1 INDUSTRIAL AVE,
S E 3
M IWAH NJ 07430

P NE: 201.684.0055
F 201.684.0066

Transcend Wireless

November 27, 2023

Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
125 Mile Creek Road, Old Lyme, CT 06371
Latitude: 41.30553942
Longitude: -72.29733538
T-Mobile Site#: CTNL802A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 171-foot level of the existing 185-foot Monopole at 125 Mile Creek Road in Old Lyme, CT. The 185-foot monopole is owned by American Tower. The property is owned and operated by Leete Associates, Inc. T-Mobile now intends to remove and replace six (6) antennas at the 171-foot level of the existing tower. The antennas support 5G services. T-Mobile will be installing the associated ground equipment within their existing ground space.

Planned Modifications:
Tower:
Install New:
(3) AIR 6419 B41 Antennas
(3) VV-65A-R1 Antennas
(3) Radio 4460 B25 B66
(3) 6x24 Hybrid Cables

To Be Removed:
(12) 1 ⅝" Coax Cables
(3) AIR21 B2A B4P Antennas
(3) AIR21 B4A B2P Antennas

To Be Relocated:
(3) APXVAARR24_43-U-NA20 Antennas
(3) Radio 4449 B71 B85
(3) 6x24 Hybrid Cables

Ground:
Install New:
(1) 6160 Power Enclosure and (1) B160 Battery Cabinet.

This facility was approved by the Connecticut Siting Council in Docket 202 dated September 12, 2001, then extended by means of a petition No. 877 on January 8, 2009. This project does not violate any of the conditions of this approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to First Selectman Timothy Griswold, Elected Official, and Eric Knapp, Land Use Coordinator, as well as the tower and property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Timothy Griswold - First Selectman of Old Lyme
Eric Knapp - Land Use Coordinator
American Tower - Tower Owner
Todd and Rebecca Machnik - Property Owner

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
ERIC KNAPP
52 LYME STREET
OLD LYME CT 06371

CT 063 5-02

UPS GROUND
TRACKING #: 1Z V25 742 03 9087 4998

BILLING: P/P

Reference #1: CTNL802A

XOL 23.11.05 NV45 47.0A 11/2023*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
FIRST SELECTMAN
TIMOTHY GRISWOLD
52 LYME STREET
OLD LYME CT 06371

CT 063 5-02

UPS GROUND
TRACKING #: 1Z V25 742 03 9942 0434

BILLING: P/P

Reference #1: CTNL802A

XOL 23.11.05 NV45 47.0A 11/2023*


ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495
1 LBS
1 OF 1
SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801
MA 018 9-04
UPS GROUND
TRACKING #: 1Z V25 742 03 9007 6985
BILLING: P/P
Reference #1: CTNL802A
XOL 23.11.05 NV45 47.0A 11/2023*


ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495
1 LBS
1 OF 1
SHIP TO:
TODD + REBECCA MACHNIK
126 MILE CREEK ROAD
OLD LYME CT 06371
CT 063 5-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9855 0420
BILLING: P/P
Reference #1: CTNL802A
XOL 23.11.05 NV45 47.0A 11/2023*

Hello, your package has been delivered.

Delivery Date: Wednesday, 11/22/2023

Delivery Time: 10:48 AM

Signed by: DONNA

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390076985
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL802A

Hello, your package has been delivered.

Delivery Date: Wednesday, 11/22/2023

Delivery Time: 11:41 AM

Signed by: HAYES

TRANSCEND WIRELESS

Tracking Number:	1ZV257420399420434
Ship To:	TIMOTHY GRISWOLD 52 LYME STREET OLD LYME, CT 06371 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL802A

Hello, your package has been delivered.

Delivery Date: Wednesday, 11/22/2023

Delivery Time: 11:41 AM

Signed by: HAYES

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390874998
Ship To:	ERIC KNAPP 52 LYME STREET OLD LYME, CT 06371 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL802A

Hello, your package has been delivered.

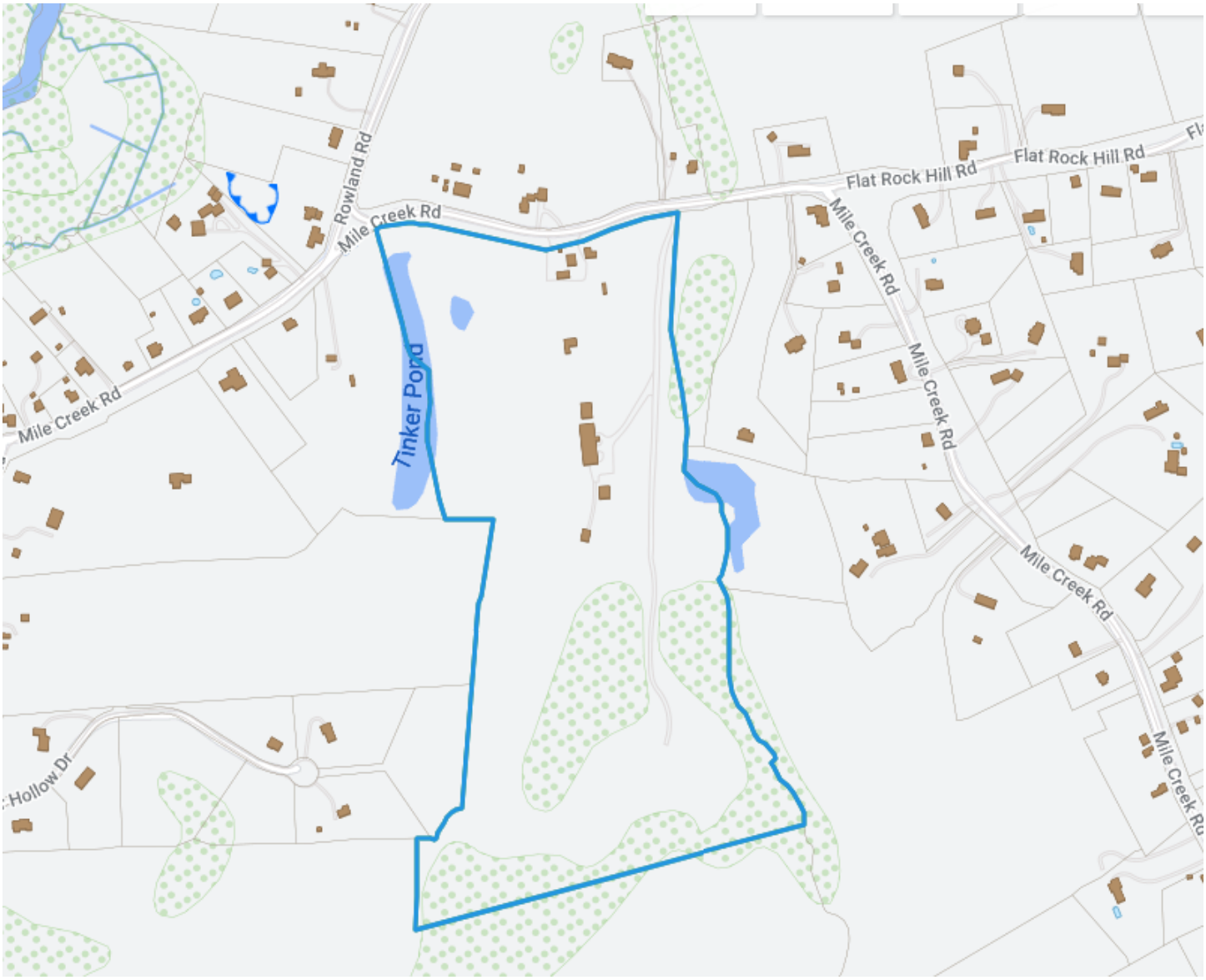
Delivery Date: Saturday, 11/25/2023

Delivery Time: 2:41 PM

Left At: OTHER-RELEAS

TRANSCEND WIRELESS

Tracking Number:	1ZV257420398550420
Ship To:	TODD + REBECCA MACHNIK 126 MILE CREEK ROAD OLD LYME, CT 06371 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL802A


Rowland Rd
Mile Creek Rd
Flat Rock Hill Rd
Flat Rock Hill Rd
Mile Creek Rd
Mile Creek Rd
Mile Creek Rd
Mile Creek Rd
Tinker Pond
Hollow Dr

125 MILE CREEK RD

Sales | Print | Map It

Location	125 MILE CREEK RD	**Mblu**	13/ / 93/ /
Acct#	00044800	**Owner**	MACHNIK TODD & REBECCA L Q/C/S
Assessment	$422,400	**Appraisal**	$835,600
PID	474	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$391,000	$444,600	$835,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$273,700	$148,700	$422,400

Owner of Record

Owner	MACHNIK TODD & REBECCA L Q/C/S	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	126 MILE CREEK RD OLD LYME, CT 06371	**Book & Page**	0309/0432
		Sale Date	01/06/2004

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
MACHNIK TODD & REBECCA L Q/C/S	$0		0309/0432	01/06/2004
MACHNIK LEON & TODD H & REBECCCA L Q/	$0		0291/0852	01/06/2003
MACHNIK LEON & TODD & REBECCA Q/C/S T	$0		0284/0764	07/22/2002
MACHNIK LEON & Q/C/S	$0		0267/0227	01/02/2001
MACHNIK LEON ET AL	$0		0261/0299	01/19/2000

Building Information

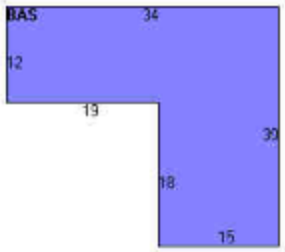
Building 1 : Section 1

Year Built:	1975
Living Area:	678
Replacement Cost:	$82,146
Building Percent Good:	71
Replacement Cost Less Depreciation:	$58,300

Building Attributes	
Field	**Description**
Style:	Commercial
Model	Commercial
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	OFFICE BLD MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3400
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE

Building Photo

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	678	678
		678	678

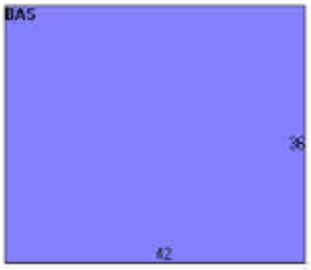
Building 2 : Section 1

Year Built:	1994
Living Area:	1,512
Replacement Cost:	$66,230
Building Percent Good:	84
Replacement Cost Less Depreciation:	$55,600

Building Attributes : Bldg 2 of 3	
Field	**Description**
Style:	Pre-Eng Gar
Model	Ind/Comm
Grade	Below Average
Stories:	1
Occupancy	0.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3161
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	12.00

Building Photo

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,512	1,512
		1,512	1,512

Building 3 : Section 1

Year Built:	1975
Living Area:	7,500
Replacement Cost:	$323,700
Building Percent Good:	71
Replacement Cost Less Depreciation:	$229,800

Building Attributes : Bldg 3 of 3	
Field	**Description**
Style:	Pre-Eng Gar
Model	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	AUTO REPR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3320
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	LIGHT
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	12.00

Building Photo

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	7,500	7,500
		7,500	7,500

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
GEN	GENERATOR	0.00 UNITS	$0	1

Land

Land Use

Use Code	3400
Description	OFFICE BLD MDL-94
Zone	RU40
Neighborhood	0060
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	62.00
Frontage	0
Depth	0
Assessed Value	$148,700
Appraised Value	$444,600

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR2	GARAGE-GOOD			864.00 S.F.	$13,000	1
PAV1	PAVING-ASPHALT			1008.00 S.F.	$1,300	2
PAV1	PAVING-ASPHALT			792.00 S.F.	$800	3
BRN8	POLE BARN			1092.00 S.F.	$11,500	3
BRN8	POLE BARN			792.00 S.F.	$5,900	2
SHD2	W/LIGHTS ETC			600.00 S.F.	$6,300	1
SHD1	SHED FRAME			100.00 S.F.	$900	3
SHD2	W/LIGHTS ETC			572.00 S.F.	$6,000	1
PAV1	PAVING-ASPHALT			262.00 S.F.	$300	3
LNT	LEAN-TO			300.00 S.F.	$1,200	3
MSC19	TOWER			50.00 UNIT	$0	3
MSC14	GENERATOR			80.00 UNIT	$100	3

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	$420,000	$444,600	$864,600
2020	$420,000	$444,600	$864,600
2019	$402,800	$410,600	$813,400

Assessment			
Valuation Year	Improvements	Land	Total
2021	$294,000	$148,700	$442,700
2020	$294,000	$148,700	$442,700
2019	$282,100	$124,900	$407,000

Petition No. 877
Omnipoint Communications (T-Mobile)
Old Lyme, Connecticut
Staff Report
January 8, 2009

On November 25, 2008, Omnipoint Communications (T-Mobile) filed a petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing telecommunications tower in Old Lyme, Connecticut. Connecticut Siting Council member Phil Ashton and Council staff member David Martin conducted a field review of the proposed modifications on December 10, 2008. Jennifer Gaudet represented T-Mobile at the field review.

T-Mobile proposes to add a ten-foot extension to an existing 160-foot monopole tower located at 125 Mile Creek Road in Old Lyme. The existing tower is owned by Verizon Wireless and was certificated by the Council in Docket 202, which was approved on June 3, 2002. In this docket, Verizon, and its co-applicant Crown, originally proposed a 190-foot tower. The Council approved a 160-foot tower but allowed for the tower and foundation to be built to accommodate extensions up to 190 feet.

From this location, T-Mobile is seeking to cover an area south of the tower that encompasses a section of the Amtrak rail line that is currently without coverage. T-Mobile's RF engineers have determined that antennas placed at the highest, existing available height of 130 feet would not cover the target area. Consequently, T-Mobile is seeking the extension in order to place its antennas at the 170-foot level to be able to achieve its coverage objectives.

The tower is located on a 62-acre parcel used for the storage of construction and agricultural equipment. The surrounding area consists of sparse single-family residential development. There is a short section on Mile Creek Road where the tower is very clearly visible because the land has been cleared for agricultural and residential purposes. Most of the surrounding area, however, is shielded from views of the tower by existing, mature deciduous trees. The proposed ten-foot extension will not appreciably increase the visible footprint of the existing tower.

The addition of T-Mobile's antennas would bring the cumulative power density of the antenna systems on the tower to 16.6% of the FCC limit.

The tower compound is enclosed by a stockade fence. At the time of the field review, the gate of the fence was open and in poor condition. Council representatives pointed this out to T-Mobile's representative and asked that a request to repair the fence be passed on to the tower owner.

Council representatives also noted that ospreys had built a nest on the tower's highest antenna platform. T-Mobile's representative stated that the proposed modifications could be done at a time when they would not disturb the nesting birds.

Based upon observations made during the field review, T-Mobile's proposed modifications should not create any significant adverse environmental impacts. Staff recommends approval of this petition with the conditions that: 1) the tower owner repair the fence as needed and 2) any work related to the extension of the tower and installation of T-Mobile's antennas be undertaken at a time when it will not disturb any actively nesting ospreys.

View of existing tower

Tower compound

DOCKET NO. 202 - Crown Atlantic Company LLC and Cellco Partnership d/b/a Cellco Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility off of Buttonball Road, located approximately 1,000 feet south of the intersection of Buttonball Road and the Amtrak railroad right-of-way, Old Lyme; or at 125 Mile Creek Road, Old Lyme, Connecticut.	}	Connecticut Siting Council September 12, 2001

Findings of Fact

Introduction

1. Crown Atlantic Company LLC (Crown) and Cellco Partnership (Cellco) d/b/a Verizon Wireless in accordance with provisions of Connecticut General Statutes (C.G.S.) §§ 16-50g through 16-50aa applied to the Connecticut Siting Council (Council) on April 13, 2001, for the construction, operation, and maintenance of a cellular telecommunications facility in Old Lyme, Connecticut, to provide cellular coverage within the New London County, New England County Metropolitan Area (NECMA). (Crown/Cellco 1, pp. 1, 2, 7, 8; Crown/Cellco 1, Sec. 7)

2. Parties and intervenors in this proceeding include the applicant, the Town of Old Lyme Zoning Commission, John P. and Judith A. McCarthy, and James B. Blair. (Transcript, June 21, 2001, 3:00 p.m., (Tr. 1), p. 5; Transcript, June 21, 2001, 7:00 p.m., (Tr. 1.1), p. 5)

3. On May 16, 2001, the applicant submitted a supplement to the application for an alternative tower site (alternative #2) at 71 Buttonball Road, in Old Lyme, Connecticut. On June 5, 2001, the applicant withdrew the proposed Alternate #2 site from future consideration. (Crown/Cellco 8; Crown/Cellco 11; Tr. 1, pp. 12, 13)

4. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on June 21, 2001, beginning at 3:00 p.m. and continuing at 7:00 p.m. in the Community Room of the Old Lyme Public Library, 2 Library Lane, Old Lyme, Connecticut. (Council's Hearing Notice dated May 25, 2001; Tr. 1, p. 3)

5. The Council and its staff made an inspection of the proposed prime and alternate sites on June 21, 2001. During the field inspection, the applicant flew balloons at the proposed sites to simulate the height of the proposed towers. The applicant also flew balloons at the proposed sites on June 9, 2001, from 10:00 a.m. to 3:00 p.m. to simulate the height of the proposed towers. (Crown/Cellco 1, p. 14; Tr. 1, pp. 13, 14, 47; Tr. 1.1, pp. 74, 75)

6. Pursuant to C.G.S. § 16-50l(e), on January 19, 2001, the applicant met with and provided copies of the Technical Report to the Town of Old Lyme's First Selectman and Town Planner for the development of a cell site in the Town of Old Lyme. Following the 60-day consultation period, the Town of Old Lyme requested that the applicant consider the alternative #2 tower site, located at 71 Buttonball Road in Old Lyme, Connecticut. (Crown/Cellco 1, p. 19; Crown/Cellco 8, pp. 1, 3)

7. There are no adjoining municipal boundaries within 2,500 feet of the proposed prime or alternate site. (Crown/Cellco 1, Sec. 3, p. 2; Crown/Cellco 1, Sec. 4, p. 2)

8. The applicant certified that copies of the application for a Certificate were sent via certified mail, return receipt requested, to municipal, regional, state, and federal officials, pursuant to C.G.S. § 16-50l(b). Notice of the application was published in The Day on April 11, 2001 and April 12, 2001. Notice of the filing of the supplement to the application was published in The Day on May 14, 2001 and May 15, 2001. The applicant certified that notice of the application, and the supplement to the application was sent to each owner of property which abut the proposed prime or alternate site, pursuant to C.G.S. § 16-50l(b). (Crown/Cellco 1, pp. 5, 6; Crown/Cellco 1, Sec. 6; Crown/Cellco 1, Sec. 8; Crown/Cellco 2; Crown/Cellco 3; Crown/Cellco 7; Letter from Kenneth C. Baldwin to Joel M. Rinebold dated April 18, 2001; Crown/Cellco 8, pp. 2, 3; Crown/Cellco 8, Sec. 5)

9. The Town of Old Lyme Zoning Commission has directed previous applicants for a telecommunications tower be responsible for its removal if and when it becomes obsolete and unused. The Zoning Commission requests that the Council consider a similar requirement for the removal of obsolete or unused towers. The Zoning Commission would also prefer a single equipment building with suitable architectural treatment and landscaping. (Crown/Cellco 1b, Zoning Regulations, p. 22-10; Town of Old Lyme Zoning Commission 1; Tr. 1.1, pp. 64, 65)

Cellular Service Design

10. In 1981, the Federal Communications Commission (FCC) recognized a public need for technical improvement, wide-area coverage, high-quality service, and competition in the provision of mobile telephone service. This included the issuance of two licenses for the provision of cellular service at the wholesale level in each market area. (Crown/Cellco 1, p. 6)

11. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. The Federal Telecommunications Act of 1996 seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. Furthermore, the Federal government has preempted the determination of public need for wireless service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. (Crown/Cellco 1, pp. 6, 7)

12. Cellco is licensed by the Federal Communications Commission (FCC) to operate a cellular system. Cellco's cellular system design provides for frequency reuse and handoff, is capable of orderly expansion, is compatible with other cellular systems, and is in conformity with Code of Federal Regulations 47 C.F.R. Part 22, Subpart K. (Crown/Cellco 1, pp. 4, 7, 8, 9)

13. Cellco would only provide digital cellular service from the proposed Old Lyme sites. Adjacent Cellco facilities located in Old Saybrook and Old Lyme currently provide both analog and digital cellular service. A Cellco subscriber with an analog only phone would not notice any improvement in service by the additional coverage provided by the proposed facilities. (Crown/Cellco 5, RPHQ #5; Tr. 1, p. 24)

14. The minimal signal level threshold required by Cellco to provide acceptable service in and around the Old Lyme area is -85 dBm. The minimal signal level threshold is determined by several factors including the amount of interference in the area, the projected traffic usage, and the extent of development of the area. The level of interference in the Old Lyme area is considered higher than normal because of the proximity of the Long Island "A" band cellular system. (Crown/Cellco 5, RPHQ #6; Tr. 1, pp. 53, 54)

Need

15. The primary purpose of this application is to provide cellular coverage to existing gaps in coverage along Interstate 95 (I-95), Route 156, the Amtrak railroad right-of-way (ROW), and local roads in the Old Lyme area; and to provide additional traffic handling capacity in the Old Lyme area. (Crown/Cellco 1, pp. 2, 8; Crown/Cellco 1, Sec. 1, pp. 1 to 4; Crown/Cellco 1, Sec. 2, p. 2; Tr. 1, p. 42)

16. Existing cellular coverage in the Old Lyme area is provided by facilities at 38 Hatchetts Hill Road in Old Lyme, and 2 Ferry Place in Old Saybrook. Cellco's existing cellular coverage along I-95, Route 156, and the Amtrak ROW, within a two mile radius of the intersection of the Amtrak ROW and Buttonball Road at a signal level threshold greater than -85 dBm, is as follows:

Existing Coverage

	Coverage (miles) ≥ -85 dBm	Total Road Miles
I-95	1.8	2.2
Route 156	1.5	4.4
Amtrak ROW	0.8	4.0

(Crown/Cellco 1, p. 8; Crown/Cellco 1, Sec. 1, pp. 1, 2; Crown/Cellco 5, RPHQ #9)

*See Appendix A

Cellco

17. Cellco's existing and proposed coverage on the proposed prime tower at 150, 130, and 110 feet above ground level (AGL) within a two mile radius of the intersection of the Amtrak ROW and Buttonball Road, would be as follows:

Coverage from the Proposed Prime Site Tower

	Coverage (miles)* ≥ -85 dBm at 150 ft AGL	Coverage (miles) ≥ -85 dBm at 130 ft AGL	Coverage (miles) ≥ -85 dBm at 110 ft AGL	Total Road Miles
I-95	2.0	1.8	1.7	2.2
Route 156	4.0	3.9	3.3	4.4
Amtrak ROW	3.5	3.1	2.7	4.0

(Crown/Cellco 1, Sec. 1, p. 3; Crown/Cellco 5, RPHQ #10, Attachment D; Crown/Cellco 10, RPHQ #34, Attachment 6; Crown/Cellco 10, RPHQ #35, Attachment 7)

*See Appendix B

18. Cellco's existing and proposed coverage on the proposed alternate tower at 160, 150, and 140 feet AGL within a two mile radius of the intersection of the Amtrak ROW and Buttonball Road, would be as follows:

Coverage from the Proposed Alternate Site Tower

	Coverage (miles)* ≥ -85 dBm at 160 ft AGL	Coverage (miles) ≥ -85 dBm at 150 ft AGL	Coverage (miles) ≥ -85 dBm at 140 ft AGL	Total Road Miles
I-95	2.0	1.9	1.9	2.2
Route 156	4.4	4.3	3.9	4.4
Amtrak ROW	4.0	3.6	3.3	4.0

(Crown/Cellco 1, Sec. 1, p. 4; Crown/Cellco 5, RPHQ #10, Attachment D; Crown/Cellco 12, RPHQ #38, Attachment 1; Crown/Cellco 12, RPHQ #39, Attachment 2)

*See Appendix C

19. A coverage gap located along I-95, west of the proposed sites, could prevent the successful hand-off of a call between Cellco's existing sites in Old Saybrook and Old Lyme, even if a telecommunications facility was developed at either proposed site. Cellco has initiated a new search for another tower west of the proposed sites (Old Lyme West site) to provide service to the coverage gaps along I-95. Cellco has also initiated a new search for another tower located southeast of the proposed sites (Rocky Neck site) to provide service to the coverage gaps south of I-95 and to the east. (Crown/Cellco 5, RPHQ #11, RPHQ #12; Crown/Cellco 10, RPHQ #36; Tr. 1, pp. 31, 32, 34, 35, 83)

20. Cellco would seek to place their antennas at the 120-foot level on the tower to be developed at the Old Lyme West site, and at the 70-foot level on the tower to be developed at the Rocky Neck site, depending on the selected site elevation above mean sea level (AMSL). If Cellco's proposed antennas at the Old Lyme West site and the Rocky Neck site were raised in height, antennas on the proposed towers could be lowered in height. (Tr. 1, pp. 35, 65)

21. Sprint PCS indicated that they may seek to co-locate on either of the proposed towers; however, Sprint PCS was not a party or intervenor to this proceeding, did not commit to co-locate on either of the proposed towers, did not submit radio-frequency propagation plots to demonstrate need for co-locating on the proposed facilities, and could not definitively indicate an antenna height that would satisfy their coverage requirements. (Tr. 1, pp. 10, 11, 22, 28, 29, 46; Tr. 1.1, pp. 84, 85)

22. The proposed tower would be designed, and made available to accommodate at least three additional wireless telecommunications providers. The applicant would also make space available on either of the proposed towers for the Town of Old Lyme's public safety entities. No other telecommunications entity has committed to sharing either of the proposed towers. Space is available on the proposed towers for the placement of antennas for up to five telecommunications providers below Cellco's proposed antennas. (Crown/Cellco 1, pp. 2, 11, 12, 18; Crown/Cellco 1, Sec. 3, p. 9; Crown/Cellco 1, Sec. 4, p. 9; Crown/Cellco 10, RPHQ #20; Tr. 1, pp. 28, 30, 38, 40, 41, 69)

Site Search

23. Cellco identified four existing telecommunications towers located within approximately three miles of the site search area including: a 90-foot tower, owned by Machnik Construction Co., located at 125 Mile Creek Road, Old Lyme; a 190-foot tower, owned by the Omnipoint Communications, located at 38 Hatchetts Hill Road, Old Lyme; a 180-foot tower, owned by Sprint, located at 30 Short Hills Road, Old Lyme; and a 115-foot smokestack serving as a Verizon Wireless facility, located at 2 Ferry Place, Old Saybrook. Existing towers and facilities would not provide adequate service to coverage gaps in the Old Lyme area because they are located too far from existing coverage gaps, would provide duplicate coverage as existing facilities, or do not offer adequate height. (Crown/Cellco 1, Sec. 2, pp. 1, 2; Crown/Cellco 5, RPHQ #9; Crown/Cellco 10, RPHQ #18, Attachment 1; Crown/Cellco 10, RPHQ #19, Attachment 2)

24. The existing 90-foot tall tower, owned by Machnik Construction Co., located at 125 Mile Creek Road could be increased in height by 15 feet in compliance with the Town of Old Lyme's Zoning Regulations. (Town of Old Lyme Zoning Commission 1; Tr. 1.1, pp. 68, 69, 70)

25. Cellco identified and investigated seven potential sites near the site search area located at the intersection of Buttonball Road and the Amtrak ROW, in Old Lyme. Five sites were rejected due to topography, proximity to a new residential subdivision, and the landowners' reluctance to sell or lease property. Two of the sites were proposed as the proposed prime and alternate sites. (Crown/Cellco 1, Sec. 2, pp. 2, 3, 4)

Proposed Equipment

26. Crown/Cellco would lease a 100-foot by 100-foot parcel on which Crown would develop a 190-foot tall steel monopole tower, and a 12-foot by 30-foot equipment building on either the proposed prime or alternate site. The proposed compound would be enclosed by an 8-foot high security fence and gate. (Crown/Cellco 1, pp. 2, 3, 12, 18; Crown/Cellco 1, Sec. 3, pp. 1, 6, 8, 9; Crown/Cellco 1, Sec. 4, pp. 1, 6, 8, 9)

27. A single equipment building could be constructed at either proposed site to accommodate the telecommunications equipment for at least three other telecommunications providers. (Tr. 1, pp. 15, 71, 72)

28. Cellco proposes to attach twelve approximately four-foot tall cellular panel antennas on a triangular platform at approximately 150 feet AGL at the proposed prime site, or at approximately 160 feet AGL at the proposed alternate #1 site. A global positioning system (GPS) antenna would be attached at approximately 70 feet AGL on either the proposed prime or alternate towers. (Crown/Cellco 1, pp. 12; Crown/Cellco 1, Sec. 3, p. 8, 9; Crown/Cellco 1, Sec. 4, pp. 8, 9; Tr. 1, pp. 37, 38)

29. The proposed 190-foot tall monopole tower at either the proposed prime or alternate #1 site would be approximately six feet in diameter at the base and three feet in diameter at the top, and designed to withstand pressures equivalent to a 90 miles per hour wind load with one-half inch solid ice accumulation in accordance with Electronic Industries Association Standard EIA/TIA 222-E, Structural Standards for Steel Antenna Towers and Support Structures. (Crown/Cellco 1, Sec. 3, p. 8 Crown/Cellco 1, Sec. 4, p. 8)

30. Cellco could utilize a stealth flagpole tower; however, Cellco may need to occupy multiple mounting locations within the flagpole structure to provide adequate capacity for Cellco's projected level of service. (Tr. 1, pp. 19, 20, 23)

31. The applicant could design and construct a tower base and foundation capable of being extended from 150 feet AGL to 190 feet AGL. (Tr. 1, pp. 38, 39)

32. The applicant could install netting at the top of the proposed tower to deter the nesting of Osprey and other birds on the proposed tower. The nesting of Osprey or other birds on the proposed tower would prohibit maintenance work or the addition of antennas, until the nests are vacated. (Tr. 1, pp. 15, 56, 84, 85)

33. The proposed equipment building would house Cellco's radio equipment, automatic heating and cooling equipment, and a 40-kilowatt diesel-fueled emergency generator. The proposed generator would run only during the interruption of electrical service and for maintenance. The proposed generator would have a 275-gallon belly tank that would be double-walled and equipped with leak detection alarms. Cellco would need to obtain a permit from the Connecticut Department of Environmental Protection (DEP) for the operation of the proposed generator. (Crown/Cellco 1, pp. 2, 3, 12; Crown/Cellco 1, Sec. 3, pp. 1, 10; Crown/Cellco 1, Sec. 4, pp. 1, 10; Crown/Cellco 1, Sec. 10; Crown/Cellco 5, RPHQ #13)

Proposed Prime/Alternate Site

34. The proposed prime site would be located on an approximately 32-acre parcel, owned by the Black Hall Club, Inc., off of Buttonball Road, approximately 1,000 feet south of the Amtrak ROW in Old Lyme. The parcel is located north of a former quarry operation, west of the Black Hall Golf Club, and north and east of low density residential development. The proposed lease area is located at 41°-17'-37.9" North and 72°-18'-16.8' West, and has an elevation of approximately 10 feet AMSL. The lease parcel at the proposed prime site is generally level, and would require minimal clearing and grading for the development of the prime access road and site compound. Vehicular access to the proposed prime site compound would extend westerly from Buttonball Road along an existing driveway a distance of approximately 410 feet. The proposed access driveway would be approximately 12 feet wide. (Crown/Cellco 1, pp. 2, 17; Crown/Cellco 1, Sec. 3, pp. 1, 2, 4, 6, 7, 10; Tr. 1, pp. 14, 15)

35. There are approximately eleven homes within a 1,000-foot radius of the proposed prime site. The nearest residential structure is located approximately 340 feet east of the proposed tower. (Crown/Cellco 1, p. 14; Crown/Cellco 1, Sec. 3, p. 11; Crown/Cellco 5, RPHQ #1, Attachment A Prime Site; Crown/Cellco 5, RPHQ #14)

36. The fall zone of the proposed 190-foot tall tower would encroach upon two properties located approximately 90 feet north of the proposed prime site lease area boundary. The fall zone of a tower constructed 150 feet tall or less, located in the southern portion of the proposed prime site lease area, would not encroach upon other nearby properties. Alternatively, the proposed prime site compound could be relocated approximately 165 feet south of its current location; however, the proposed prime site compound would be closer to on-site wetland areas. (Crown/Cellco 5, RPHQ #2, Attachment B, Flood Zone Exhibit - Prime Site; Crown/Cellco 10, RPHQ #22)

37. The proposed alternate #1 site would be located on an approximately 62-acre parcel located at 125 Mile Creek Road in Old Lyme, owned by Leon Machnik, Todd J. and Rebecca L. Machnik. The 62-acre parcel is used as the base of operations for the Machnik Construction Company. Low density

residential development is located to the east, west, and north of the proposed alternative #1 site. The proposed lease area is located at 41°-18'-20.0" North and 72°-17'-50.5" West, and has an elevation of approximately 49 feet AMSL. The lease parcel at the proposed alternate site slopes gently up from the north to the south toward the alternate site compound. Minimal clearing and grading would be required for the use of the proposed alternate access road and site compound. Vehicular access to the proposed alternate site compound would extend southerly from Mile Creek Road along an existing driveway a distance of approximately 450 feet. (Crown/Cellco 1, pp. 2, 3, 17; Crown/Cellco 1, Sec. 4, pp. 1, 2, 4, 6, 7, 10; Tr. 1, p. 23)

38. There are approximately five homes within a 1,000-foot radius of the proposed alternate #1 site. The nearest residence is located approximately 550 feet north of the proposed alternate #1 site. (Crown/Cellco 1, p. 14; Crown/Cellco 1, Sec. 4, p. 11; Crown/Cellco 5, RPHQ #1, Attachment A, Proposed Alternate Site Plan)

39. The fall zone of the proposed tower at the proposed alternate #1 site would not extend beyond the boundaries of the proposed alternate #1 site. (Crown/Cellco 5, RPHQ #1, Attachment A, Proposed Alternate Site Plan)

40. A private airstrip, which is owned by the proposed lessors, is located on the proposed alternate #1 site. The proposed tower on the proposed alternate #1 site would not require marking and lighting because the airstrip is private. (Crown/Cellco 6; Tr. 1, pp. 48, 57)

41. The proposed prime and alternate sites are located within a residential RU-40 zone. According to the Town of Old Lyme Zoning Regulations, telecommunications facilities are permitted by special exception in Light Industry (LI-80S) zones only. The only LI-80S zone in the Town of Old Lyme is located in the eastern portion of the Town immediately south of Interstate 95, a distance of between 2.3 miles and 1.6 miles from the proposed prime and alternate sites, respectively. Cellco already shares an existing telecommunications facility within the LI-80S zone at 38 Hatchells Hill Road. (Crown/Cellco 1, p. 2, 18; Crown/Cellco 1, Sec. 3, p. 6; Crown/Cellco 1, Sec. 4, p. 6; Crown/Cellco 1b, Zoning Map revised 8-1-96; Crown/Cellco 1b, Zoning Regulations of the Town of Old Lyme)

42. According to the Old Lyme Zoning Regulations, telecommunications towers shall be limited to a maximum height of 199 feet AGL; designed to accommodate tower sharing; preferred as a monopole tower with a galvanized or painted finish; prohibited to support signage; and set back at least 500 feet from any existing residential structure, and at least 75 feet from a property line. Telecommunications equipment shelters shall not exceed a gross floor area of 750 square feet; be designed to be compatible with other buildings in the area; arranged in a cluster around the proposed tower; and setback 50 feet from a street line and 35 feet from the property line. The maximum building or structure height in an RU-40 zone is 35 feet. (Crown/Cellco 1b, Zoning Regulations of the Town of Old Lyme, Schedule A-2, pp. 22-7 to 22-10)

43. According to the Old Lyme Plan of Conservation & Development adopted August 10, 2000, the proposed prime and alternate sites are located in areas that are designated for Rural Residential land use. The area immediately north and west of the proposed prime site has been designated as an area of Conservation Interest. The State of Connecticut Conservation and Development Policies Plan identifies the proposed prime and alternate sites as being Rural land near Conservation Areas. (Crown/Cellco 1, p. 18; Crown/Cellco 1a; Connecticut Conservation and Development Policies Plan 1998-2003)

44. According to the Town of Old Lyme Wetlands and Water Courses Regulations, a Regulated Activity is any activity taking place in, or within 100 feet of a wetland or watercourse involving the removal or deposition of any materials; the placement or construction of any structure or building; or any activity that may be detrimental to wetlands or watercourses. (Crown/Cellco 1c, Wetlands and Water Courses Regulations, p. 2)

45. According to the Federal Emergency Management Agency Flood Insurance Rate Map, the proposed prime site is located within Flood Zone C, characterized as areas of minimal flooding. (Crown/Cellco 1, p. 19; Crown/Cellco 5, RPHQ #2, Attachment B; Crown/Cellco 5, RPHQ #3)

46. The approximate cost of construction for the development of the proposed prime and alternate sites is estimated to be approximately $1,010,000, and $1,020,000 respectively, as follows:

	Prime	Alternate #1
Cell site radio equipment	650,000	650,000
Tower and antennas	100,000	100,000
Power Systems	45,000	45,000
Building Costs	65,000	65,000
Miscellaneous Costs (including site preparation and installation)	150,000	160,000
Total Costs	$1,010,000	$1,020,000

(Crown/Cellco 1, pp. 21, 22)

47. Crown believes that the proposed alternate #1 site would be preferable to the proposed prime site because the proposed telecommunications facility at the proposed alternate #1 site would be less visible, and would have the least environmental effect, given the nature of the development and current uses of the property. (Tr. 1, pp. 54, 55, 101; Tr. 1.1, p. 86)

Environmental Considerations

48. According to the Connecticut DEP, neither the proposed prime or alternate #1 site contain known extant populations of Federal or State Endangered, Threatened or Special Concern Species. (Crown/Cellco 1, pp. 15, 20; Crown/Cellco 1, Sec. 5)

49. No wetlands or watercourses exist within the proposed compound or proposed access road at the proposed sites. The proposed prime site compound and access road would be located approximately 100 feet and 42 feet north of a large pond, respectively. (Crown/Cellco 1, Sec. 3, pp. 6, 10; Crown/Cellco 1, Sec. 4, pp. 6, 10; Crown/Cellco 5, RPHQ #2, Attachment A, Proposed Site Plan; Crown/Cellco 10, RPHQ #21; Tr. 1, pp. 98, 99)

50. The trees in the vicinity of the proposed sites are predominantly deciduous and approximately 75 feet in height. (Connecticut DEP Comments dated June 15, 2001; Tr. 1, pp. 41, 97)

51. The State Historic Preservation Office (SHPO) has determined that construction of the proposed prime or alternate #1 site would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. The SHPO's review is conditioned upon all construction related activities, including trenching for the proposed access drive at 125 Mile Creek Road, being located to its western extent in order to avoid physical impact to the J. Brown

historical archaeological site. (Crown/Cellco 1, pp. 15, 21; Crown/Cellco 1, Sec. 5, Letter from Dawn Maddox to Rachel A. Mayo dated February 14, 2001; Crown/Cellco 1e; Crown/Cellco 10, RPHQ #24)

52. Crown would install soil erosion and sedimentation control measures throughout the proposed construction period in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control. (Crown/Cellco 1, p. 19)

53. The applicant did not determine if subsurface blasting would be required for the construction of the proposed tower foundation at the proposed sites. (Crown/Cellco 10, RPHQ #23)

54. Crown uses an airspace program to determine if the proposed towers would be a hazard to air navigation. No obstruction or notice standards were exceeded in this analysis; therefore, notification to the Federal Aviation Administration is not required. Neither the prime or alternate tower would require marking or lighting. (Crown/Cellco 1, pp. 18, 20; Crown/Cellco 6)

55. The electromagnetic radiofrequency power densities, calculated using the FCC Office of Engineering and Technology Bulletin 65, August 1997, using conservative worst-case approximation of radiofrequency power density levels at the base of each tower would be 5.2 percent of the American National Standards Institute (ANSI) Standard for the proposed prime site, or 4.6 percent of the applicable ANSI standard for the proposed alternate #1 site. An antenna height of 130 feet AGL would produce a worst-case of radiofrequency power density level at the base of the tower of 6.9 percent of the applicable ANSI standard. (Crown/Cellco 1, p. 16; Crown/Cellco 1, Sec. 3, p. 11; Crown/Cellco 1, Sec. 4, p. 11; Crown/Cellco 10, RPHQ #32)

56. Neither proposed facility would generate noise, except for the operation of the heating and air conditioning systems, and the emergency back-up generator. (Crown/Cellco 1, Sec. 3, p. 10; Crown/Cellco 1, Sec. 4, p. 10)

Visibility

57. The visibility of the proposed prime site tower from various locations in the area would be as follows:

Visibility of Proposed Prime Tower

Location	190 ft Visible	Distance and Direction To Tower
South End of Tinker Pond	No	3,600 feet north
Flat Rock Hill Rd at Mile Creek Rd	No	5,500 feet northeast
Mile Creek Rd. 4,000 feet south of Flat Rock Hill Rd.	No	5,000 feet east-northeast
Route 156 at Dogwood Drive	Yes	4,600 feet southwest
Route 156 at Buttonball Rd.	No	2,800 feet south
Route 156 at Pine Rd.	Yes	3,200 feet west
Buttonball Rd	Yes	1,000 feet north and south
Amtrak ROW	Yes	2,400 feet east-northeast
5 Strawberry Lane cul-de-sac	Yes	2,500 feet southwest
Homestead Circle	Yes	2,100 feet southwest

(Crown/Cellco 1, Sec. 3, pp. 11-19; Tr. 1.1, p. 82)

