	A325N	1.3750	4	0.00	65.33	0.000	1.333	Bolt Tension
T13	59.84	Leg	A325N	1.3750	4	3.65	65.33	0.056	1.333	Bolt Tension
		Top Guy	A325N	0.6250	5	1.54	6.44	0.239	1.333	Bolt Shear
		Pull-Off@56.5067	A325N	0.6250	5	1.78	6.44	0.277	1.333	Bolt Shear
		Torque Arm Top@56.5067	A325N	0.6250	5	1.78	6.44	0.277	1.333	Bolt Shear
T14	39.84	Leg	A325N	1.3750	4	4.26	65.33	0.065	1.333	Bolt Tension
T15	19.84	Leg	A325N	1.3750	4	0.00	65.33	0.000	1.333	Bolt Tension
T16	6.5	Leg	A325N	1.3750	4	0.00	65.21	0.000	1.333	Bolt Tension

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Guy Design Data

Section No.	Elevation <i>ft</i>	Size	Initial Tension <i>K</i>	Breaking Load <i>K</i>	Actual <i>T</i> <i>K</i>	Allowable <i>T_a</i> <i>K</i>	Required <i>S.F.</i>	Actual <i>S.F.</i>
T1	285.84 (A) (732)	3/4 EHS	5.83	58.30	20.13	29.15	2.000	2.897 ✓
	285.84 (A) (733)	3/4 EHS	5.83	58.30	20.12	29.15	2.000	2.898 ✓
	285.84 (B) (728)	3/4 EHS	5.83	58.30	19.37	29.15	2.000	3.009 ✓
	285.84 (B) (729)	3/4 EHS	5.83	58.30	19.40	29.15	2.000	3.005 ✓
	285.84 (C) (724)	3/4 EHS	5.83	58.30	20.11	29.15	2.000	2.899 ✓
	285.84 (C) (725)	3/4 EHS	5.83	58.30	20.07	29.15	2.000	2.904 ✓
T3	256.51 (A) (720)	3/4 EHS	5.83	58.30	20.06	29.15	2.000	2.907 ✓
	256.51 (A) (721)	3/4 EHS	5.83	58.30	20.08	29.15	2.000	2.904 ✓
	256.51 (B) (716)	3/4 EHS	5.83	58.30	19.15	29.15	2.000	3.044 ✓
	256.51 (B) (717)	3/4 EHS	5.83	58.30	19.27	29.15	2.000	3.026 ✓
	256.51 (C) (712)	3/4 EHS	5.83	58.30	20.07	29.15	2.000	2.904 ✓
	256.51 (C) (713)	3/4 EHS	5.83	58.30	20.05	29.15	2.000	2.908 ✓
T5	216.51 (A) (708)	3/4 EHS	5.83	58.30	20.23	29.15	2.000	2.882 ✓
	216.51 (A) (709)	3/4 EHS	5.83	58.30	20.43	29.15	2.000	2.854 ✓
	216.51 (B) (704)	3/4 EHS	5.83	58.30	19.26	29.15	2.000	3.027 ✓
	216.51 (B) (705)	3/4 EHS	5.83	58.30	19.25	29.15	2.000	3.028 ✓
	216.51 (C) (700)	3/4 EHS	5.83	58.30	20.37	29.15	2.000	2.863 ✓
	216.51 (C) (701)	3/4 EHS	5.83	58.30	20.28	29.15	2.000	2.875 ✓
T7	166.51 (A) (696)	3/4 EHS	5.83	58.30	20.57	29.15	2.000	2.834 ✓
	166.51 (A) (697)	3/4 EHS	5.83	58.30	20.91	29.15	2.000	2.788 ✓
	166.51 (B) (692)	3/4 EHS	5.83	58.30	19.45	29.15	2.000	2.998 ✓
	166.51 (B) (693)	3/4 EHS	5.83	58.30	19.13	29.15	2.000	3.047 ✓
	166.51 (C) (688)	3/4 EHS	5.83	58.30	20.64	29.15	2.000	2.824 ✓
	166.51 (C) (689)	3/4 EHS	5.83	58.30	20.43	29.15	2.000	2.853 ✓
T10	106.51 (A) (684)	3/4 EHS	5.83	58.30	22.00	29.15	2.000	2.650 ✓
	106.51 (A) (685)	3/4 EHS	5.83	58.30	22.84	29.15	2.000	2.552 ✓
	106.51 (B) (680)	3/4 EHS	5.83	58.30	21.28	29.15	2.000	2.740 ✓

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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.	
T13	106.51 (B) (681)	3/4 EHS	5.83	58.30	20.38	29.15	2.000	2.861	✓
	106.51 (C) (676)	3/4 EHS	5.83	58.30	20.79	29.15	2.000	2.804	✓
	106.51 (C) (677)	3/4 EHS	5.83	58.30	20.64	29.15	2.000	2.825	✓
	56.51 (A) (672)	7/16 EHS	2.08	20.80	8.64	10.40	2.000	2.407	✓
	56.51 (A) (673)	7/16 EHS	2.08	20.80	9.10	10.40	2.000	2.285	✓
	56.51 (B) (668)	7/16 EHS	2.08	20.80	8.62	10.40	2.000	2.412	✓
	56.51 (B) (669)	7/16 EHS	2.08	20.80	8.18	10.40	2.000	2.543	✓
	56.51 (C) (664)	7/16 EHS	2.08	20.80	7.17	10.40	2.000	2.902	✓
	56.51 (C) (665)	7/16 EHS	2.08	20.80	7.31	10.40	2.000	2.844	✓

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	327 - 291.84 (1)	EXTEND 10.75X0.875	35.16	35.16	120.4	10.306	27.1453	-4.01	279.75	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	327 - 291.84 (1)	EXTEND 10.75X0.875	27.56	-5.331	33.000	0.162	0.00	0.000	33.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	327 - 291.84 (1)	EXTEND 10.75X0.875	0.014	0.162	0.000	0.176 ✓	1.066	H1-3 ✓

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Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	Mast Stability Index	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84	2	12.00	3.00	72.0 K=1.00	1.00	20.564	3.1416	-27.23	64.61	0.421
T2	279.84 - 259.84	2	20.00	3.33	80.0 K=1.00	1.00	19.012	3.1416	-34.39	59.73	0.576
T3	259.84 - 239.84	2 1/4	20.00	3.33	71.1 K=1.00	1.00	20.731	3.9761	-50.69	82.43	0.615
T4	239.84 - 219.84	2 1/4	20.00	3.33	71.1 K=1.00	1.00	20.731	3.9761	-58.91	82.43	0.715
T5	219.84 - 199.84	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-77.30	108.11	0.715
T6	199.84 - 179.84	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-85.57	108.11	0.792
T7	179.84 - 159.84	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-108.19	136.76	0.791
T8	159.84 - 139.84	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-98.71	108.11	0.913
T9	139.84 - 119.84	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-97.55	136.76	0.713
T10	119.84 - 99.84	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-115.75	136.76	0.846
T11	99.84 - 79.84	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-171.54	168.39	1.019
T12	79.84 - 59.84	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-183.28	168.39	1.088
T13	59.84 - 39.84	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-202.88	168.39	1.205
T14	39.84 - 19.84	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-206.77	168.39	1.228
T15	19.84 - 6.5	3	13.34	3.34	53.4 K=1.00	1.00	23.819	7.0686	-195.59	168.36	1.162
T16	6.5 - 0	3	6.84	2.10	67.3 K=2.00	1.00	21.430	7.0686	-173.93	151.48	1.148

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} F _{bx}	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} F _{by}
T1	291.84 - 279.84	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T2	279.84 - 259.84	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T3	259.84 - 239.84	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T4	239.84 - 219.84	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T5	219.84 - 199.84	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T6	199.84 - 179.84	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T7	179.84 -	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

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Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T8	159.84 - 139.84	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T9	139.84 - 119.84	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T10	119.84 - 99.84	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T11	99.84 - 79.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T12	79.84 - 59.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T13	59.84 - 39.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T14	39.84 - 19.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T15	19.84 - 6.5	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T16	6.5 - 0	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	291.84 - 279.84	2	0.421	0.000	0.000	0.421	1.333	H1-3 ✓
T2	279.84 - 259.84	2	0.576	0.000	0.000	0.576	1.333	H1-3 ✓
T3	259.84 - 239.84	2 1/4	0.615	0.000	0.000	0.615	1.333	H1-3 ✓
T4	239.84 - 219.84	2 1/4	0.715	0.000	0.000	0.715	1.333	H1-3 ✓
T5	219.84 - 199.84	2 1/2	0.715	0.000	0.000	0.715	1.333	H1-3 ✓
T6	199.84 - 179.84	2 1/2	0.792	0.000	0.000	0.792	1.333	H1-3 ✓
T7	179.84 - 159.84	2 3/4	0.791	0.000	0.000	0.791	1.333	H1-3 ✓
T8	159.84 - 139.84	2 1/2	0.913	0.000	0.000	0.913	1.333	H1-3 ✓
T9	139.84 - 119.84	2 3/4	0.713	0.000	0.000	0.713	1.333	H1-3 ✓
T10	119.84 - 99.84	2 3/4	0.846	0.000	0.000	0.846	1.333	H1-3 ✓
T11	99.84 - 79.84	3	1.019	0.000	0.000	1.019	1.333	H1-3 ✓
T12	79.84 - 59.84	3	1.088	0.000	0.000	1.088	1.333	H1-3 ✓
T13	59.84 - 39.84	3	1.205	0.000	0.000	1.205	1.333	H1-3 ✓
T14	39.84 - 19.84	3	1.228	0.000	0.000	1.228	1.333	H1-3 ✓
T15	19.84 - 6.5	3	1.162	0.000	0.000	1.162	1.333	H1-3 ✓
T16	6.5 - 0	3	1.148	0.000	0.000	1.148	1.333	H1-3 ✓

