NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

May 25, 2022

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

RE: Tower Share Application
651 Paddock Avenue, Meriden, CT 06451
Latitude: 41.512761
Longitude: -72.779458
Site #: CT13069-A_BOHVN00044A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 651 Paddock Avenue, Meriden, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 87-foot level of the existing 119-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated March 25, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated April 27, 2022, confirming that the existing tower will be structurally capable of supporting the proposed equipment once the proposed tower modifications are completed. Attached as Exhibit D. The facility was originally approved by the Connecticut Siting Council, Docket No. 329 on December 10, 2015. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Kevin Scarpati, Timothy Coon, City Manager and Paul Dickson, Acting Director of Planning, Development & Enforcement for the City of Meriden, as well as the tower owner (SBA) and property owner (First Assembly of God Church).

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 119-feet and the Dish Wireless LLC antennas will be located at a center line height of 87-feet.

2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 54.09% as evidenced by Exhibit F.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish Wireless LLC respectfully submits that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole tower in Meriden. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 87-foot level of the existing 119-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Meriden.

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Mayor Kevin Scarpati
Meriden City Hall
142 East Main Street
Meriden, CT 06450

Timothy Coon, City Manager
Meriden City Hall
142 East Main Street
Meriden, CT 06450

Paul Dickson, Acting Director of Planning, Development & Enforcement
Meriden City Hall
142 East Main Street
Meriden, CT 06450

First Assembly of God Church – Property Owner
PO Box 2777
Meriden, CT 06450

SBA - Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 329 – SBA Infrastructure LLC Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at Paddock Avenue in Meriden, Connecticut.	}	Connecticut
	}	Siting
	}	Council

December 10, 2015

Decision and Order

In response to the Connecticut Siting Council's (Council) reopening of the record in this docket on December 10, 2015 to consider whether changed conditions exist that would warrant a modification to the original Decision and Order's Condition 2 eliminating the requirement that all antennas on this telecommunications facility must be flush-mounted, the Council hereby rescinds the Decision and Order in Docket 329 issued on August 29, 2007 and issues this new Decision and Order for the construction, maintenance and operation of a telecommunications facility located at 651 Paddock Road, Meriden, Connecticut.

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 designed as a steel monopole and shall be constructed no taller than 120 feet above ground level to provide telecommunications services to both public and private entities.

2. 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 City of Meriden 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, color of the tower (to be determined after consultation with the property owner and the City of Meriden), antenna mountings, equipment building, access road, utility line, and landscaping; and

   b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of 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 electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. 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.

5. 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.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Meriden public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services 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.

8. Any request for extension of the time period referred to in Condition 7 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 City of Meriden. Any proposed modifications to this Decision and Order shall likewise be so served.

9. 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.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. 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.

We hereby direct that a copy of the Staff report and reissued Decision and Order be served on each person listed in the Service List, dated November 6, 2015, and notice of issuance published in Meriden Record Journal.

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.

Exhibit B

Property Card

CITY OF MERIDEN
GIS Services

DISCLAIMER: The City of Meriden maintains this website to enhance public access to the City's tax assessment information. However, this information is continually being developed and is subject to change. The data presented here is not legally binding on the City of Meriden or any of its departments. This website reflects the best information available to the City Assessor and it should not be construed as confirming or denying the existence of any permits, licenses, or other such rights. The City of Meriden shall not be liable for any loss, damages, or claims that arise out of the user's access to, and use of, this information.

THE USER IS RESPONSIBLE FOR CHECKING THE ACCURACY OF ALL INFORMATION OBTAINED WITH THE APPROPRIATE CITY DEPARTMENT AND TO COMPLY WITH ALL CURRENT LAWS, RULES, REGULATIONS, ORDINANCES, PROCEDURES, AND GUIDELINES.

PROPERTY INFORMATION

Location: **651 PADDOCK AVE** Map/Lot: 0906-098D-0020-0005

OWNER INFORMATION

Owner(s):
FIRST ASSEMBLY OF GOD CHURCH OF MERIDEN INC

Owner Address:
PO BOX 2777
MERIDEN, CT 06450

BUILDING INFORMATION

Card Number: 1

OVERVIEW	
Building ID	14581
Finished Area	14,480
Comm/Rental Units	1
Living Units	0
Building Type	Church
Year Built	1968
Effective Yr Built	
Building Number	1

INTERIOR DETAILS	
Rooms	
BedRooms	
Full Bath	0
Full Bath Rating	
Half Bath	0
Half Bath Rating	
Kitchens	0
Kitchen Rating	
Fireplaces	0

CONSTRUCTION DETAILS	
Exterior	Brick
Roof Structure	Gable
Roof Cover	Asphalt
Quality	C
Heat Fuel	Oil
Heat Type	Forced Air
Prcnt. Heated	100.00
Prcnt. AC	0.00
Stories	1 story
Foundation	Concrete

Building Area Summary

Building ID	Description	Total Area	Finished Area	Perimeter
14581	1st FLOOR	7,240	7,240	488
14581	BASE AREA	7,240	7,240	488
14581	ENCL PORCH	120	0	46
14581	ENCL PORCH	448	0	88
14581	ENCL PORCH	448	0	88
14581	Open Area	1,008	0	128
14581	OPEN PORCH	40	0	28
	TOTALS	16,544 sqft	14,480 sqft	

Outbuildings & Special Features

BuildingID	Description	Quantity	Area	Length	Width	YearBuilt	Quality
14581	PAVING-ASPT	1	17,000			1990	Average
14581	SHED FRAME	1	140	10	14	1968	Average
14581	CELL TOWER		1				Average

APPRAISAL INFORMATION

Grand List Year: 2021

Land Appraised	Building Appraised	Outbuilding Appraised	Total Appraised Value	Land Assessed	Building Assessed	Outbuilding Assessed	Special Land Value	Total Assessed Value
$213,800	$961,400	$232,300	$1,407,500	$149,660	$672,980	$162,610	$0	$985,250

Previous Year: 2020

Land Appraised	Building Appraised	Outbuilding Appraised	Appraised Value	Land Assesed	Building Assessed	Outbuilding Assessed	Assessed Value
$169,000	$876,800	$31,100	$1,076,900	$118,300	$613,760	$21,770	**$753,830**

LAND INFORMATION

Land Use	Zoning	Land Area	Code	Neighborhood Description
Tax Exempt	S-R	3.49000	E2	E. SIDE BTWEEN WIL.CRS & 91

*Confirm zoning with Planning Office.
Zoning map is the official document to determine zone.

SALES INFORMATION

Sale Date	Sale Price	Book	Page	Grantor	Grantee	Deed Type
11/12/2010	$12,000	4540	0088		FIRST ASSEMBLY OF GOD CHURCH	Warranty
6/26/1967	$0	487	16		FIRST ASSEMBLY OF GOD CHURCH	
6/26/1967	$0	487	16		FIRST ASSEMBLY OF GOD CHURCH	

ASSESSOR'S PERMIT HISTORY

ADVISORY: Residents should not use Assessor Field Cards on the City of Meriden's GIS website to determine the status of building permits. Field cards on GIS do not list building permit status. The building department is the ONLY place where citizens can determine whether a building permit is open

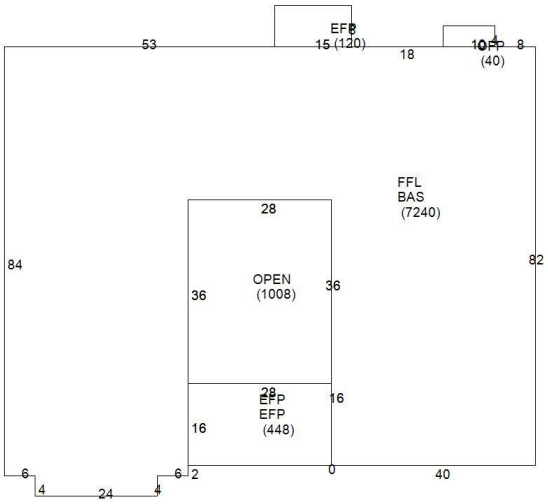
building department is the ONLY place where citizens can determine whether a building permit is open or not. For a record of all permits and their status, homeowners and title searchers who need to check permits when selling a home are welcome to contact the Building Department at 203-630-4091.

Date	Permit#	Description	Permit Type	Cost
11/10/2004	4376	SIDING ON HOUSE	RA	$7,750
6/1/2006	2048	10'X16' STORAGE SHED	RA	$2,944
10/25/2007	3561	SERVICE UPGRADE TO 200A- RELOCATE SERVICE ENTRANCE CRS#1018499		$0
11/26/2007	4079	CONSTRUCTION OF WIRELESS TELECOMMUNICATIONS FACILITY AND OMNIPOINT COMMUNICATIONS INC ANTENNAS AND EQUIPMENT		$0
12/26/2007	4348	CELL TOWER:INSTALL UG UTILITIES FOR 800A MULTI-METER CENTER INSTALL GROUND GRID AND 200A FEEDER TO PAD MOUNTED T-MOBILE EQUIPMENT		$0
6/10/2008	1778	INSTALL ANTENNAS ON EXISTING TOWER AND ADD RADIO EQUIPMENT BUILDING TO COMPOUND 12X30 PREFAB		$0
6/24/2008	1976	INSTALL 200A UG SERVICE AND TEL/COM WIRING TO A 12X30 MODULAR BUILDING		$0
8/26/2008	2675	CELL TOWER INSTALL 1-100A SERVICE FOR NEW AT&T EQUIPMENT		$0
10/22/2008	3328	INSTALL 1000 GAL PROPANE TANK & GAS LINE PER NFPA 54 & 58		
5/27/2009	1584			
12/28/2009	3843	INSTALL 8` OLYPIA CHIMNEY LINER FOR EXISTING WOODSTOVE		
1/26/2010	160	CLEARWIRE ADDING ANTENNA`S TO EXISTING TELECOMMUNICATIONS TOWER PER PLANS AND TO CODE	C	$15,001
5/18/2010	1383	"Clearwire" cell site. Install 100a. service per code. CRS#1469392	C	$2,000
2/23/2011	496	FIRE ALARM SYSTEM UPGRADE WITH REPLACEMENT OF PANEL AND DEVICES.		$7,150
4/27/2011	1269	BONDING OF CSST GAS PIPING PER CODE.		$300
7/3/2012	2110	REPLACE EXISTING CHURCH STEEPLE WITH SIMILAR STRUCTURE TO CODE	C	$4,100
12/21/2012	3964	VERIZON WIRELESS - REPLACING 3 EXISTING ANTENNAS WITH 9 NEWER MODEL ANTENNAS		$20,000