58. The visibility of the proposed alternate tower from various locations in the area would be as follows:

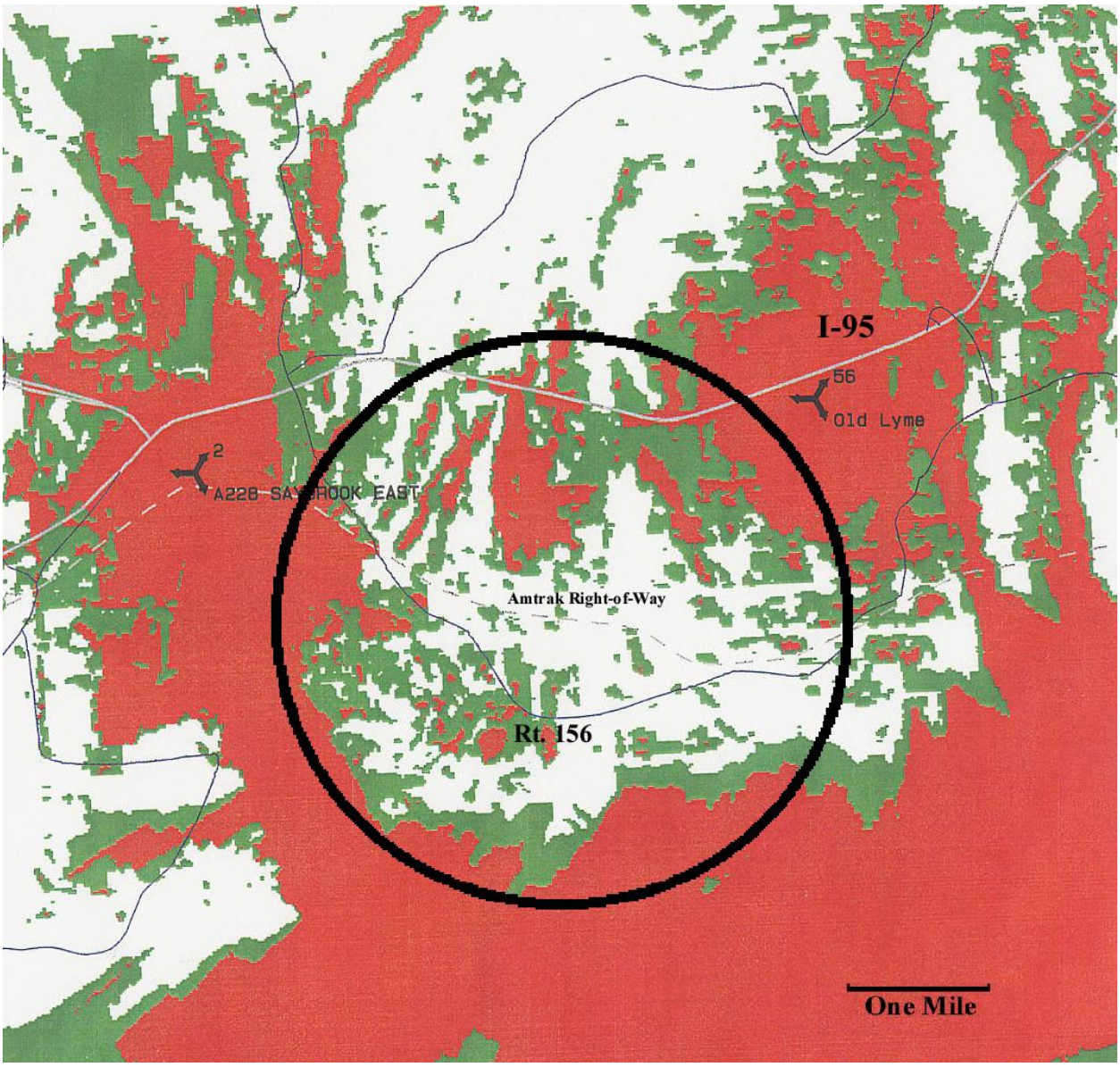
Visibility of Proposed Alternate #1 Tower

Location	190-foot Visible	Distance and Direction to Tower
Interstate 95 (I-95) at Whippoorwill Rd.	Yes	4,800 feet northwest
Rowland Rd. 600 feet south of I-95	No	2,800 feet north
Flat Rock Hill Rd. at Browns Lane	No	3,000 feet east
Mile Creek Rd. at Waite Cemetery	No	5,100 feet southeast
Amtrak ROW at Buttonball Rd.	No	4,000 feet southwest
Buttonball Rd. at Mile Creek Rd.	No	2,300 feet west
Mile Creek Rd. at Whippoorwill Rd.	Yes	3,600 feet west
Rowland Rd. at Flat Rock Hill Rd.	Yes	1,050 feet northwest

(Crown/Cellco 1, Sec. 4, pp. 11-21)

APPENDIX A

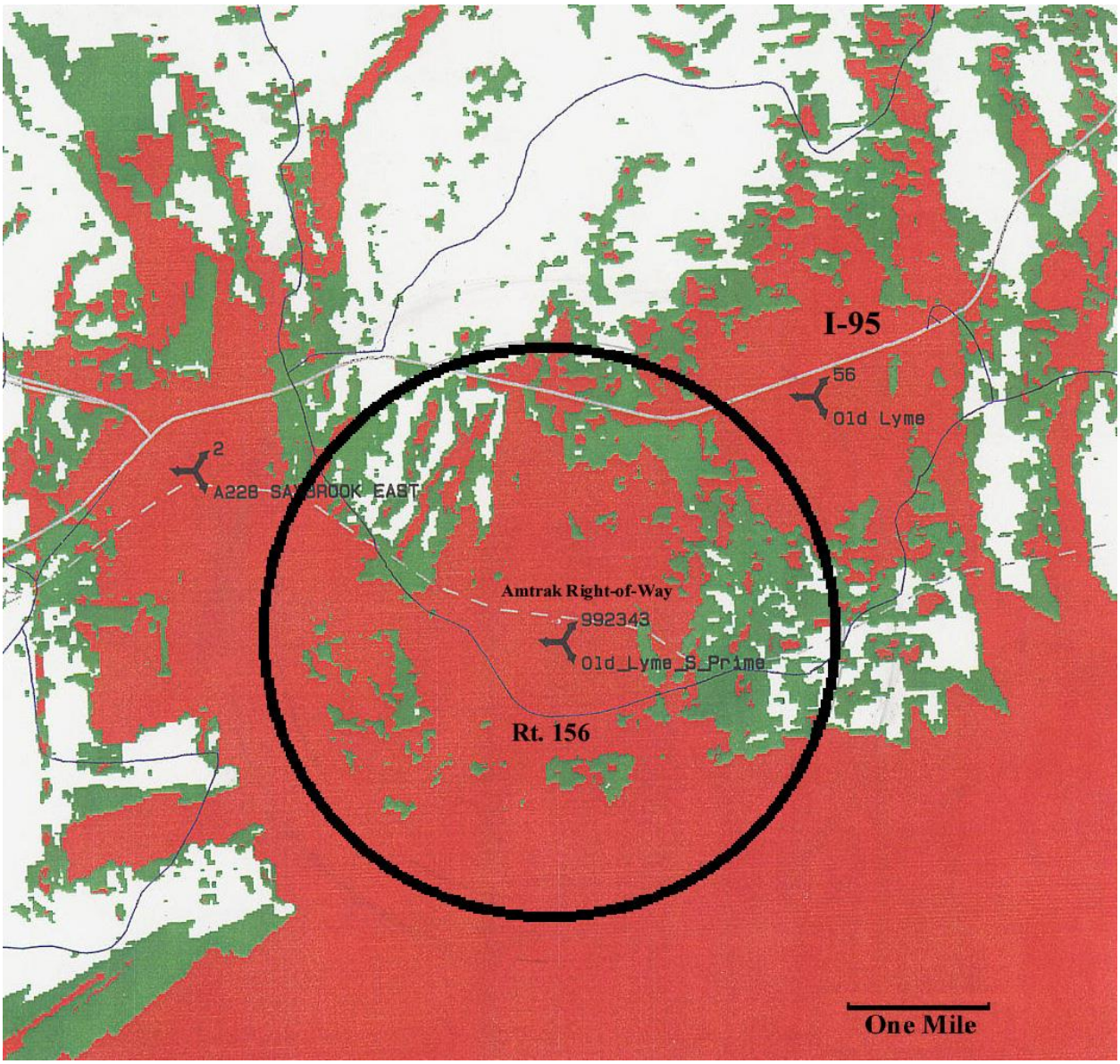
Existing Coverage (≥ -85 dBm)



(Crown/Cellco 1, p. 8; Crown/Cellco 1, Sec. 1, p. 2)

APPENDIX B

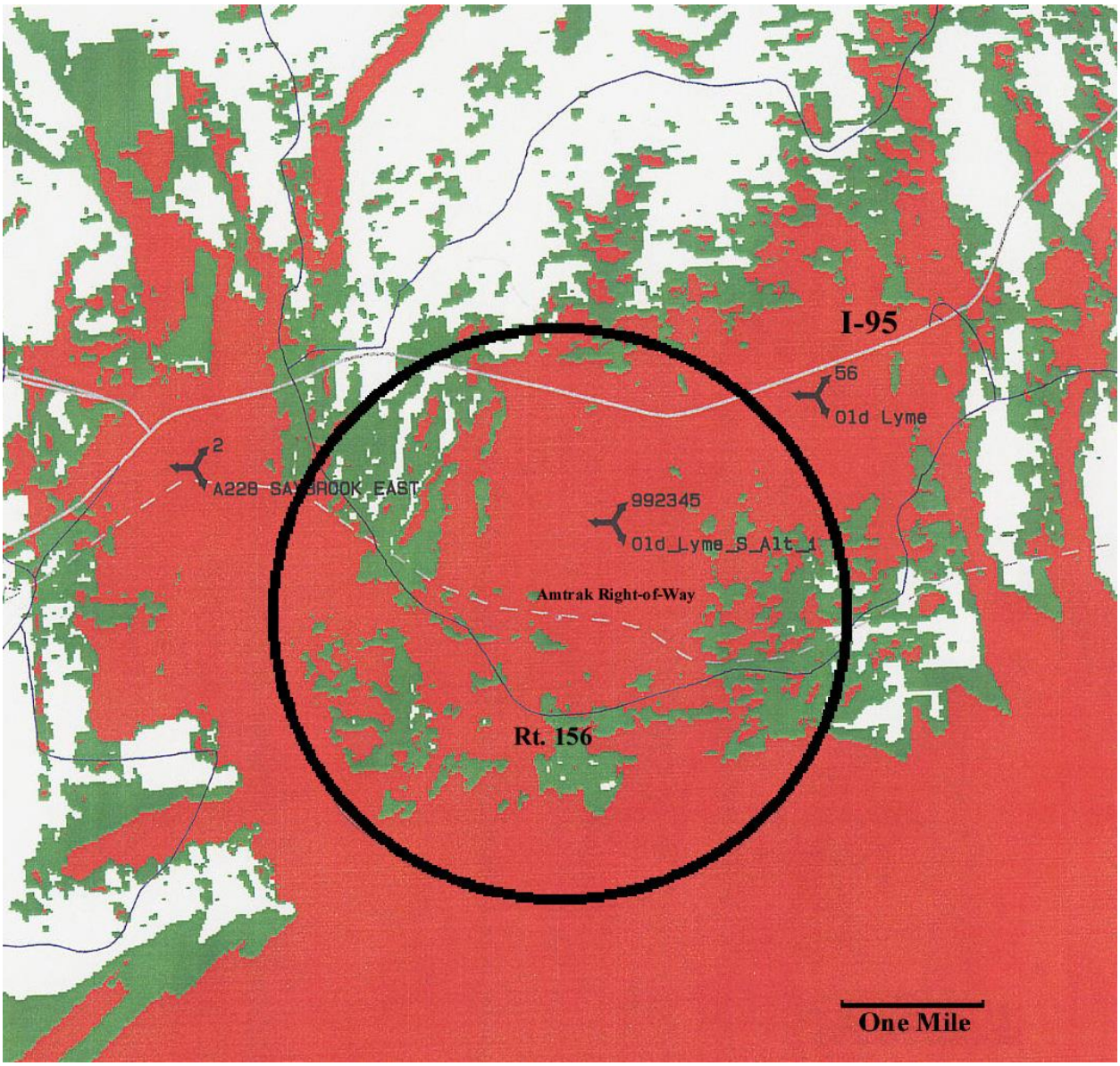
Coverage from the Proposed Prime Site Tower (≥ -85 dBm)



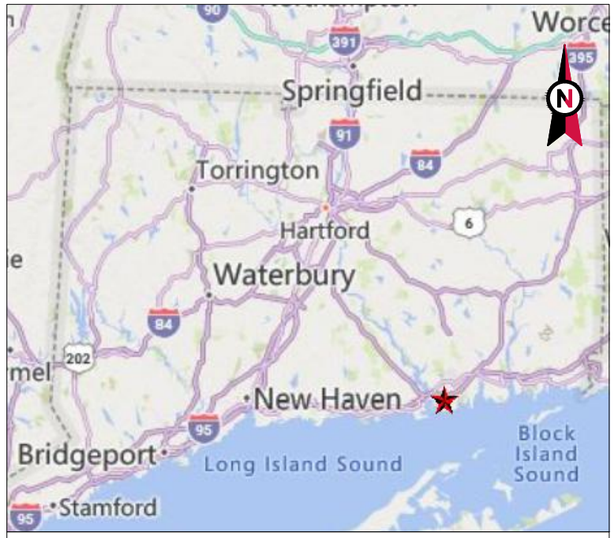
(Crown/Cellco 5, RPHQ #10, Attach. D; Crown/Cellco 10, RPHQ #34, Attachment 6; Crown/Cellco 10, RPHQ #35, Attachment 7)

APPENDIX C

Coverage from the Proposed Alternate Site Tower (≧ -85 dBm)



(Crown/Cellco 5, RPHQ #10, Attach. D; Crown/Cellco 10, RPHQ #34, Attachment 6; Crown/Cellco 10, RPHQ #35, Attachment 7)



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: OLD LYME SOUTH CT
ATC SITE NUMBER: 411178
T-MOBILE SITE NAME: AMTRAK OLD LYME VERIZON
T-MOBILE SITE NUMBER: CTNL802A
SITE ADDRESS: 125 MILE CREEK ROAD
OLD LYME, CT 06371
SITE CLASS: MONOPOLE

LOCATION MAP

T-MOBILE ANCHOR AMENDMENT PLAN
67D5D998E 6160 CONFIGURATION

COMPLIANCE CODE

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

1. 2020 NFPA 70, NATIONAL ELECTRIC CODE (NEC)
2. 2022 CONNECTICUT STATE BUILDING CODE
3. 2021 INTERNATIONAL BUILDING CODE (IBC)

DESIGN CRITERIA FROM TOWER STRUCTUAL ANALYSIS:

BASIC WIND SPEED:	126 MPH (3-SECOND GUST)
BASIC WIND SPEED W/ ICE:	50 MPH (3-SECOND GUST) W/ 1.00" RADIAL ICE CONCURRENT
CODE(S):	ANSI/TIA-222-H / 2021 IBC / 2022 CONNECTICUT STATE BUILDING CODE
EXPOSURE CATEGORY:	B
RISK CATEGORY:	II
TOPO FACTOR PROCEDURE:	METHOD 1
TOPOGRAPHIC CATEGORY:	1
SPECTRAL RESPONSE:	S_S=0.20, S_1=0.05
SITE CLASS:	D - STIFF SOIL - DEFAULT

INFORMATION TAKEN FROM STRUCTURAL ANALYSIS COMPLETED BY A.T. ENGINEERING SERVICES LLC, DATED 09/15/2023.

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (888) 783-6617

TELEPHONE COMPANY: AT&T
PHONE: (866) 593-1383

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

125 MILE CREEK ROAD
OLD LYME, CT 06371
COUNTY: NEW LONDON

GEOGRAPHIC COORDINATES:

LATITUDE: 41.30553942
LONGITUDE: -72.29733538
GROUND ELEVATION: 40' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

TODD J MACHNIK
125 MILE CREEK ROAD
OLD LYME, CT 06371

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:
REMOVE (3) T-ARM SECTOR FRAME(s), (3) TIE-BACK(s), (6) ANTENNA(S), (3) TTA(S), AND (12) 1-5/8" COAX / (1) 9X18 HCS CABLE(S)
INSTALL (1) PLATFORM(s), (6) ANTENNA(S), (3) RRU(S), AND (3) HYBRID TRUNK 6/24 4AWG CABLE(S)
EXISTING (3) ANTENNA(S), (3) RRU(S), AND (3) 6X12 HCS CABLE(S) TO REMAIN

GROUND WORK:
REMOVE (1) CABINET(s), (6) RU22, AND (2) DUW30
INSTALL (1) 6160 CABINET, (1) RP 6651, (1) CSR IXReV2, AND (1) B160 BATTERY CABINET
EXISTING (1) BATTERY CABINET, (1) RBS 6131 CABINET, (2) BB 6630, AND (1) DUG20 TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

FROM WALLINGFORD: TAKE I-91 N TOWARD HARTFORD. GO TO RT. 9 S TO RT. 95 N TO EXIT 70. TURN RIGHT AT END OF EXIT. TAKE 3RD LEFT ONTO MILL CREEK RD. GO UNDER RAILROAD BRIDGE TO #125 MILE CREEK RD. (1.5 MILES TOTAL) MAIL BOX IS ON LEFT SIDE OF ROAD. TAKE RIGHT INTO THE CONSTRUCTION CO./FARM AND FOLLOW AROUND TO THE BACK.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	10/17/23	JLR
G-002	GENERAL NOTES	0	10/17/23	JLR
C-101	DETAILED SITE PLAN	0	10/17/23	JLR
C-102	DETAILED EQUIPMENT PLAN	0	10/17/23	JLR
C-201	TOWER ELEVATION	0	10/17/23	JLR
C-401	ANTENNA INFORMATION & SCHEDULE	0	10/17/23	JLR
C-501	CONSTRUCTION DETAILS	0	10/17/23	JLR
E-501	GROUNDING DETAILS	0	10/17/23	JLR
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			
R-607	SUPPLEMENTAL			
R-608	SUPPLEMENTAL			
R-609	SUPPLEMENTAL			
R-610	SUPPLEMENTAL			

AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

ATC SITE NUMBER:
411178
ATC SITE NAME:
OLD LYME SOUTH CT
T-MOBILE SITE NAME:
AMTRAK OLD LYME VERIZON
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:

STATE OF CONNECTICUT · SCOTT A. WIRGAU · 30575 · LICENSED PROFESSIONAL ENGINEER

Scott Wirgau
Digitally signed by Scott Wirgau
Date: 2023.10.18 14:36:22 -04'00'

T-Mobile

ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
31. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
32. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
33. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
34. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
35. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL/HYBRID CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. INSTALL COAXIAL/HYBRID CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL/HYBRID CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
2. ANTENNA AND COAXIAL/HYBRID CABLE GROUNDING:
   - A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
   - B. ALL COAXIAL/HYBRID CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL/HYBRID CABLE (NOT WITHIN BENDS)

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

AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

ATC SITE NUMBER:
411178
ATC SITE NAME:

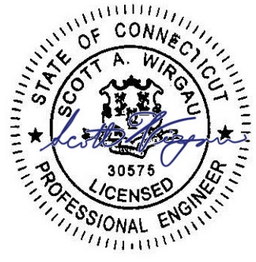
OLD LYME SOUTH CT

T-MOBILE SITE NAME:

AMTRAK OLD LYME VERIZON

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:



Digitally Signed: 2023-10-18

T-Mobile

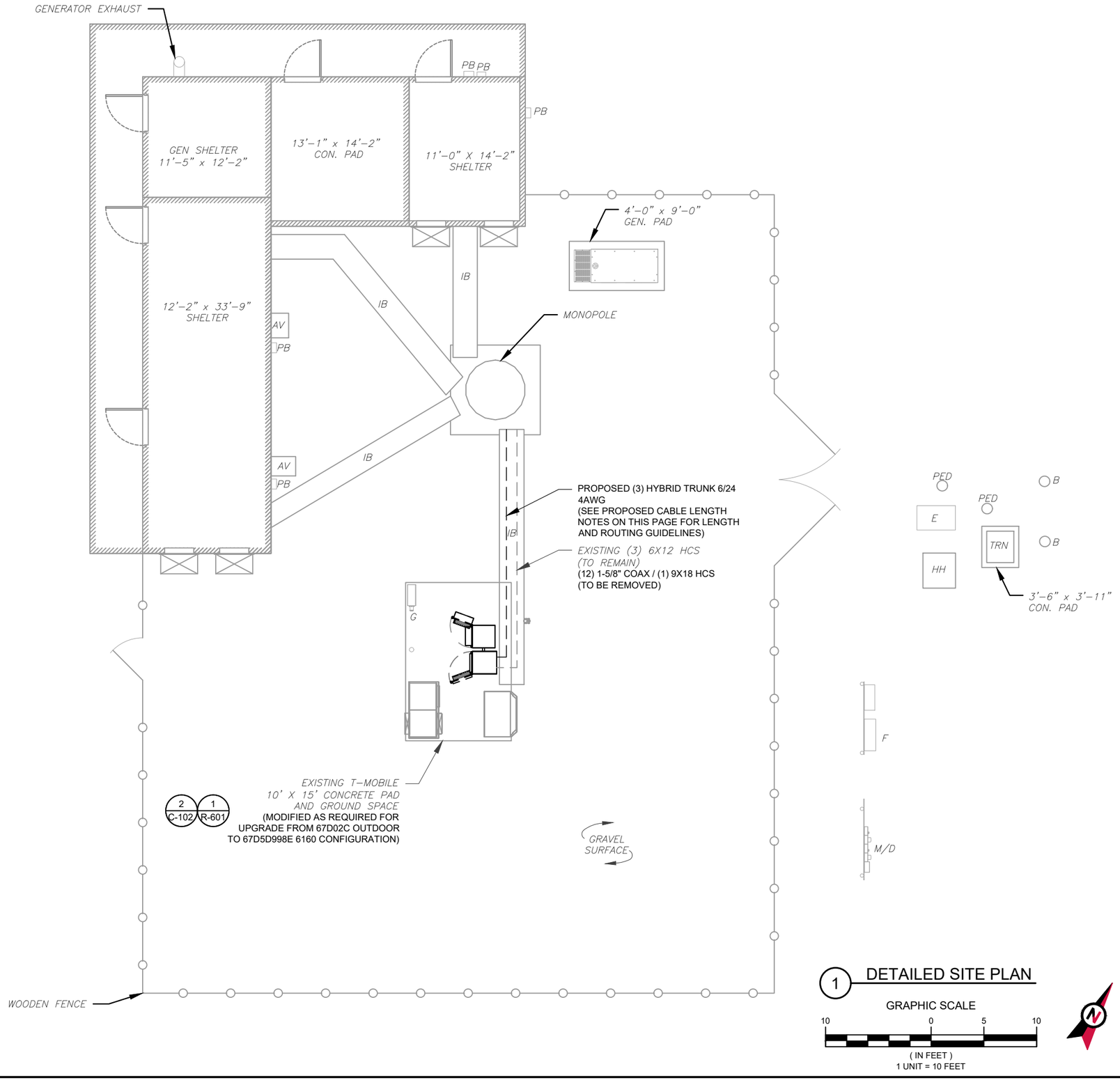
ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

LEGEND

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

PROPOSED CABLE NOTES:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **225'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

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0	FOR CONSTRUCTION	JLR	10/17/23

ATC SITE NUMBER:
411178

ATC SITE NAME:
OLD LYME SOUTH CT

T-MOBILE SITE NAME:
AMTRAK OLD LYME VERIZON

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30575
LICENSED
PROFESSIONAL ENGINEER

Digitally Signed: 2023-10-18

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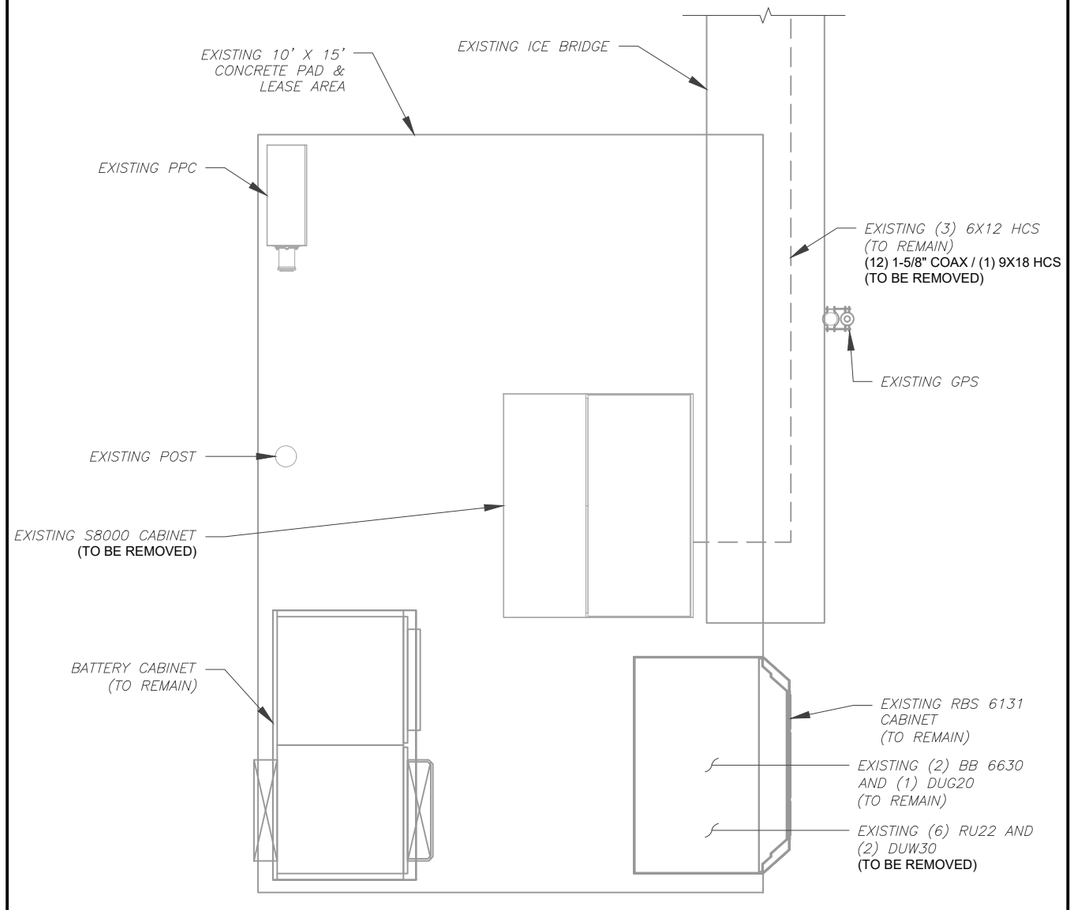
ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

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



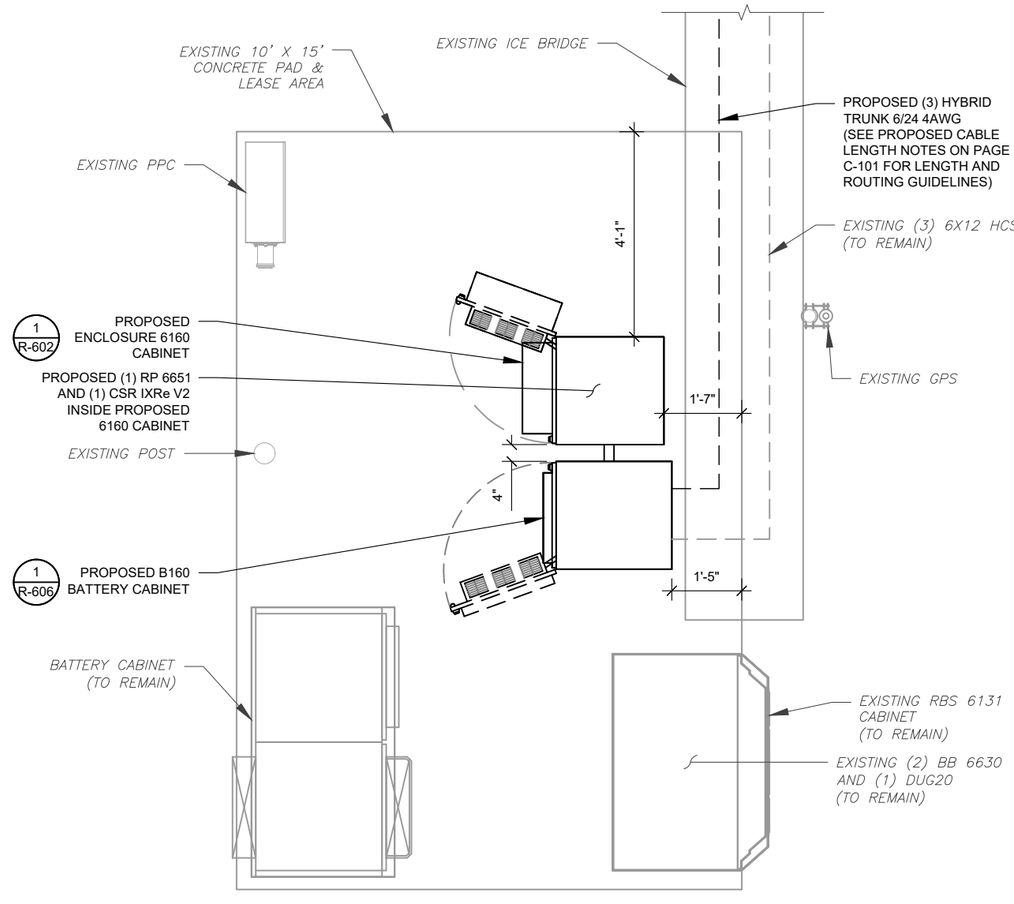
1 EXISTING GROUND EQUIPMENT LAYOUT

GRAPHIC SCALE

3 0 1.5 3

(IN FEET)
1 UNIT = 3 FEET

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS.



2 PROPOSED GROUND EQUIPMENT LAYOUT

GRAPHIC SCALE

3 0 1.5 3

(IN FEET)
1 UNIT = 3 FEET

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

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ATC SITE NAME:
OLD LYME SOUTH CT

T-MOBILE SITE NAME:
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SITE ADDRESS:
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OLD LYME, CT 06371

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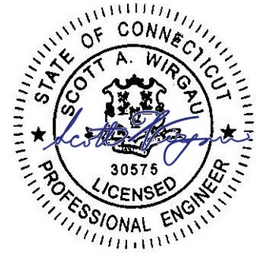

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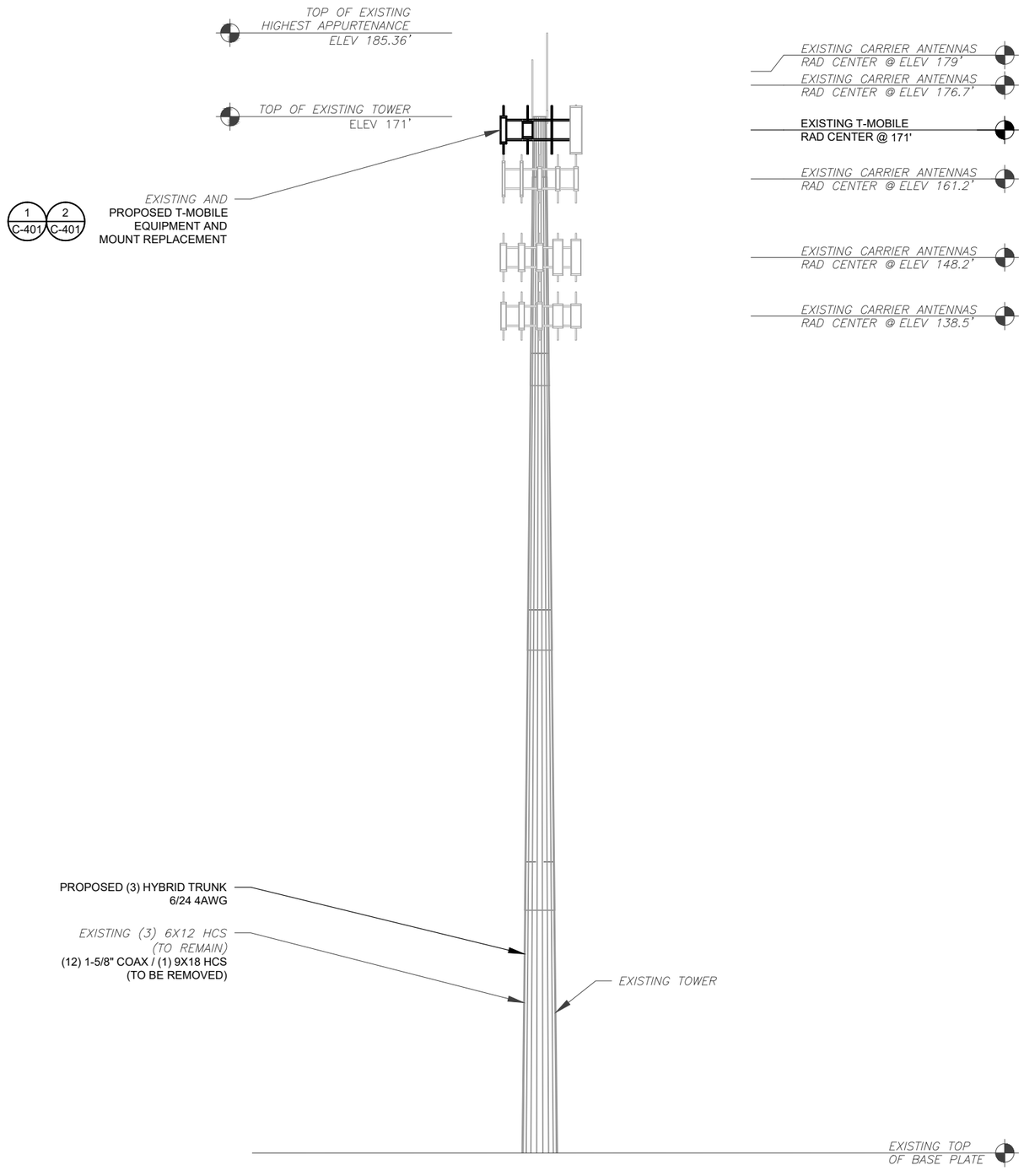
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

DETAILED EQUIPMENT PLAN

SHEET NUMBER:	REVISION:
C-102	0

PER MOUNT ANALYSIS COMPLETED BY A.T. ENGINEERING SERVICE, PLLC, DATED 09/14/2023, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
5. TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

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0	FOR CONSTRUCTION	JLR	10/17/23

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T-MOBILE SITE NAME:
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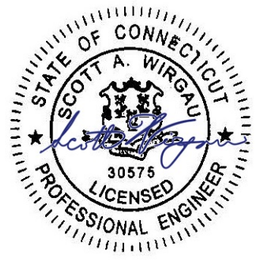
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:



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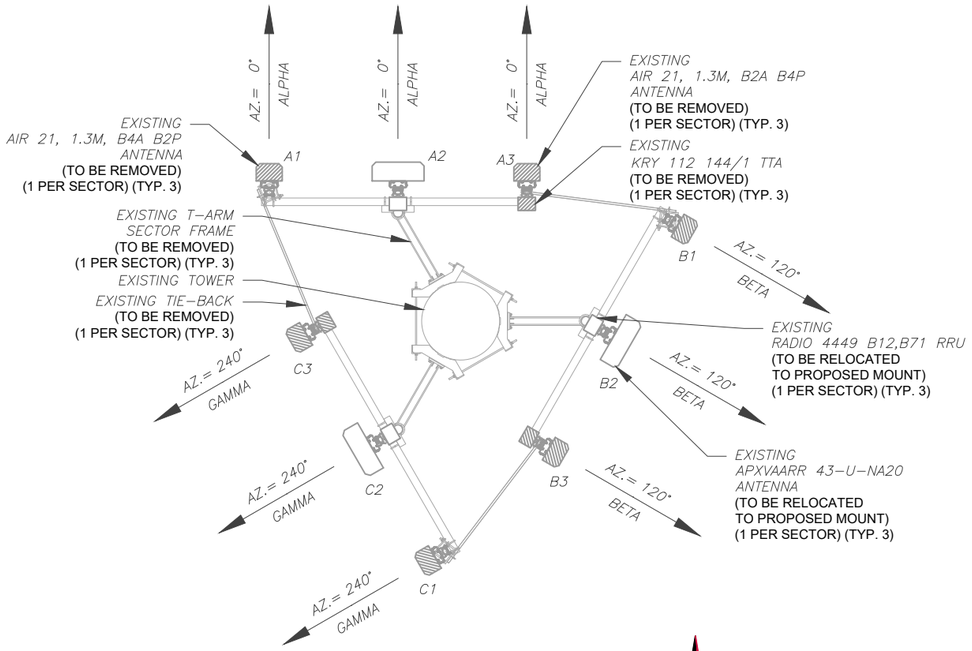
ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

TOWER ELEVATION

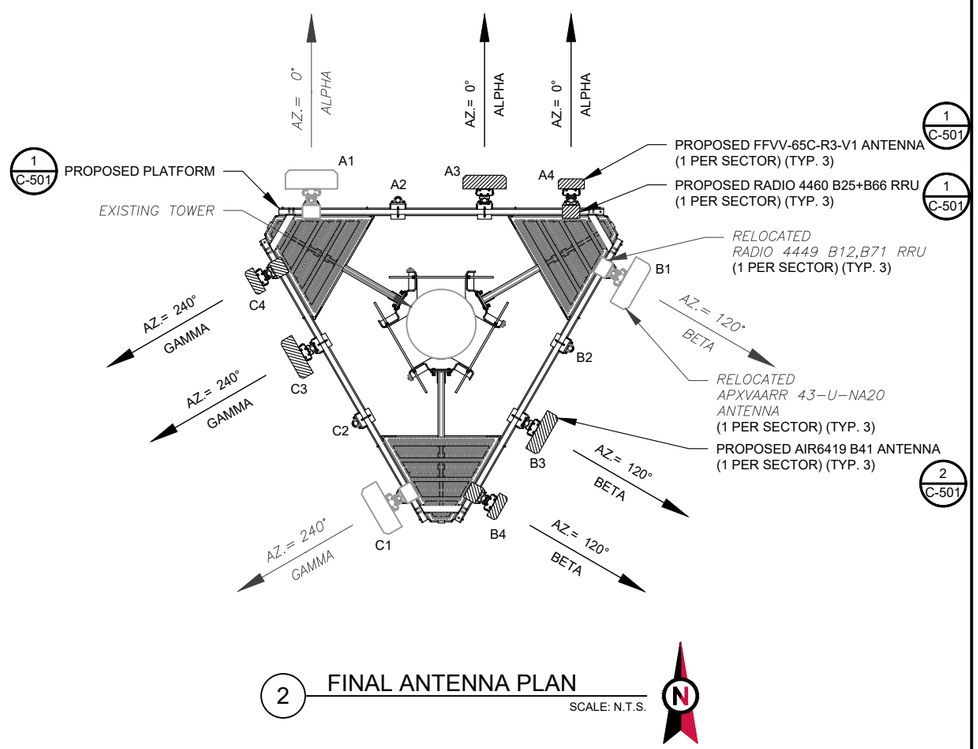
SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY A.T. ENGINEERING SERVICE, PLLC, DATED 09/14/2023, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	171'	0°	A1	AIR 21, 1.3M, B4A B2P	L2100	0°/2°	RMV	–	–
			A2	APXVAARR24 43-U-NA20	L700/L600/N600	0°/2°	REL	RADIO 4449 B12,B71	REL
			A3	AIR 21, 1.3M, B2A B4P	G1900/U1900	0°/2°	RMV	KRY 112 144/1	RMV
BETA	171'	120°	B1	AIR 21, 1.3M, B4A B2P	L2100	0°/2°	RMV	–	–
			B2	APXVAARR24 43-U-NA20	L700/L600/N600	0°/2°	REL	RADIO 4449 B12,B71	REL
			B3	AIR 21, 1.3M, B2A B4P	G1900/U1900	0°/2°	RMV	KRY 112 144/1	RMV
GAMMA	171'	240°	C1	AIR 21, 1.3M, B4A B2P	L2100	0°/2°	RMV	–	–
			C2	APXVAARR24 43-U-NA20	L700/L600/N600	0°/2°	REL	RADIO 4449 B12,B71	REL
			C3	AIR 21, 1.3M, B2A B4P	G1900/U1900	0°/2°	RMV	KRY 112 144/1	RMV

NOTES

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

STATUS ABBREVIATIONS

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

CABLE LENGTHS FOR JUMPERS

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

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	171'	0°	A1	APXVAARR24 43-U-NA20	L700/L600/N600	0°/0°	REL	RADIO 4449 B12,B71	REL
			A2	-	-	-	-	-	-
			A3	AIR 6419 B41	N2500/L2500	0°/0°	ADD	-	-
			A4	VV-65A-R1B	G1900/L2100/L1900/ N1900	0°/0°	ADD	RADIO 4460 B25+B66	ADD
BETA	171'	120°	B1	APXVAARR24 43-U-NA20	L700/L600/N600	0°/0°	REL	RADIO 4449 B12,B71	REL
			B2	-	-	-	-	-	-
			B3	AIR 6419 B41	N2500/L2500	0°/0°	ADD	-	-
			B4	VV-65A-R1B	G1900/L2100/L1900/ N1900	0°/0°	ADD	RADIO 4460 B25+B66	ADD
GAMMA	171'	240°	C1	APXVAARR24 43-U-NA20	L700/L600/N600	0°/0°	REL	RADIO 4449 B12,B71	REL
			C2	-	-	-	-	-	-
			C3	AIR 6419 B41	N2500/L2500	0°/0°	ADD	-	-
			C4	VV-65A-R1B	G1900/L2100/L1900/ N1900	0°/0°	ADD	RADIO 4460 B25+B66	ADD

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
–	–	(3) 6X12 HCS	RMN
–	–	(12) 1-5/8" COAX / (1) 9X18 HCS	RMV

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	-	(3) 6X12 HCS	RMN
-	-	(3) HYBRID TRUNK 6/24 4AWG	ADD

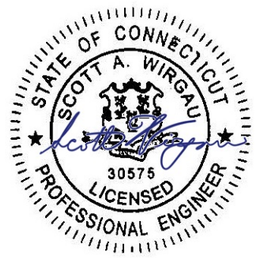
3 EQUIPMENT SCHEDULES

AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

ATC SITE NUMBER:
411178
ATC SITE NAME:
OLD LYME SOUTH CT
T-MOBILE SITE NAME:
AMTRAK OLD LYME VERIZON
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:



Digitally Signed: 2023-10-18

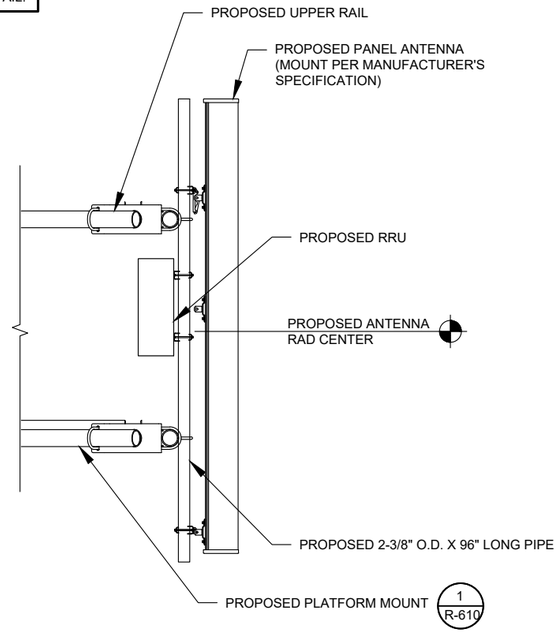
T··Mobile·

ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

ANTENNA INFORMATION & SCHEDULE

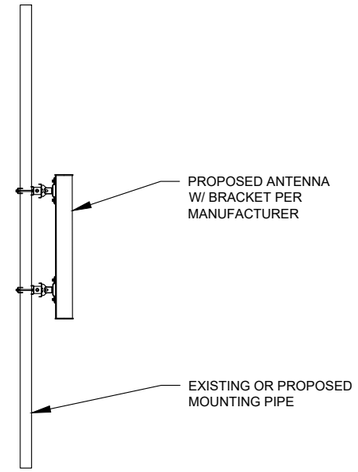
SHEET NUMBER:	REVISION:
C-401	0

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



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: N.T.S.