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Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	1 3/8	4.74	4.52	110.6 K=0.70	11.595	1.4849	-4.19	17.22	0.243
T2	279.84 - 259.84	1 3/8	4.96	4.73	115.6 K=0.70	10.898	1.4849	-2.65	16.18	0.164
T3	259.84 - 239.84	1 3/8	4.96	4.70	115.0 K=0.70	10.993	1.4849	-5.56	16.32	0.340
T4	239.84 - 219.84	1 3/8	4.96	4.70	115.0 K=0.70	10.993	1.4849	-6.08	16.32	0.372
T5	219.84 - 199.84	1 1/2	4.96	4.68	104.8 K=0.70	12.367	1.7672	-7.53	21.86	0.344
T6	199.84 - 179.84	1 1/4	4.96	4.68	125.7 K=0.70	9.451	1.2272	-9.57	11.60	0.826
T7	179.84 - 159.84	1 1/2	4.96	4.65	104.1 K=0.70	12.449	1.7672	-11.12	22.00	0.506
T8	159.84 - 139.84	1 3/8	4.96	4.68	114.3 K=0.70	11.089	1.4849	-5.74	16.47	0.348
T9	139.84 - 119.84	1 1/4	4.96	4.65	124.9 K=0.70	9.563	1.2272	-5.11	11.74	0.435
T10	119.84 - 99.84	1 1/2	4.96	4.65	104.1 K=0.70	12.449	1.7672	-19.04	22.00	0.866
T11	99.84 - 79.84	1 3/8	4.96	4.62	112.9 K=0.70	11.278	1.4849	-16.16	16.75	0.965
T12	79.84 - 59.84	1 1/4	4.96	4.62	124.2 K=0.70	9.674	1.2272	-6.35	11.87	0.535
T13	59.84 - 39.84	1 1/4	4.96	4.62	124.2 K=0.70	9.674	1.2272	-8.24	11.87	0.694
T14	39.84 - 19.84	1 1/4	4.96	4.62	124.2 K=0.70	9.674	1.2272	-7.92	11.87	0.667
T15	19.84 - 6.5	1 1/4	4.96	4.62	124.2 K=0.70	9.670	1.2272	-10.94	11.87	0.922

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	1	3.67	3.50	117.7 K=0.70	10.608	0.7854	-0.89	8.33	0.107
T2	279.84 - 259.84	1	3.67	3.50	117.7 K=0.70	10.608	0.7854	-0.60	8.33	0.071
T3	259.84 - 239.84	1	3.67	3.48	117.0 K=0.70	10.707	0.7854	-1.15	8.41	0.137
T4	239.84 - 219.84	1	3.67	3.48	117.0 K=0.70	10.707	0.7854	-1.02	8.41	0.121
T5	219.84 - 199.84	1	3.67	3.46	116.3	10.805	0.7854	-1.34	8.49	0.158

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T6	199.84 - 179.84	1	3.67	3.46	K=0.70 116.3	10.805	0.7854	-1.80	8.49	0.212
T7	179.84 - 159.84	1	3.67	3.44	K=0.70 115.6	10.903	0.7854	-1.87	8.56	0.219
T8	159.84 - 139.84	1	3.67	3.46	K=0.70 116.3	10.805	0.7854	-1.71	8.49	0.201
T9	139.84 - 119.84	1	3.67	3.44	K=0.70 115.6	10.903	0.7854	-1.69	8.56	0.197
T10	119.84 - 99.84	1	3.67	3.44	K=0.70 115.6	10.903	0.7854	-2.00	8.56	0.234
T11	99.84 - 79.84	1	3.67	3.42	K=0.70 114.9	11.000	0.7854	-2.97	8.64	0.344
T12	79.84 - 59.84	1	3.67	3.42	K=0.70 114.9	11.000	0.7854	-3.17	8.64	0.367
T13	59.84 - 39.84	1	3.67	3.42	K=0.70 114.9	11.000	0.7854	-3.51	8.64	0.407
T14	39.84 - 19.84	1	3.67	3.42	K=0.70 114.9	11.000	0.7854	-3.58	8.64	0.415
T15	19.84 - 6.5	1	3.67	3.42	K=0.70 114.9	11.000	0.7854	-3.39	8.64	0.392

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84	1	1.84	1.75	81.5	15.186	0.7854	-0.00	11.93	0.000
T2	279.84 - 259.84	1	1.84	1.75	K=0.97 81.5	15.186	0.7854	-0.00	11.93	0.000
T3	259.84 - 239.84	1	1.84	1.74	K=0.97 81.3	15.206	0.7854	-0.00	11.94	0.000
T4	239.84 - 219.84	1	1.84	1.74	K=0.97 81.3	15.206	0.7854	-0.00	11.94	0.000
T5	219.84 - 199.84	1	1.84	1.73	K=0.98 81.2	15.225	0.7854	-0.00	11.96	0.000
T6	199.84 - 179.84	1	1.84	1.73	K=0.98 81.2	15.225	0.7854	-0.00	11.96	0.000
T7	179.84 - 159.84	1	1.84	1.72	K=0.98 81.0	15.245	0.7854	-0.00	11.97	0.000
T8	159.84 - 139.84	1	1.84	1.73	K=0.98 81.2	15.225	0.7854	-0.00	11.96	0.000
T9	139.84 - 119.84	1	1.84	1.72	K=0.98 81.0	15.245	0.7854	-0.00	11.97	0.000
T10	119.84 - 99.84	1	1.84	1.72	K=0.98 81.0	15.245	0.7854	-0.00	11.97	0.000
T11	99.84 - 79.84	1	1.84	1.71	K=0.98 80.8	15.266	0.7854	-0.00	11.99	0.000
T12	79.84 - 59.84	1	1.84	1.71	K=0.98 80.8	15.266	0.7854	-0.00	11.99	0.000

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T13	59.84 - 39.84	1	1.84	1.71	K=0.98 80.8	15.266	0.7854	-0.00	11.99	0.000 ✓
T14	39.84 - 19.84	1	1.84	1.71	K=0.98 80.8	15.266	0.7854	-0.00	11.99	0.000 ✓
T15	19.84 - 6.5	1	1.84	1.71	K=0.98 80.8	15.266	0.7854	-0.00	11.99	0.000 ✓

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84	1	3.67	3.50	117.7 K=0.70	10.608	0.7854	-0.00	8.33	0.000 ✓
T4	239.84 - 219.84	1	3.67	3.48	117.0 K=0.70	10.707	0.7854	-0.07	8.41	0.009 ✓

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T16	6.5 - 0	12x3/8	0.28	0.03	3.6 K=1.00	21.454	4.5000	-5.12	96.54	0.053 ✓

Mid Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T16	6.5 - 0	9x3/8	1.41	1.16	128.8 K=1.00	9.007	3.3750	-0.32	30.40	0.010 ✓

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84	MC12x35	3.67	3.50	115.2 K=1.00	10.957	10.3000	-4.63	112.86	0.041
T3	259.84 - 239.84	MC12x35	3.67	3.48	114.7	11.031	10.3000	-5.79	113.63	0.051

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T5	219.84 - 199.84	MC12x35	3.67	3.46	K=1.00 114.2	11.106	10.3000	-8.51	114.39	0.074
T7	179.84 - 159.84	MC12x35	3.67	3.44	K=1.00 113.6	11.180	10.3000	-12.06	115.15	0.105
T10	119.84 - 99.84	MC12x35	3.67	3.44	K=1.00 113.6	11.180	10.3000	-16.29	115.15	0.141
T13	59.84 - 39.84	MC12x35	3.67	3.42	K=1.00 113.1	11.254	10.3000	-5.65	115.92	0.049

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} F _{bx}	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} F _{by}
T1	291.84 - 279.84	MC12x35	0.08	-0.025	21.600	0.001	0.00	-0.000	21.600	0.000
T3	259.84 - 239.84	MC12x35	0.08	-0.025	21.600	0.001	0.00	-0.000	21.600	0.000
T5	219.84 - 199.84	MC12x35	0.08	-0.025	21.600	0.001	0.00	-0.000	21.600	0.000
T7	179.84 - 159.84	MC12x35	0.08	-0.025	21.600	0.001	0.00	-0.000	21.600	0.000
T10	119.84 - 99.84	MC12x35	0.08	-0.025	21.600	0.001	-0.00	-0.000	21.600	0.000
T13	59.84 - 39.84	MC12x35	0.08	-0.025	21.600	0.001	0.00	-0.000	21.600	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio P P _a	Ratio f _{bx} F _{bx}	Ratio f _{by} F _{by}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	291.84 - 279.84	MC12x35	0.041	0.001	0.000	0.042	1.333	H1-3 ✓
T3	259.84 - 239.84	MC12x35	0.051	0.001	0.000	0.052	1.333	H1-3 ✓
T5	219.84 - 199.84	MC12x35	0.074	0.001	0.000	0.076	1.333	H1-3 ✓
T7	179.84 - 159.84	MC12x35	0.105	0.001	0.000	0.106	1.333	H1-3 ✓
T10	119.84 - 99.84	MC12x35	0.141	0.001	0.000	0.143	1.333	H1-3 ✓
T13	59.84 - 39.84	MC12x35	0.049	0.001	0.000	0.050	1.333	H1-3 ✓