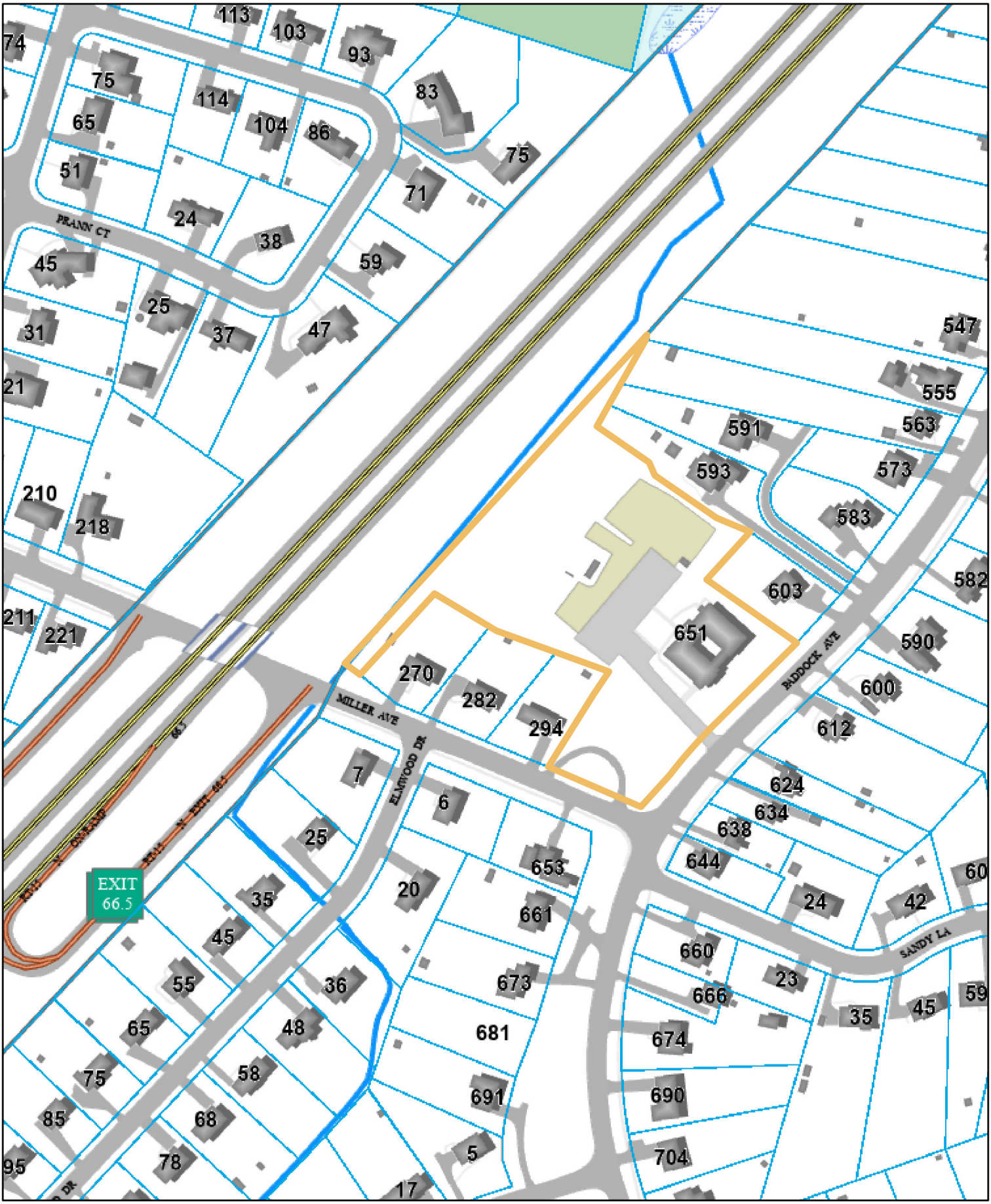
		ANTENNAS		
4/29/2014	1147	INSTALL LOW VOLTAGE CCTV CAMERA SYS		$6,700
5/9/2014	1283	REPLACE CELL ANTENNAS & EQUIPMENT.		$15,000
7/1/2014	1969	ADD ANTENNA`S TO TOWER.		$15,000
8/25/2014	2536			$12,000
12/30/2014	B-14-259	NEW SIGN/6X3.		$125
5/18/2015	B-15-275			$3,000
2/26/2016	E-16-94	CAMERAS INSTALLED.Approved by Bldg Dept.		$2,000
11/21/2016	B-16-1135	ANTENNAE PANELS REPLACED W/NEW MODELS.		$15,000
8/22/2017	B-17-685	9/15/17 - 3 DAY FUNCTION.POLE TENT 40X60.ALSO E-17-472 FOR THE ELECTRIC FOR TENT.		$1,000
8/22/2017	B-17-685	POLE TENT 40X60 FOR 3DAY EVENT 9/15/17.		$1,000
8/22/2017	E-17-472	ELECTRIC FOR TEMP TENT.3 DAY EVENT 9/15/17.		$1,000
1/22/2018	B-18-42	REPLACE 3 EXISTING ANTENNA W/3 NEWER TECHNOLOGY CELL ANTENNA AND ASSOCIATED EQUIPMENT.NO CHANGE TO TOWER. 7/10/18 EST COMPLETE N/C MM.		$25,000
4/27/2018	B-18-209	INSTALL 3 REPLACEMENT ANTENNAS. 7/10/18 EST COMPLETE N/C MM.		$15,000
7/26/2021	M21-2156		MECHANICAL PERMIT	$8,000
7/26/2021	M21-2156		MECHANICAL	$8,000
9/13/2021	B21-1934		COMMERCIAL RENOVATIONS	$3,000
9/17/2021	E21-1933		ELECTRICAL	$17,000
9/17/2021	E21-1933		ELECTRICAL PERMIT	$17,000

PROPERTY IMAGES

1 2 3



14583
0906-098D-0020-0005
1



CITY OF MERIDEN
GIS Services, MIS Department
142 East Main St, Meriden, CT
203-630-4148

CITY OF MERIDEN, CT GIS

651 PADDOCK AVE

1:2,400

Date: 5/25/2022

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00044A

DISH Wireless L.L.C. SITE ADDRESS:

651 PADDOCK AVENUE MERIDEN, CT 06451

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF THE TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:

- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:

- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE INFORMATION

PROPERTY OWNER:	FIRST ASSEMBLY OF GOD CHURCH OF MERIDEN INC
ADDRESS:	N/A N/A
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT13069-A
TOWER APP NUMBER:	168287
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 30' 45.9" N 41.512750
LONGITUDE (NAD 83):	72° 46' 46.0" W -72.77944933
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	RESIDENTIAL
PARCEL NUMBER:	0906-098D-0020-0005
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	T.B.D.
TELEPHONE COMPANY:	CROWN CASTLE

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH RYAN.LYNCH@DISH.COM
CONST. MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	SYED ZAIDI SYED.ZAIDI@DISH.COM

CONNECTICUT CODE OF COMPLIANCE

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SITE PHOTO

DIRECTIONS

DIRECTIONS FROM MERIDEN MARKHAM MUNICIPAL AIRPORT:

TAKE HANOVER ST, OAK ST AND CT-71 S TO US-5 S IN WALLINGFORD, HEAD EAST TOWARD EVANSVILLE AVE. TURN RIGHT ONTO EVANSVILLE AVE, CONTINUE ONTO HANOVER ST. TURN LEFT ONTO OAK ST, TURN RIGHT ONTO CT-71 S. TURN LEFT ONTO CT-150 N/CT-71 S, TURN RIGHT ONTO OLD NORTH COLONY RD. DRIVE TO CT-15 N IN MERIDEN. CONTINUE STRAIGHT ONTO US-5 S, TURN LEFT TO MERGE WITH CT-15 N TOWARD HARTFORD, ARRIVE AT BOHVN00044A.

SHEET INDEX

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

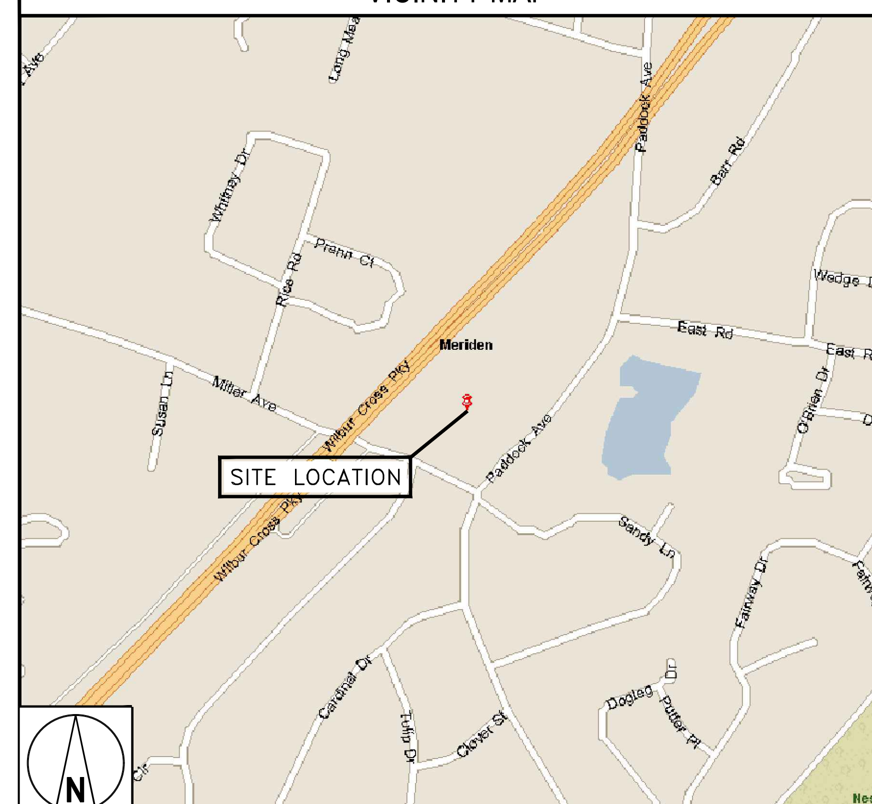
GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

VICINITY MAP

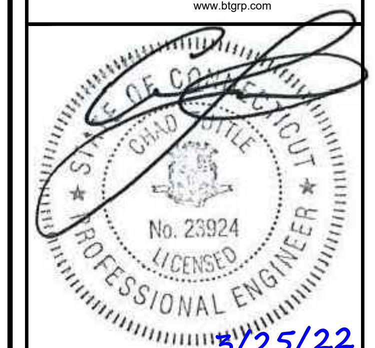


NO SCALE

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149462.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

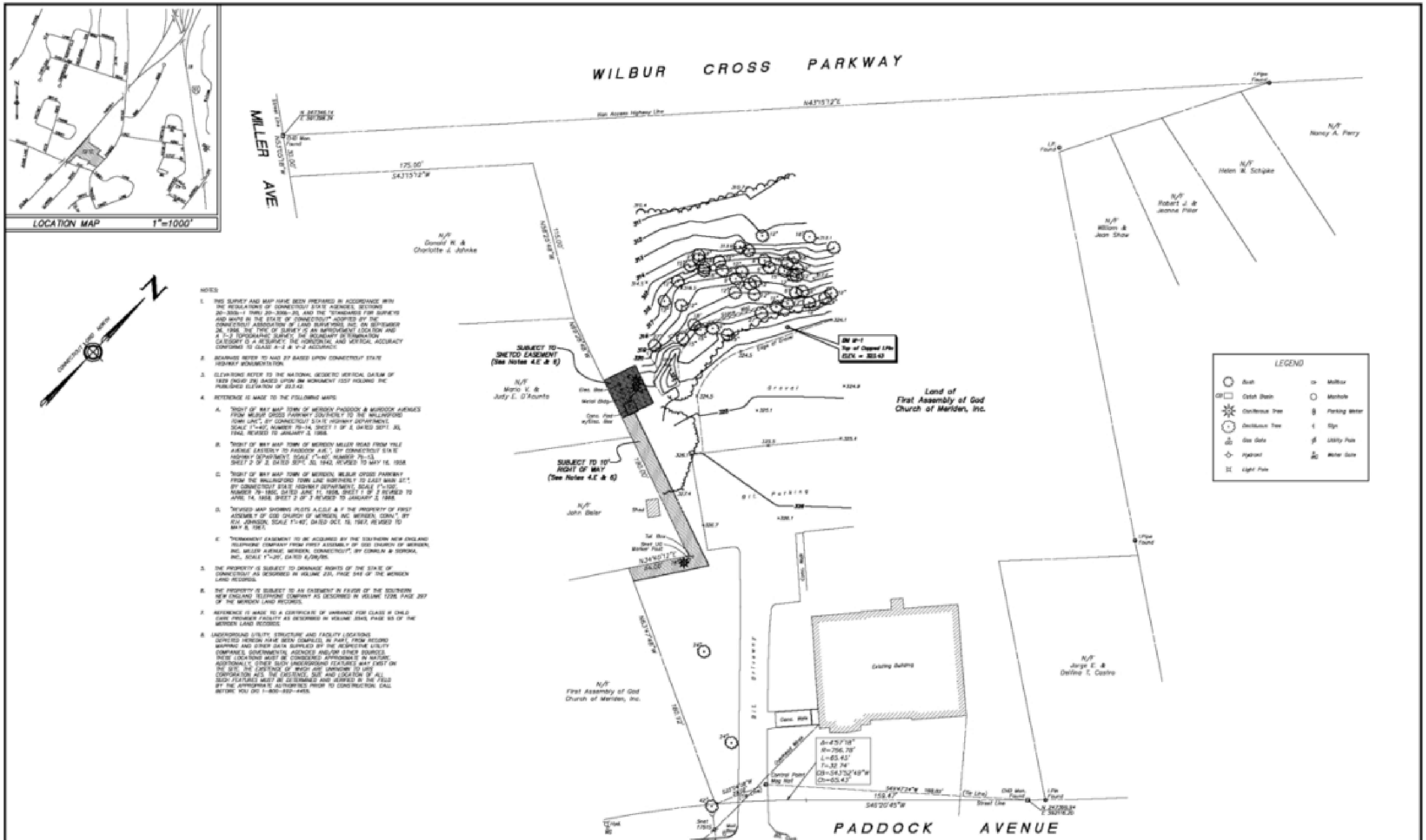
BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY
LAND OF
FIRST ASSEMBLY OF GOD CHURCH OF MERIDEN, INC.
651 PADDOCK AVENUE
MERIDEN, CONNECTICUT
PREPARED FOR
OPTASITE