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.

AMERICAN TOWER®

A.T. ENGINEERING SERVICES LLC

3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

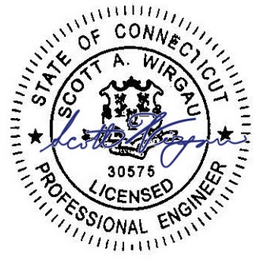
ATC SITE NUMBER:
411178

ATC SITE NAME:
OLD LYME SOUTH CT

T-MOBILE SITE NAME:
AMTRAK OLD LYME VERIZON

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:



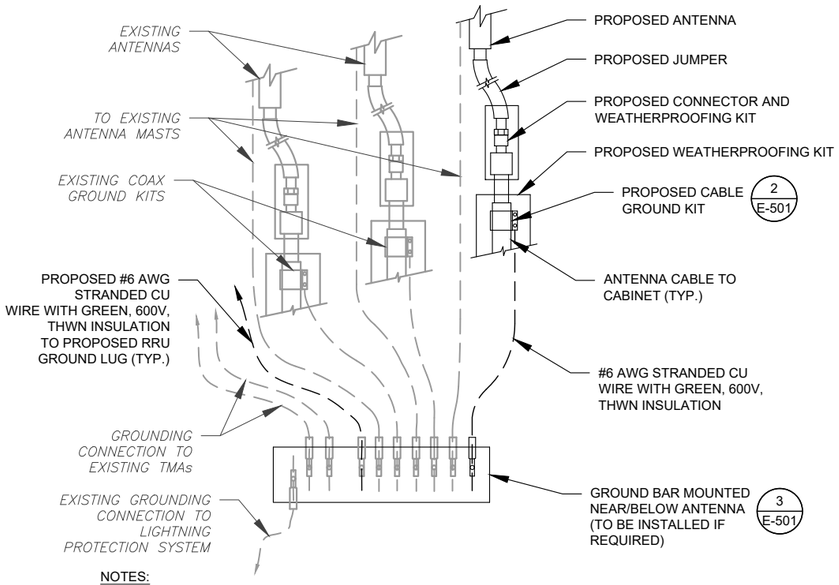
Digitally Signed: 2023-10-18

T-Mobile

ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

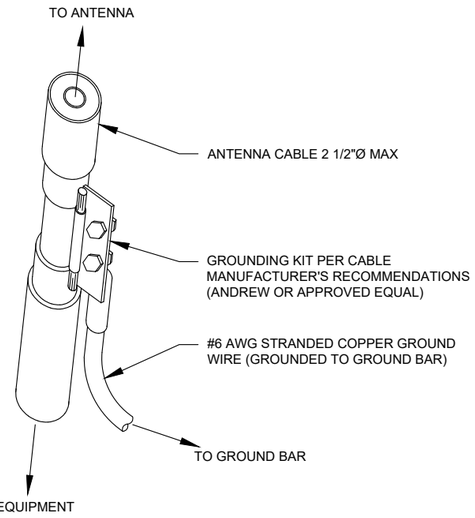


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

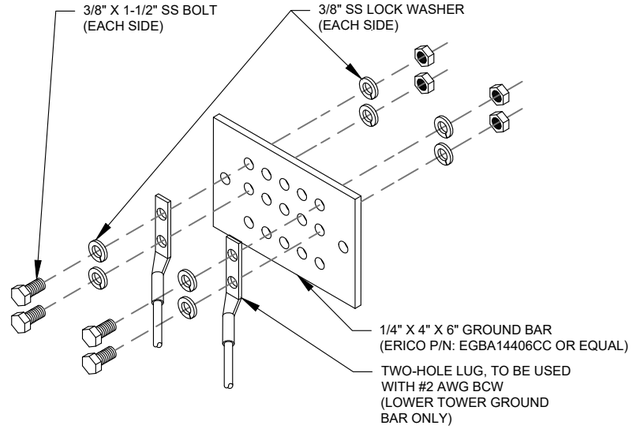


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.



GROUND BAR NOTES:

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

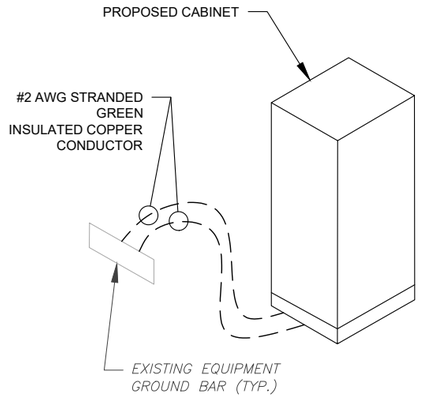
3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

STANDARD CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
RMC (METALLIC)	AC, DC COMM	ABOVE GROUND	ABOVE GROUND PPC TO SSC
PVC	AC POWER	UNDERGROUND	UNDERGROUND PPC TO SSC OR BACKHAUL TRANSPORT HUB TO SSC
LFMC	AC, DC, COMM	MAX 6' PER CONDUIT RUN, ABOVE GROUND ONLY	TIGHT LOCATIONS BETWEEN HUB AND CONDUIT BUT NOT TO BE USED WHERE IT CAN BE STEPPED ON
EMT	INDOOR AC, DC COMM	INDOOR NOT EXPOSED TO THE OUTDOOR ENVIRONMENT (MUST BE DRY)	CIRCUIT PANEL TO JUNCTION BOX
LFNC	GROUND WIRE	CONCEALING AND PROTECTING BTCW RISERS ONLY	GROUND RING TO MGB OR SSC

EXCEPTION CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
EMT (NOT PREFERRED)	OUTDOOR DC, COMM	OUTDOOR WHEN USED WITH WATERTIGHT HUBS ONLY	BETWEEN EQUIPMENT AND BATTERY CABINET OR EQUIPMENT TO EQUIPMENT CABINETS FOR INTER CABINET CONNECTION
RMC NONMETALLIC (ALUMINUM)	OUTDOOR/INDOOR PER NEC GUIDLINES	ABOVE GROUND	MAT BE USED AS A LOWER COST ALTERNATIVE TO METALLIC RMC, MUST MEET OR EXCEED FEDERAL SPEC: WW-C-540C, UL-6A, ANSI C80.5, NEC 344.10 (A) ALLOWS THE USE OF EITHER ALUMINUM OR GALVANIZED FITTINGS

4 CONDUIT USE TABLES



5 CABINET GROUNDING DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

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

VOLTS	OCPD SIZE	WIRE SIZE	GROUND	CONDUIT
120/240V OR 120/208V	80A/2P	3-#3 AWG	#8 AWG	1-1/4"
	100/2P	3-#2 AWG	#8 AWG	1-1/4"
	125A/2P	3-#3/0 AWG	#6 AWG	2"
	150A/2P	3-#3/0 AWG	#6 AWG	2"
	200A/2P	3-#3/0 AWG	#6 AWG	2"
240V OR 208V	80A/2P	2-#3 AWG	#8 AWG	1-1/4"
	100/2P	2-#2 AWG	#8 AWG	1-1/4"
	125A/2P	2-#3/0 AWG	#6 AWG	2"
	150A/2P	2-#3/0 AWG	#6 AWG	2"
	200A/2P	2-#3/0 AWG	#6 AWG	2"

6 ELECTRICAL NOTES

AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
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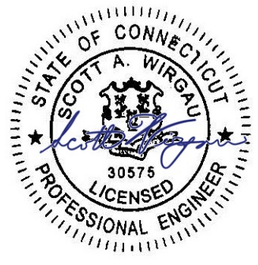
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JLR	10/17/23

ATC SITE NUMBER:
411178
ATC SITE NAME:
OLD LYME SOUTH CT
T-MOBILE SITE NAME:
AMTRAK OLD LYME VERIZON
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06371

SEAL:



Digitally Signed: 2023-10-18

T-Mobile

ATC PROJ. #:	14529806_G0
CUST. ID:	AMTRAK OLD LYME VERIZON
CUST. #:	CTNL802A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Proposed RAN Equipment			
Template: 67D5D998E 6160			
Enclosure	**1**	**2**	**3**
Enclosure Type	Enclosure 6160 AC V1	RBS 6131	B160
Baseband	RP 6651 N2500 L2500	BB 6630 N600 L600 L700 BB 6630 N1900 L1900 L2100 DUG20 G1900	
Transport System	CSR IXRe V2 (Gen2)		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 70m (x3)	Ericsson 6x12 HCS *Select Length & AWG* (x3)	

RAN Scope of Work:

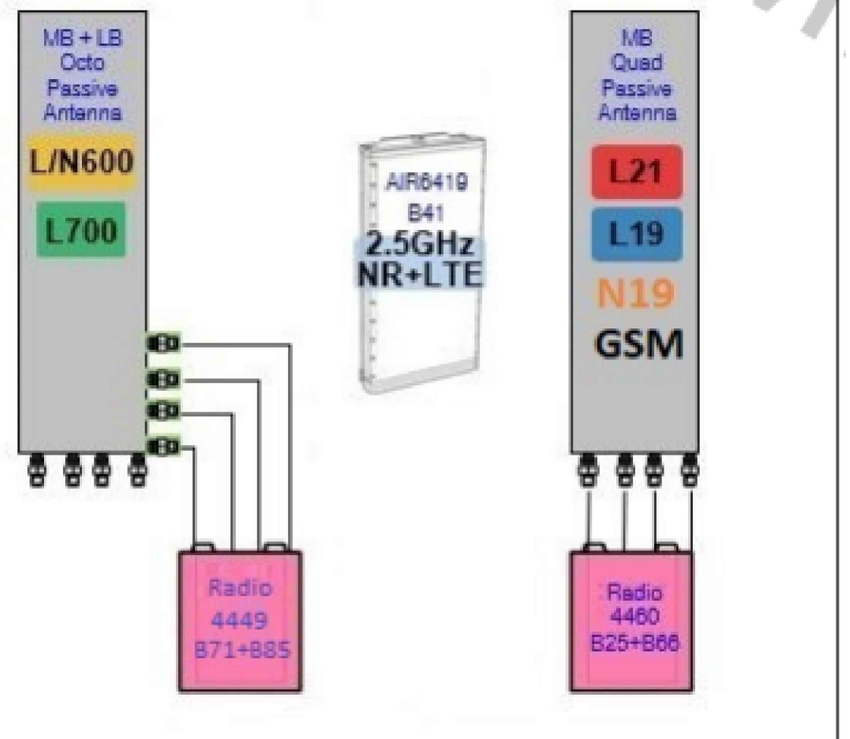
Remove all unused equipment's from RAN section.

Add (1) 6160 and (1) B160 cabinets.
Add (1) RP6651 for NR2500/L2500
Add (1) IXRe router to 6160.
Add (3) Hybrid Trunk 6/24 4AWG 70m same TBD

Scoping note:
remove the dead nortel cabinet

1 CABINET CONFIGURATION

67D5D998E_OP+AIR+QP with GSM-.jpg



Notes:

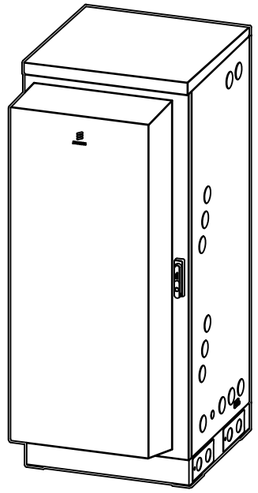
2 ANTENNA CONFIGURATION

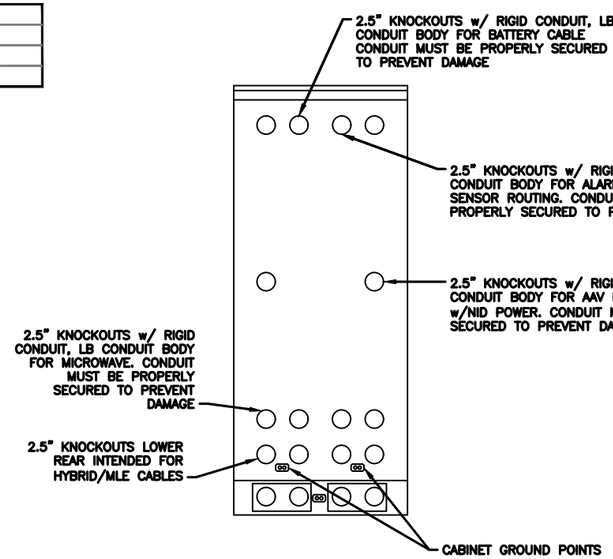
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

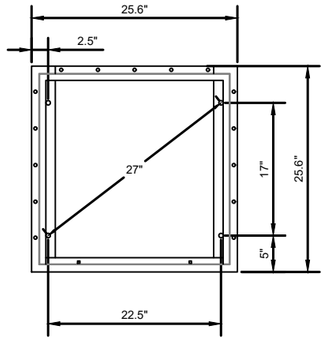
MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS





REAR VIEW

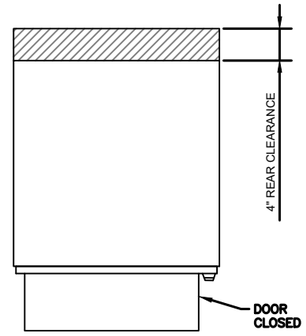
NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

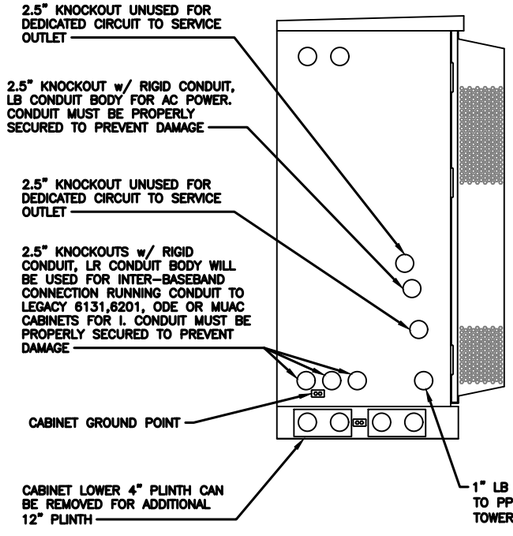


BOLT DOWN PATTERN

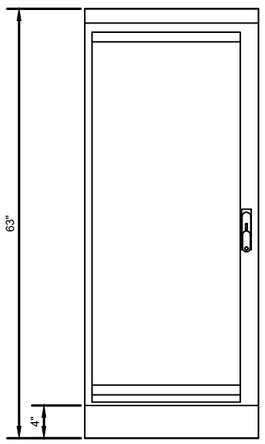
GROUNDING NOTE:

"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."

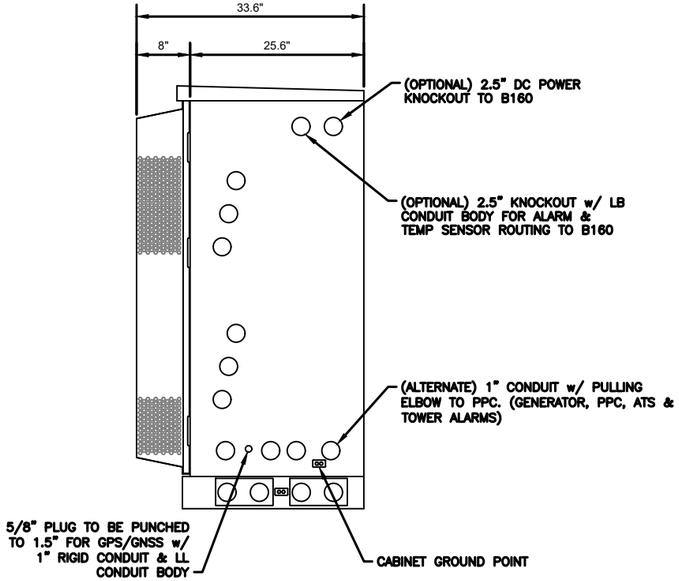




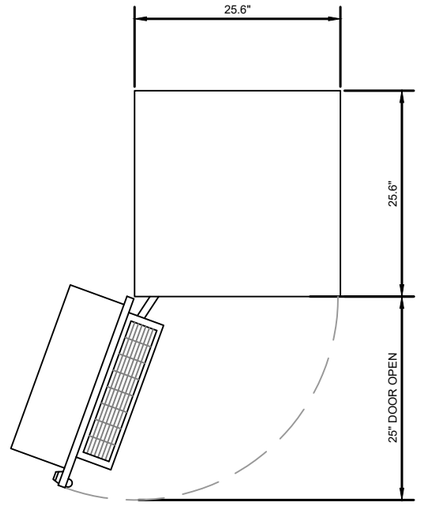
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

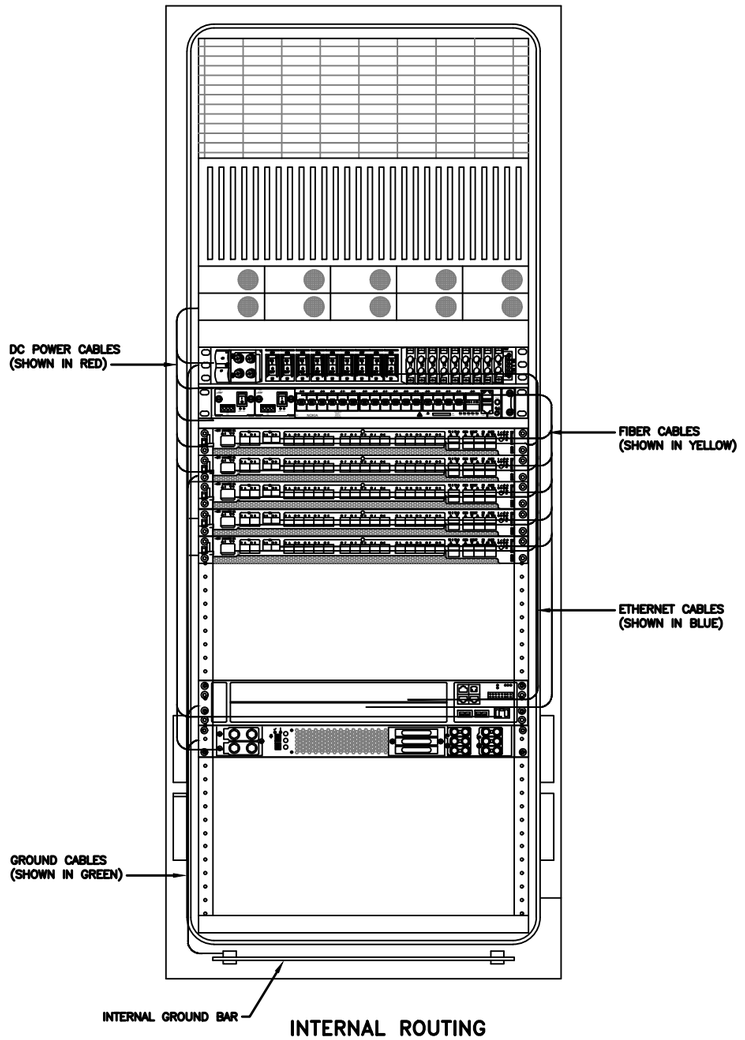
1 ERICSSON 6160 SITE SUPPORT CABINET SPECIFICATIONS

SCALE: N.T.S.

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

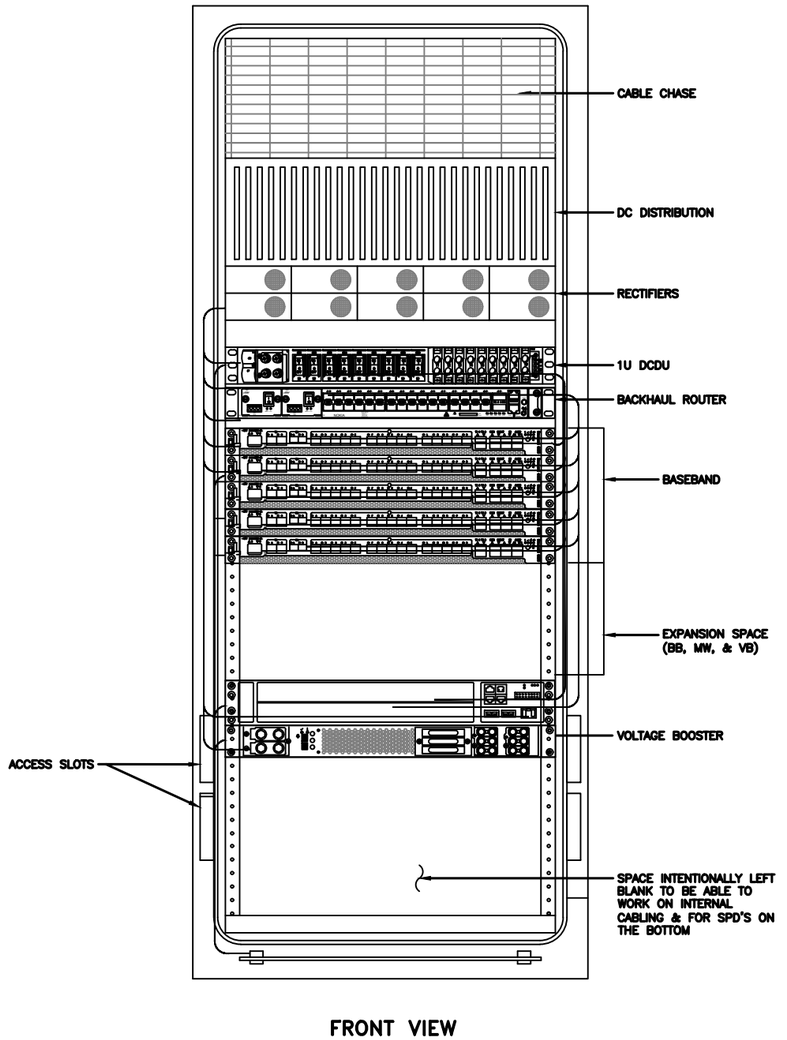
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	0



INTERNAL ROUTING
(DOOR OPEN)

RACK ASSIGNMENTS	
RU SLOTS	DESCRIPTION
1	DC DISTRIBUTION
2	
3	
4	
5	RECTIFIER SHELF
6	
7	FIBER BOX
8	DCDU
9	BACKHAUL ROUTER
10	
11	1ST BASEBAND
12	2ND BASEBAND
13	3RD BASEBAND
14	4TH BASEBAND
15	5TH BASEBAND
16	EXPANSION
17	
18	
19	
20	EXPANSION / LEGACY BASEBAND / VOLTAGE BOOSTER
21	
22	VOLTAGE BOOSTER
23	OPEN SPACE FOR SPD ACCESS
24	
25	



FRONT VIEW
(DOOR OPEN)

1 ERICSSON 6160 CABINET DETAILS

SCALE: N.T.S.

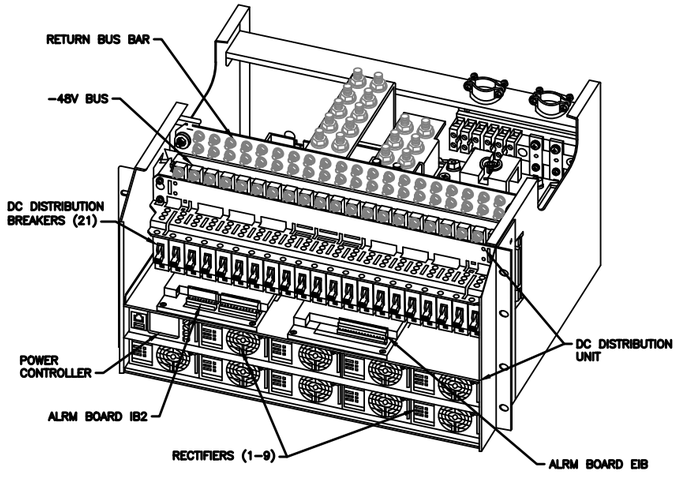
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

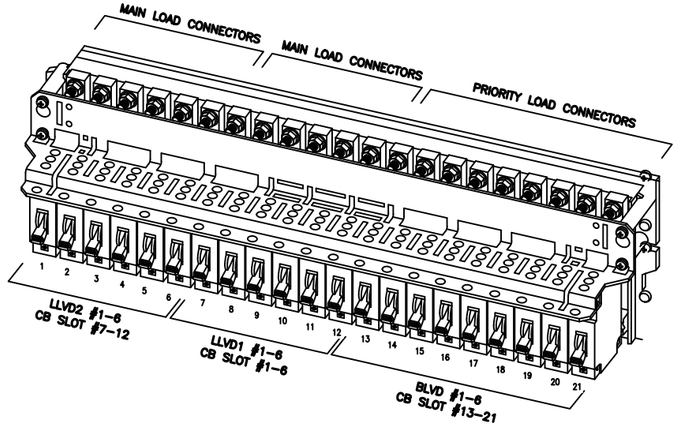
SHEET NUMBER:	REVISION:
R-603	0

NOTE:
THIS IS FOR REFERENCE ONLY, CHECK FOR SPECIFIC DETAIL IN T–MOBILE CABINET SPECIFIC INSTALLATION GUIDES

Breaker Allocation for E6160					
CB SLOT	Ckt #		w/ DCDU Prior to availability of the 4460 and 4480	w/ DCDU Later Design Post-4460 and Post-4480	w/ DCDU 4 and 6 Sector designs
1	LVD1 47.0V	1	Router PS-2*/Future		Radio 4460 B25/66 ζ-1
2		2	Future		Radio 4460 B25/66 ζ-2
3		3	PSU 4813 feeding B25/66 α, β and γ (AIR 1641s)		PSU 4813 feeding B41-δ & B71/12-δ (Air 6449s and Radio 4480s)
4		4			
5		5	PSU 4813 feeding B41 α, β and γ (Air 6449s)		
6		6			
7	LVD2 45.1V	1	PSU 4813 feeding B71/12 α, β and γ (Radio 4449s)	PSU 4813 feeding B71/12 α, β and γ (Radio 4480s)	
8		2			
9		3	Future		Radio 4460 B25/66 δ-1
10		4	Future		Radio 4460 B25/66 δ-2
11		5	Future		Radio 4460 B25/66 ε-1
12		6	Future		Radio 4460 B25/66 ε-2
13	BLVD 43.2V	1	Router PS-1		
14		2	Radio 4415 B25/66 α	Radio 4460 B25/66 α-1	
15		3	Radio 4415 B25/66 β	Radio 4460 B25/66 α-2	
16		4	Radio 4415 B25/66 γ	Radio 4460 B25/66 β-1	
17		5	PSU 4813 feeding B2/25 α, β and γ (Radio 4424s)	Radio 4460 B25/66 β-2	
18		6		Radio 4460 B25/66 γ-1	
19		7	Future	Radio 4460 B25/66 γ-2	
20		8	DCDU		
21		9	AAV		
Sector Identification α = Alpha, β = Beta, γ = Gamma, δ = Delta, ε = Epsilon, ζ = Zeta					



POWER SUBRACK



DC DISTRIBUTION

1 ERICSSON 6160 ELECTRICAL DETAILS

SCALE: N.T.S.

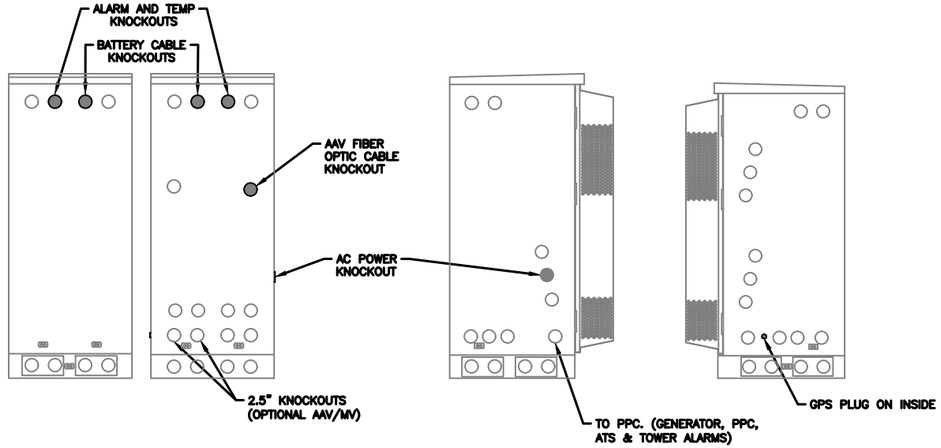
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

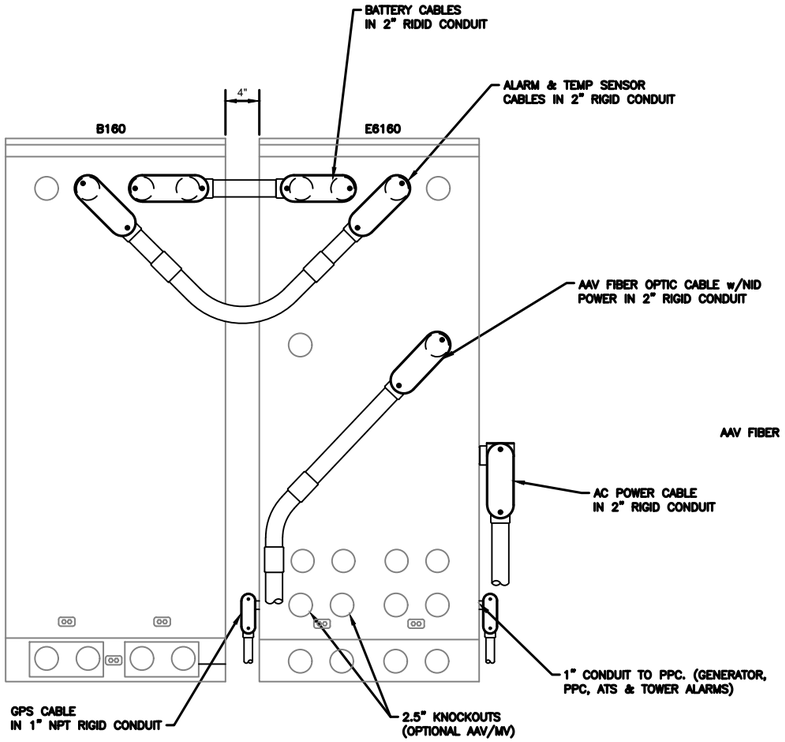
SHEET NUMBER:	REVISION:
R-604	0

NOTE:

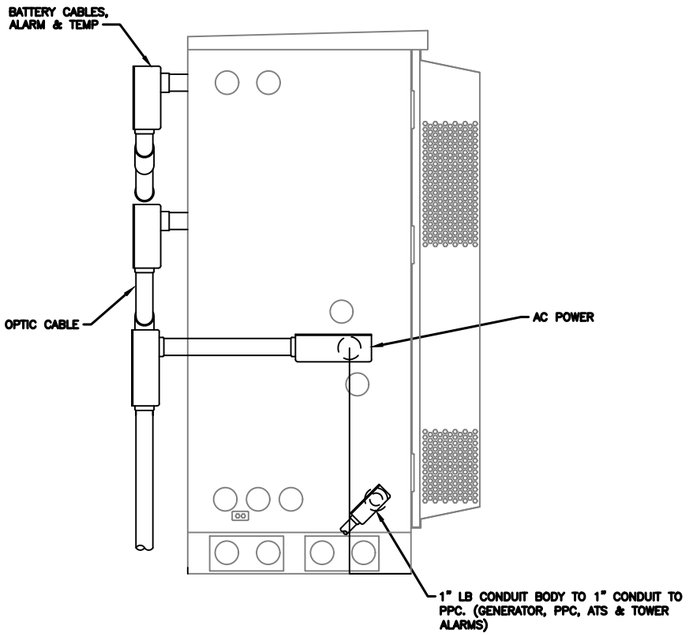
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT BENDS AND RUNS SUBJECT TO UL AND NEC LIMITATIONS. 6' MAX PER CONDUIT RUN.
3. POWER CONDUIT BODY ATTACHED WITH SHORT NIPPLE AND SEALING WASHER INSIDE & OUT. (FOR DOOR HOOD CLEARANCE)
4. PULLING ELBOWS MAY BE USED IN LIEU OF A CONDUIT BODIES WHEN CLEARANCE IS LIMITED.
5. ALL EXTERNAL ALARM CONDUITS ARE TOO TERMINATE AT THE PPC WITH A SINGLE 1" ALARM CONDUIT TO THE 6160.
6. (DO NOT USE CHASE NIPPLES) CONDUIT SHOULD HAVE SEALING WASHERS INSIDE AND OUT w/ LOCK NUT AND CAP.



CONDUIT LOCATIONS



REAR VIEW



SIDE VIEW

1 ERICSSON 6160/B160 CONDUIT ROUTING DETAILS

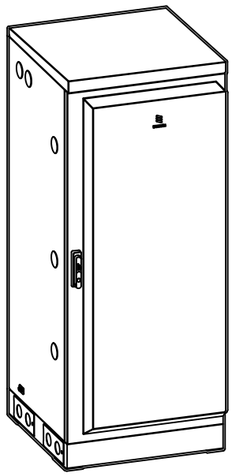
SCALE: N.T.S.

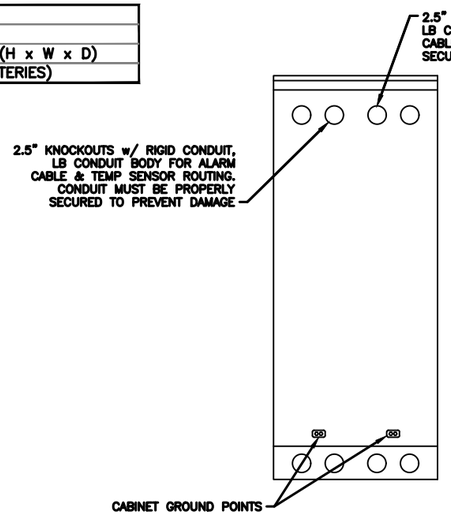
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

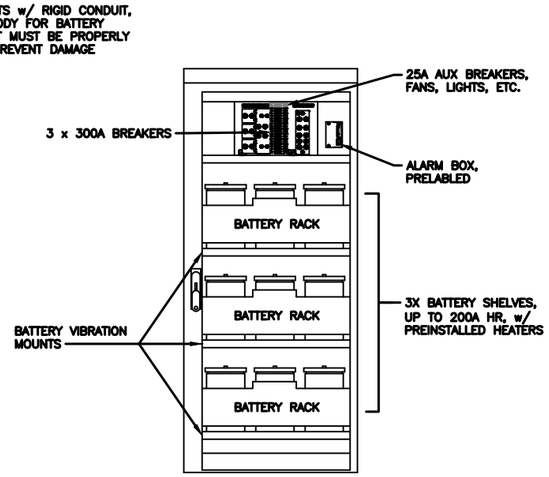
SHEET NUMBER:	REVISION:
R-605	0

MANUFACTURER:	ERICSSON
MODEL:	B160 BATTERY CABINET
DIMENSIONS:	63" x 25.6" x 29.5" (H x W x D)
WEIGHT:	295 LBS (WITHOUT BATTERIES)



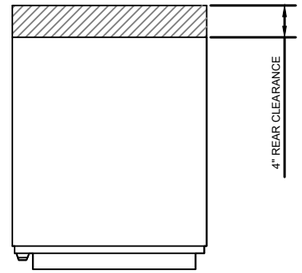


REAR VIEW



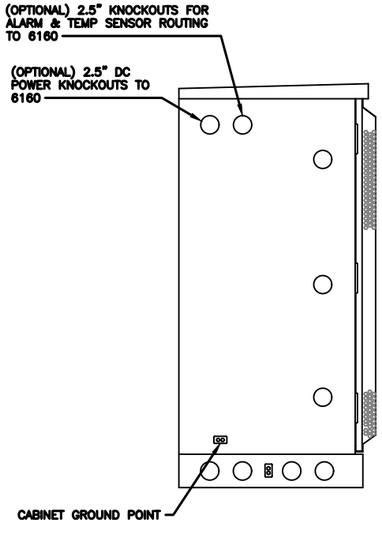
FRONT VIEW
(DOOR OPEN)

NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

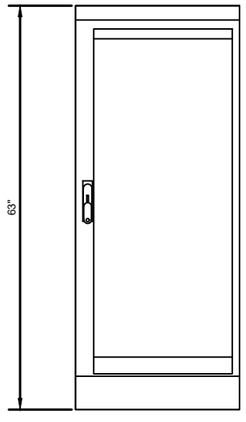


GROUNDING NOTE:

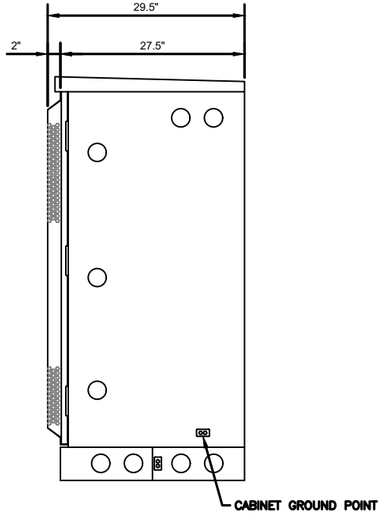
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."



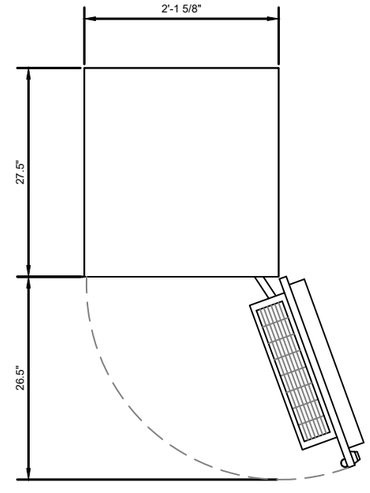
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

1 ERICSSON B160 BATTERY CABINET SPECIFICATIONS

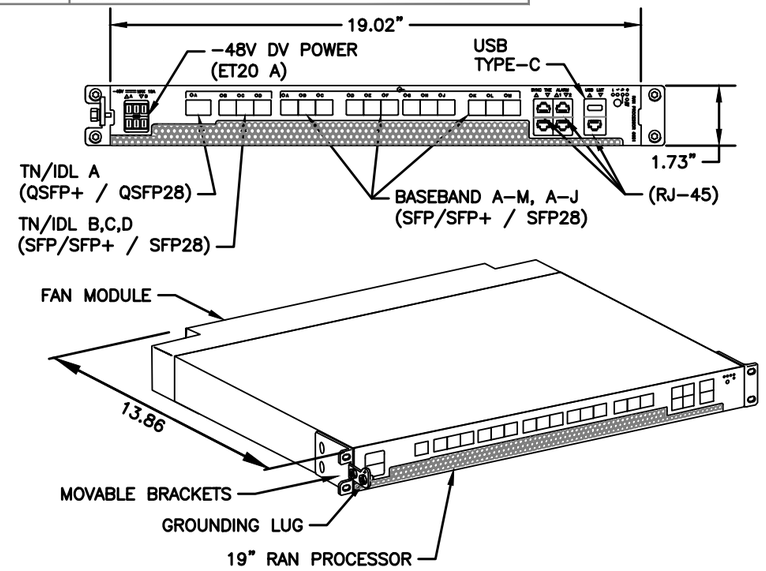
SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-606	0

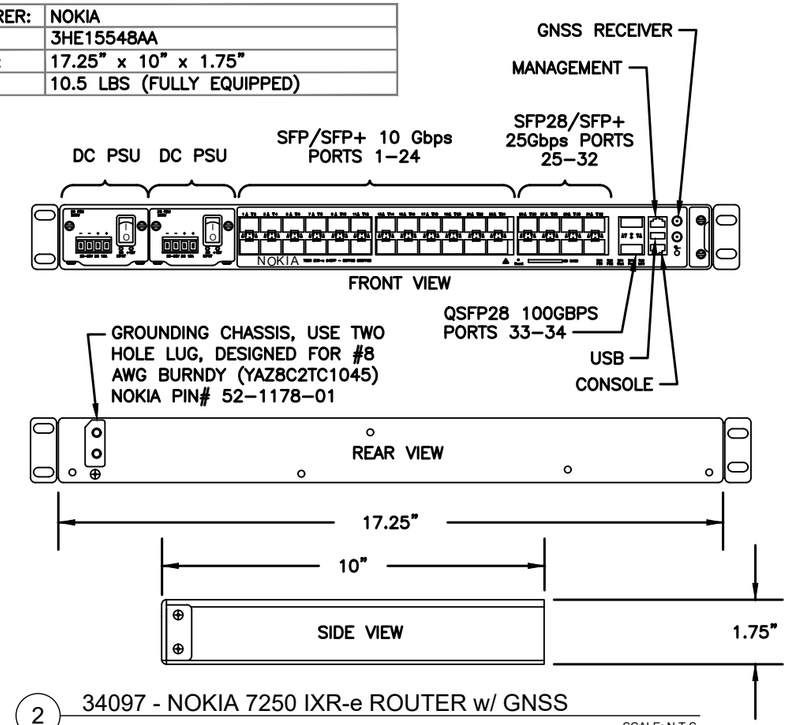
MANUFACTURER:	ERICSSON
MODEL:	6651 RAN PROCESSOR (KDU1370093/11)
DIMENSIONS:	1.73" X 19.02" X 13.86" (H" X W" X D")
WEIGHT:	16.98 LBS



1 34553 - ERICSSON 6651 RAN PROCESSOR

SCALE: N.T.S.

