



10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

August 1, 2019

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

RE: Notice of Exempt Modification
232 Shore Road, Old Lyme, CT 06371
Latitude: 41.2910000000
Longitude: -72.28586100000
T-Mobile Site#: CTNL803A – L600

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 99-foot level of the existing 109-foot monopole at 232 Shore Road, Old Lyme, CT. The 109-foot monopole is owned and operated by American Tower Corporation. The property is owned by ATSSLSS LLC. T-Mobile now intends to replace three (3) of its existing antennas with three (3) new 600/700 MHz antennas. The new antennas will be installed at the same 99-foot level of the tower. Mount modifications are also required as detailed in the enclosed mount analysis.

Planned Modifications:

Tower:

Remove

(3) TMA

Remove and Replace:

(3) Andrew – LNX-6515DS-A1M (remove) – Add (3) RFS APXVAARR24_43-UNA20 600/700 MHz

(3) RRUS11B12 (remove) – Add (3) Radio 4449 B12+B71

Install New:

(3) 1-5/8" hybrid

Existing to Remain:

(6) AIR 21

(12) 1-5/8" coax

(1) 1-1/4" Hybrid

Ground:

Replace: Existing cabinet with new 6131 cabinet

This tower facility was originally approved by the Siting Council in Docket No. 391 on September 23, 2010. This modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectwoman -Bonnie Reemseynder, Elected Official, and Kim Barrows, Land Use Technician for the Town of Old Lyme, as well as the tower owner 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,

Kyle Richers

Transcend Wireless

Cell: 908-447-4716

Email: krichers@transcendwireless.com

Attachments

cc: Bonnie Reemseynder – Town of Old Lyme First Selectwoman

Kim Barrows– Town of Old Lyme Land Use Technician

American Tower – Tower Owner

ATSSLSS – Property Owner

UPS Internet Shipping: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS

Customers with a Daily Pickup

Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.

Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages.

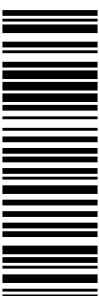
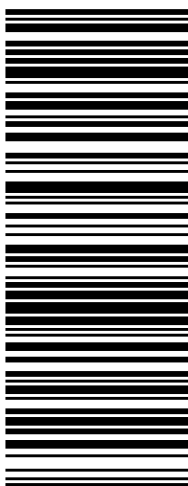

Hand the package to any UPS driver in your area.

UPS Access Point™
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RAMSEY ,NJ 07446

UPS Access Point™
POSTNET NY137
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: CONTACTS MANAGEMENT AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053</p>	<p>1 LBS</p> <p style="text-align: right;">1 OF 1</p>	<p>MA 018 9-04</p> 	<p>UPS GROUND</p> <p>TRACKING #: 1Z V25 742 03 9265 2858</p> 	<p>BILLING: P/P</p> <p>Reference#1: CTNL803A Reference#2: UPS-ATC</p> <p style="text-align: right;">  <small>UPS 21.5.22. WINTNVS0 12.0A 04/2019</small> </p>
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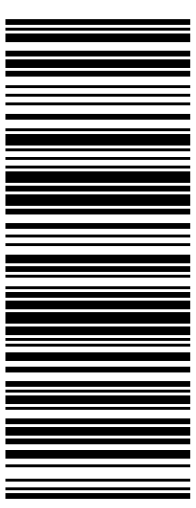

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74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: KIM BARROWS TOWN OF OLD LYME OLD LYME MEMORIAL TOWN HALL 52 LYME STREET OLD LYME CT 06371-2331</p>	<p style="text-align: right;">1 OF 1</p> <p style="text-align: center;">CT 063 5-02</p> 	<p style="text-align: center;">UPS GROUND</p> <p>TRACKING #: 1Z V25 742 03 9086 9511</p> 	<p style="text-align: center;">BILLING: P/P</p> <p>Reference#1: CTNI803A Reference#2: UPS-Planner</p> <p style="text-align: right;">  <small>UPS 21.5.24. WINTNVS0 15.0A 07/2019</small> </p>
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UPS Internet Shipping: View/Print Label

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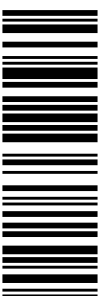
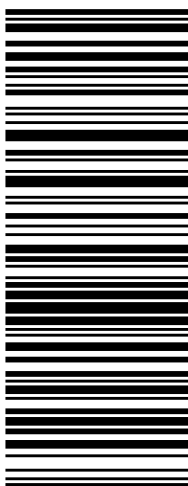

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74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE

<p>NEIL GUERRIERO 3473040176 TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH NJ 07430</p> <p>SHIP TO: BONNIE A. REEMSNYDER TOWN OF OLD LYME 52 LYME STREET OLD LYME CT 06371-2331</p>	<p style="text-align: right;">1 LBS</p> <p style="text-align: right;">1 OF 1</p> <p style="text-align: center;">CT 063 5-02</p> 	<p style="text-align: center;">UPS GROUND</p> <p>TRACKING #: 1Z V25 742 03 9334 8873</p> 	<p style="text-align: center;">BILLING: P/P</p> <p>Reference#1: CTNL803A Reference#2: UPS-Mayor</p> <p style="text-align: center;"></p> <p style="text-align: center;"><small>UPS 21.5.22. WINTNVS0 12.0A 04/2019</small></p>
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U.S. Postal Service™

CERTIFIED MAIL™ RECEIPT

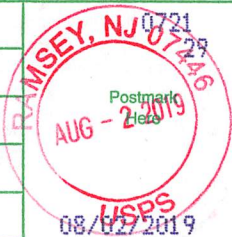
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OLD LYME, CT 06371

OFFICIAL USE

Postage	\$3.50
Certified Fee	\$2.80
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$1.60
	\$7.90



Sent To

ATSSLS LLC

Street, Apt. No.;
or PO Box No.

PO Box 833

City, State, ZIP+4

Old Lyme, CT 06371

7009 3410 0002 0389 3533

Certified Mail Provides:

- A mailing receipt
- A unique identifier for your mailpiece
- A record of delivery kept by the Postal Service for two years

Important Reminders:

- Certified Mail may **ONLY** be combined with First-Class Mail® or Priority Mail®.
- Certified Mail is *not* available for any class of international mail.
- **NO INSURANCE COVERAGE IS PROVIDED** with Certified Mail. For valuables, please consider Insured or Registered Mail.
- For an additional fee, a *Return Receipt* may be requested to provide proof of delivery. To obtain Return Receipt service, please complete and attach a Return Receipt (PS Form 3811) to the article and add applicable postage to cover the fee. Endorse mailpiece "Return Receipt Requested". To receive a fee waiver for a duplicate return receipt, a USPS® postmark on your Certified Mail receipt is required.
- For an additional fee, delivery may be restricted to the addressee or addressee's authorized agent. Advise the clerk or mark the mailpiece with the endorsement "*Restricted Delivery*".
- If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is not needed, detach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.

232 SHORE RD

Location 232 SHORE RD

Mblu 8 / / 36/2 /

Acct# 00020990

Owner ATSSLSS LLC

Assessment \$1,196,500

Appraisal \$1,709,400

PID 100505

Building Count 7

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2014	\$879,200	\$830,200	\$1,709,400
Assessment			
Valuation Year	Improvements	Land	Total
2014	\$615,400	\$581,100	\$1,196,500

Owner of Record

Owner ATSSLSS LLC

Co-Owner

Address POB 833
OLD LYME, CT 06371

Sale Price \$0

Certificate

Book & Page 396/ 757

Sale Date 12/12/2013

Ownership History

Ownership History

Owner	Sale Price	Certificate	Book & Page	Sale Date
ATSSLSS LLC	\$0		396/ 757	12/12/2013
SMITH GARY D	\$0		181/ 61	

Building Information

Building 1 : Section 1

Year Built: 1986
Living Area: 3,800
Replacement Cost: \$122,056
Building Percent Good: 66
Replacement Cost Less Depreciation: \$80,600

Building Attributes

Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal/Tin

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos/\00\00\49\2>;

Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	3,800	3,800
		3,800	3,800

Building 2 : Section 1

Year Built: 1986
Living Area: 5,000
Replacement Cost: \$134,850
Building Percent Good: 66

Replacement Cost**Less Depreciation:** \$89,000

Building Attributes : Bldg 2 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I

Building Photo

([http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\2:](http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\2;)

Building Layout

(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>

Building Sub-Areas (sq ft)**Legend**

Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Code	Description	Gross Area	Living Area
BAS	First Floor	5,000	5,000
		5,000	5,000

Building 3 : Section 1

Year Built: 1986
Living Area: 8,700
Replacement Cost: \$239,857
Building Percent Good: 66
Replacement Cost Less Depreciation: \$158,300

Building Attributes : Bldg 3 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	Vinyl Siding
Roof Structure	Shed

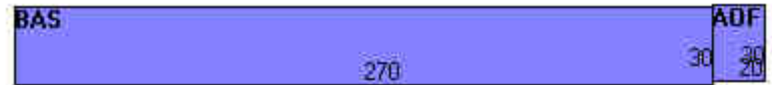
Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\24>)

Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	8,100	8,100
AOF	Office, (Average)	600	600
		8,700	8,700

Building 4 : Section 1

Year Built: 1986
Living Area: 5,600
Replacement Cost: \$146,888

Building Percent 66

Good:

Replacement Cost

Less Depreciation: \$96,900

Building Attributes : Bldg 4 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\2:>

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>

Building Sub-Areas (sq ft)

Legend

1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Code	Description	Gross Area	Living Area
BAS	First Floor	5,600	5,600
		5,600	5,600

Building 5 : Section 1

Year Built: 1989
Living Area: 8,100
Replacement Cost: \$196,587
Building Percent Good: 69
Replacement Cost Less Depreciation: \$135,600

Building Attributes : Bldg 5 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\2;>

Roof Structure	Shed
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	8,100	8,100
		8,100	8,100

Building 6 : Section 1

Year Built: 1989
Living Area: 7,500

Replacement Cost: \$193,725

Building Percent 69

Good:

Replacement Cost

Less Depreciation: \$133,700

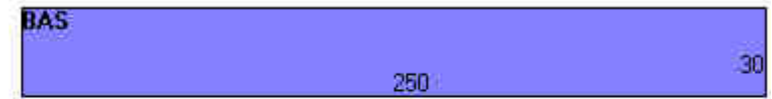
Building Attributes : Bldg 6 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\26>)

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/106>)

Building Sub-Areas (sq ft)

Legend

Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	LIGHT
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Code	Description	Gross Area	Living Area
BAS	First Floor	7,500	7,500
		7,500	7,500

Building 7 : Section 1

Year Built: 1986
Living Area: 4,900
Replacement Cost: \$132,790
Building Percent Good: 66
Replacement Cost Less Depreciation: \$87,600

Building Attributes : Bldg 7 of 7	
Field	Description
STYLE	Self Storage
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\49\2!>)

Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	8

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/100>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	4,900	4,900
		4,900	4,900

Extra Features

Extra Features**Legend**

No Data for Extra Features

Land**Land Use**

Use Code 316I
Description COM WHS/GAR
Zone IND
Neighborhood C2
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 5.01
Frontage
Depth
Assessed Value \$581,100
Appraised Value \$830,200

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SGN2	DOUBLE SIDED			16 S.F.&HGT	\$400	1
LT1	LIGHTS-IN W/PL			6 UNITS	\$2,100	1
FN7	W/O TOP RL-5'			1100 L.F.	\$4,400	1
	TOWER			1	\$90,600	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$879,200	\$830,200	\$1,709,400

2017	\$879,200	\$830,200	\$1,709,400
2011	\$380,400	\$662,900	\$1,043,300

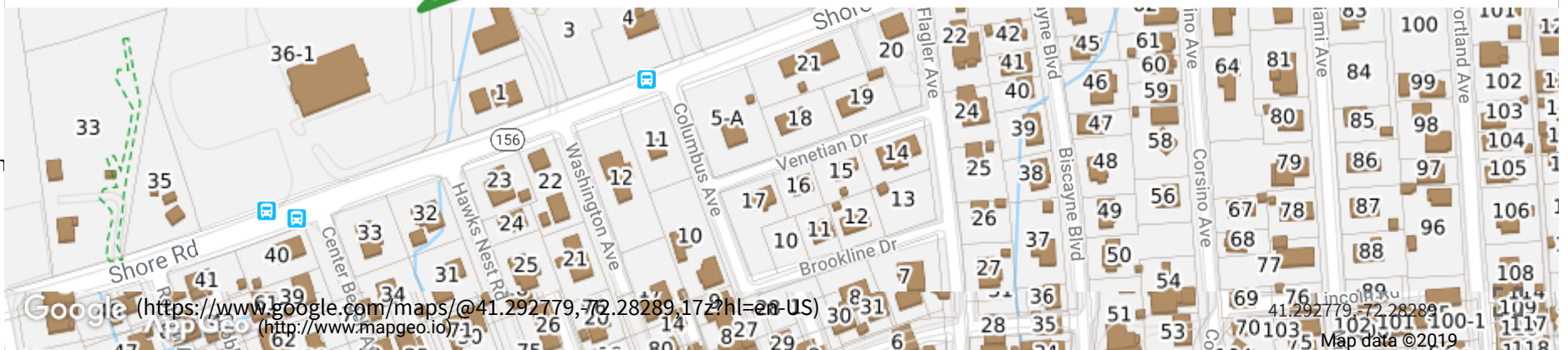
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$615,400	\$581,100	\$1,196,500
2017	\$615,400	\$581,100	\$1,196,500
2011	\$266,400	\$464,100	\$730,500

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Town of Old Lyme, CT

Property

322 shore rd



DOCKET NO. 391 - T-Mobile Northeast, LLC application for a }
Certificate of Environmental Compatibility and Public Need for }
the construction, maintenance and operation of a }
telecommunications facility located 232 Shore Road, Old Lyme, }
Connecticut. }

Connecticut

Siting

Council

September 23, 2010

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to T-Mobile Northeast, LLC (T-Mobile), hereinafter referred to as the Certificate Holder, for a telecommunications facility at the Northern Alternative Location, located at 232 Shore Road, Old Lyme, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC, T-Mobile, and Celco Partnership d/b/a Verizon Wireless and other entities, both public and private, but such tower shall not exceed a height of 110 feet above ground level (agl). The wireless antennas shall be attached to the tower via T-arm mounts.
2. The tower and foundation shall be designed to accommodate a tower extension up to 160 feet agl.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Old Lyme for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Old Lyme public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
9. Any request for extension of the time period referred to in Condition 8 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Old Lyme. Any proposed modifications to this Decision and Order shall likewise be so served.
10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
11. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

13. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
14. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder\transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder\transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in *The Day*.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

T-Mobile Northeast, LLC

Its Representative

Julie D. Kohler, Esq.
Monte E. Frank, Esq.
Jesse A. Langer, Esq.
Cohen and Wolf, P.C.
1115 Broad Street
Bridgeport, CT 06604

Intervenor

Cellco Partnership d/b/a Verizon Wireless

Its Representative

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

New Cingular Wireless PCS, LLC

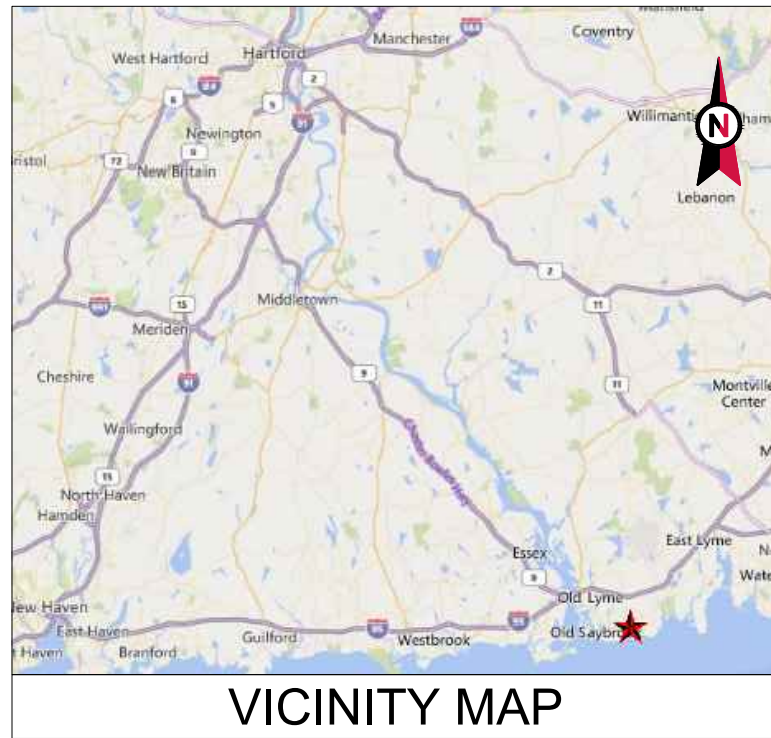
Christopher B. Fisher, Esq.
Daniel M. Laub, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

Party

Town of Old Lyme

Its Representative

The Honorable Timothy G. Griswold
Office of the Selectman
Town of Old Lyme
52 Lyme Street
Old Lyme, CT 06371




AMERICAN TOWER®

ATC SITE NAME: OLD LYME II CT
 ATC SITE NUMBER: 284982
 T-MOBILE SITE ID: CTNL803A
 SITE ADDRESS: 232 SHORE ROAD
 OLD LYME, CT 06371



**T-MOBILE L600 ANTENNA AMENDMENT
 67D02C CONFIGURATION**



AMERICAN TOWER®
 A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: P-1177

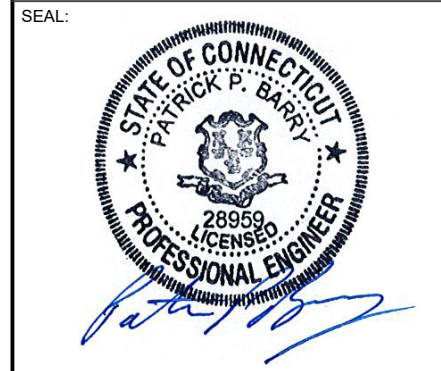
THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.


REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	07/24/19

ATC SITE NUMBER:
284982

ATC SITE NAME:
OLD LYME II CT

SITE ADDRESS:
 232 SHORE ROAD
 OLD LYME, CT 06371



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. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES
UTILITY COMPANIES
POWER COMPANY: UNKNOWN PHONE: N/A
TELEPHONE COMPANY: UNKNOWN PHONE: N/A
 Know what's below. Call before you dig.

PROJECT SUMMARY
<u>SITE ADDRESS:</u> 232 SHORE ROAD OLD LYME, CT 06371 COUNTY: NEW LONDON
<u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41° 17' 30.44" N LONGITUDE: 72° 17' 12.84" W GROUND ELEVATION: 34.5' AMSL
PROJECT TEAM
<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801
<u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518
<u>PROPERTY OWNER:</u> GARY SMITH P.O. BOX 833 OLD LYME, CT 06371

PROJECT DESCRIPTION
THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (3) PANELS, (3) TTAs, AND (3) T-ARM MOUNTS INSTALL (3) NEW PANELS, (3) RRU's, (3) 1-5/8" HYBRID CABLES, (1) PLATFORM MOUNT EXISTING (6) PANELS, (12) 1-5/8" COAX CABLES, AND (1) 1-1/4" HYBRID CABLE 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.
PROJECT LOCATION DIRECTIONS
FROM HARTFORD, CT: TAKE CT-15 S/US-5 S TO I-91 S. TAKE EXIT 22S TOWARDS MIDDLETOWN. TAKE CT-9 S TO CT-156 E IN OLD LYME. TAKE EXIT 70 FROM I-95 N/US-1 N. FOLLOW SHORE RD/CT-156 E TO ACCESS ROAD. SITE WILL BE ON THE LEFT.

SHEET INDEX						
SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:		
G-001	TITLE SHEET	0	07/24/19	KTL		
G-002	GENERAL NOTES	0	07/24/19	KTL		
C-101	GENERAL NOTES	0	07/24/19	KTL		
C-501	ANTENNA INFORMATION & SCHEDULE	0	07/24/19	KTL		
C-502	MOUNTING DETAILS	0	07/24/19	KTL		
E-501	GROUNDING DETAILS	0	07/24/19	KTL		
R-601	SUPPLEMENTAL					
R-602	SUPPLEMENTAL					
R-603	SUPPLEMENTAL					
R-604	SUPPLEMENTAL					
R-605	SUPPLEMENTAL					
R-606	SUPPLEMENTAL					

DRAWN BY:	KTL
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

TITLE SHEET	
SHEET NUMBER: G-001	REVISION: 0

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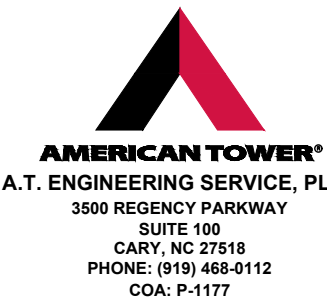
GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. 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.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH T-MOBILE WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS 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.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. 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.
25. CONTRACTOR SHALL NOTIFY T-MOBILE WIRELESS 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.
26. 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.

27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. 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 WIRELESS REP. ANY WORK FOUND BY THE T-MOBILE WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. 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.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
 - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
 - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
 - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
 - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
 - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
 - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
 - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
 - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
 - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
 - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
 - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
 - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	07/24/19

ATC SITE NUMBER:

284982

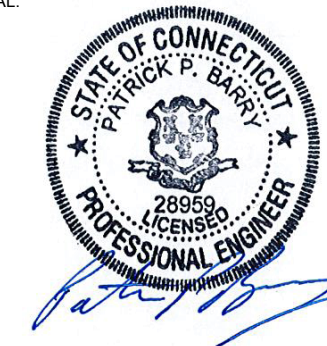
ATC SITE NAME:

OLD LYME II CT

SITE ADDRESS:

232 SHORE ROAD
OLD LYME, CT 06371

SEAL:



Authorized by "EOR"
Jul 24 2019 11:19 AM
T-Mobileesign

DRAWN BY:	KTL
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

GENERAL NOTES

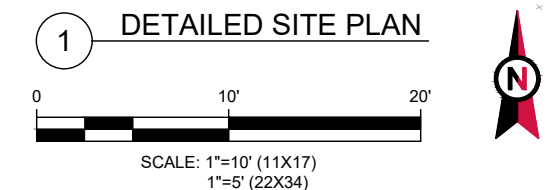
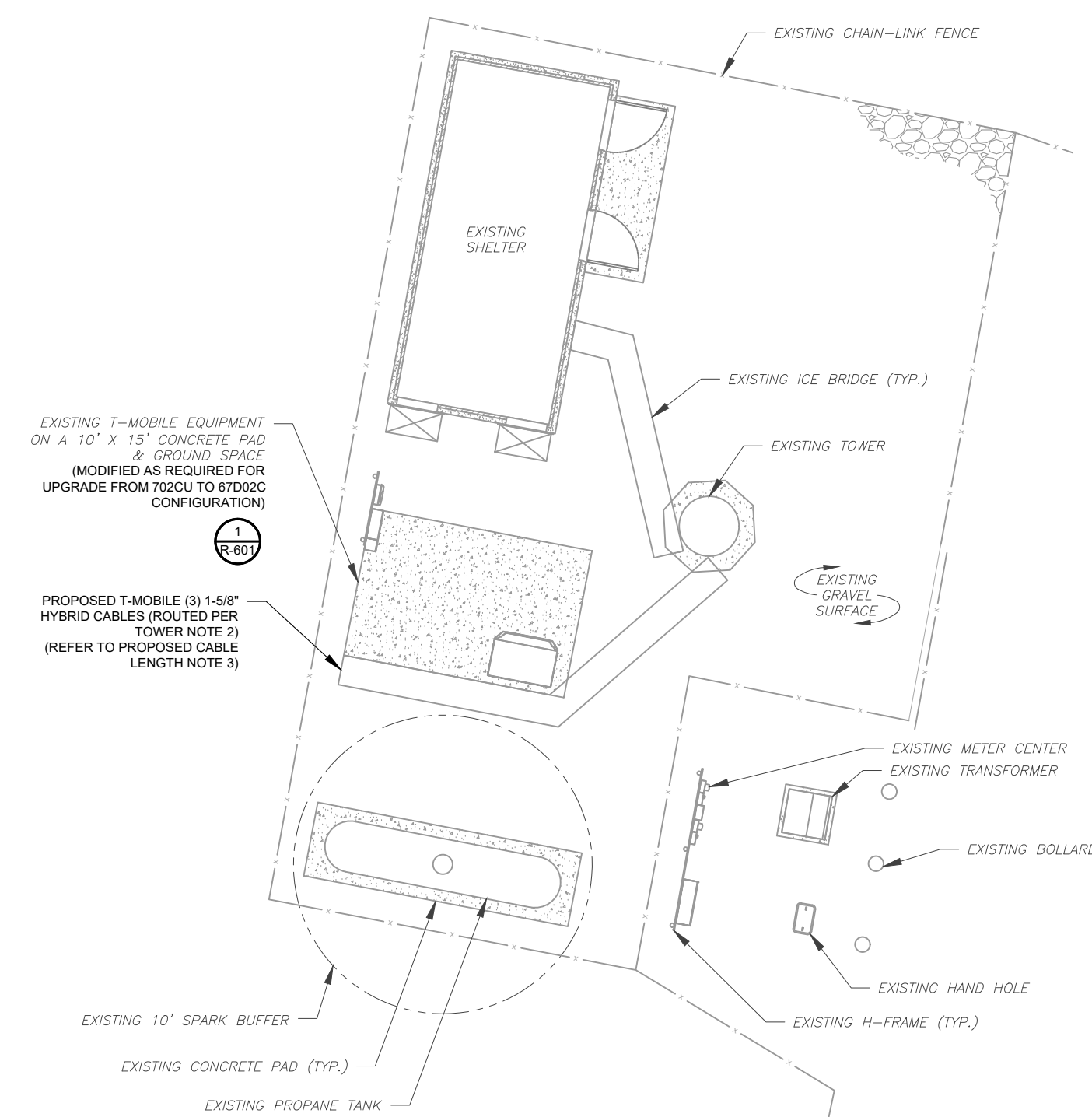
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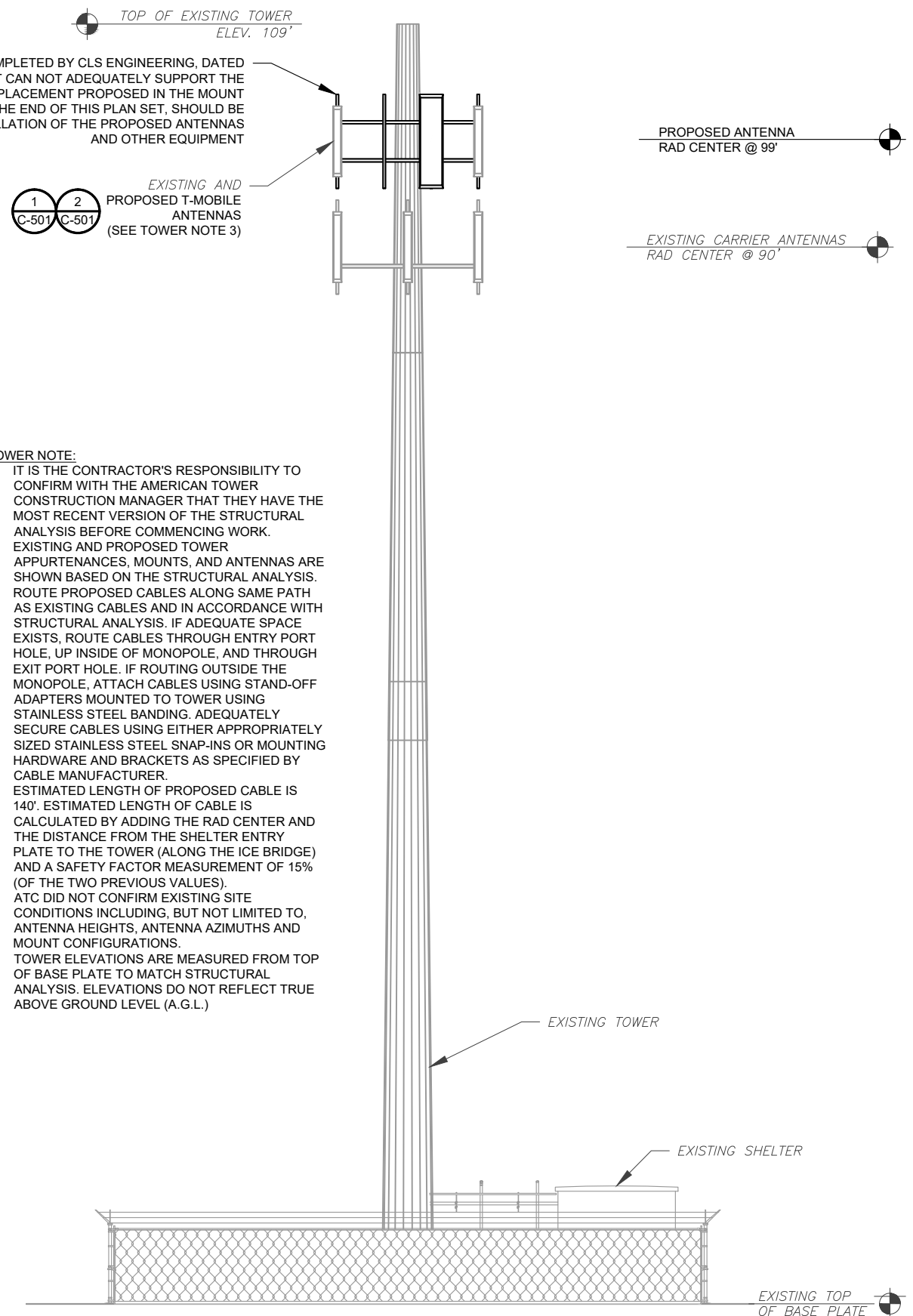
SITE PLAN NOTES:

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

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-03-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, SHOULD BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



- TOWER NOTE:**
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. 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.
 3. ESTIMATED LENGTH OF PROPOSED CABLE IS 140'. ESTIMATED LENGTH OF CABLE IS 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).
 4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
 5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)



2 TOWER ELEVATION
SCALE: NOT TO SCALE

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: P-1177

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	07/24/19

ATC SITE NUMBER:
284982

ATC SITE NAME:
OLD LYME II CT

SITE ADDRESS:
232 SHORE ROAD
OLD LYME, CT 06371

SEAL:

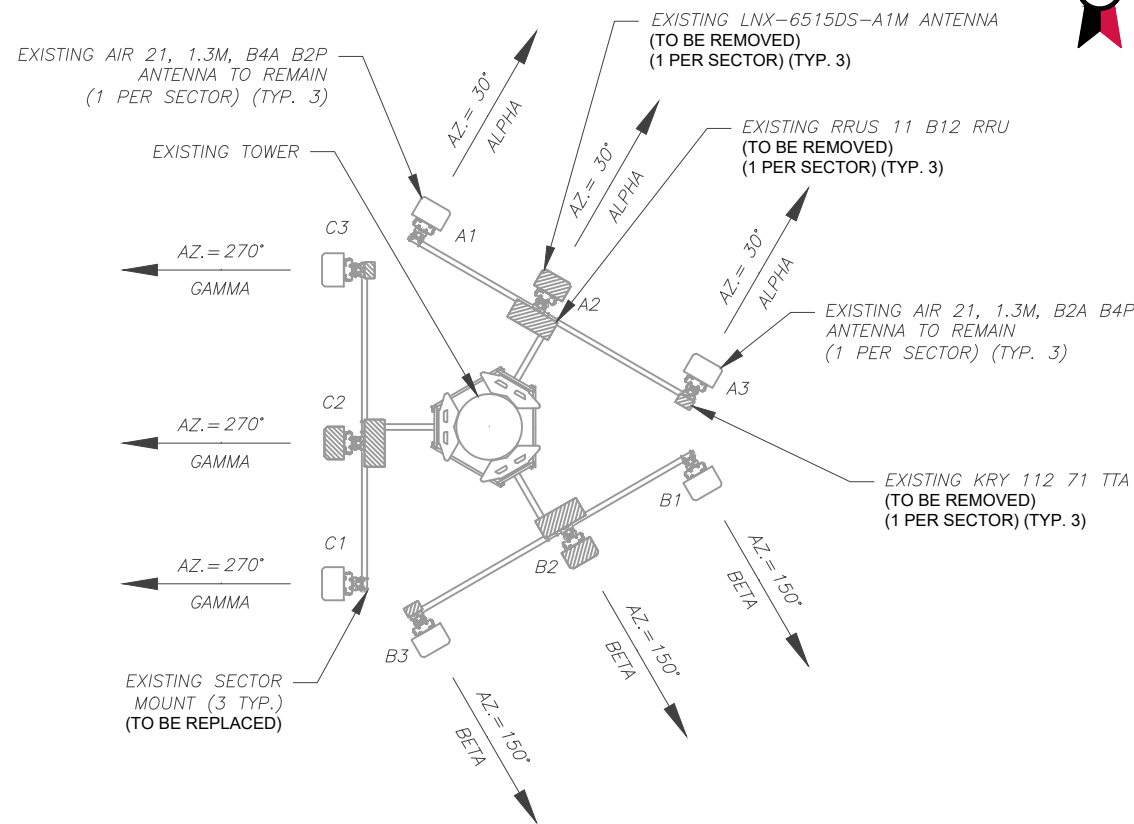
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DRAWN BY:	KTL
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

GENERAL NOTES

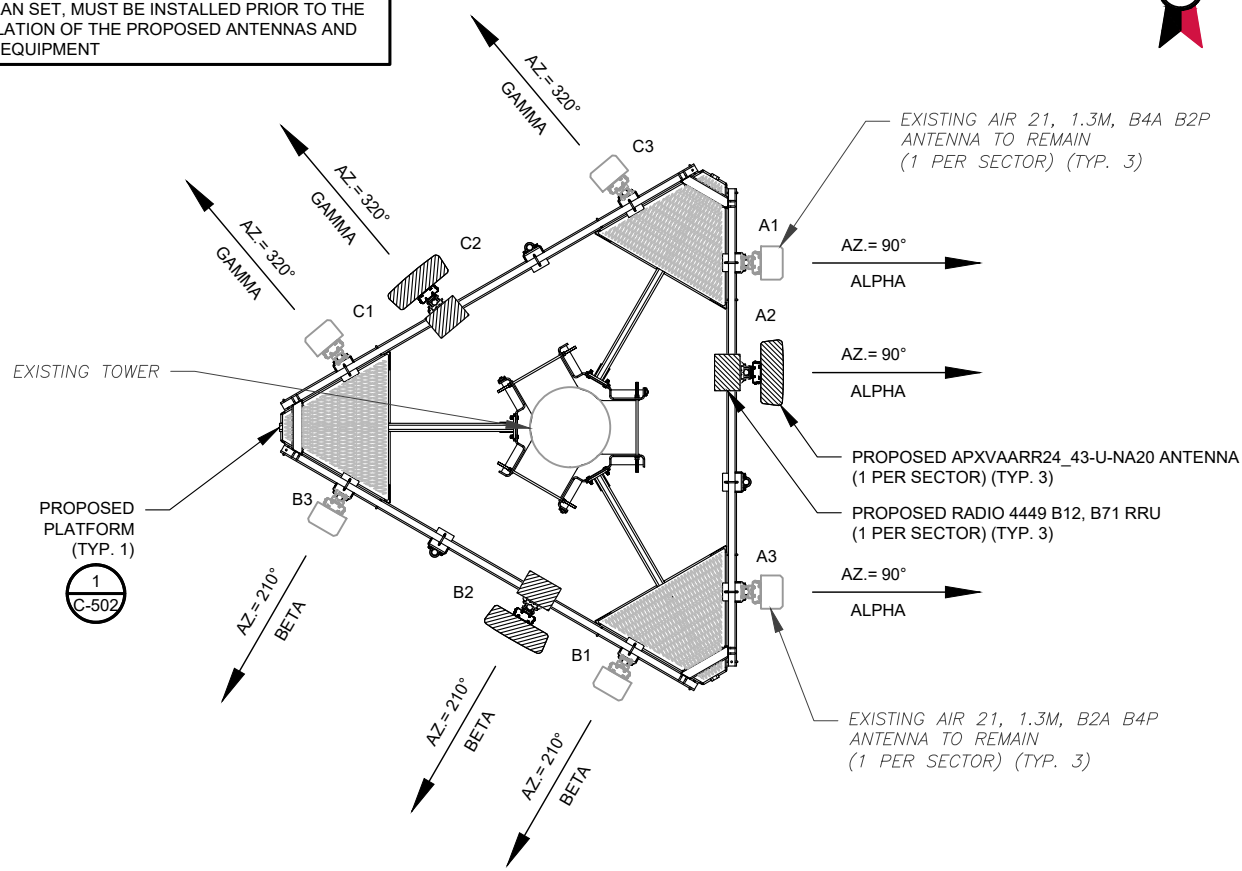
SHEET NUMBER:	REVISION:
C-101	0

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1 EXISTING ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-03-19. THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN