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

3/25/22

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149462.001.01

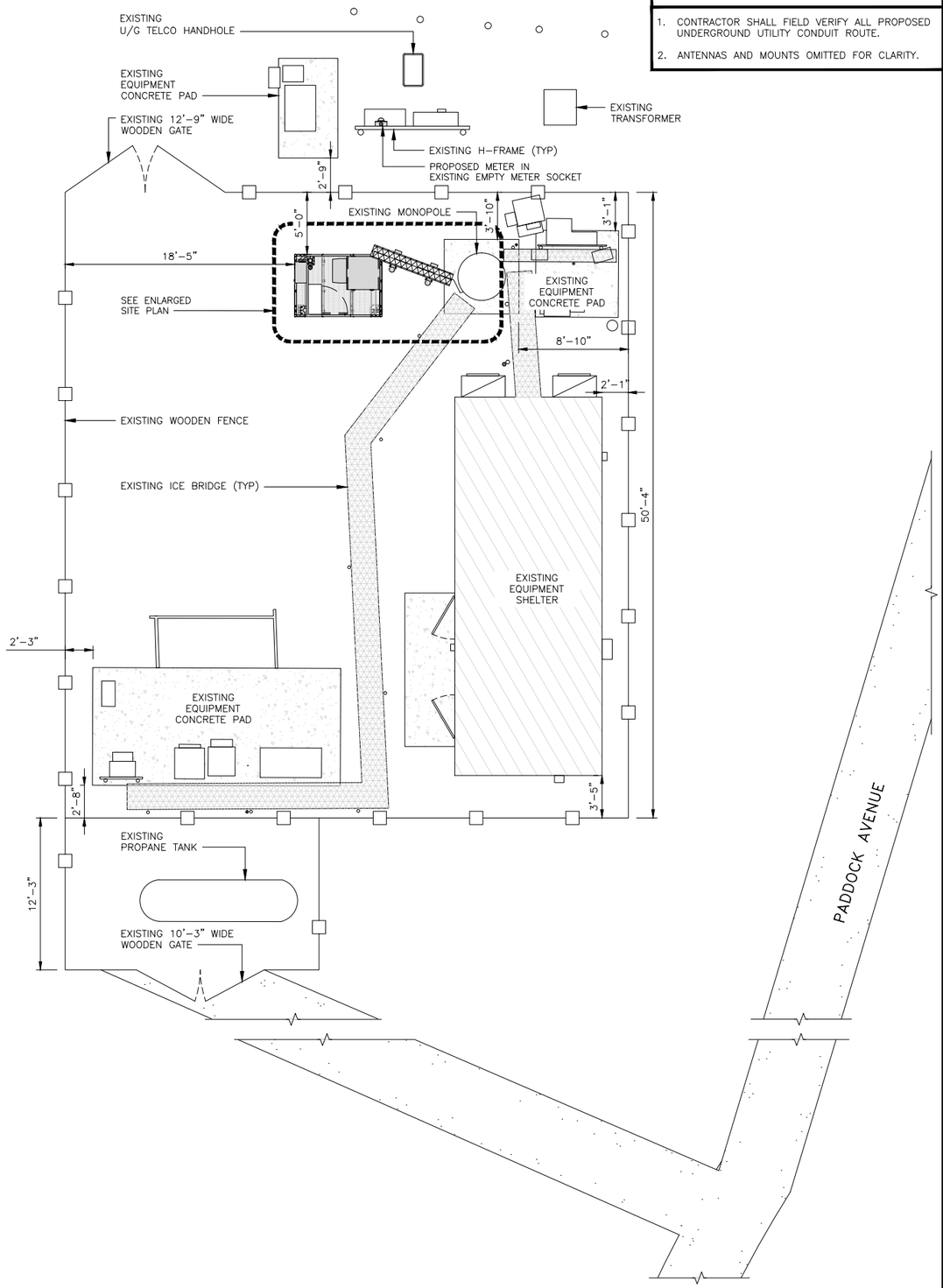
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE
TITLE SHEET

SHEET NUMBER
LS1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



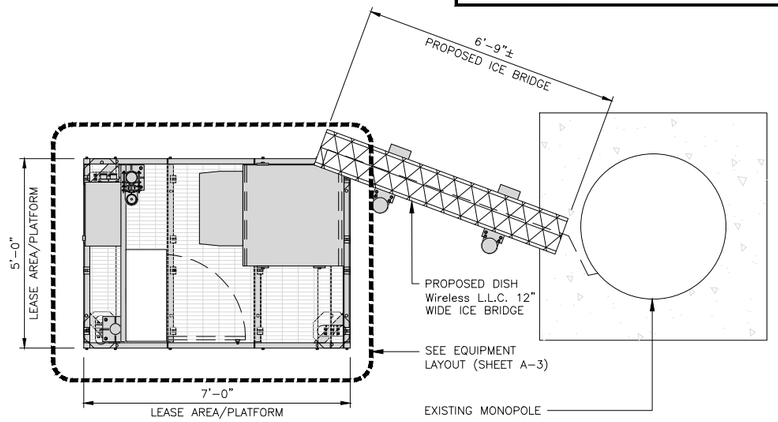
OVERALL SITE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



N

ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2

NOT USED

NO SCALE

3

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CHAD E. TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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PROJECT INFORMATION

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MERIDEN, CT 06451

SHEET TITLE

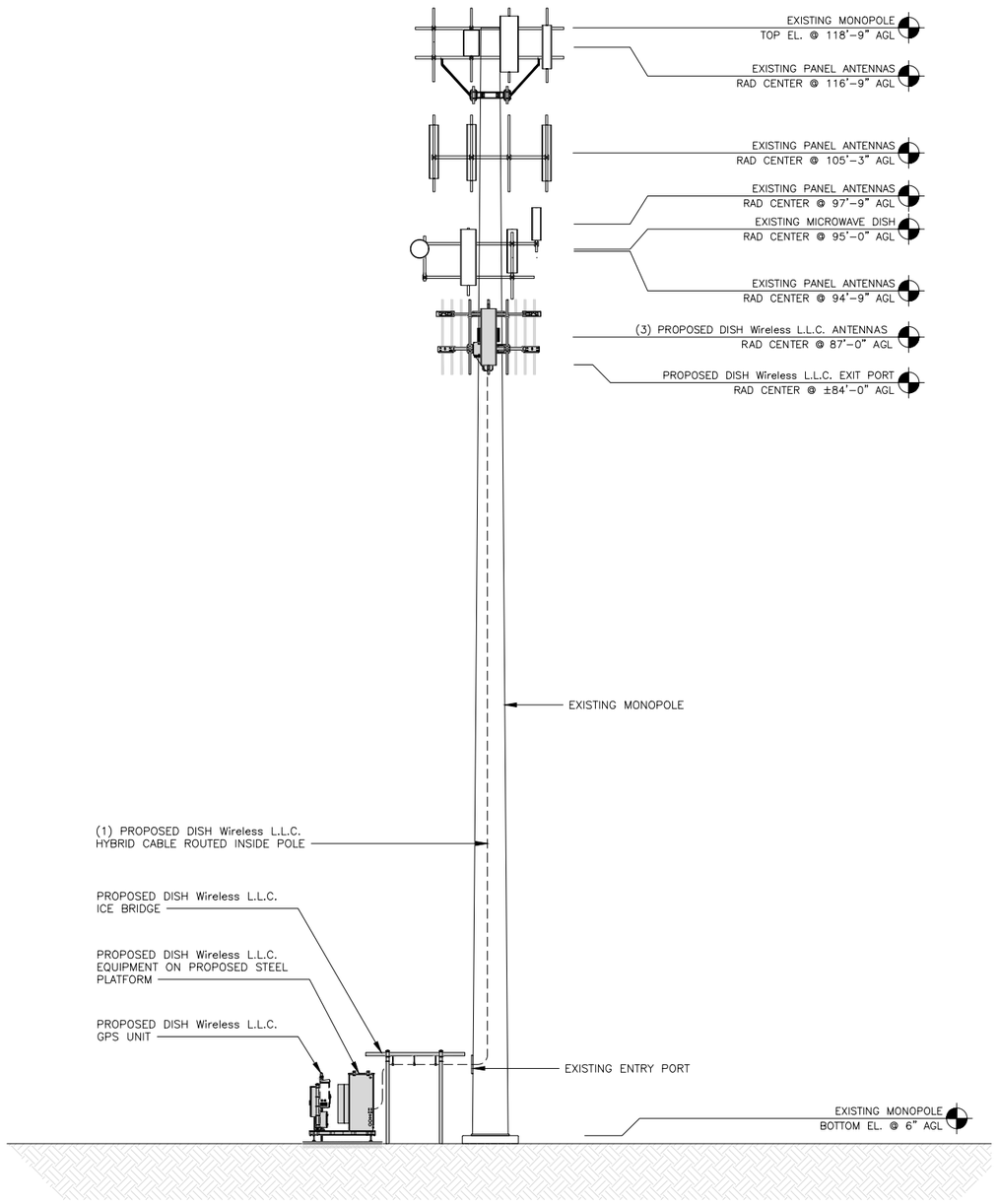
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED WEST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1

N

ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A2	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	87'-0"	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
BETA	B2	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	87'-0"	
GAMMA	G2	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	87'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A2		
	A2		
BETA	B2		
	B2		
GAMMA	G2		
	G2		

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

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PROJECT INFORMATION

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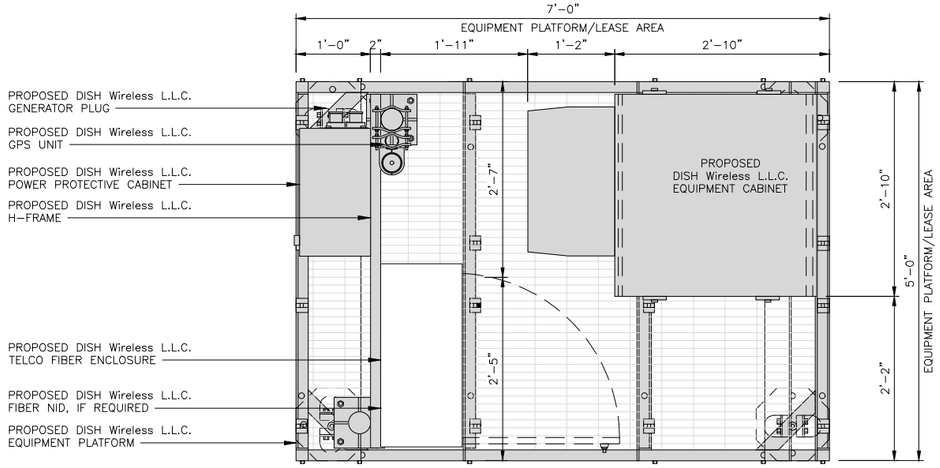
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



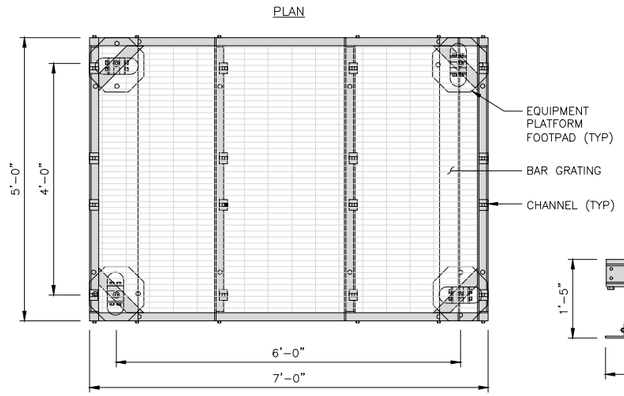
PLATFORM EQUIPMENT PLAN

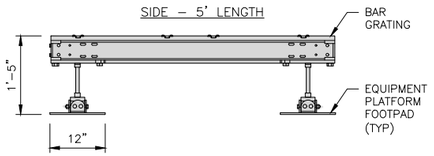
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"