MANUFACTURER:	NOKIA
MODEL:	3HE15548AA
DIMENSIONS:	17.25" x 10" x 1.75"
WEIGHT:	10.5 LBS (FULLY EQUIPPED)



2 34097 - NOKIA 7250 IXR-e ROUTER w/ GNSS

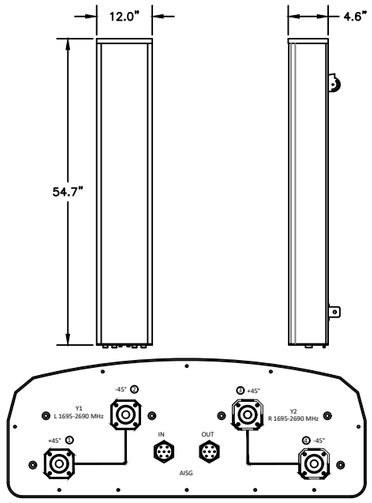
SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-607	0

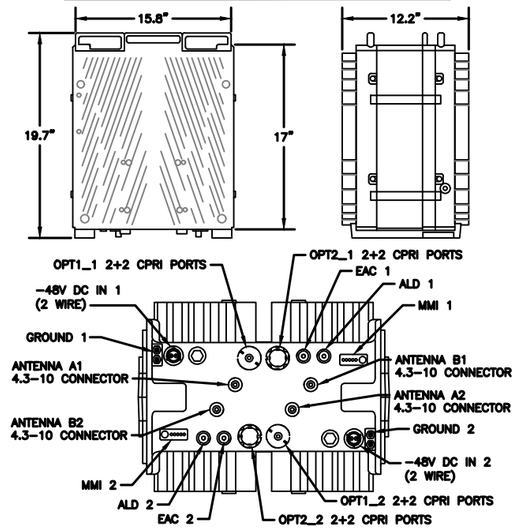
MANUFACTURER:	COMMSCOPE
MODEL:	VV-65A-R1
DIMENSIONS:	54.7" x 12.1" x 4.6" (H x W x D)
WEIGHT:	24.7 LB
INTERFACE:	4-PORT 4.3-10 FEMALE
MOUNTING KIT:	600899A-2 (INCLUDED) WEIGHT: 8.6 LB



1 34401 - COMMSCOPE VV-65A-R1

SCALE: N.T.S.

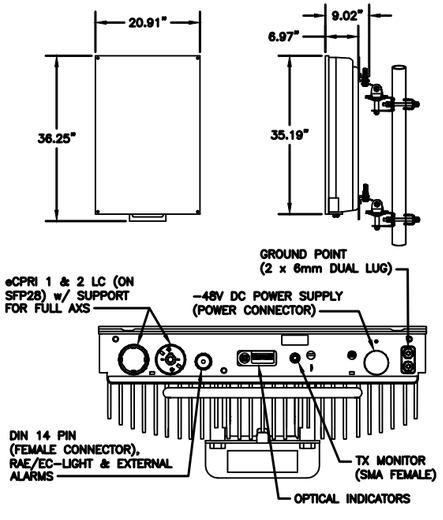
MANUFACTURER:	ERICSSON
MODEL:	4460 RADIO B2/25 B66 (KRC 161 912/3)
DIMENSIONS:	19.7" x 15.8" x 12.2" (H" x W" x D")
WEIGHT:	109 LBS
BRACKET WEIGHT:	4.8 LBS (ERS HEAVY #SXK1255993/1)

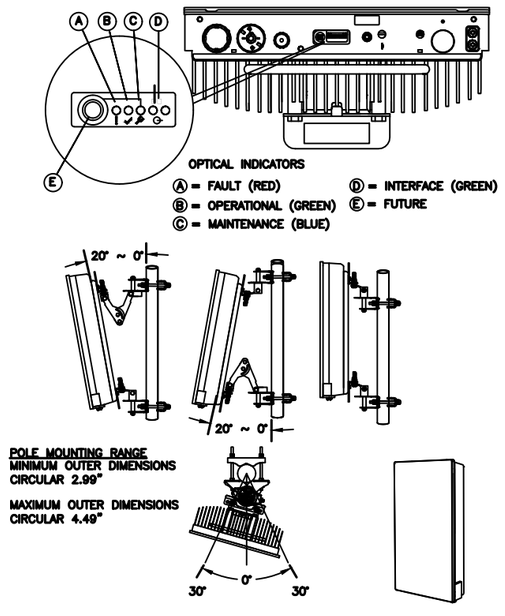


2 34373 - ERICSSON 4460 RADIO B2/25 B66

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	AIR 6419 B41 (2.5GHz M-MIMO)
DIMENSIONS:	36.25" x 20.91" x 9.02" NOT TO EXCEED (H x W x D)
WEIGHT:	83 LBS (EXCLUDING MOUNTING KIT)
MOUNT WEIGHT:	13.5 LBS (SXK109 2016/1)





3 34552 - ERICSSON AIR 6419 BAND 41

SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-608	0

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Asset Name	:	Old Lyme South CT
ATC Asset Number	:	411178
Engineering Number	:	14529806_C8_02
Mount Elevation	:	171 ft
Proposed Carrier	:	T-Mobile
Carrier Site Name	:	Amtrak Old Lyme Verizon
Carrier Site Number	:	CTNL802A
Site Location	:	125 Mile Creek Road OLD LYME, CT 06371-1718 41.3055, -72.2973
County	:	New London
Date	:	September 14, 2023
Max Usage	:	42%
Analysis Result	:	Pass

Prepared By:
Max Carter
Structural Engineer II

Max Carter

STATE OF CONNECTICUT · ESHA KAUSHAL MODI · 32593 · LICENSED PROFESSIONAL ENGINEER

Esha Modi

Digitally signed by Esha Modi
Date: 2023.09.14 14:31:55 -04'00'

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 171 ft.

Supporting Documents

Specifications Sheet:	Perfect Vision PV-LPPGS12M-HR2-AP1, dated December 29, 2022
Radio Frequency Data Sheet:	RFDS ID #CTNL802A, dated August 3, 2023
Reference Photos:	Site photos from 2021

Analysis

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

Basic Wind Speed:	126 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.199, S1 = 0.053
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis based on new installation of Perfect Vision PV-LPPGS12M-HR2-AP1 Platform w/ Handrails(s) (M1300R(1250)-4[0]).

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

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

1 MOUNT ANALYSIS

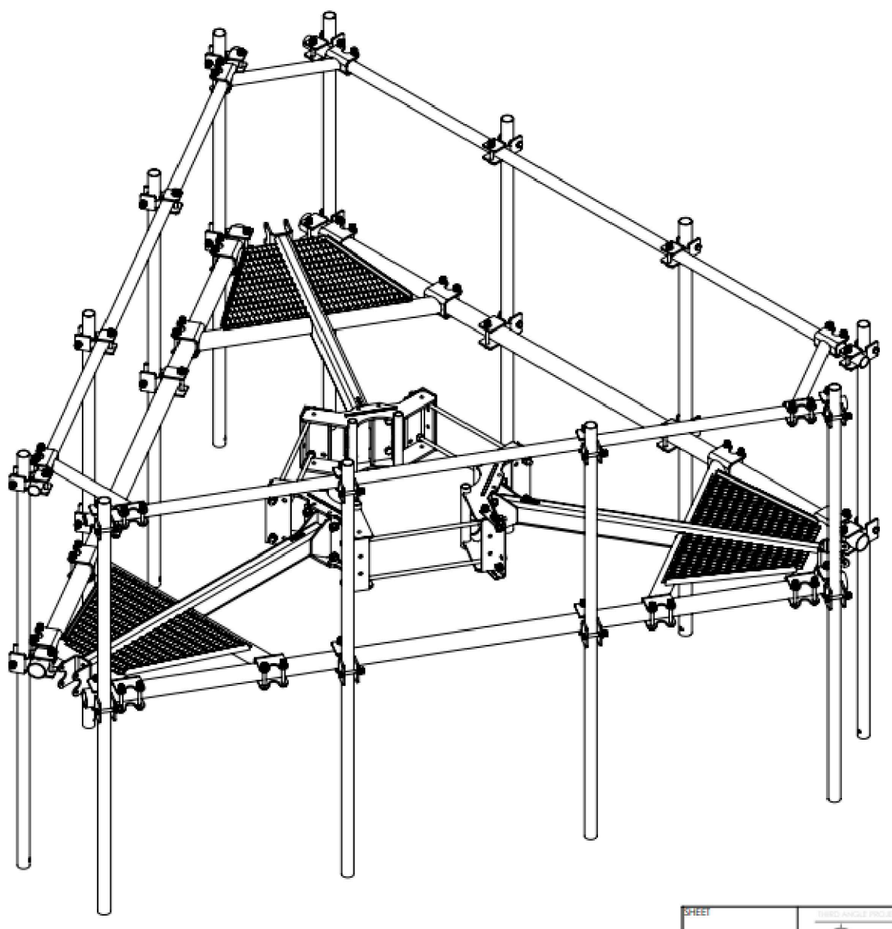
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY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

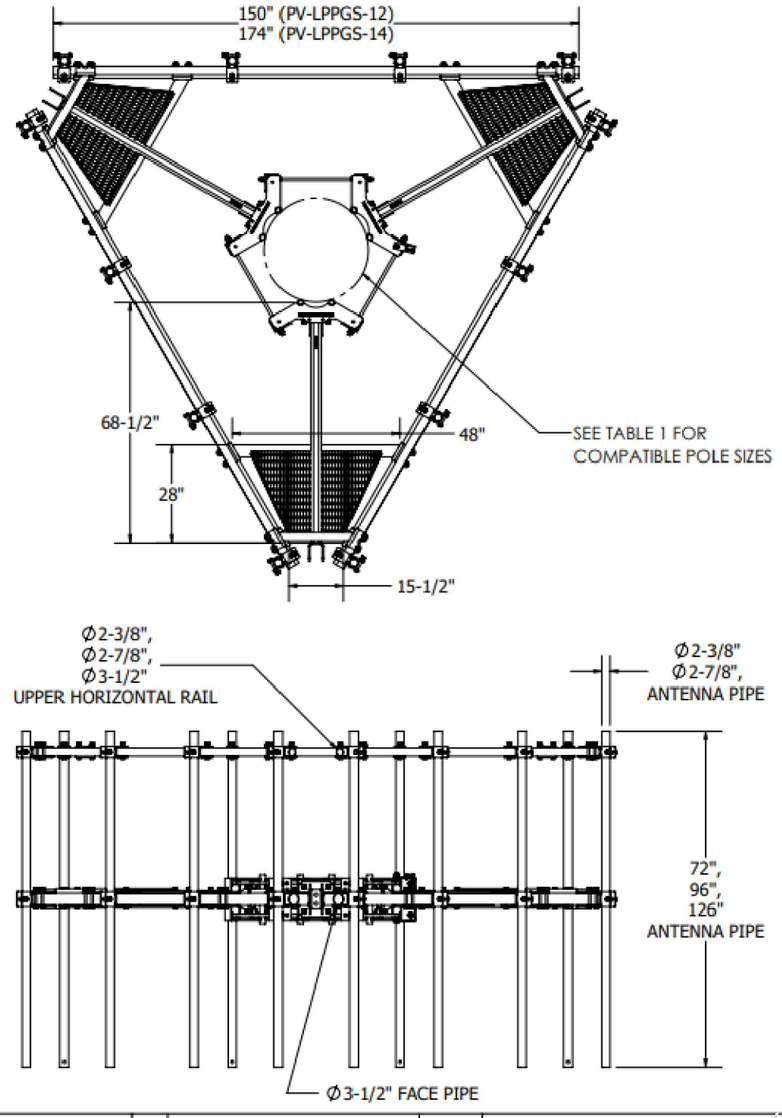
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-609	0

PV-LPPGS
MONOPOLE GUARDIAN MOUNT

SEE SHEET 2 - TABLE 1 FOR FULL CONFIGURATION DETAILS





SHEET: 1 OF 17	CATEGORY: 02_Monopole	11	BOM TABLES UPDATED - BASE KITS	12/29/22	PERFECTVISION
6/23/2023 SCALE: 1:36	SERIES: 01_Triangular	10	ADDED SEPARATE EPA & WEIGHTS TABLE	2/10/22	
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"	TYPE: PV-LPPGS_GUARDIAN	9	ACC1 REPLACE ACC2, PV-CMX-CG-BO REPLACE 115-242	3/14/21	MONOPOLE GUARDIAN MOUNT
	BY: DJN	8	KKGS UPDATE	2/2/21	DOCUMENT NUMBER: LPPGS-ENG-01-R11 REV: 11
	CHECKED: SJS	7	ADDED ALL THREAD NOTE TO COLLARS REPLACED PKBK WITH PV-KKRS	11/11/20	
	STATUS: APPROVED	REV	DESCRIPTION	DATE	

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

SUPPLEMENTAL

SHEET NUMBER: R-610

REVISION: 0

C:\...PV\Steel\Catalog\SW Working Files\Engineering Details\

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Asset Name	:	Old Lyme South CT
ATC Asset Number	:	411178
Engineering Number	:	14529806_C8_02
Mount Elevation	:	171 ft
Proposed Carrier	:	T-Mobile
Carrier Site Name	:	Amtrak Old Lyme Verizon
Carrier Site Number	:	CTNL802A
Site Location	:	125 Mile Creek Road OLD LYME, CT 06371-1718 41.3055, -72.2973
County	:	New London
Date	:	September 14, 2023
Max Usage	:	42%
Analysis Result	:	Pass

Prepared By:
Max Carter
Structural Engineer II

Max Carter

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Esha Modi

Digitally signed by Esha Modi
Date: 2023.09.14 14:31:55 -04'00'

COA: PEC.0001553

Table of Contents

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Radio Frequency Data Sheet:	RFDS ID #CTNL802A, dated August 3, 2023
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This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	126 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.199, S1 = 0.053
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis based on new installation of Perfect Vision PV-LPPGS12M-HR2-AP1 Platform w/ Handrails(s) (M1300R(1250)-4[0]).

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

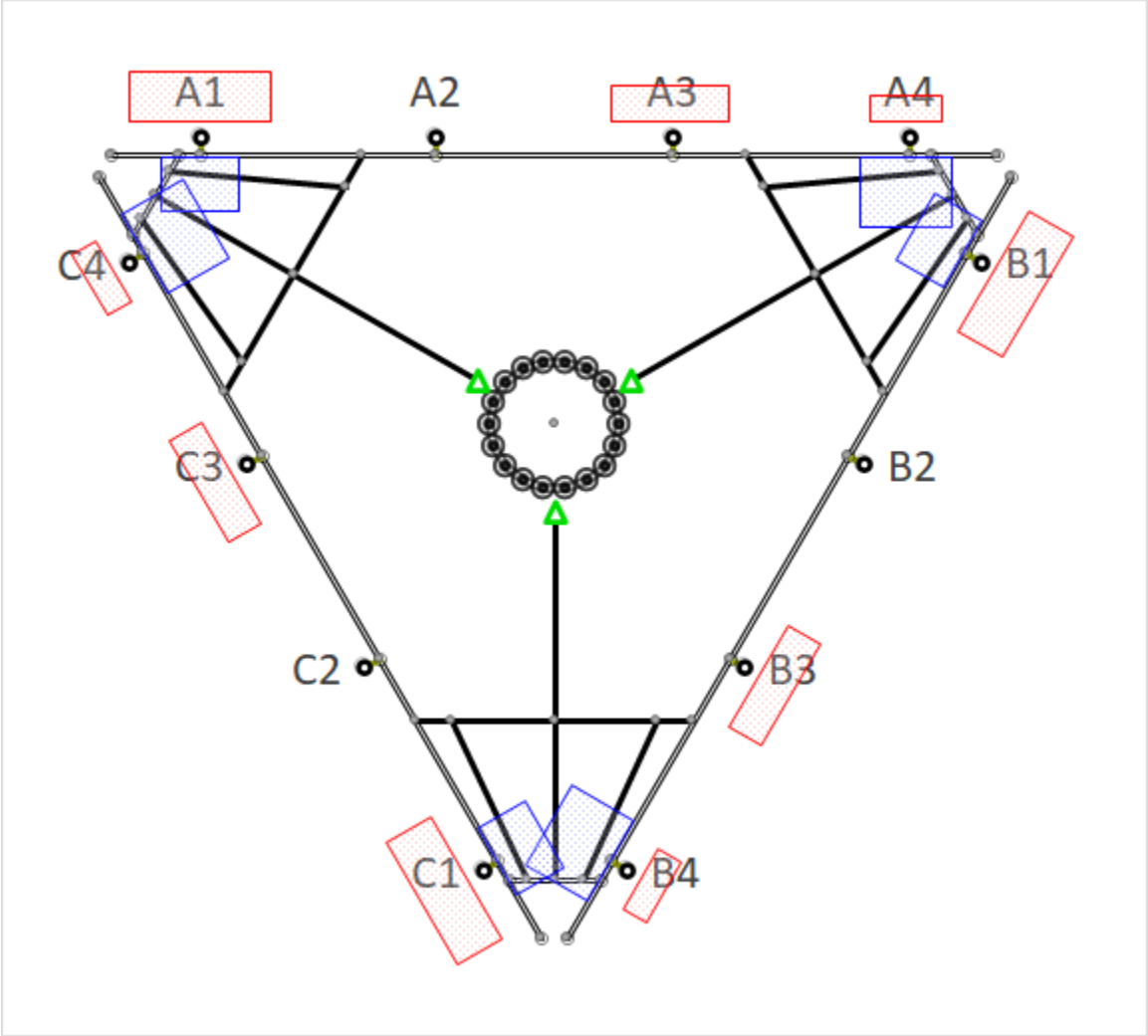
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
171.0	171.0	3	RFS APXVAARR24_43-U-NA20
		3	Ericsson AIR 6419 B41
		3	Commscope VV-65A-R1B
		3	Ericsson Radio 4460 B25+B66
		3	Ericsson Radio 4449 B12,B71

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	42%	Pass
Mount Pipes	42%	Pass

Mount Layout



Equipment Position Table

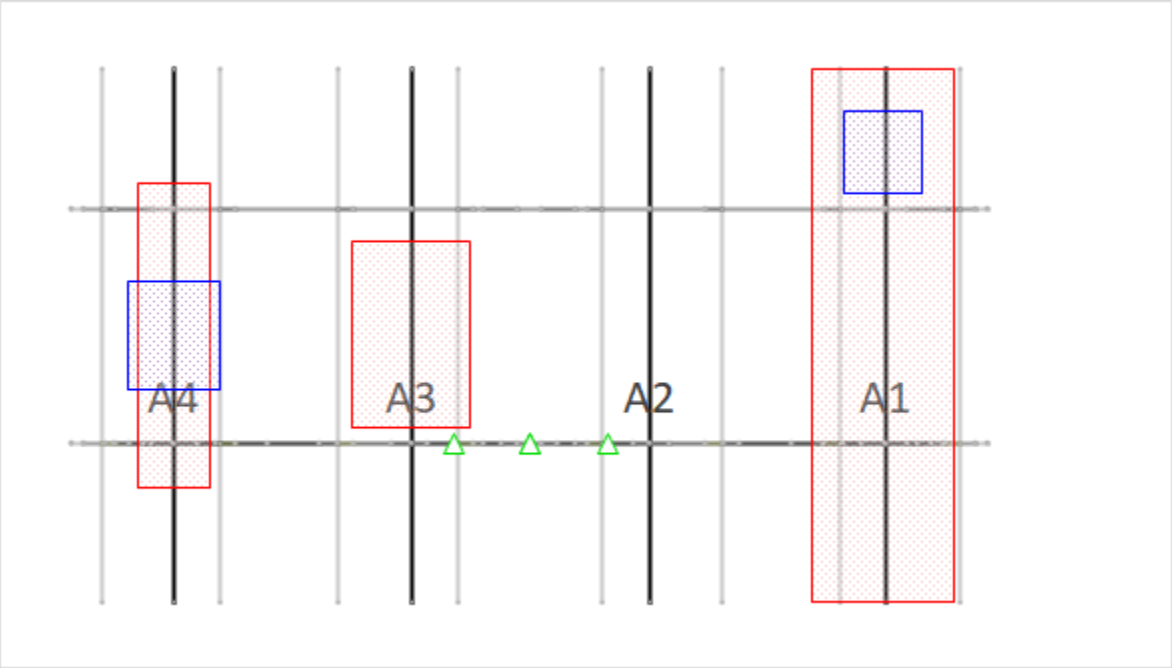
MP	RAD Center (ft)	Qty.	Antenna Model
A1	171.0	1	RFS APXVAARR24_43-U-NA20
	171.0	1	Ericsson Radio 4449 B12,B71
A2	-	-	Empty
A3	171.0	1	Ericsson AIR 6419 B41
A4	171.0	1	Commscope VV-65A-R1B
	171.0	1	Ericsson Radio 4460 B25+B66
B1	171.0	1	RFS APXVAARR24_43-U-NA20
	171.0	1	Ericsson Radio 4449 B12,B71
B2	-	-	Empty
B3	171.0	1	Ericsson AIR 6419 B41

Equipment Position Table Cont.

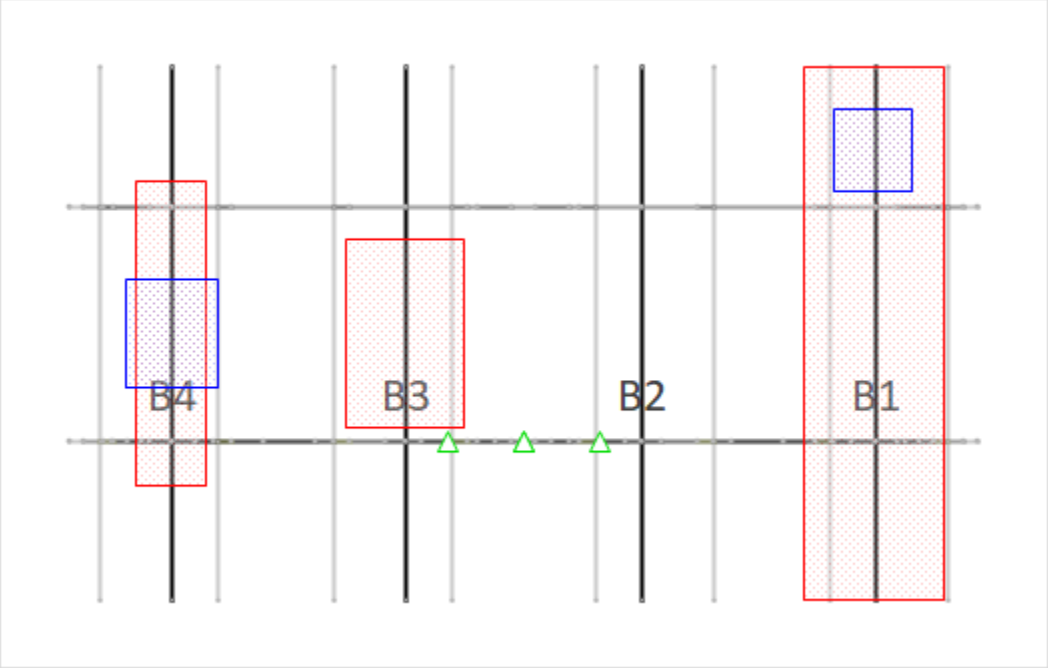
MP	RAD Center (ft)	Qty.	Antenna Model
B4	171.0	1	Commscope VV-65A-R1B
	171.0	1	Ericsson Radio 4460 B25+B66
C1	171.0	1	RFS APXVAARR24_43-U-NA20
	171.0	1	Ericsson Radio 4449 B12,B71
C2	-	-	Empty
C3	171.0	1	Ericsson AIR 6419 B41
C4	171.0	1	Commscope VV-65A-R1B
	171.0	1	Ericsson Radio 4460 B25+B66

Equipment Layout

Front View - Alpha

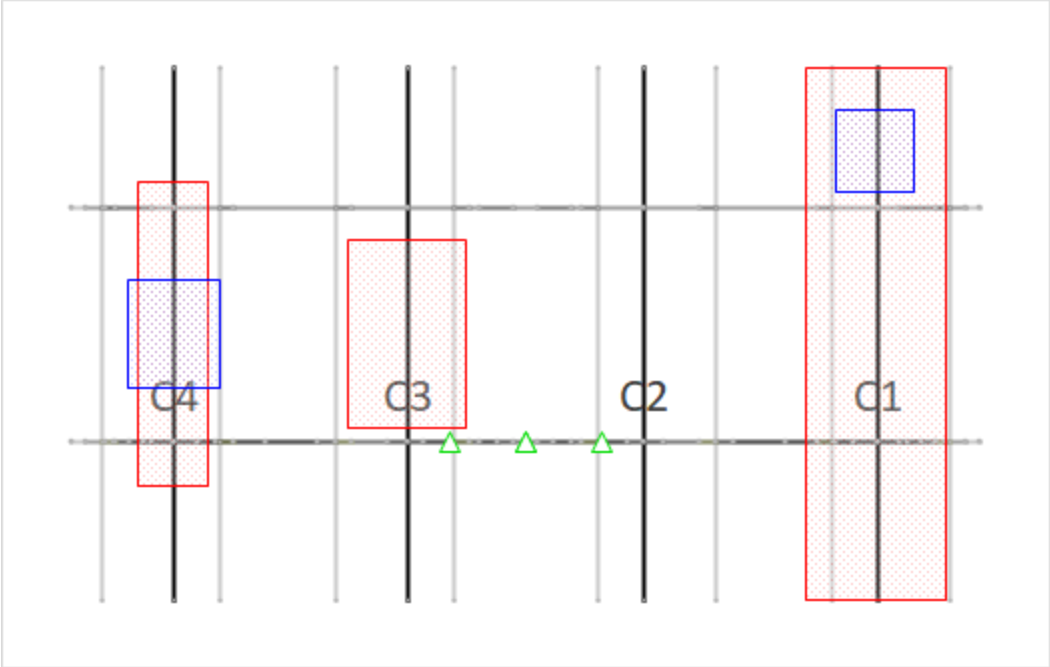


Front View - Beta



Equipment Layout Cont.

Front View - Gamma



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding equipment, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

AMERICAN TOWER®
CORPORATION

Site Number:	*411178*
Project Number:	*14529806_C8_02*
Carrier:	*T-Mobile*
Mount Elevation:	*171 ft*
Date:	9/14/2023

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.15	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	1.00	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	126	mph
Velocity Pressure	q_z	44.4	psf
Height Escalation Factor	K_{iz}	1.18	
Thickness of Radial Glaze Ice	T_{iz}	1.18	in

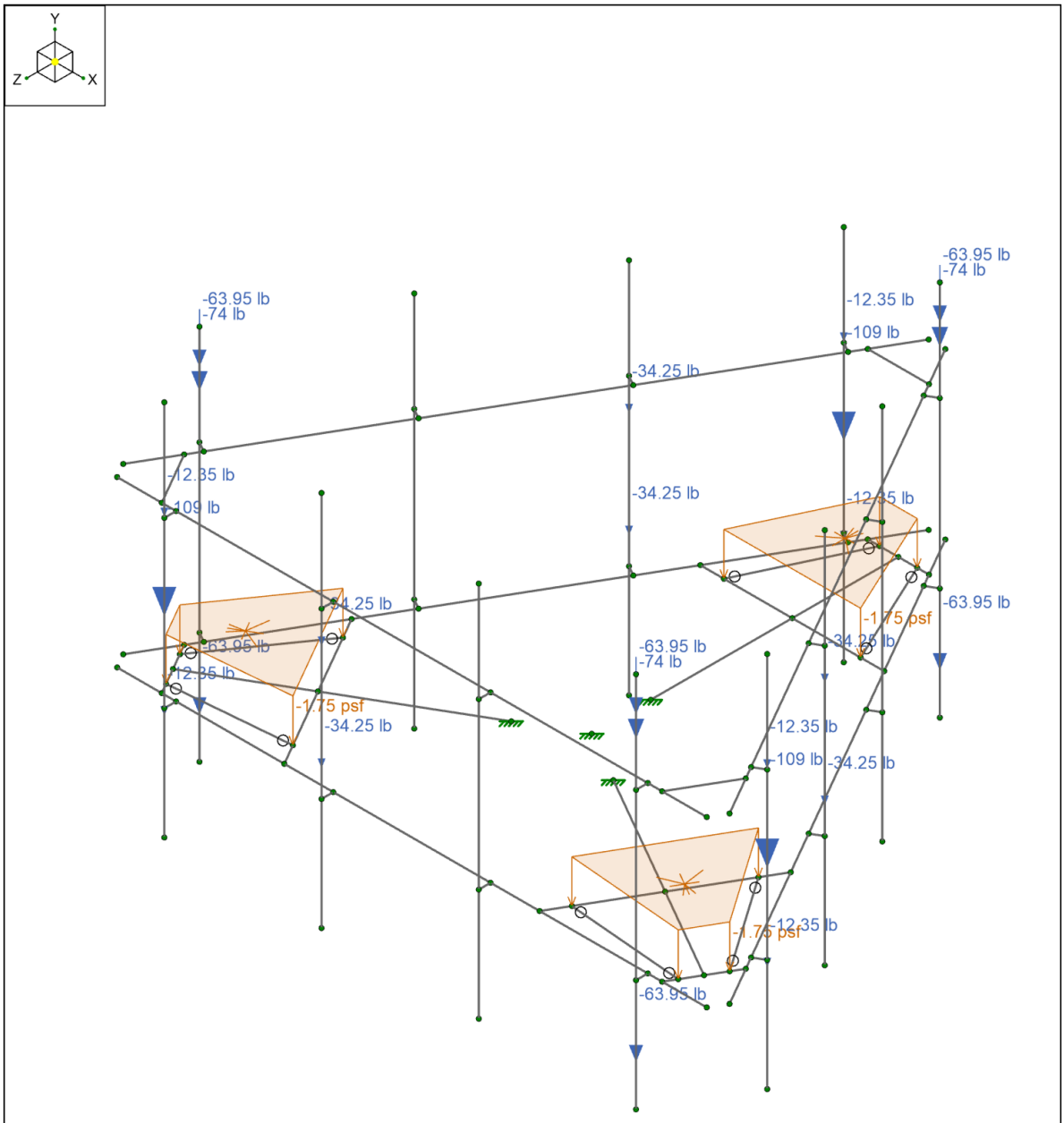
Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.212	
1 Second DSRAP	S_{D1}	0.085	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.106	
Amplification Factor	A	1.0	
Total Weight	W	2430.8	lbs
Total Shear Force	V_S	258.0	lbs
Horizontal Seismic Load	Eh	258.0	lbs
Vertical Seismic Load	Ev	103.2	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
RFS APXVAARR24_43-U-NA20	95.9	24.0	8.7	127.9	20.24	3.48	22.78	4.53
Ericsson AIR 6419 B41	33.6	20.0	6.3	68.5	5.60	0.86	6.70	1.27
Commscope VV-65A-R1B	54.7	12.0	4.6	24.7	5.89	1.33	7.35	2.10
Ericsson Radio 4460 B25+B66	19.6	15.7	12.1	109.0	2.56	1.98	3.30	2.65
Ericsson Radio 4449 B12,B71	14.9	13.2	9.3	74.0	1.64	1.15	2.24	1.68

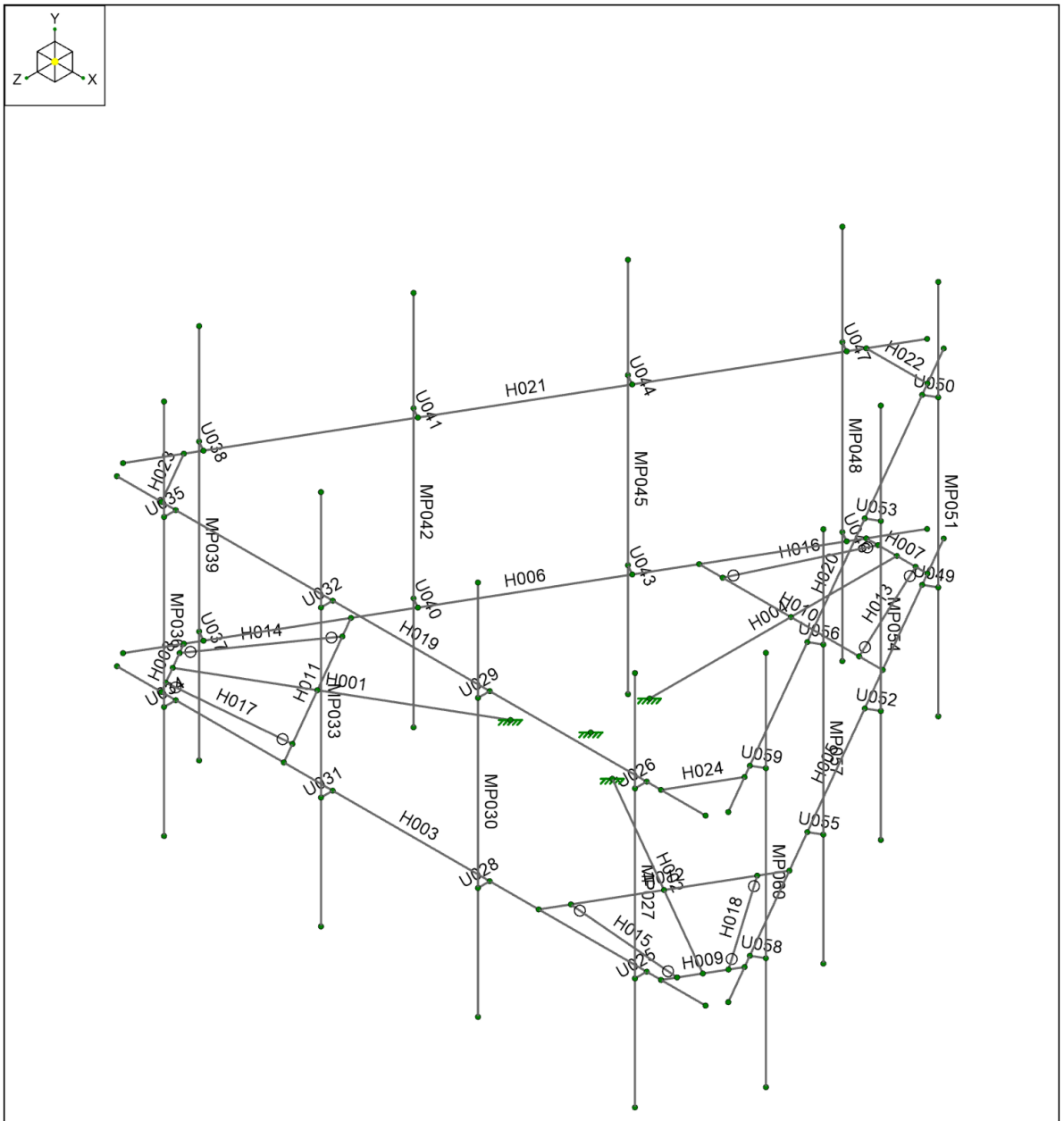
**** Equipment with EPA values N/A were not considered in the mount analysis***

American Tower Corp.	411178, Old Lyme South CT	SK-1
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…

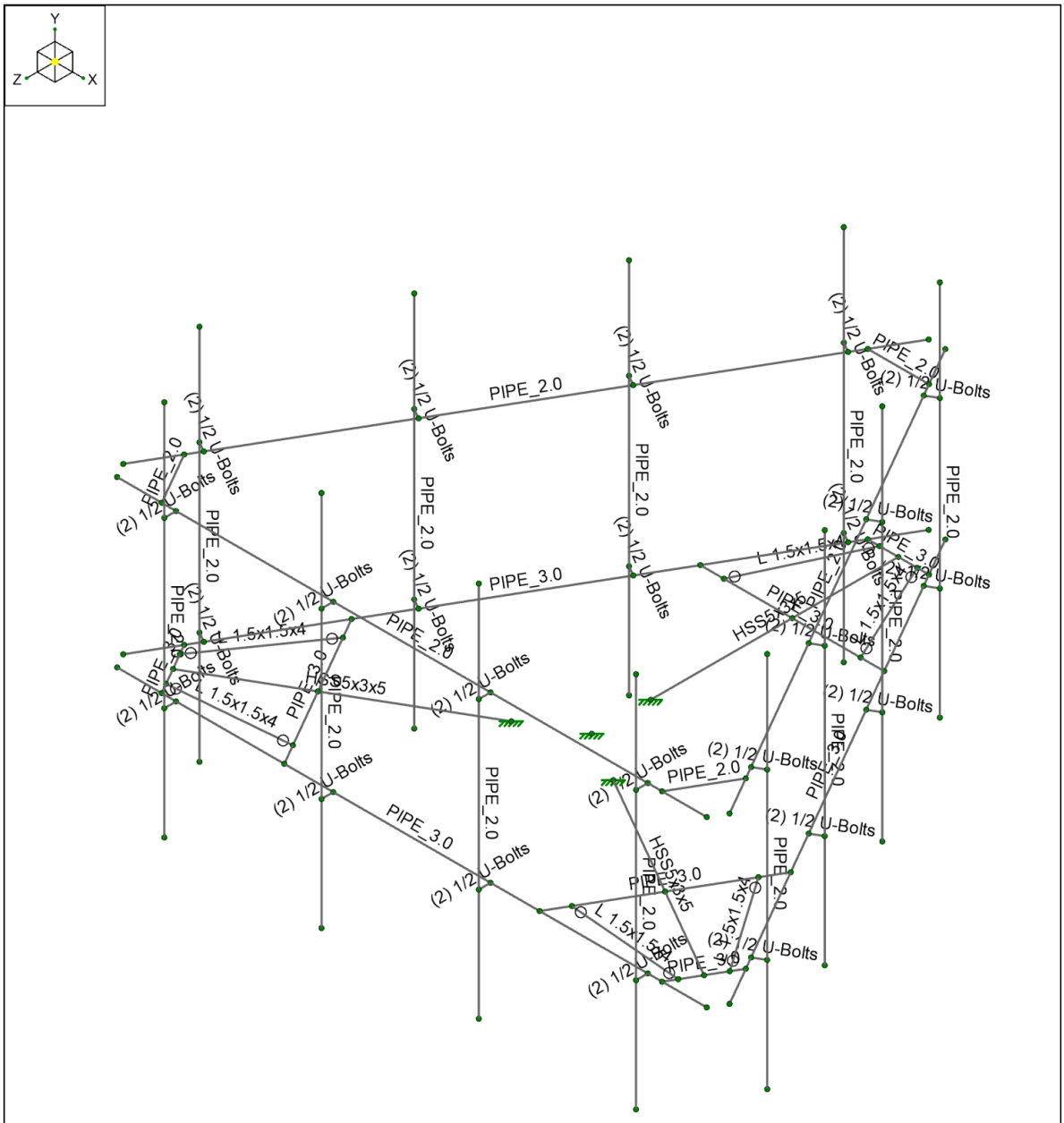


Loads: BLC 1, D

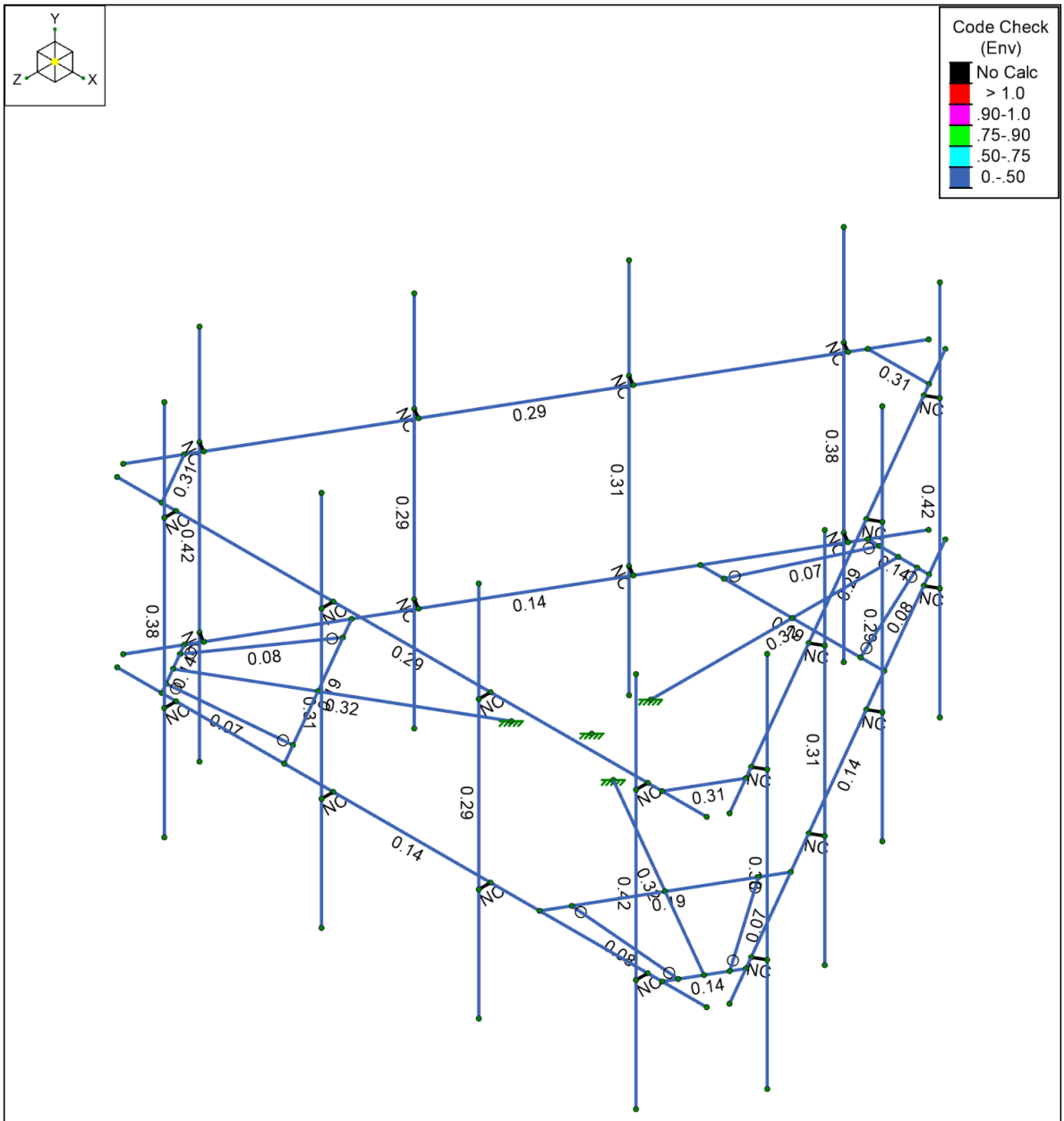
American Tower Corp.	411178, Old Lyme South CT	SK-2
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…