EXISTING ANTENNA / EQUIPMENT SCHEDULE							
SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21 B4A B2P	99'-0"	30°	0°	2°	-
ALPHA	A2	LNx-6515DS-A1M	99'-0"	30°	0°	2°	RRUS11 B12
ALPHA	A3	AIR 21 B2A B4P	99'-0"	30°	0°	2°	KRY 112 71
BETA	B1	AIR 21 B4A B2P	99'-0"	150°	0°	2°	-
BETA	B2	LNx-6515DS-A1M	99'-0"	150°	0°	2°	RRUS11 B12
BETA	B3	AIR 21 B2A B4P	99'-0"	150°	0°	2°	KRY 112 71
GAMMA	C1	AIR 21 B4A B2P	99'-0"	270°	0°	2°	-
GAMMA	C2	LNx-6515DS-A1M	99'-0"	270°	0°	2°	RRUS11 B12
GAMMA	C3	AIR 21 B2A B4P	99'-0"	270°	0°	2°	KRY 112 71

- NOTES
- BASED ON APPROVED ATC APPLICATION 12927136, DATED 04/01/19. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFG). GC TO CAP ALL UNUSED PORTS.
 - ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
 - ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
 - CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
 - POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE							
SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21 B4A B2P	99'-0"	30°	0°	2°	-
ALPHA	A2	APXVAARR24_43-U-NA20	99'-0"	90°	0°	2°	RADIO 4449 B12, B71
ALPHA	A3	AIR 21 B2A B4P	99'-0"	30°	0°	2°	-
BETA	B1	AIR 21 B4A B2P	99'-0"	150°	0°	0°/2°	-
BETA	B2	APXVAARR24_43-U-NA20	99'-0"	210°	0°	2°	RADIO 4449 B12, B71
BETA	B3	AIR 21 B2A B4P	99'-0"	150°	0°	2°	-
GAMMA	C1	AIR 21 B4A B2P	99'-0"	270°	0°	0°/2°	-
GAMMA	C2	APXVAARR24_43-U-NA20	99'-0"	320°	0°	2°	RADIO 4449 B12, B71
GAMMA	C3	AIR 21 B2A B4P	99'-0"	270°	0°	2°	-

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	(1) 1-1/4"	RMN
-	-	-	-	-

STATUS ABBREVIATIONS	
RMV:	TO BE REMOVED
RMN:	TO REMAIN
REL:	TO BE RELOCATED
DSC:	TO BE DISCONNECTED & REMAIN
ADD:	TO BE ADDED

3 ANTENNA SCHEDULE

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/OVP TO RRU: 15'
RRU TO ANTENNA: 10'

PROPOSED FIBER DISTRIBUTION/OVP BOX		PROPOSED CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	(1) 1-1/4"	RMN
-	-	-	(3) 1-5/8"	ADD

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	KTL	07/24/19
1			
2			
3			
4			

ATC SITE NUMBER:
284982

ATC SITE NAME:
OLD LYME II CT

SITE ADDRESS:
232 SHORE ROAD
OLD LYME, CT 06371

SEAL:

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T-Mobile

DRAWN BY:	KTL
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

ANTENNA INFORMATION & SCHEDULE	
SHEET NUMBER:	REVISION:
C-501	0



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OLD LYME II CT

 SITE ADDRESS:
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 OLD LYME, CT 06371

SEAL:

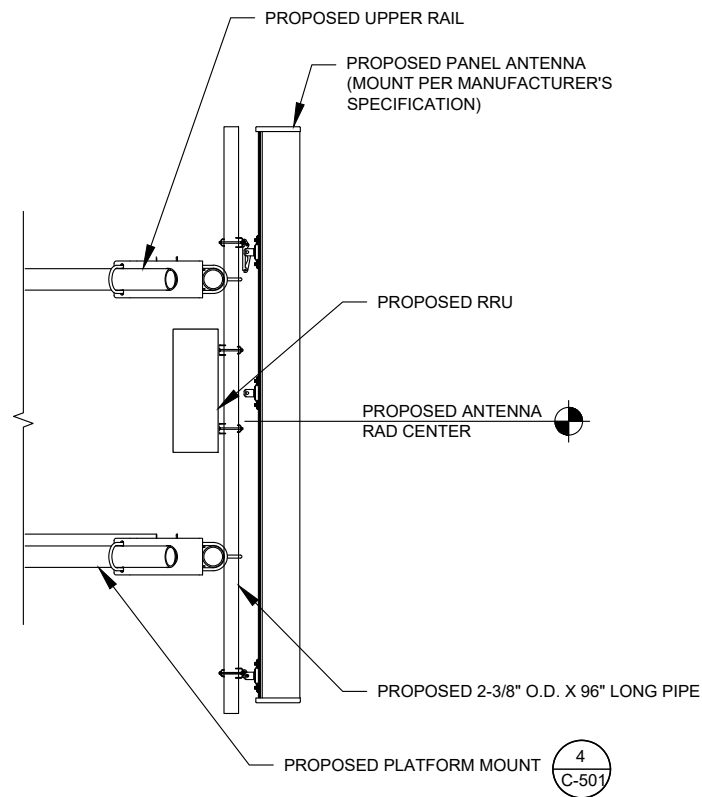


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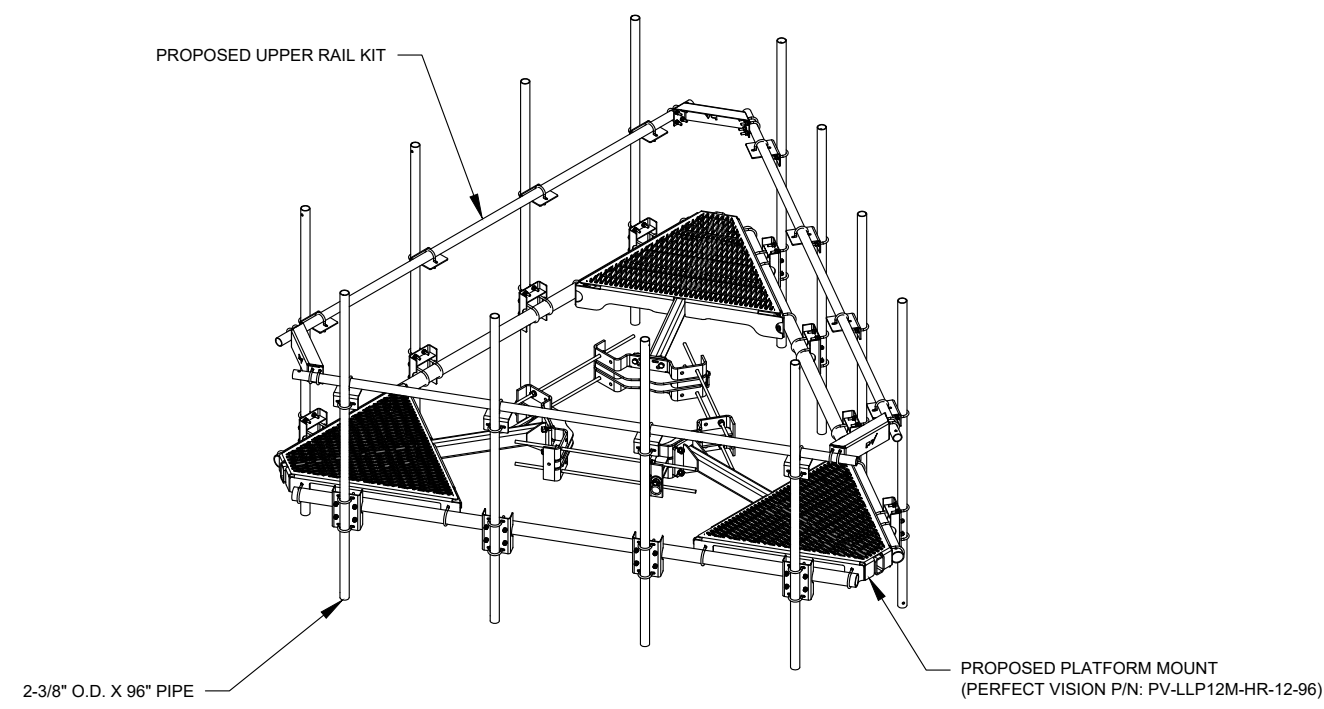
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APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

MOUNTING DETAILS

SHEET NUMBER: **C-502** REVISION: **0**

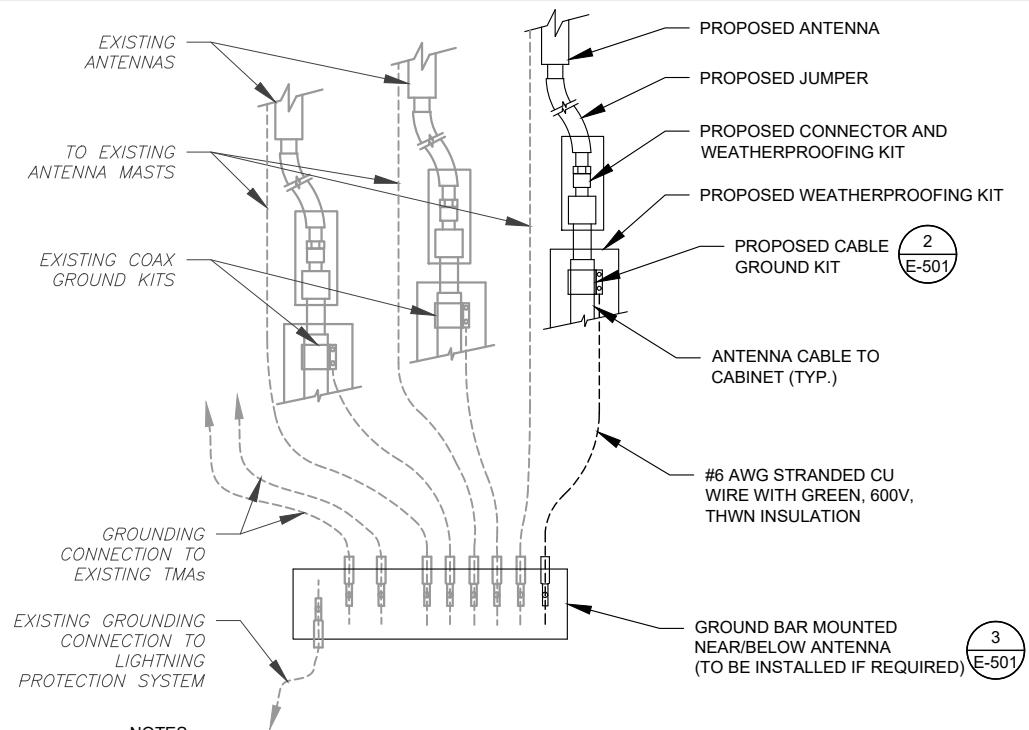


1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)
 SCALE: NOT TO SCALE



2 ISOMETRIC PLATFORM DETAIL
 SCALE: NOT TO SCALE

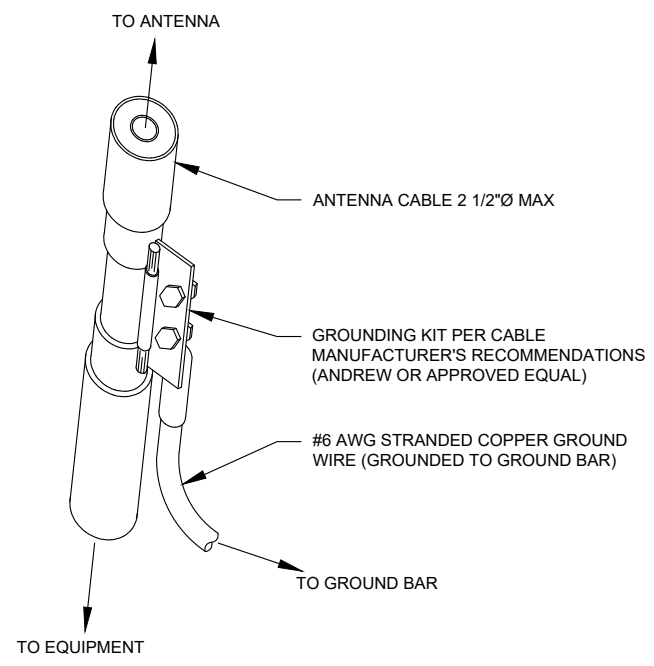
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NOTES:

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.

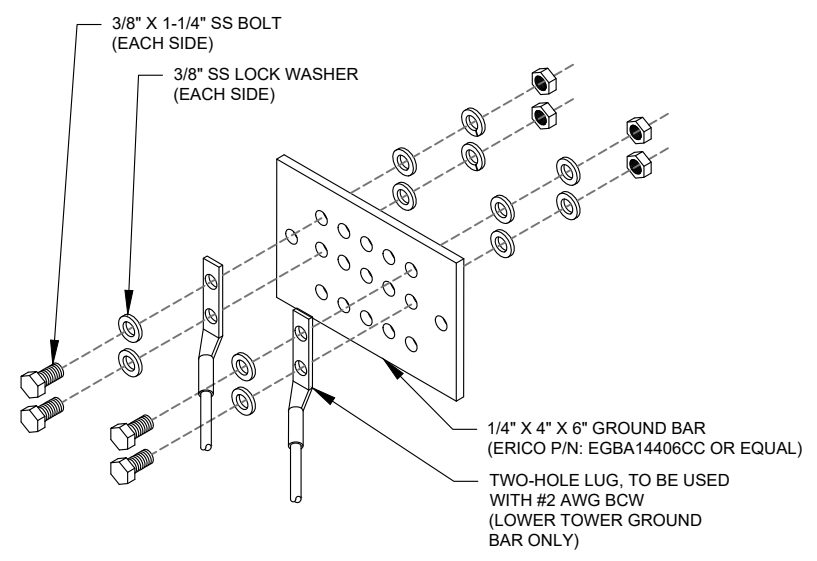
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



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: NOT TO SCALE



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: NOT TO SCALE

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ATC SITE NUMBER:
284982

ATC SITE NAME:
OLD LYME II CT

SITE ADDRESS:
232 SHORE ROAD
OLD LYME, CT 06371

SEAL:

Patrick P. Barry

Authorized by "EOR"
Jul 24 2019 11:19 AM
T-Mobileesign

DRAWN BY:	KTL
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12964155

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

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Section 5 - RAN Equipment

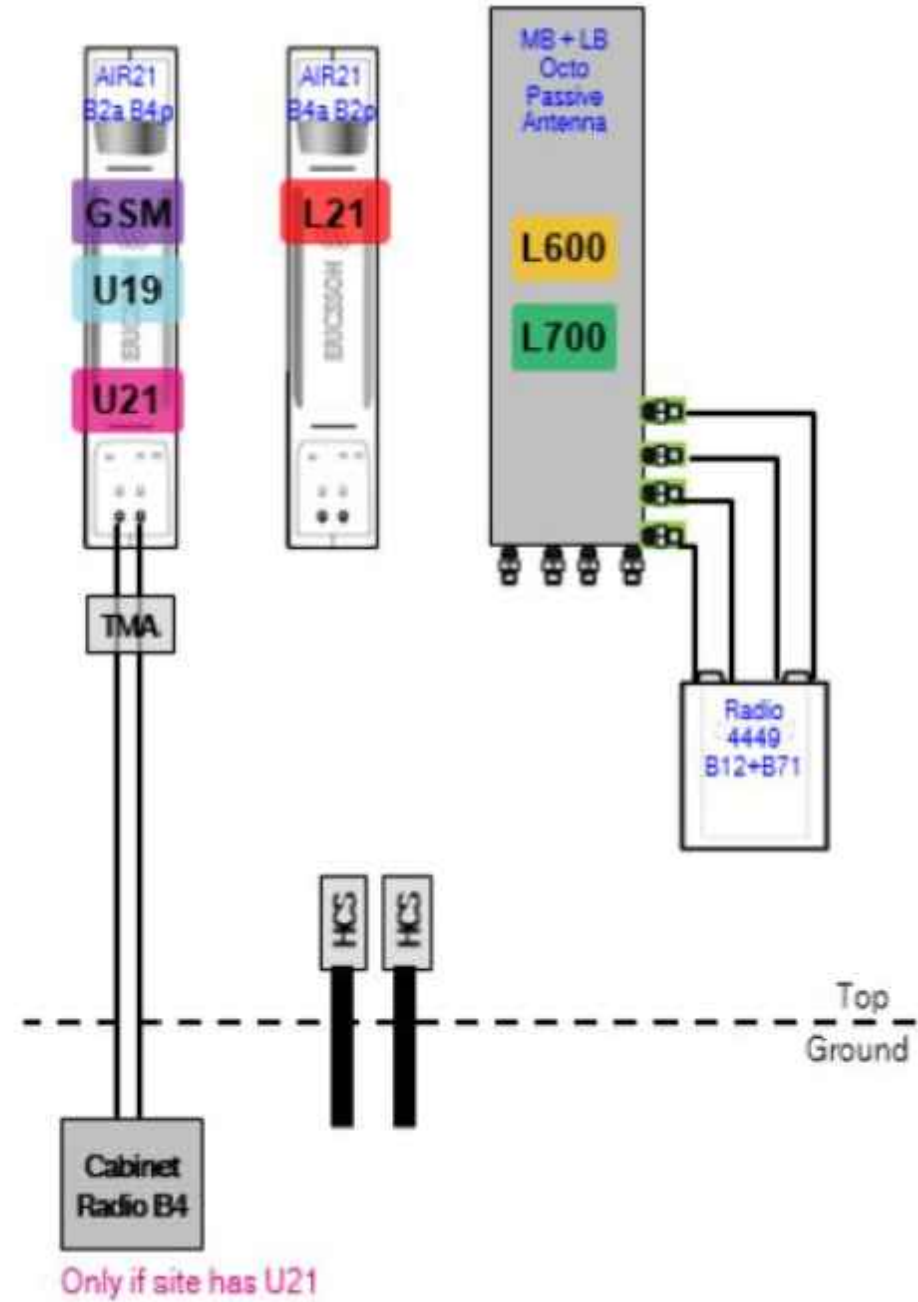
Existing RAN Equipment	
Template: 702Cu	
Enclosure	1
Enclosure Type	RBS 6131
Baseband	DUW30 DUG20 DUS41
Hybrid Cable System	Ericsson 9x18 HCS *Select Length*
Radio	RU22 (x 6)

Proposed RAN Equipment	
Template: 67D02C Outdoor	
Enclosure	1
Enclosure Type	RBS 6131
Baseband	DUW30 DUG20 BB 6630 BB 6630 U1900 G1900 L2100 N600 (DARK) L700 L600
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x 3)
Radio	RU22 (x 6) U2100

RAN Scope of Work:

Replace (1) DUS41 with (1) BB6630 for L2100, L700, and L600.
 Add (1) BB6630 for future 5G N600.
 Add (3) 6X12 HCS, Length and AWG will decide by Dev.
 Swap (3) LNX 6515 Antennas with (3) 8' Octoport antennas @ P2. Swap (3) RRUS11 B12 with (3) Radios 4449.
 Existing: (12) Coax, (1) 9X18 HCS. 12 Unused Coax on Tower.

1 **CABINET CONFIGURATION**
SCALE: NOT TO SCALE



Notes:

2 **ANTENNA CONFIGURATION**
SCALE: NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER: **R-601** REVISION: **0**

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

Mount Analysis of Proposed Perfect Vision PV-LLP12M-HR-12-96 Platform w/ PV-PKBK-M Kicker Kit for American Tower on behalf of T-Mobile

284982 - OLD LYME II CT

Project #: 12927136

T-Mobile Site ID: CTNL803A

Program: L600

CLS Engineering PLLC Project #41124-12927136-01-MR-R1

July 3, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-LLP12M-HR-12-96 Platform w/ PV-PKBK-M Kicker Kit at 99 ft
ANTENNA ELEVATION	Nominal Rad. Elevation of 99 ft AGL
SITE DESCRIPTION	109 ft Monopole
SITE ADDRESS	232 Shore Road, Old Lyme, CT, 06371, New London County
GPS COORDINATES	41.291736, -72.28706
ANALYSIS STANDARD	2015 IBC /2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	135 mph, V_{ult} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

■ ANALYSIS RESULT: **Pass (Replacement)**

MEMBER USAGE	82%	Pass
--------------	-----	------

Existing mounts to be replaced; see conclusion for details.

Prepared by:
Marena Anderson

Reviewed and Approved by:
Tyler M. Barker, P.E.



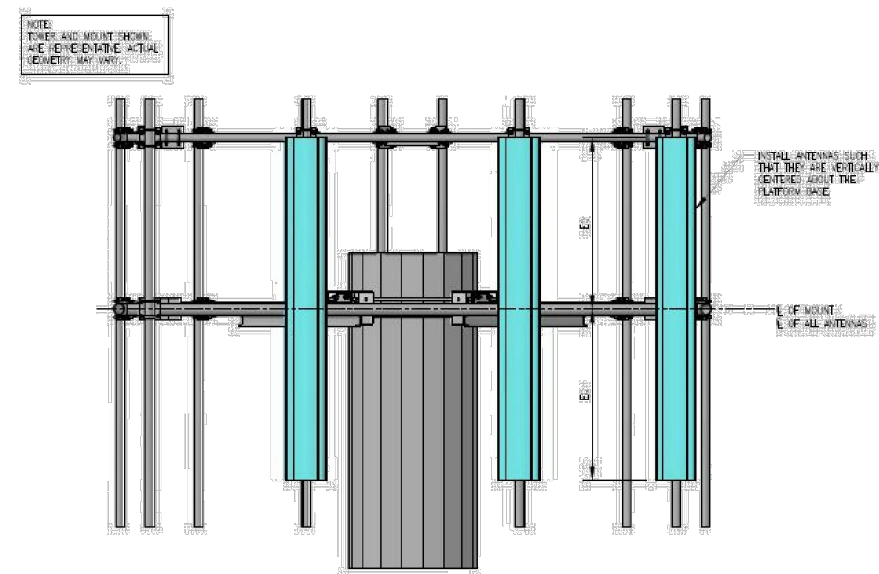
Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.001833 Exp. 8/14/2019

Digitally signed by
Tyler Barker
DN: cn=US,
o=Telamon
Corporation,
ou=A01427E00000
16A4525ADF80000
-1D17, cn=Tyler
Barker
Date: 2019.07.03
09:34:37 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **PASS PENDING REPLACEMENT**. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

- Replace existing T-Arm mounts with (1) new Perfect Vision PV-LLP12M-HR-12-96 Platform Mount.
- Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.
- Install (4) mount pipes included in the standard kit at each sector (12 total). All mount pipes are to be installed equidistant from each other as shown in the sketches below.
- Install support rails included in the proposed platform kit 3'-6" above the platform base. Connect to all mount pipes using crossover angles included in the proposed platform kit.
- Install existing and proposed antennas such that they are vertically centered about the platform base member. Install existing and proposed RRUS behind the antennas.

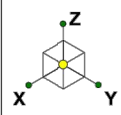


See following sketches and Perfect Vision assembly drawing for additional details.

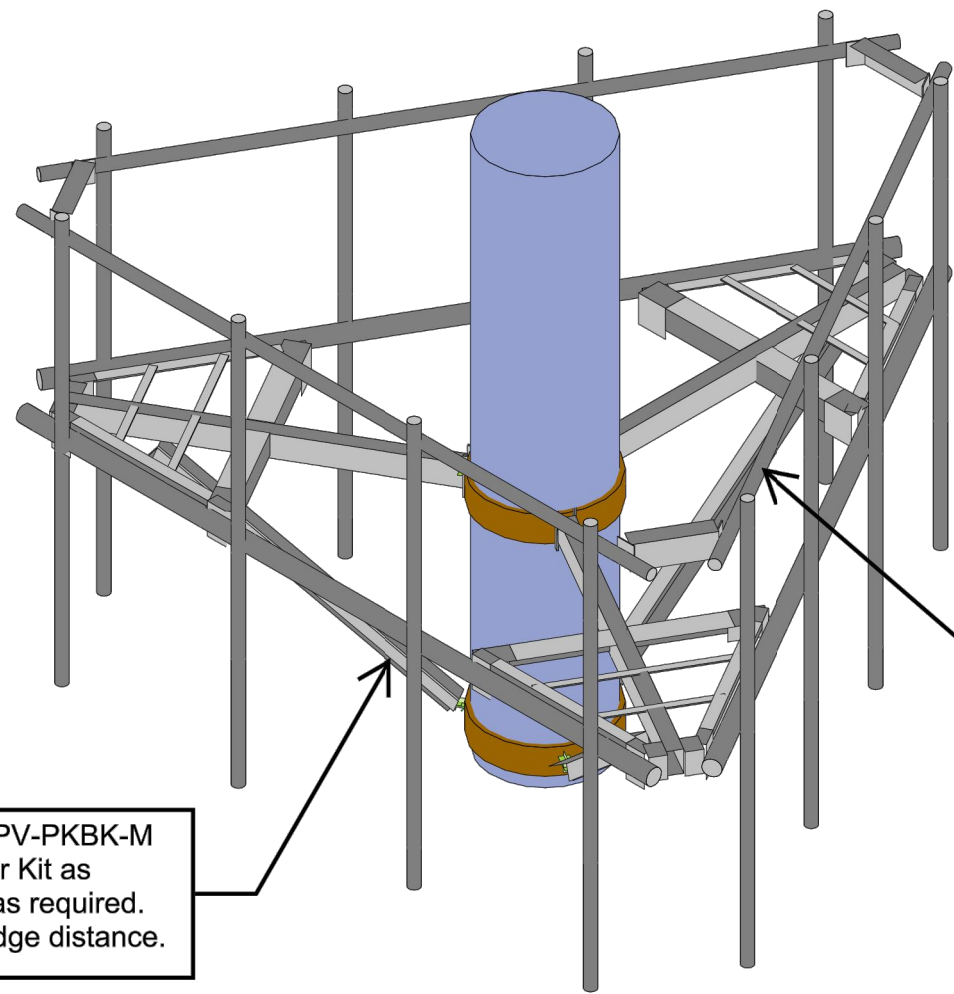
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SUPPLEMENTAL

SHEET NUMBER: R-602	REVISION: 0
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Replace existing T-Arm mounts with (1) new Perfect Vision PV-LLP12M-HR-12-96 Platform Mount.



Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.

Install support rails included in the proposed platform kit 3'-6" above the platform base. Connect to all mount pipes using crossover angles included in the proposed platform kit.

Install (4) mount pipes included in the standard kit at each sector (12 total). All mount pipes are to be installed equidistant from each other as shown in the sketches below.

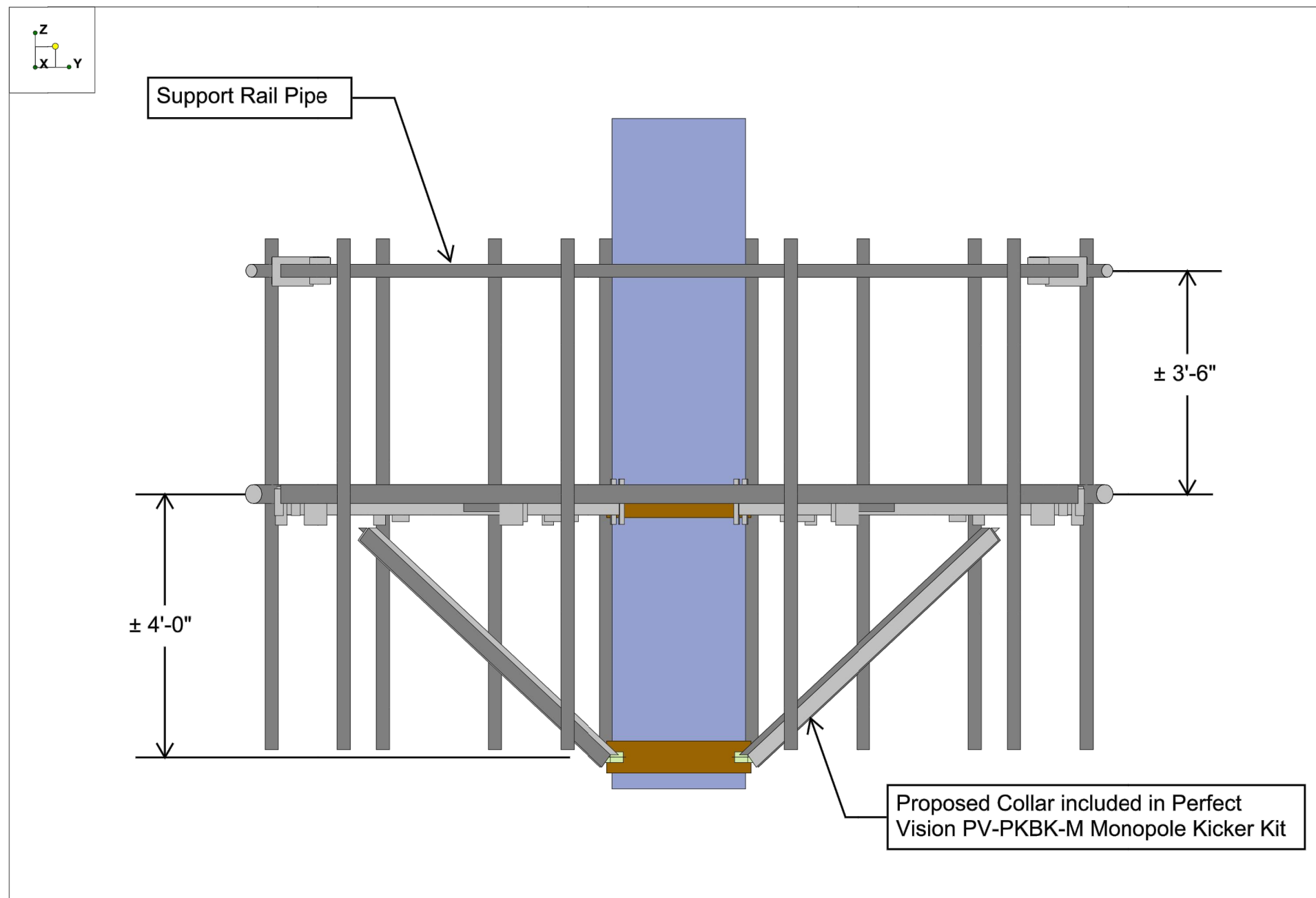
CLS		IN - 1
MJA	41124-12927136-OLD LYME II CT	May 21, 2019 at 8:58 AM
41124-12927136-01-MR	Proposed Mount - Isometric View	41124-12927136-01-MR.r3d

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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SUPPLEMENTAL

SHEET NUMBER: R-603	REVISION: 0
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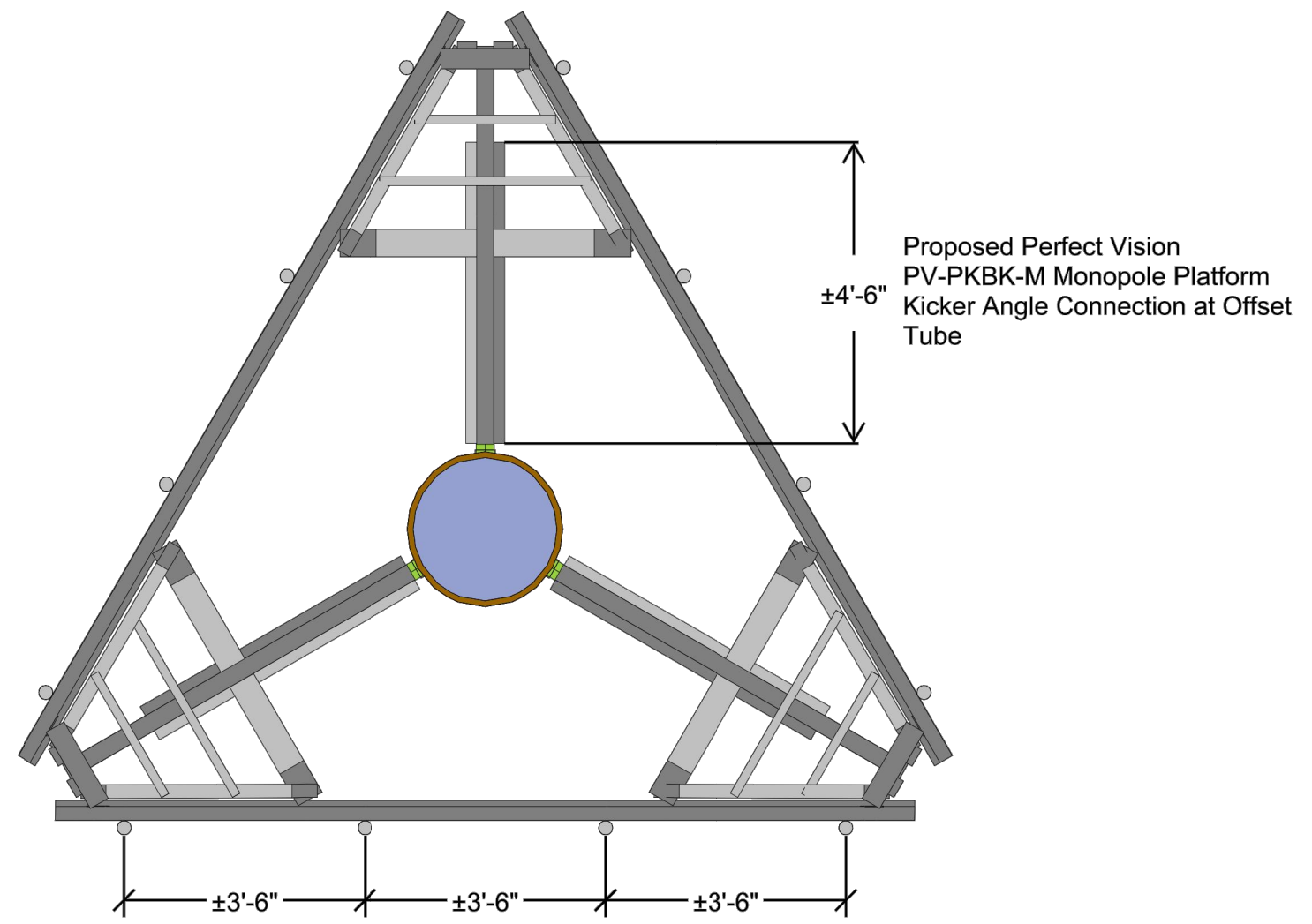
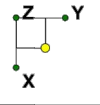


CLS	41124-12927136-OLD LYME II CT Installation Sketch - Front Elevation	IN - 2
MJA		May 21, 2019 at 8:58 AM
41124-12927136-01-MR		41124-12927136-01-MR.r3d

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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SUPPLEMENTAL	
SHEET NUMBER: R-604	REVISION: 0



CLS
MJA
41124-12927136-01-MR

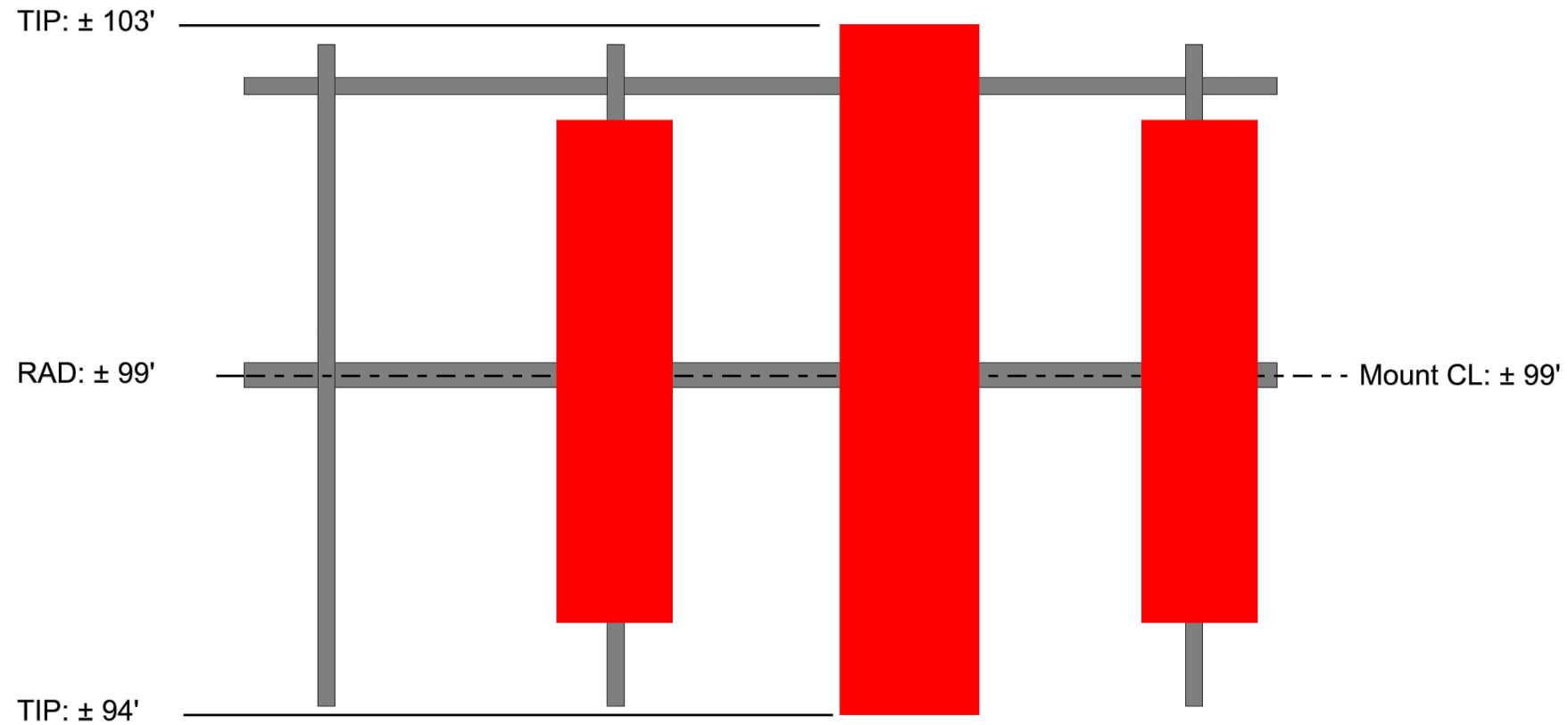
41124-12927136-OLD LYME II CT
Installation Sketch - Plan View

IN - 3
May 21, 2019 at 9:00 AM
41124-12927136-01-MR.r3d

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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SUPPLEMENTAL	
SHEET NUMBER: R-605	REVISION: 0



Install existing and proposed antennas such that they are vertically centered about the platform.
Install proposed RRUS behind the antennas.