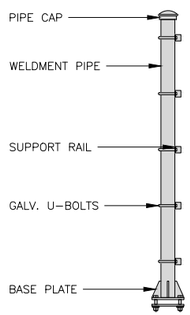


PLATFORM DETAIL

NO SCALE

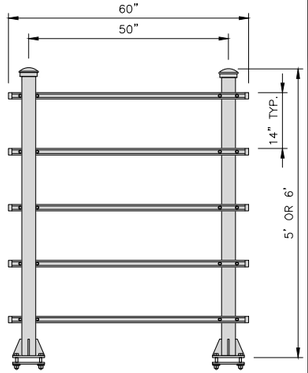
2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



SIDE

NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT



FRONT

H-FRAME DETAIL

NO SCALE

3

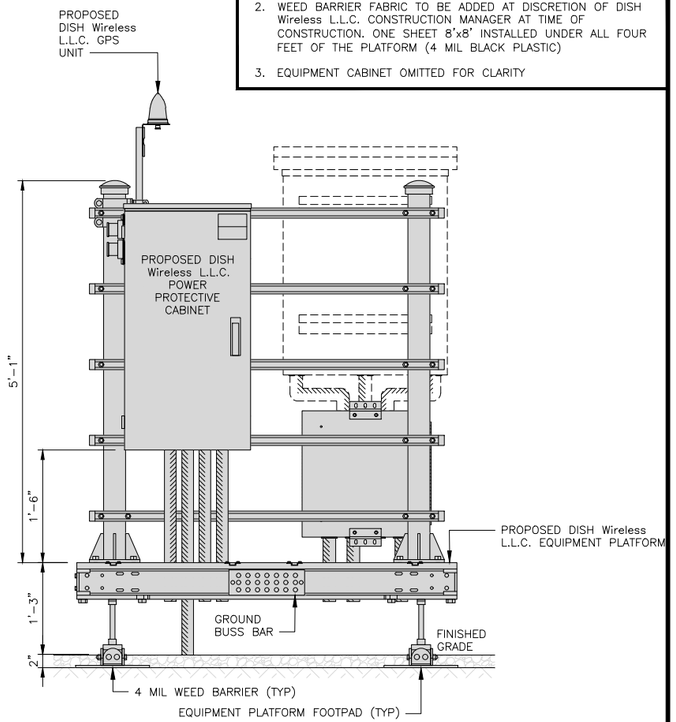
NOT USED

NO SCALE

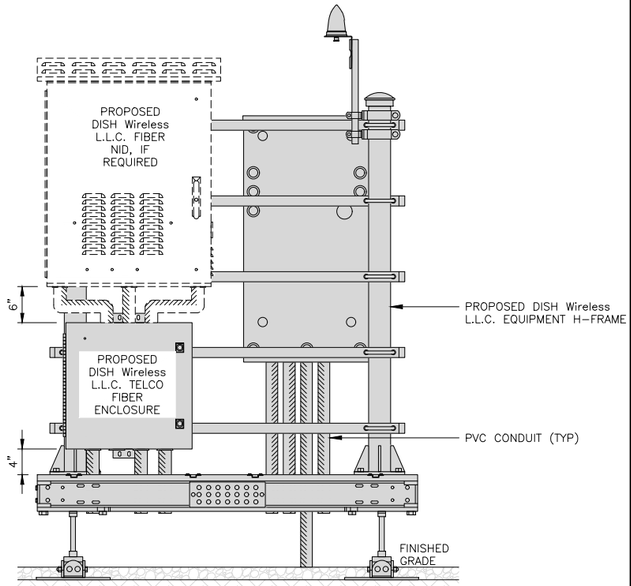
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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PROJECT INFORMATION

BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

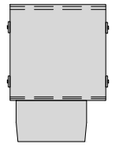
SHEET TITLE

EQUIPMENT PLATFORM AND H-FRAME DETAILS

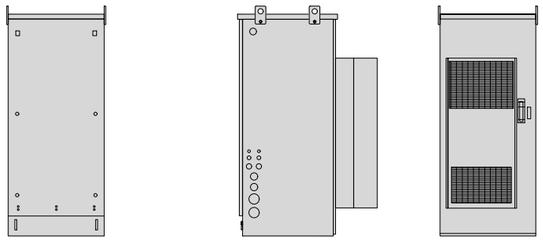
SHEET NUMBER

A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs



PLAN

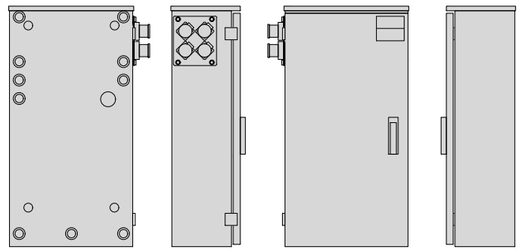


BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP



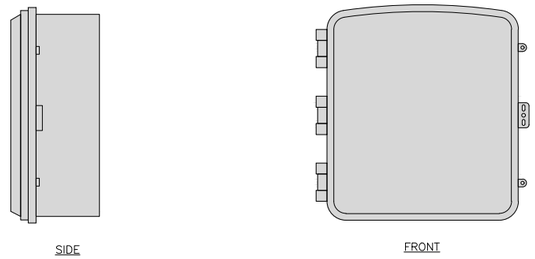
BACK SIDE FRONT SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3

CIENA 3931 FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs

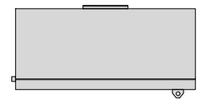
TOP



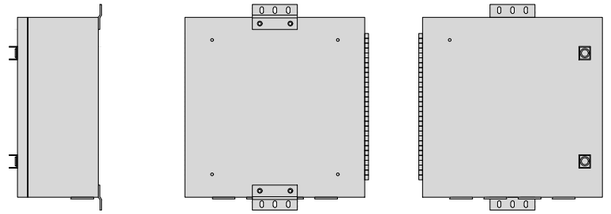
SIDE FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FRONT



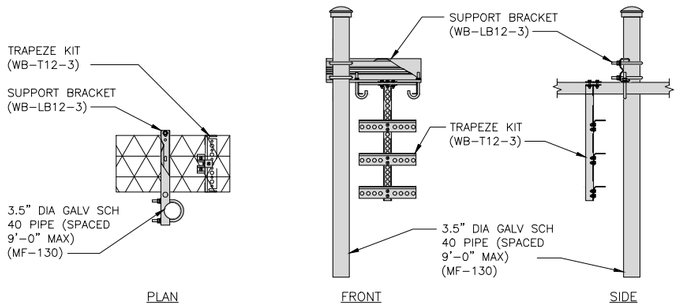
SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

NOT USED | NO SCALE | 4

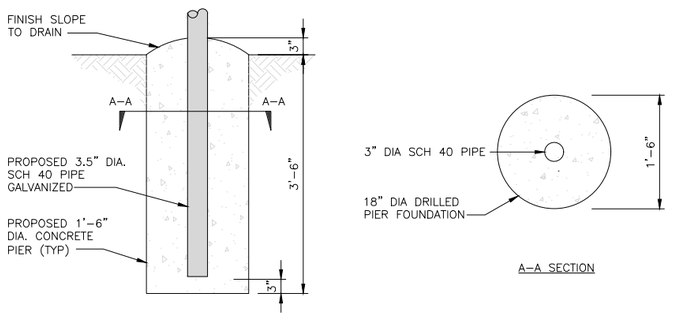
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



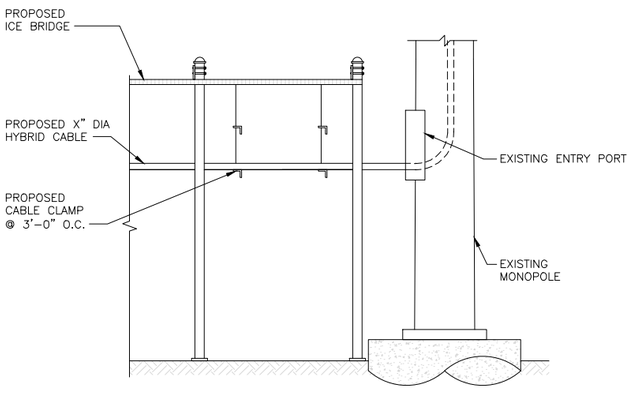
PLAN FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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MERIDEN, CT 06451

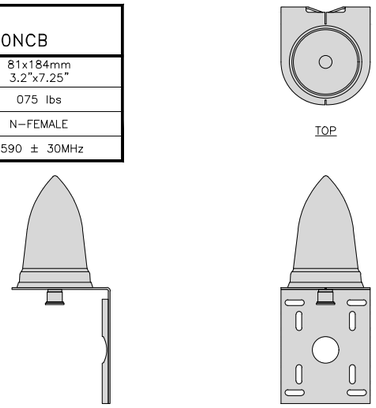
SHEET TITLE

EQUIPMENT DETAILS

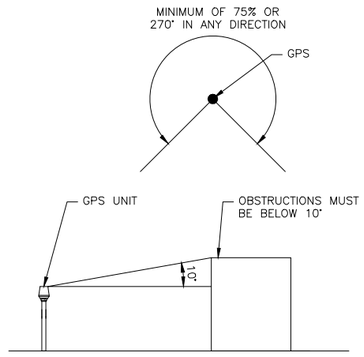
SHEET NUMBER

A-4

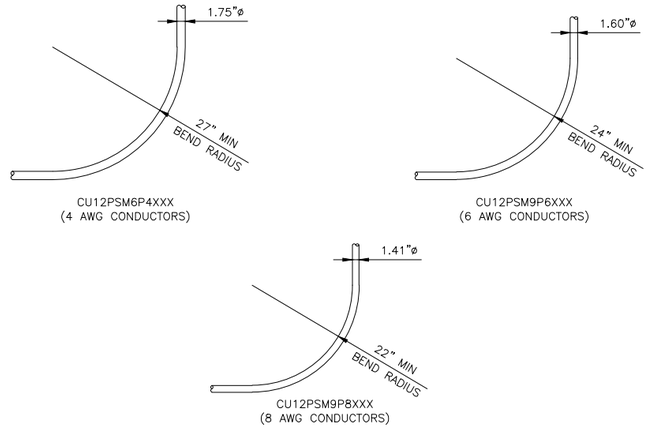
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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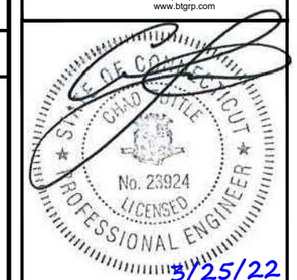

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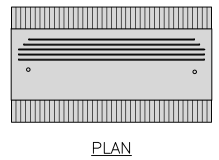
SHEET TITLE

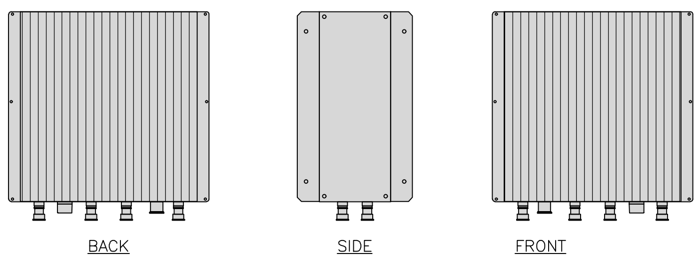
EQUIPMENT DETAILS

SHEET NUMBER

A-5

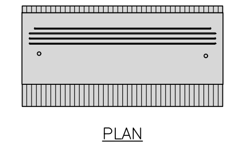
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

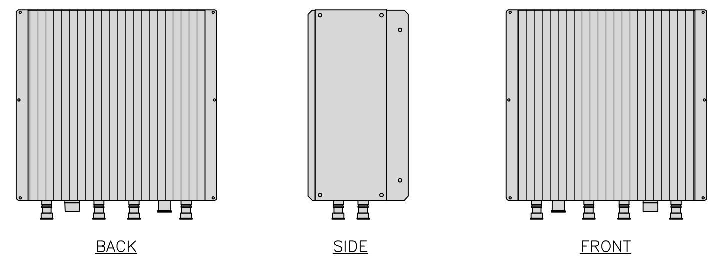




RRH DETAIL — NO SCALE — 1

FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

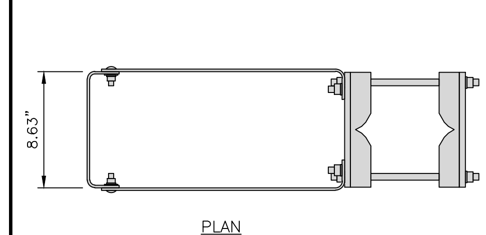


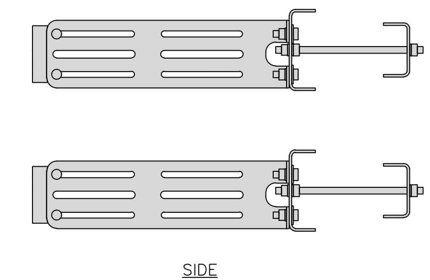


RRH DETAIL — NO SCALE — 2

COMMSCOPE RR-FA2 LARGE STABILIZER	
DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