American Tower Corp.	411178, Old Lyme South CT	SK-3
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…

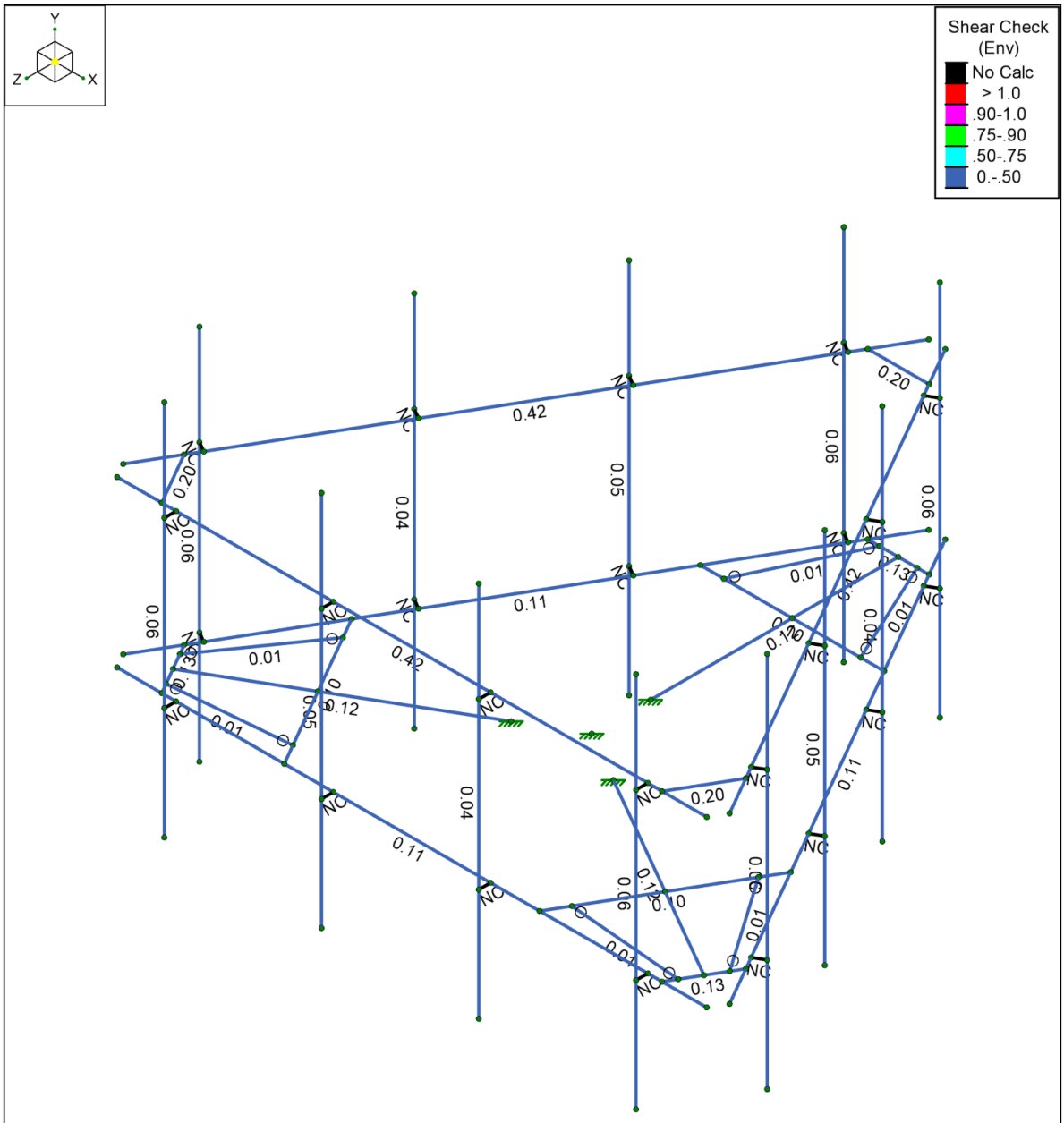


American Tower Corp.	411178, Old Lyme South CT	SK-4
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…



Member Code Checks Displayed (Enveloped)

American Tower Corp.	411178, Old Lyme South CT	SK-5
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…



American Tower Corp.	411178, Old Lyme South CT	SK-6
Max.Carter		Sep 14, 2023
14529806_C8_02		R3D. T-MOBILE @ 411178, Old L…

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	D	DL		-1			24		3
2	Di	IL					24	36	3
3	W 0	WL					24	60	
4	W 30	WL					48	120	
5	W 60	WL					48	120	
6	W 90	WL					24	63	
7	W 120	WL					48	120	
8	W 150	WL					48	120	
9	W 180	WL					24	60	
10	W 210	WL					48	120	
11	W 240	WL					48	120	
12	W 270	WL					24	63	
13	W 300	WL					48	120	
14	W 330	WL					48	120	
15	Wi 0	WL					24	60	
16	Wi 30	WL					48	120	
17	Wi 60	WL					48	120	
18	Wi 90	WL					24	63	
19	Wi 120	WL					48	120	
20	Wi 150	WL					48	120	
21	Wi 180	WL					24	60	
22	Wi 210	WL					48	120	
23	Wi 240	WL					48	120	
24	Wi 270	WL					24	63	
25	Wi 300	WL					48	120	
26	Wi 330	WL					48	120	
27	Ws 0	WL					24	60	
28	Ws 30	WL					48	120	
29	Ws 60	WL					48	120	
30	Ws 90	WL					24	63	
31	Ws 120	WL					48	120	
32	Ws 150	WL					48	120	
33	Ws 180	WL					24	60	
34	Ws 210	WL					48	120	
35	Ws 240	WL					48	120	
36	Ws 270	WL					24	63	
37	Ws 300	WL					48	120	
38	Ws 330	WL					48	120	
39	Ev -Y	ELY		-0.042			24		3
40	Eh -Z	ELZ			-0.106		24		3
41	Eh -X	ELX	-0.106				24		3
42	Lm (1)	LL				1			
43	Lm (2)	LL				1			
44	Lm (3)	LL				1			
45	Lm (4)	LL				1			
46	Lm (5)	LL				1			
47	Lm (6)	LL				1			
48	Lm (7)	LL				1			
49	Lm (8)	LL				1			
50	Lm (9)	LL				1			
51	Lm (10)	LL				1			
52	Lm (11)	LL				1			
53	Lm (12)	LL				1			
54	BLC 1 Transient Area Loads	None						66	
55	BLC 2 Transient Area Loads	None						66	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
56	BLC 39 Transient Area Loads	None						66	
57	BLC 40 Transient Area Loads	None						66	
58	BLC 41 Transient Area Loads	None						66	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4D	Yes	Y	DL	1.4						
2	1.2D + 1.0W [0°]	Yes	Y	DL	1.2	3	1				
3	1.2D + 1.0W [30°]	Yes	Y	DL	1.2	4	1				
4	1.2D + 1.0W [60°]	Yes	Y	DL	1.2	5	1				
5	1.2D + 1.0W [90°]	Yes	Y	DL	1.2	6	1				
6	1.2D + 1.0W [120°]	Yes	Y	DL	1.2	7	1				
7	1.2D + 1.0W [150°]	Yes	Y	DL	1.2	8	1				
8	1.2D + 1.0W [180°]	Yes	Y	DL	1.2	9	1				
9	1.2D + 1.0W [210°]	Yes	Y	DL	1.2	10	1				
10	1.2D + 1.0W [240°]	Yes	Y	DL	1.2	11	1				
11	1.2D + 1.0W [270°]	Yes	Y	DL	1.2	12	1				
12	1.2D + 1.0W [300°]	Yes	Y	DL	1.2	13	1				
13	1.2D + 1.0W [330°]	Yes	Y	DL	1.2	14	1				
14	0.9D + 1.0W [0°]	Yes	Y	DL	0.9	3	1				
15	0.9D + 1.0W [30°]	Yes	Y	DL	0.9	4	1				
16	0.9D + 1.0W [60°]	Yes	Y	DL	0.9	5	1				
17	0.9D + 1.0W [90°]	Yes	Y	DL	0.9	6	1				
18	0.9D + 1.0W [120°]	Yes	Y	DL	0.9	7	1				
19	0.9D + 1.0W [150°]	Yes	Y	DL	0.9	8	1				
20	0.9D + 1.0W [180°]	Yes	Y	DL	0.9	9	1				
21	0.9D + 1.0W [210°]	Yes	Y	DL	0.9	10	1				
22	0.9D + 1.0W [240°]	Yes	Y	DL	0.9	11	1				
23	0.9D + 1.0W [270°]	Yes	Y	DL	0.9	12	1				
24	0.9D + 1.0W [300°]	Yes	Y	DL	0.9	13	1				
25	0.9D + 1.0W [330°]	Yes	Y	DL	0.9	14	1				
26	1.2D + 1.0Di + 1.0Wi [0°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	15	1		
27	1.2D + 1.0Di + 1.0Wi [30°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	16	1		
28	1.2D + 1.0Di + 1.0Wi [60°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	17	1		
29	1.2D + 1.0Di + 1.0Wi [90°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	18	1		
30	1.2D + 1.0Di + 1.0Wi [120°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	19	1		
31	1.2D + 1.0Di + 1.0Wi [150°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	20	1		
32	1.2D + 1.0Di + 1.0Wi [180°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	21	1		
33	1.2D + 1.0Di + 1.0Wi [210°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	22	1		
34	1.2D + 1.0Di + 1.0Wi [240°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	23	1		
35	1.2D + 1.0Di + 1.0Wi [270°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	24	1		
36	1.2D + 1.0Di + 1.0Wi [300°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	25	1		
37	1.2D + 1.0Di + 1.0Wi [330°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	26	1		
38	1.2D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	1.2	ELY	1	ELZ	1	ELX	0.001
39	1.2D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	0.5
40	1.2D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	0.866
41	1.2D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	1
42	1.2D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	0.866
43	1.2D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	0.5
44	1.2D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	1.2	ELY	1	ELZ	-1	ELX	0.001
45	1.2D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	-0.5
46	1.2D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	-0.866
47	1.2D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	-1
48	1.2D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	-0.866
49	1.2D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	-0.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
50	0.9D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	0.9	ELY	1	ELZ	1	ELX	0.001
51	0.9D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	0.5
52	0.9D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	0.866
53	0.9D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	1
54	0.9D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	0.866
55	0.9D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	0.5
56	0.9D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	0.9	ELY	1	ELZ	-1	ELX	0.001
57	0.9D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	-0.5
58	0.9D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	-0.866
59	0.9D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	-1
60	0.9D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	-0.866
61	0.9D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	-0.5
62	1.2D + 1.5Lm(1) + 1.0Wm [0°]	Yes	Y	DL	1.2	42	1.5	27	1		
63	1.2D + 1.5Lm(1) + 1.0Wm [30°]	Yes	Y	DL	1.2	42	1.5	28	1		
64	1.2D + 1.5Lm(1) + 1.0Wm [60°]	Yes	Y	DL	1.2	42	1.5	29	1		
65	1.2D + 1.5Lm(1) + 1.0Wm [90°]	Yes	Y	DL	1.2	42	1.5	30	1		
66	1.2D + 1.5Lm(1) + 1.0Wm [120°]	Yes	Y	DL	1.2	42	1.5	31	1		
67	1.2D + 1.5Lm(1) + 1.0Wm [150°]	Yes	Y	DL	1.2	42	1.5	32	1		
68	1.2D + 1.5Lm(1) + 1.0Wm [180°]	Yes	Y	DL	1.2	42	1.5	33	1		
69	1.2D + 1.5Lm(1) + 1.0Wm [210°]	Yes	Y	DL	1.2	42	1.5	34	1		
70	1.2D + 1.5Lm(1) + 1.0Wm [240°]	Yes	Y	DL	1.2	42	1.5	35	1		
71	1.2D + 1.5Lm(1) + 1.0Wm [270°]	Yes	Y	DL	1.2	42	1.5	36	1		
72	1.2D + 1.5Lm(1) + 1.0Wm [300°]	Yes	Y	DL	1.2	42	1.5	37	1		
73	1.2D + 1.5Lm(1) + 1.0Wm [330°]	Yes	Y	DL	1.2	42	1.5	38	1		
74	1.2D + 1.5Lm(2) + 1.0Wm [0°]	Yes	Y	DL	1.2	43	1.5	27	1		
75	1.2D + 1.5Lm(2) + 1.0Wm [30°]	Yes	Y	DL	1.2	43	1.5	28	1		
76	1.2D + 1.5Lm(2) + 1.0Wm [60°]	Yes	Y	DL	1.2	43	1.5	29	1		
77	1.2D + 1.5Lm(2) + 1.0Wm [90°]	Yes	Y	DL	1.2	43	1.5	30	1		
78	1.2D + 1.5Lm(2) + 1.0Wm [120°]	Yes	Y	DL	1.2	43	1.5	31	1		
79	1.2D + 1.5Lm(2) + 1.0Wm [150°]	Yes	Y	DL	1.2	43	1.5	32	1		
80	1.2D + 1.5Lm(2) + 1.0Wm [180°]	Yes	Y	DL	1.2	43	1.5	33	1		
81	1.2D + 1.5Lm(2) + 1.0Wm [210°]	Yes	Y	DL	1.2	43	1.5	34	1		
82	1.2D + 1.5Lm(2) + 1.0Wm [240°]	Yes	Y	DL	1.2	43	1.5	35	1		
83	1.2D + 1.5Lm(2) + 1.0Wm [270°]	Yes	Y	DL	1.2	43	1.5	36	1		
84	1.2D + 1.5Lm(2) + 1.0Wm [300°]	Yes	Y	DL	1.2	43	1.5	37	1		
85	1.2D + 1.5Lm(2) + 1.0Wm [330°]	Yes	Y	DL	1.2	43	1.5	38	1		
86	1.2D + 1.5Lm(3) + 1.0Wm [0°]	Yes	Y	DL	1.2	44	1.5	27	1		
87	1.2D + 1.5Lm(3) + 1.0Wm [30°]	Yes	Y	DL	1.2	44	1.5	28	1		
88	1.2D + 1.5Lm(3) + 1.0Wm [60°]	Yes	Y	DL	1.2	44	1.5	29	1		
89	1.2D + 1.5Lm(3) + 1.0Wm [90°]	Yes	Y	DL	1.2	44	1.5	30	1		
90	1.2D + 1.5Lm(3) + 1.0Wm [120°]	Yes	Y	DL	1.2	44	1.5	31	1		
91	1.2D + 1.5Lm(3) + 1.0Wm [150°]	Yes	Y	DL	1.2	44	1.5	32	1		
92	1.2D + 1.5Lm(3) + 1.0Wm [180°]	Yes	Y	DL	1.2	44	1.5	33	1		
93	1.2D + 1.5Lm(3) + 1.0Wm [210°]	Yes	Y	DL	1.2	44	1.5	34	1		
94	1.2D + 1.5Lm(3) + 1.0Wm [240°]	Yes	Y	DL	1.2	44	1.5	35	1		
95	1.2D + 1.5Lm(3) + 1.0Wm [270°]	Yes	Y	DL	1.2	44	1.5	36	1		
96	1.2D + 1.5Lm(3) + 1.0Wm [300°]	Yes	Y	DL	1.2	44	1.5	37	1		
97	1.2D + 1.5Lm(3) + 1.0Wm [330°]	Yes	Y	DL	1.2	44	1.5	38	1		
98	1.2D + 1.5Lm(4) + 1.0Wm [0°]	Yes	Y	DL	1.2	45	1.5	27	1		
99	1.2D + 1.5Lm(4) + 1.0Wm [30°]	Yes	Y	DL	1.2	45	1.5	28	1		
100	1.2D + 1.5Lm(4) + 1.0Wm [60°]	Yes	Y	DL	1.2	45	1.5	29	1		
101	1.2D + 1.5Lm(4) + 1.0Wm [90°]	Yes	Y	DL	1.2	45	1.5	30	1		
102	1.2D + 1.5Lm(4) + 1.0Wm [120°]	Yes	Y	DL	1.2	45	1.5	31	1		
103	1.2D + 1.5Lm(4) + 1.0Wm [150°]	Yes	Y	DL	1.2	45	1.5	32	1		
104	1.2D + 1.5Lm(4) + 1.0Wm [180°]	Yes	Y	DL	1.2	45	1.5	33	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
105	1.2D + 1.5Lm(4) + 1.0Wm [210°]	Yes	Y	DL	1.2	45	1.5	34	1		
106	1.2D + 1.5Lm(4) + 1.0Wm [240°]	Yes	Y	DL	1.2	45	1.5	35	1		
107	1.2D + 1.5Lm(4) + 1.0Wm [270°]	Yes	Y	DL	1.2	45	1.5	36	1		
108	1.2D + 1.5Lm(4) + 1.0Wm [300°]	Yes	Y	DL	1.2	45	1.5	37	1		
109	1.2D + 1.5Lm(4) + 1.0Wm [330°]	Yes	Y	DL	1.2	45	1.5	38	1		
110	1.2D + 1.5Lm(5) + 1.0Wm [0°]	Yes	Y	DL	1.2	46	1.5	27	1		
111	1.2D + 1.5Lm(5) + 1.0Wm [30°]	Yes	Y	DL	1.2	46	1.5	28	1		
112	1.2D + 1.5Lm(5) + 1.0Wm [60°]	Yes	Y	DL	1.2	46	1.5	29	1		
113	1.2D + 1.5Lm(5) + 1.0Wm [90°]	Yes	Y	DL	1.2	46	1.5	30	1		
114	1.2D + 1.5Lm(5) + 1.0Wm [120°]	Yes	Y	DL	1.2	46	1.5	31	1		
115	1.2D + 1.5Lm(5) + 1.0Wm [150°]	Yes	Y	DL	1.2	46	1.5	32	1		
116	1.2D + 1.5Lm(5) + 1.0Wm [180°]	Yes	Y	DL	1.2	46	1.5	33	1		
117	1.2D + 1.5Lm(5) + 1.0Wm [210°]	Yes	Y	DL	1.2	46	1.5	34	1		
118	1.2D + 1.5Lm(5) + 1.0Wm [240°]	Yes	Y	DL	1.2	46	1.5	35	1		
119	1.2D + 1.5Lm(5) + 1.0Wm [270°]	Yes	Y	DL	1.2	46	1.5	36	1		
120	1.2D + 1.5Lm(5) + 1.0Wm [300°]	Yes	Y	DL	1.2	46	1.5	37	1		
121	1.2D + 1.5Lm(5) + 1.0Wm [330°]	Yes	Y	DL	1.2	46	1.5	38	1		
122	1.2D + 1.5Lm(6) + 1.0Wm [0°]	Yes	Y	DL	1.2	47	1.5	27	1		
123	1.2D + 1.5Lm(6) + 1.0Wm [30°]	Yes	Y	DL	1.2	47	1.5	28	1		
124	1.2D + 1.5Lm(6) + 1.0Wm [60°]	Yes	Y	DL	1.2	47	1.5	29	1		
125	1.2D + 1.5Lm(6) + 1.0Wm [90°]	Yes	Y	DL	1.2	47	1.5	30	1		
126	1.2D + 1.5Lm(6) + 1.0Wm [120°]	Yes	Y	DL	1.2	47	1.5	31	1		
127	1.2D + 1.5Lm(6) + 1.0Wm [150°]	Yes	Y	DL	1.2	47	1.5	32	1		
128	1.2D + 1.5Lm(6) + 1.0Wm [180°]	Yes	Y	DL	1.2	47	1.5	33	1		
129	1.2D + 1.5Lm(6) + 1.0Wm [210°]	Yes	Y	DL	1.2	47	1.5	34	1		
130	1.2D + 1.5Lm(6) + 1.0Wm [240°]	Yes	Y	DL	1.2	47	1.5	35	1		
131	1.2D + 1.5Lm(6) + 1.0Wm [270°]	Yes	Y	DL	1.2	47	1.5	36	1		
132	1.2D + 1.5Lm(6) + 1.0Wm [300°]	Yes	Y	DL	1.2	47	1.5	37	1		
133	1.2D + 1.5Lm(6) + 1.0Wm [330°]	Yes	Y	DL	1.2	47	1.5	38	1		
134	1.2D + 1.5Lm(7) + 1.0Wm [0°]	Yes	Y	DL	1.2	48	1.5	27	1		
135	1.2D + 1.5Lm(7) + 1.0Wm [30°]	Yes	Y	DL	1.2	48	1.5	28	1		
136	1.2D + 1.5Lm(7) + 1.0Wm [60°]	Yes	Y	DL	1.2	48	1.5	29	1		
137	1.2D + 1.5Lm(7) + 1.0Wm [90°]	Yes	Y	DL	1.2	48	1.5	30	1		
138	1.2D + 1.5Lm(7) + 1.0Wm [120°]	Yes	Y	DL	1.2	48	1.5	31	1		
139	1.2D + 1.5Lm(7) + 1.0Wm [150°]	Yes	Y	DL	1.2	48	1.5	32	1		
140	1.2D + 1.5Lm(7) + 1.0Wm [180°]	Yes	Y	DL	1.2	48	1.5	33	1		
141	1.2D + 1.5Lm(7) + 1.0Wm [210°]	Yes	Y	DL	1.2	48	1.5	34	1		
142	1.2D + 1.5Lm(7) + 1.0Wm [240°]	Yes	Y	DL	1.2	48	1.5	35	1		
143	1.2D + 1.5Lm(7) + 1.0Wm [270°]	Yes	Y	DL	1.2	48	1.5	36	1		
144	1.2D + 1.5Lm(7) + 1.0Wm [300°]	Yes	Y	DL	1.2	48	1.5	37	1		
145	1.2D + 1.5Lm(7) + 1.0Wm [330°]	Yes	Y	DL	1.2	48	1.5	38	1		
146	1.2D + 1.5Lm(8) + 1.0Wm [0°]	Yes	Y	DL	1.2	49	1.5	27	1		
147	1.2D + 1.5Lm(8) + 1.0Wm [30°]	Yes	Y	DL	1.2	49	1.5	28	1		
148	1.2D + 1.5Lm(8) + 1.0Wm [60°]	Yes	Y	DL	1.2	49	1.5	29	1		
149	1.2D + 1.5Lm(8) + 1.0Wm [90°]	Yes	Y	DL	1.2	49	1.5	30	1		
150	1.2D + 1.5Lm(8) + 1.0Wm [120°]	Yes	Y	DL	1.2	49	1.5	31	1		
151	1.2D + 1.5Lm(8) + 1.0Wm [150°]	Yes	Y	DL	1.2	49	1.5	32	1		
152	1.2D + 1.5Lm(8) + 1.0Wm [180°]	Yes	Y	DL	1.2	49	1.5	33	1		
153	1.2D + 1.5Lm(8) + 1.0Wm [210°]	Yes	Y	DL	1.2	49	1.5	34	1		
154	1.2D + 1.5Lm(8) + 1.0Wm [240°]	Yes	Y	DL	1.2	49	1.5	35	1		
155	1.2D + 1.5Lm(8) + 1.0Wm [270°]	Yes	Y	DL	1.2	49	1.5	36	1		
156	1.2D + 1.5Lm(8) + 1.0Wm [300°]	Yes	Y	DL	1.2	49	1.5	37	1		
157	1.2D + 1.5Lm(8) + 1.0Wm [330°]	Yes	Y	DL	1.2	49	1.5	38	1		
158	1.2D + 1.5Lm(9) + 1.0Wm [0°]	Yes	Y	DL	1.2	50	1.5	27	1		
159	1.2D + 1.5Lm(9) + 1.0Wm [30°]	Yes	Y	DL	1.2	50	1.5	28	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
160	1.2D + 1.5Lm(9) + 1.0Wm [60°]	Yes	Y	DL	1.2	50	1.5	29	1		
161	1.2D + 1.5Lm(9) + 1.0Wm [90°]	Yes	Y	DL	1.2	50	1.5	30	1		
162	1.2D + 1.5Lm(9) + 1.0Wm [120°]	Yes	Y	DL	1.2	50	1.5	31	1		
163	1.2D + 1.5Lm(9) + 1.0Wm [150°]	Yes	Y	DL	1.2	50	1.5	32	1		
164	1.2D + 1.5Lm(9) + 1.0Wm [180°]	Yes	Y	DL	1.2	50	1.5	33	1		
165	1.2D + 1.5Lm(9) + 1.0Wm [210°]	Yes	Y	DL	1.2	50	1.5	34	1		
166	1.2D + 1.5Lm(9) + 1.0Wm [240°]	Yes	Y	DL	1.2	50	1.5	35	1		
167	1.2D + 1.5Lm(9) + 1.0Wm [270°]	Yes	Y	DL	1.2	50	1.5	36	1		
168	1.2D + 1.5Lm(9) + 1.0Wm [300°]	Yes	Y	DL	1.2	50	1.5	37	1		
169	1.2D + 1.5Lm(9) + 1.0Wm [330°]	Yes	Y	DL	1.2	50	1.5	38	1		
170	1.2D + 1.5Lm(10) + 1.0Wm [0°]	Yes	Y	DL	1.2	51	1.5	27	1		
171	1.2D + 1.5Lm(10) + 1.0Wm [30°]	Yes	Y	DL	1.2	51	1.5	28	1		
172	1.2D + 1.5Lm(10) + 1.0Wm [60°]	Yes	Y	DL	1.2	51	1.5	29	1		
173	1.2D + 1.5Lm(10) + 1.0Wm [90°]	Yes	Y	DL	1.2	51	1.5	30	1		
174	1.2D + 1.5Lm(10) + 1.0Wm [120°]	Yes	Y	DL	1.2	51	1.5	31	1		
175	1.2D + 1.5Lm(10) + 1.0Wm [150°]	Yes	Y	DL	1.2	51	1.5	32	1		
176	1.2D + 1.5Lm(10) + 1.0Wm [180°]	Yes	Y	DL	1.2	51	1.5	33	1		
177	1.2D + 1.5Lm(10) + 1.0Wm [210°]	Yes	Y	DL	1.2	51	1.5	34	1		
178	1.2D + 1.5Lm(10) + 1.0Wm [240°]	Yes	Y	DL	1.2	51	1.5	35	1		
179	1.2D + 1.5Lm(10) + 1.0Wm [270°]	Yes	Y	DL	1.2	51	1.5	36	1		
180	1.2D + 1.5Lm(10) + 1.0Wm [300°]	Yes	Y	DL	1.2	51	1.5	37	1		
181	1.2D + 1.5Lm(10) + 1.0Wm [330°]	Yes	Y	DL	1.2	51	1.5	38	1		
182	1.2D + 1.5Lm(11) + 1.0Wm [0°]	Yes	Y	DL	1.2	52	1.5	27	1		
183	1.2D + 1.5Lm(11) + 1.0Wm [30°]	Yes	Y	DL	1.2	52	1.5	28	1		
184	1.2D + 1.5Lm(11) + 1.0Wm [60°]	Yes	Y	DL	1.2	52	1.5	29	1		
185	1.2D + 1.5Lm(11) + 1.0Wm [90°]	Yes	Y	DL	1.2	52	1.5	30	1		
186	1.2D + 1.5Lm(11) + 1.0Wm [120°]	Yes	Y	DL	1.2	52	1.5	31	1		
187	1.2D + 1.5Lm(11) + 1.0Wm [150°]	Yes	Y	DL	1.2	52	1.5	32	1		
188	1.2D + 1.5Lm(11) + 1.0Wm [180°]	Yes	Y	DL	1.2	52	1.5	33	1		
189	1.2D + 1.5Lm(11) + 1.0Wm [210°]	Yes	Y	DL	1.2	52	1.5	34	1		
190	1.2D + 1.5Lm(11) + 1.0Wm [240°]	Yes	Y	DL	1.2	52	1.5	35	1		
191	1.2D + 1.5Lm(11) + 1.0Wm [270°]	Yes	Y	DL	1.2	52	1.5	36	1		
192	1.2D + 1.5Lm(11) + 1.0Wm [300°]	Yes	Y	DL	1.2	52	1.5	37	1		
193	1.2D + 1.5Lm(11) + 1.0Wm [330°]	Yes	Y	DL	1.2	52	1.5	38	1		
194	1.2D + 1.5Lm(12) + 1.0Wm [0°]	Yes	Y	DL	1.2	53	1.5	27	1		
195	1.2D + 1.5Lm(12) + 1.0Wm [30°]	Yes	Y	DL	1.2	53	1.5	28	1		
196	1.2D + 1.5Lm(12) + 1.0Wm [60°]	Yes	Y	DL	1.2	53	1.5	29	1		
197	1.2D + 1.5Lm(12) + 1.0Wm [90°]	Yes	Y	DL	1.2	53	1.5	30	1		
198	1.2D + 1.5Lm(12) + 1.0Wm [120°]	Yes	Y	DL	1.2	53	1.5	31	1		
199	1.2D + 1.5Lm(12) + 1.0Wm [150°]	Yes	Y	DL	1.2	53	1.5	32	1		
200	1.2D + 1.5Lm(12) + 1.0Wm [180°]	Yes	Y	DL	1.2	53	1.5	33	1		
201	1.2D + 1.5Lm(12) + 1.0Wm [210°]	Yes	Y	DL	1.2	53	1.5	34	1		
202	1.2D + 1.5Lm(12) + 1.0Wm [240°]	Yes	Y	DL	1.2	53	1.5	35	1		
203	1.2D + 1.5Lm(12) + 1.0Wm [270°]	Yes	Y	DL	1.2	53	1.5	36	1		
204	1.2D + 1.5Lm(12) + 1.0Wm [300°]	Yes	Y	DL	1.2	53	1.5	37	1		
205	1.2D + 1.5Lm(12) + 1.0Wm [330°]	Yes	Y	DL	1.2	53	1.5	38	1		

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N005		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N006		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
3	H003	N009	N010		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
4	H004	N002	N015		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N011	N013		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
6	H006	N012	N014		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
7	H007	N019	N017		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
8	H008	N021	N023		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
9	H009	N022	N024		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
10	H010	N018	N020		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
11	H011	N025	N027		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
12	H012	N026	N028		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
13	H013	N037	N029	270	L 1.5x1.5x4	Beam	None	A36	Typical
14	H014	N038	N030	270	L 1.5x1.5x4	Beam	None	A36	Typical
15	H015	N039	N040	270	L 1.5x1.5x4	Beam	None	A36	Typical
16	H016	N034	N031		L 1.5x1.5x4	Beam	None	A36	Typical
17	H017	N035	N032		L 1.5x1.5x4	Beam	None	A36	Typical
18	H018	N036	N033		L 1.5x1.5x4	Beam	None	A36	Typical
19	H019	N041	N042		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
20	H020	N043	N045		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
21	H021	N044	N046		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
22	H022	N048	N047		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
23	H023	N049	N051		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
24	H024	N050	N052		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
25	U025	N053	N065		(2) 1/2 U-Bolts	Beam	None	A36	Typical
26	U026	N066	N067		(2) 1/2 U-Bolts	Beam	None	A36	Typical
27	MP027	N068	N069		PIPE_2.0	Column	None	A53 Gr. B	Typical
28	U028	N055	N070		(2) 1/2 U-Bolts	Beam	None	A36	Typical
29	U029	N071	N072		(2) 1/2 U-Bolts	Beam	None	A36	Typical
30	MP030	N073	N074		PIPE_2.0	Column	None	A53 Gr. B	Typical
31	U031	N056	N075		(2) 1/2 U-Bolts	Beam	None	A36	Typical
32	U032	N076	N077		(2) 1/2 U-Bolts	Beam	None	A36	Typical
33	MP033	N078	N079		PIPE_2.0	Column	None	A53 Gr. B	Typical
34	U034	N054	N080		(2) 1/2 U-Bolts	Beam	None	A36	Typical
35	U035	N081	N082		(2) 1/2 U-Bolts	Beam	None	A36	Typical
36	MP036	N083	N084		PIPE_2.0	Column	None	A53 Gr. B	Typical
37	U037	N058	N085		(2) 1/2 U-Bolts	Beam	None	A36	Typical
38	U038	N086	N087		(2) 1/2 U-Bolts	Beam	None	A36	Typical
39	MP039	N088	N089		PIPE_2.0	Column	None	A53 Gr. B	Typical
40	U040	N062	N090		(2) 1/2 U-Bolts	Beam	None	A36	Typical
41	U041	N091	N092		(2) 1/2 U-Bolts	Beam	None	A36	Typical
42	MP042	N093	N094		PIPE_2.0	Column	None	A53 Gr. B	Typical
43	U043	N064	N095		(2) 1/2 U-Bolts	Beam	None	A36	Typical
44	U044	N096	N097		(2) 1/2 U-Bolts	Beam	None	A36	Typical
45	MP045	N098	N099		PIPE_2.0	Column	None	A53 Gr. B	Typical
46	U046	N060	N100		(2) 1/2 U-Bolts	Beam	None	A36	Typical
47	U047	N101	N102		(2) 1/2 U-Bolts	Beam	None	A36	Typical
48	MP048	N103	N104		PIPE_2.0	Column	None	A53 Gr. B	Typical
49	U049	N057	N105		(2) 1/2 U-Bolts	Beam	None	A36	Typical
50	U050	N106	N107		(2) 1/2 U-Bolts	Beam	None	A36	Typical
51	MP051	N108	N109		PIPE_2.0	Column	None	A53 Gr. B	Typical
52	U052	N061	N110		(2) 1/2 U-Bolts	Beam	None	A36	Typical
53	U053	N111	N112		(2) 1/2 U-Bolts	Beam	None	A36	Typical
54	MP054	N113	N114		PIPE_2.0	Column	None	A53 Gr. B	Typical
55	U055	N063	N115		(2) 1/2 U-Bolts	Beam	None	A36	Typical
56	U056	N116	N117		(2) 1/2 U-Bolts	Beam	None	A36	Typical
57	MP057	N118	N119		PIPE_2.0	Column	None	A53 Gr. B	Typical
58	U058	N059	N120		(2) 1/2 U-Bolts	Beam	None	A36	Typical
59	U059	N121	N122		(2) 1/2 U-Bolts	Beam	None	A36	Typical
60	MP060	N123	N124		PIPE_2.0	Column	None	A53 Gr. B	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS5x3x5	63			Lbyy		1	1	Lateral
2	H002	HSS5x3x5	63			Lbyy		1	1	Lateral
3	H003	PIPE_3.0	150.004			Lbyy		1	1	Lateral
4	H004	HSS5x3x5	63			Lbyy		1	1	Lateral
5	H005	PIPE_3.0	150.004			Lbyy		1	1	Lateral
6	H006	PIPE_3.0	150.004			Lbyy		1	1	Lateral
7	H007	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
8	H008	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
9	H009	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
10	H010	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
11	H011	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
12	H012	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
13	H013	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
14	H014	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
15	H015	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
16	H016	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
17	H017	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
18	H018	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
19	H019	PIPE_2.0	150.004			Lbyy		1	1	Lateral
20	H020	PIPE_2.0	150.004			Lbyy		1	1	Lateral
21	H021	PIPE_2.0	150.004			Lbyy		1	1	Lateral
22	H022	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
23	H023	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
24	H024	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
25	U025	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
26	U026	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
27	MP027	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
28	U028	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
29	U029	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
30	MP030	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
31	U031	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
32	U032	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
33	MP033	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	U034	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
35	U035	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
36	MP036	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
37	U037	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
38	U038	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
39	MP039	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
40	U040	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
41	U041	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
42	MP042	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
43	U043	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
44	U044	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
45	MP045	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
46	U046	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
47	U047	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
48	MP048	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
49	U049	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
50	U050	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
51	MP051	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
52	U052	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
53	U053	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
54	MP054	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
55	U055	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
56	U056	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
57	MP057	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
58	U058	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
59	U059	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
60	MP060	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N003	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N004	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010			Yes	N/A		None
11	H011			Yes	N/A		None
12	H012			Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016	BenPIN	BenPIN	Yes	N/A		None
17	H017	BenPIN	BenPIN	Yes	N/A		None
18	H018	BenPIN	BenPIN	Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022			Yes	N/A		None
23	H023			Yes	N/A		None
24	H024			Yes	N/A		None
25	U025			Yes	N/A	Exclude	None
26	U026			Yes	N/A	Exclude	None
27	MP027			Yes	** NA **		None
28	U028			Yes	N/A	Exclude	None
29	U029			Yes	N/A	Exclude	None
30	MP030			Yes	** NA **		None
31	U031			Yes	N/A	Exclude	None
32	U032			Yes	N/A	Exclude	None
33	MP033			Yes	** NA **		None
34	U034			Yes	N/A	Exclude	None
35	U035			Yes	N/A	Exclude	None
36	MP036			Yes	** NA **		None
37	U037			Yes	N/A	Exclude	None
38	U038			Yes	N/A	Exclude	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
39	MP039			Yes	** NA **		None
40	U040			Yes	N/A	Exclude	None
41	U041			Yes	N/A	Exclude	None
42	MP042			Yes	** NA **		None
43	U043			Yes	N/A	Exclude	None
44	U044			Yes	N/A	Exclude	None
45	MP045			Yes	** NA **		None
46	U046			Yes	N/A	Exclude	None
47	U047			Yes	N/A	Exclude	None
48	MP048			Yes	** NA **		None
49	U049			Yes	N/A	Exclude	None
50	U050			Yes	N/A	Exclude	None
51	MP051			Yes	** NA **		None
52	U052			Yes	N/A	Exclude	None
53	U053			Yes	N/A	Exclude	None
54	MP054			Yes	** NA **		None
55	U055			Yes	N/A	Exclude	None
56	U056			Yes	N/A	Exclude	None
57	MP057			Yes	** NA **		None
58	U058			Yes	N/A	Exclude	None
59	U059			Yes	N/A	Exclude	None
60	MP060			Yes	** NA **		None