Torque-Arm Top Design Data

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84 (726)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.18	97.67	0.002
T1	291.84 - 279.84 (727)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.14	97.67	0.001
T1	291.84 - 279.84 (730)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.20	97.67	0.002
T1	291.84 - 279.84 (731)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.21	97.67	0.002
T1	291.84 - 279.84 (734)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.24	97.67	0.002
T1	291.84 - 279.84 (735)	MC12x35	4.00	3.92	125.5 K=1.00	9.483	10.3000	-0.21	97.67	0.002
T3	259.84 - 239.84 (714)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-0.91	98.05	0.009
T3	259.84 - 239.84 (715)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-0.96	98.05	0.010
T3	259.84 - 239.84 (718)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-0.85	98.05	0.009
T3	259.84 - 239.84 (719)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-1.03	98.05	0.011
T3	259.84 - 239.84 (722)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-1.01	98.05	0.010
T3	259.84 - 239.84 (723)	MC12x35	4.00	3.91	125.2 K=1.00	9.519	10.3000	-1.01	98.05	0.010
T5	219.84 - 199.84 (702)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.31	98.42	0.023
T5	219.84 - 199.84 (703)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.32	98.42	0.024
T5	219.84 - 199.84 (706)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.05	98.42	0.021
T5	219.84 - 199.84 (707)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.31	98.42	0.023
T5	219.84 - 199.84 (710)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.13	98.42	0.022
T5	219.84 - 199.84 (711)	MC12x35	4.00	3.90	125.0 K=1.00	9.556	10.3000	-2.25	98.42	0.023
T7	179.84 - 159.84 (690)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-4.08	98.80	0.041
T7	179.84 - 159.84 (691)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-4.27	98.80	0.043
T7	179.84 - 159.84 (694)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-3.77	98.80	0.038
T7	179.84 - 159.84 (695)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-3.76	98.80	0.038
T7	179.84 - 159.84 (698)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-3.33	98.80	0.034
T7	179.84 - 159.84 (699)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-3.80	98.80	0.038
T10	119.84 - 99.84 (678)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-6.11	98.80	0.062
T10	119.84 - 99.84 (679)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-8.15	98.80	0.083
T10	119.84 - 99.84 (682)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-5.48	98.80	0.056
T10	119.84 - 99.84 (683)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-7.52	98.80	0.076
T10	119.84 - 99.84 (686)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-5.22	98.80	0.053
T10	119.84 - 99.84 (687)	MC12x35	4.00	3.89	124.7 K=1.00	9.592	10.3000	-5.83	98.80	0.059
T13	59.84 - 39.84	MC12x35	4.00	3.88	124.5	9.629	10.3000	-4.01	99.18	0.040

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T13	(666) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-2.41	99.18	0.024
T13	(667) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-3.91	99.18	0.039
T13	(670) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-2.45	99.18	0.025
T13	(671) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-2.84	99.18	0.029
T13	(674) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-2.79	99.18	0.028
T13	(675) 59.84 - 39.84	MC12x35	4.00	3.88	K=1.00 124.5	9.629	10.3000	-2.79	99.18	0.028

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	291.84 - 279.84 (726)	MC12x35	-65.38	-21.733	21.600	1.006	-0.00	-0.000	21.600	0.000
T1	291.84 - 279.84 (727)	MC12x35	-65.85	-21.888	21.600	1.013	0.00	-0.000	21.600	0.000
T1	291.84 - 279.84 (730)	MC12x35	-65.45	-21.758	21.600	1.007	-0.00	-0.000	21.600	0.000
T1	291.84 - 279.84 (731)	MC12x35	-60.94	-20.257	21.600	0.938	0.00	-0.000	21.600	0.000
T1	291.84 - 279.84 (734)	MC12x35	-61.06	-20.298	21.600	0.940	0.00	-0.000	21.600	0.000
T1	291.84 - 279.84 (735)	MC12x35	-65.70	-21.840	21.600	1.011	0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (714)	MC12x35	-62.73	-20.851	21.600	0.965	0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (715)	MC12x35	-62.58	-20.802	21.600	0.963	-0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (718)	MC12x35	-57.34	-19.062	21.600	0.882	0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (719)	MC12x35	-62.35	-20.726	21.600	0.960	-0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (722)	MC12x35	-57.11	-18.984	21.600	0.879	0.00	-0.000	21.600	0.000
T3	259.84 - 239.84 (723)	MC12x35	-62.82	-20.882	21.600	0.967	0.00	-0.000	21.600	0.000
T5	219.84 - 199.84 (702)	MC12x35	-58.84	-19.560	21.600	0.906	0.00	-0.000	21.600	0.000
T5	219.84 - 199.84 (703)	MC12x35	-58.67	-19.503	21.600	0.903	-0.00	-0.000	21.600	0.000
T5	219.84 - 199.84 (706)	MC12x35	-52.16	-17.338	21.600	0.803	0.00	-0.000	21.600	0.000
T5	219.84 - 199.84 (707)	MC12x35	-58.37	-19.403	21.600	0.898	-0.00	-0.000	21.600	0.000
T5	219.84 - 199.84 (710)	MC12x35	-51.95	-17.268	21.600	0.799	0.00	0.000	21.600	0.000
T5	219.84 - 199.84 (711)	MC12x35	-58.94	-19.593	21.600	0.907	0.00	-0.000	21.600	0.000
T7	179.84 - 159.84 (690)	MC12x35	-51.45	-17.104	21.600	0.792	-0.00	-0.000	21.600	0.000
T7	179.84 -	MC12x35	-52.66	-17.503	21.600	0.810	0.00	-0.000	21.600	0.000

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Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T7	159.84 (691)	MC12x35	-51.58	-17.146	21.600	0.794	-0.00	-0.000	21.600	0.000
T7	179.84 - 159.84 (694)	MC12x35	-43.58	-14.485	21.600	0.671	-0.00	-0.000	21.600	0.000
T7	179.84 - 159.84 (695)	MC12x35	-43.70	-14.526	21.600	0.672	-0.00	-0.000	21.600	0.000
T7	179.84 - 159.84 (698)	MC12x35	-52.31	-17.388	21.600	0.805	0.00	-0.000	21.600	0.000
T10	159.84 (699)	MC12x35	-40.22	-13.368	21.600	0.619	-0.00	-0.000	21.600	0.000
T10	119.84 - 99.84 (678)	MC12x35	-44.25	-14.708	21.600	0.681	-0.00	-0.000	21.600	0.000
T10	119.84 - 99.84 (679)	MC12x35	-39.99	-13.292	21.600	0.615	-0.00	-0.000	21.600	0.000
T10	119.84 - 99.84 (682)	MC12x35	-32.58	-10.831	21.600	0.501	0.00	-0.000	21.600	0.000
T10	119.84 - 99.84 (683)	MC12x35	-32.56	-10.825	21.600	0.501	-0.00	-0.000	21.600	0.000
T10	119.84 - 99.84 (686)	MC12x35	-43.49	-14.457	21.600	0.669	0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (666)	MC12x35	-11.75	-3.906	21.600	0.181	0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (667)	MC12x35	-8.97	-2.983	21.600	0.138	0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (670)	MC12x35	-7.33	-2.437	21.600	0.113	-0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (671)	MC12x35	-8.98	-2.985	21.600	0.138	0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (674)	MC12x35	-6.76	-2.247	21.600	0.104	-0.00	-0.000	21.600	0.000
T13	59.84 - 39.84 (675)	MC12x35	-11.01	-3.660	21.600	0.169	0.00	-0.000	21.600	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	291.84 - 279.84 (726)	MC12x35	0.002	1.006	0.000	1.008	1.333	H1-3 ✓
T1	291.84 - 279.84 (727)	MC12x35	0.001	1.013	0.000	1.015	1.333	H1-3 ✓
T1	291.84 - 279.84 (730)	MC12x35	0.002	1.007	0.000	1.009	1.333	H1-3 ✓
T1	291.84 - 279.84 (731)	MC12x35	0.002	0.938	0.000	0.940	1.333	H1-3 ✓
T1	291.84 - 279.84 (734)	MC12x35	0.002	0.940	0.000	0.942	1.333	H1-3 ✓
T1	291.84 - 279.84 (735)	MC12x35	0.002	1.011	0.000	1.013	1.333	H1-3 ✓
T3	259.84 - 239.84 (714)	MC12x35	0.009	0.965	0.000	0.975	1.333	H1-3 ✓
T3	259.84 -	MC12x35	0.010	0.963	0.000	0.973	1.333	H1-3 ✓