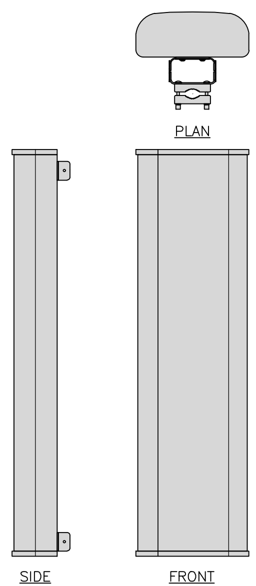




NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL — NO SCALE — 3

JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs

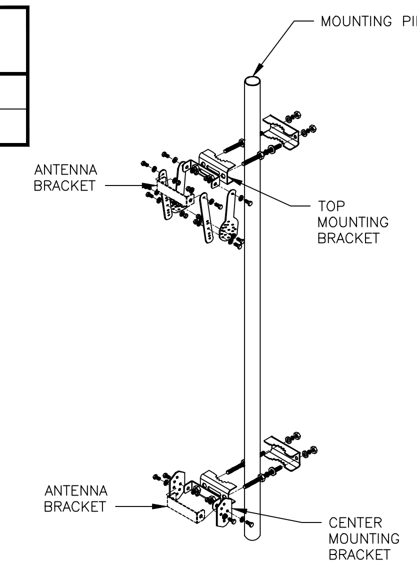


ANTENNA DETAIL — NO SCALE — 4

NOT USED — NO SCALE — 5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

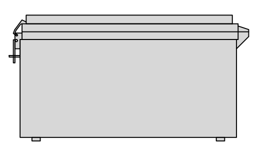
NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

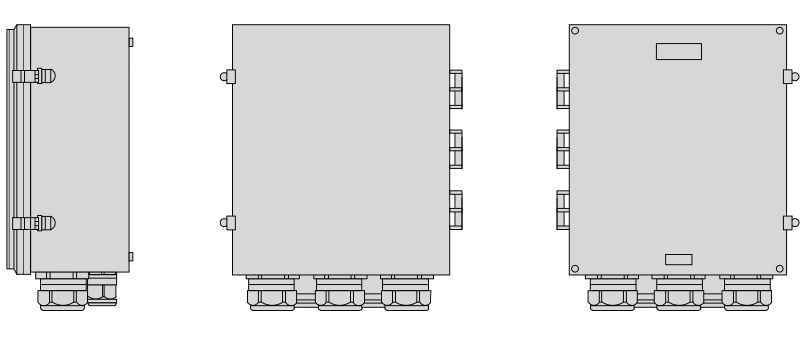


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL — NO SCALE — 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS





SURGE SUPPRESSION DETAIL (OVP) — NO SCALE — 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

NOTE:
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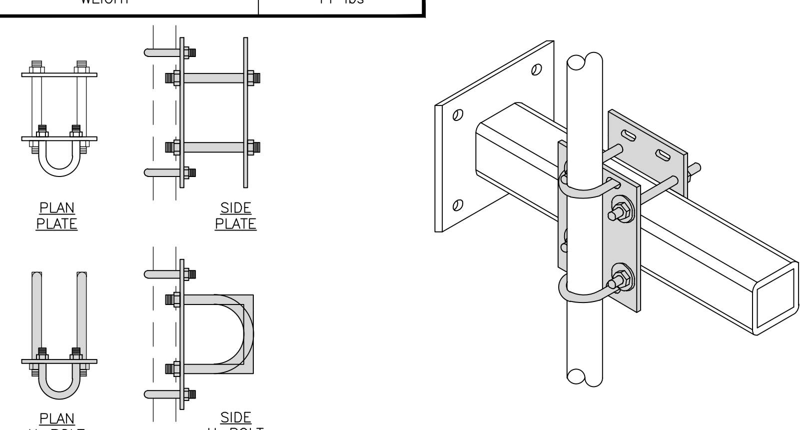

RRH/OVP MOUNT DETAIL — NO SCALE — 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
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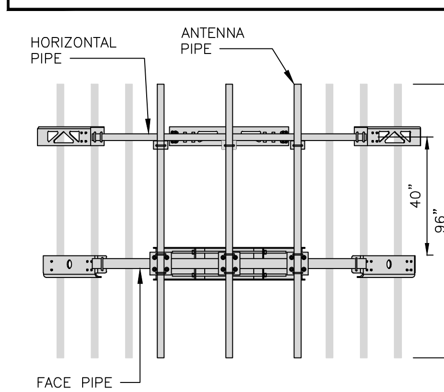
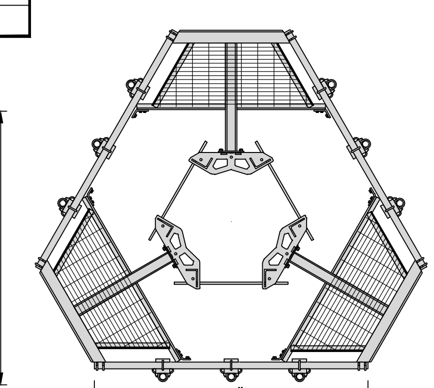
APPROVED EQUIVALENT





ANTENNA PLATFORM DETAIL — NO SCALE — 9

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CHAD TITLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER
149462.001.01

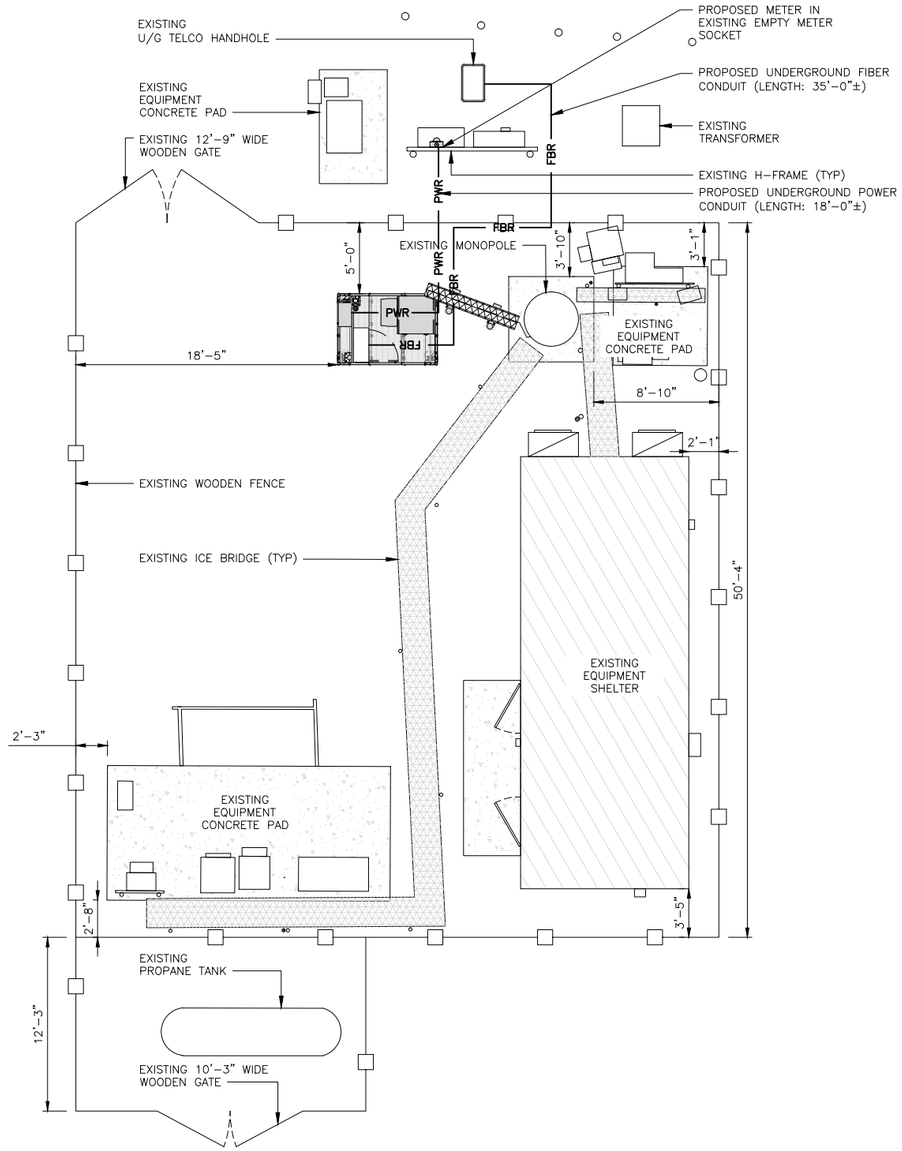
DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

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PROJECT INFORMATION

BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

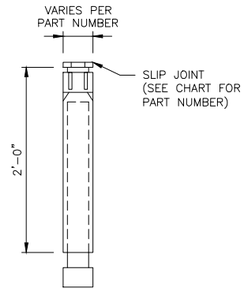
ELECTRICAL NOTES

NO SCALE

2

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

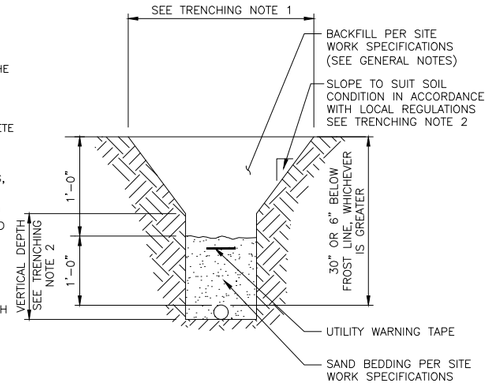


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

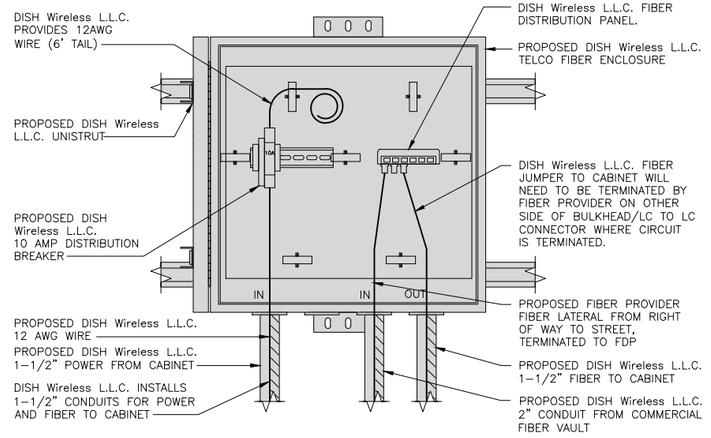
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

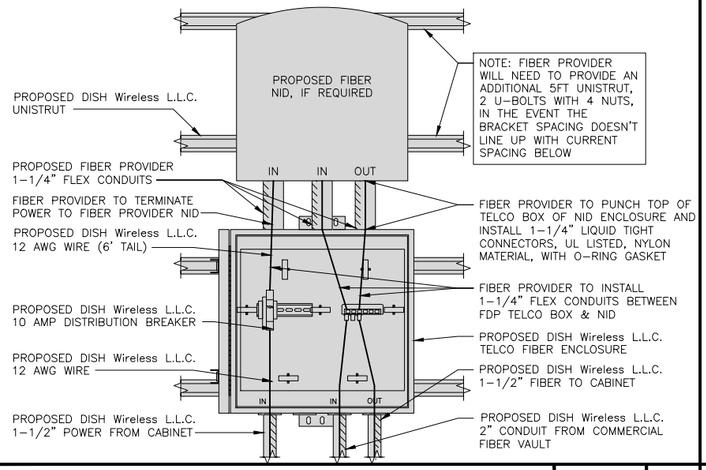
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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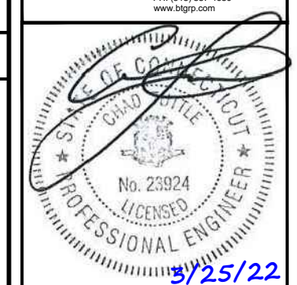