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [lb/ft^{3}]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	58000	1.3
2	A500 Gr. B [RND]	2.9e+07	1.115e+07	0.3	0.65	490	42000	1.4	58000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N001	max	0	205	0	205	0	205	0	205	0	205	0	205
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N002	max	1304.679	17	2176.82	26	2840.362	14	7058.643	26	2422.844	23	1153.109	11
4		min	-1305.751	23	-206.074	20	-2888.842	8	-1442.384	20	-2420.979	17	-1160.136	5
5	N003	max	2425.687	18	2176.811	30	1503.212	12	771.356	25	2422.808	15	1257.694	24
6		min	-2467.807	12	-206.057	24	-1479.206	18	-3541.405	31	-2420.944	21	-6118.674	30
7	N004	max	2535.719	4	2176.814	34	1456.599	2	797.375	15	2422.797	19	6107.215	34
8		min	-2493.87	22	-206.057	16	-1433.241	20	-3560.117	33	-2420.932	25	-1240.451	16
9	Totals:	max	5214.27	5	5905.49	28	5566.18	14						
10		min	-5214.27	11	2120.16	22	-5566.18	8						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS5x3x5	0.323	0	30	0.118	0	z	9	139602.037	169740	15456	22149	2.356	H1-1b
2	H002	HSS5x3x5	0.323	0	34	0.118	0	z	13	139602.037	169740	15456	22149	2.356	H1-1b
3	H003	PIPE_3.0	0.135	43.751	11	0.115	137.504		8	28614.088	78246	6898.5	6898.5	2.154	H1-1b
4	H004	HSS5x3x5	0.323	0	26	0.118	0	z	5	139602.037	169740	15456	22149	2.356	H1-1b
5	H005	PIPE_3.0	0.135	43.751	3	0.115	137.504		12	28614.088	78246	6898.5	6898.5	2.154	H1-1b
6	H006	PIPE_3.0	0.135	43.751	7	0.115	137.504		4	28614.088	78246	6898.5	6898.5	2.154	H1-1b
7	H007	PIPE_3.0	0.141	7.794	3	0.129	7.794		10	77888.459	78246	6898.5	6898.5	1.184	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
8	H008	PIPE_3.0	0.141	7.794	7	0.129	7.794		2	77888.459	78246	6898.5	6898.5	1.184	H1-1b
9	H009	PIPE_3.0	0.141	7.794	11	0.129	7.794		6	77888.459	78246	6898.5	6898.5	1.184	H1-1b
10	H010	PIPE_3.0	0.189	23.383	195	0.1	23.383		11	75086.325	78246	6898.5	6898.5	1.44	H1-1b
11	H011	PIPE_3.0	0.189	23.383	103	0.1	23.383		3	75086.325	78246	6898.5	6898.5	1.44	H1-1b
12	H012	PIPE_3.0	0.189	23.383	191	0.1	23.383		7	75086.325	78246	6898.5	6898.5	1.44	H1-1b
13	H013	L 1.5x1.5x4	0.076	15.206	13	0.007	29.79	y	5	8987.293	22469.4	217.337	861.863	1.132	H2-1
14	H014	L 1.5x1.5x4	0.076	15.206	5	0.007	29.79	y	9	8987.293	22469.4	217.337	861.863	1.132	H2-1
15	H015	L 1.5x1.5x4	0.076	15.206	9	0.007	29.79	y	13	8987.293	22469.4	217.337	861.866	1.132	H2-1
16	H016	L 1.5x1.5x4	0.07	15.206	3	0.008	29.79	z	11	8987.293	22469.4	217.337	861.866	1.132	H2-1
17	H017	L 1.5x1.5x4	0.07	15.206	7	0.008	29.79	z	3	8987.293	22469.4	217.337	861.865	1.132	H2-1
18	H018	L 1.5x1.5x4	0.07	15.206	11	0.008	29.79	z	7	8987.293	22469.4	217.337	861.863	1.132	H2-1
19	H019	PIPE_2.0	0.286	14.063	2	0.425	12.5		2	6295.099	38556	2245.95	2245.95	2.929	H3-6
20	H020	PIPE_2.0	0.286	14.063	6	0.425	12.5		6	6295.099	38556	2245.95	2245.95	2.929	H3-6
21	H021	PIPE_2.0	0.286	14.063	10	0.425	12.5		10	6295.099	38556	2245.95	2245.95	2.929	H3-6
22	H022	PIPE_2.0	0.314	0	6	0.2	0		11	38162.512	38556	2245.95	2245.95	1.813	H1-1b
23	H023	PIPE_2.0	0.314	0	10	0.2	0		3	38162.512	38556	2245.95	2245.95	1.813	H1-1b
24	H024	PIPE_2.0	0.314	0	2	0.2	0		7	38162.512	38556	2245.95	2245.95	1.813	H1-1b
25	MP027	PIPE_2.0	0.422	67	2	0.057	67		3	16811.605	32130	1871.625	1871.625	1.709	H1-1b
26	MP030	PIPE_2.0	0.295	67	4	0.043	67		4	16811.605	32130	1871.625	1871.625	2.317	H1-1b
27	MP033	PIPE_2.0	0.313	67	3	0.05	67		12	16811.605	32130	1871.625	1871.625	2.391	H1-1b
28	MP036	PIPE_2.0	0.383	67	2	0.062	67		11	16811.605	32130	1871.625	1871.625	2.672	H1-1b
29	MP039	PIPE_2.0	0.422	67	10	0.057	67		11	16811.605	32130	1871.625	1871.625	1.581	H1-1b
30	MP042	PIPE_2.0	0.295	67	12	0.043	67		12	16811.605	32130	1871.625	1871.625	3	H1-1b
31	MP045	PIPE_2.0	0.313	67	11	0.05	67		8	16811.605	32130	1871.625	1871.625	3	H1-1b
32	MP048	PIPE_2.0	0.383	67	10	0.062	67		7	16811.605	32130	1871.625	1871.625	3	H1-1b
33	MP051	PIPE_2.0	0.422	67	6	0.057	67		7	16811.605	32130	1871.625	1871.625	2.215	H1-1b
34	MP054	PIPE_2.0	0.295	67	8	0.043	67		8	16811.605	32130	1871.625	1871.625	1.56	H1-1b
35	MP057	PIPE_2.0	0.313	67	7	0.05	67		4	16811.605	32130	1871.625	1871.625	1.721	H1-1b
36	MP060	PIPE_2.0	0.383	67	6	0.062	67		3	16811.605	32130	1871.625	1871.625	2.481	H1-1b

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	171 ft Monopole
ATC Asset Name	:	Old Lyme South CT
ATC Asset Number	:	411178
Engineering Number	:	14529806_C3_01
Proposed Carrier	:	T-MOBILE
Carrier Site Name	:	Amtrak Old Lyme Verizon
Carrier Site Number	:	CTNL802A
Site Location	:	125 Mile Creek Road OLD LYME, CT 06371-1718 41.3055° N, 72.2973° W
County	:	New London
Date	:	September 15, 2023
Max Usage	:	53%
Analysis Result	:	Pass

Created By:

Pedro Morales Mendoza
Structural Engineer I

pedro morales

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Esha Modi

Digitally signed by Esha Modi
Date: 2023.09.15 16:34:30 -04'00'

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 171 ft Monopole tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower:	EEI Project #11723 Rev 1, dated September 19, 2003 Mapping by TEP Job #68269-80551, dated April 25, 2016
Foundation:	EEI Project #11723 Rev 1, dated October 21, 2003
Geotechnical:	Clarence Welti Site #CT54XC701, dated October 17, 2003
Mount Analysis:	ATC Mount Analysis #14529806_C8_02, dated September 14, 2023

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	126 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	Ss = 0.20, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

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

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	53.0%	1.2D + 1.0W	Pass
Serviceability Usage	23.8%	1.0D + 1.0W	Pass
Upper Flange Plate @ 161.5 ft	13.4%	Bolts	Pass
Base Plate @ 0.0 ft	39.6%	Rods	Pass
Mat & Pier	42.5%	Flexure [Steel (Pier)]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	4,404.6	73.3	36.2

Reactions shown reflect the results from the Load Case with maximum Moment

Structure base reactions were analyzed using available geotechnical and foundation information.

T-MOBILE Final Loading

Elev (ft)	Qty	Equipment	Lines
171.0	3	Commscope VV-65A-R1B	(3) 1 1/4" Hybriflex Cable (3) 1.99" (50.7mm) Hybrid
	3	Ericsson AIR 6419 B41	
	3	Ericsson Radio 4449 B12,B71	
	3	Ericsson Radio 4460 B25+B66	
	3	RFS APXVAARR24_43-U-NA20	
170.0	1	Platform with Handrails	-

Install proposed lines inside the pole shaft.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
177.0	1	12' Dipole	-	TOWN OF OLD LYME, CT
176.0	1	Decibel DB201-A	(7) 1/2" Coax	TOWN OF OLD LYME, CT
170.0	1	Platform with Handrails	-	-
165.7	2	RFS DB-T1-6Z-8AB-0Z	-	VERIZON WIRELESS
161.0	1	Low Profile Platform	-	-
	1	Antel BXA-70063-4CF-EDIN-10	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	1	Unused Reserve (519.6200 sqin)		
	2	Amphenol Antel LPA-80080-6CF-EDIN-2		
	2	Antel BXA-70063/6CF_		
	3	Alcatel-Lucent B66 RRH4x45		
	3	Alcatel-Lucent RRH2X60-1900		
	3	Alcatel-Lucent RRH2x60 700		
	4	RFS APL866513-42T0		
	6	Commscope SBNHH-1D65B		
158.0	2	RFS DB-T1-6Z-8AB-0Z	-	VERIZON WIRELESS
150.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	(3) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
149.9	6	Alcatel-Lucent RRH2x50-08	-	SPRINT NEXTEL
149.8	3	Alcatel-Lucent 1900 MHz 4X45 RRH	-	SPRINT NEXTEL
148.3	3	Commscope NNVV-65B-R4	-	SPRINT NEXTEL
148.2	3	RFS APXVTM14-ALU-I20	-	SPRINT NEXTEL
148.0	1	Low Profile Platform	(6) 1 5/8" Coax	SPRINT NEXTEL
140.0	1	Raycap DC6-48-60-18-8F ("Squid")	(2) 0.39" (10mm) Fiber Trunk (5) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (2) 2" conduit	AT&T MOBILITY
	1	Raycap DC9-48-60-24-8C-EV		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14 (15")		
	3	Ericsson RRUS 8843 B2, B66A		
	3	Powerwave Allgon 7770.00		
	6	CCI DMP65R-BU4D		
	6	Powerwave Allgon TT19-08BP111-001		
	1	Platform with Handrails	-	-
	3	Mount Reinforcement		
111.0	1	12' Dipole	(2) 1/2" Coax	TOWN OF OLD LYME, CT
	1	Stand-Off		
76.4	1	GPS	-	SPRINT NEXTEL
74.0	1	Stand-Off	-	-

(If table breaks across pages, please see previous page for data in merged cells)

Standard Conditions

All engineering services performed by A.T. Engineering Services LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Services LLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Services LLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

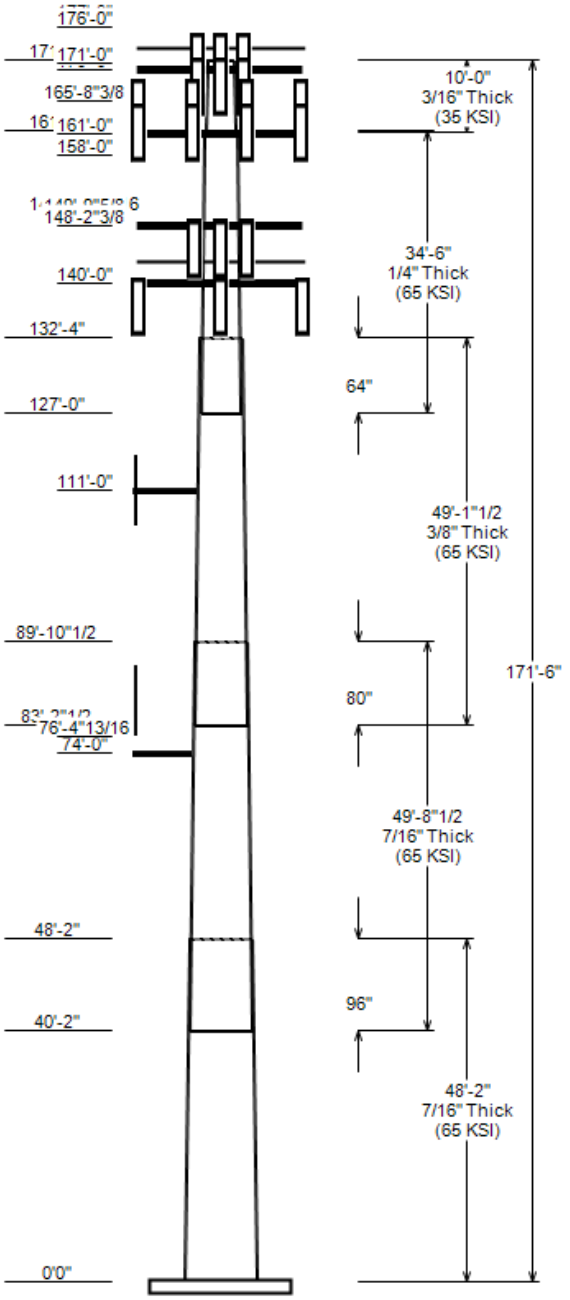
Unless explicitly agreed by both the client and A.T. Engineering Services LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ASSET:	411178, Old Lyme South CT	CODE:	ANSI/TIA-222-H
CUSTOMER:	T-MOBILE	PROJECT:	14529806

ANALYSIS PARAMETERS

Nominal Wind:	126 mph	**Ice Wind:**	50 mph w/ 1" ice	**Service Wind:**	60 mph
Risk Category:	II	**Exposure:**	B	**S_s:** 0.199	**S_1:** 0.053
Topo Category:	1	**Topo Factor:**	Method 1	**Topo Feature:**	
Structure Height:	171.5 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Custom
Base Diameter:	69 in	**Base Rotation:**	0°	**Taper:**	0.2610 (in/ft)



POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	48.167	56.44	69.00	0.438		0.000	18 Sides	65
2	49.708	46.44	59.40	0.438	Slip Joint	96.000	18 Sides	65
3	49.125	36.11	48.92	0.375	Slip Joint	80.000	18 Sides	65
4	34.500	29.01	38.00	0.250	Slip Joint	64.000	18 Sides	65
5	10.000	26.00	27.50	0.188	Butt Joint	0.000	18 Sides	35

DISCRETE APPURTENANCE

Elev (ft)	Description
177.0	(1) Generic 12' Dipole
176.0	(1) Decibel DB201-A
171.0	(3) Ericsson Radio 4449 B12,B71
171.0	(3) Ericsson Radio 4460 B25+B66
171.0	(3) Ericsson AIR 6419 B41
171.0	(3) Commscope VV-65A-R1B
171.0	(3) RFS APXVAARR24_43-U-NA20
170.0	(1) Generic Flat Platform with Han
165.7	(2) RFS DB-T1-6Z-8AB-0Z
161.0	(3) Alcatel-Lucent RRH2X60-1900
161.0	(3) Alcatel-Lucent RRH2x60 700
161.0	(3) Alcatel-Lucent B66 RRH4x45
161.0	(1) Unused Reserve (519.6200 sqin)
161.0	(1) Unused Reserve (519.6200 sqin)
161.0	(4) RFS APL866513-42T0
161.0	(1) Antel BXA-70063-4CF-EDIN-10
161.0	(2) Antel BXA-70063/6CF_
161.0	(6) Commscope SBNHH-1D65B
161.0	(2) Amphenol Antel LPA-80080-6CF-E
161.0	(1) Generic Flat Low Profile Platf
158.0	(2) RFS DB-T1-6Z-8AB-0Z
150.0	(3) Alcatel-Lucent TD-RRH8x20-25 w
149.9	(6) Alcatel-Lucent RRH2x50-08
149.8	(3) Alcatel-Lucent 1900 MHz 4X45 R
148.3	(3) Commscope NNVV-65B-R4
148.2	(3) RFS APXVTM14-ALU-I20
148.0	(1) Generic Flat Low Profile Platf
140.0	(6) Powerwave Allgon TT19-08BP111-
140.0	(1) Raycap DC6-48-60-18-8F ("Squid
140.0	(3) Ericsson RRUS 8843 B2, B66A
140.0	(3) Ericsson RRUS 4478 B14 (15")
140.0	(3) Ericsson RRUS 4449 B5, B12
140.0	(1) Raycap DC9-48-60-24-8C-EV
140.0	(3) Generic Mount Reinforcement
140.0	(3) Powerwave Allgon 7770.00
140.0	(6) CCI DMP65R-BU4D
140.0	(1) Generic Round Platform with Ha
111.0	(1) Generic 12' Dipole
111.0	(1) Generic Flat Stand-Off
76.4	(1) Generic GPS
74.0	(1) Generic Flat Stand-Off

LINEAR APPURTENANCE

Elev To (ft)	Description
176.0	(1) 1/2" Coax
176.0	(2) 1/2" Coax
176.0	(4) 1/2" Coax
171.0	(3) 1.99" (50.7mm) Hybrid
171.0	(3) 1 1/4" Hybriflex Cable
162.0	(6) 1 5/8" Coax
161.0	(2) 1 5/8" Hybriflex
161.0	(12) 1 5/8" Coax
150.0	(3) 1 1/4" Hybriflex Cable
148.0	(6) 1 5/8" Coax
140.0	(2) 2" conduit
140.0	(6) 1 5/8" Coax
140.0	(5) 0.78" (19.7mm) 8 AWG 6
140.0	(2) 0.39" (10mm) Fiber Trunk
111.0	(2) 1/2" Coax
78.0	(1) 1/2" Coax

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	4404.61	73.29	36.19
0.9D + 1.0W	4362.09	54.96	36.17
1.2D + 1.0Di + 1.0Wi	1048.14	95.29	8.79
1.2D + 1.0Ev + 1.0Eh	254.03	73.61	1.84
0.9D - 1.0Ev + 1.0Eh	250.95	50.80	1.83
1.0D + 1.0W	888.28	61.10	7.34

ANALYSIS PARAMETERS

Location:	New London County,CT	**Height:**	171.5 ft
Type and Shape:	Custom, 18 Sides	**Base Diameter:**	69.00 in
Manufacturer:	EEI	**Top Diameter:**	29.01 in
K_d (non-service):	0.95	**Taper:**	0.2610 in/ft
K_e:	1.00	**Rotation:**	0.000º

ICE & WIND PARAMETERS

Risk Category:	II	**Design Wind Speed:**	126 mph
Exposure Category:	B	**Design Wind Speed w/ Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Design Ice Thickness:**	1.00 in
Topographic Category:	1	**Service Wind Speed:**	60 mph
Crest Height:	0 ft	**HMSL:**	40.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil		**Period Based on Rayleigh Method (sec):**		2.28
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.199	**S_1:**	0.053	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.212	**S_{d1}:**	0.085		

LOAD CASES

1.2D + 1.0W	126 mph Wind with No Ice
0.9D + 1.0W	126 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph Wind with 1" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	48.17	0.4375	65		0.00	14,175	69.00	0.003	95.20	56,543.5	26.40	157.71	56.44	48.17	77.76	30,810.	21.34	129.00	0.2608
2-18	49.71	0.4375	65	Slip	96.00	12,326	59.40	40.172	81.87	35,961.6	22.53	135.77	46.44	89.88	63.87	17,074.	17.30	106.14	0.2608
3-18	49.12	0.3750	65	Slip	80.00	8,385	48.92	83.205	57.78	17,207.7	21.59	130.46	36.11	132.33	42.53	6,863.5	15.57	96.30	0.2608
4-18	34.50	0.2500	65	Slip	64.00	3,098	38.00	127.000	29.96	5,394.5	25.39	152.01	29.01	161.50	22.82	2,383.8	19.05	116.02	0.2608
5-18	10.00	0.1875	35	Butt	0.00	538	27.50	161.500	16.25	1,531.9	24.45	146.67	26.00	171.50	15.36	1,293.1	23.04	138.67	0.1500
			Total Shaft Weight			**38,522**													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
177.00	Generic 12' Dipole	1	0.90	2.000	40.00	4.510	1.00	130.26	9.355	1.00
176.00	Decibel DB201-A	1	1.00	0.000	25.00	3.130	1.00	92.20	10.255	1.00
171.00	Ericsson AIR 6419 B41	3	0.75	0.000	68.50	5.600	0.60	150.26	6.672	0.60
171.00	Commscope VV-65A-R1B	3	0.75	0.000	24.70	5.887	0.63	103.79	7.319	0.63
171.00	RFS APXVAARR24_43-U-NA20	3	0.75	-0.800	127.90	20.243	0.63	393.54	22.753	0.63
171.00	Ericsson Radio 4449 B12,B71	3	0.75	0.600	74.00	1.639	0.50	111.88	2.210	0.50
171.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	168.81	3.277	0.67
170.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3700.16	56.569	1.00
165.70	RFS DB-T1-6Z-8AB-0Z	2	1.00	0.000	44.00	4.800	0.72	128.90	5.759	0.72
161.00	Alcatel-Lucent B66 RRH4x45	3	0.80	2.400	67.00	2.580	0.67	114.65	3.338	0.67
161.00	Amphenol Antel LPA-80080-6CF-E	2	0.80	0.000	21.00	8.628	0.71	134.05	10.467	0.71
161.00	Commscope SBNHH-1D65B	6	0.80	1.400	50.70	8.173	0.69	168.74	10.076	0.69
161.00	Alcatel-Lucent RRH2X60-1900	3	0.80	1.700	43.00	1.876	0.50	80.21	2.506	0.50
161.00	Alcatel-Lucent RRH2x60 700	3	0.80	2.000	56.70	2.150	0.67	102.47	2.824	0.67
161.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2419.69	38.941	1.00
161.00	Unused Reserve (519.6200 sqin)	1	0.80	0.000	209.00	3.608	0.90	306.93	5.299	0.90
161.00	RFS APL866513-42T0	4	0.80	0.300	15.70	4.050	0.76	89.00	5.301	0.76
161.00	Antel BXA-70063-4CF-EDIN-10	1	0.80	0.000	9.90	4.708	1.00	78.26	5.946	1.00
161.00	Antel BXA-70063/6CF_	2	0.80	0.000	17.00	7.569	0.73	112.11	9.424	0.73
158.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	0.000	44.00	4.800	0.50	128.44	5.753	0.50
150.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	1.000	70.00	4.046	0.50	133.13	4.933	0.50
149.90	Alcatel-Lucent RRH2x50-08	6	0.80	0.900	52.90	1.701	0.50	92.48	2.277	0.50
149.80	Alcatel-Lucent 1900 MHz 4X45 R	3	0.80	0.800	60.00	2.322	0.50	113.80	3.043	0.50
148.30	Commscope NNVV-65B-R4	3	0.80	-0.700	77.40	12.271	0.64	245.06	14.142	0.64
148.20	RFS APXVTM14-ALU-I20	3	0.80	-0.800	56.20	6.342	0.66	148.07	7.795	0.66
148.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2414.74	38.824	1.00
140.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3572.66	43.388	1.00
140.00	CCI DMP65R-BU4D	6	0.75	-0.100	67.90	8.280	0.62	187.50	9.621	0.62
140.00	Powerwave Allgon 7770.00	3	0.75	-1.500	35.00	5.508	0.65	110.28	6.916	0.65
140.00	Ericsson RRUS 4449 B5, B12	3	0.75	-0.200	71.00	1.969	0.50	113.68	2.587	0.50
140.00	Raycap DC9-48-60-24-8C-EV	1	0.75	0.000	16.00	4.788	0.50	101.50	5.762	0.50
140.00	Generic Mount Reinforcement	3	0.75	0.000	200.00	4.980	0.67	328.17	8.272	0.67
140.00	Ericsson RRUS 4478 B14 (15")	3	0.75	0.100	59.40	1.650	0.50	92.31	2.211	0.50
140.00	Ericsson RRUS 8843 B2, B66A	3	0.75	3.200	72.00	1.639	0.50	112.59	2.199	0.50
140.00	Raycap DC6-48-60-18-8F ("Squid	1	0.75	-0.200	18.90	1.470	0.50	59.77	1.933	0.50
140.00	Powerwave Allgon TT19-08BP111-	6	0.75	-1.000	16.00	0.553	0.50	29.38	0.892	0.50
111.00	Generic Flat Stand-Off	1	1.00	0.000	187.50	6.300	1.00	273.83	8.319	1.00
111.00	Generic 12' Dipole	1	1.00	0.000	40.00	4.510	1.00	126.39	9.147	1.00
76.40	Generic GPS	1	1.00	2.400	10.00	0.900	0.50	28.25	1.299	0.50
74.00	Generic Flat Stand-Off	1	1.00	0.000	187.50	6.300	1.00	270.21	8.234	1.00
Totals	**Row Count: 40**	**101**			**14,749.00**			**25,674.55**		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 230.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	176.00	4	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF OLD LYME, CT

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 230.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	176.00	2	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF OLD LYME, CT
0.00	176.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF OLD LYME, CT
0.00	171.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	171.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	T-MOBILE
0.00	162.00	6	1 5/8" Coax	1.98	0.82	N	6	1	1	320	1	Y	VERIZON WIRELESS
0.00	161.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	161.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	150.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	148.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	140.00	5	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	140.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	140.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	111.00	2	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF OLD LYME, CT
0.00	78.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SPRINT NEXTEL

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	69.000	95.204	56,543.50	26.40	157.71	70.4	1614.0	0.0	0.0
5.00		0.4375	67.696	93.393	53,378.20	25.87	154.73	71	1553.0	0.0	1,604.4
10.00		0.4375	66.392	91.583	50,333.30	25.35	151.75	71.6	1493.2	0.0	1,573.6
15.00		0.4375	65.088	89.772	47,406.50	24.82	148.77	72.2	1434.6	0.0	1,542.8
20.00		0.4375	63.784	87.961	44,595.40	24.30	145.79	72.8	1377.1	0.0	1,512.0
25.00		0.4375	62.480	86.151	41,897.70	23.77	142.81	73.4	1320.8	0.0	1,481.2
30.00		0.4375	61.176	84.340	39,311.00	23.25	139.83	74.1	1265.7	0.0	1,450.4
35.00		0.4375	59.872	82.529	36,833.10	22.72	136.85	74.7	1211.7	0.0	1,419.5
40.00		0.4375	58.568	80.719	34,461.50	22.19	133.87	75.3	1158.9	0.0	1,388.7
40.17	Bot - Section 2	0.4375	58.525	80.658	34,384.30	22.18	133.77	75.3	1157.2	0.0	45.8
45.00		0.4375	57.264	78.908	32,194.00	21.67	130.89	75.9	1107.3	0.0	2,644.3
48.17	Top - Section 1	0.4375	57.313	78.976	32,277.60	21.69	131.00	75.9	1109.2	0.0	1,701.3
50.00		0.4375	56.835	78.312	31,470.40	21.50	129.91	76.1	1090.6	0.0	490.6
55.00		0.4375	55.531	76.501	29,337.50	20.97	126.93	76.7	1040.6	0.0	1,317.0
60.00		0.4375	54.227	74.691	27,303.30	20.44	123.95	77.4	991.7	0.0	1,286.2
65.00		0.4375	52.923	72.880	25,365.30	19.92	120.97	78	944.0	0.0	1,255.4
70.00		0.4375	51.619	71.069	23,521.30	19.39	117.99	78.6	897.5	0.0	1,224.6
74.00		0.4375	50.576	69.621	22,112.20	18.97	115.60	79.1	861.1	0.0	957.5
75.00		0.4375	50.315	69.259	21,768.90	18.87	115.01	79.2	852.2	0.0	236.3
76.40		0.4375	49.950	68.752	21,294.30	18.72	114.17	79.4	839.7	0.0	328.7
80.00		0.4375	49.011	67.448	20,105.80	18.34	112.03	79.8	808.0	0.0	834.2
83.21	Bot - Section 3	0.4375	48.174	66.286	19,084.50	18.01	110.11	80.2	780.3	0.0	730.0
85.00		0.4375	47.707	65.637	18,529.60	17.82	109.04	80.4	765.0	0.0	752.7
89.88	Top - Section 2	0.3750	47.186	55.714	15,424.40	20.78	125.83	77	643.8	0.0	2,011.0
90.00		0.3750	47.153	55.676	15,392.20	20.76	125.74	77	642.9	0.0	23.7
95.00		0.3750	45.849	54.123	14,140.50	20.15	122.26	77.7	607.5	0.0	934.1
100.00		0.3750	44.545	52.571	12,958.60	19.53	118.79	78.4	573.0	0.0	907.6
105.00		0.3750	43.241	51.019	11,844.40	18.92	115.31	79.1	539.5	0.0	881.2
110.00		0.3750	41.937	49.467	10,796.10	18.31	111.83	79.9	507.0	0.0	854.8
111.00		0.3750	41.676	49.157	10,594.10	18.19	111.14	80	500.7	0.0	167.8
115.00		0.3750	40.633	47.915	9,811.40	17.70	108.35	80.6	475.6	0.0	660.6
120.00		0.3750	39.329	46.363	8,888.60	17.08	104.88	81.3	445.1	0.0	802.0
125.00		0.3750	38.025	44.811	8,025.50	16.47	101.40	82	415.7	0.0	775.6
127.00	Bot - Section 4	0.3750	37.503	44.190	7,696.50	16.22	100.01	82.3	404.2	0.0	302.9
130.00		0.3750	36.721	43.259	7,220.10	15.86	97.92	82.6	387.3	0.0	749.0
132.33	Top - Section 3	0.2500	36.612	28.853	4,820.00	24.41	146.45	72.7	259.3	0.0	571.6
135.00		0.2500	35.917	28.301	4,548.70	23.92	143.67	73.3	249.4	0.0	259.3
140.00		0.2500	34.613	27.266	4,067.80	23.00	138.45	74.3	231.5	0.0	472.7
145.00		0.2500	33.309	26.231	3,622.00	22.08	133.24	75.4	214.2	0.0	455.1

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
148.00		0.2500	32.527	25.611	3,370.90	21.53	130.11	76.1	204.1	0.0	264.6
148.20		0.2500	32.474	25.569	3,354.60	21.49	129.90	76.1	203.5	0.0	17.4
148.30		0.2500	32.448	25.548	3,346.50	21.48	129.79	76.1	203.1	0.0	8.7
149.80		0.2500	32.057	25.238	3,226.00	21.20	128.23	76.5	198.2	0.0	129.6
149.90		0.2500	32.031	25.217	3,218.00	21.18	128.12	76.5	197.9	0.0	8.6
150.00		0.2500	32.005	25.197	3,210.10	21.16	128.02	76.5	197.6	0.0	8.6
155.00		0.2500	30.701	24.162	2,830.70	20.24	122.80	77.6	181.6	0.0	419.9
158.00		0.2500	29.919	23.541	2,618.00	19.69	119.67	78.2	172.4	0.0	243.5
160.00		0.2500	29.397	23.127	2,482.40	19.32	117.59	78.7	166.3	0.0	158.8
161.00		0.2500	29.136	22.920	2,416.30	19.14	116.54	78.9	163.3	0.0	78.3
161.50	Top - Section 4	0.2500	29.006	22.817	2,383.80	19.05	116.02	79	161.9	0.0	38.9
161.50	Bot - Section 5	0.1875	27.500	16.254	1,531.90	24.45	146.67	43.2	109.7	0.0	
165.00		0.1875	26.975	15.941	1,445.20	23.96	143.87	43.5	105.5	0.0	191.7
165.70		0.1875	26.870	15.879	1,428.30	23.86	143.31	43.5	104.7	0.0	37.9
170.00		0.1875	26.225	15.495	1,327.20	23.25	139.87	43.8	99.7	0.0	229.5
171.00		0.1875	26.075	15.406	1,304.40	23.11	139.07	43.9	98.5	0.0	52.6
171.50		0.1875	26.000	15.361	1,293.10	23.04	138.67	43.9	98.0	0.0	26.2
										Total:	**38,521.0**

CALCULATED FORCES

Load Case: 1.2D + 1.0W — 126 mph Wind with No Ice — 24 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-73.29	-36.19	0.00	-4,404.6	0.00	4,404.61	6,027.96	1,670.83	10,346.58	8,516.24	0	0	0.530
5.00	-70.99	-35.70	0.00	-4,223.7	0.00	4,223.68	5,965.27	1,639.06	9,956.79	8,266.37	0.06	-0.11	0.523
10.00	-68.73	-35.22	0.00	-4,045.2	0.00	4,045.18	5,900.57	1,607.28	9,574.49	8,017.15	0.23	-0.22	0.517
15.00	-66.51	-34.74	0.00	-3,869.1	0.00	3,869.10	5,833.85	1,575.50	9,199.67	7,768.75	0.52	-0.33	0.510
20.00	-64.33	-34.27	0.00	-3,695.4	0.00	3,695.40	5,765.11	1,543.72	8,832.34	7,521.33	0.93	-0.44	0.503
25.00	-62.18	-33.81	0.00	-3,524.0	0.00	3,524.05	5,694.36	1,511.94	8,472.49	7,275.05	1.46	-0.56	0.496
30.00	-60.07	-33.34	0.00	-3,355.0	0.00	3,355.03	5,621.60	1,480.17	8,120.12	7,030.08	2.11	-0.68	0.488
35.00	-58.00	-32.86	0.00	-3,188.3	0.00	3,188.33	5,546.82	1,448.39	7,775.24	6,786.58	2.88	-0.79	0.481
40.00	-56.00	-32.59	0.00	-3,024.0	0.00	3,024.04	5,470.03	1,416.61	7,437.84	6,544.71	3.77	-0.91	0.473
40.17	-55.91	-32.35	0.00	-3,018.6	0.00	3,018.60	5,467.43	1,415.55	7,426.72	6,536.68	3.81	-0.92	0.473
45.00	-52.39	-31.90	0.00	-2,862.2	0.00	2,862.24	5,391.22	1,384.83	7,107.92	6,304.65	4.8	-1.04	0.464
48.17	-50.13	-31.62	0.00	-2,761.2	0.00	2,761.21	5,394.23	1,386.03	7,120.21	6,313.65	5.51	-1.11	0.447
50.00	-49.39	-31.26	0.00	-2,703.2	0.00	2,703.24	5,364.85	1,374.38	7,001.02	6,226.09	5.95	-1.16	0.444
55.00	-47.46	-30.71	0.00	-2,546.9	0.00	2,546.94	5,283.37	1,342.60	6,681.05	5,988.66	7.23	-1.28	0.435
60.00	-45.56	-30.16	0.00	-2,393.4	0.00	2,393.37	5,199.87	1,310.82	6,368.56	5,753.41	8.63	-1.4	0.425
65.00	-43.70	-29.60	0.00	-2,242.6	0.00	2,242.57	5,114.36	1,279.04	6,063.56	5,520.50	10.17	-1.52	0.415
70.00	-41.89	-29.09	0.00	-2,094.6	0.00	2,094.57	5,026.83	1,247.27	5,766.04	5,290.10	11.82	-1.64	0.405
74.00	-40.26	-28.54	0.00	-1,978.2	0.00	1,978.21	4,955.35	1,221.84	5,533.42	5,107.69	13.24	-1.74	0.396
75.00	-39.90	-28.41	0.00	-1,949.7	0.00	1,949.67	4,937.28	1,215.49	5,476.01	5,062.36	13.61	-1.77	0.394
76.40	-39.39	-28.12	0.00	-1,909.8	0.00	1,909.85	4,911.85	1,206.59	5,396.14	4,999.10	14.13	-1.8	0.391
80.00	-38.14	-27.73	0.00	-1,808.6	0.00	1,808.62	4,845.73	1,183.71	5,193.46	4,837.46	15.53	-1.89	0.382
83.21	-37.05	-27.44	0.00	-1,719.6	0.00	1,719.65	4,785.91	1,163.32	5,016.10	4,694.71	16.82	-1.97	0.375
85.00	-36.02	-27.06	0.00	-1,670.5	0.00	1,670.49	4,752.15	1,151.93	4,918.39	4,615.55	17.57	-2.02	0.370
89.88	-33.29	-26.70	0.00	-1,538.6	0.00	1,538.58	3,859.20	977.79	4,134.15	3,716.46	19.69	-2.14	0.423
90.00	-33.23	-26.44	0.00	-1,535.2	0.00	1,535.24	3,857.41	977.11	4,128.40	3,712.13	19.75	-2.14	0.423
95.00	-31.77	-25.87	0.00	-1,403.1	0.00	1,403.06	3,785.01	949.87	3,901.46	3,540.11	22.06	-2.27	0.405
100.00	-30.35	-25.31	0.00	-1,273.7	0.00	1,273.70	3,710.59	922.63	3,680.94	3,370.18	24.52	-2.41	0.387
105.00	-28.95	-24.75	0.00	-1,147.2	0.00	1,147.15	3,634.16	895.39	3,466.84	3,202.49	27.11	-2.54	0.367
110.00	-27.61	-24.39	0.00	-1,023.4	0.00	1,023.40	3,555.71	868.15	3,259.15	3,037.22	29.85	-2.67	0.346
111.00	-27.08	-23.65	0.00	-999.0	0.00	999.01	3,539.78	862.71	3,218.38	3,004.47	30.41	-2.7	0.341
115.00	-26.03	-23.17	0.00	-904.4	0.00	904.39	3,475.25	840.91	3,057.87	2,874.52	32.71	-2.8	0.323
120.00	-24.74	-22.62	0.00	-788.6	0.00	788.57	3,392.78	813.68	2,863.01	2,714.56	35.71	-2.92	0.299
125.00	-23.50	-22.22	0.00	-675.5	0.00	675.48	3,308.29	786.44	2,674.57	2,557.51	38.84	-3.04	0.272
127.00	-23.01	-21.95	0.00	-631.0	0.00	631.04	3,273.93	775.54	2,600.99	2,495.54	40.12	-3.09	0.261
130.00	-21.92	-21.64	0.00	-565.2	0.00	565.18	3,213.95	759.20	2,492.54	2,397.68	42.09	-3.15	0.243

CALCULATED FORCES

132.33	-21.09	-21.36	0.00	-514.7	0.00	514.69	1,887.50	506.36	1,663.02	1,413.57	43.64	-3.2	0.377
135.00	-20.61	-20.98	0.00	-457.7	0.00	457.74	1,866.09	496.68	1,600.03	1,370.63	45.44	-3.26	0.347
140.00	-14.73	-16.69	0.00	-352.8	0.00	352.84	1,824.41	478.52	1,485.18	1,290.68	48.93	-3.38	0.283
145.00	-13.97	-16.28	0.00	-269.4	0.00	269.38	1,780.72	460.36	1,374.61	1,211.62	52.53	-3.49	0.231
148.00	-11.36	-14.75	0.00	-220.5	0.00	220.54	1,753.53	449.47	1,310.32	1,164.67	54.74	-3.55	0.197
148.20	-11.16	-14.25	0.00	-217.6	0.00	217.59	1,751.69	448.74	1,306.09	1,161.56	54.89	-3.55	0.195
148.30	-10.92	-13.28	0.00	-216.2	0.00	216.16	1,750.77	448.38	1,303.98	1,160.00	54.97	-3.56	0.193
149.80	-10.51	-13.05	0.00	-196.1	0.00	196.13	1,736.87	442.93	1,272.49	1,136.70	56.09	-3.58	0.179
149.90	-10.13	-12.83	0.00	-194.7	0.00	194.66	1,735.94	442.56	1,270.41	1,135.15	56.16	-3.58	0.178
150.00	-9.88	-12.35	0.00	-193.1	0.00	193.14	1,735.01	442.20	1,268.32	1,133.60	56.24	-3.59	0.177
155.00	-9.23	-11.96	0.00	-131.4	0.00	131.37	1,687.28	424.04	1,166.31	1,056.80	60.03	-3.66	0.131
158.00	-8.75	-11.53	0.00	-95.5	0.00	95.50	1,657.68	413.15	1,107.15	1,011.36	62.34	-3.69	0.100
160.00	-8.51	-11.38	0.00	-72.4	0.00	72.45	1,637.54	405.88	1,068.57	981.37	63.89	-3.71	0.080
161.00	-5.05	-6.38	0.00	-58.1	0.00	58.10	1,627.35	402.25	1,049.53	966.46	64.67	-3.72	0.063
161.50	-5.00	-6.21	0.00	-54.9	0.00	54.91	1,622.23	400.44	1,040.08	959.03	65.06	-3.72	0.061
161.50	-5.00	-6.21	0.00	-54.9	0.00	54.91	632.49	153.60	378.91	355.79	65.06	-3.72	0.164
165.00	-4.74	-6.02	0.00	-33.2	0.00	33.17	623.63	150.65	364.48	344.02	67.79	-3.74	0.106
165.70	-4.62	-5.48	0.00	-29.0	0.00	28.96	621.84	150.06	361.63	341.68	68.34	-3.74	0.094
170.00	-1.45	-2.99	0.00	-5.4	0.00	5.38	610.74	146.43	344.36	327.41	71.72	-3.76	0.019
171.00	-0.09	-0.38	0.00	-2.4	0.00	2.39	608.13	145.58	340.40	324.12	72.51	-3.76	0.008
171.50	0.00	-0.37	0.00	-2.2	0.00	2.20	606.82	145.16	338.43	322.48	72.9	-3.76	0.007