CLS		IN - 4
MJA	41124-12927136-OLD LYME II CT	May 21, 2019 at 9:01 AM
41124-12927136-01-MR	Installation Sketch - Front Elevation	41124-12927136-01-MR.r3d



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 109 ft Monopole
ATC Site Name : Old Lyme II CT, CT
ATC Site Number : 284982
Engineering Number : 12927136_C3_02
Proposed Carrier : T-Mobile
Carrier Site Name : Amtrak_OldLyme4
Carrier Site Number : CTNL803A
Site Location : 232 Shore Road
Old Lyme, CT 06371-0000
41.291700,-72.287100
County : New London
Date : July 16, 2019
Max Usage : 39%
Result : Pass

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:



Authorized by "EOR"
Jul 22 2019 4:35 PM

cosign

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment	2
Structure Usages	3
Foundations	3
Deflection, Twist, and Sway.....	3
Standard Conditions	4
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 109 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Sabre Job #41153, dated April 26, 2011 Mapping by ETS Report #190402, dated January 30, 2019
Foundation Drawing	Sabre Job #41153, dated April 26, 2011 Mapping by ETS Report #190402, dated January 30, 2019
Geotechnical Report	Terracon Project #J2105224, dated November 10, 2010
Mount Analysis	CLS Engineering PLLC Project #41124-12927136-01-MR-R1, dated July 3, 2019

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:	105 mph (3-Second Gust, V_{asd}) / 135 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.16$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

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 contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
99.0	-	-	-	(12) 1 5/8" Coax	T-Mobile
90.0	6	Alcatel-Lucent RRH2x60 700	Low Profile Platform	(2) 1 5/8" Hybriflex	Verizon Wireless
	3	Alcatel-Lucent RRH2x40-AWS			
	1	RFS DB-T1-6Z-8AB-OZ			
	1	RFS DB-T1-6Z-8AB-OZ			
	6	Commscope SBNHH-1D65B			
	3	Alcatel-Lucent RRH2x40-07-U			
	6	Amphenol Antel BXA-171063-12CF-EDIN-X			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
99.0	9	Ericsson AIR 21	T-Arms	(6) 1 5/8" Coax	T-Mobile
	6	Ericsson KRY 112 71			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
99.0	3	Ericsson Radio 4449 B12,B71	Perfect Vision PV-LLP12M-HR-12-96 Platform with Perfect Vision PV-PKBK-M Monopole Kicker Kit	(1) 1 1/4" Fiber (3) 1 5/8" Fiber	T-Mobile
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
	3	Ericsson AIR 21, 1.3M, B4A B2P			
	3	RFS APXVAARR24_43-U-NA20			

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	21%	Pass
Shaft	35%	Pass
Base Plate	13%	Pass
Flanges	36%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,155.0	4,259.3	1,543.2	36%
Shear (Kips)	40.1	54.1	20.9	39%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
99.0	Ericsson Radio 4449 B12,B71	T-Mobile	0.314	0.329
	Ericsson AIR 21, 1.3 M, B2A B4P			
	Ericsson AIR 21, 1.3M, B4A B2P			
	RFS APXVAARR24_43-U-NA20			

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



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:

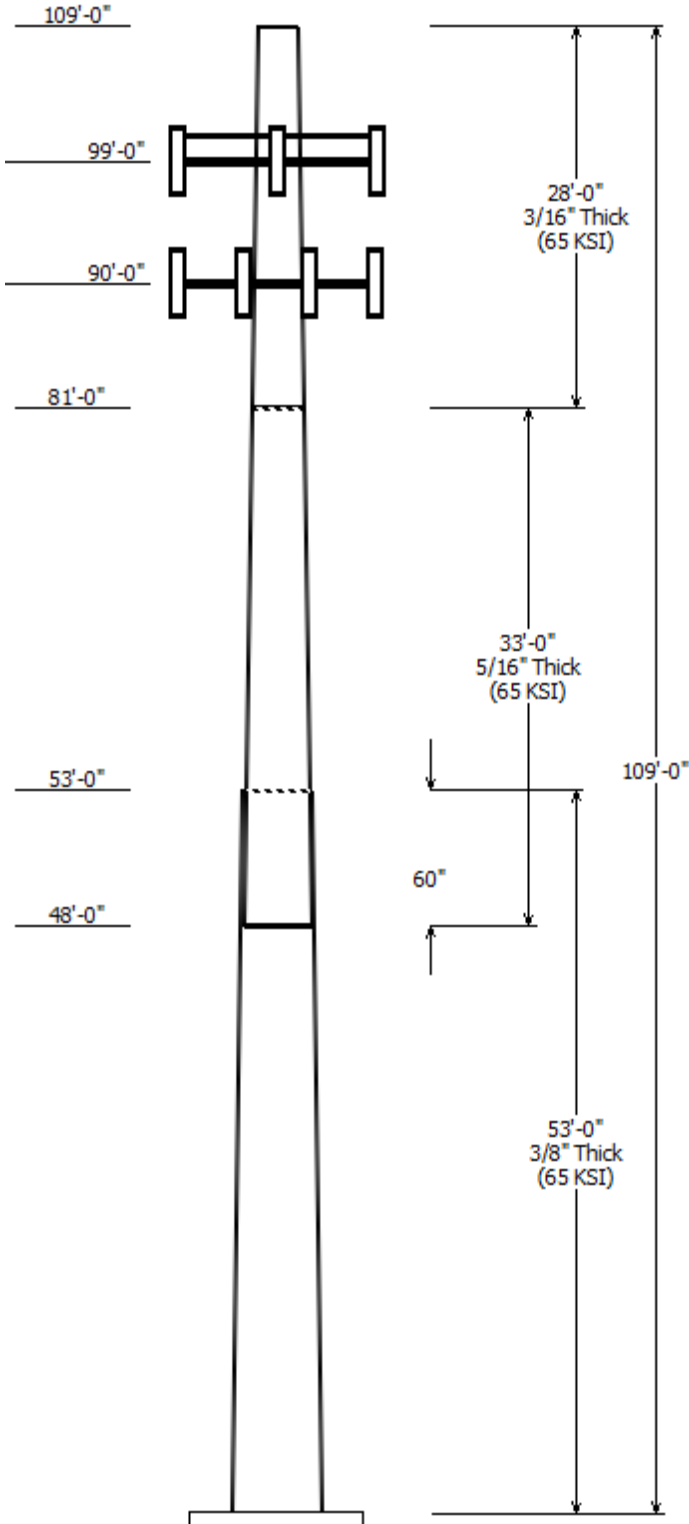
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

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 Service, PLLC, 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 Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information	
Client : T-MOBILE	Code: ANSI/TIA-222-G
Pole : 284982	
Location : OLD LYME II CT, CT	
Description :	Struct Class : II
Shape : 18 Sides	Exposure : C
Height : 109.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.282334in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Across Top	Across Bottom				
1	53.000	37.43	52.40	0.375		0.000	18 Sides 65
2	33.000	30.15	39.47	0.313	Slip Joint	60.000	18 Sides 65
3	28.000	22.25	30.15	0.188	Butt Joint	0.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
99.000	99.000	3	RFS APXVAARR24_43-U-NA20
99.000	99.000	3	Ericsson AIR 21, 1.3M, B4A B2P
99.000	99.000	3	Ericsson AIR 21, 1.3 M, B2A B4
99.000	99.000	3	Ericsson Radio 4449 B12,B71
99.000	99.000	1	Perfect Vision PV-LLP12M-HR-
90.000	90.000	1	Round Low Profile Platform
90.000	90.000	6	Commscope SBNHH-1D65B
90.000	90.000	1	RFS DB-T1-6Z-8AB-0Z
90.000	90.000	1	RFS DB-T1-6Z-8AB-0Z
90.000	90.000	6	Amphenol Antel BXA-171063-
90.000	90.000	3	Alcatel-Lucent RRH2x40-AWS
90.000	90.000	6	Alcatel-Lucent RRH2x60 700
90.000	90.000	3	Alcatel-Lucent RRH2x40-07-U

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	90.000	1 5/8" Hybriflex	No
0.000	99.000	1 1/4" (1.25"-	No
0.000	99.000	1 5/8" (1.63"-	No
0.000	99.000	1 5/8" Coax	No

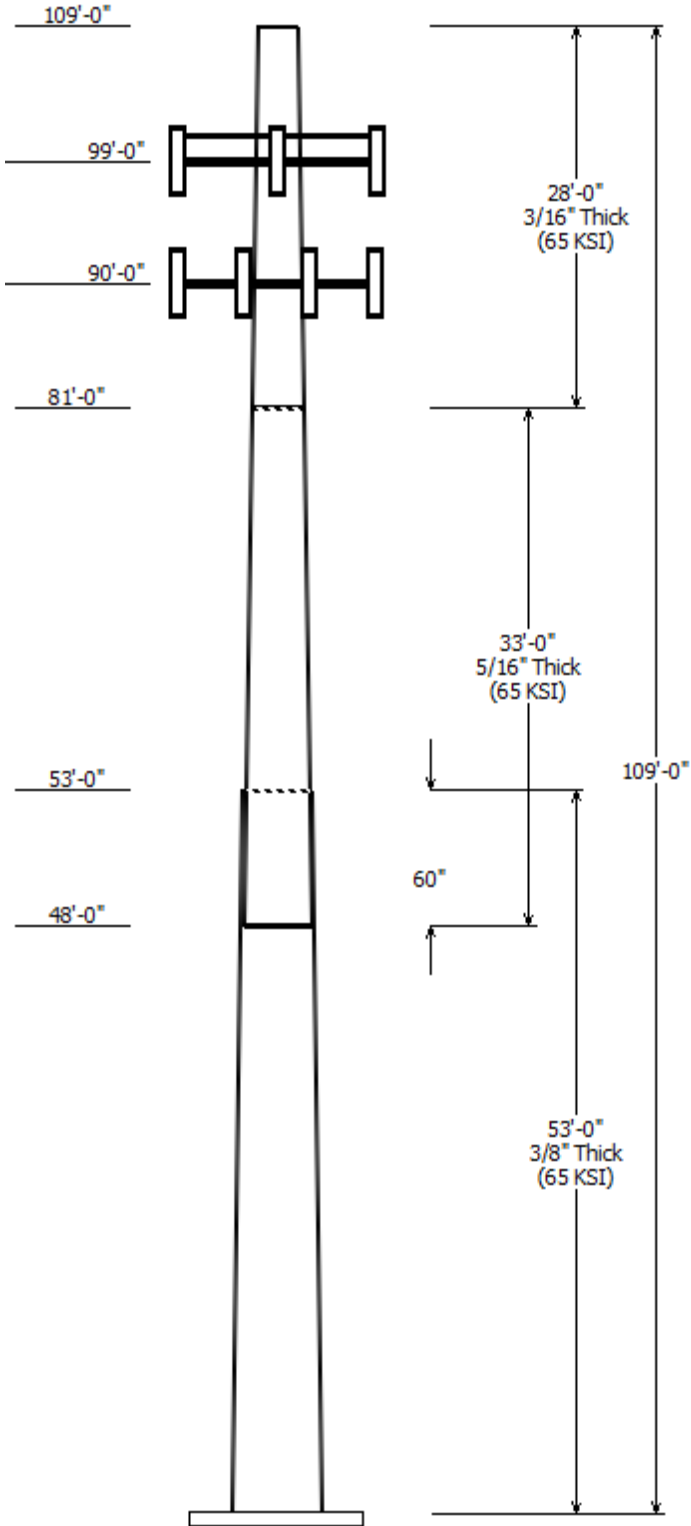
Load Cases	
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1543.21	20.93	26.26
0.9D + 1.6W	1538.19	20.92	19.69
1.2D + 1.0Di + 1.0Wi	373.88	5.23	37.19
(1.2 + 0.2Sds) * DL + E ELMF	99.05	1.28	25.64

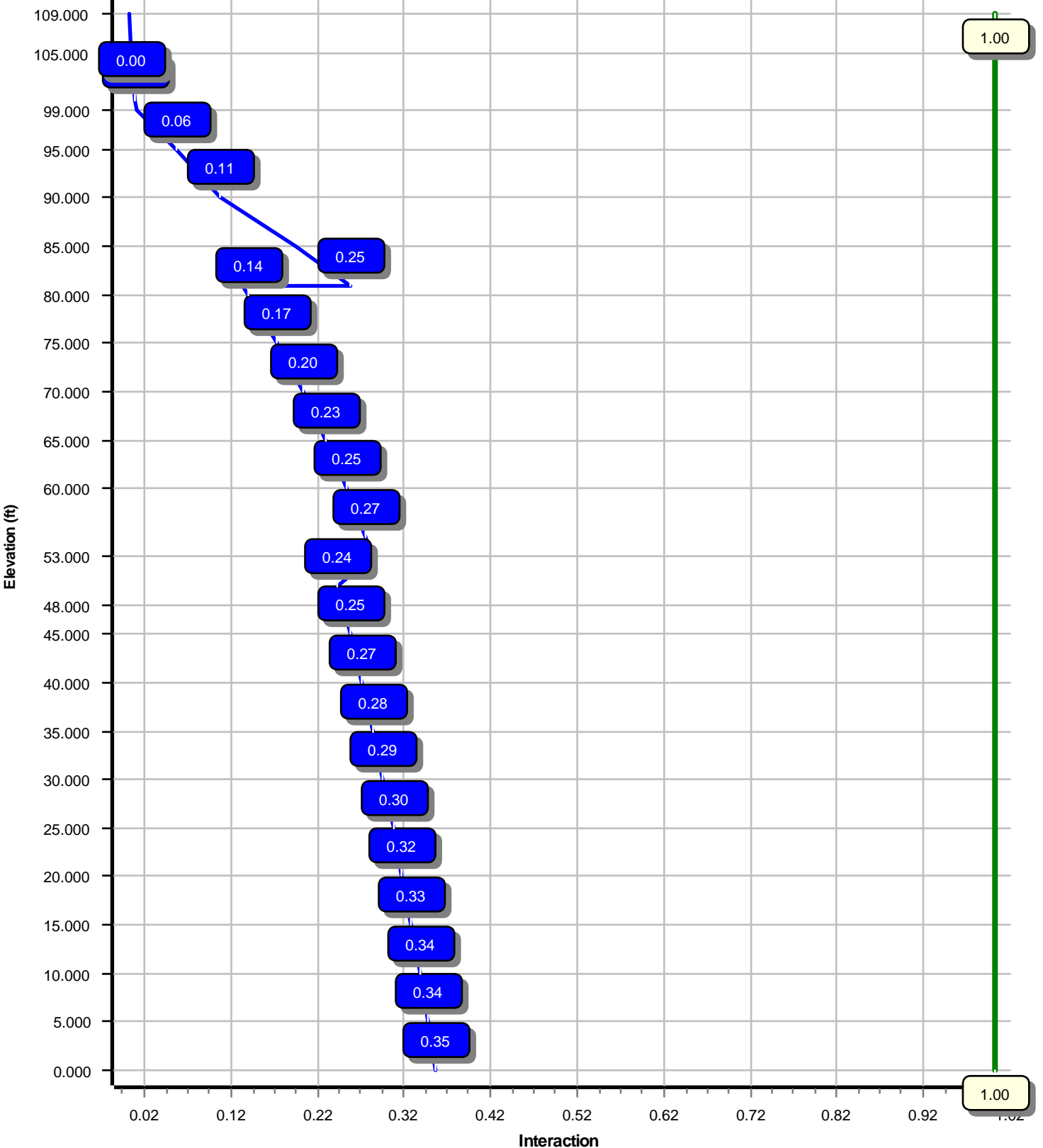
$(1.2 + 0.2Sds) * DL + E$ EMAM	79.04	0.99	25.64
$(0.9 - 0.2Sds) * DL + E$ ELFM	98.69	1.28	17.97
$(0.9 - 0.2Sds) * DL + E$ EMAM	78.74	0.99	17.97
1.0D + 1.0W	281.19	3.82	21.90

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



Load Case : 1.2D + 1.6W
Max Ratio 35.35% at 0.0 ft



Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Analysis Parameters

Location :	New London County, CT	Height (ft) :	109
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.40
Shape :	18 Sides	Top Diameter (in) :	22.25
Pole Type :	Taper	Taper (in/ft) :	0.282
Pole Manufacturer :	Mapped	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	C	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 1.06

T_L (sec):	6	p :	1	C_s :	0.058
S_s :	0.162	S_1 :	0.058	C_s Max:	0.058
F_a :	1.600	F_v :	2.400	C_s Min:	0.030
S_{ds} :	0.173	S_{d1} :	0.093		

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom					Top					Taper (in/ft)		
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)		W/t Ratio	D/t Ratio
1-18	53.000	0.3750	65		0.00	9,561	52.40	0.00	61.92	21174.4	22.88	139.73	37.43	53.00	44.11	7654.7	15.84	99.83	0.282339
2-18	33.000	0.3125	65	Slip	60.00	3,843	39.47	48.00	38.84	7525.4	20.51	126.31	30.15	81.00	29.60	3330.6	15.25	96.50	0.282339
3-18	28.000	0.1875	65	Butt	0.00	1,475	30.15	81.00	17.83	2023.6	26.60	160.83	22.25	109.00	13.13	807.4	19.16	118.67	0.282339
Shaft Weight						14,879													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
99.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	127.71	2.450	0.50
99.00	Ericsson AIR 21, 1.3 M, B2A B4P	3	0.80	0.000	83.00	6.050	0.71	223.01	8.124	0.71
99.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.75	0.000	81.50	6.090	0.70	220.99	8.166	0.70
99.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.240	0.63	504.51	23.797	0.63
99.00	Perfect Vision PV-LLP12M-HR-	1	1.00	0.000	1,522.00	34.400	1.00	2,467.96	64.057	1.00
90.00	Alcatel-Lucent RRH2x40-07-U	3	0.80	0.000	50.70	1.920	0.50	106.40	2.786	0.50
90.00	Alcatel-Lucent RRH2x60 700	6	0.80	0.000	56.70	2.150	0.67	121.32	3.101	0.67
90.00	Alcatel-Lucent RRH2x40-AWS	3	0.80	0.000	44.00	2.160	0.67	101.54	3.153	0.67
90.00	Amphenol Antel BXA-171063-	6	0.80	0.000	15.00	4.790	0.72	105.79	7.030	0.72
90.00	RFS DB-T1-6Z-8AB-0Z	1	0.80	0.000	44.00	4.800	1.00	163.50	6.149	1.00
90.00	RFS DB-T1-6Z-8AB-0Z	1	0.80	0.000	44.00	4.800	1.00	163.50	6.149	1.00
90.00	Commscope SBNHH-1D65B	6	0.80	0.000	50.70	8.170	0.69	217.34	10.856	0.69
90.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,115.15	39.929	1.00
Totals	Num Loadings:13	40			5,227.70			11,429.31		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Dist Azimuth (deg)	Dist From Face (in)	Exposed To Wind Carrier
0.00	99.00	1	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0.00	0.00	0	N T-MOBILE
0.00	99.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	N T-MOBILE
0.00	99.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	N T-MOBILE
0.00	90.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	N VERIZON WIRELESS

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	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		0.3750	52.400	61.921	21,174.4	22.88	139.73	74.5	795.9	0.0	0.0
5.00		0.3750	50.988	60.240	19,497.1	22.21	135.97	75.3	753.1	0.0	1,039.2
10.00		0.3750	49.577	58.560	17,910.7	21.55	132.20	76.1	711.6	0.0	1,010.6
15.00		0.3750	48.165	56.880	16,412.9	20.88	128.44	76.8	671.2	0.0	982.0
20.00		0.3750	46.753	55.200	15,000.9	20.22	124.68	77.6	632.0	0.0	953.5
25.00		0.3750	45.342	53.519	13,672.4	19.56	120.91	78.4	593.9	0.0	924.9
30.00		0.3750	43.930	51.839	12,424.6	18.89	117.15	79.2	557.1	0.0	896.3
35.00		0.3750	42.518	50.159	11,255.3	18.23	113.38	80.0	521.4	0.0	867.7
40.00		0.3750	41.106	48.479	10,161.7	17.57	109.62	80.7	486.9	0.0	839.1
45.00		0.3750	39.695	46.799	9,141.3	16.90	105.85	81.5	453.6	0.0	810.5
48.00	Bot - Section 2	0.3750	38.848	45.790	8,563.2	16.50	103.59	82.0	434.2	0.0	472.6
50.00		0.3750	38.283	45.118	8,191.6	16.24	102.09	82.3	421.4	0.0	571.8
53.00	Top - Section 1	0.3125	38.061	37.440	6,740.5	19.71	121.80	78.2	348.8	0.0	841.9
55.00		0.3125	37.496	36.880	6,442.5	19.39	119.99	78.6	338.4	0.0	252.9
60.00		0.3125	36.085	35.480	5,736.3	18.60	115.47	79.5	313.1	0.0	615.6
65.00		0.3125	34.673	34.080	5,083.6	17.80	110.95	80.5	288.8	0.0	591.7
70.00		0.3125	33.261	32.680	4,482.4	17.00	106.44	81.4	265.4	0.0	567.9
75.00		0.3125	31.850	31.280	3,930.6	16.21	101.92	82.3	243.1	0.0	544.1
80.00		0.3125	30.438	29.879	3,426.0	15.41	97.40	82.6	221.7	0.0	520.3
81.00	Top - Section 2	0.3125	30.156	29.599	3,330.6	15.25	96.50	82.6	217.5	0.0	101.2
81.00	Bot - Section 3	0.1875	30.156	17.834	2,023.6	26.60	160.83	70.1	132.2	0.0	
85.00		0.1875	29.026	17.162	1,803.3	25.53	154.81	71.4	122.4	0.0	238.2
90.00		0.1875	27.614	16.322	1,551.2	24.21	147.28	72.9	110.6	0.0	284.8
95.00		0.1875	26.203	15.482	1,323.8	22.88	139.75	74.5	99.5	0.0	270.6
99.00		0.1875	25.073	14.810	1,158.8	21.82	133.72	75.7	91.0	0.0	206.2
100.0		0.1875	24.791	14.642	1,119.8	21.55	132.22	76.1	89.0	0.0	50.1
105.0		0.1875	23.379	13.802	937.9	20.22	124.69	77.6	79.0	0.0	242.0
109.0		0.1875	22.250	13.129	807.4	19.16	118.67	78.9	71.5	0.0	183.3
											14,878.9

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Load Case: 1.2D + 1.6W

105 mph with No Ice

18 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		285.1	0.0					0.0	0.0	285.1	0.0	0.0	0.0
5.00		562.5	1,247.1					0.0	109.9	562.5	1,357.0	0.0	0.0
10.00		546.9	1,212.8					0.0	109.9	546.9	1,322.7	0.0	0.0
15.00		539.6	1,178.4					0.0	109.9	539.6	1,288.4	0.0	0.0
20.00		546.3	1,144.1					0.0	109.9	546.3	1,254.1	0.0	0.0
25.00		555.6	1,109.8					0.0	109.9	555.6	1,219.8	0.0	0.0
30.00		559.5	1,075.5					0.0	109.9	559.5	1,185.5	0.0	0.0
35.00		559.5	1,041.2					0.0	109.9	559.5	1,151.2	0.0	0.0
40.00		556.4	1,006.9					0.0	109.9	556.4	1,116.8	0.0	0.0
45.00		441.8	972.6					0.0	109.9	441.8	1,082.5	0.0	0.0
48.00	Bot - Section 2	275.5	567.1					0.0	66.0	275.5	633.1	0.0	0.0
50.00		275.7	686.1					0.0	44.0	275.7	730.1	0.0	0.0
53.00	Top - Section 1	273.9	1,010.3					0.0	66.0	273.9	1,076.3	0.0	0.0
55.00		377.9	303.5					0.0	44.0	377.9	347.4	0.0	0.0
60.00		532.1	738.7					0.0	109.9	532.1	848.6	0.0	0.0
65.00		520.0	710.1					0.0	109.9	520.0	820.0	0.0	0.0
70.00		506.7	681.5					0.0	109.9	506.7	791.4	0.0	0.0
75.00		492.3	652.9					0.0	109.9	492.3	762.8	0.0	0.0
80.00		289.9	624.3					0.0	109.9	289.9	734.3	0.0	0.0
81.00	Top - Section 2	234.5	121.4					0.0	22.0	234.5	143.4	0.0	0.0
85.00		413.1	285.8					0.0	87.9	413.1	373.7	0.0	0.0
90.00	Appurtenance(s)	443.5	341.8	5,005.3	0.0	0.0	3,127.8	0.0	109.9	5,448.8	3,579.5	0.0	0.0
95.00		384.8	324.7					0.0	94.3	384.8	419.0	0.0	0.0
99.00	Appurtenance(s)	208.3	247.4	5,063.5	0.0	0.0	3,145.4	0.0	75.5	5,271.8	3,468.3	0.0	0.0
100.00		239.7	60.1					0.0	0.0	239.7	60.1	0.0	0.0
105.00		350.9	290.4					0.0	0.0	350.9	290.4	0.0	0.0
109.00		152.0	219.9					0.0	0.0	152.0	219.9	0.0	0.0
Totals:										21,192.7	26,276.2	0.00	0.00

Load Case: 1.2D + 1.6W

105 mph with No Ice

18 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

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	-26.26	-20.93	0.00	-1,543.21	0.00	1,543.21	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.353
5.00	-24.86	-20.41	0.00	-1,438.56	0.00	1,438.56	4,081.17	2,040.59	8,491.45	4,252.04	0.05	-0.10	0.345
10.00	-23.51	-19.90	0.00	-1,336.50	0.00	1,336.50	4,008.49	2,004.24	8,105.89	4,058.97	0.21	-0.20	0.335
15.00	-22.19	-19.40	0.00	-1,236.99	0.00	1,236.99	3,933.44	1,966.72	7,724.18	3,867.83	0.48	-0.30	0.326
20.00	-20.90	-18.88	0.00	-1,140.01	0.00	1,140.01	3,856.03	1,928.02	7,346.76	3,678.84	0.85	-0.41	0.315
25.00	-19.65	-18.35	0.00	-1,045.61	0.00	1,045.61	3,776.27	1,888.13	6,974.02	3,492.19	1.34	-0.51	0.305
30.00	-18.44	-17.81	0.00	-953.86	0.00	953.86	3,694.14	1,847.07	6,606.39	3,308.10	1.93	-0.61	0.293
35.00	-17.27	-17.27	0.00	-864.79	0.00	864.79	3,609.65	1,804.82	6,244.28	3,126.78	2.63	-0.72	0.281
40.00	-16.13	-16.73	0.00	-778.43	0.00	778.43	3,522.79	1,761.40	5,888.10	2,948.43	3.44	-0.82	0.269
45.00	-15.03	-16.29	0.00	-694.79	0.00	694.79	3,433.58	1,716.79	5,538.27	2,773.25	4.35	-0.93	0.255
48.00	-14.39	-16.02	0.00	-645.91	0.00	645.91	3,378.92	1,689.46	5,331.58	2,669.76	4.96	-0.99	0.246
50.00	-13.65	-15.74	0.00	-613.87	0.00	613.87	3,342.01	1,671.00	5,195.19	2,601.46	5.38	-1.03	0.240
53.00	-12.56	-15.46	0.00	-566.64	0.00	566.64	2,635.57	1,317.79	4,086.32	2,046.20	6.05	-1.09	0.282
55.00	-12.20	-15.09	0.00	-535.72	0.00	535.72	2,608.58	1,304.29	3,983.48	1,994.70	6.51	-1.13	0.273
60.00	-11.34	-14.56	0.00	-460.26	0.00	460.26	2,539.46	1,269.73	3,729.47	1,867.51	7.76	-1.24	0.251
65.00	-10.50	-14.04	0.00	-387.44	0.00	387.44	2,467.98	1,233.99	3,480.22	1,742.70	9.12	-1.35	0.227
70.00	-9.70	-13.53	0.00	-317.21	0.00	317.21	2,394.14	1,197.07	3,236.14	1,620.47	10.58	-1.45	0.200
75.00	-8.93	-13.04	0.00	-249.54	0.00	249.54	2,317.94	1,158.97	2,997.63	1,501.04	12.15	-1.54	0.170
80.00	-8.20	-12.73	0.00	-184.36	0.00	184.36	2,219.90	1,109.95	2,741.08	1,372.58	13.80	-1.61	0.138
81.00	-8.05	-12.50	0.00	-171.63	0.00	171.63	2,199.09	1,099.55	2,689.68	1,346.84	14.14	-1.63	0.131
81.00	-8.05	-12.50	0.00	-171.63	0.00	171.63	1,125.47	562.74	1,388.10	695.08	14.14	-1.63	0.255
85.00	-7.68	-12.08	0.00	-121.63	0.00	121.63	1,102.35	551.18	1,308.03	654.99	15.53	-1.68	0.193
90.00	-4.26	-6.53	0.00	-61.21	0.00	61.21	1,071.33	535.66	1,208.59	605.19	17.33	-1.75	0.105
95.00	-3.85	-6.14	0.00	-28.54	0.00	28.54	1,037.94	518.97	1,110.25	555.95	19.19	-1.79	0.055
99.00	-0.55	-0.76	0.00	-3.99	0.00	3.99	1,009.53	504.77	1,032.65	517.09	20.70	-1.81	0.008
100.00	-0.49	-0.52	0.00	-3.23	0.00	3.23	1,002.19	501.10	1,013.42	507.46	21.08	-1.81	0.007
105.00	-0.22	-0.16	0.00	-0.64	0.00	0.64	964.09	482.04	918.53	459.95	22.98	-1.81	0.002
109.00	0.00	-0.15	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	24.49	-1.81	0.000