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DISH Wireless L.L.C.
PROJECT INFORMATION

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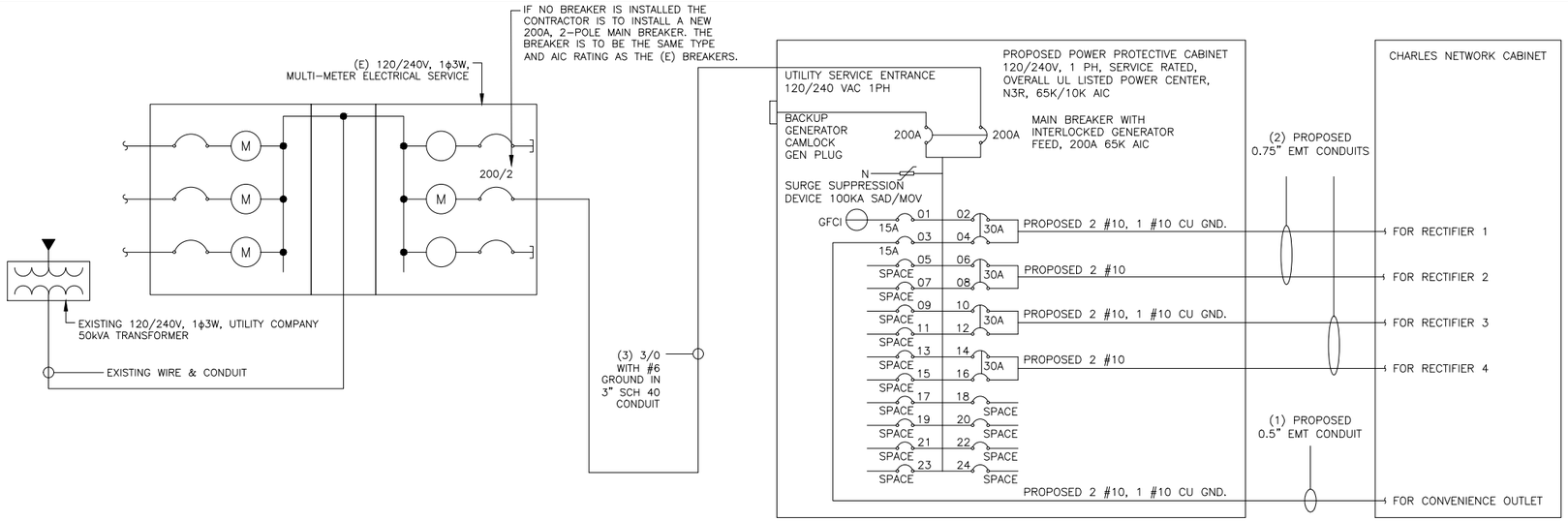
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2



NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(1) 15A, 1P BREAKER - SQUARE D P/N:QO115

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	

200A MCB, 1φ, 24 SPACE, 120/240V	L1	L2	
MB RATING: 65,000 AIC	11700	11700	VOLTAGE AMPS
	98	98	AMPS
	98		MAX AMPS
	123		MAX 125%

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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STATE OF CONNECTICUT * CHAD M. TYLER * No. 23924 LICENSED PROFESSIONAL ENGINEER *
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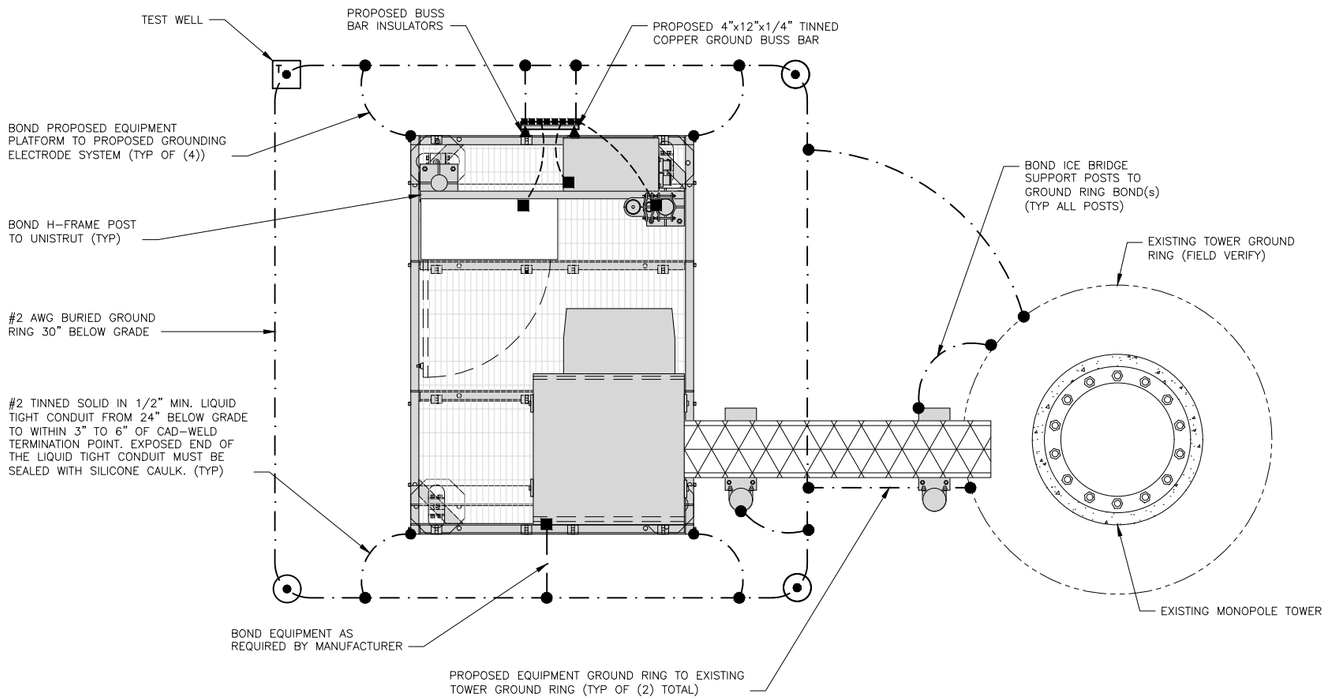
651 PADDOCK AVENUE
MERIDEN, CT 06451

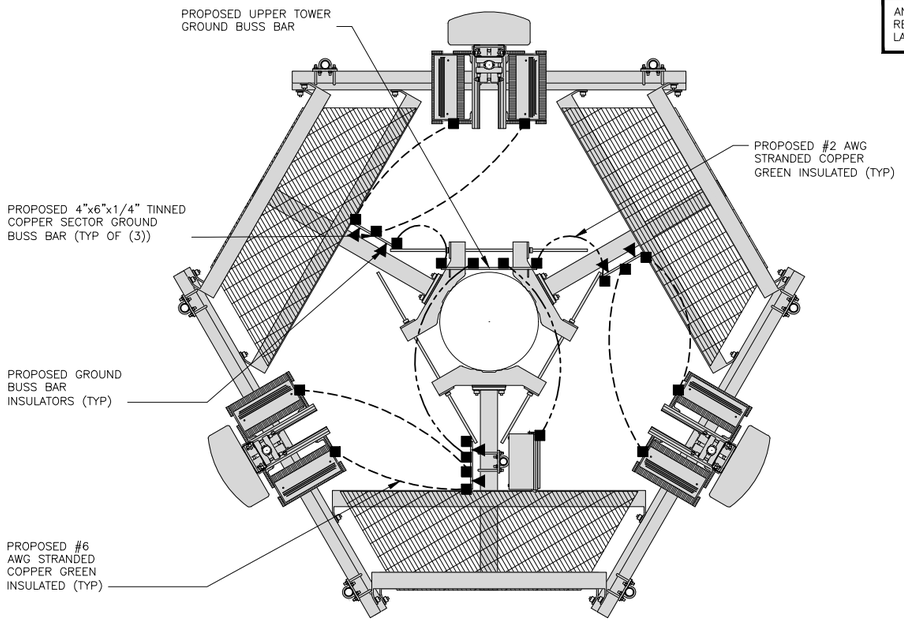
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- #2 AWG STRANDED & INSULATED
- BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149462.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

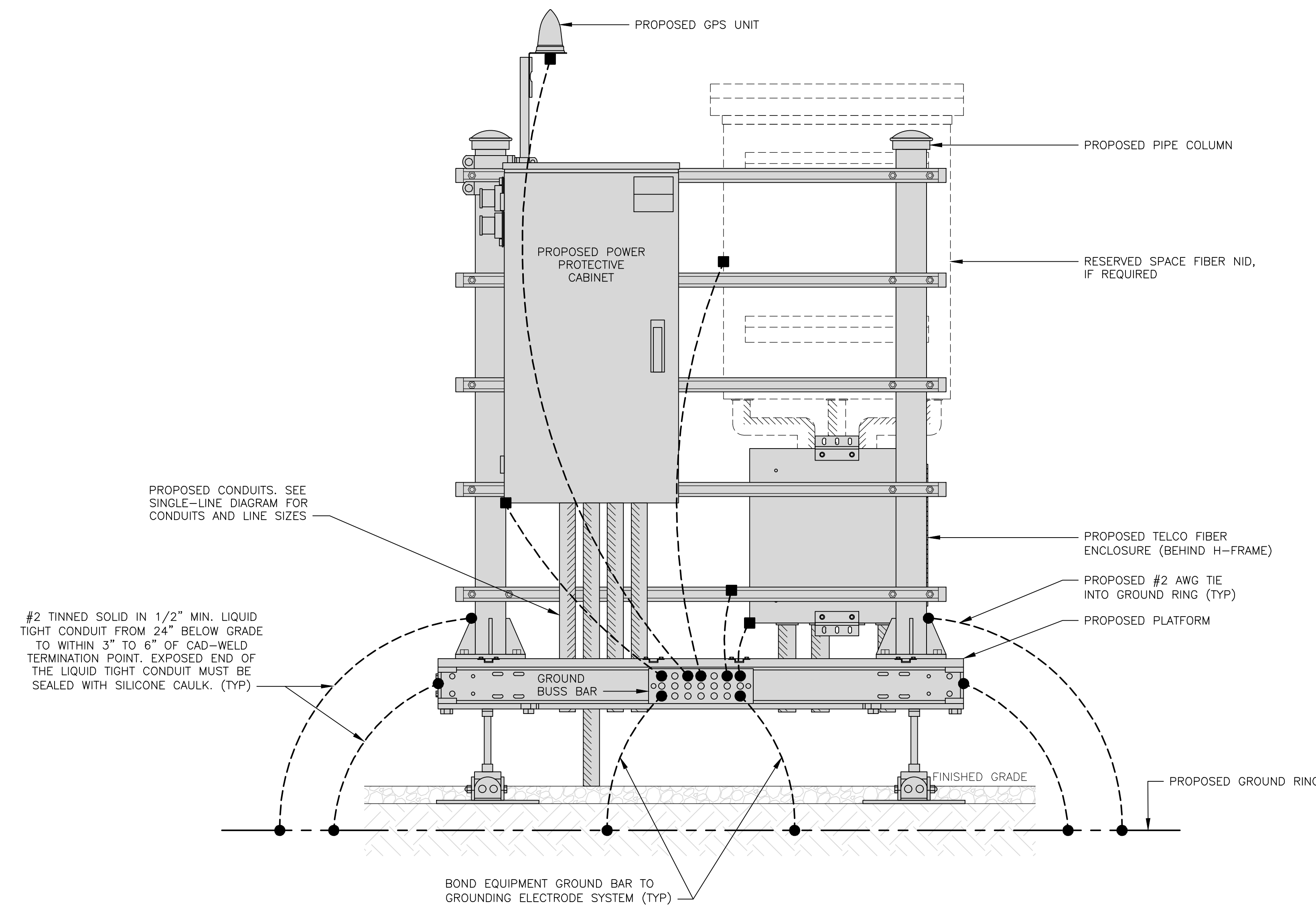
BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE
GROUNDING PLANS AND NOTES