CALCULATED FORCES

Load Case: 0.9D + 1.0W — 126 mph Wind with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.96	-36.17	0.00	-4,362.1	0.00	4,362.09	6,027.96	1,670.83	10,346.58	8,516.24	0	0	0.522
5.00	-53.22	-35.65	0.00	-4,181.2	0.00	4,181.25	5,965.27	1,639.06	9,956.79	8,266.37	0.06	-0.11	0.515
10.00	-51.51	-35.13	0.00	-4,003.0	0.00	4,003.02	5,900.57	1,607.28	9,574.49	8,017.15	0.23	-0.22	0.509
15.00	-49.83	-34.62	0.00	-3,827.4	0.00	3,827.37	5,833.85	1,575.50	9,199.67	7,768.75	0.52	-0.33	0.502
20.00	-48.17	-34.12	0.00	-3,654.2	0.00	3,654.25	5,765.11	1,543.72	8,832.34	7,521.33	0.92	-0.44	0.495
25.00	-46.55	-33.63	0.00	-3,483.6	0.00	3,483.63	5,694.36	1,511.94	8,472.49	7,275.05	1.44	-0.55	0.488
30.00	-44.95	-33.14	0.00	-3,315.5	0.00	3,315.48	5,621.60	1,480.17	8,120.12	7,030.08	2.08	-0.67	0.480
35.00	-43.39	-32.63	0.00	-3,149.8	0.00	3,149.79	5,546.82	1,448.39	7,775.24	6,786.58	2.85	-0.79	0.472
40.00	-41.88	-32.36	0.00	-2,986.6	0.00	2,986.62	5,470.03	1,416.61	7,437.84	6,544.71	3.73	-0.9	0.465
40.17	-41.80	-32.10	0.00	-2,981.2	0.00	2,981.22	5,467.43	1,415.55	7,426.72	6,536.68	3.77	-0.91	0.464
45.00	-39.16	-31.65	0.00	-2,826.1	0.00	2,826.06	5,391.22	1,384.83	7,107.92	6,304.65	4.75	-1.02	0.456
48.17	-37.45	-31.36	0.00	-2,725.8	0.00	2,725.84	5,394.23	1,386.03	7,120.21	6,313.65	5.45	-1.1	0.439
50.00	-36.89	-30.99	0.00	-2,668.4	0.00	2,668.36	5,364.85	1,374.38	7,001.02	6,226.09	5.89	-1.15	0.436
55.00	-35.43	-30.42	0.00	-2,513.4	0.00	2,513.43	5,283.37	1,342.60	6,681.05	5,988.66	7.15	-1.26	0.427
60.00	-34.00	-29.86	0.00	-2,361.3	0.00	2,361.32	5,199.87	1,310.82	6,368.56	5,753.41	8.54	-1.38	0.417
65.00	-32.59	-29.28	0.00	-2,212.0	0.00	2,212.05	5,114.36	1,279.04	6,063.56	5,520.50	10.05	-1.5	0.408
70.00	-31.22	-28.76	0.00	-2,065.6	0.00	2,065.63	5,026.83	1,247.27	5,766.04	5,290.10	11.69	-1.62	0.397
74.00	-30.00	-28.22	0.00	-1,950.6	0.00	1,950.58	4,955.35	1,221.84	5,533.42	5,107.69	13.09	-1.72	0.388
75.00	-29.73	-28.08	0.00	-1,922.4	0.00	1,922.36	4,937.28	1,215.49	5,476.01	5,062.36	13.45	-1.74	0.386
76.40	-29.34	-27.78	0.00	-1,883.0	0.00	1,883.01	4,911.85	1,206.59	5,396.14	4,999.10	13.97	-1.78	0.383
80.00	-28.40	-27.39	0.00	-1,783.0	0.00	1,782.99	4,845.73	1,183.71	5,193.46	4,837.46	15.35	-1.87	0.375
83.21	-27.58	-27.10	0.00	-1,695.1	0.00	1,695.11	4,785.91	1,163.32	5,016.10	4,694.71	16.63	-1.95	0.367
85.00	-26.79	-26.71	0.00	-1,646.6	0.00	1,646.56	4,752.15	1,151.93	4,918.39	4,615.55	17.37	-1.99	0.363
89.88	-24.74	-26.37	0.00	-1,516.3	0.00	1,516.34	3,859.20	977.79	4,134.15	3,716.46	19.46	-2.11	0.415
90.00	-24.70	-26.09	0.00	-1,513.0	0.00	1,513.05	3,857.41	977.11	4,128.40	3,712.13	19.52	-2.11	0.415
95.00	-23.59	-25.52	0.00	-1,382.6	0.00	1,382.57	3,785.01	949.87	3,901.46	3,540.11	21.8	-2.25	0.398
100.00	-22.51	-24.96	0.00	-1,255.0	0.00	1,254.95	3,710.59	922.63	3,680.94	3,370.18	24.23	-2.38	0.379
105.00	-21.46	-24.40	0.00	-1,130.2	0.00	1,130.16	3,634.16	895.39	3,466.84	3,202.49	26.79	-2.51	0.360
110.00	-20.45	-24.04	0.00	-1,008.2	0.00	1,008.18	3,555.71	868.15	3,259.15	3,037.22	29.49	-2.64	0.338
111.00	-20.06	-23.30	0.00	-984.1	0.00	984.14	3,539.78	862.71	3,218.38	3,004.47	30.04	-2.66	0.334
115.00	-19.26	-22.81	0.00	-890.9	0.00	890.93	3,475.25	840.91	3,057.87	2,874.52	32.32	-2.77	0.316
120.00	-18.30	-22.27	0.00	-776.9	0.00	776.86	3,392.78	813.68	2,863.01	2,714.56	35.28	-2.89	0.292
125.00	-17.36	-21.88	0.00	-665.5	0.00	665.52	3,308.29	786.44	2,674.57	2,557.51	38.36	-3	0.266
127.00	-16.99	-21.61	0.00	-621.8	0.00	621.77	3,273.93	775.54	2,600.99	2,495.54	39.63	-3.05	0.255
130.00	-16.18	-21.31	0.00	-556.9	0.00	556.93	3,213.95	759.20	2,492.54	2,397.68	41.57	-3.11	0.238
132.33	-15.55	-21.03	0.00	-507.2	0.00	507.21	1,887.50	506.36	1,663.02	1,413.57	43.1	-3.16	0.369
135.00	-15.19	-20.65	0.00	-451.1	0.00	451.13	1,866.09	496.68	1,600.03	1,370.63	44.88	-3.21	0.339
140.00	-10.82	-16.45	0.00	-347.9	0.00	347.87	1,824.41	478.52	1,485.18	1,290.68	48.31	-3.34	0.277
145.00	-10.25	-16.04	0.00	-265.6	0.00	265.63	1,780.72	460.36	1,374.61	1,211.62	51.87	-3.45	0.226
148.00	-8.31	-14.55	0.00	-217.5	0.00	217.50	1,753.53	449.47	1,310.32	1,164.67	54.05	-3.5	0.193
148.20	-8.17	-14.06	0.00	-214.6	0.00	214.59	1,751.69	448.74	1,306.09	1,161.56	54.2	-3.51	0.190
148.30	-8.01	-13.09	0.00	-213.2	0.00	213.19	1,750.77	448.38	1,303.98	1,160.00	54.28	-3.51	0.189
149.80	-7.70	-12.87	0.00	-193.4	0.00	193.44	1,736.87	442.93	1,272.49	1,136.70	55.38	-3.53	0.175
149.90	-7.41	-12.65	0.00	-192.0	0.00	191.98	1,735.94	442.56	1,270.41	1,135.15	55.46	-3.54	0.174
150.00	-7.24	-12.18	0.00	-190.5	0.00	190.49	1,735.01	442.20	1,268.32	1,133.60	55.53	-3.54	0.173
155.00	-6.75	-11.79	0.00	-129.6	0.00	129.59	1,687.28	424.04	1,166.31	1,056.80	59.27	-3.61	0.127
158.00	-6.40	-11.37	0.00	-94.2	0.00	94.21	1,657.68	413.15	1,107.15	1,011.36	61.55	-3.64	0.098
160.00	-6.21	-11.23	0.00	-71.5	0.00	71.48	1,637.54	405.88	1,068.57	981.37	63.08	-3.66	0.077
161.00	-3.70	-6.29	0.00	-57.3	0.00	57.29	1,627.35	402.25	1,049.53	966.46	63.85	-3.67	0.062
161.50	-3.66	-6.12	0.00	-54.1	0.00	54.14	1,622.23	400.44	1,040.08	959.03	64.23	-3.67	0.059
161.50	-3.66	-6.12	0.00	-54.1	0.00	54.14	632.49	153.60	378.91	355.79	64.23	-3.67	0.160
165.00	-3.47	-5.94	0.00	-32.7	0.00	32.72	623.63	150.65	364.48	344.02	66.93	-3.69	0.102
165.70	-3.38	-5.40	0.00	-28.6	0.00	28.56	621.84	150.06	361.63	341.68	67.47	-3.69	0.090
170.00	-1.04	-2.96	0.00	-5.4	0.00	5.35	610.74	146.43	344.36	327.41	70.81	-3.71	0.018
171.00	-0.06	-0.38	0.00	-2.4	0.00	2.39	608.13	145.58	340.40	324.12	71.58	-3.71	0.007

CALCULATED FORCES													
171.50	0.00	-0.37	0.00	-2.2	0.00	2.20	606.82	145.16	338.43	322.48	71.97	-3.71	0.007

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph Wind with 1" Radial Ice — 23 Iterations

Gust Response Factor: 1.10 — Ice Dead Load Factor 1.00
Dead load Factor: 1.20 — Ice Importance Factor 1.00
Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-95.29	-8.79	0.00	-1,048.1	0.00	1,048.14	6,027.96	1,670.83	10,346.58	8,516.24	0	0	0.139
5.00	-92.66	-8.66	0.00	-1,004.2	0.00	1,004.21	5,965.27	1,639.06	9,956.79	8,266.37	0.01	-0.03	0.137
10.00	-90.04	-8.54	0.00	-960.9	0.00	960.89	5,900.57	1,607.28	9,574.49	8,017.15	0.06	-0.05	0.135
15.00	-87.43	-8.42	0.00	-918.2	0.00	918.19	5,833.85	1,575.50	9,199.67	7,768.75	0.12	-0.08	0.133
20.00	-84.86	-8.30	0.00	-876.1	0.00	876.09	5,765.11	1,543.72	8,832.34	7,521.33	0.22	-0.11	0.131
25.00	-82.32	-8.18	0.00	-834.6	0.00	834.59	5,694.36	1,511.94	8,472.49	7,275.05	0.35	-0.13	0.129
30.00	-79.82	-8.06	0.00	-793.7	0.00	793.68	5,621.60	1,480.17	8,120.12	7,030.08	0.5	-0.16	0.127
35.00	-77.35	-7.94	0.00	-753.4	0.00	753.37	5,546.82	1,448.39	7,775.24	6,786.58	0.68	-0.19	0.125
40.00	-74.93	-7.87	0.00	-713.7	0.00	713.67	5,470.03	1,416.61	7,437.84	6,544.71	0.9	-0.22	0.123
40.17	-74.84	-7.81	0.00	-712.4	0.00	712.36	5,467.43	1,415.55	7,426.72	6,536.68	0.9	-0.22	0.123
45.00	-70.93	-7.69	0.00	-674.6	0.00	674.62	5,391.22	1,384.83	7,107.92	6,304.65	1.14	-0.25	0.120
48.17	-68.41	-7.62	0.00	-650.3	0.00	650.26	5,394.23	1,386.03	7,120.21	6,313.65	1.31	-0.26	0.116
50.00	-67.54	-7.53	0.00	-636.3	0.00	636.29	5,364.85	1,374.38	7,001.02	6,226.09	1.41	-0.27	0.115
55.00	-65.21	-7.38	0.00	-598.7	0.00	598.66	5,283.37	1,342.60	6,681.05	5,988.66	1.71	-0.3	0.112
60.00	-62.91	-7.24	0.00	-561.7	0.00	561.74	5,199.87	1,310.82	6,368.56	5,753.41	2.05	-0.33	0.110
65.00	-60.66	-7.09	0.00	-525.5	0.00	525.54	5,114.36	1,279.04	6,063.56	5,520.50	2.41	-0.36	0.107
70.00	-58.46	-6.96	0.00	-490.1	0.00	490.07	5,026.83	1,247.27	5,766.04	5,290.10	2.8	-0.39	0.104
74.00	-56.43	-6.83	0.00	-462.2	0.00	462.24	4,955.35	1,221.84	5,533.42	5,107.69	3.14	-0.41	0.102
75.00	-56.00	-6.79	0.00	-455.4	0.00	455.41	4,937.28	1,215.49	5,476.01	5,062.36	3.22	-0.42	0.101
76.40	-55.38	-6.72	0.00	-445.9	0.00	445.89	4,911.85	1,206.59	5,396.14	4,999.10	3.35	-0.42	0.100
80.00	-53.85	-6.62	0.00	-421.7	0.00	421.71	4,845.73	1,183.71	5,193.46	4,837.46	3.67	-0.45	0.098
83.21	-52.51	-6.54	0.00	-400.5	0.00	400.49	4,785.91	1,163.32	5,016.10	4,694.71	3.98	-0.46	0.096
85.00	-51.35	-6.44	0.00	-388.8	0.00	388.77	4,752.15	1,151.93	4,918.39	4,615.55	4.16	-0.47	0.095
89.88	-48.24	-6.34	0.00	-357.4	0.00	357.39	3,859.20	977.79	4,134.15	3,716.46	4.66	-0.5	0.109
90.00	-48.19	-6.27	0.00	-356.6	0.00	356.60	3,857.41	977.11	4,128.40	3,712.13	4.67	-0.5	0.109
95.00	-46.36	-6.12	0.00	-325.2	0.00	325.23	3,785.01	949.87	3,901.46	3,540.11	5.21	-0.54	0.104
100.00	-44.57	-5.97	0.00	-294.6	0.00	294.61	3,710.59	922.63	3,680.94	3,370.18	5.79	-0.57	0.099
105.00	-42.81	-5.83	0.00	-264.7	0.00	264.74	3,634.16	895.39	3,466.84	3,202.49	6.4	-0.6	0.094
110.00	-41.10	-5.73	0.00	-235.6	0.00	235.61	3,555.71	868.15	3,259.15	3,037.22	7.04	-0.63	0.089
111.00	-40.35	-5.54	0.00	-229.9	0.00	229.88	3,539.78	862.71	3,218.38	3,004.47	7.17	-0.63	0.088
115.00	-39.02	-5.40	0.00	-207.7	0.00	207.74	3,475.25	840.91	3,057.87	2,874.52	7.72	-0.66	0.084
120.00	-37.39	-5.26	0.00	-180.7	0.00	180.72	3,392.78	813.68	2,863.01	2,714.56	8.42	-0.68	0.078
125.00	-35.79	-5.15	0.00	-154.4	0.00	154.44	3,308.29	786.44	2,674.57	2,557.51	9.15	-0.71	0.071
127.00	-35.17	-5.08	0.00	-144.2	0.00	144.15	3,273.93	775.54	2,600.99	2,495.54	9.45	-0.72	0.069
130.00	-33.87	-4.99	0.00	-128.9	0.00	128.92	3,213.95	759.20	2,492.54	2,397.68	9.91	-0.74	0.064
132.33	-32.88	-4.91	0.00	-117.3	0.00	117.27	1,887.50	506.36	1,663.02	1,413.57	10.27	-0.75	0.100
135.00	-32.22	-4.81	0.00	-104.2	0.00	104.17	1,866.09	496.68	1,600.03	1,370.63	10.7	-0.76	0.093
140.00	-23.49	-3.80	0.00	-80.1	0.00	80.11	1,824.41	478.52	1,485.18	1,290.68	11.51	-0.79	0.075
145.00	-22.40	-3.69	0.00	-61.1	0.00	61.11	1,780.72	460.36	1,374.61	1,211.62	12.35	-0.81	0.063
148.00	-19.10	-3.31	0.00	-50.0	0.00	50.05	1,753.53	449.47	1,310.32	1,164.67	12.87	-0.83	0.054
148.20	-18.64	-3.21	0.00	-49.4	0.00	49.39	1,751.69	448.74	1,306.09	1,161.56	12.9	-0.83	0.053
148.30	-17.95	-3.02	0.00	-49.1	0.00	49.07	1,750.77	448.38	1,303.98	1,160.00	12.92	-0.83	0.053
149.80	-17.30	-2.96	0.00	-44.5	0.00	44.51	1,736.87	442.93	1,272.49	1,136.70	13.18	-0.83	0.049
149.90	-16.71	-2.91	0.00	-44.2	0.00	44.18	1,735.94	442.56	1,270.41	1,135.15	13.2	-0.84	0.049
150.00	-16.29	-2.80	0.00	-43.8	0.00	43.84	1,735.01	442.20	1,268.32	1,133.60	13.21	-0.84	0.048
155.00	-15.31	-2.69	0.00	-29.8	0.00	29.84	1,687.28	424.04	1,166.31	1,056.80	14.1	-0.85	0.037
158.00	-14.50	-2.58	0.00	-21.8	0.00	21.77	1,657.68	413.15	1,107.15	1,011.36	14.64	-0.86	0.030
160.00	-14.12	-2.54	0.00	-16.6	0.00	16.61	1,637.54	405.88	1,068.57	981.37	15	-0.86	0.026
161.00	-8.32	-1.45	0.00	-13.5	0.00	13.48	1,627.35	402.25	1,049.53	966.46	15.18	-0.87	0.019
161.50	-8.24	-1.41	0.00	-12.8	0.00	12.75	1,622.23	400.44	1,040.08	959.03	15.27	-0.87	0.018
161.50	-8.24	-1.41	0.00	-12.8	0.00	12.75	632.49	153.60	378.91	355.79	15.27	-0.87	0.049
165.00	-7.81	-1.35	0.00	-7.8	0.00	7.83	623.63	150.65	364.48	344.02	15.91	-0.87	0.035
165.70	-7.49	-1.23	0.00	-6.9	0.00	6.88	621.84	150.06	361.63	341.68	16.04	-0.87	0.032
170.00	-3.05	-0.67	0.00	-1.6	0.00	1.60	610.74	146.43	344.36	327.41	16.82	-0.88	0.010
171.00	-0.25	-0.15	0.00	-0.9	0.00	0.93	608.13	145.58	340.40	324.12	17.01	-0.88	0.003

CALCULATED FORCES													
171.50	0.00	-0.15	0.00	-0.8	0.00	0.85	606.82	145.16	338.43	322.48	17.1	-0.88	0.003

CALCULATED FORCES

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 23 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-61.10	-7.34	0.00	-888.3	0.00	888.28	6,027.96	1,670.83	10,346.58	8,516.24	0	0	0.114
5.00	-59.24	-7.24	0.00	-851.6	0.00	851.59	5,965.27	1,639.06	9,956.79	8,266.37	0.01	-0.02	0.113
10.00	-57.41	-7.13	0.00	-815.4	0.00	815.41	5,900.57	1,607.28	9,574.49	8,017.15	0.05	-0.04	0.111
15.00	-55.61	-7.03	0.00	-779.8	0.00	779.75	5,833.85	1,575.50	9,199.67	7,768.75	0.11	-0.07	0.110
20.00	-53.84	-6.93	0.00	-744.6	0.00	744.59	5,765.11	1,543.72	8,832.34	7,521.33	0.19	-0.09	0.108
25.00	-52.10	-6.83	0.00	-709.9	0.00	709.92	5,694.36	1,511.94	8,472.49	7,275.05	0.29	-0.11	0.107
30.00	-50.40	-6.74	0.00	-675.8	0.00	675.75	5,621.60	1,480.17	8,120.12	7,030.08	0.42	-0.14	0.105
35.00	-48.72	-6.64	0.00	-642.1	0.00	642.07	5,546.82	1,448.39	7,775.24	6,786.58	0.58	-0.16	0.103
40.00	-47.08	-6.58	0.00	-608.9	0.00	608.89	5,470.03	1,416.61	7,437.84	6,544.71	0.76	-0.18	0.102
40.17	-47.02	-6.53	0.00	-607.8	0.00	607.79	5,467.43	1,415.55	7,426.72	6,536.68	0.77	-0.19	0.102
45.00	-44.13	-6.44	0.00	-576.2	0.00	576.23	5,391.22	1,384.83	7,107.92	6,304.65	0.97	-0.21	0.100
48.17	-42.27	-6.38	0.00	-555.8	0.00	555.84	5,394.23	1,386.03	7,120.21	6,313.65	1.11	-0.22	0.096
50.00	-41.68	-6.31	0.00	-544.1	0.00	544.14	5,364.85	1,374.38	7,001.02	6,226.09	1.2	-0.23	0.095
55.00	-40.11	-6.19	0.00	-512.6	0.00	512.61	5,283.37	1,342.60	6,681.05	5,988.66	1.46	-0.26	0.093
60.00	-38.57	-6.08	0.00	-481.6	0.00	481.65	5,199.87	1,310.82	6,368.56	5,753.41	1.74	-0.28	0.091
65.00	-37.06	-5.96	0.00	-451.2	0.00	451.25	5,114.36	1,279.04	6,063.56	5,520.50	2.05	-0.31	0.089
70.00	-35.58	-5.86	0.00	-421.4	0.00	421.43	5,026.83	1,247.27	5,766.04	5,290.10	2.38	-0.33	0.087
74.00	-34.23	-5.75	0.00	-398.0	0.00	398.00	4,955.35	1,221.84	5,533.42	5,107.69	2.67	-0.35	0.085
75.00	-33.94	-5.72	0.00	-392.2	0.00	392.25	4,937.28	1,215.49	5,476.01	5,062.36	2.74	-0.36	0.084
76.40	-33.53	-5.66	0.00	-384.2	0.00	384.23	4,911.85	1,206.59	5,396.14	4,999.10	2.85	-0.36	0.084
80.00	-32.51	-5.58	0.00	-363.8	0.00	363.85	4,845.73	1,183.71	5,193.46	4,837.46	3.13	-0.38	0.082
83.21	-31.62	-5.52	0.00	-345.9	0.00	345.94	4,785.91	1,163.32	5,016.10	4,694.71	3.39	-0.4	0.080
85.00	-30.77	-5.45	0.00	-336.0	0.00	336.04	4,752.15	1,151.93	4,918.39	4,615.55	3.54	-0.41	0.079
89.88	-28.52	-5.37	0.00	-309.5	0.00	309.50	3,859.20	977.79	4,134.15	3,716.46	3.97	-0.43	0.091
90.00	-28.48	-5.32	0.00	-308.8	0.00	308.82	3,857.41	977.11	4,128.40	3,712.13	3.98	-0.43	0.091
95.00	-27.30	-5.21	0.00	-282.2	0.00	282.22	3,785.01	949.87	3,901.46	3,540.11	4.44	-0.46	0.087
100.00	-26.13	-5.09	0.00	-256.2	0.00	256.19	3,710.59	922.63	3,680.94	3,370.18	4.94	-0.49	0.083
105.00	-25.00	-4.98	0.00	-230.7	0.00	230.74	3,634.16	895.39	3,466.84	3,202.49	5.46	-0.51	0.079
110.00	-23.89	-4.91	0.00	-205.8	0.00	205.85	3,555.71	868.15	3,259.15	3,037.22	6.01	-0.54	0.075
111.00	-23.44	-4.76	0.00	-200.9	0.00	200.94	3,539.78	862.71	3,218.38	3,004.47	6.13	-0.54	0.074
115.00	-22.58	-4.66	0.00	-181.9	0.00	181.92	3,475.25	840.91	3,057.87	2,874.52	6.59	-0.56	0.070
120.00	-21.53	-4.55	0.00	-158.6	0.00	158.64	3,392.78	813.68	2,863.01	2,714.56	7.19	-0.59	0.065
125.00	-20.50	-4.47	0.00	-135.9	0.00	135.90	3,308.29	786.44	2,674.57	2,557.51	7.82	-0.61	0.059
127.00	-20.10	-4.41	0.00	-127.0	0.00	126.97	3,273.93	775.54	2,600.99	2,495.54	8.08	-0.62	0.057
130.00	-19.19	-4.35	0.00	-113.7	0.00	113.73	3,213.95	759.20	2,492.54	2,397.68	8.48	-0.63	0.053
132.33	-18.51	-4.29	0.00	-103.6	0.00	103.58	1,887.50	506.36	1,663.02	1,413.57	8.79	-0.64	0.083
135.00	-18.11	-4.22	0.00	-92.1	0.00	92.12	1,866.09	496.68	1,600.03	1,370.63	9.15	-0.66	0.077
140.00	-13.05	-3.36	0.00	-71.0	0.00	71.03	1,824.41	478.52	1,485.18	1,290.68	9.85	-0.68	0.062
145.00	-12.42	-3.28	0.00	-54.2	0.00	54.24	1,780.72	460.36	1,374.61	1,211.62	10.58	-0.7	0.052
148.00	-10.17	-2.97	0.00	-44.4	0.00	44.41	1,753.53	449.47	1,310.32	1,164.67	11.03	-0.71	0.044
148.20	-9.98	-2.87	0.00	-43.8	0.00	43.82	1,751.69	448.74	1,306.09	1,161.56	11.06	-0.72	0.043
148.30	-9.74	-2.67	0.00	-43.5	0.00	43.53	1,750.77	448.38	1,303.98	1,160.00	11.07	-0.72	0.043
149.80	-9.39	-2.63	0.00	-39.5	0.00	39.50	1,736.87	442.93	1,272.49	1,136.70	11.3	-0.72	0.040
149.90	-9.06	-2.58	0.00	-39.2	0.00	39.20	1,735.94	442.56	1,270.41	1,135.15	11.31	-0.72	0.040
150.00	-8.84	-2.49	0.00	-38.9	0.00	38.90	1,735.01	442.20	1,268.32	1,133.60	11.33	-0.72	0.039
155.00	-8.28	-2.41	0.00	-26.5	0.00	26.46	1,687.28	424.04	1,166.31	1,056.80	12.09	-0.74	0.030
158.00	-7.87	-2.32	0.00	-19.2	0.00	19.23	1,657.68	413.15	1,107.15	1,011.36	12.56	-0.74	0.024
160.00	-7.66	-2.29	0.00	-14.6	0.00	14.59	1,637.54	405.88	1,068.57	981.37	12.87	-0.75	0.020
161.00	-4.53	-1.28	0.00	-11.7	0.00	11.70	1,627.35	402.25	1,049.53	966.46	13.03	-0.75	0.015
161.50	-4.48	-1.25	0.00	-11.1	0.00	11.06	1,622.23	400.44	1,040.08	959.03	13.1	-0.75	0.014
161.50	-4.48	-1.25	0.00	-11.1	0.00	11.06	632.49	153.60	378.91	355.79	13.1	-0.75	0.038
165.00	-4.25	-1.21	0.00	-6.7	0.00	6.68	623.63	150.65	364.48	344.02	13.65	-0.75	0.026
165.70	-4.12	-1.10	0.00	-5.8	0.00	5.83	621.84	150.06	361.63	341.68	13.76	-0.75	0.024
170.00	-1.36	-0.60	0.00	-1.1	0.00	1.09	610.74	146.43	344.36	327.41	14.45	-0.76	0.006
171.00	-0.09	-0.08	0.00	-0.5	0.00	0.49	608.13	145.58	340.40	324.12	14.6	-0.76	0.002

CALCULATED FORCES													
171.50	0.00	-0.08	0.00	-0.4	0.00	0.45	606.82	145.16	338.43	322.48	14.68	-0.76	0.001

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.199
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.053
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.212
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.085
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.280
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.890
Total Unfactored Dead Load:	61.100 k
Seismic Base Shear (E):	1.830 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
54	171.25	27	449	0.001	2	33
53	170.5	62	1,039	0.003	5	77
52	167.85	271	4,394	0.011	21	337
51	165.35	45	704	0.002	3	56
50	163.25	228	3,506	0.009	17	284
49	161.25	46	694	0.002	3	57
48	160.5	105	1,568	0.004	7	131
47	159	213	3,112	0.008	15	265
46	156.5	325	4,605	0.012	22	404
45	152.5	555	7,498	0.020	36	690
44	149.95	12	152	0.000	1	14
43	149.85	12	151	0.000	1	14
42	149.05	175	2,260	0.006	11	217
41	148.25	12	150	0.000	1	15
40	148.1	23	299	0.001	1	29
39	146.5	370	4,626	0.012	22	459
38	142.5	630	7,484	0.020	36	783
37	137.5	724	8,039	0.021	38	900
36	133.6667	393	4,140	0.011	20	489
35	131.1667	689	6,994	0.018	33	856
34	128.5	900	8,787	0.023	42	1,118
33	126	403	3,796	0.010	18	501
32	122.5	1,027	9,163	0.024	44	1,276
31	117.5	1,054	8,686	0.023	41	1,309
30	113	862	6,599	0.017	31	1,071
29	110.5	218	1,603	0.004	8	271
28	107.5	1,108	7,719	0.020	37	1,377
27	102.5	1,134	7,222	0.019	34	1,409
26	97.5	1,161	6,723	0.018	32	1,442
25	92.5	1,187	6,224	0.016	30	1,475
24	89.9375	30	149	0.000	1	37
23	87.4375	2,258	10,641	0.028	51	2,805
22	84.1042	843	3,694	0.010	18	1,048
21	81.6042	892	3,691	0.010	18	1,109
20	78.2	1,017	3,880	0.010	18	1,263
19	75.7	400	1,435	0.004	7	497
18	74.5	287	999	0.003	5	357
17	72	1,161	3,788	0.010	18	1,442

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
16	67.5	1,478	4,271	0.011	20	1,837
15	62.5	1,509	3,769	0.010	18	1,875
14	57.5	1,540	3,285	0.008	16	1,913
13	52.5	1,571	2,821	0.007	13	1,952
12	49.0834	584	923	0.002	4	725
11	46.5834	1,862	2,667	0.007	13	2,314
10	42.5834	2,890	3,492	0.009	17	3,590
9	40.0834	54	58	0.000	0	67
8	37.5	1,643	1,561	0.004	7	2,041
7	32.5	1,673	1,213	0.003	6	2,079
6	27.5	1,704	900	0.002	4	2,117
5	22.5	1,735	627	0.002	3	2,156
4	17.5	1,766	397	0.001	2	2,194
3	12.5	1,797	214	0.001	1	2,232
2	7.5	1,827	83	0.000	0	2,270
1	2.5	1,858	11	0.000	0	2,309
Generic 12' Dipole	171.5	40	674	0.002	3	50
Generic 12' Dipole	111	40	296	0.001	1	50
Decibel DB201-A	171.5	25	421	0.001	2	31
Ericsson Radio 4449 B12,B71	171	222	3,722	0.010	18	276
Ericsson Radio 4460 B25+B66	171	327	5,482	0.014	26	406
Ericsson AIR 6419 B41	171	206	3,445	0.009	16	255
Commscope VV-65A-R1B	171	74	1,242	0.003	6	92
RFS APXVAARR24_43-U-NA20	171	384	6,433	0.017	31	477
Generic Flat Platform with Handrails	170	2,500	41,450	0.108	198	3,106
RFS DB-T1-6Z-8AB-0Z	165.7	88	1,390	0.004	7	109
RFS DB-T1-6Z-8AB-0Z	158	88	1,270	0.003	6	109
Alcatel-Lucent RRH2X60-1900	161	129	1,930	0.005	9	160
Alcatel-Lucent RRH2x60 700	161	170	2,544	0.007	12	211
Alcatel-Lucent B66 RRH4x45	161	201	3,007	0.008	14	250
Unused Reserve (519.6200 sqin)	161	209	3,126	0.008	15	260
RFS APL866513-42T0	161	63	939	0.002	4	78
Antel BXA-70063-4CF-EDIN-10	161	10	148	0.000	1	12
Antel BXA-70063/6CF_	161	34	509	0.001	2	42
Commscope SBNHH-1D65B	161	304	4,550	0.012	22	378
Amphenol Antel LPA-80080-6CF-EDIN-2	161	42	628	0.002	3	52
Generic Flat Low Profile Platform	161	1,875	28,048	0.073	134	2,330
Generic Flat Low Profile Platform	148	1,875	23,918	0.062	114	2,330
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	150	210	2,748	0.007	13	261
Alcatel-Lucent RRH2x50-08	149.9	317	4,148	0.011	20	394
Alcatel-Lucent 1900 MHz 4X45 RRH	149.8	180	2,349	0.006	11	224
Commscope NNVV-65B-R4	148.3	232	2,973	0.008	14	288
RFS APXVTM14-ALU-I20	148.2	169	2,156	0.006	10	209
Powerwave Allgon TT19-08BP111-001	140	96	1,102	0.003	5	119
Raycap DC6-48-60-18-8F ("Squid")	140	19	217	0.001	1	23
Ericsson RRUS 8843 B2, B66A	140	216	2,480	0.006	12	268
Ericsson RRUS 4478 B14 (15")	140	178	2,046	0.005	10	221
Ericsson RRUS 4449 B5, B12	140	213	2,446	0.006	12	265
Raycap DC9-48-60-24-8C-EV	140	16	184	0.000	1	20
Generic Mount Reinforcement	140	600	6,890	0.018	33	745
Powerwave Allgon 7770.00	140	105	1,206	0.003	6	130
CCI DMP65R-BU4D	140	407	4,678	0.012	22	506
Generic Round Platform with Handrails	140	2,500	28,708	0.075	137	3,106
Generic Flat Stand-Off	111	188	1,388	0.004	7	233
Generic Flat Stand-Off	74	188	645	0.002	3	233
Generic GPS	76.4	10	37	0.000	0	12
	Totals:	**61,101**	**384,526**	**1.000**	**1,833**	**75,916**

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
54	171.25	27	449	0.001	2	23
53	170.5	62	1,039	0.003	5	53
52	167.85	271	4,394	0.011	21	233
51	165.35	45	704	0.002	3	38
50	163.25	228	3,506	0.009	17	196
49	161.25	46	694	0.002	3	40
48	160.5	105	1,568	0.004	7	90
47	159	213	3,112	0.008	15	183
46	156.5	325	4,605	0.012	22	279
45	152.5	555	7,498	0.020	36	476
44	149.95	12	152	0.000	1	10
43	149.85	12	151	0.000	1	10
42	149.05	175	2,260	0.006	11	150
41	148.25	12	150	0.000	1	10
40	148.1	23	299	0.001	1	20
39	146.5	370	4,626	0.012	22	317
38	142.5	630	7,484	0.020	36	540
37	137.5	724	8,039	0.021	38	621
36	133.6667	393	4,140	0.011	20	337
35	131.1667	689	6,994	0.018	33	591
34	128.5	900	8,787	0.023	42	772
33	126	403	3,796	0.010	18	346
32	122.5	1,027	9,163	0.024	44	881
31	117.5	1,054	8,686	0.023	41	904
30	113	862	6,599	0.017	31	739
29	110.5	218	1,603	0.004	8	187
28	107.5	1,108	7,719	0.020	37	950
27	102.5	1,134	7,222	0.019	34	973
26	97.5	1,161	6,723	0.018	32	995
25	92.5	1,187	6,224	0.016	30	1,018
24	89.9375	30	149	0.000	1	26
23	87.4375	2,258	10,641	0.028	51	1,936
22	84.1042	843	3,694	0.010	18	723
21	81.6042	892	3,691	0.010	18	765
20	78.2	1,017	3,880	0.010	18	872
19	75.7	400	1,435	0.004	7	343
18	74.5	287	999	0.003	5	246
17	72	1,161	3,788	0.010	18	995
16	67.5	1,478	4,271	0.011	20	1,268
15	62.5	1,509	3,769	0.010	18	1,294
14	57.5	1,540	3,285	0.008	16	1,321
13	52.5	1,571	2,821	0.007	13	1,347
12	49.0834	584	923	0.002	4	501
11	46.5834	1,862	2,667	0.007	13	1,597
10	42.5834	2,890	3,492	0.009	17	2,478
9	40.0834	54	58	0.000	0	47
8	37.5	1,643	1,561	0.004	7	1,409
7	32.5	1,673	1,213	0.003	6	1,435
6	27.5	1,704	900	0.002	4	1,461
5	22.5	1,735	627	0.002	3	1,488
4	17.5	1,766	397	0.001	2	1,514
3	12.5	1,797	214	0.001	1	1,541
2	7.5	1,827	83	0.000	0	1,567
1	2.5	1,858	11	0.000	0	1,594
Generic 12' Dipole	171.5	40	674	0.002	3	34
Generic 12' Dipole	111	40	296	0.001	1	34
Decibel DB201-A	171.5	25	421	0.001	2	21
Ericsson Radio 4449 B12,B71	171	222	3,722	0.010	18	190
Ericsson Radio 4460 B25+B66	171	327	5,482	0.014	26	280
Ericsson AIR 6419 B41	171	206	3,445	0.009	16	176
Commscope VV-65A-R1B	171	74	1,242	0.003	6	64

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
RFS APXVAARR24_43-U-NA20	171	384	6,433	0.017	31	329
Generic Flat Platform with Handrails	170	2,500	41,450	0.108	198	2,144
RFS DB-T1-6Z-8AB-0Z	165.7	88	1,390	0.004	7	75
RFS DB-T1-6Z-8AB-0Z	158	88	1,270	0.003	6	75
Alcatel-Lucent RRH2X60-1900	161	129	1,930	0.005	9	111
Alcatel-Lucent RRH2x60 700	161	170	2,544	0.007	12	146
Alcatel-Lucent B66 RRH4x45	161	201	3,007	0.008	14	172
Unused Reserve (519.6200 sqin)	161	209	3,126	0.008	15	179
RFS APL866513-42T0	161	63	939	0.002	4	54
Antel BXA-70063-4CF-EDIN-10	161	10	148	0.000	1	8
Antel BXA-70063/6CF_	161	34	509	0.001	2	29
Commscope SBNHH-1D65B	161	304	4,550	0.012	22	261
Amphenol Antel LPA-80080-6CF-EDIN-2	161	42	628	0.002	3	36
Generic Flat Low Profile Platform	161	1,875	28,048	0.073	134	1,608
Generic Flat Low Profile Platform	148	1,875	23,918	0.062	114	1,608
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	150	210	2,748	0.007	13	180
Alcatel-Lucent RRH2x50-08	149.9	317	4,148	0.011	20	272
Alcatel-Lucent 1900 MHz 4X45 RRH	149.8	180	2,349	0.006	11	154
Commscope NNVV-65B-R4	148.3	232	2,973	0.008	14	199
RFS APXVTM14-ALU-I20	148.2	169	2,156	0.006	10	145
Powerwave Allgon TT19-08BP111-001	140	96	1,102	0.003	5	82
Raycap DC6-48-60-18-8F ("Squid")	140	19	217	0.001	1	16
Ericsson RRUS 8843 B2, B66A	140	216	2,480	0.006	12	185
Ericsson RRUS 4478 B14 (15")	140	178	2,046	0.005	10	153
Ericsson RRUS 4449 B5, B12	140	213	2,446	0.006	12	183
Raycap DC9-48-60-24-8C-EV	140	16	184	0.000	1	14
Generic Mount Reinforcement	140	600	6,890	0.018	33	515
Powerwave Allgon 7770.00	140	105	1,206	0.003	6	90
CCI DMP65R-BU4D	140	407	4,678	0.012	22	349
Generic Round Platform with Handrails	140	2,500	28,708	0.075	137	2,144
Generic Flat Stand-Off	111	188	1,388	0.004	7	161
Generic Flat Stand-Off	74	188	645	0.002	3	161
Generic GPS	76.4	10	37	0.000	0	9
	Totals:	**61,101**	**384,526**	**1.000**	**1,833**	**52,397**

1.2D + 1.0Ev + 1.0Eh **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-73.61	-1.84	0.00	-254.03	0.00	254.03	6,027.96	1,670.83	10,347	8,516.24	0.00	0.00	0.04
5.00	-71.34	-1.84	0.00	-244.85	0.00	244.85	5,965.27	1,639.06	9,957	8,266.37	0.00	-0.01	0.04
10.00	-69.10	-1.85	0.00	-235.63	0.00	235.63	5,900.57	1,607.28	9,574	8,017.15	0.01	-0.01	0.04
15.00	-66.91	-1.86	0.00	-226.38	0.00	226.38	5,833.85	1,575.50	9,200	7,768.75	0.03	-0.02	0.04
20.00	-64.75	-1.86	0.00	-217.11	0.00	217.11	5,765.11	1,543.72	8,832	7,521.33	0.05	-0.03	0.04
25.00	-62.64	-1.86	0.00	-207.81	0.00	207.81	5,694.36	1,511.94	8,472	7,275.05	0.08	-0.03	0.04
30.00	-60.56	-1.86	0.00	-198.51	0.00	198.51	5,621.60	1,480.17	8,120	7,030.08	0.12	-0.04	0.04
35.00	-58.52	-1.86	0.00	-189.20	0.00	189.20	5,546.82	1,448.39	7,775	6,786.58	0.17	-0.05	0.04
40.00	-58.45	-1.86	0.00	-179.90	0.00	179.90	5,470.03	1,416.61	7,438	6,544.71	0.22	-0.05	0.04
40.17	-54.86	-1.85	0.00	-179.59	0.00	179.59	5,467.43	1,415.55	7,427	6,536.68	0.22	-0.05	0.04
45.00	-52.54	-1.84	0.00	-170.67	0.00	170.67	5,391.22	1,384.83	7,108	6,304.65	0.28	-0.06	0.04
48.17	-51.82	-1.83	0.00	-164.85	0.00	164.85	5,394.23	1,386.03	7,120	6,313.65	0.32	-0.07	0.04
50.00	-49.87	-1.82	0.00	-161.49	0.00	161.49	5,364.85	1,374.38	7,001	6,226.09	0.35	-0.07	0.04
55.00	-47.95	-1.81	0.00	-152.37	0.00	152.37	5,283.37	1,342.60	6,681	5,988.66	0.42	-0.08	0.04
60.00	-46.08	-1.80	0.00	-143.32	0.00	143.32	5,199.87	1,310.82	6,369	5,753.41	0.51	-0.08	0.03
65.00	-44.24	-1.78	0.00	-134.33	0.00	134.33	5,114.36	1,279.04	6,064	5,520.50	0.60	-0.09	0.03
70.00	-42.80	-1.76	0.00	-125.44	0.00	125.44	5,026.83	1,247.27	5,766	5,290.10	0.70	-0.10	0.03
74.00	-42.21	-1.76	0.00	-118.38	0.00	118.38	4,955.35	1,221.84	5,533	5,107.69	0.78	-0.10	0.03
75.00	-41.71	-1.75	0.00	-116.63	0.00	116.63	4,937.28	1,215.49	5,476	5,062.36	0.80	-0.10	0.03
76.40	-40.44	-1.73	0.00	-114.17	0.00	114.17	4,911.85	1,206.59	5,396	4,999.10	0.83	-0.11	0.03