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

7/16/2019 4:27:28 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W 105 mph with No Ice (Reduced DL) 18 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		285.1	0.0					0.0	0.0	285.1	0.0	0.0	0.0
5.00		562.5	935.3					0.0	82.4	562.5	1,017.7	0.0	0.0
10.00		546.9	909.6					0.0	82.4	546.9	992.0	0.0	0.0
15.00		539.6	883.8					0.0	82.4	539.6	966.3	0.0	0.0
20.00		546.3	858.1					0.0	82.4	546.3	940.5	0.0	0.0
25.00		555.6	832.4					0.0	82.4	555.6	914.8	0.0	0.0
30.00		559.5	806.7					0.0	82.4	559.5	889.1	0.0	0.0
35.00		559.5	780.9					0.0	82.4	559.5	863.4	0.0	0.0
40.00		556.4	755.2					0.0	82.4	556.4	837.6	0.0	0.0
45.00		441.8	729.5					0.0	82.4	441.8	811.9	0.0	0.0
48.00	Bot - Section 2	275.5	425.3					0.0	49.5	275.5	474.8	0.0	0.0
50.00		275.7	514.6					0.0	33.0	275.7	547.6	0.0	0.0
53.00	Top - Section 1	273.9	757.7					0.0	49.5	273.9	807.2	0.0	0.0
55.00		377.9	227.6					0.0	33.0	377.9	260.6	0.0	0.0
60.00		532.1	554.0					0.0	82.4	532.1	636.5	0.0	0.0
65.00		520.0	532.6					0.0	82.4	520.0	615.0	0.0	0.0
70.00		506.7	511.1					0.0	82.4	506.7	593.6	0.0	0.0
75.00		492.3	489.7					0.0	82.4	492.3	572.1	0.0	0.0
80.00		289.9	468.2					0.0	82.4	289.9	550.7	0.0	0.0
81.00	Top - Section 2	234.5	91.1					0.0	16.5	234.5	107.6	0.0	0.0
85.00		413.1	214.4					0.0	66.0	413.1	280.3	0.0	0.0
90.00	Appurtenance(s)	443.5	256.4	5,005.3	0.0	0.0	2,345.8	0.0	82.4	5,448.8	2,684.7	0.0	0.0
95.00		384.8	243.5					0.0	70.7	384.8	314.2	0.0	0.0
99.00	Appurtenance(s)	208.3	185.5	5,063.5	0.0	0.0	2,359.1	0.0	56.6	5,271.8	2,601.2	0.0	0.0
100.00		239.7	45.1					0.0	0.0	239.7	45.1	0.0	0.0
105.00		350.9	217.8					0.0	0.0	350.9	217.8	0.0	0.0
109.00		152.0	165.0					0.0	0.0	152.0	165.0	0.0	0.0
Totals:										21,192.7	19,707.1	0.00	0.00

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

7/16/2019 4:27:29 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

18 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

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	-19.69	-20.92	0.00	-1,538.19	0.00	1,538.19	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.351
5.00	-18.64	-20.39	0.00	-1,433.57	0.00	1,433.57	4,081.17	2,040.59	8,491.45	4,252.04	0.05	-0.10	0.342
10.00	-17.61	-19.88	0.00	-1,331.60	0.00	1,331.60	4,008.49	2,004.24	8,105.89	4,058.97	0.21	-0.20	0.333
15.00	-16.61	-19.36	0.00	-1,232.22	0.00	1,232.22	3,933.44	1,966.72	7,724.18	3,867.83	0.48	-0.30	0.323
20.00	-15.64	-18.84	0.00	-1,135.41	0.00	1,135.41	3,856.03	1,928.02	7,346.76	3,678.84	0.85	-0.41	0.313
25.00	-14.70	-18.30	0.00	-1,041.22	0.00	1,041.22	3,776.27	1,888.13	6,974.02	3,492.19	1.33	-0.51	0.302
30.00	-13.78	-17.76	0.00	-949.72	0.00	949.72	3,694.14	1,847.07	6,606.39	3,308.10	1.92	-0.61	0.291
35.00	-12.89	-17.21	0.00	-860.93	0.00	860.93	3,609.65	1,804.82	6,244.28	3,126.78	2.62	-0.72	0.279
40.00	-12.03	-16.67	0.00	-774.87	0.00	774.87	3,522.79	1,761.40	5,888.10	2,948.43	3.42	-0.82	0.266
45.00	-11.21	-16.23	0.00	-691.54	0.00	691.54	3,433.58	1,716.79	5,538.27	2,773.25	4.34	-0.92	0.253
48.00	-10.72	-15.95	0.00	-642.86	0.00	642.86	3,378.92	1,689.46	5,331.58	2,669.76	4.94	-0.98	0.244
50.00	-10.16	-15.68	0.00	-610.95	0.00	610.95	3,342.01	1,671.00	5,195.19	2,601.46	5.36	-1.03	0.238
53.00	-9.35	-15.40	0.00	-563.91	0.00	563.91	2,635.57	1,317.79	4,086.32	2,046.20	6.02	-1.09	0.279
55.00	-9.07	-15.03	0.00	-533.12	0.00	533.12	2,608.58	1,304.29	3,983.48	1,994.70	6.49	-1.13	0.271
60.00	-8.42	-14.50	0.00	-457.98	0.00	457.98	2,539.46	1,269.73	3,729.47	1,867.51	7.73	-1.24	0.249
65.00	-7.79	-13.98	0.00	-385.50	0.00	385.50	2,467.98	1,233.99	3,480.22	1,742.70	9.08	-1.34	0.224
70.00	-7.19	-13.47	0.00	-315.61	0.00	315.61	2,394.14	1,197.07	3,236.14	1,620.47	10.54	-1.44	0.198
75.00	-6.61	-12.97	0.00	-248.27	0.00	248.27	2,317.94	1,158.97	2,997.63	1,501.04	12.10	-1.53	0.168
80.00	-6.06	-12.67	0.00	-183.41	0.00	183.41	2,219.90	1,109.95	2,741.08	1,372.58	13.75	-1.61	0.136
81.00	-5.95	-12.44	0.00	-170.74	0.00	170.74	2,199.09	1,099.55	2,689.68	1,346.84	14.08	-1.62	0.130
81.00	-5.95	-12.44	0.00	-170.74	0.00	170.74	1,125.47	562.74	1,388.10	695.08	14.08	-1.62	0.251
85.00	-5.67	-12.02	0.00	-120.99	0.00	120.99	1,102.35	551.18	1,308.03	654.99	15.47	-1.67	0.190
90.00	-3.14	-6.50	0.00	-60.88	0.00	60.88	1,071.33	535.66	1,208.59	605.19	17.26	-1.74	0.104
95.00	-2.84	-6.11	0.00	-28.38	0.00	28.38	1,037.94	518.97	1,110.25	555.95	19.11	-1.78	0.054
99.00	-0.40	-0.76	0.00	-3.96	0.00	3.96	1,009.53	504.77	1,032.65	517.09	20.61	-1.80	0.008
100.00	-0.37	-0.51	0.00	-3.20	0.00	3.20	1,002.19	501.10	1,013.42	507.46	20.99	-1.80	0.007
105.00	-0.16	-0.16	0.00	-0.63	0.00	0.63	964.09	482.04	918.53	459.95	22.88	-1.80	0.002
109.00	0.00	-0.15	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	24.39	-1.80	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	17 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		77.9	0.0					0.0	0.0	77.9	0.0	0.0	0.0
5.00		154.1	1,625.6					0.0	109.9	154.1	1,735.6	0.0	0.0
10.00		150.6	1,624.9					0.0	109.9	150.6	1,734.8	0.0	0.0
15.00		149.2	1,600.7					0.0	109.9	149.2	1,710.7	0.0	0.0
20.00		151.5	1,568.8					0.0	109.9	151.5	1,678.8	0.0	0.0
25.00		154.6	1,532.9					0.0	109.9	154.6	1,642.8	0.0	0.0
30.00		156.1	1,494.4					0.0	109.9	156.1	1,604.3	0.0	0.0
35.00		156.6	1,454.1					0.0	109.9	156.6	1,564.1	0.0	0.0
40.00		156.3	1,412.5					0.0	109.9	156.3	1,522.5	0.0	0.0
45.00		124.4	1,369.9					0.0	109.9	124.4	1,479.8	0.0	0.0
48.00	Bot - Section 2	77.7	802.8					0.0	66.0	77.7	868.7	0.0	0.0
50.00		77.9	844.3					0.0	44.0	77.9	888.3	0.0	0.0
53.00	Top - Section 1	77.5	1,243.9					0.0	66.0	77.5	1,309.8	0.0	0.0
55.00		107.2	457.7					0.0	44.0	107.2	501.7	0.0	0.0
60.00		151.3	1,112.8					0.0	109.9	151.3	1,222.7	0.0	0.0
65.00		148.5	1,073.3					0.0	109.9	148.5	1,183.2	0.0	0.0
70.00		145.3	1,033.4					0.0	109.9	145.3	1,143.3	0.0	0.0
75.00		141.8	993.1					0.0	109.9	141.8	1,103.0	0.0	0.0
80.00		83.7	952.4					0.0	109.9	83.7	1,062.3	0.0	0.0
81.00	Top - Section 2	68.0	186.7					0.0	22.0	68.0	208.7	0.0	0.0
85.00		120.2	538.5					0.0	87.9	120.2	626.5	0.0	0.0
90.00	Appurtenance(s)	129.8	644.9	1,063.0	0.0	0.0	5,194.1	0.0	109.9	1,192.8	5,948.9	0.0	0.0
95.00		113.2	614.8					0.0	94.3	113.2	709.1	0.0	0.0
99.00	Appurtenance(s)	61.5	471.2	1,076.4	0.0	0.0	4,105.4	0.0	75.5	1,137.9	4,652.1	0.0	0.0
100.00		71.3	115.6					0.0	0.0	71.3	115.6	0.0	0.0
105.00		104.7	553.9					0.0	0.0	104.7	553.9	0.0	0.0
109.00		45.6	422.2					0.0	0.0	45.6	422.2	0.0	0.0
Totals:										5,295.98	37,193.3	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

17 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

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	-37.19	-5.23	0.00	-373.88	0.00	373.88	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.093
5.00	-35.45	-5.09	0.00	-347.75	0.00	347.75	4,081.17	2,040.59	8,491.45	4,252.04	0.01	-0.02	0.090
10.00	-33.72	-4.95	0.00	-322.32	0.00	322.32	4,008.49	2,004.24	8,105.89	4,058.97	0.05	-0.05	0.088
15.00	-32.01	-4.81	0.00	-297.58	0.00	297.58	3,933.44	1,966.72	7,724.18	3,867.83	0.12	-0.07	0.085
20.00	-30.32	-4.67	0.00	-273.52	0.00	273.52	3,856.03	1,928.02	7,346.76	3,678.84	0.21	-0.10	0.082
25.00	-28.68	-4.53	0.00	-250.17	0.00	250.17	3,776.27	1,888.13	6,974.02	3,492.19	0.32	-0.12	0.079
30.00	-27.07	-4.38	0.00	-227.54	0.00	227.54	3,694.14	1,847.07	6,606.39	3,308.10	0.46	-0.15	0.076
35.00	-25.51	-4.23	0.00	-205.65	0.00	205.65	3,609.65	1,804.82	6,244.28	3,126.78	0.63	-0.17	0.073
40.00	-23.99	-4.08	0.00	-184.52	0.00	184.52	3,522.79	1,761.40	5,888.10	2,948.43	0.83	-0.20	0.069
45.00	-22.50	-3.95	0.00	-164.14	0.00	164.14	3,433.58	1,716.79	5,538.27	2,773.25	1.05	-0.22	0.066
48.00	-21.64	-3.88	0.00	-152.28	0.00	152.28	3,378.92	1,689.46	5,331.58	2,669.76	1.19	-0.24	0.063
50.00	-20.75	-3.80	0.00	-144.52	0.00	144.52	3,342.01	1,671.00	5,195.19	2,601.46	1.29	-0.25	0.062
53.00	-19.44	-3.72	0.00	-133.12	0.00	133.12	2,635.57	1,317.79	4,086.32	2,046.20	1.45	-0.26	0.072
55.00	-18.93	-3.62	0.00	-125.68	0.00	125.68	2,608.58	1,304.29	3,983.48	1,994.70	1.56	-0.27	0.070
60.00	-17.71	-3.47	0.00	-107.59	0.00	107.59	2,539.46	1,269.73	3,729.47	1,867.51	1.86	-0.30	0.065
65.00	-16.53	-3.32	0.00	-90.25	0.00	90.25	2,467.98	1,233.99	3,480.22	1,742.70	2.18	-0.32	0.058
70.00	-15.38	-3.17	0.00	-73.65	0.00	73.65	2,394.14	1,197.07	3,236.14	1,620.47	2.53	-0.34	0.052
75.00	-14.28	-3.03	0.00	-57.78	0.00	57.78	2,317.94	1,158.97	2,997.63	1,501.04	2.90	-0.36	0.045
80.00	-13.22	-2.94	0.00	-42.63	0.00	42.63	2,219.90	1,109.95	2,741.08	1,372.58	3.30	-0.38	0.037
81.00	-13.01	-2.87	0.00	-39.68	0.00	39.68	2,199.09	1,099.55	2,689.68	1,346.84	3.38	-0.39	0.035
81.00	-13.01	-2.87	0.00	-39.68	0.00	39.68	1,125.47	562.74	1,388.10	695.08	3.38	-0.39	0.069
85.00	-12.38	-2.75	0.00	-28.18	0.00	28.18	1,102.35	551.18	1,308.03	654.99	3.71	-0.40	0.054
90.00	-6.44	-1.52	0.00	-14.42	0.00	14.42	1,071.33	535.66	1,208.59	605.19	4.13	-0.41	0.030
95.00	-5.73	-1.40	0.00	-6.82	0.00	6.82	1,037.94	518.97	1,110.25	555.95	4.57	-0.42	0.018
99.00	-1.09	-0.23	0.00	-1.21	0.00	1.21	1,009.53	504.77	1,032.65	517.09	4.93	-0.43	0.003
100.00	-0.97	-0.16	0.00	-0.98	0.00	0.98	1,002.19	501.10	1,013.42	507.46	5.02	-0.43	0.003
105.00	-0.42	-0.05	0.00	-0.19	0.00	0.19	964.09	482.04	918.53	459.95	5.47	-0.43	0.001
109.00	0.00	-0.05	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	5.83	-0.43	0.000

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

7/16/2019 4:27:30 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		52.1	0.0					0.0	0.0	52.1	0.0	0.0	0.0
5.00		102.7	1,039.2					0.0	91.6	102.7	1,130.8	0.0	0.0
10.00		99.9	1,010.6					0.0	91.6	99.9	1,102.2	0.0	0.0
15.00		98.5	982.0					0.0	91.6	98.5	1,073.6	0.0	0.0
20.00		99.8	953.5					0.0	91.6	99.8	1,045.1	0.0	0.0
25.00		101.4	924.9					0.0	91.6	101.4	1,016.5	0.0	0.0
30.00		102.2	896.3					0.0	91.6	102.2	987.9	0.0	0.0
35.00		102.2	867.7					0.0	91.6	102.2	959.3	0.0	0.0
40.00		101.6	839.1					0.0	91.6	101.6	930.7	0.0	0.0
45.00		80.7	810.5					0.0	91.6	80.7	902.1	0.0	0.0
48.00	Bot - Section 2	50.3	472.6					0.0	55.0	50.3	527.6	0.0	0.0
50.00		50.3	571.8					0.0	36.6	50.3	608.4	0.0	0.0
53.00	Top - Section 1	50.0	841.9					0.0	55.0	50.0	896.9	0.0	0.0
55.00		69.0	252.9					0.0	36.6	69.0	289.5	0.0	0.0
60.00		97.2	615.6					0.0	91.6	97.2	707.2	0.0	0.0
65.00		94.9	591.7					0.0	91.6	94.9	683.3	0.0	0.0
70.00		92.5	567.9					0.0	91.6	92.5	659.5	0.0	0.0
75.00		89.9	544.1					0.0	91.6	89.9	635.7	0.0	0.0
80.00		52.9	520.3					0.0	91.6	52.9	611.9	0.0	0.0
81.00	Top - Section 2	42.8	101.2					0.0	18.3	42.8	119.5	0.0	0.0
85.00		75.4	238.2					0.0	73.3	75.4	311.4	0.0	0.0
90.00	Appurtenance(s)	81.0	284.8	914.0	0.0	0.0	2,606.5	0.0	91.6	995.0	2,982.9	0.0	0.0
95.00		70.3	270.6					0.0	78.6	70.3	349.2	0.0	0.0
99.00	Appurtenance(s)	38.0	206.2	924.6	0.0	0.0	2,621.2	0.0	62.9	962.6	2,890.2	0.0	0.0
100.00		43.8	50.1					0.0	0.0	43.8	50.1	0.0	0.0
105.00		64.1	242.0					0.0	0.0	64.1	242.0	0.0	0.0
109.00		27.8	183.3					0.0	0.0	27.8	183.3	0.0	0.0
Totals:										3,869.77	21,896.8	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

17 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

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	-21.90	-3.82	0.00	-281.19	0.00	281.19	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.069
5.00	-20.76	-3.72	0.00	-262.09	0.00	262.09	4,081.17	2,040.59	8,491.45	4,252.04	0.01	-0.02	0.067
10.00	-19.66	-3.63	0.00	-243.46	0.00	243.46	4,008.49	2,004.24	8,105.89	4,058.97	0.04	-0.04	0.065
15.00	-18.59	-3.54	0.00	-225.31	0.00	225.31	3,933.44	1,966.72	7,724.18	3,867.83	0.09	-0.06	0.063
20.00	-17.54	-3.44	0.00	-207.62	0.00	207.62	3,856.03	1,928.02	7,346.76	3,678.84	0.16	-0.07	0.061
25.00	-16.52	-3.34	0.00	-190.41	0.00	190.41	3,776.27	1,888.13	6,974.02	3,492.19	0.24	-0.09	0.059
30.00	-15.53	-3.25	0.00	-173.69	0.00	173.69	3,694.14	1,847.07	6,606.39	3,308.10	0.35	-0.11	0.057
35.00	-14.57	-3.15	0.00	-157.46	0.00	157.46	3,609.65	1,804.82	6,244.28	3,126.78	0.48	-0.13	0.054
40.00	-13.64	-3.05	0.00	-141.73	0.00	141.73	3,522.79	1,761.40	5,888.10	2,948.43	0.63	-0.15	0.052
45.00	-12.74	-2.97	0.00	-126.49	0.00	126.49	3,433.58	1,716.79	5,538.27	2,773.25	0.79	-0.17	0.049
48.00	-12.21	-2.92	0.00	-117.59	0.00	117.59	3,378.92	1,689.46	5,331.58	2,669.76	0.90	-0.18	0.048
50.00	-11.60	-2.87	0.00	-111.76	0.00	111.76	3,342.01	1,671.00	5,195.19	2,601.46	0.98	-0.19	0.046
53.00	-10.71	-2.82	0.00	-103.16	0.00	103.16	2,635.57	1,317.79	4,086.32	2,046.20	1.10	-0.20	0.054
55.00	-10.42	-2.75	0.00	-97.53	0.00	97.53	2,608.58	1,304.29	3,983.48	1,994.70	1.19	-0.21	0.053
60.00	-9.71	-2.65	0.00	-83.79	0.00	83.79	2,539.46	1,269.73	3,729.47	1,867.51	1.41	-0.23	0.049
65.00	-9.02	-2.56	0.00	-70.53	0.00	70.53	2,467.98	1,233.99	3,480.22	1,742.70	1.66	-0.25	0.044
70.00	-8.36	-2.46	0.00	-57.74	0.00	57.74	2,394.14	1,197.07	3,236.14	1,620.47	1.93	-0.26	0.039
75.00	-7.73	-2.37	0.00	-45.42	0.00	45.42	2,317.94	1,158.97	2,997.63	1,501.04	2.21	-0.28	0.034
80.00	-7.12	-2.32	0.00	-33.56	0.00	33.56	2,219.90	1,109.95	2,741.08	1,372.58	2.51	-0.29	0.028
81.00	-7.00	-2.28	0.00	-31.24	0.00	31.24	2,199.09	1,099.55	2,689.68	1,346.84	2.58	-0.30	0.026
81.00	-7.00	-2.28	0.00	-31.24	0.00	31.24	1,125.47	562.74	1,388.10	695.08	2.58	-0.30	0.051
85.00	-6.69	-2.20	0.00	-22.14	0.00	22.14	1,102.35	551.18	1,308.03	654.99	2.83	-0.31	0.040
90.00	-3.71	-1.19	0.00	-11.14	0.00	11.14	1,071.33	535.66	1,208.59	605.19	3.16	-0.32	0.022
95.00	-3.36	-1.12	0.00	-5.19	0.00	5.19	1,037.94	518.97	1,110.25	555.95	3.50	-0.33	0.013
99.00	-0.47	-0.14	0.00	-0.72	0.00	0.72	1,009.53	504.77	1,032.65	517.09	3.77	-0.33	0.002
100.00	-0.42	-0.09	0.00	-0.59	0.00	0.59	1,002.19	501.10	1,013.42	507.46	3.84	-0.33	0.002
105.00	-0.18	-0.03	0.00	-0.12	0.00	0.12	964.09	482.04	918.53	459.95	4.18	-0.33	0.000
109.00	0.00	-0.03	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	4.46	-0.33	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.16
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.17
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.06
Upper Limit C_s	0.06
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.06
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	1.28
Total Unfactored Dead Load:	21.90 k
Seismic Base Shear (E):	1.28 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
26	107.00	183	72	0.018	23	226
25	102.50	242	90	0.023	29	299
24	99.50	50	18	0.005	6	62
23	97.00	269	94	0.024	30	332
22	92.50	349	114	0.029	37	431
21	87.50	376	115	0.029	37	465
20	83.00	311	89	0.022	29	385
19	80.50	120	33	0.008	11	148
18	77.50	612	160	0.040	52	755
17	72.50	636	153	0.039	49	785
16	67.50	660	144	0.037	47	814
15	62.50	683	136	0.034	44	844
14	57.50	707	126	0.032	41	873
13	54.00	290	48	0.012	15	357
12	51.50	897	139	0.035	45	1,107
11	49.00	608	88	0.022	29	751
10	46.50	528	72	0.018	23	651
9	42.50	902	109	0.028	35	1,114
8	37.50	931	96	0.024	31	1,149
7	32.50	959	82	0.021	27	1,184
6	27.50	988	69	0.017	22	1,220
5	22.50	1,016	55	0.014	18	1,255
4	17.50	1,045	41	0.010	13	1,290

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

3	12.50	1,074	27	0.007	9	1,325
2	7.50	1,102	15	0.004	5	1,361
1	2.50	1,131	4	0.001	1	1,396
Ericsson Radio 4449	99.00	222	79	0.020	26	274
Ericsson AIR 21, 1.3	99.00	249	89	0.023	29	307
Ericsson AIR 21, 1.3	99.00	244	87	0.022	28	302
RFS APXVAARR24_43-U-	99.00	384	137	0.035	44	474
Perfect Vision PV-LL	99.00	1,522	544	0.138	176	1,879
Alcatel-Lucent RRH2x	90.00	152	48	0.012	16	188
Alcatel-Lucent RRH2x	90.00	340	108	0.027	35	420
Alcatel-Lucent RRH2x	90.00	132	42	0.011	14	163
Amphenol Antel BXA-1	90.00	90	28	0.007	9	111
RFS DB-T1-6Z-8AB-0Z	90.00	44	14	0.004	5	54
RFS DB-T1-6Z-8AB-0Z	90.00	44	14	0.004	5	54
Commscope SBNHH-1D65	90.00	304	96	0.024	31	376
Round Low Profile PI	90.00	1,500	475	0.120	154	1,852
		21,897	3,951	1.000	1,279	27,033

Load Case (0.9 - 0.2Sds) * DL + E EFLM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
26	107.00	183	72	0.018	23	159
25	102.50	242	90	0.023	29	209
24	99.50	50	18	0.005	6	43
23	97.00	269	94	0.024	30	233
22	92.50	349	114	0.029	37	302
21	87.50	376	115	0.029	37	326
20	83.00	311	89	0.022	29	270
19	80.50	120	33	0.008	11	103
18	77.50	612	160	0.040	52	530
17	72.50	636	153	0.039	49	550
16	67.50	660	144	0.037	47	571
15	62.50	683	136	0.034	44	591
14	57.50	707	126	0.032	41	612
13	54.00	290	48	0.012	15	251
12	51.50	897	139	0.035	45	776
11	49.00	608	88	0.022	29	527
10	46.50	528	72	0.018	23	457
9	42.50	902	109	0.028	35	781
8	37.50	931	96	0.024	31	805
7	32.50	959	82	0.021	27	830
6	27.50	988	69	0.017	22	855
5	22.50	1,016	55	0.014	18	880
4	17.50	1,045	41	0.010	13	904
3	12.50	1,074	27	0.007	9	929
2	7.50	1,102	15	0.004	5	954
1	2.50	1,131	4	0.001	1	979
Ericsson Radio 4449	99.00	222	79	0.020	26	192
Ericsson AIR 21, 1.3	99.00	249	89	0.023	29	215
Ericsson AIR 21, 1.3	99.00	244	87	0.022	28	212
RFS APXVAARR24_43-U-	99.00	384	137	0.035	44	332
Perfect Vision PV-LL	99.00	1,522	544	0.138	176	1,317
Alcatel-Lucent RRH2x	90.00	152	48	0.012	16	132
Alcatel-Lucent RRH2x	90.00	340	108	0.027	35	294
Alcatel-Lucent RRH2x	90.00	132	42	0.011	14	114
Amphenol Antel BXA-1	90.00	90	28	0.007	9	78
RFS DB-T1-6Z-8AB-0Z	90.00	44	14	0.004	5	38
RFS DB-T1-6Z-8AB-0Z	90.00	44	14	0.004	5	38
Commscope SBNHH-1D65	90.00	304	96	0.024	31	263

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Round Low Profile PI	90.00	1,500	475	0.120	154	1,298
		21,897	3,951	1.000	1,279	18,950

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

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	-25.64	-1.28	0.00	-99.05	0.00	99.05	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.028
5.00	-24.28	-1.28	0.00	-92.66	0.00	92.66	4,081.17	2,040.59	8,491.45	4,252.04	0.00	-0.01	0.028
10.00	-22.95	-1.27	0.00	-86.27	0.00	86.27	4,008.49	2,004.24	8,105.89	4,058.97	0.01	-0.01	0.027
15.00	-21.66	-1.26	0.00	-79.92	0.00	79.92	3,933.44	1,966.72	7,724.18	3,867.83	0.03	-0.02	0.026
20.00	-20.40	-1.24	0.00	-73.62	0.00	73.62	3,856.03	1,928.02	7,346.76	3,678.84	0.06	-0.03	0.025
25.00	-19.19	-1.22	0.00	-67.41	0.00	67.41	3,776.27	1,888.13	6,974.02	3,492.19	0.09	-0.03	0.024
30.00	-18.00	-1.20	0.00	-61.29	0.00	61.29	3,694.14	1,847.07	6,606.39	3,308.10	0.12	-0.04	0.023
35.00	-16.85	-1.17	0.00	-55.30	0.00	55.30	3,609.65	1,804.82	6,244.28	3,126.78	0.17	-0.05	0.022
40.00	-15.74	-1.13	0.00	-49.46	0.00	49.46	3,522.79	1,761.40	5,888.10	2,948.43	0.22	-0.05	0.021
45.00	-15.09	-1.11	0.00	-43.80	0.00	43.80	3,433.58	1,716.79	5,538.27	2,773.25	0.28	-0.06	0.020
48.00	-14.34	-1.08	0.00	-40.47	0.00	40.47	3,378.92	1,689.46	5,331.58	2,669.76	0.32	-0.06	0.019
50.00	-13.23	-1.04	0.00	-38.30	0.00	38.30	3,342.01	1,671.00	5,195.19	2,601.46	0.35	-0.07	0.019
53.00	-12.87	-1.02	0.00	-35.19	0.00	35.19	2,635.57	1,317.79	4,086.32	2,046.20	0.39	-0.07	0.022
55.00	-12.00	-0.98	0.00	-33.15	0.00	33.15	2,608.58	1,304.29	3,983.48	1,994.70	0.42	-0.07	0.021
60.00	-11.15	-0.94	0.00	-28.25	0.00	28.25	2,539.46	1,269.73	3,729.47	1,867.51	0.50	-0.08	0.020
65.00	-10.34	-0.89	0.00	-23.57	0.00	23.57	2,467.98	1,233.99	3,480.22	1,742.70	0.58	-0.09	0.018
70.00	-9.55	-0.84	0.00	-19.12	0.00	19.12	2,394.14	1,197.07	3,236.14	1,620.47	0.68	-0.09	0.016
75.00	-8.80	-0.79	0.00	-14.92	0.00	14.92	2,317.94	1,158.97	2,997.63	1,501.04	0.78	-0.10	0.014
80.00	-8.65	-0.78	0.00	-10.98	0.00	10.98	2,219.90	1,109.95	2,741.08	1,372.58	0.88	-0.10	0.012
81.00	-8.27	-0.75	0.00	-10.20	0.00	10.20	2,199.09	1,099.55	2,689.68	1,346.84	0.90	-0.10	0.011
81.00	-8.27	-0.75	0.00	-10.20	0.00	10.20	1,125.47	562.74	1,388.10	695.08	0.90	-0.10	0.022
85.00	-7.80	-0.71	0.00	-7.20	0.00	7.20	1,102.35	551.18	1,308.03	654.99	0.99	-0.11	0.018
90.00	-4.15	-0.40	0.00	-3.65	0.00	3.65	1,071.33	535.66	1,208.59	605.19	1.10	-0.11	0.010
95.00	-3.82	-0.37	0.00	-1.65	0.00	1.65	1,037.94	518.97	1,110.25	555.95	1.22	-0.11	0.007
99.00	-0.52	-0.05	0.00	-0.17	0.00	0.17	1,009.53	504.77	1,032.65	517.09	1.31	-0.11	0.001
100.00	-0.23	-0.02	0.00	-0.12	0.00	0.12	1,002.19	501.10	1,013.42	507.46	1.34	-0.11	0.000
105.00	0.00	0.00	0.00	0.00	0.00	0.00	964.09	482.04	918.53	459.95	1.46	-0.11	0.000
109.00	0.00	0.00	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	1.55	-0.11	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELMF

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

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	-17.97	-1.28	0.00	-98.69	0.00	98.69	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.027
5.00	-17.02	-1.28	0.00	-92.29	0.00	92.29	4,081.17	2,040.59	8,491.45	4,252.04	0.00	-0.01	0.026
10.00	-16.09	-1.27	0.00	-85.92	0.00	85.92	4,008.49	2,004.24	8,105.89	4,058.97	0.01	-0.01	0.025
15.00	-15.18	-1.26	0.00	-79.57	0.00	79.57	3,933.44	1,966.72	7,724.18	3,867.83	0.03	-0.02	0.024
20.00	-14.30	-1.24	0.00	-73.29	0.00	73.29	3,856.03	1,928.02	7,346.76	3,678.84	0.05	-0.03	0.024
25.00	-13.45	-1.22	0.00	-67.09	0.00	67.09	3,776.27	1,888.13	6,974.02	3,492.19	0.09	-0.03	0.023
30.00	-12.62	-1.19	0.00	-60.99	0.00	60.99	3,694.14	1,847.07	6,606.39	3,308.10	0.12	-0.04	0.022
35.00	-11.81	-1.16	0.00	-55.02	0.00	55.02	3,609.65	1,804.82	6,244.28	3,126.78	0.17	-0.05	0.021
40.00	-11.03	-1.13	0.00	-49.21	0.00	49.21	3,522.79	1,761.40	5,888.10	2,948.43	0.22	-0.05	0.020
45.00	-10.58	-1.11	0.00	-43.56	0.00	43.56	3,433.58	1,716.79	5,538.27	2,773.25	0.28	-0.06	0.019
48.00	-10.05	-1.08	0.00	-40.25	0.00	40.25	3,378.92	1,689.46	5,331.58	2,669.76	0.32	-0.06	0.018
50.00	-9.27	-1.03	0.00	-38.09	0.00	38.09	3,342.01	1,671.00	5,195.19	2,601.46	0.34	-0.07	0.017
53.00	-9.02	-1.02	0.00	-35.00	0.00	35.00	2,635.57	1,317.79	4,086.32	2,046.20	0.39	-0.07	0.021
55.00	-8.41	-0.98	0.00	-32.97	0.00	32.97	2,608.58	1,304.29	3,983.48	1,994.70	0.42	-0.07	0.020
60.00	-7.82	-0.93	0.00	-28.09	0.00	28.09	2,539.46	1,269.73	3,729.47	1,867.51	0.50	-0.08	0.018
65.00	-7.25	-0.89	0.00	-23.43	0.00	23.43	2,467.98	1,233.99	3,480.22	1,742.70	0.58	-0.09	0.016
70.00	-6.70	-0.84	0.00	-19.00	0.00	19.00	2,394.14	1,197.07	3,236.14	1,620.47	0.67	-0.09	0.015
75.00	-6.17	-0.78	0.00	-14.83	0.00	14.83	2,317.94	1,158.97	2,997.63	1,501.04	0.77	-0.10	0.013
80.00	-6.06	-0.77	0.00	-10.91	0.00	10.91	2,219.90	1,109.95	2,741.08	1,372.58	0.88	-0.10	0.011
81.00	-5.80	-0.74	0.00	-10.14	0.00	10.14	2,199.09	1,099.55	2,689.68	1,346.84	0.90	-0.10	0.010
81.00	-5.80	-0.74	0.00	-10.14	0.00	10.14	1,125.47	562.74	1,388.10	695.08	0.90	-0.10	0.020
85.00	-5.47	-0.71	0.00	-7.16	0.00	7.16	1,102.35	551.18	1,308.03	654.99	0.98	-0.10	0.016
90.00	-2.91	-0.40	0.00	-3.63	0.00	3.63	1,071.33	535.66	1,208.59	605.19	1.10	-0.11	0.009
95.00	-2.68	-0.37	0.00	-1.64	0.00	1.64	1,037.94	518.97	1,110.25	555.95	1.21	-0.11	0.006
99.00	-0.37	-0.05	0.00	-0.17	0.00	0.17	1,009.53	504.77	1,032.65	517.09	1.31	-0.11	0.001
100.00	-0.16	-0.02	0.00	-0.12	0.00	0.12	1,002.19	501.10	1,013.42	507.46	1.33	-0.11	0.000
105.00	0.00	0.00	0.00	0.00	0.00	0.00	964.09	482.04	918.53	459.95	1.45	-0.11	0.000
109.00	0.00	0.00	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	1.54	-0.11	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.16
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.17
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Period Based on Rayleigh Method (sec):	1.06
Redundancy Factor (ρ):	1.00