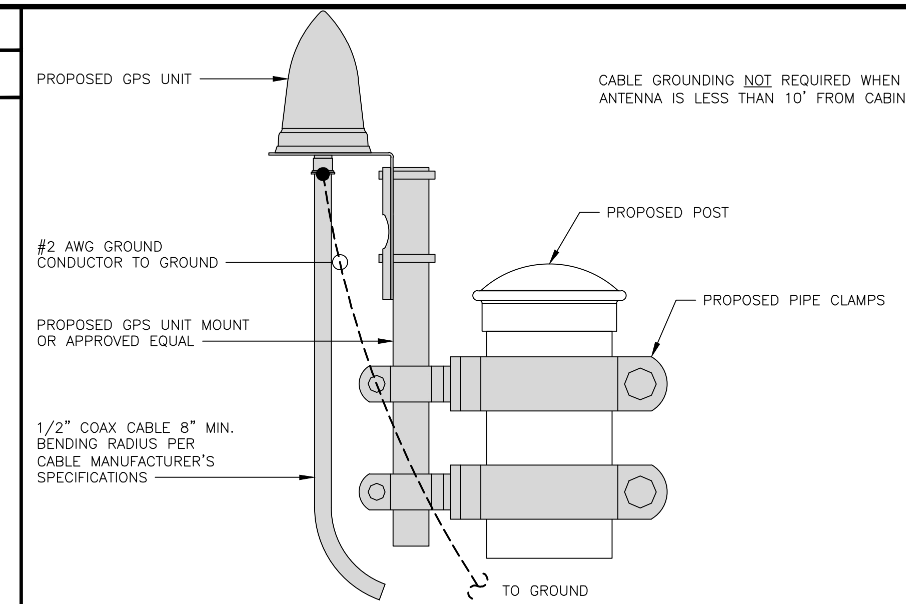
SHEET NUMBER
G-1

NOTES

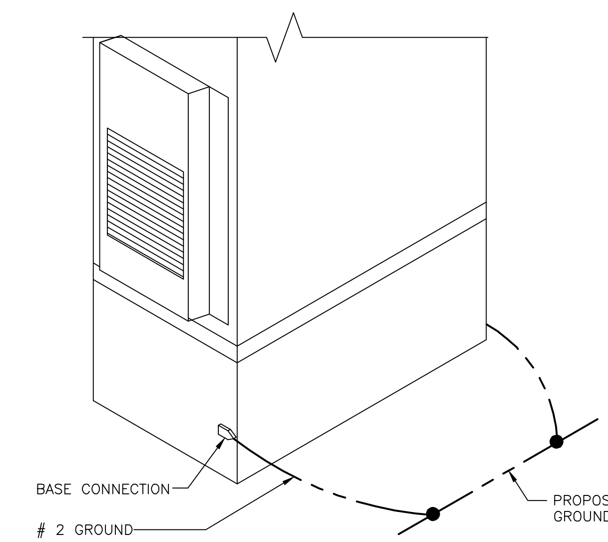
EQUIPMENT CABINET OMITTED FOR CLARITY



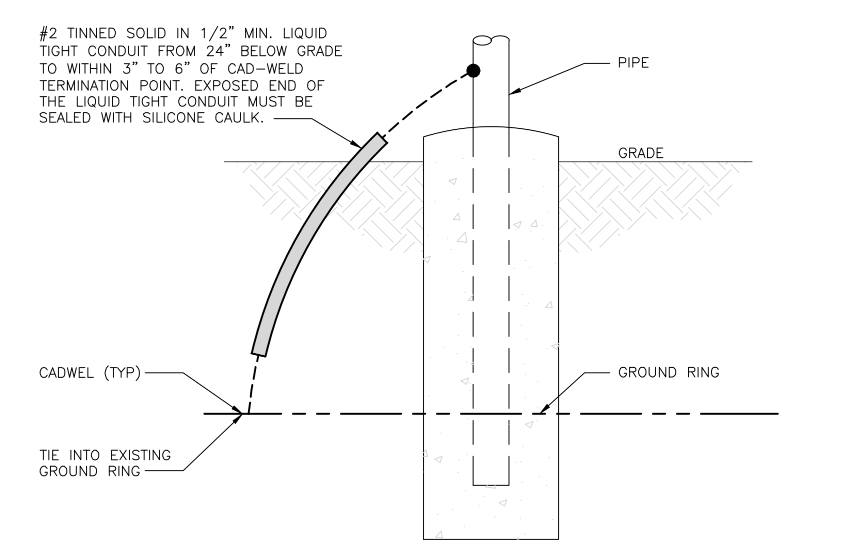
H-FRAME GROUNDING DETAIL — NO SCALE — 1



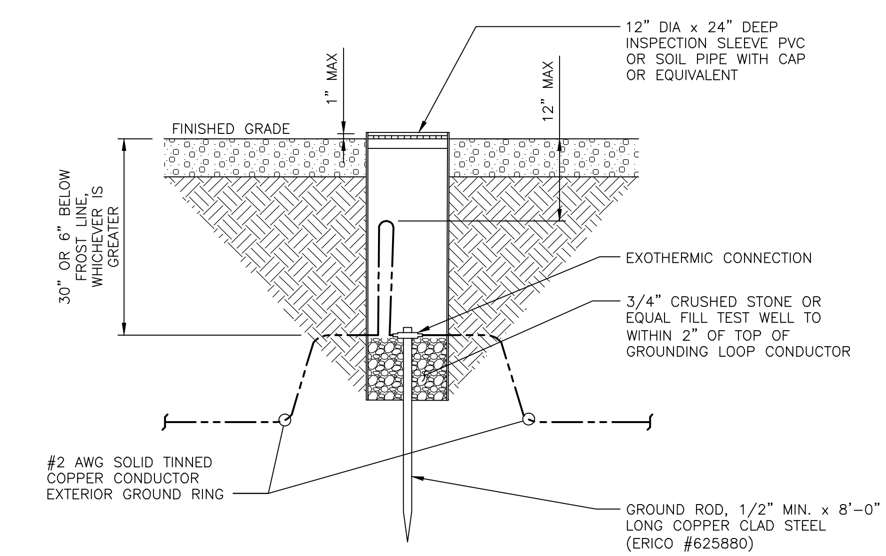
TYPICAL GPS UNIT GROUNDING — NO SCALE — 2



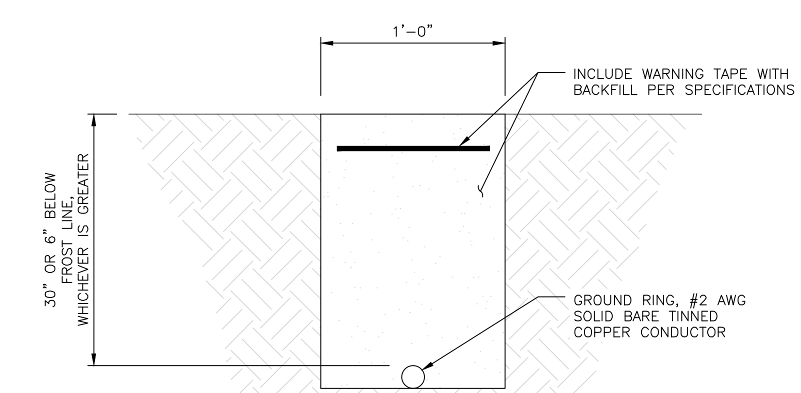
OUTDOOR CABINET GROUNDING — NO SCALE — 3



TRANSITIONING GROUND DETAIL — NO SCALE — 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE — NO SCALE — 5



TYPICAL GROUND RING TRENCH — NO SCALE — 6

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651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

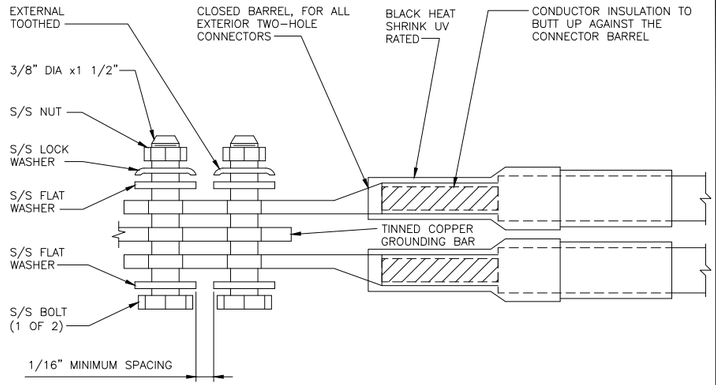
GROUNDING DETAILS

SHEET NUMBER

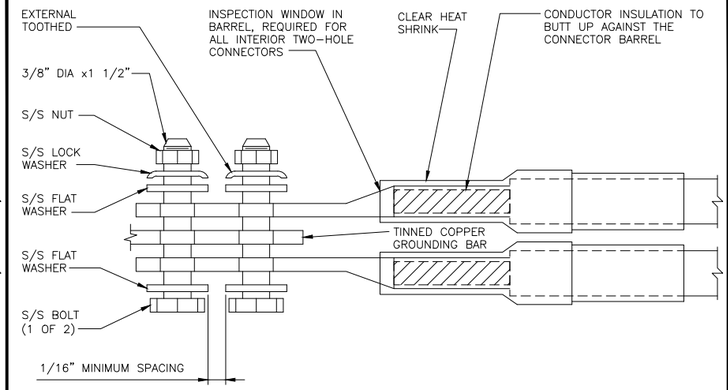
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR, ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

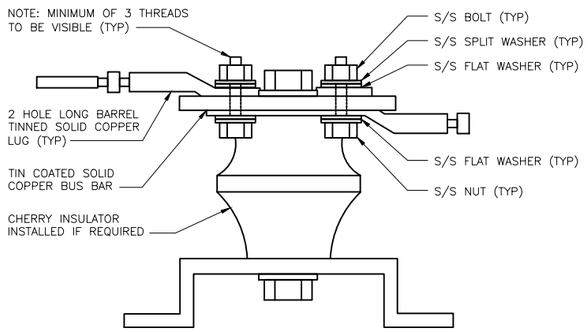
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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PROJECT INFORMATION

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651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

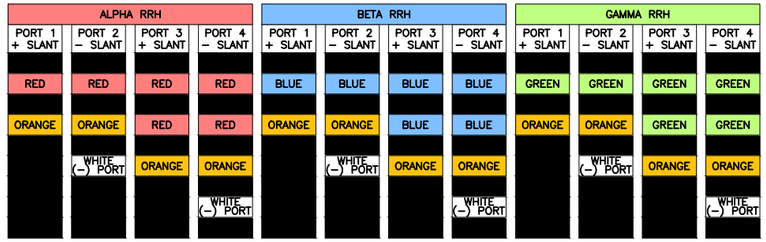
G-3

HYBRID/DISCREET CABLES

3/4" TAPE WIDTHS WITH 3/4" SPACING

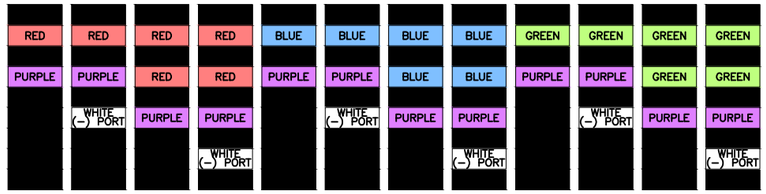
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BAND)



MID–BAND RRH
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



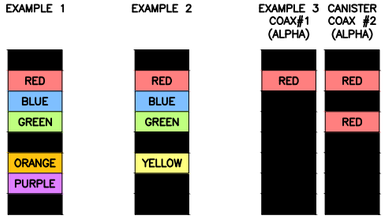
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW–BANDS AND MID–BANDS.

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.



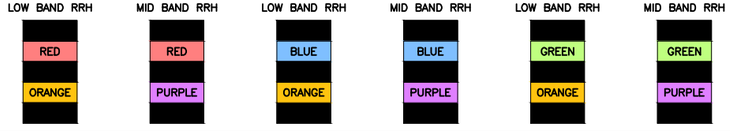
CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

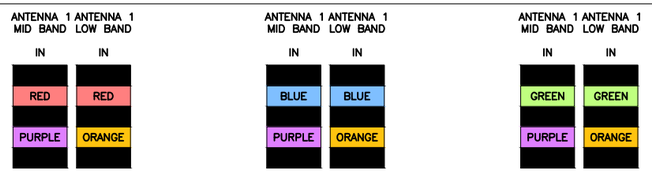
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID–BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

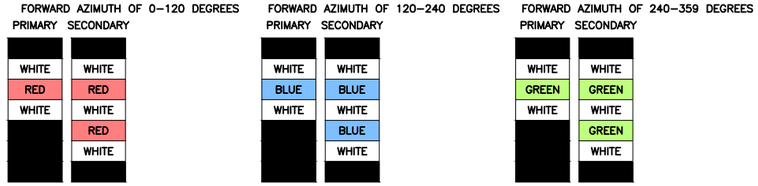
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.