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
80.00	-39.33	-1.72	0.00	-107.94	0.00	107.94	4,845.73	1,183.71	5,193	4,837.46	0.91	-0.11	0.03
83.21	-38.28	-1.70	0.00	-102.43	0.00	102.43	4,785.91	1,163.32	5,016	4,694.71	0.99	-0.12	0.03
85.00	-35.47	-1.65	0.00	-99.39	0.00	99.39	4,752.15	1,151.93	4,918	4,615.55	1.04	-0.12	0.03
89.88	-35.44	-1.65	0.00	-91.36	0.00	91.36	3,859.20	977.79	4,134	3,716.46	1.16	-0.13	0.03
90.00	-33.96	-1.62	0.00	-91.16	0.00	91.16	3,857.41	977.11	4,128	3,712.13	1.16	-0.13	0.03
95.00	-32.52	-1.59	0.00	-83.07	0.00	83.07	3,785.01	949.87	3,901	3,540.11	1.30	-0.13	0.03
100.00	-31.11	-1.55	0.00	-75.14	0.00	75.14	3,710.59	922.63	3,681	3,370.18	1.45	-0.14	0.03
105.00	-29.73	-1.52	0.00	-67.38	0.00	67.38	3,634.16	895.39	3,467	3,202.49	1.60	-0.15	0.03
110.00	-29.46	-1.51	0.00	-59.80	0.00	59.80	3,555.71	868.15	3,259	3,037.22	1.76	-0.16	0.03
111.00	-28.11	-1.47	0.00	-58.29	0.00	58.29	3,539.78	862.71	3,218	3,004.47	1.80	-0.16	0.03
115.00	-26.80	-1.43	0.00	-52.42	0.00	52.42	3,475.25	840.91	3,058	2,874.52	1.93	-0.17	0.03
120.00	-25.52	-1.38	0.00	-45.28	0.00	45.28	3,392.78	813.68	2,863	2,714.56	2.11	-0.17	0.02
125.00	-25.02	-1.36	0.00	-38.37	0.00	38.37	3,308.29	786.44	2,675	2,557.51	2.30	-0.18	0.02
127.00	-23.90	-1.32	0.00	-35.64	0.00	35.64	3,273.93	775.54	2,601	2,495.54	2.37	-0.18	0.02
130.00	-23.05	-1.29	0.00	-31.68	0.00	31.68	3,213.95	759.20	2,493	2,397.68	2.49	-0.19	0.02
132.33	-22.56	-1.27	0.00	-28.68	0.00	28.68	1,887.50	506.36	1,663	1,413.57	2.58	-0.19	0.03
135.00	-21.66	-1.23	0.00	-25.31	0.00	25.31	1,866.09	496.68	1,600	1,370.63	2.69	-0.19	0.03
140.00	-15.47	-0.93	0.00	-19.17	0.00	19.17	1,824.41	478.52	1,485	1,290.68	2.89	-0.20	0.02
145.00	-15.01	-0.91	0.00	-14.51	0.00	14.51	1,780.72	460.36	1,375	1,211.62	3.10	-0.20	0.02
148.00	-12.65	-0.79	0.00	-11.78	0.00	11.78	1,753.53	449.47	1,310	1,164.67	3.23	-0.21	0.02
148.20	-12.43	-0.78	0.00	-11.62	0.00	11.62	1,751.69	448.74	1,306	1,161.56	3.24	-0.21	0.02
148.30	-11.92	-0.75	0.00	-11.54	0.00	11.54	1,750.77	448.38	1,304	1,160.00	3.24	-0.21	0.02
149.80	-11.69	-0.74	0.00	-10.42	0.00	10.42	1,736.87	442.93	1,272	1,136.70	3.31	-0.21	0.02
149.90	-11.28	-0.71	0.00	-10.34	0.00	10.34	1,735.94	442.56	1,270	1,135.15	3.31	-0.21	0.02
150.00	-10.33	-0.66	0.00	-10.27	0.00	10.27	1,735.01	442.20	1,268	1,133.60	3.32	-0.21	0.02
155.00	-9.92	-0.64	0.00	-6.96	0.00	6.96	1,687.28	424.04	1,166	1,056.80	3.54	-0.21	0.01
158.00	-9.55	-0.62	0.00	-5.04	0.00	5.04	1,657.68	413.15	1,107	1,011.36	3.67	-0.22	0.01
160.00	-9.42	-0.61	0.00	-3.81	0.00	3.81	1,637.54	405.88	1,069	981.37	3.77	-0.22	0.01
161.00	-5.59	-0.38	0.00	-3.20	0.00	3.20	1,627.35	402.25	1,050	966.46	3.81	-0.22	0.01
161.50	-5.30	-0.36	0.00	-3.01	0.00	3.01	1,622.23	400.44	1,040	959.03	3.83	-0.22	0.01
161.50	-5.30	-0.36	0.00	-3.01	0.00	3.01	632.49	153.60	379	355.79	3.83	-0.22	0.02
165.00	-5.25	-0.35	0.00	-1.76	0.00	1.76	623.63	150.65	364	344.02	3.99	-0.22	0.01
165.70	-4.80	-0.32	0.00	-1.51	0.00	1.51	621.84	150.06	362	341.68	4.02	-0.22	0.01
170.00	-1.62	-0.11	0.00	-0.11	0.00	0.11	610.74	146.43	344	327.41	4.22	-0.22	0.00
171.00	-0.08	-0.01	0.00	0.00	0.00	0.00	608.13	145.58	340	324.12	4.27	-0.22	0.00
171.50	0.00	-0.01	0.00	0.00	0.00	0.00	606.82	145.16	338	322.48	4.29	-0.22	0.00

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.80	-1.83	0.00	-250.95	0.00	250.95	6,027.96	1,670.83	10,347	8,516.24	0.00	0.00	0.04
5.00	-49.24	-1.84	0.00	-241.78	0.00	241.78	5,965.27	1,639.06	9,957	8,266.37	0.00	-0.01	0.04
10.00	-47.70	-1.84	0.00	-232.58	0.00	232.58	5,900.57	1,607.28	9,574	8,017.15	0.01	-0.01	0.04
15.00	-46.18	-1.85	0.00	-223.36	0.00	223.36	5,833.85	1,575.50	9,200	7,768.75	0.03	-0.02	0.04
20.00	-44.69	-1.85	0.00	-214.13	0.00	214.13	5,765.11	1,543.72	8,832	7,521.33	0.05	-0.03	0.04
25.00	-43.23	-1.85	0.00	-204.89	0.00	204.89	5,694.36	1,511.94	8,472	7,275.05	0.08	-0.03	0.04
30.00	-41.80	-1.85	0.00	-195.64	0.00	195.64	5,621.60	1,480.17	8,120	7,030.08	0.12	-0.04	0.04
35.00	-40.39	-1.84	0.00	-186.41	0.00	186.41	5,546.82	1,448.39	7,775	6,786.58	0.17	-0.05	0.04
40.00	-40.34	-1.85	0.00	-177.19	0.00	177.19	5,470.03	1,416.61	7,438	6,544.71	0.22	-0.05	0.03
40.17	-37.86	-1.83	0.00	-176.89	0.00	176.89	5,467.43	1,415.55	7,427	6,536.68	0.22	-0.05	0.03
45.00	-36.27	-1.82	0.00	-168.05	0.00	168.05	5,391.22	1,384.83	7,108	6,304.65	0.28	-0.06	0.03
48.17	-35.76	-1.82	0.00	-162.29	0.00	162.29	5,394.23	1,386.03	7,120	6,313.65	0.32	-0.06	0.03
50.00	-34.42	-1.80	0.00	-158.96	0.00	158.96	5,364.85	1,374.38	7,001	6,226.09	0.34	-0.07	0.03
55.00	-33.10	-1.79	0.00	-149.94	0.00	149.94	5,283.37	1,342.60	6,681	5,988.66	0.42	-0.07	0.03
60.00	-31.80	-1.77	0.00	-140.99	0.00	140.99	5,199.87	1,310.82	6,369	5,753.41	0.50	-0.08	0.03
65.00	-30.53	-1.76	0.00	-132.12	0.00	132.12	5,114.36	1,279.04	6,064	5,520.50	0.59	-0.09	0.03
70.00	-29.54	-1.74	0.00	-123.34	0.00	123.34	5,026.83	1,247.27	5,766	5,290.10	0.69	-0.10	0.03
74.00	-29.13	-1.73	0.00	-116.38	0.00	116.38	4,955.35	1,221.84	5,533	5,107.69	0.77	-0.10	0.03

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
75.00	-28.79	-1.73	0.00	-114.65	0.00	114.65	4,937.28	1,215.49	5,476	5,062.36	0.79	-0.10	0.03
76.40	-27.91	-1.71	0.00	-112.23	0.00	112.23	4,911.85	1,206.59	5,396	4,999.10	0.82	-0.11	0.03
80.00	-27.14	-1.69	0.00	-106.08	0.00	106.08	4,845.73	1,183.71	5,193	4,837.46	0.90	-0.11	0.03
83.21	-26.42	-1.67	0.00	-100.66	0.00	100.66	4,785.91	1,163.32	5,016	4,694.71	0.98	-0.12	0.03
85.00	-24.48	-1.62	0.00	-97.66	0.00	97.66	4,752.15	1,151.93	4,918	4,615.55	1.02	-0.12	0.03
89.88	-24.46	-1.62	0.00	-89.75	0.00	89.75	3,859.20	977.79	4,134	3,716.46	1.15	-0.12	0.03
90.00	-23.44	-1.59	0.00	-89.55	0.00	89.55	3,857.41	977.11	4,128	3,712.13	1.15	-0.12	0.03
95.00	-22.44	-1.56	0.00	-81.59	0.00	81.59	3,785.01	949.87	3,901	3,540.11	1.28	-0.13	0.03
100.00	-21.47	-1.53	0.00	-73.79	0.00	73.79	3,710.59	922.63	3,681	3,370.18	1.43	-0.14	0.03
105.00	-20.52	-1.49	0.00	-66.15	0.00	66.15	3,634.16	895.39	3,467	3,202.49	1.58	-0.15	0.03
110.00	-20.33	-1.48	0.00	-58.70	0.00	58.70	3,555.71	868.15	3,259	3,037.22	1.74	-0.16	0.03
111.00	-19.40	-1.44	0.00	-57.22	0.00	57.22	3,539.78	862.71	3,218	3,004.47	1.77	-0.16	0.03
115.00	-18.50	-1.40	0.00	-51.44	0.00	51.44	3,475.25	840.91	3,058	2,874.52	1.90	-0.16	0.02
120.00	-17.61	-1.36	0.00	-44.44	0.00	44.44	3,392.78	813.68	2,863	2,714.56	2.08	-0.17	0.02
125.00	-17.27	-1.34	0.00	-37.65	0.00	37.65	3,308.29	786.44	2,675	2,557.51	2.26	-0.18	0.02
127.00	-16.50	-1.30	0.00	-34.97	0.00	34.97	3,273.93	775.54	2,601	2,495.54	2.34	-0.18	0.02
130.00	-15.91	-1.26	0.00	-31.09	0.00	31.09	3,213.95	759.20	2,493	2,397.68	2.45	-0.18	0.02
132.33	-15.57	-1.24	0.00	-28.14	0.00	28.14	1,887.50	506.36	1,663	1,413.57	2.54	-0.19	0.03
135.00	-14.95	-1.20	0.00	-24.83	0.00	24.83	1,866.09	496.68	1,600	1,370.63	2.64	-0.19	0.03
140.00	-10.68	-0.92	0.00	-18.82	0.00	18.82	1,824.41	478.52	1,485	1,290.68	2.85	-0.20	0.02
145.00	-10.36	-0.89	0.00	-14.24	0.00	14.24	1,780.72	460.36	1,375	1,211.62	3.05	-0.20	0.02
148.00	-8.73	-0.77	0.00	-11.56	0.00	11.56	1,753.53	449.47	1,310	1,164.67	3.18	-0.20	0.02
148.20	-8.58	-0.76	0.00	-11.40	0.00	11.40	1,751.69	448.74	1,306	1,161.56	3.19	-0.20	0.02
148.30	-8.23	-0.73	0.00	-11.33	0.00	11.33	1,750.77	448.38	1,304	1,160.00	3.19	-0.20	0.01
149.80	-8.07	-0.72	0.00	-10.23	0.00	10.23	1,736.87	442.93	1,272	1,136.70	3.26	-0.21	0.01
149.90	-7.78	-0.70	0.00	-10.15	0.00	10.15	1,735.94	442.56	1,270	1,135.15	3.26	-0.21	0.01
150.00	-7.13	-0.65	0.00	-10.08	0.00	10.08	1,735.01	442.20	1,268	1,133.60	3.27	-0.21	0.01
155.00	-6.85	-0.63	0.00	-6.83	0.00	6.83	1,687.28	424.04	1,166	1,056.80	3.49	-0.21	0.01
158.00	-6.59	-0.61	0.00	-4.95	0.00	4.95	1,657.68	413.15	1,107	1,011.36	3.62	-0.21	0.01
160.00	-6.50	-0.60	0.00	-3.74	0.00	3.74	1,637.54	405.88	1,069	981.37	3.71	-0.21	0.01
161.00	-3.86	-0.37	0.00	-3.14	0.00	3.14	1,627.35	402.25	1,050	966.46	3.75	-0.21	0.01
161.50	-3.66	-0.35	0.00	-2.96	0.00	2.96	1,622.23	400.44	1,040	959.03	3.77	-0.21	0.01
161.50	-3.66	-0.35	0.00	-2.96	0.00	2.96	632.49	153.60	379	355.79	3.77	-0.21	0.01
165.00	-3.62	-0.35	0.00	-1.73	0.00	1.73	623.63	150.65	364	344.02	3.93	-0.21	0.01
165.70	-3.31	-0.32	0.00	-1.48	0.00	1.48	621.84	150.06	362	341.68	3.96	-0.21	0.01
170.00	-1.12	-0.11	0.00	-0.11	0.00	0.11	610.74	146.43	344	327.41	4.15	-0.21	0.00
171.00	-0.06	-0.01	0.00	0.00	0.00	0.00	608.13	145.58	340	324.12	4.20	-0.21	0.00
171.50	0.00	-0.01	0.00	0.00	0.00	0.00	606.82	145.16	338	322.48	4.22	-0.21	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions: Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage: Elev (ft)	Interaction Ratio
1.2D + 1.0W	36.19	0.00	73.29	0.00	0.00	4404.61	0.00	0.53
0.9D + 1.0W	36.17	0.00	54.96	0.00	0.00	4362.09	0.00	0.52
1.2D + 1.0Di + 1.0Wi	8.79	0.00	95.29	0.00	0.00	1048.14	0.00	0.14
1.2D + 1.0Ev + 1.0Eh	1.86	0.00	73.61	0.00	0.00	254.03	0.00	0.04
0.9D - 1.0Ev + 1.0Eh	1.85	0.00	50.80	0.00	0.00	250.95	0.00	0.04
1.0D + 1.0W	7.34	0.00	61.10	0.00	0.00	888.28	0.00	0.11

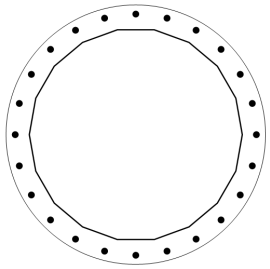
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
4404.61	73.29	36.19

PLATE PARAMETERS (ID# 26685)

Width:	85	in
Shape:	Round	
Thickness:	2.25	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	d	
Clear Distance	4.5	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	22	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#27387]	Radial	24	2.25	79	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	69"ø x 0.4375" (18 Sides)	93.7578	-	-	55098.28	-
Bolt Group	Original (24) 2.25"ø	3.9761	3.2477	0.8393	56852.83	4.5

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	69"ø x 0.4375" (18 Sides)	4404.6	73.29	36.19	1.000
Bolt Group	Original (24) 2.25"ø	4404.6	-	36.19	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	69.12	in	Flat Width:	12.189	in	Neutral Axis:	22	°
Point-to-Point Diameter:	70.19	in	Flat Radians:	0.349	rad	Bend Line Limits:	1.455 to 2.472	rad
Orientation Offset:	-	°						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$
Flats	44.831	0.00	56.740	931.1	3063.9	30.4%
Corners	43.143	0.00	54.602	689.1	2948.5	23.4%
Circumferential	54.451	0.00	68.915	1403.3	3721.4	37.7%

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Plastic Result
Original	24	2.25	96.5	2.3	243.6	39.6%

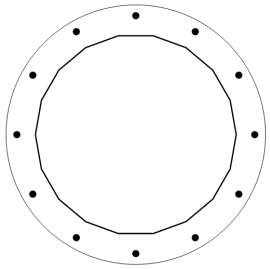
UPPER FLANGE PLATE ANALYSIS @ 161.5 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
54.91	5	6.21

PLATE PARAMETERS (ID# 26686)

Width:	36	in
Shape:	Round	
Thickness:	1	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	165	°



FLANGE BOLT PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#27386]	Radial	12	1	33	A325	92	120	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	27.5"ø x 0.1875" (18 Sides)	16.0068	-	-	1492.77	-
Bolt Group	Original (12) 1"ø	0.7854	0.6057	0.0292	916.29	8.0

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	27.5"ø x 0.1875" (18 Sides)	54.9	5.00	6.21	1.000
Bolt Group	Original (12) 1"ø	54.9	-	6.21	1.000

UPPER FLANGE PLATE BEND LINE ANALYSIS @ 161.5 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	27.62	in	Flat Width:	4.871	in	Neutral Axis:	165	°
Point-to-Point Diameter:	28.05	in	Flat Radians:	0.349	rad	Bend Line Limits:	3.868 to 5.033	rad
Orientation Offset:	-	°						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	20.792	0.00	5.198	21.6	280.7	7.7%	✓
Corners	20.213	0.00	5.053	18.6	272.9	6.8%	✓
Circumferential	26.268	0.00	6.567	26.2	354.6	7.4%	✓

PLASTIC FLANGE BOLT ANALYSIS

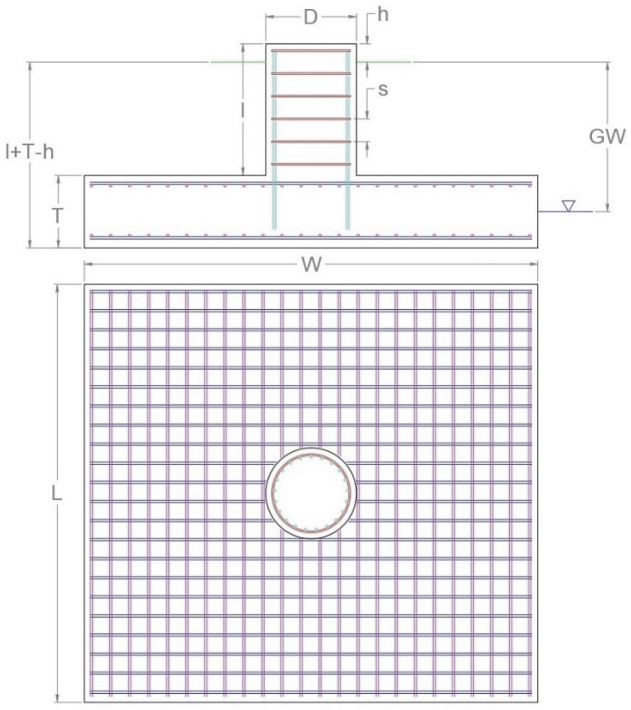
Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Interaction Result	
Original	12	1	6.2	0.8	54.5	13.4%	✓

APPLIED GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
4,404.61	73.29	36.19

FOUNDATION PARAMETERS

Mat Length:	L	31	ft
Mat Width:	W	31	ft
Mat Thickness:	T	3.5	ft
Base Depth:	L+T-h	7	ft
Pier Shape:		Square	
Pier Width:	D	8.5	ft
Pier Height above Grade:	h	1	ft
Concrete Compressive Strength:		4,000	psi
Mat Top Rebar:		(27) #9 bars [60 ksi]	
Mat Bottom Rebar:		(54) #9 bars [60 ksi]	
Pier Vertical Rebar:		(52) #9 bars [60 ksi]	
Pier Rebar Ties:	s	#4 bars @ 12.0" c/c [60 ksi]	
Rebar Clear Cover:		3.0	in
Tower Eccentricity:	ecc	0	ft
Tower Leg Count		1	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW		ft
Soil Unit Weight:		125	pcf
Ultimate Skin Friction:		0	psf
Ultimate Bearing Pressure:		12,000	psf
Bearing Pressure Type:		Gross	
Coefficient of Shear Friction:		0.6	

SOIL STRENGTH ANALYSIS

Soil Strength Reduction Factor, Φ_s	Uplift Strength Reduction Factor, Φ_s	Asset Dead Load Factor	Dead Load Factor
0.75	0.75	0.9	1.2

SOIL OVERTURNING ANALYSIS

Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)	Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$	
4,694.13	14,691.42	**32.0%**	✓

SOIL BEARING ANALYSIS

Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (k-ft)	Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$	
1,395.00	9,000.00	Diagonal to Pad Edge	**15.5%**	✓

SOIL SLIDING SHEAR ANALYSIS

Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, $\Phi_s V_n$ (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$	
36.19	0.00	656.2	71.20	504.84	**7.0%**	✓

MAT REINFORCING STEEL STRENGTH ANALYSIS

Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
29,000	0.9	0.75	0.65

MAT REINFORCING ONE WAY SHEAR ANALYSIS

One Way Design Shear, V_u (k)	Nominal One Way Shear Capacity, $\Phi_c V_n$ (k)	One Way Shear Controlling Load Direction	Mat One Way Shear Usage, $V_u / \Phi_c V_n$	
109.48	1,251.62	Diagonal to Pad Edge	**8.7%**	✓

MAT REINFORCING PUNCHING SHEAR ANALYSIS

Punching Shear Design Stress, v_u (psi)	Nominal Punching Shear Capacity, $\Phi_c v_n$ (psi)	Mat Punching Shear Usage, $v_u / \Phi_c v_n$	
27.7	189.7	**14.6%**	✓

MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_f (in)	Neutral Axis Depth (in)	Pier Moment at Joint, M_{ut} (k-in)	Nominal Moment Transfer Capacity, $\Phi M_{sc,f}$ (k-in)	Mat Moment Transfer Usage, $0.6\ M_{ut} / \Phi M_{sc,f}$	
19.00	2.64	0.00	67,614.4	**0.0%**	✓

MAT REINFORCING FLEXURE ANALYSIS – UPPER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Upper Rebar Flexure Usage, $M_u / \Phi M_n$	
1,798.32	4,535.67	Parallel to Pad Edge	**39.6%**	✓

MAT REINFORCING FLEXURE ANALYSIS – LOWER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Lower Rebar Flexure Usage, $M_u / \Phi M_n$	
1,765.10	8,939.07	Parallel to Pad Edge	**19.7%**	✓

PIER REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
93.88	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u/\Phi_b M_n$	
4,567.46	10,740.74	0.005	**42.5%**	✓

PIER REINFORCING COMPRESSION ANALYSIS

Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$	
73.29	18,333.54	**0.4%**	✓

PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$	
36.19	1,112.89	**3.3%**	✓

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Section 1 - Site Information

Site ID: CTNL802A
Status: Preliminary
Version: 3
Project Type: Anchor
Approved: 08/03/2023 6:07:27 PM
Approved By: Ilyes.Mekias2@T-Mobile.com
Last Modified: 08/03/2023 6:07:27 PM
Last Modified By: Ilyes.Mekias2@T-Mobile.com

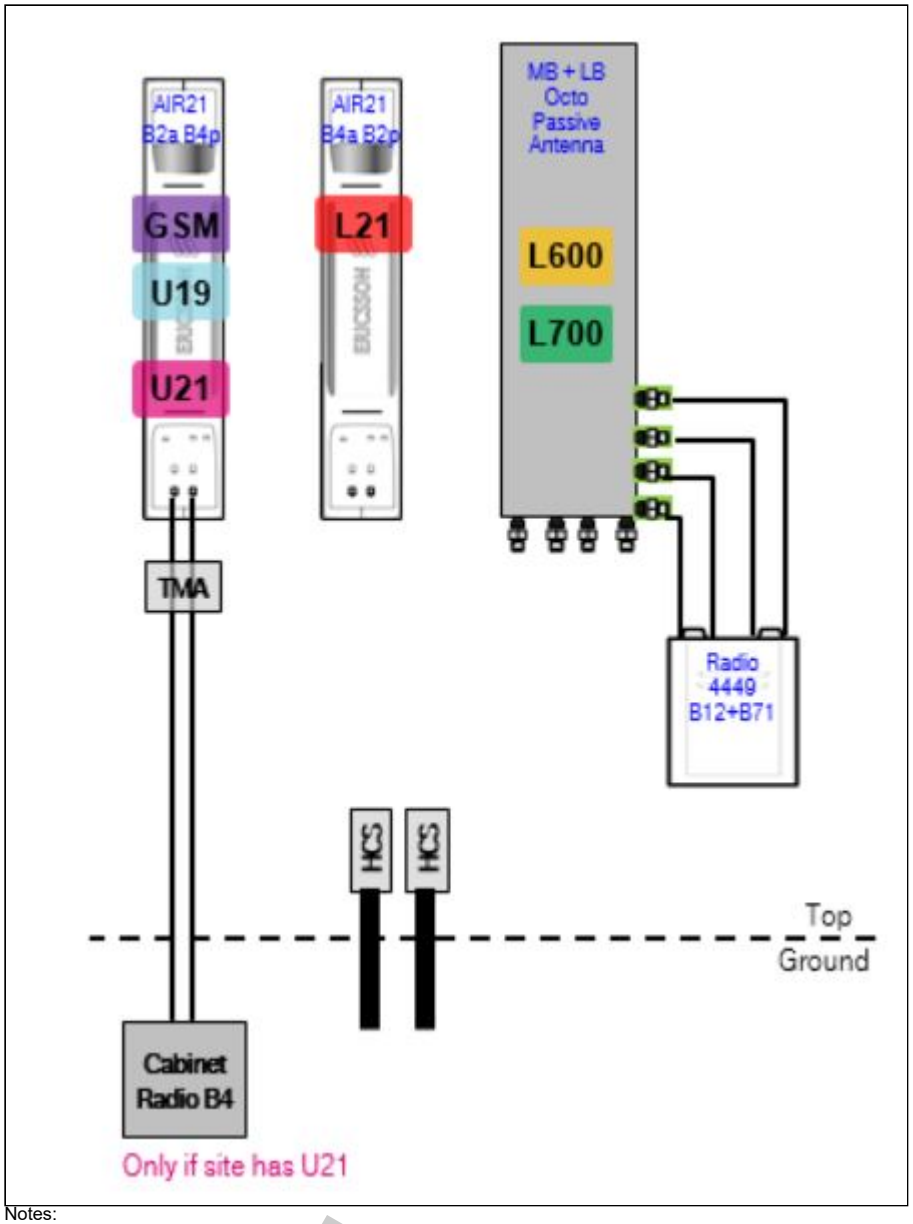
Site Name: Amtrak Old Lyme Verizon
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2023
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: American Tower

Latitude: 41.305611
Longitude: -72.297083
Address: 125 Mile Creek Rd
City, State: Old Lyme, CT
Region: NORTHEAST

RAN Template: 67D5D998E 6160			AL Template: 67D5998E_1xAIR+1OP+1QP	
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

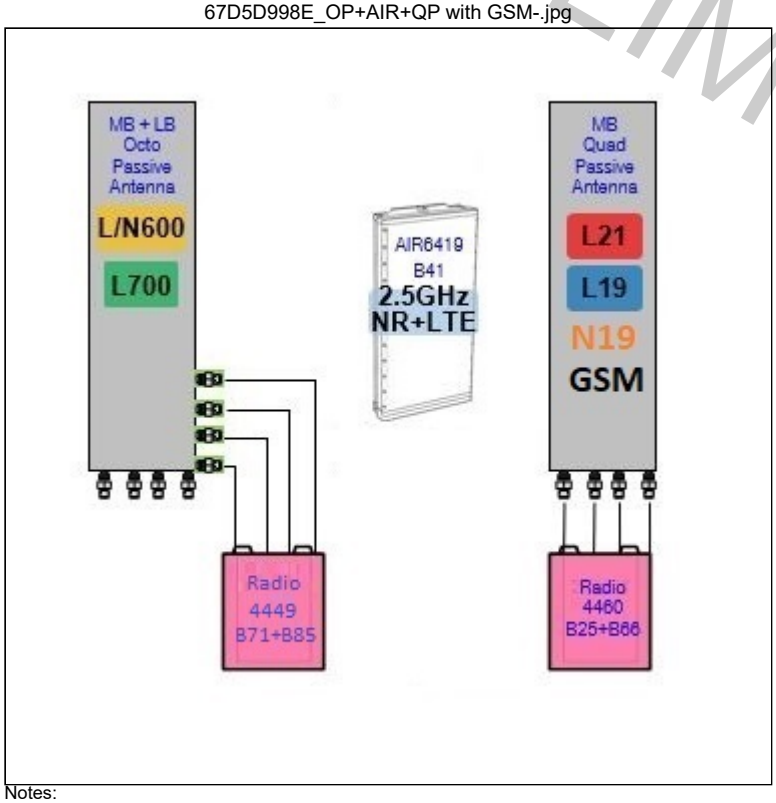
67D02C.JPG



Notes:

Section 3 - Proposed Template Images

67D5D998E_OP+AIR+QP with GSM-.jpg



Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 67D02C Outdoor

Enclosure	1	2
Enclosure Type	RBS 6131	S8000 Outdoor
Radio	RU22 (x 6)	
Baseband	BB 6630 [L2100]; BB 6630 [N600, L600, L700]; DUG20 [G1900]; DUW30; DUW30 [U1900 (DECOMMISSIONED)]	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 3); Ericsson 9x18 HCS 60m	

Proposed RAN Equipment

Template: 67D5D998E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160 AC V1	RBS 6131	B160
Baseband	RP 6651 [N2500, L2500]	BB 6630 [N600, L600, L700]; BB 6630 [N1900, L1900, L2100]; DUG20 [G1900]	
Transport System	CSR IXRe V2 (Gen2)		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 70m (x 3)	Ericsson 6x12 HCS *Select Length & AWG* (x 3)	

RAN Scope of Work:

Remove all unused equipment's from RAN section.

Add (1) 6160 and (1) B160 cabinets.
Add (1) RP6651 for NR2500/L2500
Add (1) IXRe router to 6160.
Add (3) Hybrid Trunk 6/24 4AWG 70m same TBD

Scoping note:
remove the dead nortel cabinet

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Section 6 - A&L Equipment

Existing Template: 67D02C_2xAIR+1OP
Proposed Template: 67D5998E_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	0		0				0	
M. Tilt								
Height (ft)	170		168				170	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech	L2100		L700 L600 N600	L700 L600 N600			G1900	
Dark Tech								
Restricted Tech								
Decomm. Tech							U1900	
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft. **(x2)**		Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)**			Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 200 ft. **(x2)**
TMAs								Generic Twin Style 1B - AWS (At Antenna)
Diplexer / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

Add (1) LB/MB Octo to Position 2. Rad Center will be 168 feet in order to match tops. Need to reinforce mount.
Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1				2	3		4
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)				Empty Antenna Mount (Empty mount)	AIR 6419 B41 (Active Antenna - Massive MIMO)		Commscope_VV-65A-R1 (Quad)
Azimuth	0					0		0
M. Tilt	0					0		0
Height (ft)	171					171		171
Ports	P1	P2	P3	P4		P5	P6	P7	P8
Active Tech	L600 L700 N600	L600 L700 N600				L2500 N2500	L2500 N2500	L2100 G1900 N1900 L1900	L2100 N1900 L1900
Dark Tech									
Restricted Tech									
Decomm. Tech									
E. Tilt									
Cables	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)				Fiber Jumper (x4)	SHARED Fiber Jumper (x4)	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)
TMAs									
Diplexer / Combiners									
Radio	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)						Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment									

Unconnected Equipment:

Scope of Work:

Replace AIR21 KRC118023-1_B2P_B4P with AIR6419 at P3.
Replace AIR21 KRC118023-1_B2A_B4P with VV-65A-R1 at P4.
Add (1) 4460 Radio and connect it to quad antenna at P4.
Remove all unused material.
Scoping notes:

Add Full Platform with Handrail kit with 4 positions

Rad center 171'.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Sector 2 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	120		120				120	
M. Tilt								
Height (ft)	170		168				170	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech	L2100		L700 L600 N600	L700 L600 N600			G1900	
Dark Tech								
Restricted Tech								
Decomm. Tech							U1900	
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft. **(x2)**		Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)**			Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 200 ft. **(x2)**
TMAs								Generic Twin Style 1B - AWS (At Antenna)
Diplexer / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

Add (1) LB/MB Octo to Position 2. Rad Center will be 168 feet in order to match tops. Need to reinforce mount.
Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1				2	3		4
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)				Empty Antenna Mount (Empty mount)	AIR 6419 B41 (Active Antenna - Massive MIMO)		Commscope_VV-65A-R1 (Quad)
Azimuth	120					120		120
M. Tilt	0					0		0
Height (ft)	171					171		171
Ports	P1	P2	P3	P4		P5	P6	P7	P8
Active Tech	N600 L700 L600	N600 L700 L600				N2500 L2500	N2500 L2500	L1900 N1900 L2100 G1900	L1900 N1900 L2100
Dark Tech									
Restricted Tech									
Decomm. Tech									
E. Tilt									
Cables	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)**				Fiber Jumper **(x4)**	SHARED Fiber Jumper **(x4)**	Coax Jumper **(x2)** Fiber Jumper **(x2)**	Coax Jumper **(x2)**
TMAs									
Diplexer / Combiners									
Radio	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)						Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment									

Unconnected Equipment:

Scope of Work:

Replace AIR21 KRC118023-1_B2P_B4P with AIR6419 at P3.
Replace AIR21 KRC118023-1_B2A_B4P with VV-65A-R1 at P4.
Add (1) 4460 Radio and connect it to quad antenna at P4.
Remove all unused material.
Scoping notes:

Add Full Platform with Handrail kit with 4 positions

Rad center 171'.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Sector 3 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	240		240				240	
M. Tilt								
Height (ft)	170		168				170	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech	L2100		L700 L600 N600	L700 L600 N600			G1900	
Dark Tech								
Restricted Tech								
Decomm. Tech							U1900	
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft. **(x2)**		Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)**			Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 200 ft. **(x2)**
TMAs								Generic Twin Style 1B - AWS (At Antenna)
Diplexer / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

Add (1) LB/MB Octo to Position 2. Rad Center will be 168 feet in order to match tops. Need to reinforce mount.
Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5D998E 6160	67D5998E_1xAIR+1OP+1QP

CTNL802A_Anchor_3_preliminary

Print Name: Standard
PORs: Anchor_Phase 3

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro								
Antenna	1				2	3		4	
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)				Empty Antenna Mount (Empty mount)	AIR 6419 B41 (Active Antenna - Massive MIMO)		Commscope_VV-65A-R1 (Quad)	
Azimuth	240					240		240	
M. Tilt	0					0		0	
Height (ft)	171					171		171	
Ports	P1	P2	P3	P4		P5	P6	P7	P8
Active Tech	L600 L700 N600	L600 L700 N600				N2500 L2500	N2500 L2500	G1900 L2100 L1900 N1900	L2100 L1900 N1900
Dark Tech									
Restricted Tech									
Decomm. Tech									
E. Tilt									
Cables	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)				Fiber Jumper (x4)	SHARED Fiber Jumper (x4)	Coax Jumper (x2) Fiber Jumper (x2)	Coax Jumper (x2)
TMAs									
Diplexer / Combiners									
Radio	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)						Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment									

Unconnected Equipment:

Scope of Work:

Replace AIR21 KRC118023-1_B2P_B4P with AIR6419 at P3.
Replace AIR21 KRC118023-1_B2A_B4P with VV-65A-R1 at P4.
Add (1) 4460 Radio and connect it to quad antenna at P4.
Remove all unused material.
Scoping notes:

Add Full Platform with Handrail kit with 4 positions

Rad center 171'.

*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNL802A

Amtrak Old Lyme Verizon
125 Mile Creek Road
Old Lyme, Connecticut 06371

October 25, 2023

EBI Project Number: 6223003900

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**1.83%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

October 25, 2023

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTNL802A - Amtrak Old Lyme Verizon

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **125 Mile Creek Road** in **Old Lyme, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 population 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 population 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 T-Mobile Wireless antenna facility located at 125 Mile Creek Road in Old Lyme, Connecticut using the equipment information listed below. Modeling of the antennas and associated equipment was completed using RoofMaster™ software, which is a widely-used predictive modeling program that has been developed to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications (FCC) Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

Since T-Mobile 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 manufacturer's supplied specifications 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. **All calculations were performed using Far Field Analysis.**

For all calculations, telecommunications equipment was modeled using the following assumptions:

1) 1 LTE channel (600 MHz Band) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 1 GSM channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 10 Watts per Channel.

5) 1 LTE channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 80 Watts per Channel.

6) 1 NR channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 80 Watts per Channel.

7) 1 LTE channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 160 Watts per Channel.

8) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 45 Watts.

9) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 15 Watts.

10) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 90 Watts.

11) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 30 Watts.

12) 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.

13) 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 manufacturer's supplied specifications 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.

14) The antennas used in this modeling are the RFS APXVAARR24 43-U-NA20 00DT 600 for the 600 MHz / 600 MHz / 600 MHz channel(s), the ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the COMMSCOPE VV-65A-R1B 00DT 1900 for the 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the RFS APXVAARR24 43-U-NA20 00DT 600 for the 600 MHz / 600 MHz / 700 MHz channel(s), the ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the COMMSCOPE VV-65A-R1B 00DT 1900 for the 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the RFS APXVAARR24 43-U-NA20 00DT 600 for the 600 MHz / 600 MHz / 700 MHz channel(s), the ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the COMMSCOPE VV-65A-R1B 00DT 1900 for the 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications 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.

15) The antenna mounting height centerline of the proposed antennas is 171 feet above ground level (AGL).

16) Emissions values for additional carriers were calculated in Far Field utilizing the antenna models provided in the structural analysis.

17) All calculations were done in Far Field mode with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAARR24 43-U-NA20 00DT 600	Make / Model:	RFS APXVAARR24 43-U-NA20 00DT 600	Make / Model:	RFS APXVAARR24 43-U-NA20 00DT 600
Frequency Bands:	600 MHz / 600 MHz / 600 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	13.09 dBd / 13.09 dBd / 13.17 dBd	Gain:	13.09 dBd / 13.09 dBd / 13.17 dBd	Gain:	13.09 dBd / 13.09 dBd / 13.17 dBd
Height (AGL):	171 feet	Height (AGL):	171 feet	Height (AGL):	171 feet
Channel Count:	3	Channel Count:	3	Channel Count:	3
Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts
ERP (W):	2,861.76	ERP (W):	2,861.76	ERP (W):	2,861.76
Antenna A1 MPE %:	**0.91%**	Antenna B1 MPE %:	**0.91%**	Antenna C1 MPE %:	**0.91%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO	Make / Model:	ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO	Make / Model:	ERICSSON SON_AIR6419 B41 LTE TB 02.09.21 2500 TMO
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd / 15.55 dBd / 15.55 dBd	Gain:	22.05 dBd / 22.05 dBd / 15.55 dBd / 15.55 dBd	Gain:	22.05 dBd / 22.05 dBd / 15.55 dBd / 15.55 dBd
Height (AGL):	171 feet	Height (AGL):	171 feet	Height (AGL):	171 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	180.00 Watts	Total TX Power (W):	180.00 Watts	Total TX Power (W):	180.00 Watts
ERP (W):	23,258.96	ERP (W):	23,258.96	ERP (W):	23,258.96
Antenna A2 MPE %:	**3.07%**	Antenna B2 MPE %:	**3.07%**	Antenna C2 MPE %:	**3.07%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	COMMSCOPE VV-65A-R1B 00DT 1900	Make / Model:	COMMSCOPE VV-65A-R1B 00DT 1900	Make / Model:	COMMSCOPE VV-65A-R1B 00DT 1900
Frequency Bands:	1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.15 dBd / 15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.15 dBd / 15.15 dBd / 15.8 dBd
Height (AGL):	171 feet	Height (AGL):	171 feet	Height (AGL):	171 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	330.00 Watts	Total TX Power (W):	330.00 Watts	Total TX Power (W):	330.00 Watts
ERP (W):	10,098.22	ERP (W):	10,098.22	ERP (W):	10,098.22
Antenna A3 MPE %:	**1.33%**	Antenna B3 MPE %:	**1.33%**	Antenna C3 MPE %:	**1.33%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Combined Sectors):	0.49%
Town	0.31%
Verizon	0.29%
Sprint	0.1%
AT&T	0.64%
Site Total MPE % :	1.83%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	0.48%
T-Mobile Sector B Total:	0.48%
T-Mobile Sector C Total:	0.48%
T-Mobile Total MPE % :	0.49%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 600 MHz LTE	1	712.1311635	171	0.94039139	600 MHz LTE	400.0	0.24%
T-Mobile 600 MHz NR	1	1424.262327	171	1.880782781	600 MHz NR	400.0	0.47%
T-Mobile 700 MHz LTE	1	725.3706703	171	0.957874572	700 MHz LTE	467.0	0.21%
T-Mobile 2500 MHz LTE	1	7214.604258	171	9.52710972	2500 MHz LTE	1000.0	0.95%
T-Mobile 2500 MHz NR	1	14429.20852	171	19.05421944	2500 MHz NR	1000.0	1.91%
T-Mobile 2500 MHz LTE	1	538.382902	171	0.710951397	2500 MHz LTE	1000.0	0.07%
T-Mobile 2500 MHz NR	1	1076.765804	171	1.421902795	2500 MHz NR	1000.0	0.14%
T-Mobile 1900 MHz GSM	1	283.7919028	171	0.37475605	1900 MHz GSM	1000.0	0.04%
T-Mobile 1900 MHz LTE	1	2270.335223	171	2.998048402	1900 MHz LTE	1000.0	0.30%
T-Mobile 1900 MHz NR	1	2270.335223	171	2.998048402	1900 MHz NR	1000.0	0.30%
T-Mobile 2100 MHz LTE	1	5273.755395	171	6.964158322	2100 MHz LTE	1000.0	0.70%
						T-Mobile Total:	**0.49%**

• NOTE: Total T-Mobile MPE values reflect all T-Mobile antennas as reported by RoofMaster™ combined modeling.
• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	0.48%
Sector B:	0.48%
Sector C:	0.48%
T-Mobile Maximum MPE % (Sector A):	0.48%
T-Mobile Combined Sectors MPE %:	0.49%
Site Total:	1.83%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **1.83%** of the allowable FCC established general population limit sampled at the ground level at a distance of 74 feet away from the tower. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions or documents available on the Connecticut Siting Council website.

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.