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
26	107.00	183	1.821	1.637	1.014	0.323	39	226
25	102.50	242	1.671	1.016	0.771	0.246	40	299
24	99.50	50	1.575	0.703	0.637	0.203	7	62
23	97.00	269	1.497	0.493	0.539	0.170	31	332
22	92.50	349	1.361	0.214	0.393	0.121	28	431
21	87.50	376	1.218	0.022	0.268	0.080	20	465
20	83.00	311	1.096	-0.072	0.184	0.055	11	385
19	80.50	120	1.031	-0.101	0.147	0.045	4	148
18	77.50	612	0.955	-0.118	0.110	0.036	15	755
17	72.50	636	0.836	-0.118	0.065	0.030	13	785
16	67.50	660	0.725	-0.094	0.035	0.029	13	814
15	62.50	683	0.621	-0.061	0.017	0.033	15	844
14	57.50	707	0.526	-0.026	0.008	0.037	17	873
13	54.00	290	0.464	-0.003	0.006	0.039	8	357
12	51.50	897	0.422	0.011	0.006	0.040	24	1,107
11	49.00	608	0.382	0.024	0.007	0.041	17	751
10	46.50	528	0.344	0.034	0.009	0.041	14	651
9	42.50	902	0.287	0.048	0.013	0.041	24	1,114
8	37.50	931	0.224	0.060	0.020	0.038	24	1,149
7	32.50	959	0.168	0.066	0.028	0.035	23	1,184
6	27.50	988	0.120	0.070	0.034	0.032	21	1,220
5	22.50	1,016	0.081	0.072	0.040	0.029	20	1,255
4	17.50	1,045	0.049	0.071	0.042	0.026	18	1,290
3	12.50	1,074	0.025	0.066	0.039	0.023	17	1,325
2	7.50	1,102	0.009	0.053	0.031	0.018	13	1,361
1	2.50	1,131	0.001	0.024	0.013	0.008	6	1,396
Ericsson Radio 4449	99.00	222	1.559	0.657	0.616	0.196	29	274
Ericsson AIR 21, 1.3	99.00	249	1.559	0.657	0.616	0.196	32	307
Ericsson AIR 21, 1.3	99.00	244	1.559	0.657	0.616	0.196	32	302
RFS APXVAARR24_43-U-	99.00	384	1.559	0.657	0.616	0.196	50	474
Perfect Vision PV-LL	99.00	1,522	1.559	0.657	0.616	0.196	199	1,879
Alcatel-Lucent RRH2x	90.00	152	1.289	0.105	0.326	0.099	10	188
Alcatel-Lucent RRH2x	90.00	340	1.289	0.105	0.326	0.099	22	420
Alcatel-Lucent RRH2x	90.00	132	1.289	0.105	0.326	0.099	9	163

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

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Customer: T-MOBILE

Amphenol Antel BXA-1	90.00	90	1.289	0.105	0.326	0.099	6	111
RFS DB-T1-6Z-8AB-0Z	90.00	44	1.289	0.105	0.326	0.099	3	54
RFS DB-T1-6Z-8AB-0Z	90.00	44	1.289	0.105	0.326	0.099	3	54
Commscope SBNHH-	90.00	304	1.289	0.105	0.326	0.099	20	376
Round Low Profile PI	90.00	1,500	1.289	0.105	0.326	0.099	99	1,852
		21,897	35.613	8.219	10.166	3.588	995	27,033

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
26	107.00	183	1.821	1.637	1.014	0.323	39	159
25	102.50	242	1.671	1.016	0.771	0.246	40	209
24	99.50	50	1.575	0.703	0.637	0.203	7	43
23	97.00	269	1.497	0.493	0.539	0.170	31	233
22	92.50	349	1.361	0.214	0.393	0.121	28	302
21	87.50	376	1.218	0.022	0.268	0.080	20	326
20	83.00	311	1.096	-0.072	0.184	0.055	11	270
19	80.50	120	1.031	-0.101	0.147	0.045	4	103
18	77.50	612	0.955	-0.118	0.110	0.036	15	530
17	72.50	636	0.836	-0.118	0.065	0.030	13	550
16	67.50	660	0.725	-0.094	0.035	0.029	13	571
15	62.50	683	0.621	-0.061	0.017	0.033	15	591
14	57.50	707	0.526	-0.026	0.008	0.037	17	612
13	54.00	290	0.464	-0.003	0.006	0.039	8	251
12	51.50	897	0.422	0.011	0.006	0.040	24	776
11	49.00	608	0.382	0.024	0.007	0.041	17	527
10	46.50	528	0.344	0.034	0.009	0.041	14	457
9	42.50	902	0.287	0.048	0.013	0.041	24	781
8	37.50	931	0.224	0.060	0.020	0.038	24	805
7	32.50	959	0.168	0.066	0.028	0.035	23	830
6	27.50	988	0.120	0.070	0.034	0.032	21	855
5	22.50	1,016	0.081	0.072	0.040	0.029	20	880
4	17.50	1,045	0.049	0.071	0.042	0.026	18	904
3	12.50	1,074	0.025	0.066	0.039	0.023	17	929
2	7.50	1,102	0.009	0.053	0.031	0.018	13	954
1	2.50	1,131	0.001	0.024	0.013	0.008	6	979
Ericsson Radio 4449	99.00	222	1.559	0.657	0.616	0.196	29	192
Ericsson AIR 21, 1.3	99.00	249	1.559	0.657	0.616	0.196	32	215
Ericsson AIR 21, 1.3	99.00	244	1.559	0.657	0.616	0.196	32	212
RFS APXVAARR24_43-U-	99.00	384	1.559	0.657	0.616	0.196	50	332
Perfect Vision PV-LL	99.00	1,522	1.559	0.657	0.616	0.196	199	1,317
Alcatel-Lucent RRH2x	90.00	152	1.289	0.105	0.326	0.099	10	132
Alcatel-Lucent RRH2x	90.00	340	1.289	0.105	0.326	0.099	22	294
Alcatel-Lucent RRH2x	90.00	132	1.289	0.105	0.326	0.099	9	114
Amphenol Antel BXA-1	90.00	90	1.289	0.105	0.326	0.099	6	78
RFS DB-T1-6Z-8AB-0Z	90.00	44	1.289	0.105	0.326	0.099	3	38
RFS DB-T1-6Z-8AB-0Z	90.00	44	1.289	0.105	0.326	0.099	3	38
Commscope SBNHH-	90.00	304	1.289	0.105	0.326	0.099	20	263
Round Low Profile PI	90.00	1,500	1.289	0.105	0.326	0.099	99	1,298
		21,897	35.613	8.219	10.166	3.588	995	18,950

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

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	-25.64	-0.99	0.00	-79.04	0.00	79.04	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.024
5.00	-24.28	-0.98	0.00	-74.10	0.00	74.10	4,081.17	2,040.59	8,491.45	4,252.04	0.00	-0.01	0.023
10.00	-22.95	-0.96	0.00	-69.21	0.00	69.21	4,008.49	2,004.24	8,105.89	4,058.97	0.01	-0.01	0.023
15.00	-21.66	-0.95	0.00	-64.39	0.00	64.39	3,933.44	1,966.72	7,724.18	3,867.83	0.02	-0.02	0.022
20.00	-20.41	-0.93	0.00	-59.66	0.00	59.66	3,856.03	1,928.02	7,346.76	3,678.84	0.04	-0.02	0.022
25.00	-19.19	-0.91	0.00	-55.01	0.00	55.01	3,776.27	1,888.13	6,974.02	3,492.19	0.07	-0.03	0.021
30.00	-18.00	-0.89	0.00	-50.47	0.00	50.47	3,694.14	1,847.07	6,606.39	3,308.10	0.10	-0.03	0.020
35.00	-16.85	-0.86	0.00	-46.04	0.00	46.04	3,609.65	1,804.82	6,244.28	3,126.78	0.14	-0.04	0.019
40.00	-15.74	-0.84	0.00	-41.72	0.00	41.72	3,522.79	1,761.40	5,888.10	2,948.43	0.18	-0.04	0.019
45.00	-15.09	-0.83	0.00	-37.51	0.00	37.51	3,433.58	1,716.79	5,538.27	2,773.25	0.23	-0.05	0.018
48.00	-14.34	-0.81	0.00	-35.03	0.00	35.03	3,378.92	1,689.46	5,331.58	2,669.76	0.26	-0.05	0.017
50.00	-13.23	-0.79	0.00	-33.41	0.00	33.41	3,342.01	1,671.00	5,195.19	2,601.46	0.28	-0.05	0.017
53.00	-12.87	-0.78	0.00	-31.06	0.00	31.06	2,635.57	1,317.79	4,086.32	2,046.20	0.32	-0.06	0.020
55.00	-12.00	-0.76	0.00	-29.50	0.00	29.50	2,608.58	1,304.29	3,983.48	1,994.70	0.34	-0.06	0.019
60.00	-11.15	-0.75	0.00	-25.69	0.00	25.69	2,539.46	1,269.73	3,729.47	1,867.51	0.41	-0.07	0.018
65.00	-10.34	-0.73	0.00	-21.96	0.00	21.96	2,467.98	1,233.99	3,480.22	1,742.70	0.48	-0.07	0.017
70.00	-9.56	-0.72	0.00	-18.29	0.00	18.29	2,394.14	1,197.07	3,236.14	1,620.47	0.56	-0.08	0.015
75.00	-8.80	-0.71	0.00	-14.69	0.00	14.69	2,317.94	1,158.97	2,997.63	1,501.04	0.64	-0.08	0.014
80.00	-8.65	-0.70	0.00	-11.16	0.00	11.16	2,219.90	1,109.95	2,741.08	1,372.58	0.73	-0.09	0.012
81.00	-8.27	-0.69	0.00	-10.46	0.00	10.46	2,199.09	1,099.55	2,689.68	1,346.84	0.75	-0.09	0.012
81.00	-8.27	-0.69	0.00	-10.46	0.00	10.46	1,125.47	562.74	1,388.10	695.08	0.75	-0.09	0.022
85.00	-7.80	-0.67	0.00	-7.70	0.00	7.70	1,102.35	551.18	1,308.03	654.99	0.82	-0.09	0.019
90.00	-4.15	-0.47	0.00	-4.34	0.00	4.34	1,071.33	535.66	1,208.59	605.19	0.92	-0.10	0.011
95.00	-3.82	-0.43	0.00	-2.02	0.00	2.02	1,037.94	518.97	1,110.25	555.95	1.03	-0.10	0.007
99.00	-0.52	-0.08	0.00	-0.28	0.00	0.28	1,009.53	504.77	1,032.65	517.09	1.11	-0.10	0.001
100.00	-0.23	-0.04	0.00	-0.20	0.00	0.20	1,002.19	501.10	1,013.42	507.46	1.13	-0.10	0.001
105.00	0.00	0.00	0.00	0.00	0.00	0.00	964.09	482.04	918.53	459.95	1.24	-0.10	0.000
109.00	0.00	0.00	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	1.32	-0.10	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

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	-17.97	-0.99	0.00	-78.74	0.00	78.74	4,151.50	2,075.75	8,880.46	4,446.83	0.00	0.00	0.022
5.00	-17.02	-0.98	0.00	-73.79	0.00	73.79	4,081.17	2,040.59	8,491.45	4,252.04	0.00	-0.01	0.022
10.00	-16.09	-0.96	0.00	-68.91	0.00	68.91	4,008.49	2,004.24	8,105.89	4,058.97	0.01	-0.01	0.021
15.00	-15.18	-0.94	0.00	-64.10	0.00	64.10	3,933.44	1,966.72	7,724.18	3,867.83	0.02	-0.02	0.020
20.00	-14.30	-0.93	0.00	-59.38	0.00	59.38	3,856.03	1,928.02	7,346.76	3,678.84	0.04	-0.02	0.020
25.00	-13.45	-0.91	0.00	-54.75	0.00	54.75	3,776.27	1,888.13	6,974.02	3,492.19	0.07	-0.03	0.019
30.00	-12.62	-0.88	0.00	-50.22	0.00	50.22	3,694.14	1,847.07	6,606.39	3,308.10	0.10	-0.03	0.019
35.00	-11.81	-0.86	0.00	-45.80	0.00	45.80	3,609.65	1,804.82	6,244.28	3,126.78	0.14	-0.04	0.018
40.00	-11.03	-0.84	0.00	-41.50	0.00	41.50	3,522.79	1,761.40	5,888.10	2,948.43	0.18	-0.04	0.017
45.00	-10.58	-0.82	0.00	-37.31	0.00	37.31	3,433.58	1,716.79	5,538.27	2,773.25	0.23	-0.05	0.017
48.00	-10.05	-0.81	0.00	-34.85	0.00	34.85	3,378.92	1,689.46	5,331.58	2,669.76	0.26	-0.05	0.016
50.00	-9.27	-0.78	0.00	-33.23	0.00	33.23	3,342.01	1,671.00	5,195.19	2,601.46	0.28	-0.05	0.016
53.00	-9.02	-0.77	0.00	-30.89	0.00	30.89	2,635.57	1,317.79	4,086.32	2,046.20	0.31	-0.06	0.019
55.00	-8.41	-0.76	0.00	-29.34	0.00	29.34	2,608.58	1,304.29	3,983.48	1,994.70	0.34	-0.06	0.018
60.00	-7.82	-0.74	0.00	-25.56	0.00	25.56	2,539.46	1,269.73	3,729.47	1,867.51	0.40	-0.07	0.017
65.00	-7.25	-0.73	0.00	-21.84	0.00	21.84	2,467.98	1,233.99	3,480.22	1,742.70	0.48	-0.07	0.015
70.00	-6.70	-0.72	0.00	-18.20	0.00	18.20	2,394.14	1,197.07	3,236.14	1,620.47	0.55	-0.08	0.014
75.00	-6.17	-0.70	0.00	-14.61	0.00	14.61	2,317.94	1,158.97	2,997.63	1,501.04	0.64	-0.08	0.012
80.00	-6.06	-0.70	0.00	-11.10	0.00	11.10	2,219.90	1,109.95	2,741.08	1,372.58	0.73	-0.09	0.011
81.00	-5.80	-0.69	0.00	-10.40	0.00	10.40	2,199.09	1,099.55	2,689.68	1,346.84	0.75	-0.09	0.010
81.00	-5.80	-0.69	0.00	-10.40	0.00	10.40	1,125.47	562.74	1,388.10	695.08	0.75	-0.09	0.020
85.00	-5.47	-0.67	0.00	-7.66	0.00	7.66	1,102.35	551.18	1,308.03	654.99	0.82	-0.09	0.017
90.00	-2.91	-0.46	0.00	-4.32	0.00	4.32	1,071.33	535.66	1,208.59	605.19	0.92	-0.10	0.010
95.00	-2.68	-0.43	0.00	-2.01	0.00	2.01	1,037.94	518.97	1,110.25	555.95	1.02	-0.10	0.006
99.00	-0.37	-0.08	0.00	-0.28	0.00	0.28	1,009.53	504.77	1,032.65	517.09	1.10	-0.10	0.001
100.00	-0.16	-0.04	0.00	-0.20	0.00	0.20	1,002.19	501.10	1,013.42	507.46	1.12	-0.10	0.001
105.00	0.00	0.00	0.00	0.00	0.00	0.00	964.09	482.04	918.53	459.95	1.23	-0.10	0.000
109.00	0.00	0.00	0.00	0.00	0.00	0.00	931.90	465.95	844.28	422.77	1.31	-0.10	0.000

Site Number: 284982

Code: ANSI/TIA-222-G

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Site Name: OLD LYME II CT, CT

Engineering Number: 12927136_C3_02

7/16/2019 4:27:32 PM

Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	20.93	0.00	26.26	0.00	0.00	1543.21	0.00	0.35
0.9D + 1.6W	20.92	0.00	19.69	0.00	0.00	1538.19	0.00	0.35
1.2D + 1.0Di + 1.0Wi	5.23	0.00	37.19	0.00	0.00	373.88	0.00	0.09
(1.2 + 0.2Sds) * DL + E ELFM	1.28	0.00	25.64	0.00	0.00	99.05	0.00	0.03
(1.2 + 0.2Sds) * DL + E EMAM	0.99	0.00	25.64	0.00	0.00	79.04	0.00	0.02
(0.9 - 0.2Sds) * DL + E ELFM	1.28	0.00	17.97	0.00	0.00	98.69	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	0.99	0.00	17.97	0.00	0.00	78.74	0.00	0.02
1.0D + 1.0W	3.82	0.00	21.90	0.00	0.00	281.19	0.00	0.07

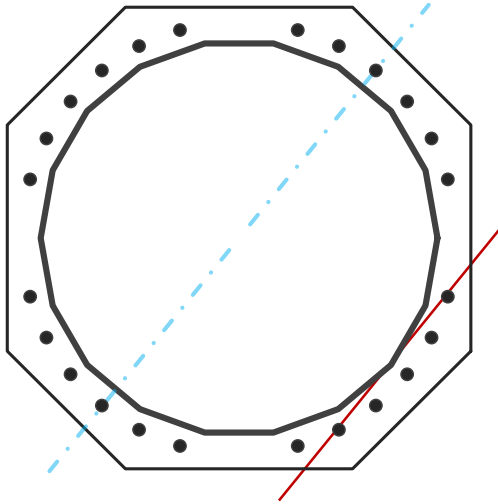
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	52.4	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	1543.2	k-ft
Axial, Pu	26.3	k
Shear, Vu	20.9	k
Neutral Axis	231	°

Report Capacities		
Component	Capacity	Result
Base Plate	13%	Pass
Anchor Rods	21%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	62.75	in
Thickness	2 3/4	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	16	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	4.5	in
Applied Moment, Mu	449.8	k
Bending Stress, ϕMn	3389.7	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	24	-
Diameter, ϕ	2 1/4	in
Bolt Circle	58.75	in
Grade	A615-75	-
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6	in
Orientation Offset	0	°
Applied Force, Pu	53.6	k
Anchor Rods, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	20.9	1543.2	1.00
Anchor Rod Forces	20.9	1543.2	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	60.9798	3.3878	0.1594		20633.87
Bolt	3.9761	3.2477	0.8393	4.5	33648.95
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	62.75	in
Thickness, t	2.75	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	34.522	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	4.5	-

Anchor Rods		
Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	58.75	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	53.6	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.206	OK
Interaction Capacity	0.043	OK

External Base Plate		
Chord Length AA	35.842	in
Additional AA	4.000	in
Section Modulus, Z	75.326	in ³
Applied Moment, Mu	449.8	k-ft
Bending Capacity, φMn	3389.7	k-ft
Capacity, Mu/φMn	0.133	OK
Chord Length AB	35.026	in
Additional AB	4.000	in
Section Modulus, Z	73.783	in ³
Applied Moment, Mu	344.9	k-ft
Bending Capacity, φMn	3320.2	k-ft
Capacity, Mu/φMn	0.104	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in ³
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

Base/Flange Plate	Plate Type	Flange @ 81 ft
	Pole Diameter	30.1555 in
	Pole Thickness	0.1875 in
	Plate Diameter	37.875 in
	Plate Thickness	1.25 in
	Plate Fy	60 ksi
	Weld Length	0.1875 in
	ϕ_s Resistance	113.06 k-in
	Applied	19.44 k-in
	Stiffeners	#

Code Rev. **G**

Date **7/16/2019**
 Engineer **RDB**
 Site # **284982**
 Carrier **T-Mobile**

Moment **171.6 k-ft**
 Axial **8.1 k**

Required Flange Thickness:
0.52 in OK

Bolts	#	12
	Bolt Circle (R)adial / (S)quare	33.625 in R
	Diameter	1 in
	Hole Diameter	1.125 in
	Type	A325
	Fy	92 ksi
	Fu	120 ksi
	ϕ_s Resistance	54.52 k
	Applied	19.74 k
	Reinforcement	#
Extra Bolts	#	0

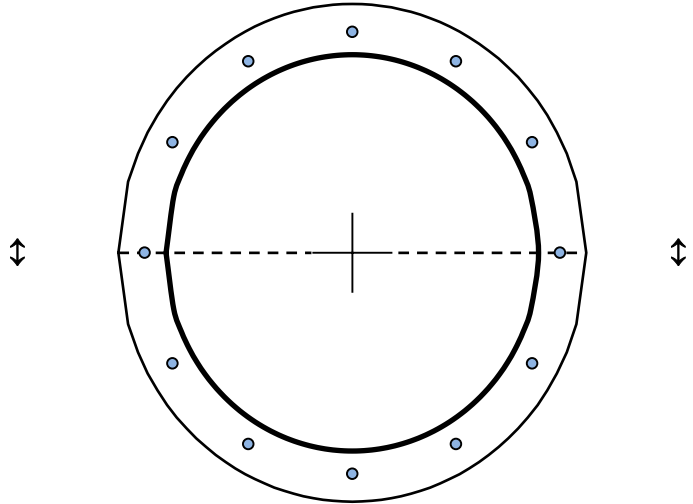


Plate Stress Ratio:
0.17 (Pass)

Bolt Stress Ratio:
0.36 (Pass)

Mount Analysis of Proposed Perfect Vision PV-LLP12M-HR-12-96 Platform w/ PV-PKBM-M Kicker Kit for American Tower on behalf of T-Mobile
284982 - OLD LYME II CT
Project #: 12927136
T-Mobile Site ID: CTNL803A
Program: L600

CLS Engineering PLLC Project #41124-12927136-01-MR-R1
 July 3, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-LLP12M-HR-12-96 Platform w/ PV-PKBM-M Kicker Kit at 99 ft
ANTENNA ELEVATION	Nominal Rad. Elevation of 99 ft AGL
SITE DESCRIPTION	109 ft Monopole
SITE ADDRESS	232 Shore Road, Old Lyme, CT, 06371, New London County
GPS COORDINATES	41.291736, -72.28706
ANALYSIS STANDARD	2015 IBC /2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	135 mph, V_{ult} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

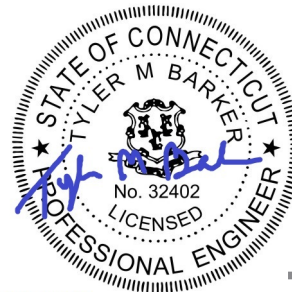
■ ANALYSIS RESULT: **Pass (Replacement)**

MEMBER USAGE	82%	Pass
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Existing mounts to be replaced; see conclusion for details.

Prepared by:
 Marena Anderson

Reviewed and Approved by:
 Tyler M. Barker, P.E.



Tyler M. Barker
 CLS Engineering, PLLC
 Director of Engineering
 PE # 32402 Exp. 1/31/2020
 COA # PEC.001833 Exp. 8/14/2019

Digitally signed by
 Tyler Barker
 DN: c=US,
 o=Telamon
 Corporation,
 ou=A01427E00000
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 1D17, cn=Tyler
 Barker
 Date: 2019.07.03
 09:34:37 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the proposed Perfect Vision PV-LLP12M-HR-12-96 Platform w/ PV-PKBK-M Kicker Kit. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

■ STRUCTURAL DOCUMENTS PROVIDED

STRUCTURAL DATA	Site Photos, dated September 27, 2018 Perfect Vision Drawing #LLP-ENG-01-R7 Rev. 7, dated January 16, 2018 Perfect Vision Drawing #PV-PKBK-M, Rev. 0, dated April 11, 2017
PREVIOUS ANALYSES	Structural Analysis by American Tower Corporation, Engineering #:12927136_C3_01, dated April 16, 2019
LOADING DATA	Application by American Tower Corporation, Project #12927136, dated April 1, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	135 mph, V_{ult} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
EXPOSURE CATEGORY	C
MAX. TOPOGRAPHIC FACTOR, K_{zt}	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M : 500 lb

■ FINAL EQUIPMENT

ELEVATION (ft)		ANTENNAS	
MOUNT	RAD.	#	NAME
99.0	99.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 21, 1.3 M, B4A B2P
		3	Ericsson AIR 21, 1.3 M, B2A B4P
		3	Ericsson RADIO 4449 B12/B71

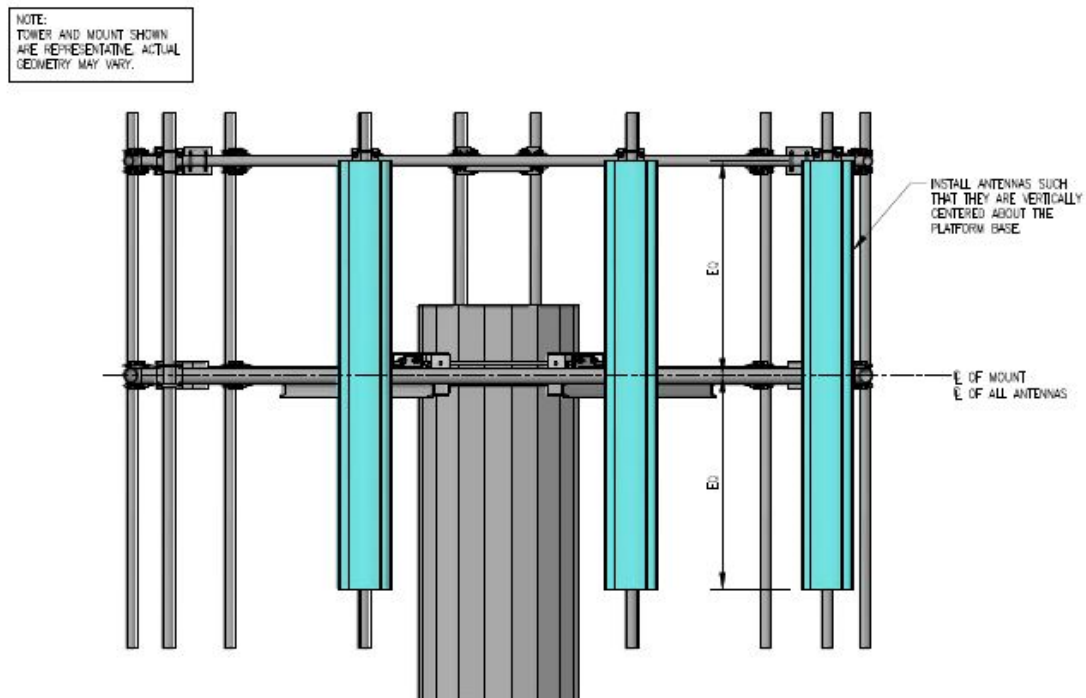
■ RESULTS SUMMARY

COMPONENT	PEAK USAGE	RESULT
Grating Angle	82%	Pass
Collar Reactions	68%	Pass
Mount Pipes	66%	Pass
Support Rail	62%	Pass
Bracing Members	47%	Pass
SR Conn Angle	46%	Pass
Stand-Off Horizontals	20%	Pass
Platform Base	17%	Pass

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **PASS PENDING REPLACEMENT**. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

- Replace existing T-Arm mounts with (1) new Perfect Vision PV-LLP12M-HR-12-96 Platform Mount.
- Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.
- Install (4) mount pipes included in the standard kit at each sector (12 total). All mount pipes are to be installed equidistant from each other as shown in the sketches below.
- Install support rails included in the proposed platform kit 3'-6" above the platform base. Connect to all mount pipes using crossover angles included in the proposed platform kit.
- Install existing and proposed antennas such that they are vertically centered about the platform base member. Install existing and proposed RRUS behind the antennas.



See following sketches and Perfect Vision assembly drawing for additional details.

■ ASSUMPTIONS AND CONDITIONS

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering PLLC should be notified immediately to revise results.

This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

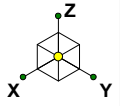
It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

Wind & Ice Loading			
Nominal Mount Elevation (AGL), z_{mount}	99 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	99 ft	K_d	0.95
Elevation AMSL (ft)	17 ft	K_e	1.00
TIA Standard	G	K_z	1.26
Basic Wind Speed, V_{ult} (bare)	135 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	1.00
Design Ice Thickness, t_i	1 in	t_{iz}	1.12 in
Exposure Category	C	G_h	1.00
Risk Category	II	q_z (bare)	55.9 psf
Seismic Response Coeff., C_s	-	q_z (ice)	7.7 psf

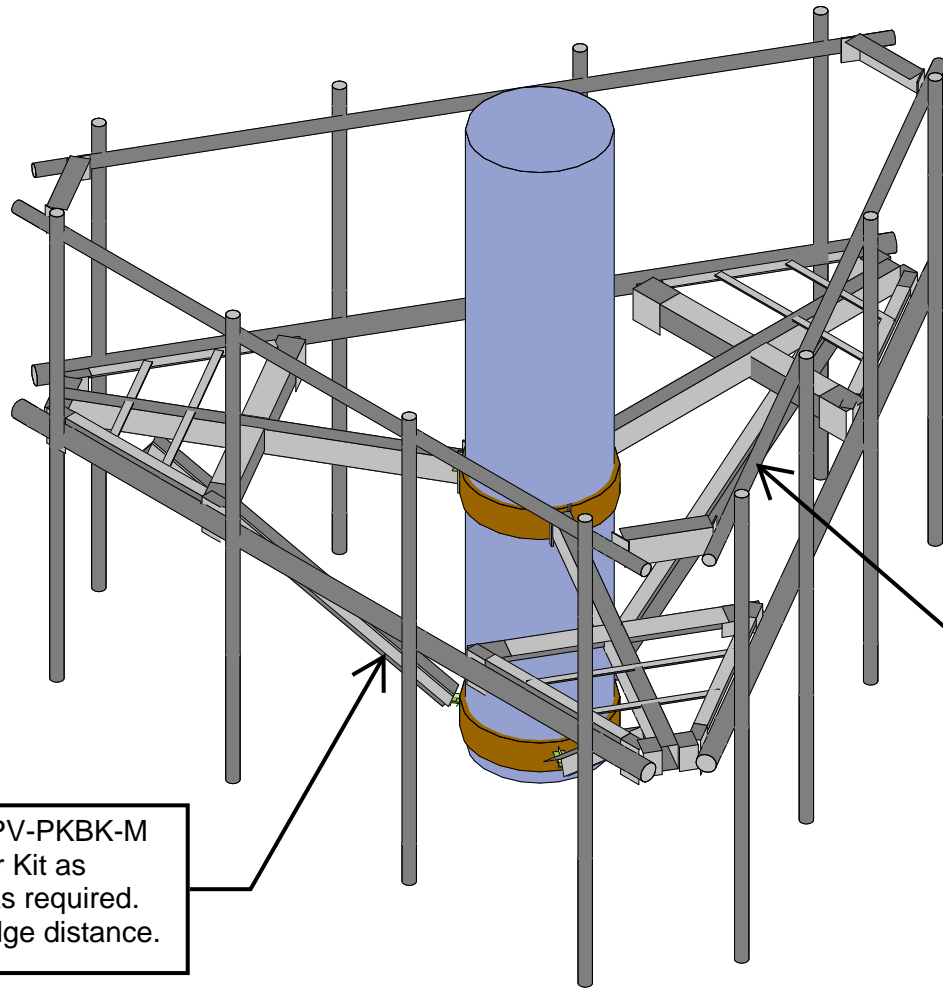
Live Loading	
At Mount Pipes, L_M	500 lb
Joint Labels Considered	N169
	N286
	N290
	N282

Member Distributed Loading				
Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset Tube	HSS5x3x3/8"	41.96	1.97	8.47
End Plate Angle	L5x4x0.25	41.96	1.97	9.23
Grating Angle 2	L6.4x4.750x0.25	53.71	2.09	11.10
Grating Angle 4	L7.25x2.375x0.25	60.84	2.17	9.77
Grating Angle 3	L2.375x1.25x0.25	19.93	1.75	4.56
Grating PL 2	PL1.50x0.25	12.59	2.59	3.04
Grating Angle 1	L4.75x4.5x0.25	39.86	1.95	9.45
Platform Horizontal Pipe	PIPE_3.0	17.62	3.96	6.29
Mount Pipe	PIPE_2.0	11.96	3.18	4.76
Support Rail	PIPE_2.0	11.96	3.18	4.76
MOD Stabilizer	L3X3X3	25.17	1.80	6.63
Conn. PL	PL8.5x3/8	71.33	7.42	9.23
SR Conn Plate	PL5x0.1875	41.96	5.00	6.03
SR Conn Angle	L5.50X3.5625X3	46.15	2.02	9.29

Appurtenances																														
Appurtenance Model	Status	Azimuth Offset ($^\circ$, \cup)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA _A (Bare) (ft²)		EPA _A (Ice) (ft²)		F _A (Bare) (lb)		F _A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
					AIR 21, 1.3 M, B4A B2P		10		<input type="checkbox"/>				1	1	1	3							A1	A2	B1	B2	C1	C2	56	12.1
APXVAARR24_43-U-NA20		10		<input type="checkbox"/>			1	1	1	3	A3	A4	B3	B4	C3	C4	95.9	24	8.7	128	Flat	251.34	20.24	8.89	22.44	10.92	#####	447.53	154.97	75.43
AIR 21, 1.3 M, B2A B4P		10		<input type="checkbox"/>			1	1	1	3	A5	A6	B5	B6	C5	C6	56	12	8	83	Flat	93.54	6.05	4.36	7.31	5.55	304.58	219.30	50.51	38.35
RADIO 4449 B12/B71		10		<input type="checkbox"/>	0.25		1	1	1	3	AR1		BR1		CR1		15	13.2	10.4	75	Flat	38.40	0.41	1.30	0.55	1.81	20.77	65.45	3.83	12.53



Replace existing T-Arm mounts with (1) new Perfect Vision PV-LLP12M-HR-12-96 Platform Mount.



Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.

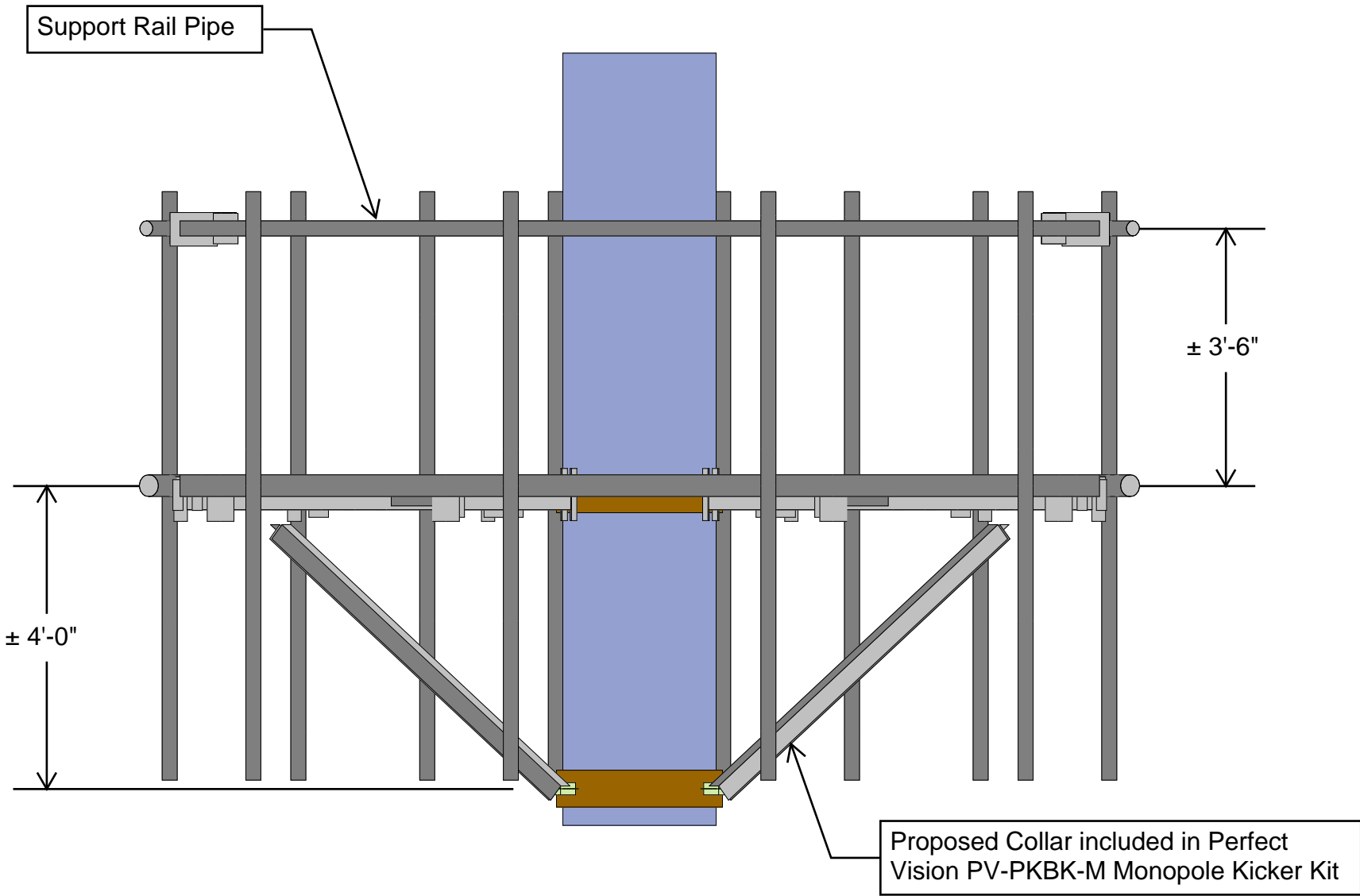
Install support rails included in the proposed platform kit 3'-6" above the platform base. Connect to all mount pipes using crossover angles included in the proposed platform kit.