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	239.84 (715)					✓		
T3	259.84 - 239.84 (718)	MC12x35	0.009	0.882	0.000	0.891	1.333	H1-3 ✓
T3	259.84 - 239.84 (719)	MC12x35	0.011	0.960	0.000	0.970	1.333	H1-3 ✓
T3	259.84 - 239.84 (722)	MC12x35	0.010	0.879	0.000	0.889	1.333	H1-3 ✓
T3	259.84 - 239.84 (723)	MC12x35	0.010	0.967	0.000	0.977	1.333	H1-3 ✓
T5	219.84 - 199.84 (702)	MC12x35	0.023	0.906	0.000	0.929	1.333	H1-3 ✓
T5	219.84 - 199.84 (703)	MC12x35	0.024	0.903	0.000	0.926	1.333	H1-3 ✓
T5	219.84 - 199.84 (706)	MC12x35	0.021	0.803	0.000	0.824	1.333	H1-3 ✓
T5	219.84 - 199.84 (707)	MC12x35	0.023	0.898	0.000	0.922	1.333	H1-3 ✓
T5	219.84 - 199.84 (710)	MC12x35	0.022	0.799	0.000	0.821	1.333	H1-3 ✓
T5	219.84 - 199.84 (711)	MC12x35	0.023	0.907	0.000	0.930	1.333	H1-3 ✓
T7	179.84 - 159.84 (690)	MC12x35	0.041	0.792	0.000	0.833	1.333	H1-3 ✓
T7	179.84 - 159.84 (691)	MC12x35	0.043	0.810	0.000	0.854	1.333	H1-3 ✓
T7	179.84 - 159.84 (694)	MC12x35	0.038	0.794	0.000	0.832	1.333	H1-3 ✓
T7	179.84 - 159.84 (695)	MC12x35	0.038	0.671	0.000	0.709	1.333	H1-3 ✓
T7	179.84 - 159.84 (698)	MC12x35	0.034	0.672	0.000	0.706	1.333	H1-3 ✓
T7	179.84 - 159.84 (699)	MC12x35	0.038	0.805	0.000	0.843	1.333	H1-3 ✓
T10	119.84 - 99.84 (678)	MC12x35	0.062	0.619	0.000	0.681	1.333	H1-3 ✓
T10	119.84 - 99.84 (679)	MC12x35	0.083	0.681	0.000	0.763	1.333	H1-3 ✓
T10	119.84 - 99.84 (682)	MC12x35	0.056	0.615	0.000	0.671	1.333	H1-3 ✓
T10	119.84 - 99.84 (683)	MC12x35	0.076	0.501	0.000	0.578	1.333	H1-3 ✓
T10	119.84 - 99.84 (686)	MC12x35	0.053	0.501	0.000	0.554	1.333	H1-3 ✓
T10	119.84 - 99.84 (687)	MC12x35	0.059	0.669	0.000	0.728	1.333	H1-3 ✓
T13	59.84 - 39.84 (666)	MC12x35	0.040	0.181	0.000	0.221	1.333	H1-3 ✓
T13	59.84 - 39.84 (667)	MC12x35	0.024	0.138	0.000	0.162	1.333	H1-3 ✓
T13	59.84 - 39.84 (670)	MC12x35	0.039	0.113	0.000	0.152	1.333	H1-3 ✓
T13	59.84 - 39.84 (671)	MC12x35	0.025	0.138	0.000	0.163	1.333	H1-3 ✓

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T13	59.84 - 39.84 (674)	MC12x35	0.029	0.104	0.000	0.133 ✓	1.333	H1-3 ✓
T13	59.84 - 39.84 (675)	MC12x35	0.028	0.169	0.000	0.198 ✓	1.333	H1-3 ✓

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	2	12.00	3.00	72.0	30.000	3.1416	12.15	94.25	0.129
T11	99.84 - 79.84	3	20.00	3.33	53.3	30.000	7.0686	0.39	212.06	0.002
T12	79.84 - 59.84	3	20.00	3.33	53.3	30.000	7.0686	3.09	212.06	0.015
T13	59.84 - 39.84	3	20.00	3.33	53.3	30.000	7.0686	14.61	212.06	0.069
T14	39.84 - 19.84	3	20.00	3.33	53.3	30.000	7.0686	20.08	212.06	0.095
T15	19.84 - 6.5	3	13.34	3.34	53.4	30.000	7.0686	13.56	212.06	0.064

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	291.84 - 279.84	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T11	99.84 - 79.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T12	79.84 - 59.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T13	59.84 - 39.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T14	39.84 - 19.84	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T15	19.84 - 6.5	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	291.84 - 279.84	2	0.129	0.000	0.000	0.129 ✓	1.333	H2-1 ✓
T11	99.84 - 79.84	3	0.002	0.000	0.000	0.002 ✓	1.333	H2-1 ✓
T12	79.84 - 59.84	3	0.015	0.000	0.000	0.015 ✓	1.333	H2-1 ✓

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T13	59.84 - 39.84	3	0.069	0.000	0.000	0.069	1.333	H2-1 ✓
T14	39.84 - 19.84	3	0.095	0.000	0.000	0.095	1.333	H2-1 ✓
T15	19.84 - 6.5	3	0.064	0.000	0.000	0.064	1.333	H2-1 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	1 3/8	4.74	4.52	158.0	21.600	1.4849	3.98	32.07	0.124
T2	279.84 - 259.84	1 3/8	4.96	4.73	165.2	21.600	1.4849	2.38	32.07	0.074
T3	259.84 - 239.84	1 3/8	4.96	4.70	164.2	21.600	1.4849	4.54	32.07	0.142
T4	239.84 - 219.84	1 3/8	4.96	4.70	164.2	21.600	1.4849	4.71	32.07	0.147
T5	219.84 - 199.84	1 1/2	4.96	4.68	149.6	21.600	1.7672	6.10	38.17	0.160
T6	199.84 - 179.84	1 1/4	4.96	4.68	179.6	21.600	1.2272	7.84	26.51	0.296
T7	179.84 - 159.84	1 1/2	4.96	4.65	148.7	21.600	1.7672	9.73	38.17	0.255
T8	159.84 - 139.84	1 3/8	4.96	4.68	163.2	21.600	1.4849	4.55	32.07	0.142
T9	139.84 - 119.84	1 1/4	4.96	4.65	178.5	21.600	1.2272	2.75	26.51	0.104
T10	119.84 - 99.84	1 1/2	4.96	4.65	148.7	21.600	1.7672	16.82	38.17	0.441
T11	99.84 - 79.84	1 3/8	4.96	4.62	161.3	21.600	1.4849	12.67	32.07	0.395
T12	79.84 - 59.84	1 1/4	4.96	4.62	177.4	21.600	1.2272	3.42	26.51	0.129
T13	59.84 - 39.84	1 1/4	4.96	4.62	177.4	21.600	1.2272	5.86	26.51	0.221
T14	39.84 - 19.84	1 1/4	4.96	4.62	177.4	21.600	1.2272	4.55	26.51	0.172
T15	19.84 - 6.5	1 1/4	4.96	4.62	177.5	21.600	1.2272	9.20	26.51	0.347

Horizontal Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	1	3.67	3.50	168.2	21.600	0.7854	1.51	16.96	0.089
T2	279.84 - 259.84	1	3.67	3.50	168.2	21.600	0.7854	0.60	16.96	0.035
T3	259.84 - 239.84	1	3.67	3.48	167.2	21.600	0.7854	0.88	16.96	0.052
T4	239.84 - 219.84	1	3.67	3.48	167.2	21.600	0.7854	1.02	16.96	0.060
T5	219.84 - 199.84	1	3.67	3.46	166.2	21.600	0.7854	1.34	16.96	0.079
T6	199.84 - 179.84	1	3.67	3.46	166.2	21.600	0.7854	2.76	16.96	0.162
T7	179.84 - 159.84	1	3.67	3.44	165.2	21.600	0.7854	1.87	16.96	0.110
T8	159.84 - 139.84	1	3.67	3.46	166.2	21.600	0.7854	1.71	16.96	0.101
T9	139.84 - 119.84	1	3.67	3.44	165.2	21.600	0.7854	1.69	16.96	0.100
T10	119.84 - 99.84	1	3.67	3.44	165.2	21.600	0.7854	2.54	16.96	0.150
T11	99.84 - 79.84	1	3.67	3.42	164.2	21.600	0.7854	3.08	16.96	0.182
T12	79.84 - 59.84	1	3.67	3.42	164.2	21.600	0.7854	3.17	16.96	0.187
T13	59.84 - 39.84	1	3.67	3.42	164.2	21.600	0.7854	3.51	16.96	0.207
T14	39.84 - 19.84	1	3.67	3.42	164.2	21.600	0.7854	3.58	16.96	0.211
T15	19.84 - 6.5	1	3.67	3.42	164.2	21.600	0.7854	3.39	16.96	0.200

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	1	1.84	1.75	84.1	21.600	0.7854	0.00	16.96	0.000
T2	279.84 - 259.84	1	1.84	1.75	84.1	21.600	0.7854	0.00	16.96	0.000
T3	259.84 - 239.84	1	1.84	1.74	83.6	21.600	0.7854	0.00	16.96	0.000
T4	239.84 - 219.84	1	1.84	1.74	83.6	21.600	0.7854	0.00	16.96	0.000
T5	219.84 - 199.84	1	1.84	1.73	83.1	21.600	0.7854	0.00	16.96	0.000
T6	199.84 - 179.84	1	1.84	1.73	83.1	21.600	0.7854	0.00	16.96	0.000
T7	179.84 - 159.84	1	1.84	1.72	82.6	21.600	0.7854	0.00	16.96	0.000

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T8	159.84 - 139.84	1	1.84	1.73	83.1	21.600	0.7854	0.00	16.96	0.000
T9	139.84 - 119.84	1	1.84	1.72	82.6	21.600	0.7854	0.00	16.96	0.000
T10	119.84 - 99.84	1	1.84	1.72	82.6	21.600	0.7854	0.00	16.96	0.000
T11	99.84 - 79.84	1	1.84	1.71	82.1	21.600	0.7854	0.00	16.96	0.000
T12	79.84 - 59.84	1	1.84	1.71	82.1	21.600	0.7854	0.00	16.96	0.000
T13	59.84 - 39.84	1	1.84	1.71	82.1	21.600	0.7854	0.00	16.96	0.000
T14	39.84 - 19.84	1	1.84	1.71	82.1	21.600	0.7854	0.00	16.96	0.000
T15	19.84 - 6.5	1	1.84	1.71	82.1	21.600	0.7854	0.00	16.96	0.000