Install (4) mount pipes included in the standard kit at each sector (12 total). All mount pipes are to be installed equidistant from each other as shown in the sketches below.

CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Proposed Mount - Isometric View

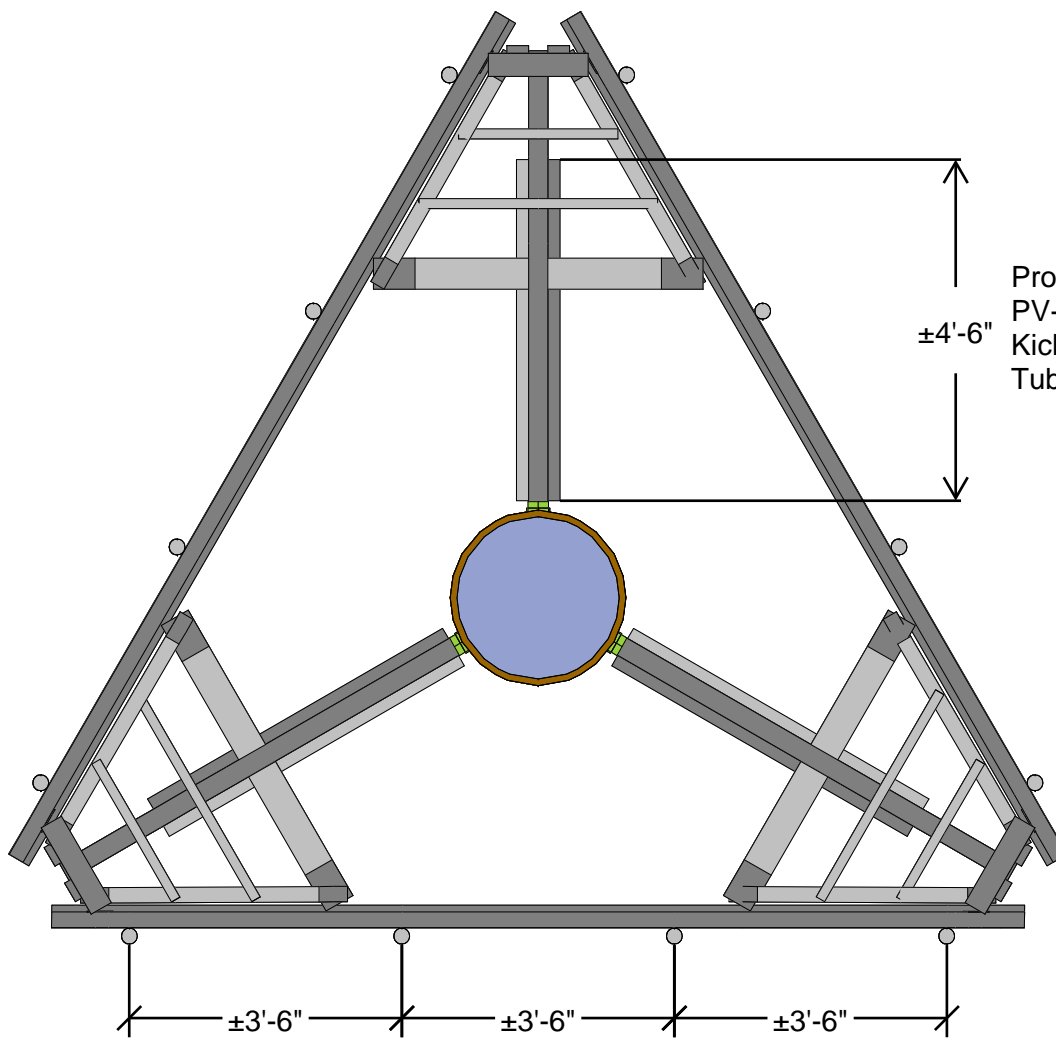
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41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Installation Sketch - Front Elevation

IN - 2
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Proposed Perfect Vision
PV-PKBK-M Monopole Platform
Kicker Angle Connection at Offset
Tube

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41124-12927136-OLD LYME II CT
Installation Sketch - Plan View

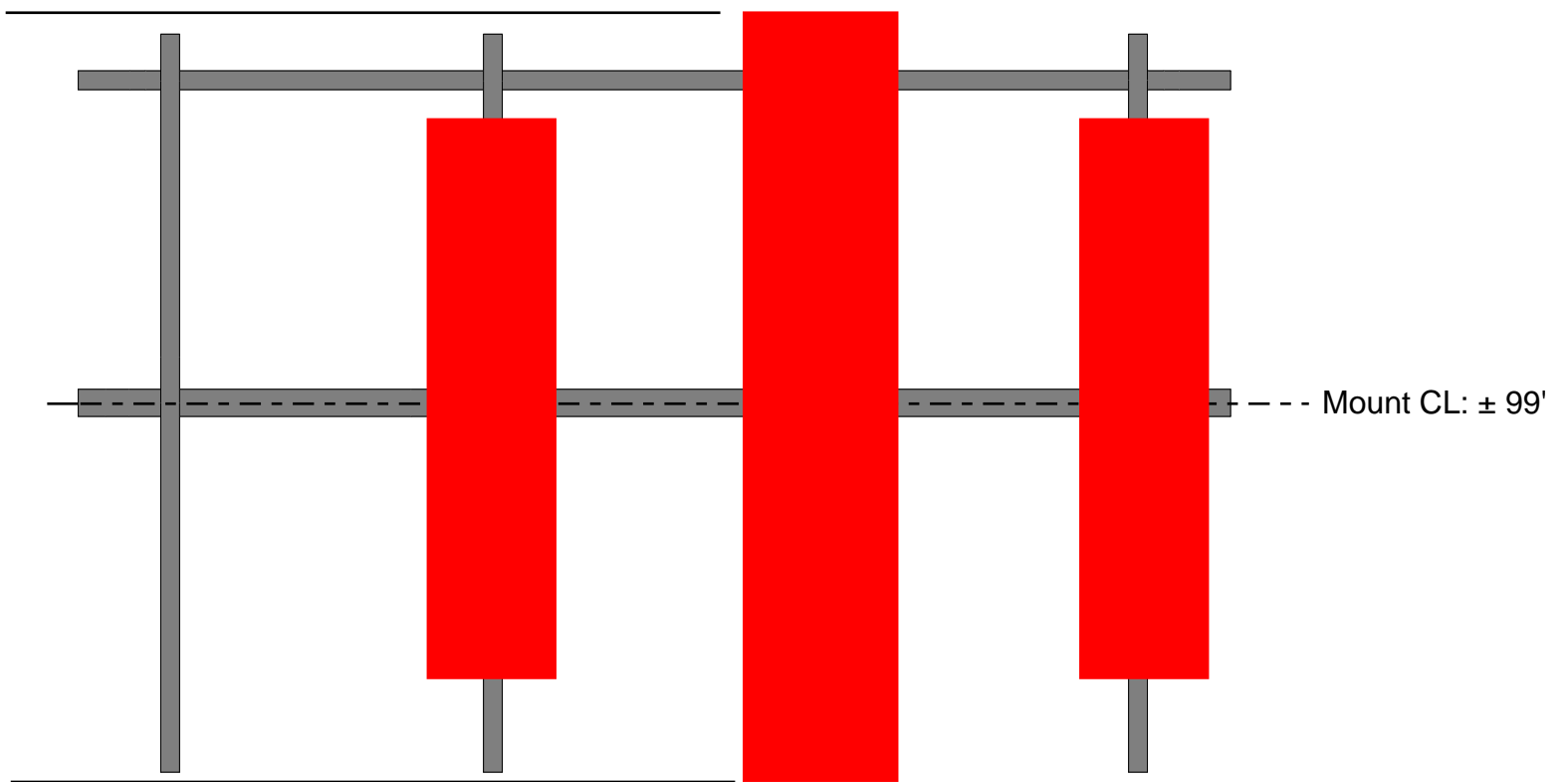
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41124-12927136-01-MR.r3d



TIP: $\pm 103'$

RAD: $\pm 99'$

TIP: $\pm 94'$



--- Mount CL: $\pm 99'$

Install existing and proposed antennas such that they are vertically centered about the platform.
Install proposed RRUS behind the antennas.

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41124-12927136-OLD LYME II CT
Installation Sketch - Front Elevation

IN - 4
May 21, 2019 at 9:01 AM
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PV-LPP L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

TABLE 1: PLATFORM CONFIGURATIONS

PART NUMBER	DESCRIPTION	MIN POLE OD	MAX POLE OD	WEIGHT (LBS)	INCLUDED PARTS									
					PIPE-312X150	PIPE-312X174	PIPE-238X150	PIPE-238X174	PV-RM1045	PV-RM3060	PV-LPP12-01	PV-LPP14-01	PV-LPPH	PV-PHK12-B
PV-LPP12M-B	12'6" FACE PLATFORM	10"	34"	1267	3	-	-	-	1	-	3	-	1	0
PV-LPP14M-B	14'6" FACE PLATFORM	10"	35"	1365	-	3	-	-	1	-	-	3	1	0
PV-LPP14L-B	14'6" FACE PLATFORM, LARGE POLE	33"	60"	1370	-	3	-	-	1	3	-	1	0	0
PV-LPP12M-HR-B	12'6" FACE PLATFORM W/ HANDRAIL	10"	34"	1522	3	-	3	-	1	-	3	-	1	1
PV-LPP14M-HR-B	14'6" FACE PLATFORM W/ HANDRAIL	10"	35"	1641	-	3	-	3	1	-	-	3	1	1
PV-LPP14L-HR-B	14'6" FACE PLATFORM W/ HANDRAIL, LARGE POLE	33"	60"	1647	-	3	-	3	-	1	3	-	1	1

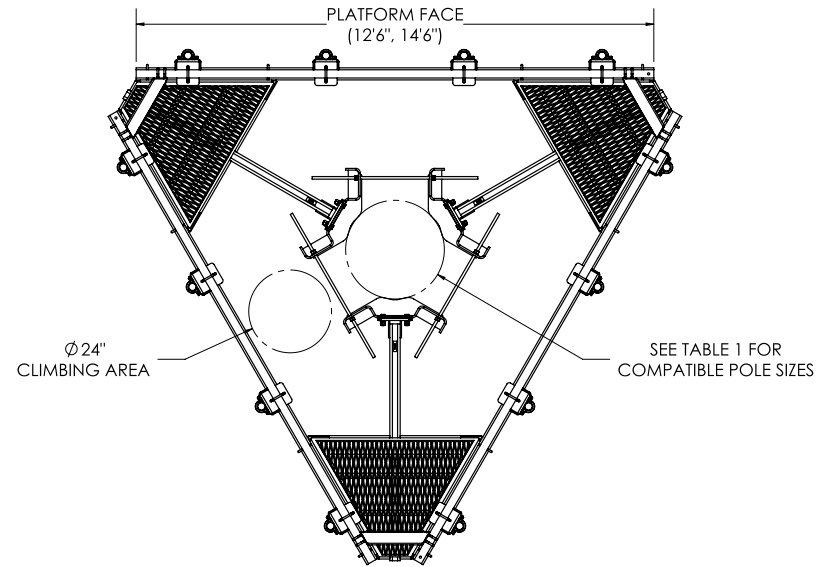


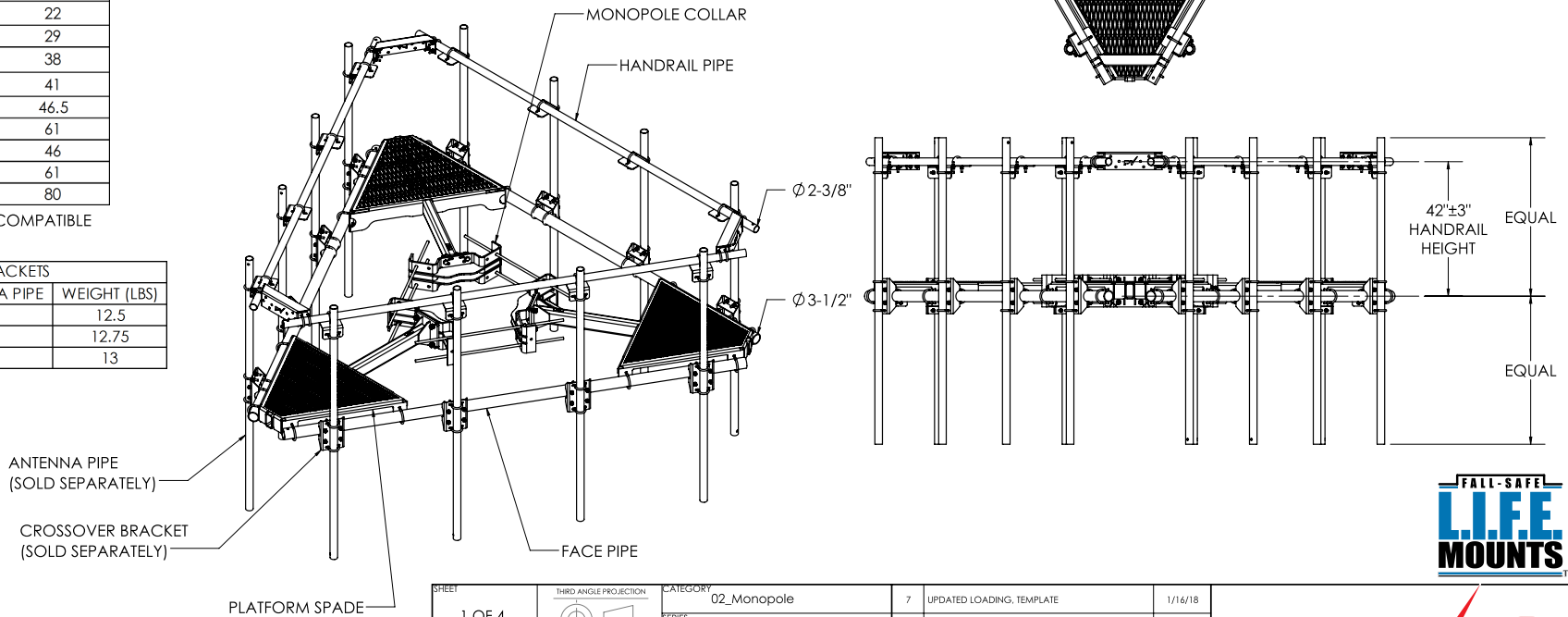
TABLE 2: ANTENNA PIPE OPTIONS***

OD	LENGTH	ANTENNA PIPE	WEIGHT (LBS)
2-3/8"	72"	PIPE-238X72	22
	96"	PIPE-238X96	29
	126"	PIPE-238X126	38
2-7/8"	84"	PIPE-278X84	41
	96"	PIPE-278X96	46.5
	126"	PIPE-278X126	61
3-1/2"	72"	PIPE-312X72	46
	96"	PIPE-312X96	61
	126"	PIPE-312X126	80

***PLATFORM WITH HANDRAIL KITS ARE COMPATIBLE WITH 2-3/8" OD HANDRAIL PIPE ONLY

TABLE 3: CROSSOVER BRACKETS

PART NUMBER	COMPATIBLE ANTENNA PIPE	WEIGHT (LBS)
PV-XP-2030-HD	2-3/8" OD	12.5
PV-XP-2530-HD	2-7/8" OD	12.75
PV-XP-3030-HD	3-1/2" OD	13



SHEET	THIRD ANGLE PROJECTION	CATEGORY	7	UPDATED LOADING, TEMPLATE	1/16/18
1 OF 4		SERIES	02_Monopole	VZW LOADING	1/19/17
3/13/2018	SCALE 1:36	TYPE	01_Triangular	HEAVY-S LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4", BEND ±2° ALL OTHERS: ±1/16"		BY	PV-LPP_LIFE Mount	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED	DJN	REDESIGNED COLLAR	12/30/15
		STATUS	SJS	APPROVED	
		REV		DESCRIPTION	DATE
L.I.F.E. MOUNT™ LOW PROFILE PLATFORM					REV
DOCUMENT NUMBER					LPP-ENG-01-R7
					7



MOUNT CLASSIFICATIONS:

REFERENCE STRUCTURAL LETTER (LPP-STL-01-R1) FOR ADDITIONAL LOADING REQUIREMENTS

MOUNT CLASSIFICATION INFORMATION:

- MAX STRUCTURE HEIGHT: 400ft
- STRUCTURE CLASS: I OR II
- EXPOSURE CATEGORY: B OR C
- TOPOGRAPHIC CATEGORY: 1
- DESIGN WIND PRESSURE (NO ICE): 135psf
- DESIGN WIND PRESSURE (ICED): 15psf
- DESIGN ICE THICKNESS: 2.75in Radial

APPROVED MOUNT CLASSIFICATIONS*

APPROVED MOUNT CLASSIFICATIONS (4 PIPE)						
		REQUIRED EXTREME WIND LOAD (LBS)				
		700	750	1150	1550	1800
REQUIRED EXTREME ICE LOAD (LBS)	0	M750R(0)-4[6]	M750R(0)-4[6]	M1150R(0)-4[6]	M1550R(0)-4[6]	M1800R(0)-4[6]
	600	M750R(600)-4[6]	M750R(600)-4[6]	M1150R(600)-4[6]	M1550R(600)-4[6]	M1800R(600)-4[6]
	800	M750R(800)-4[6]	M750R(800)-4[6]	M1150R(800)-4[6]	M1550R(800)-4[6]	M1800R(800)-4[6]
	1100	M750R(1100)-4[6]	M750R(1100)-4[6]	M1150R(1100)-4[6]	M1550R(1100)-4[6]	M1800R(1100)-4[6]
	1250	M750R(1250)-4[6]	M750R(1250)-4[6]	M1150R(1250)-4[6]	M1550R(1250)-4[6]	M1800R(1250)-4[6]

- HEAVY-5

APPLIES TO ALL PV-LPP12M, PV-LPP14M, AND PV-LPP14L SERIES PLATFORMS WITH ANTENNAS AND APPURTENANCES SYMMETRICALLY MOUNTED ABOUT THE PLATFORM CENTERLINE.

POLE THICKNESS LIMITATIONS:

ON POLES WITH WALL THICKNESS EQUAL TO OR GREATER THAN THE VALUES LISTED BELOW, THE PERFECT VISION PV-LPP MOUNT SERIES IS STRUCTURALLY CAPABLE OF SUPPORTING THE ABOVE LOADING SCENARIOS WITHOUT THE NEED FOR AN ADDITIONAL KICKER BRACE.

FOR THIN WALL POLES, USE PV-PBK PLATFORM KICKER BRACE TO AVOID POLE CRIMPING FAILURES. KICKER BRACE CAN BE INSTALLED ABOVE OR BELOW PLATFORM.

POLE THICKNESS LIMITATIONS	
MOUNT CLASSIFICATION	MINIMUM POLE THICKNESS
M750R-4[6]	1/4"
M800R-4[6]	1/4"
M900R-4[6]	1/4"
M950R-4[6]	1/4"
M1000R-4[6]	5/16"
M1400R-4[6]	5/16"
M1000R(i)-4[6]	5/16"
M1150R(i)-4[6]	5/16"

PLATFORM EPA:

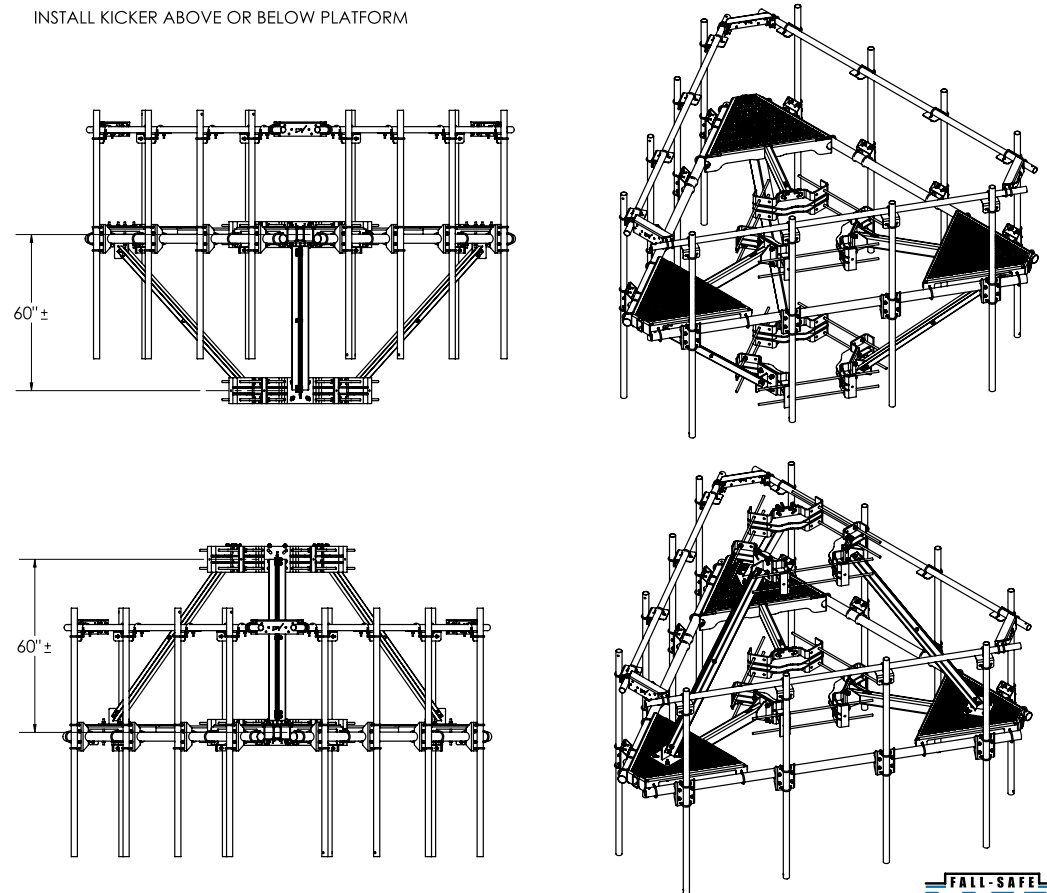
PLATFORM EPA		
PLATFORM TYPE	NO ICE (FT ²)	1/2" RADIAL ICE (FT ²)
12'6" FACE	20.3*	25.8*
12'6" FACE WITH HANDRAIL	34.4**	43.0**
14'6" FACE	22.1*	28.1*
14'6" FACE WITH HANDRAIL	36.8**	46.2**

*DOES NOT INCLUDE CROSSOVER PLATES OR ANTENNA PIPES
 **DOES NOT INCLUDE ANTENNA PIPES

KICKER ATTACHMENT:

SEE CLASSIFICATIONS SECTION FOR KICKER REQUIREMENT DETAILS.

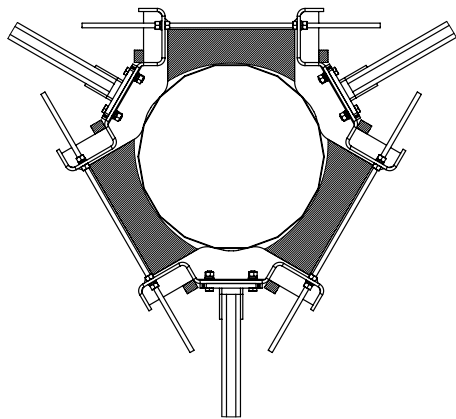
INSTALL KICKER ABOVE OR BELOW PLATFORM



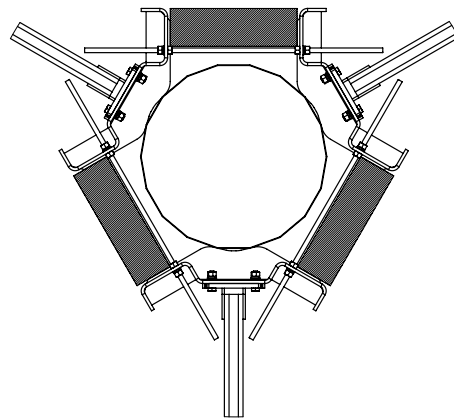
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2 OF 4		02_Monopole	6	VZW LOADING	1/19/17
3/13/2018	SCALE 1:48	SERIES 01_Triangular	5	HEAVY-5 LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4", BEND ±2" ALL OTHERS: ±1/16"		TYPE PV-LPP_LIFE Mount	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		BY DJN	3	REDESIGNED COLLAR	12/30/15
		CHECKED SJS	REV	DESCRIPTION	DATE
		STATUS APPROVED	REV	DESCRIPTION	DATE
LPP-ENG-01-R7					7

SAFETY CLIMB ROUTING:

CABLE GUIDES AND PV-RM-SAFETYCLIP SOLD SEPARATELY.



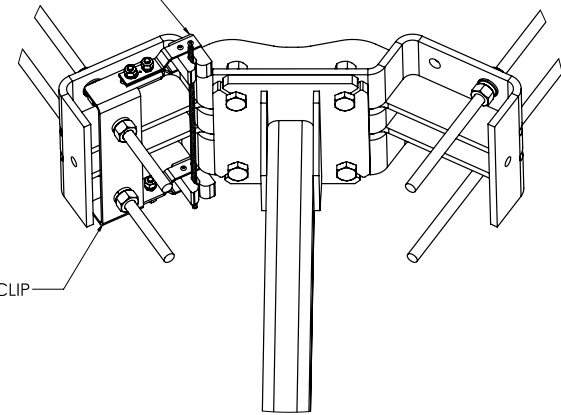
**SAFETY CLIMB CABLE
RECOMMENDED ROUTING
(ALL THREAD IN EXTERIOR HOLES)**



**SAFETY CLIMB CABLE
RECOMMENDED ROUTING
(ALL THREAD IN INTERIOR HOLES)**

SAFETY CLIMB CABLE GUIDE

PV-RM-SAFETYCLIP



SAFETY CLIMB CABLE GUIDE ATTACHMENT
IF RING MOUNT IS TO BE INSTALLED ON THE SAFETY CLIMB FACE, USE
THE RECOMMENDED ROUTING AS SHOWN



SHEET 3 OF 4	THIRD ANGLE PROJECTION 	CATEGORY	02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES	01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE NTS	TYPE	PV-LPP_LIFE Mount	5	HEAVY-S LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY	DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED	SJS	3	REDESIGNED COLLAR	12/30/15
		STATUS	APPROVED	REV	DESCRIPTION	DATE
L.I.F.E. MOUNT™ LOW PROFILE PLATFORM LPP-ENG-01-R7						REV 7

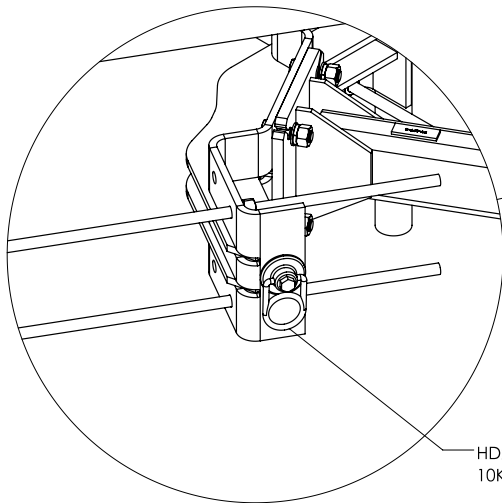
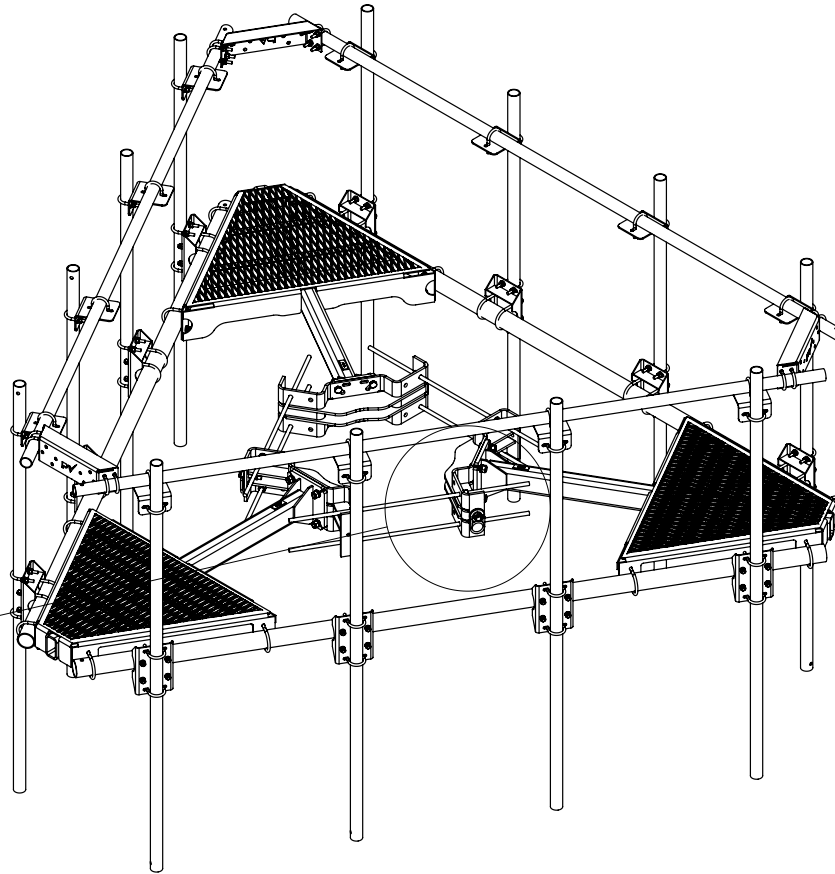


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10K SWIVEL ANCHOR

SWIVEL ANCHOR ATTACHMENT NOTES:

- DO NOT INSTALL ANCHORS UNTIL AFTER RING MOUNT IS PROPERLY INSTALLED ON TOWER.
- DO NOT USE SWIVEL ANCHORS AS A RIGGING / LIFTING POINT.
- SWIVEL ANCHOR SPECS:
 - UTS: 10,000 LBF
 - MAX USER WEIGHT: 310 LBS
 - WORKING LOAD: 2,000 LBS
- FOLLOW MANUFACTURER SPECIFICATIONS FOR ANCHOR INSTALLATION AND MAINTENANCE.