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	291.84 - 279.84	1	3.67	3.50	168.2	21.600	0.7854	0.00	16.96	0.000
T2	279.84 - 259.84	1	3.67	3.50	168.2	21.600	0.7854	0.37	16.96	0.022
T3	259.84 - 239.84	1	3.67	3.50	168.2	21.600	0.7854	0.91	16.96	0.053
T4	239.84 - 219.84	1	3.67	3.48	167.2	21.600	0.7854	0.61	16.96	0.036
T5	219.84 - 199.84	1	3.67	3.48	167.2	21.600	0.7854	0.95	16.96	0.056
T6	199.84 - 179.84	1	3.67	3.46	166.2	21.600	0.7854	0.86	16.96	0.050
T7	179.84 - 159.84	1	3.67	3.46	166.2	21.600	0.7854	0.67	16.96	0.039
T8	159.84 - 139.84	1	3.67	3.44	165.2	21.600	0.7854	0.99	16.96	0.059
T9	139.84 - 119.84	1	3.67	3.46	166.2	21.600	0.7854	0.94	16.96	0.055
T10	119.84 - 99.84	1	3.67	3.44	165.2	21.600	0.7854	1.03	16.96	0.061
T11	99.84 - 79.84	1	3.67	3.44	165.2	21.600	0.7854	1.26	16.96	0.074
T12	79.84 - 59.84	1	3.67	3.42	164.2	21.600	0.7854	1.26	16.96	0.074
T13	59.84 - 39.84	1	3.67	3.42	164.2	21.600	0.7854	1.41	16.96	0.083
T14	39.84 - 19.84	1	3.67	3.42	164.2	21.600	0.7854	1.51	16.96	0.089

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T15	19.84 - 6.5	1	3.67	3.42	164.2	21.600	0.7854	1.69	16.96	0.100
T16	6.5 - 0	12x3/8	3.67	3.42	379.1	21.600	4.5000	30.95	97.20	0.318

Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T16	6.5 - 0	9x3/8	2.54	2.29	253.9	21.600	3.3750	0.47	72.90	0.006

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	MC12x35	3.67	3.50	37.9	29.000	7.4623	5.35	216.41	0.025
T3	259.84 - 239.84	MC12x35	3.67	3.48	37.6	29.000	7.4623	6.92	216.41	0.032
T5	219.84 - 199.84	MC12x35	3.67	3.46	37.4	29.000	7.4623	10.12	216.41	0.047
T7	179.84 - 159.84	MC12x35	3.67	3.44	37.2	29.000	7.4623	13.95	216.41	0.064
T10	119.84 - 99.84	MC12x35	3.67	3.44	37.2	29.000	7.4623	19.65	216.41	0.091
T13	59.84 - 39.84	MC12x35	3.67	3.42	37.0	29.000	7.4623	7.71	216.41	0.036

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	291.84 - 279.84	MC12x35	0.08	0.025	21.600	0.001	-0.00	0.000	27.000	0.000
T3	259.84 - 239.84	MC12x35	0.08	0.025	21.600	0.001	-0.00	0.000	27.000	0.000
T5	219.84 - 199.84	MC12x35	0.08	0.025	21.600	0.001	-0.00	0.000	27.000	0.000
T7	179.84 - 159.84	MC12x35	0.08	0.025	21.600	0.001	-0.00	0.000	27.000	0.000
T10	119.84 - 99.84	MC12x35	0.08	0.025	21.600	0.001	-0.00	0.000	27.000	0.000
T13	59.84 - 39.84	MC12x35	0.08	0.025	21.600	0.001	0.00	0.000	27.000	0.000

Top Guy Pull-Off Interaction Design Data

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	291.84 - 279.84	MC12x35	0.025	0.001	0.000	0.026 ✓	1.333	H2-1 ✓
T3	259.84 - 239.84	MC12x35	0.032	0.001	0.000	0.033 ✓	1.333	H2-1 ✓
T5	219.84 - 199.84	MC12x35	0.047	0.001	0.000	0.048 ✓	1.333	H2-1 ✓
T7	179.84 - 159.84	MC12x35	0.064	0.001	0.000	0.066 ✓	1.333	H2-1 ✓
T10	119.84 - 99.84	MC12x35	0.091	0.001	0.000	0.092 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84	MC12x35	0.036	0.001	0.000	0.037 ✓	1.333	H2-1 ✓

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	291.84 - 279.84	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.22	222.48	0.005
T1	291.84 - 279.84 (726)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.28	222.48	0.006
T1	291.84 - 279.84 (727)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.39	222.48	0.006
T1	291.84 - 279.84 (730)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.26	222.48	0.006
T1	291.84 - 279.84 (731)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.22	222.48	0.005
T1	291.84 - 279.84 (734)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.38	222.48	0.006
T1	291.84 - 279.84 (735)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.26	222.48	0.006
T3	259.84 - 239.84	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.10	222.48	0.005
T3	259.84 - 239.84 (714)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.04	222.48	0.005
T3	259.84 - 239.84 (715)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.22	222.48	0.005
T3	259.84 - 239.84 (718)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.16	222.48	0.005
T3	259.84 - 239.84 (719)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.06	222.48	0.005
T3	259.84 - 239.84 (722)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.18	222.48	0.005
T3	259.84 - 239.84 (723)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.18	222.48	0.005
T5	219.84 - 199.84	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.60	222.48	0.003
T5	219.84 - 199.84 (702)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.66	222.48	0.003
T5	219.84 - 199.84 (703)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.66	222.48	0.003
T5	219.84 - 199.84 (706)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.94	222.48	0.004
T5	219.84 - 199.84 (707)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.81	222.48	0.004
T5	219.84 - 199.84 (710)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.84	222.48	0.004
T5	219.84 - 199.84 (711)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.79	222.48	0.004
T7	179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.06	222.48	0.000

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T7	(690) 179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	5.15	222.48	0.023
T7	(691) 179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.42	222.48	0.002
T7	(694) 179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.46	222.48	0.002
T7	(695) 179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.77	222.48	0.003
T7	(698) 179.84 - 159.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.19	222.48	0.001
T10	(699) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	8.77	222.48	0.039
T10	(678) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	4.78	222.48	0.021
T10	(679) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.00	222.48	0.000
T10	(682) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	6.00	222.48	0.027
T10	(683) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.40	222.48	0.002
T10	(686) 119.84 - 99.84	MC12x35	4.00	3.89	42.1	21.600	10.3000	6.62	222.48	0.030
T13	(687) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	1.43	222.48	0.006
T13	(666) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	1.83	222.48	0.008
T13	(667) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	1.96	222.48	0.009
T13	(670) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	1.67	222.48	0.007
T13	(671) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	3.73	222.48	0.017
T13	(674) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000	1.03	222.48	0.005
T13	(675) 59.84 - 39.84	MC12x35	4.00	3.88	41.9	21.600	10.3000			

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	291.84 - 279.84 (726)	MC12x35	-61.00	20.277	21.600	0.939	-0.00	0.000	27.000	0.000
T1	291.84 - 279.84 (727)	MC12x35	-61.47	20.434	21.600	0.946	0.00	0.000	27.000	0.000
T1	291.84 - 279.84 (730)	MC12x35	-61.89	20.571	21.600	0.952	0.00	0.000	27.000	0.000
T1	291.84 - 279.84 (731)	MC12x35	-57.34	19.062	21.600	0.882	-0.00	0.000	27.000	0.000
T1	291.84 - 279.84 (734)	MC12x35	-57.40	19.081	21.600	0.883	0.00	0.000	27.000	0.000
T1	291.84 - 279.84 (735)	MC12x35	-62.02	20.618	21.600	0.955	-0.00	0.000	27.000	0.000
T3	259.84 - 239.84 (714)	MC12x35	-58.27	19.369	21.600	0.897	0.00	0.000	27.000	0.000
T3	259.84 -	MC12x35	-58.05	19.297	21.600	0.893	-0.00	0.000	27.000	0.000

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Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T3	239.84 (715)	MC12x35	-53.81	17.889	21.600	0.828	-0.00	0.000	27.000	0.000
T3	259.84 - 239.84 (718)	MC12x35	-58.74	19.525	21.600	0.904	0.00	0.000	27.000	0.000
T3	259.84 - 239.84 (719)	MC12x35	-53.40	17.750	21.600	0.822	0.00	0.000	27.000	0.000
T3	259.84 - 239.84 (722)	MC12x35	-59.16	19.664	21.600	0.910	-0.00	0.000	27.000	0.000
T5	219.84 - 239.84 (723)	MC12x35	-54.35	18.066	21.600	0.836	0.00	0.000	27.000	0.000
T5	219.84 - 199.84 (702)	MC12x35	-54.11	17.986	21.600	0.833	-0.00	0.000	27.000	0.000
T5	219.84 - 199.84 (703)	MC12x35	-48.85	16.238	21.600	0.752	-0.00	0.000	27.000	0.000
T5	219.84 - 199.84 (706)	MC12x35	-55.00	18.284	21.600	0.846	0.00	0.000	27.000	0.000
T5	219.84 - 199.84 (707)	MC12x35	-48.37	16.079	21.600	0.744	0.00	0.000	27.000	0.000
T5	219.84 - 199.84 (710)	MC12x35	-55.47	18.440	21.600	0.854	-0.00	0.000	27.000	0.000
T7	179.84 - 199.84 (711)	MC12x35	-47.37	15.746	21.600	0.729	-0.00	0.000	27.000	0.000
T7	159.84 (690)	MC12x35	-39.72	13.204	21.600	0.611	0.00	0.000	27.000	0.000
T7	179.84 - 159.84 (691)	MC12x35	-48.93	16.263	21.600	0.753	-0.00	0.000	27.000	0.000
T7	179.84 - 159.84 (694)	MC12x35	-40.81	13.566	21.600	0.628	-0.00	0.000	27.000	0.000
T7	179.84 - 159.84 (695)	MC12x35	-40.95	13.611	21.600	0.630	0.00	0.000	27.000	0.000
T7	179.84 - 159.84 (698)	MC12x35	-49.59	16.483	21.600	0.763	-0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (678)	MC12x35	-29.35	9.755	21.600	0.452	0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (679)	MC12x35	-32.44	10.785	21.600	0.499	0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (682)	MC12x35	-37.66	12.518	21.600	0.580	-0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (683)	MC12x35	-24.04	7.992	21.600	0.370	0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (686)	MC12x35	-30.93	10.280	21.600	0.476	-0.00	0.000	27.000	0.000
T10	119.84 - 99.84 (687)	MC12x35	-34.73	11.546	21.600	0.535	-0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (666)	MC12x35	-10.02	3.332	21.600	0.154	-0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (667)	MC12x35	-9.13	3.036	21.600	0.141	-0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (670)	MC12x35	-6.38	2.122	21.600	0.098	0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (671)	MC12x35	-9.11	3.029	21.600	0.140	-0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (674)	MC12x35	-6.69	2.224	21.600	0.103	0.00	0.000	27.000	0.000
T13	59.84 - 39.84 (675)	MC12x35	-11.73	3.901	21.600	0.181	-0.00	0.000	27.000	0.000

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Torque-Arm Top Interaction Design Data

Section No.	Elevation <i>ft</i>	Size	Ratio <i>P</i>	Ratio <i>f_{bx}</i>	Ratio <i>f_{by}</i>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria	
			<i>P_a</i>	<i>F_{bx}</i>	<i>F_{by}</i>				
T1	291.84 - 279.84 (726)	MC12x35	0.005	0.939	0.000	0.944	1.333	H2-1	✓
T1	291.84 - 279.84 (727)	MC12x35	0.006	0.946	0.000	0.952	1.333	H2-1	✓
T1	291.84 - 279.84 (730)	MC12x35	0.006	0.952	0.000	0.959	1.333	H2-1	✓
T1	291.84 - 279.84 (731)	MC12x35	0.006	0.882	0.000	0.888	1.333	H2-1	✓
T1	291.84 - 279.84 (734)	MC12x35	0.005	0.883	0.000	0.889	1.333	H2-1	✓
T1	291.84 - 279.84 (735)	MC12x35	0.006	0.955	0.000	0.961	1.333	H2-1	✓
T3	259.84 - 239.84 (714)	MC12x35	0.005	0.897	0.000	0.902	1.333	H2-1	✓
T3	259.84 - 239.84 (715)	MC12x35	0.005	0.893	0.000	0.898	1.333	H2-1	✓
T3	259.84 - 239.84 (718)	MC12x35	0.005	0.828	0.000	0.834	1.333	H2-1	✓
T3	259.84 - 239.84 (719)	MC12x35	0.005	0.904	0.000	0.909	1.333	H2-1	✓
T3	259.84 - 239.84 (722)	MC12x35	0.005	0.822	0.000	0.827	1.333	H2-1	✓
T3	259.84 - 239.84 (723)	MC12x35	0.005	0.910	0.000	0.916	1.333	H2-1	✓
T5	219.84 - 199.84 (702)	MC12x35	0.003	0.836	0.000	0.839	1.333	H2-1	✓
T5	219.84 - 199.84 (703)	MC12x35	0.003	0.833	0.000	0.836	1.333	H2-1	✓
T5	219.84 - 199.84 (706)	MC12x35	0.004	0.752	0.000	0.756	1.333	H2-1	✓
T5	219.84 - 199.84 (707)	MC12x35	0.004	0.846	0.000	0.850	1.333	H2-1	✓
T5	219.84 - 199.84 (710)	MC12x35	0.004	0.744	0.000	0.748	1.333	H2-1	✓
T5	219.84 - 199.84 (711)	MC12x35	0.004	0.854	0.000	0.857	1.333	H2-1	✓
T7	179.84 - 159.84 (690)	MC12x35	0.000	0.729	0.000	0.729	1.333	H2-1	✓
T7	179.84 - 159.84 (691)	MC12x35	0.023	0.611	0.000	0.634	1.333	H2-1	✓
T7	179.84 - 159.84 (694)	MC12x35	0.002	0.753	0.000	0.755	1.333	H2-1	✓
T7	179.84 - 159.84 (695)	MC12x35	0.002	0.628	0.000	0.630	1.333	H2-1	✓
T7	179.84 - 159.84 (698)	MC12x35	0.003	0.630	0.000	0.634	1.333	H2-1	✓
T7	179.84 - 159.84 (699)	MC12x35	0.001	0.763	0.000	0.764	1.333	H2-1	✓
T10	119.84 - 99.84 (678)	MC12x35	0.039	0.452	0.000	0.491	1.333	H2-1	✓