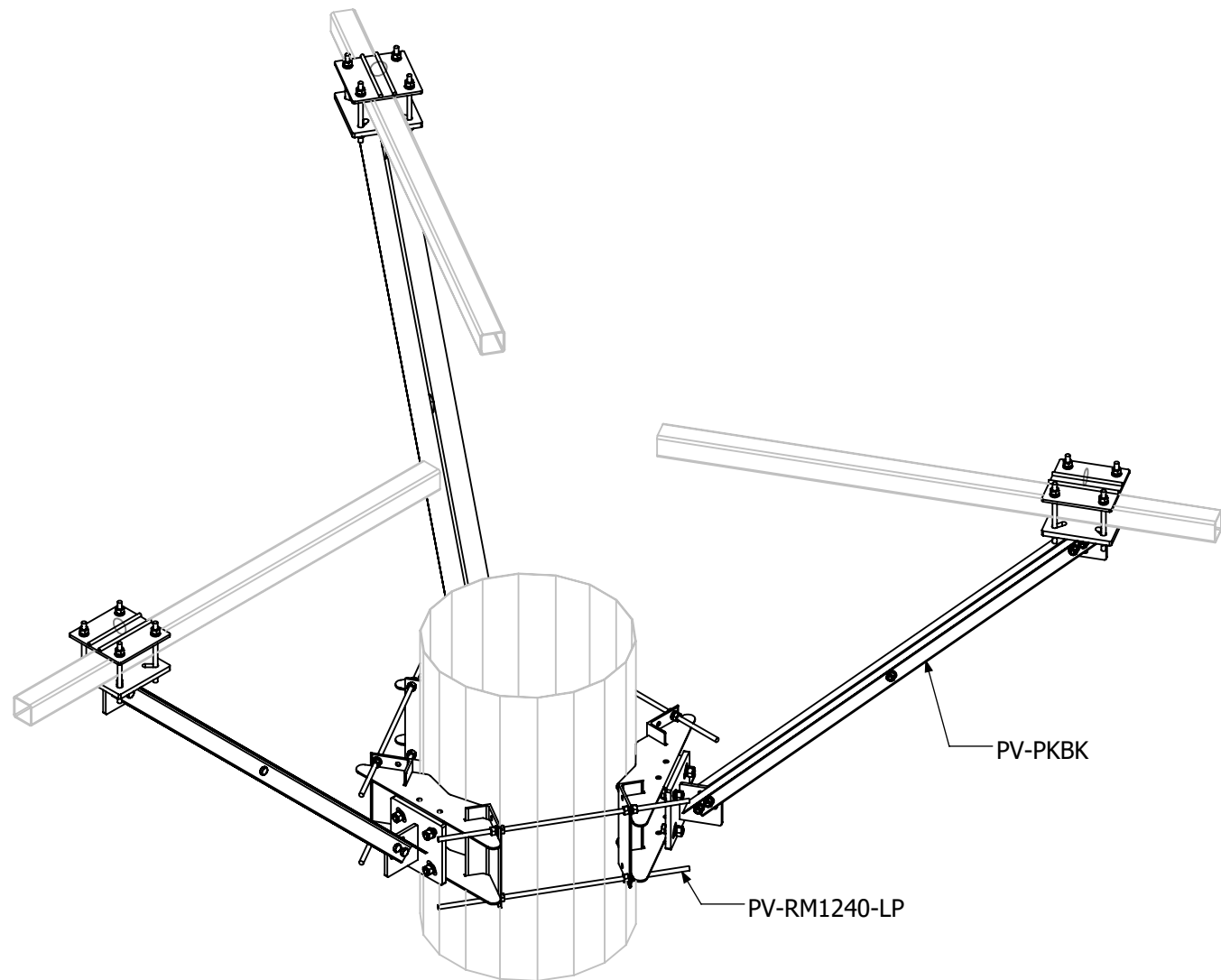
HD26226
10K SWIVEL ANCHOR

DETAIL A
SCALE 1 : 8

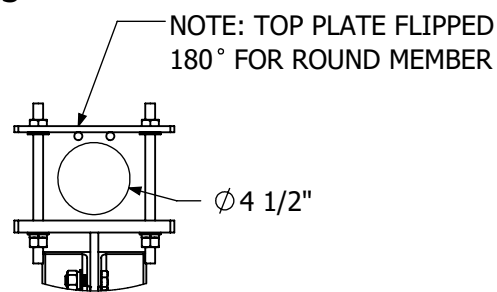
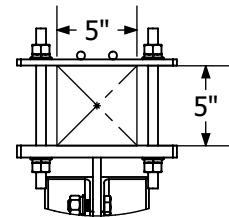


SHEET 4 OF 4	THIRD ANGLE PROJECTION 	CATEGORY 02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES 01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE 1:24	TYPE PV-LPP_LIFE Mount	5	HEAVY-S LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4", BEND ±2" ALL OTHERS: ±1/16"		BY DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED SJS	3	REDESIGNED COLLAR	12/30/15
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					REV 7

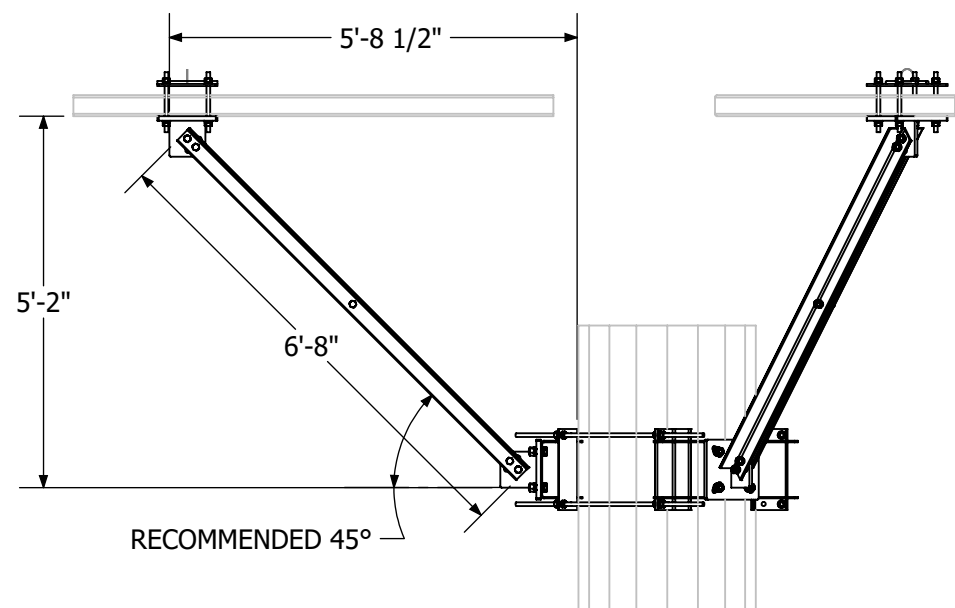
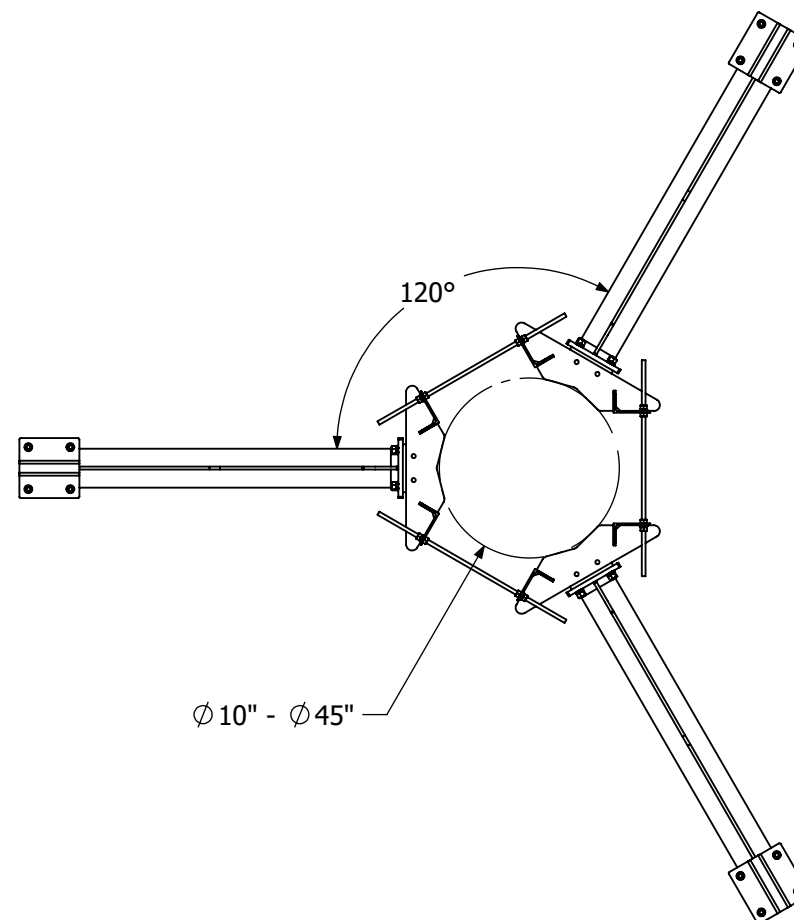
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PV-PKBM-M
(INCLUDES (1) PV-RM1240-LP AND (1) PV-PKBK)
KICKER BRACE
510 LBS



ARM ATTACHMENT
CLAMPS TO RECT HSS UP TO 5"X5" AND ROUND PIPE UP TO 4-1/2" OD



PERFECT VISION
 MANUFACTURING

16101 La Grande Dr.
 Little Rock, AR 72223
 1-800-205-8620

STAMP:

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REVISIONS:

NO.	DATE	DESCRIPTION	BY	CHK	APD
5				SS	
4			DJN	LL	
3					
2					
1					
0	4/11/17	INITIAL RELEASE			

SITE INFORMATION:

DESIGN TYPE:

MONOPOLE KICKER BRACE KIT

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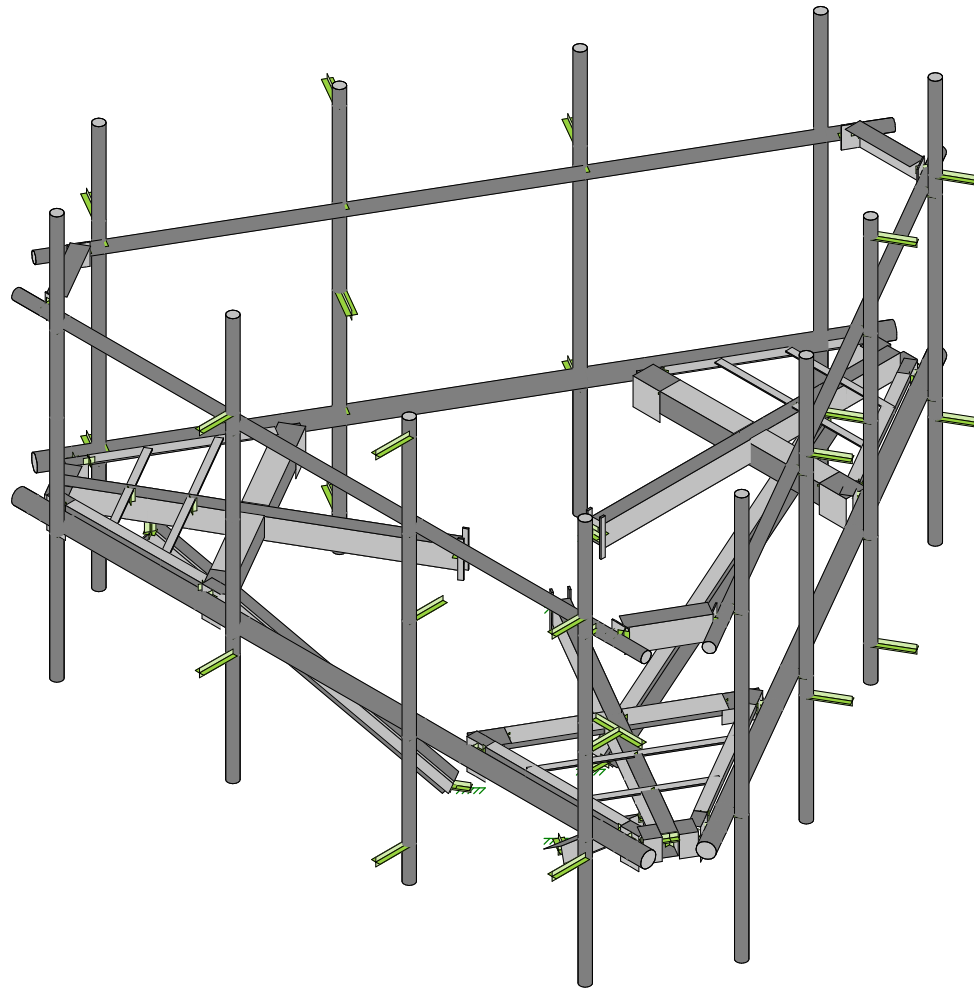
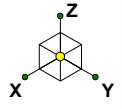
ENGINEERING DETAIL

SHEET TITLE:

REVISION:

E-1

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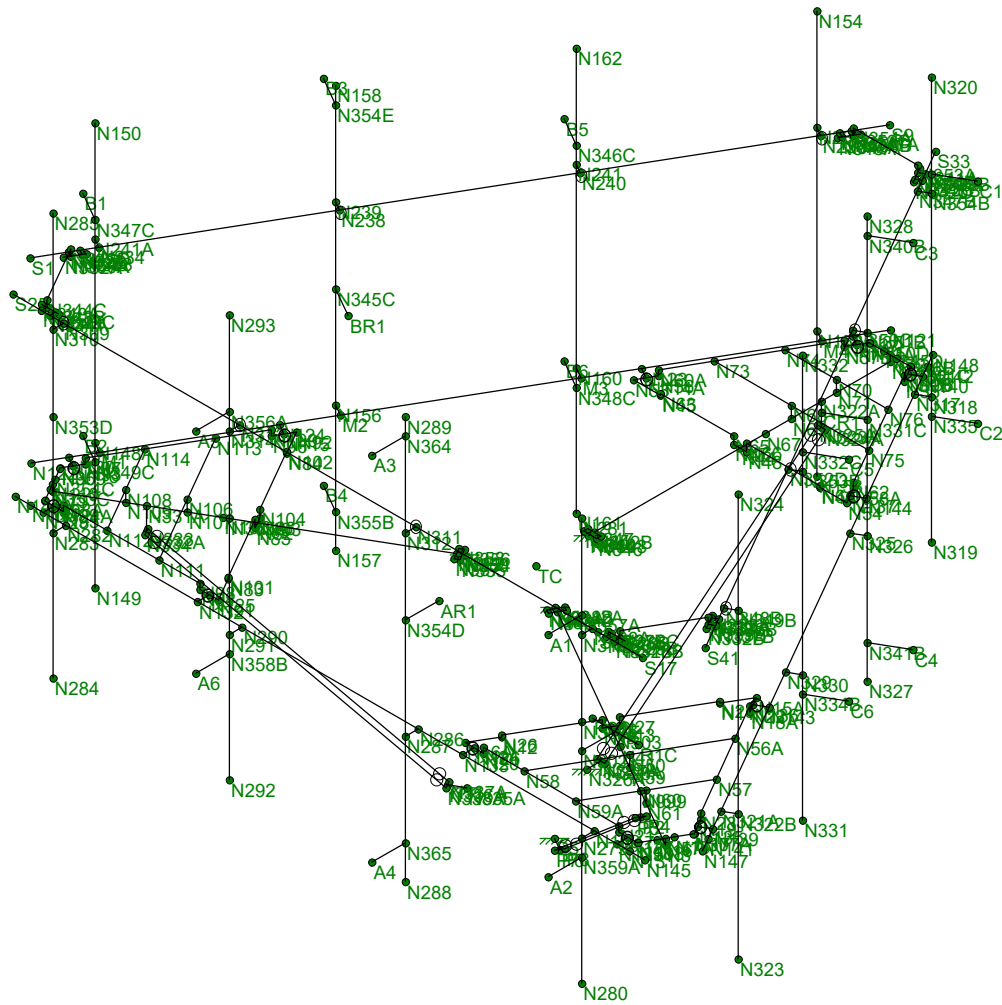
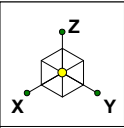


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41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Rendered

SK - 1
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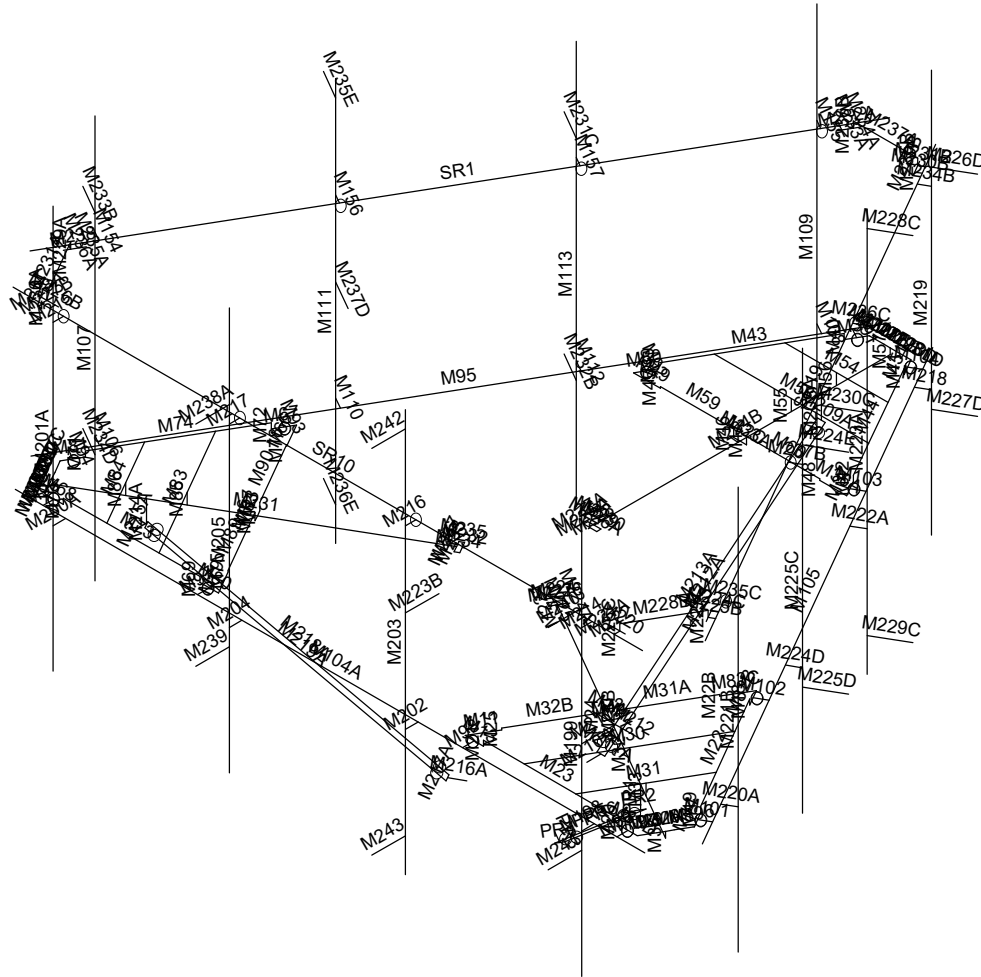
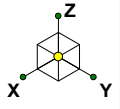


Envelope Only Solution

CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Joint Labels

SK - 2
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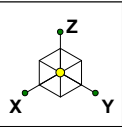


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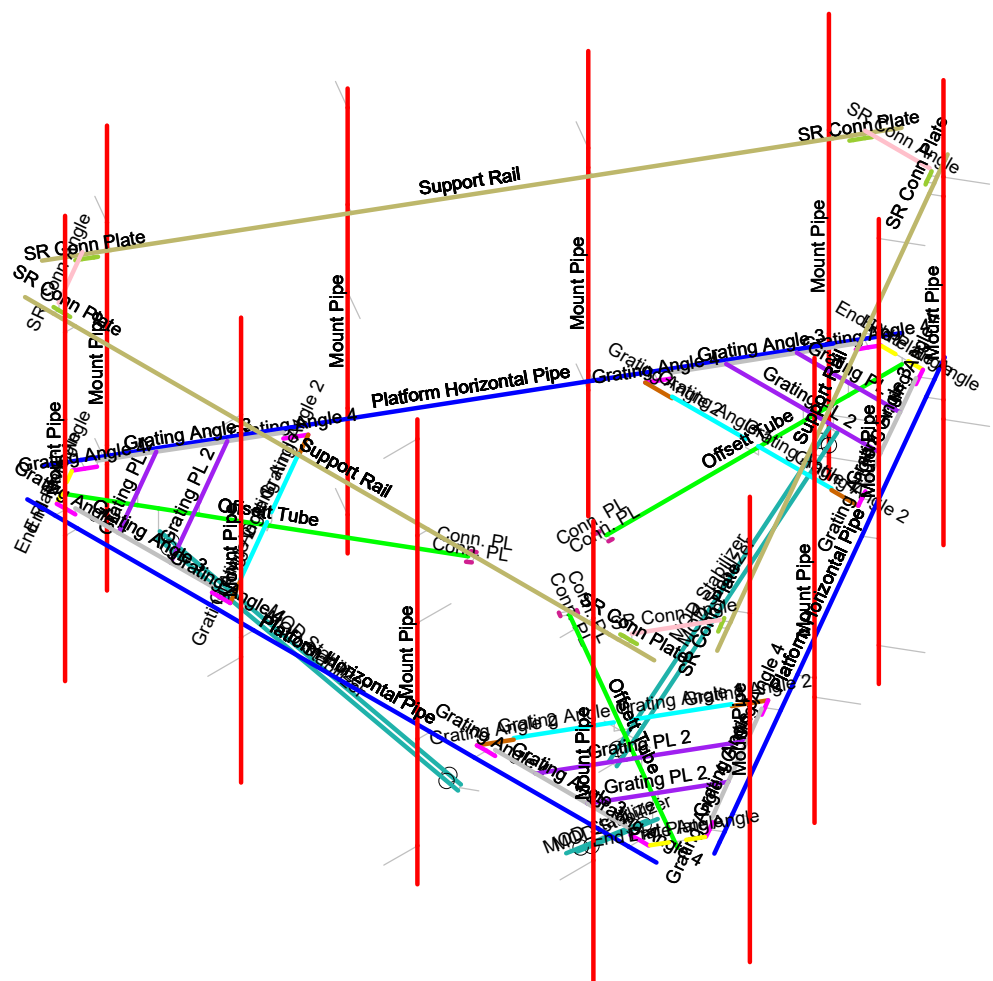
CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Member Labels

SK - 3
May 21, 2019 at 8:47 AM
41124-12927136-01-MR.r3d



- Section Sets
- Platform Horizontal Pipe
 - Offset Tube
 - Mount Pipe
 - Grating Angle 3
 - Grating Angle 4
 - Grating Angle 1
 - Grating Angle 2
 - End Plate Angle
 - Grating PL 2
 - Support Rail
 - SR Conn Plate
 - SR Conn Angle
 - MOD Stabilizer
 - Conn. PL
 - RIGID

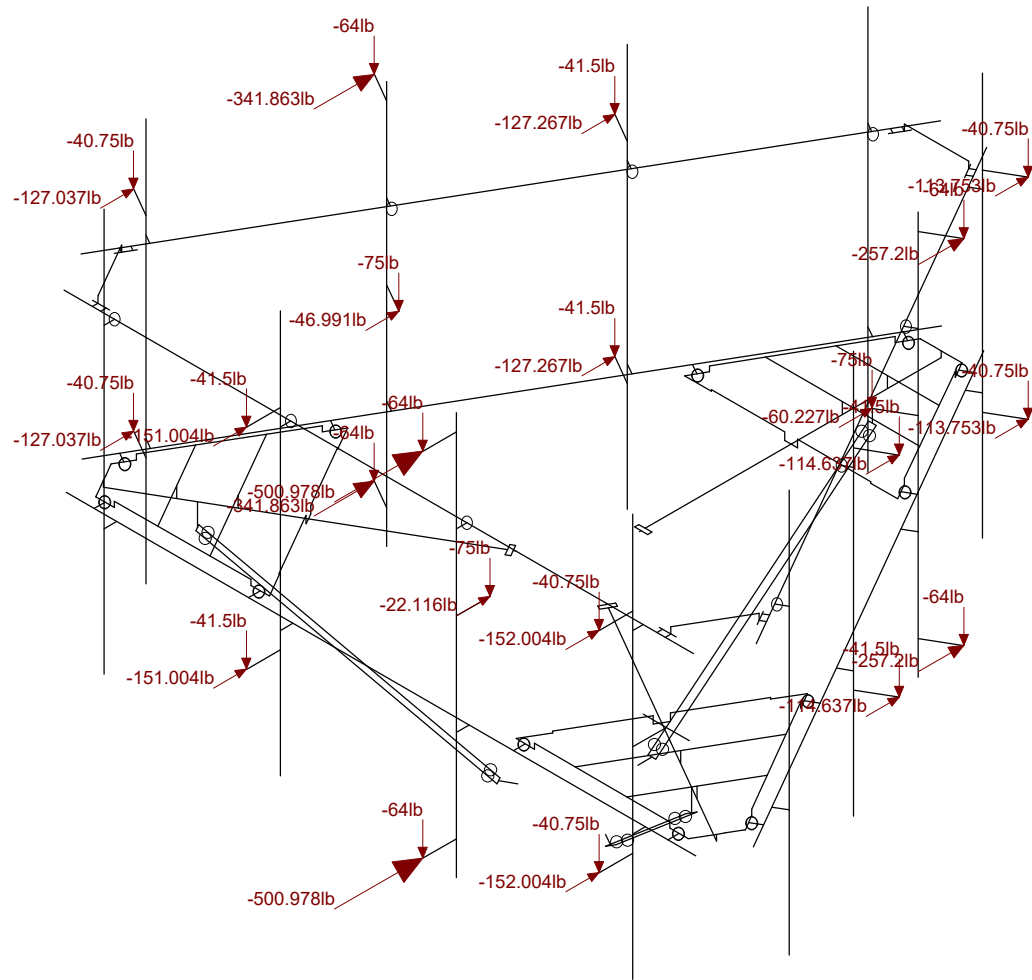
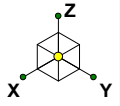


Envelope Only Solution

CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Section Sets

SK - 4
May 21, 2019 at 8:47 AM
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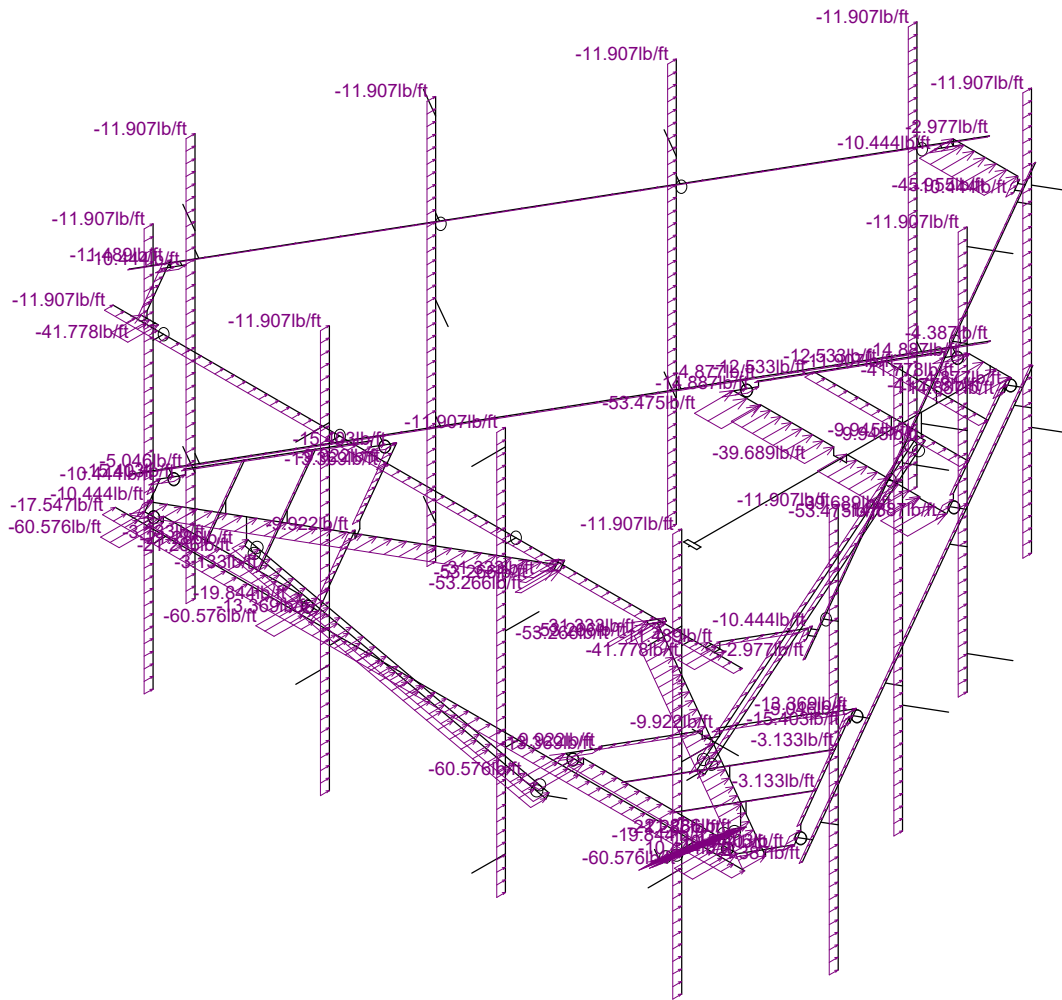
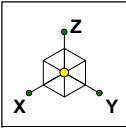


Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
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CLS
MJA
41124-12927136-01-MR

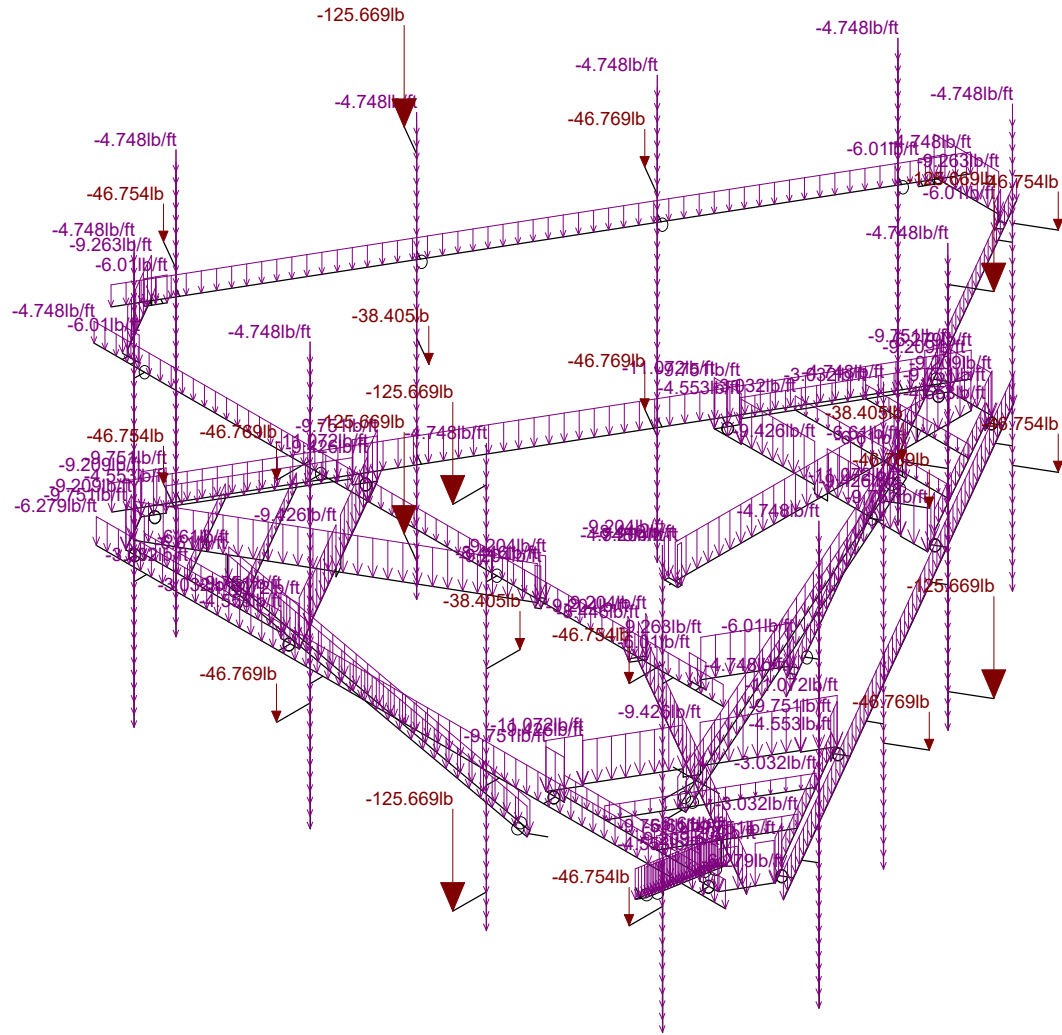
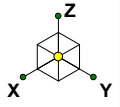
41124-12927136-OLD LYME II CT
Joint Loads - Dead and Normal Wind

SK - 5
May 21, 2019 at 8:47 AM
41124-12927136-01-MR.r3d



Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS	41124-12927136-OLD LYME II CT Distributed Load - Normal Wind	SK - 6
MJA		May 21, 2019 at 8:47 AM
41124-12927136-01-MR		41124-12927136-01-MR.r3d

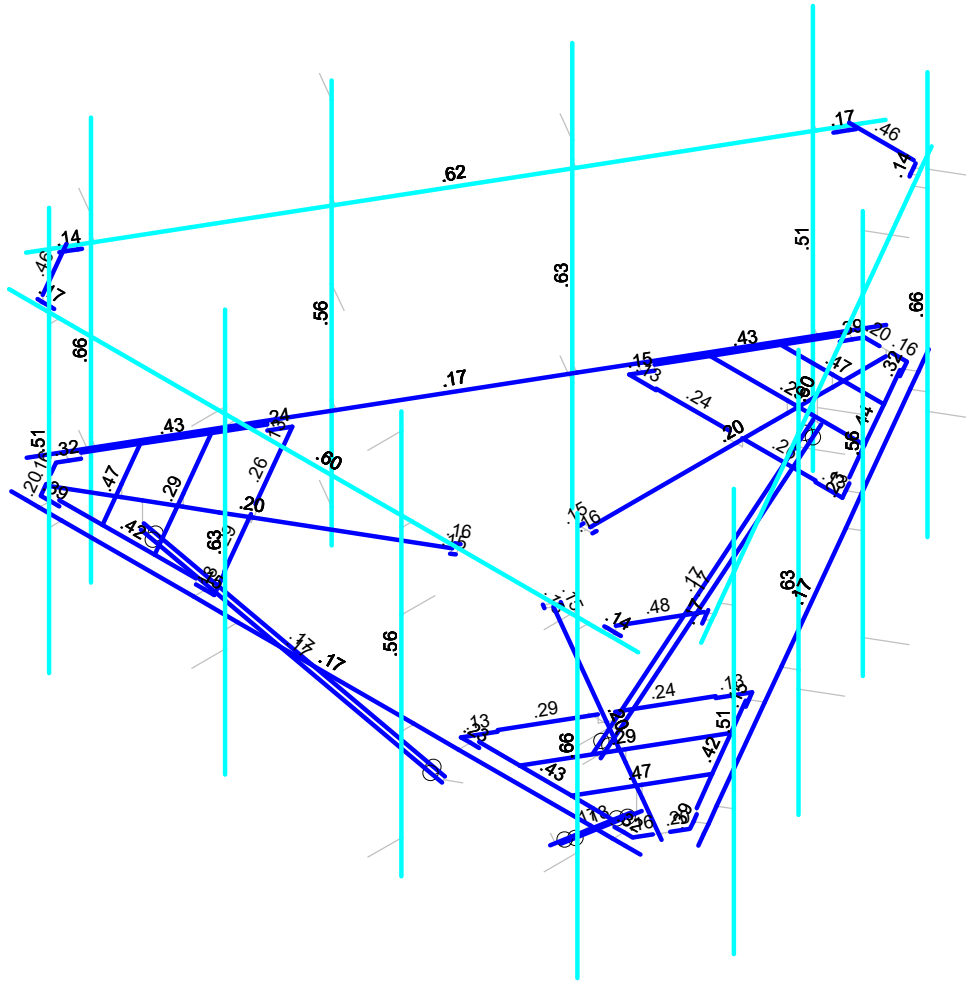
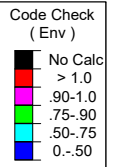
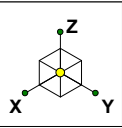


Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Ice Dead Loads

SK - 7
May 21, 2019 at 8:48 AM
41124-12927136-01-MR.r3d

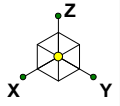


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS
MJA
41124-12927136-01-MR

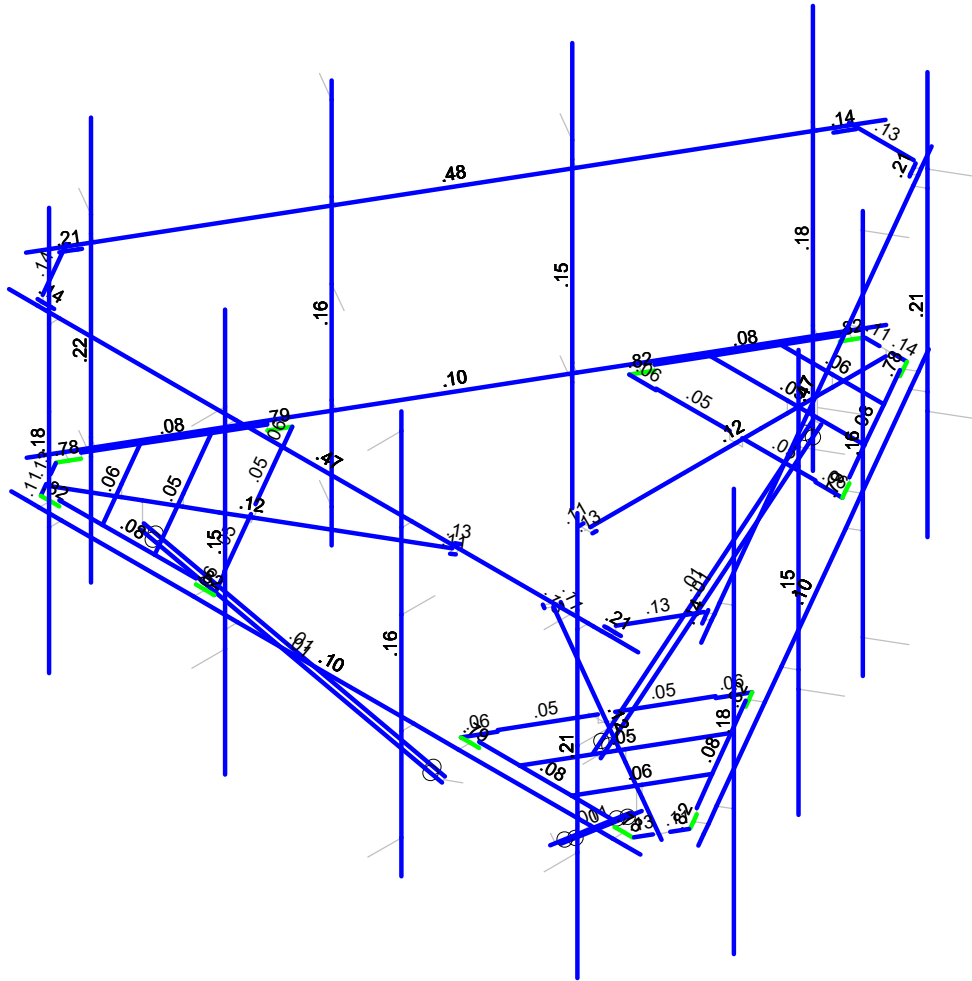
41124-12927136-OLD LYME II CT
Envelope Member Unity Check Results - Bending