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	119.84 - 99.84 (679)	MC12x35	0.021	0.499	0.000	0.521 ✓	1.333	H2-1 ✓
T10	119.84 - 99.84 (682)	MC12x35	0.000	0.580	0.000	0.580 ✓	1.333	H2-1 ✓
T10	119.84 - 99.84 (683)	MC12x35	0.027	0.370	0.000	0.397 ✓	1.333	H2-1 ✓
T10	119.84 - 99.84 (686)	MC12x35	0.002	0.476	0.000	0.478 ✓	1.333	H2-1 ✓
T10	119.84 - 99.84 (687)	MC12x35	0.030	0.535	0.000	0.564 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (666)	MC12x35	0.006	0.154	0.000	0.161 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (667)	MC12x35	0.008	0.141	0.000	0.149 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (670)	MC12x35	0.009	0.098	0.000	0.107 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (671)	MC12x35	0.007	0.140	0.000	0.148 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (674)	MC12x35	0.017	0.103	0.000	0.120 ✓	1.333	H2-1 ✓
T13	59.84 - 39.84 (675)	MC12x35	0.005	0.181	0.000	0.185 ✓	1.333	H2-1 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
L1	327 - 291.84	Pole	EXTEND 10.75X0.875	1	-4.01	298.32	16.5	Pass
T1	291.84 - 279.84	Leg	2	4	-27.23	86.12	31.6	Pass
T2	279.84 - 259.84	Leg	2	36	-34.39	79.62	43.2	Pass
T3	259.84 - 239.84	Leg	2 1/4	81	-50.69	109.88	46.1	Pass
T4	239.84 - 219.84	Leg	2 1/4	126	-58.91	109.88	53.6	Pass
T5	219.84 - 199.84	Leg	2 1/2	171	-77.30	144.10	53.6	Pass
T6	199.84 - 179.84	Leg	2 1/2	216	-85.57	144.10	59.4	Pass
T7	179.84 - 159.84	Leg	2 3/4	261	-108.19	182.30	59.3	Pass
T8	159.84 - 139.84	Leg	2 1/2	306	-98.71	144.10	68.5	Pass
T9	139.84 - 119.84	Leg	2 3/4	351	-97.55	182.30	53.5	Pass
T10	119.84 - 99.84	Leg	2 3/4	398	-115.75	182.30	63.5	Pass
T11	99.84 - 79.84	Leg	3	443	-171.54	224.47	76.4	Pass
T12	79.84 - 59.84	Leg	3	488	-183.28	224.47	81.6	Pass
T13	59.84 - 39.84	Leg	3	533	-202.88	224.47	90.4	Pass
T14	39.84 - 19.84	Leg	3	578	-206.77	224.47	92.1	Pass
T15	19.84 - 6.5	Leg	3	623	-195.59	224.43	87.2	Pass
T16	6.5 - 0	Leg	3	652	-173.93	201.92	86.1	Pass
T1	291.84 - 279.84	Diagonal	1 3/8	27	-4.19	22.95	18.2	Pass
T2	279.84 - 259.84	Diagonal	1 3/8	44	-2.65	21.57	12.3	Pass
T3	259.84 - 239.84	Diagonal	1 3/8	115	-5.56	21.76	25.5	Pass
T4	239.84 - 219.84	Diagonal	1 3/8	133	-6.08	21.76	27.9	Pass
T5	219.84 - 199.84	Diagonal	1 1/2	205	-7.53	29.13	25.8	Pass
T6	199.84 - 179.84	Diagonal	1 1/4	223	-9.57	15.46	61.9	Pass
T7	179.84 - 159.84	Diagonal	1 1/2	290	-11.12	29.33	37.9	Pass
T8	159.84 - 139.84	Diagonal	1 3/8	347	-5.74	21.95	26.1	Pass
T9	139.84 - 119.84	Diagonal	1 1/4	358	-5.11	15.64	32.6	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T10	119.84 - 99.84	Diagonal	1 1/2	409	-19.04	29.33	64.9	Pass
T11	99.84 - 79.84	Diagonal	1 3/8	482	-16.16	22.32	72.4	Pass
T12	79.84 - 59.84	Diagonal	1 1/4	494	-6.35	15.83	40.1	Pass
T13	59.84 - 39.84	Diagonal	1 1/4	567	-8.24	15.83	52.0	Pass
T14	39.84 - 19.84	Diagonal	1 1/4	584	-7.92	15.83	50.0	Pass
T15	19.84 - 6.5	Diagonal	1 1/4	629	-10.94	15.82	69.1	Pass
T1	291.84 - 279.84	Horizontal	1	15	-0.89	11.11	8.0	Pass
T2	279.84 - 259.84	Horizontal	1	46	-0.60	11.11	5.4	Pass
T3	259.84 - 239.84	Horizontal	1	112	-1.15	11.21	10.3	Pass
T4	239.84 - 219.84	Horizontal	1	143	-1.02	11.21	9.1	Pass
T5	219.84 - 199.84	Horizontal	1	183	-1.34	11.31	11.8	Pass
T6	199.84 - 179.84	Horizontal	1	235	-1.80	11.31	15.9	Pass
T7	179.84 - 159.84	Horizontal	1	271	-1.87	11.41	16.4	Pass
T8	159.84 - 139.84	Horizontal	1	323	-1.71	11.31	15.1	Pass
T9	139.84 - 119.84	Horizontal	1	361	-1.69	11.41	14.8	Pass
T10	119.84 - 99.84	Horizontal	1	407	-2.00	11.41	17.6	Pass
T11	99.84 - 79.84	Horizontal	1	453	-2.97	11.52	25.8	Pass
T12	79.84 - 59.84	Horizontal	1	497	-3.17	11.52	27.6	Pass
T13	59.84 - 39.84	Horizontal	1	543	-3.51	11.52	30.5	Pass
T14	39.84 - 19.84	Horizontal	1	587	-3.58	11.52	31.1	Pass
T15	19.84 - 6.5	Horizontal	1	639	-3.39	11.52	29.4	Pass
T1	291.84 - 279.84	Secondary Horizontal	1	28	-0.00	15.90	0.0	Pass
T2	279.84 - 259.84	Secondary Horizontal	1	73	-0.00	15.90	0.0	Pass
T3	259.84 - 239.84	Secondary Horizontal	1	118	-0.00	15.92	0.0	Pass
T4	239.84 - 219.84	Secondary Horizontal	1	149	0.00	22.61	0.0	Pass
T5	219.84 - 199.84	Secondary Horizontal	1	208	-0.00	15.94	0.0	Pass
T6	199.84 - 179.84	Secondary Horizontal	1	225	0.00	22.61	0.0	Pass
T7	179.84 - 159.84	Secondary Horizontal	1	284	0.00	22.61	0.0	Pass
T8	159.84 - 139.84	Secondary Horizontal	1	329	0.00	22.61	0.0	Pass
T9	139.84 - 119.84	Secondary Horizontal	1	360	0.00	22.61	0.0	Pass
T10	119.84 - 99.84	Secondary Horizontal	1	419	0.00	22.61	0.0	Pass
T11	99.84 - 79.84	Secondary Horizontal	1	464	0.00	22.61	0.0	Pass
T12	79.84 - 59.84	Secondary Horizontal	1	495	0.00	22.61	0.0	Pass
T13	59.84 - 39.84	Secondary Horizontal	1	540	-0.00	15.98	0.0	Pass
T14	39.84 - 19.84	Secondary Horizontal	1	585	-0.00	15.98	0.0	Pass
T15	19.84 - 6.5	Secondary Horizontal	1	630	-0.00	15.98	0.0	Pass
T1	291.84 - 279.84	Top Girt	1	5	-0.00	11.11	0.0	Pass
T2	279.84 - 259.84	Top Girt	1	10	0.37	22.61	1.6	Pass
T3	259.84 - 239.84	Top Girt	1	39	0.91	22.61	4.0	Pass
T4	239.84 - 219.84	Top Girt	1	86	0.61	22.61	2.7	Pass
T5	219.84 - 199.84	Top Girt	1	130	0.95	22.61	4.2	Pass
T6	199.84 - 179.84	Top Girt	1	174	0.86	22.61	3.8	Pass
T7	179.84 - 159.84	Top Girt	1	221	0.67	22.61	3.0	Pass
T8	159.84 - 139.84	Top Girt	1	264	0.99	22.61	4.4	Pass
T9	139.84 - 119.84	Top Girt	1	309	0.94	22.61	4.2	Pass
T10	119.84 - 99.84	Top Girt	1	354	1.03	22.61	4.6	Pass
T11	99.84 - 79.84	Top Girt	1	399	1.26	22.61	5.6	Pass
T12	79.84 - 59.84	Top Girt	1	445	1.26	22.61	5.6	Pass
T13	59.84 - 39.84	Top Girt	1	490	1.41	22.61	6.2	Pass
T14	39.84 - 19.84	Top Girt	1	535	1.51	22.61	6.7	Pass
T15	19.84 - 6.5	Top Girt	1	581	1.69	22.61	7.5	Pass
T16	6.5 - 0	Top Girt	12x3/8	626	30.95	129.57	23.9	Pass
T16	6.5 - 0	Bottom Girt	12x3/8	655	-4.98	128.69	19.5	Pass
T16	6.5 - 0	Mid Girt	9x3/8	660	-0.32	40.52	0.8	Pass
T1	291.84 - 279.84	Guy A@285.84	3/4	732	20.13	29.15	69.0	Pass
T3	259.84 - 239.84	Guy A@256.507	3/4	721	20.08	29.15	68.9	Pass
T5	219.84 - 199.84	Guy A@216.507	3/4	709	20.43	29.15	70.1	Pass
T7	179.84 - 159.84	Guy A@166.507	3/4	697	20.91	29.15	71.7	Pass
T10	119.84 - 99.84	Guy A@106.507	3/4	685	22.84	29.15	78.4	Pass
T13	59.84 - 39.84	Guy A@56.5067	7/16	673	9.10	10.40	87.5	Pass
T1	291.84 - 279.84	Guy B@285.84	3/4	729	19.40	29.15	66.5	Pass

tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:	Job	CT1077 - Storrs-UConn Rev.2	Page	72 of 73
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	Client	Com-Ex Consultants	Designed by	Ahmet Colakoglu

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T3	259.84 - 239.84	Guy B@256.507	3/4	717	19.27	29.15	66.1	Pass
T5	219.84 - 199.84	Guy B@216.507	3/4	704	19.26	29.15	66.1	Pass
T7	179.84 - 159.84	Guy B@166.507	3/4	692	19.45	29.15	66.7	Pass
T10	119.84 - 99.84	Guy B@106.507	3/4	680	21.28	29.15	73.0	Pass
T13	59.84 - 39.84	Guy B@56.5067	7/16	668	8.62	10.40	82.9	Pass
T1	291.84 - 279.84	Guy C@285.84	3/4	724	20.11	29.15	69.0	Pass
T3	259.84 - 239.84	Guy C@256.507	3/4	712	20.07	29.15	68.9	Pass
T5	219.84 - 199.84	Guy C@216.507	3/4	700	20.37	29.15	69.9	Pass
T7	179.84 - 159.84	Guy C@166.507	3/4	688	20.64	29.15	70.8	Pass
T10	119.84 - 99.84	Guy C@106.507	3/4	676	20.79	29.15	71.3	Pass
T13	59.84 - 39.84	Guy C@56.5067	7/16	665	7.31	10.40	70.3	Pass
T1	291.84 - 279.84	Top Guy	MC12x35	23	-4.63	150.44	3.2	Pass
		Pull-Off@285.84					12.5 (b)	
T3	259.84 - 239.84	Top Guy	MC12x35	119	-5.79	151.46	3.9	Pass
		Pull-Off@256.507					16.1 (b)	
T5	219.84 - 199.84	Top Guy	MC12x35	211	-8.51	152.48	5.7	Pass
		Pull-Off@216.507					23.6 (b)	
T7	179.84 - 159.84	Top Guy	MC12x35	280	-12.06	153.50	7.9	Pass
		Pull-Off@166.507					32.5 (b)	
T10	119.84 - 99.84	Top Guy	MC12x35	415	-16.29	153.50	10.7	Pass
		Pull-Off@106.507					45.8 (b)	
T13	59.84 - 39.84	Top Guy	MC12x35	570	-5.65	154.52	3.7	Pass
		Pull-Off@56.5067					18.0 (b)	
T1	291.84 - 279.84	Torque Arm	MC12x35	727	1.28	296.57	76.1	Pass
		Top@285.84						
T3	259.84 - 239.84	Torque Arm	MC12x35	723	-1.01	130.70	73.3	Pass
		Top@256.507						
T5	219.84 - 199.84	Torque Arm	MC12x35	711	-2.25	131.20	69.8	Pass
		Top@216.507						
T7	179.84 - 159.84	Torque Arm	MC12x35	691	-4.27	131.70	64.0	Pass
		Top@166.507						
T10	119.84 - 99.84	Torque Arm	MC12x35	679	-8.15	131.70	57.3	Pass
		Top@106.507						
T13	59.84 - 39.84	Torque Arm	MC12x35	666	-4.01	132.20	16.6	Pass
		Top@56.5067					20.8 (b)	
							Summary	
							Pole (L1)	16.5 Pass
							Leg (T14)	92.1 Pass
							Diagonal (T11)	72.4 Pass
							Horizontal (T14)	31.1 Pass
							Secondary Horizontal (T15)	0.0 Pass
							Top Girt (T16)	23.9 Pass
							Bottom Girt (T16)	19.5 Pass
							Mid Girt (T16)	0.8 Pass
							Guy A (T13)	87.5 Pass
							Guy B (T13)	82.9 Pass
							Guy C (T10)	71.3 Pass
							Top Guy	45.8 Pass
							Pull-Off (T10)	
							Torque Arm	76.1 Pass
							Top (T1)	
							Bolt Checks	49.6 Pass
							RATING =	92.1 Pass

<i>tnxTower</i> <i>Destek Engineering, LLC</i> <i>1281 Kennestone Circle, Suite 100</i> <i>Marietta, GA 30066</i> <i>Phone: (770) 693 0835</i> <i>FAX:</i>	Job CT1077 - Storrs-UConn Rev.2	Page 73 of 73
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	Client Com-Ex Consultants	Designed by Ahmet Colakoglu

Guyed Tower Pier and Pad Foundation

BU #:

Site Name: CT1077 - Storrs Uconn

App Number:

Design Reactions		
Shear, S:	9	kips
Compression, Cn:	421	kips
Tower Height, H:	327	ft

Pad Properties		
Depth, D:	4	ft
Pad Width, W:	10	ft
Pad Thickness, T:	2	ft
Ext. Above Grade, E:	0.5	ft
Neglected Depth, N:	1	ft
Pad Rebar Size, Sp:	7	
Pad Rebar Quantity, mp:	18	7

Pier Properties		
Pier Diameter, Pd:	3	ft
Pier Rebar Size, Sc:	7	
Pier Rebar Quantity, mc:	10	9
Pier Tie Size, St:	3	3
Tie Quantity, mt:	0	4.14285714

Material Properties		
Rebar Tensile, Fy:	60000	psi
Concrete Strength, F'c:	3000	psi
Concrete Density, δc:	0.15	kcf
Clear Cover, cc:	3	in

Soil Properties		
Soil Unit Weight, γ:	0.125	kcf
Allowable Net Bearing, Bc:	5.000	ksf
Cohesion, Co:	0	ksf
Friction Angle, Φ:	30	deg
Passive Pressure, Pp:	0	pcf
Base Friction, μ:	0.5	
Seismic Zone, z:	2	

Design Checks				
	Capacity/ Availability	Demand/ Limits	Check	%
Shear Capacity (kips)	120.78	9.00	OK	7.5%
Bearing (ksf):	5.00	4.49	OK	89.7%
Pad Shear - 1-way (kips)	270.30	153.05	OK	56.6%
Pad Shear - 2-way (kips)	800.53	602.40	OK	75.3%
Pier Rebar Area (in ²)	6.00	5.09	OK	N/A
Pad Rebar Area (in2)	10.80	3.89	OK	N/A
Pier Moment Capacity (k-ft)	566.19	22.50	OK	4.0%
Pier Bar Spacing (in)	8.55	12 > s > 4.5	OK	N/A
Pad Bar Spacing (in)	5.78	12 > s > 4.5	OK	N/A
Pad Development Length (in)	21	31.71	OK	N/A
Hook Development Length (in)	57.00	13.42	OK	N/A
Rebar Hook Length (in)	42.00	14.00	OK	N/A
Rebar Hook Length (in)	42.00	14.00	OK	N/A

OK

Modification Checks			
	Capacity/ Availability	Demand/ Limits	Check
Sleeve Rebar Area (in2):	15.8	0.00	Not Used
Sleeve Moment Capacity (k-ft):	566.19	22.50	Not Run
Sleeve Rebar Spacing (in):	N/a	12 > s > 4.5	Not Used
Sleeve Tie Spacing (in):	N/A	2.25 > s > 4.5	Not Used
Minimum Extra Thickness (in):	0	0	Not Used
Pad Rebar Area-short (in2):	14	0.41	Not Used
Pad Rebar Area-long (in2):	14	0.41	Not Used
Pad Rebar Spacing-short (in):	7.55	12 > s > 4.5	Not Used
Pad Rebar Spacing-long (in):	7.55	12 > s > 4.5	Not Used
End Cap Width (ft):	0	0	Not Used
End Cap Rebar Area (in2):	3.16	0	Not Used
Rebar Spacing (in):	-3	12 > s > 4.5	Not Used
Tie Spacing (in):	7.6	114 > s > 4.5	Not Used
Dowel Area (in2):	2.2	0.00	Not Used
Dowel Embedment (in):	9	6	Not Used
Shear Strength of Cone (kips):	21.78	23.76	Not Used
Dowel Edge Dist (in):	12	6.00	Not Used
Dowel Spacing (in):	24.0	18	Not Used
Dowel Edge Dist (vert) (in):	12	6.00	Not Used
Dowel Devel. Length (in):	-3.00	15.38	Not Used

Modifications					
Pier Sleeve, ds:	0	in	End Cap Width, Wec:	0	ft
Revised Pier Diameter, dx:	3	ft	Revised Width, Wx:	10	ft
PS Rebar Size, Ss:	8		EC Rebar Size, Sec:	8	per side, top & bottom
Rebar Quantity, ms:	20	0	Rebar Quantity, mec:	4	0
Tie Size, Sst:	5		EC Tie Size, Sect:	4	per side
Tie Quantity, mst:	9	16	Tie Quantity, mect:	15	0
Pad Thickness, Te:	0	in	EC Dowel Size, Secd:	6	per side
Revised Pad Thickness, Tx:	2.00	ft	Dowel Quantity, mecd:	5	0
Rebar Size, Se:	9		Rows of Dowels, Nd:	1	
Rebar Quantity (long), me:	14	1	Dowel Depth, dec d:	9	in
Rebar Quantity (short), mex:	14	1	Edge Distance, eed:	12	in
Dowel Size, Sed:	4				
Dowel Quantity, med:	16	0			



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT1077

Storrs
60 North Eaglesville Road
Mansfield, CT 06269

September 22, 2016

EBI Project Number: 6216004268

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	23.86 %



September 22, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1077 – Storrs**

EBI Consulting was directed to analyze the proposed AT&T facility located at **60 North Eaglesville Road, Mansfield, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **60 North Eaglesville Road, Mansfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 4 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channels (2300 MHz (WCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Powerwave 7770, CCI OPA-65R-LCUU-H6, CCI OPA-65R-LCUU-H8, CCI HPA-65R-BUU-H6 and the CCI HPA-65R-BUU-H8** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerlines of the proposed antennas are **185 feet** above ground level (AGL) for **Sector A**, **185 feet** above ground level (AGL) for **Sector B** and **185 feet** above ground level (AGL) for Sector C.
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.



AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	185 feet	Height (AGL):	185 feet	Height (AGL):	185 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	0.31 %	Antenna B1 MPE%	0.31 %	Antenna C1 MPE%	0.31 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI OPA-65R-LCUU-H8	Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H8
Gain:	13.35 / 12.55 / 14.95 dBd	Gain:	13.35 / 12.55 / 14.95 dBd	Gain:	13.35 / 12.55 / 14.95 dBd
Height (AGL):	185 feet	Height (AGL):	185 feet	Height (AGL):	185 feet
Frequency Bands	850 MHz / 700 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 700 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 700 MHz / 2300 MHz (WCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	360 Watts	Total TX Power(W):	360 Watts	Total TX Power(W):	360 Watts
ERP (W):	8,505.20	ERP (W):	8,073.14	ERP (W):	8,505.20
Antenna A2 MPE%	1.45 %	Antenna B2 MPE%	1.31 %	Antenna C2 MPE%	1.45 %
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H8
Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd
Height (AGL):	185 feet	Height (AGL):	185 feet	Height (AGL):	185 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	6,229.75	ERP (W):	5,462.56	ERP (W):	6,229.75
Antenna A3 MPE%	1.02 %	Antenna B3 MPE%	0.85 %	Antenna C3 MPE%	1.02 %

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	2.78 %
UCONN Police	0.12 %
Existing	14.12 %
Nextel	0.10 %
MetroPCS	0.14 %
Verizon Wireless	6.60 %
Site Total MPE %:	23.86 %

AT&T Sector A Total:	2.78 %
AT&T Sector B Total:	2.48 %
AT&T Sector C Total:	2.78 %
Site Total:	23.86 %



AT&T Max Emission Values Per Sector: Max Values on Sectors A & C

AT&T _ Frequency Band / Technology	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	185	0.93	850 MHz	567	0.16%
AT&T 1900 MHz (PCS) UMTS	2	656.33	185	1.47	1900 MHz (PCS)	1000	0.15%
AT&T 850 MHz LTE	2	1,297.63	185	2.91	850 MHz	567	0.51%
AT&T 700 MHz LTE	2	1,079.32	185	2.42	700 MHz	467	0.52%
AT&T 2300 MHz (WCS) LTE	2	1,875.65	185	4.21	2300 MHz (WCS)	1000	0.42%
AT&T 700 MHz LTE	2	1,239.23	185	2.78	700 MHz	467	0.60%
AT&T 1900 MHz (PCS) LTE	2	1,875.65	185	4.21	1900 MHz (PCS)	1000	0.42%
						Total:	2.78%



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	2.78 %
Sector B:	2.48 %
Sector C:	2.78 %
AT&T Maximum Total (per sector):	2.78 %
Site Total:	23.86 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **23.86 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.