SK - 8
May 21, 2019 at 8:48 AM
41124-12927136-01-MR.r3d



Shear Check
(Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS
MJA
41124-12927136-01-MR

41124-12927136-OLD LYME II CT
Envelope Member Check Results - Shear

SK - 9
May 21, 2019 at 8:48 AM
41124-12927136-01-MR.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Dead	DL			-1	21			
2	Ice Dead	RL				21		84	
4	Structure Wind 0°	None						81	
5	Structure Wind 30°	None						142	
6	Structure Wind 45°	None						168	
7	Structure Wind 60°	None						162	
8	Structure Wind 90°	None						71	
9	Structure Wind 120°	None						162	
10	Structure Wind 135°	None						168	
11	Structure Wind 150°	None						142	
12	Structure Wind w/ Ice ...	None						81	
13	Structure Wind w/ Ice ...	None						142	
14	Structure Wind w/ Ice ...	None						168	
15	Structure Wind w/ Ice ...	None						162	
16	Structure Wind w/ Ice ...	None						71	
17	Structure Wind w/ Ice ...	None						162	
18	Structure Wind w/ Ice ...	None						168	
19	Structure Wind w/ Ice ...	None						142	
20	Antenna Wind 0°	None				21			
21	Antenna Wind 30°	None				42			
22	Antenna Wind 45°	None				42			
23	Antenna Wind 60°	None				42			
24	Antenna Wind 90°	None				21			
25	Antenna Wind 120°	None				42			
26	Antenna Wind 135°	None				42			
27	Antenna Wind 150°	None				42			
28	Antenna Wind w/ Ice 0°	None				21			
29	Antenna Wind w/ Ice ...	None				42			
30	Antenna Wind w/ Ice ...	None				42			
31	Antenna Wind w/ Ice ...	None				42			
32	Antenna Wind w/ Ice ...	None				21			
33	Antenna Wind w/ Ice ...	None				42			
34	Antenna Wind w/ Ice ...	None				42			
35	Antenna Wind w/ Ice ...	None				42			
39	Maintenance Live 500...	OL1				1			
40	Maintenance Live 500...	OL2				1			
41	Maintenance Live 500...	OL3				1			
42	Maintenance Live 500...	OL4				1			

Load Combinations

	Description	Sol...	PD...	SR...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...
1	DISPLAY ...	Yes	Y		DL	1	20	1					
2	1.4D	Yes	Y		DL	1.4							
3	1.2D + 1.0...	Yes	Y		DL	1.2	4	1	20	1			
4	1.2D + 1.0...	Yes	Y		DL	1.2	5	1	21	1			
5	1.2D + 1.0...	Yes	Y		DL	1.2	6	1	22	1			
6	1.2D + 1.0...	Yes	Y		DL	1.2	7	1	23	1			
7	1.2D + 1.0...	Yes	Y		DL	1.2	8	1	24	1			
8	1.2D + 1.0...	Yes	Y		DL	1.2	9	1	25	1			
9	1.2D + 1.0...	Yes	Y		DL	1.2	10	1	26	1			
10	1.2D + 1.0...	Yes	Y		DL	1.2	11	1	27	1			
11	1.2D + 1.0...	Yes	Y		DL	1.2	4	-1	20	-1			
12	1.2D + 1.0...	Yes	Y		DL	1.2	5	-1	21	-1			
13	1.2D + 1.0...	Yes	Y		DL	1.2	6	-1	22	-1			

Load Combinations (Continued)

	Description	Sol.	PD	SR	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
14	1.2D + 1.0..	Yes	Y		DL 1.2	7	-1	23	-1				
15	1.2D + 1.0..	Yes	Y		DL 1.2	8	-1	24	-1				
16	1.2D + 1.0..	Yes	Y		DL 1.2	9	-1	25	-1				
17	1.2D + 1.0..	Yes	Y		DL 1.2	10	-1	26	-1				
18	1.2D + 1.0..	Yes	Y		DL 1.2	11	-1	27	-1				
19	1.2D + 1.0..	Yes	Y		DL 1.2	12	1	28	1	RL	1		
20	1.2D + 1.0..	Yes	Y		DL 1.2	13	1	29	1	RL	1		
21	1.2D + 1.0..	Yes	Y		DL 1.2	14	1	30	1	RL	1		
22	1.2D + 1.0..	Yes	Y		DL 1.2	15	1	31	1	RL	1		
23	1.2D + 1.0..	Yes	Y		DL 1.2	16	1	32	1	RL	1		
24	1.2D + 1.0..	Yes	Y		DL 1.2	17	1	33	1	RL	1		
25	1.2D + 1.0..	Yes	Y		DL 1.2	18	1	34	1	RL	1		
26	1.2D + 1.0..	Yes	Y		DL 1.2	19	1	35	1	RL	1		
27	1.2D + 1.0..	Yes	Y		DL 1.2	12	-1	28	-1	RL	1		
28	1.2D + 1.0..	Yes	Y		DL 1.2	13	-1	29	-1	RL	1		
29	1.2D + 1.0..	Yes	Y		DL 1.2	14	-1	30	-1	RL	1		
30	1.2D + 1.0..	Yes	Y		DL 1.2	15	-1	31	-1	RL	1		
31	1.2D + 1.0..	Yes	Y		DL 1.2	16	-1	32	-1	RL	1		
32	1.2D + 1.0..	Yes	Y		DL 1.2	17	-1	33	-1	RL	1		
33	1.2D + 1.0..	Yes	Y		DL 1.2	18	-1	34	-1	RL	1		
34	1.2D + 1.0..	Yes	Y		DL 1.2	19	-1	35	-1	RL	1		
35	1.2D + 1.5..	Yes	Y		DL 1.2	4	.052	20	.052	OL1	1.5		
36	1.2D + 1.5..	Yes	Y		DL 1.2	5	.052	21	.052	OL1	1.5		
37	1.2D + 1.5..	Yes	Y		DL 1.2	6	.052	22	.052	OL1	1.5		
38	1.2D + 1.5..	Yes	Y		DL 1.2	7	.052	23	.052	OL1	1.5		
39	1.2D + 1.5..	Yes	Y		DL 1.2	8	.052	24	.052	OL1	1.5		
40	1.2D + 1.5..	Yes	Y		DL 1.2	9	.052	25	.052	OL1	1.5		
41	1.2D + 1.5..	Yes	Y		DL 1.2	10	.052	26	.052	OL1	1.5		
42	1.2D + 1.5..	Yes	Y		DL 1.2	11	.052	27	.052	OL1	1.5		
43	1.2D + 1.5..	Yes	Y		DL 1.2	4	-.052	20	-.052	OL1	1.5		
44	1.2D + 1.5..	Yes	Y		DL 1.2	5	-.052	21	-.052	OL1	1.5		
45	1.2D + 1.5..	Yes	Y		DL 1.2	6	-.052	22	-.052	OL1	1.5		
46	1.2D + 1.5..	Yes	Y		DL 1.2	7	-.052	23	-.052	OL1	1.5		
47	1.2D + 1.5..	Yes	Y		DL 1.2	8	-.052	24	-.052	OL1	1.5		
48	1.2D + 1.5..	Yes	Y		DL 1.2	9	-.052	25	-.052	OL1	1.5		
49	1.2D + 1.5..	Yes	Y		DL 1.2	10	-.052	26	-.052	OL1	1.5		
50	1.2D + 1.5..	Yes	Y		DL 1.2	11	-.052	27	-.052	OL1	1.5		
51	1.2D + 1.5..	Yes	Y		DL 1.2	4	.052	20	.052	OL2	1.5		
52	1.2D + 1.5..	Yes	Y		DL 1.2	5	.052	21	.052	OL2	1.5		
53	1.2D + 1.5..	Yes	Y		DL 1.2	6	.052	22	.052	OL2	1.5		
54	1.2D + 1.5..	Yes	Y		DL 1.2	7	.052	23	.052	OL2	1.5		
55	1.2D + 1.5..	Yes	Y		DL 1.2	8	.052	24	.052	OL2	1.5		
56	1.2D + 1.5..	Yes	Y		DL 1.2	9	.052	25	.052	OL2	1.5		
57	1.2D + 1.5..	Yes	Y		DL 1.2	10	.052	26	.052	OL2	1.5		
58	1.2D + 1.5..	Yes	Y		DL 1.2	11	.052	27	.052	OL2	1.5		
59	1.2D + 1.5..	Yes	Y		DL 1.2	4	-.052	20	-.052	OL2	1.5		
60	1.2D + 1.5..	Yes	Y		DL 1.2	5	-.052	21	-.052	OL2	1.5		
61	1.2D + 1.5..	Yes	Y		DL 1.2	6	-.052	22	-.052	OL2	1.5		
62	1.2D + 1.5..	Yes	Y		DL 1.2	7	-.052	23	-.052	OL2	1.5		
63	1.2D + 1.5..	Yes	Y		DL 1.2	8	-.052	24	-.052	OL2	1.5		
64	1.2D + 1.5..	Yes	Y		DL 1.2	9	-.052	25	-.052	OL2	1.5		
65	1.2D + 1.5..	Yes	Y		DL 1.2	10	-.052	26	-.052	OL2	1.5		
66	1.2D + 1.5..	Yes	Y		DL 1.2	11	-.052	27	-.052	OL2	1.5		
67	1.2D + 1.5..	Yes	Y		DL 1.2	4	.052	20	.052	OL3	1.5		
68	1.2D + 1.5..	Yes	Y		DL 1.2	5	.052	21	.052	OL3	1.5		
69	1.2D + 1.5..	Yes	Y		DL 1.2	6	.052	22	.052	OL3	1.5		
70	1.2D + 1.5..	Yes	Y		DL 1.2	7	.052	23	.052	OL3	1.5		

Load Combinations (Continued)

	Description	Sol.	PD	SR	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
71	1.2D + 1.5..	Yes	Y		DL 1.2	8	.052	24	.052	OL3	1.5			
72	1.2D + 1.5..	Yes	Y		DL 1.2	9	.052	25	.052	OL3	1.5			
73	1.2D + 1.5..	Yes	Y		DL 1.2	10	.052	26	.052	OL3	1.5			
74	1.2D + 1.5..	Yes	Y		DL 1.2	11	.052	27	.052	OL3	1.5			
75	1.2D + 1.5..	Yes	Y		DL 1.2	4	-.052	20	-.052	OL3	1.5			
76	1.2D + 1.5..	Yes	Y		DL 1.2	5	-.052	21	-.052	OL3	1.5			
77	1.2D + 1.5..	Yes	Y		DL 1.2	6	-.052	22	-.052	OL3	1.5			
78	1.2D + 1.5..	Yes	Y		DL 1.2	7	-.052	23	-.052	OL3	1.5			
79	1.2D + 1.5..	Yes	Y		DL 1.2	8	-.052	24	-.052	OL3	1.5			
80	1.2D + 1.5..	Yes	Y		DL 1.2	9	-.052	25	-.052	OL3	1.5			
81	1.2D + 1.5..	Yes	Y		DL 1.2	10	-.052	26	-.052	OL3	1.5			
82	1.2D + 1.5..	Yes	Y		DL 1.2	11	-.052	27	-.052	OL3	1.5			
83	1.2D + 1.5..	Yes	Y		DL 1.2	4	.052	20	.052	OL4	1.5			
84	1.2D + 1.5..	Yes	Y		DL 1.2	5	.052	21	.052	OL4	1.5			
85	1.2D + 1.5..	Yes	Y		DL 1.2	6	.052	22	.052	OL4	1.5			
86	1.2D + 1.5..	Yes	Y		DL 1.2	7	.052	23	.052	OL4	1.5			
87	1.2D + 1.5..	Yes	Y		DL 1.2	8	.052	24	.052	OL4	1.5			
88	1.2D + 1.5..	Yes	Y		DL 1.2	9	.052	25	.052	OL4	1.5			
89	1.2D + 1.5..	Yes	Y		DL 1.2	10	.052	26	.052	OL4	1.5			
90	1.2D + 1.5..	Yes	Y		DL 1.2	11	.052	27	.052	OL4	1.5			
91	1.2D + 1.5..	Yes	Y		DL 1.2	4	-.052	20	-.052	OL4	1.5			
92	1.2D + 1.5..	Yes	Y		DL 1.2	5	-.052	21	-.052	OL4	1.5			
93	1.2D + 1.5..	Yes	Y		DL 1.2	6	-.052	22	-.052	OL4	1.5			
94	1.2D + 1.5..	Yes	Y		DL 1.2	7	-.052	23	-.052	OL4	1.5			
95	1.2D + 1.5..	Yes	Y		DL 1.2	8	-.052	24	-.052	OL4	1.5			
96	1.2D + 1.5..	Yes	Y		DL 1.2	9	-.052	25	-.052	OL4	1.5			
97	1.2D + 1.5..	Yes	Y		DL 1.2	10	-.052	26	-.052	OL4	1.5			
98	1.2D + 1.5..	Yes	Y		DL 1.2	11	-.052	27	-.052	OL4	1.5			

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Platform Horizonta...	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offsett Tube	HSS5x3x3/8"	Beam	None	A500 Gr.B ...	Typical	5.438	7.216	16.856	15.248
3	Mount Pipe	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Grating Angle 3	L2.375x1.25x0.25	Beam	None	A36 Gr.36	Typical	.844	.093	.479	.016
5	Grating Angle 4	L7.25x2.375x0.25	Beam	None	A36 Gr.36	Typical	2.344	.789	12.975	.047
6	Grating Angle 1	L4.75x4.5x0.25	Beam	None	A36 Gr.36	Typical	2.25	4.444	5.077	.045
7	Grating Angle 2	L6.4x4.75x0.25	Beam	None	A36 Gr.36	Typical	2.725	5.633	11.713	.055
8	End Plate Angle	L5x4x0.25	Beam	None	A36 Gr.36	Typical	2.188	3.248	5.631	.044
9	Grating PL 2	PL1.50x0.25	Beam	None	A36 Gr.36	Typical	.375	.002	.07	.007
10	Support Rail	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
11	SR Conn Plate	PL5x0.1875	Beam	None	A36 Gr.36	Typical	.938	.003	1.953	.011
12	SR Conn Angle	L5.50X3.5625X3	Beam	None	A36 Gr.36	Typical	1.664	1.848	5.368	.019
13	MOD Stabilizer	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	.948	.948	.014

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Ivy [in4]	Izz [in4]	J [in4]
14	Conn. PL	PL8.5x3/8	Beam	None	A36 Gr.36	Typical	3.188	.037	19.191	.145
15	Grating Plate 1	PL4.75x0.25	Beam	None	A36 Gr.36	Typical	1.188	.006	2.233	.024
16	Grating Plate 2	PL6.4x0.25	Beam	None	A36 Gr.36	Typical	1.6	.008	5.461	.033

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Offset Tube	70.5			Lbyy						Lateral
2	M8	End Plate A...	3.313			Lbyy			.65	.65		Lateral
3	M11	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
4	M13	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
5	M14	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
6	M22	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
7	M23	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
8	M83C	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
9	M82B	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
10	M83D	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
11	M29	End Plate A...	3.313			Lbyy			.65	.65		Lateral
12	M30	Grating PL 2	36.828						.65	.65		Lateral
13	M31	Grating PL 2	24.556						.65	.65		Lateral
14	M31A	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
15	M32B	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
16	M36A	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
17	M37	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
18	M38	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
19	M43	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
20	M44	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
21	M49	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
22	M50	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
23	M51	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
24	M53	Grating PL 2	36.828						.65	.65		Lateral
25	M54	Grating PL 2	24.556						.65	.65		Lateral
26	M59	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
27	M60	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
28	M66	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
29	M67	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
30	M68	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
31	M73	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
32	M74	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
33	M79	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
34	M80	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
35	M81	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
36	M83	Grating PL 2	36.828						.65	.65		Lateral
37	M84	Grating PL 2	24.556						.65	.65		Lateral
38	M89	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
39	M90	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
40	M95	Platform Ho...	149.999			Lbyy						Lateral
41	M104A	Platform Ho...	149.999			Lbyy						Lateral
42	M105	Platform Ho...	149.999			Lbyy						Lateral
43	M107	Mount Pipe	96			Lbyy						Lateral
44	M109	Mount Pipe	96			Lbyy						Lateral
45	M111	Mount Pipe	96			Lbyy						Lateral
46	M113	Mount Pipe	96			Lbyy						Lateral
47	SR1	Support Rail	150									Lateral
48	SR10	Support Rail	150									Lateral
49	SR19	Support Rail	150									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
50	PR5	MOD Stabili...	67.674									Lateral
51	PR6	MOD Stabili...	67.674									Lateral
52	M212A	MOD Stabili...	67.674									Lateral
53	M213A	MOD Stabili...	67.674									Lateral
54	M218A	MOD Stabili...	67.674									Lateral
55	M219A	MOD Stabili...	67.674									Lateral
56	M224A	Conn. PL	1			Lbyy			.65	.65		Lateral
57	M225	Conn. PL	1			Lbyy			.65	.65		Lateral
58	M224B	Offsett Tube	70.5			Lbyy						Lateral
59	M227A	Conn. PL	1			Lbyy			.65	.65		Lateral
60	M228	Conn. PL	1			Lbyy			.65	.65		Lateral
61	M231	Offsett Tube	70.5			Lbyy						Lateral
62	M234	Conn. PL	1			Lbyy			.65	.65		Lateral
63	M235	Conn. PL	1			Lbyy			.65	.65		Lateral
64	M238	SR Conn Pl...	4									Lateral
65	M226B	SR Conn Pl...	4									Lateral
66	M231A	SR Conn A...	15.399									Lateral
67	M220	SR Conn Pl...	4									Lateral
68	M223	SR Conn Pl...	4									Lateral
69	M228B	SR Conn A...	15.399									Lateral
70	M229B	SR Conn Pl...	4									Lateral
71	M232A	SR Conn Pl...	4									Lateral
72	M237A	SR Conn A...	15.399									Lateral
73	M199	Mount Pipe	96			Lbyy						Lateral
74	M201A	Mount Pipe	96			Lbyy						Lateral
75	M203	Mount Pipe	96			Lbyy						Lateral
76	M205	Mount Pipe	96			Lbyy						Lateral
77	M219	Mount Pipe	96			Lbyy						Lateral
78	M221B	Mount Pipe	96			Lbyy						Lateral
79	M223A	Mount Pipe	96			Lbyy						Lateral
80	M225C	Mount Pipe	96			Lbyy						Lateral
81	M227E	End Plate A...	3.313			Lbyy			.65	.65		Lateral
82	M228D	End Plate A...	3.313			Lbyy			.65	.65		Lateral
83	M233C	End Plate A...	3.313			Lbyy			.65	.65		Lateral
84	M234C	End Plate A...	3.313			Lbyy			.65	.65		Lateral

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N354	max	1900.723	3	4551.656	14	842.956	5	412.971	11	530.379	18	3411.811	18
2		min	-2520.361	11	-3472.979	6	-108.531	13	-1467.858	3	-1020.729	74	-3418.933	10
3	N344	max	5157.737	3	1875.566	15	838.09	10	1099.155	7	1231.645	10	3411.778	7
4		min	-3912.796	11	-1872.516	7	-102.729	18	-951.552	15	-109.669	18	-3418.886	15
5	N338B	max	2162.342	18	3304.32	16	838.023	15	957.74	34	756.785	5	3411.37	12
6		min	-2777.969	10	-4382.237	8	-102.911	7	-26.133	10	-1454.058	13	-3418.467	4
7	N335A	max	1053.027	14	479.589	6	1778.605	14	108.892	5	79.271	6	161.98	18
8		min	-277.017	6	-1824.401	14	-469.492	6	-432.411	13	-254.962	14	-149.939	10
9	N326A	max	553.777	11	140.14	15	1778.625	3	100.607	7	500.238	3	161.961	7
10		min	-2106.516	3	-140.556	7	-469.438	11	-90.77	15	-132.029	11	-149.946	15
11	P5	max	1053.619	8	1824.417	8	1778.856	8	436.083	8	52.744	16	161.951	12
12		min	-276.735	16	-479.537	16	-469.341	16	-121.971	16	-245.29	8	-149.938	4
13	Totals:	max	7387.679	3	7388.103	15	6080.371	26						
14		min	-7387.656	11	-7388.103	7	2549.802	1						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear Che...	Loc[in]	DirLC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M82B	L7.25x2.3...	.150	2.188	6	.822	4.375	z 5	38519...	75945.6	1392.04	12074...	1.. H2-1
2	M80	L7.25x2.3...	.150	2.188	11	.820	4.375	z 11	38519...	75945.6	1392.04	12074...	1.. H2-1
3	M50	L7.25x2.3...	.150	2.187	16	.820	4.375	z 16	38519...	75945.6	1392.04	12074...	1.. H2-1
4	M68	L7.25x2.3...	.391	0	10	.816	2.187	z 11	38519...	75945.6	631.129	5474.5...	2.. H2-1
5	M14	L7.25x2.3...	.391	0	4	.816	2.188	z 6	38519...	75945.6	631.129	5474.5...	2.. H2-1
6	M38	L7.25x2.3...	.391	0	15	.816	2.188	z 16	38519...	75945.6	631.129	5474.5...	2.. H2-1
7	M37	L7.25x2.3...	.230	0	15	.788	0	z 6	38519...	75945.6	631.129	5474.5...	1.. H2-1
8	M67	L7.25x2.3...	.237	0	9	.787	0	z 16	38519...	75945.6	631.129	5474.5...	1.. H2-1
9	M13	L7.25x2.3...	.230	0	4	.787	0	z 11	38519...	75945.6	631.129	5474.5...	1.. H2-1
10	M51	L7.25x2.3...	.323	4.375	7	.780	2.187	z 6	38519...	75945.6	631.129	5474.5...	2.. H2-1
11	M83D	L7.25x2.3...	.323	4.375	12	.780	2.187	z 11	38519...	75945.6	631.129	5474.5...	2.. H2-1
12	M81	L7.25x2.3...	.323	4.375	18	.780	2.188	z 16	38519...	75945.6	631.129	5474.5...	2.. H2-1
13	SR1	PIPE 2.0	.621	7.895	5	.484	138.158	17	6295.4...	32130	1871.6...	1871.6...	3.. H1-1a
14	SR19	PIPE 2.0	.597	7.895	11	.468	138.158	6	6295.4...	32130	1871.6...	1871.6...	3.. H1-1a
15	SR10	PIPE 2.0	.598	7.895	16	.468	138.158	11	6295.4...	32130	1871.6...	1871.6...	3.. H1-1a
16	M107	PIPE 2.0	.659	65.684	13	.221	65.684	9	14916...	32130	1871.6...	1871.6...	3.. H1-1b
17	M219	PIPE 2.0	.657	65.684	18	.214	65.684	15	14916...	32130	1871.6...	1871.6...	3.. H1-1b
18	M199	PIPE 2.0	.657	65.684	7	.214	65.684	4	14916...	32130	1871.6...	1871.6...	3.. H1-1b
19	M238	PL5x0.18...	.143	.842	9	.213	2.737	y 9	17775...	30375	118.652	3164.0...	1.. H1-1b
20	M229B	PL5x0.18...	.142	.842	15	.205	2.737	y 14	17775...	30375	118.652	3164.0...	1.. H1-1b
21	M220	PL5x0.18...	.142	.842	4	.205	2.737	y 3	17775...	30375	118.652	3164.0...	1.. H1-1b
22	M201A	PIPE 2.0	.510	65.684	14	.176	65.684	9	14916...	32130	1871.6...	1871.6...	2.. H1-1b
23	M109	PIPE 2.0	.511	65.684	3	.176	65.684	15	14916...	32130	1871.6...	1871.6...	2.. H1-1b
24	M221B	PIPE 2.0	.513	65.684	9	.176	65.684	4	14916...	32130	1871.6...	1871.6...	2.. H1-1b
25	M203	PIPE 2.0	.557	65.684	3	.164	68.211	5	14916...	32130	1871.6...	1871.6...	1.. H1-1b
26	M111	PIPE 2.0	.557	65.684	8	.157	68.211	11	14916...	32130	1871.6...	1871.6...	1.. H1-1b
27	M223A	PIPE 2.0	.557	65.684	14	.157	68.211	16	14916...	32130	1871.6...	1871.6...	1.. H1-1b
28	M205	PIPE 2.0	.626	65.684	15	.147	65.684	12	14916...	32130	1871.6...	1871.6...	2.. H1-1b
29	M225C	PIPE 2.0	.626	65.684	10	.147	65.684	7	14916...	32130	1871.6...	1871.6...	2.. H1-1b
30	M113	PIPE 2.0	.628	65.684	5	.147	65.684	18	14916...	32130	1871.6...	1871.6...	2.. H1-1b
31	M232A	PL5x0.18...	.172	.842	13	.142	.842	y 17	17775...	30375	118.652	3164.0...	1.. H1-1b*
32	M223	PL5x0.18...	.166	.842	3	.138	.842	y 6	17775...	30375	118.652	3164.0...	1.. H1-1b*
33	M226B	PL5x0.18...	.166	.842	8	.138	.842	y 11	17775...	30375	118.652	3164.0...	1.. H1-1b*
34	M228D	L5x4x0.25	.158	3.313	7	.137	3.313	z 13	57000...	70875	2842.6...	6820.0...	1.. H2-1
35	M231A	L5.50X3.5...	.463	0	18	.136	0	y 17	26491...	53915...	966.11	2943.7...	1.. H2-1
36	M237A	L5.50X3.5...	.463	0	7	.134	15.399	z 6	26491...	53915...	966.11	2943.7...	1.. H2-1
37	M228B	L5.50X3.5...	.476	0	13	.134	15.399	z 11	26491...	53915...	966.11	2943.7...	2.. H2-1
38	M234C	L5x4x0.25	.158	3.313	18	.134	3.313	z 8	57000...	70875	2842.6...	6820.0...	1.. H2-1
39	M29	L5x4x0.25	.158	3.313	12	.134	3.313	z 3	57000...	70875	2842.6...	6820.0...	1.. H2-1
40	M225	PL8.5x3/8	.162	0	12	.128	0	y 13	84967...	103275	806.836	18288...	1.. H1-1b
41	M235	PL8.5x3/8	.162	0	18	.126	0	y 18	84967...	103275	806.836	18288...	1.. H1-1b
42	M228	PL8.5x3/8	.162	0	7	.126	0	y 7	84967...	103275	806.836	18288...	1.. H1-1b
43	M231	HSS5x3x...	.203	0	18	.122	0	z 18	16330...	20553...	18493...	27058...	1.. H1-1b
44	M224B	HSS5x3x...	.203	0	7	.122	0	z 7	16330...	20553...	18493...	27058...	1.. H1-1b
45	M1	HSS5x3x...	.203	0	12	.122	0	z 12	16330...	20553...	18493...	27058...	1.. H1-1b
46	M234	PL8.5x3/8	.146	0	10	.112	1	y 18	84967...	103275	806.836	18288...	1.. H1-1b
47	M227A	PL8.5x3/8	.146	0	15	.112	1	y 7	84967...	103275	806.836	18288...	1.. H1-1b
48	M224A	PL8.5x3/8	.146	0	4	.112	1	y 12	84967...	103275	806.836	18288...	1.. H1-1b
49	M227E	L5x4x0.25	.199	0	15	.109	0	z 9	57000...	70875	2842.6...	6820.0...	1.. H2-1
50	M8	L5x4x0.25	.199	0	4	.109	0	z 15	57000...	70875	2842.6...	6820.0...	1.. H2-1
51	M233C	L5x4x0.25	.199	0	10	.109	0	z 4	57000...	70875	2842.6...	6820.0...	1.. H2-1
52	M95	PIPE 3.0	.172	134.209	3	.098	43.421	17	28250...	65205	5748.75	5748.75	2.. H1-1b
53	M105	PIPE 3.0	.175	134.209	9	.097	43.421	6	28250...	65205	5748.75	5748.75	2.. H1-1b
54	M104A	PIPE 3.0	.172	134.209	14	.097	43.421	11	28250...	65205	5748.75	5748.75	2.. H1-1b
55	M23	L2.375x1...	.432	0	10	.083	10.236	y 11	19702...	27345.6	330.185	1354.4...	2.. H2-1
56	M44	L2.375x1...	.443	0	5	.083	10.236	y 6	19702...	27345.6	330.185	1354.4...	2.. H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear Che...	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...Cb	Eqn
57	M74	L2.375x1...	.432	0	15	.083	10.236	y	16	19702...	27345.6	330.185	1354.4...2... H2-1
58	M73	L2.375x1...	.421	32.414	12	.081	22.178	y	11	19702...	27345.6	330.185	1349.8...2... H2-1
59	M22	L2.375x1...	.421	32.414	7	.081	22.178	y	6	19702...	27345.6	330.185	1349.8...2... H2-1
60	M43	L2.375x1...	.426	32.414	17	.081	22.178	y	16	19702...	27345.6	330.185	1348.6...2... H2-1
61	M54	PL1.50x0...	.470	24.556	13	.063	12.278	y	7	1731.8...	12150	63.283	379.688...2... H1-1a
62	M31	PL1.50x0...	.466	24.556	3	.063	12.278	y	12	1731.8...	12150	63.283	379.688...2... H1-1a
63	M84	PL1.50x0...	.466	24.556	8	.063	12.278	y	18	1731.8...	12150	63.283	379.688...2... H1-1a
64	M83C	L6.4x4.75...	.125	6.406	6	.062	6.406	z	13	57754...	88290	2962.2...	7667.7...1... H2-1
65	M49	L6.4x4.75...	.125	6.406	16	.062	0	z	7	57754...	88290	2962.2...	7667.7...1... H2-1
66	M79	L6.4x4.75...	.125	6.406	11	.062	.337	z	18	57754...	88290	2962.2...	7667.7...1... H2-1
67	M66	L6.4x4.75...	.129	0	17	.061	0	z	9	57754...	88290	2962.2...	7667.7...1... H2-1
68	M36A	L6.4x4.75...	.129	0	6	.061	0	z	14	57754...	88290	2962.2...	7667.7...1... H2-1
69	M11	L6.4x4.75...	.129	0	11	.061	0	z	3	57754...	88290	2962.2...	7667.7...1... H2-1
70	M89	L4.75x4.5...	.294	0	79	.052	0	z	79	60192...	72900	4381.6...	8212.7...1... H2-1
71	M32B	L4.75x4.5...	.295	17.5	61	.052	17.5	z	61	60192...	72900	4381.6...	8212.7...1... H2-1
72	M60	L4.75x4.5...	.263	17.5	24	.051	17.5	z	24	60192...	72900	4381.6...	8212.7...1... H2-1
73	M90	L4.75x4.5...	.263	17.5	19	.051	17.5	z	19	60192...	72900	4381.6...	8212.7...1... H2-1
74	M30	PL1.50x0...	.288	18.414	15	.049	18.414	y	5	769.952	12150	63.283	379.688...1... H1-1a
75	M53	PL1.50x0...	.290	18.414	9	.049	18.414	y	16	769.952	12150	63.283	379.688...1... H1-1a
76	M83	PL1.50x0...	.288	18.414	4	.049	18.414	y	11	769.952	12150	63.283	379.688...1... H1-1a
77	M31A	L4.75x4.5...	.235	0	27	.047	0	z	24	60192...	72900	4381.6...	8212.7...1... H2-1
78	M59	L4.75x4.5...	.235	0	21	.047	0	z	19	60192...	72900	4381.6...	8212.7...1... H2-1
79	M213A	L3X3X3	.175	33.837	15	.010	0	y	7	16982...	35316	1320.0...	2354.7...1... H2-1
80	M212A	L3X3X3	.170	33.837	7	.010	67.674	z	7	16982...	35316	1320.0...	2354.7...1... H2-1
81	PR5	L3X3X3	.170	33.837	12	.010	67.674	z	12	16982...	35316	1320.0...	2354.7...1... H2-1
82	PR6	L3X3X3	.181	33.837	5	.010	0	y	12	16982...	35316	1320.0...	2354.7...1... H2-1
83	M219A	L3X3X3	.175	33.837	10	.010	0	y	18	16982...	35316	1320.0...	2354.7...1... H2-1
84	M218A	L3X3X3	.170	33.837	17	.010	67.674	z	18	16982...	35316	1320.0...	2354.7...1... H2-1

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

T-Mobile Existing Facility

Site ID: CTNL803A

Amtrak_OldLyme4
232 Shore Road
Old Lyme, Connecticut 06371

June 13, 2019

EBI Project Number: 6219002203

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	17.72%

June 13, 2019

T-Mobile

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

Emissions Analysis for Site: CTNL803A - Amtrak_OldLyme4

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **232 Shore 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 232 Shore Road in Old Lyme, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. 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, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 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.
- 7) 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, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 8) The antennas used in this modeling are the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 1900 MHz / 1900 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, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 9) The antenna mounting height centerline of the proposed antennas is 99 feet above ground level (AGL).
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 11) All calculations were done 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:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	99 feet	Height (AGL):	99 feet	Height (AGL):	99 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A1 MPE %:	1.51%	Antenna B1 MPE %:	1.51%	Antenna C1 MPE %:	1.51%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	99 feet	Height (AGL):	99 feet	Height (AGL):	99 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	2.10%	Antenna B2 MPE %:	2.10%	Antenna C2 MPE %:	2.10%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	99 feet	Height (AGL):	99 feet	Height (AGL):	99 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A3 MPE %:	2.26%	Antenna B3 MPE %:	2.26%	Antenna C3 MPE %:	2.26%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	5.88%
Verizon	9.56%
AT&T	2.28%
Site Total MPE % :	17.72%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.88%
T-Mobile Sector B Total:	5.88%
T-Mobile Sector C Total:	5.88%
Site Total MPE % :	17.72%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz LTE	2	2056.61	99.0	15.09	2100 MHz LTE	1000	1.51%
T-Mobile 600 MHz LTE	2	591.73	99.0	4.34	600 MHz LTE	400	1.09%
T-Mobile 700 MHz LTE	2	648.82	99.0	4.76	700 MHz LTE	467	1.02%
T-Mobile 1900 MHz GSM	4	1028.30	99.0	15.09	1900 MHz GSM	1000	1.51%
T-Mobile 1900 MHz UMTS	2	1028.30	99.0	7.54	1900 MHz UMTS	1000	0.75%
						Total:	5.88%

• 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:	5.88%
Sector B:	5.88%
Sector C:	5.88%
T-Mobile Maximum MPE % (Sector A):	5.88%
Site Total:	17.72%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **17.72%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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