RF CABLE COLOR CODES | NO SCALE | 1

LOW BANDS (N71+N26) OPTIONAL – (N29): ORANGE

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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DISH Wireless L.L.C.
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BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8 — F

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE — X X X X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W W W W W

UNDERGROUND POWER — UGP UGP UGP UGP UGP

UNDERGROUND TELCO — UGT UGT UGT UGT UGT

OVERHEAD POWER — OHP OHP OHP OHP

OVERHEAD TELCO — OHT OHT OHT OHT

UNDERGROUND TELCO/POWER — UGT/P UGT/P UGT/P UGT/P

ABOVE GROUND POWER — AGP AGP AGP AGP AGP

ABOVE GROUND TELCO — AGT AGT AGT AGT AGT

ABOVE GROUND TELCO/POWER — AGT/P AGT/P AGT/P AGT/P

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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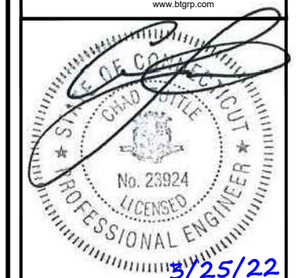

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651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

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PROFESSIONAL ENGINEER
3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149462.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

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CONSTRUCTION DOCUMENTS

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

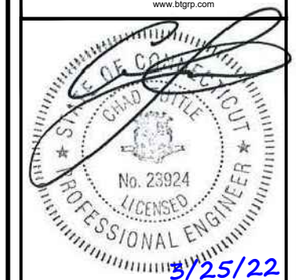
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



3/25/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149462.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00044A
651 PADDOCK AVENUE
MERIDEN, CT 06451

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Post-Mod Structural Analysis Report

Existing 119 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13069-A

Customer Site Name: Meriden

Carrier Name: Dish Wireless (App#: 168287-1)

Carrier Site ID / Name: BOHVN00044A / 0

Site Location: 651 Paddock Avenue

Meriden, Connecticut

New Haven County

Latitude: 41.512750

Longitude: -72.779449

Analysis Result:

Max Structural Usage: 91.3% [Pass]

Max Foundation Usage: 98.0% [Pass]

Report Prepared By : Tawfeeq Alajaj

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New Haven County

Latitude: 41.512750

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Analysis Result:

Max Structural Usage: 91.3% [Pass]

Max Foundation Usage: 98.0% [Pass]

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 119 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre, Job #08-10201 dated November 9, 2007
Foundation Drawing	Sabre, Job #08-10201 dated November 9, 2007
Geotechnical Report	Gemini Geotechnical Associates, Project #07099CT dated August 21, 2007
Mount Analysis	Verizon MA by Maser Consulting Connecticut Project#:20777580A.Dated 04/29/2021
Existing Modification	N/A
Proposed Modification	TES Job # 119368

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.183, S_1 = 0.063

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	117.0	3	Ericsson AIR6449 B41 Panel	Low Profile platform w/HRK Sitepro RMQP-4096-HK	(10) 1 5/8" (3) 1 5/8" Fiber	T-Mobile
2		3	Ericsson Air 32 KRD901146-1_B66A_B2A			
3		3	RFS APXVAALL18-43-U-NA20 panel			
4		3	Ericsson KRY 112 144/1 TMA			
5		3	Commscope SDX1926Q-43 Diplexers			
6		3	Ericsson Radio 4449 B71+B85 RRUs			
7		3	Ericsson 4415 B25 RRUs			
8	107.0	3	Samsung - VZS01 - Panel	Modified Low Profile Platform Perfect Vision PV-LPP12M-B	(6) 1 5/8" (2) 1 5/8" Hybrid	Verizon
9		6	Andrew - JAHH-65B-R3B - Panel			
10		3	CommScope CBC78T-DS-43-2X			
11		3	Samsung RFV01U-D1A			
12		3	Samsung RFV01UA-D2A			
13		2	RFS DB-T1-6Z-8AB-0Z			
14	97.0	3	Commscope NNVV-65B-R4 - Panel	(3) SitePro Sector Mount UDS-NPL	(1) 1 5/8" Fiber (4) 1-1/4" Fiber (3) 1/2"	Sprint Nextel
15		3	Nokia AAHC - Panel			
16		3	Alcatel Lucent 1900 MHz- RRUs			
17		6	Alcatel Lucent 800 MHz - RRUs			
18		3	Alcatel Lucent TD-RRH8x20-25 - RRUs			
19		2	Andrew VHLP2-18 - Dish			
20		1	Andrew VHLP1-23 - Dish			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
21	87.0	3	JMA Wireless - MX08FRO665-21 - Panel	MC-PK8-DSH	(1) 1.411"	Dish Wireless
22		3	Fujitsu TA08025-B605			
23		3	Fujitsu TA08025-B604			
24		1	Raycap RDIDC-9181-PF-48			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**91.3%**	**67.8%**	**56.8%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	1627.5	19.1
Analysis Reactions	1855.2	20.0
Factored Reactions*	2197.1	25.8
% of Design Reactions	84.4%	77.7%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.0708 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222-G-2 Standard after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 119368

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed Dish Wireless equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-322 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-322. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-322 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6 month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

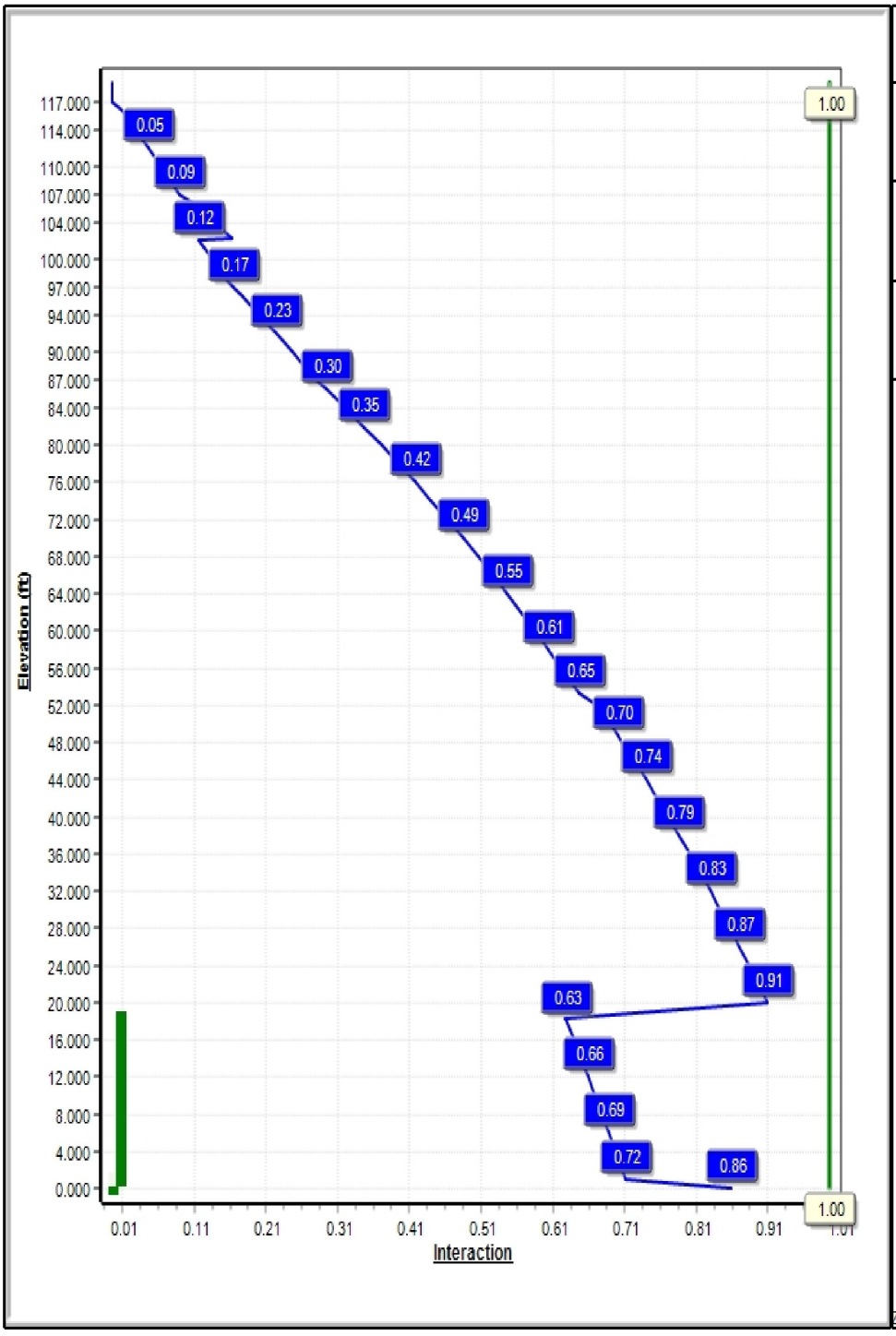
Usage Diagram - Max Ratio 91.35% at 20.0ft

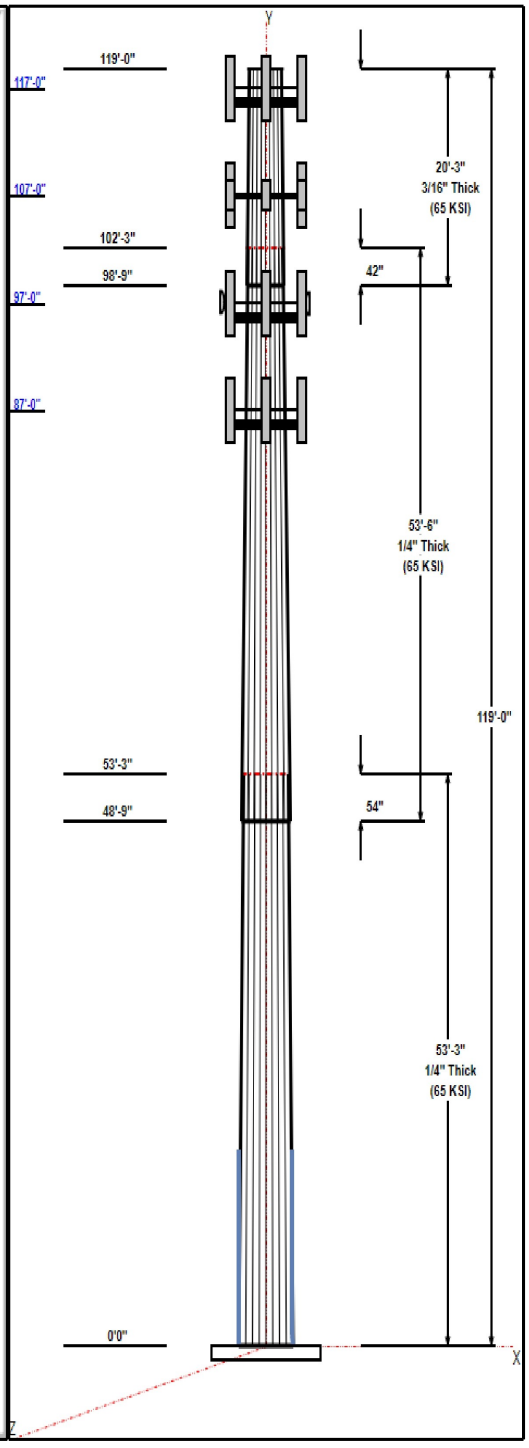
Structure:	CT13069-A-SBA	**Code:**	EIA/TIA-222-G	4/27/2022
Site Name:	Meriden	**Exposure:**	B	
Height:	119.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	28
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT13069-A-SBA

Type: Tapered
Site Name: Meriden
Height: 119.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.16197

4/27/2022

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	34.63	43.26	0.250		0.16197	65
2	53.50	27.20	35.86	0.250	Slip	0.16197	65
3	20.25	24.86	28.14	0.188	Slip	0.16197	65

Discrete Appurtenances

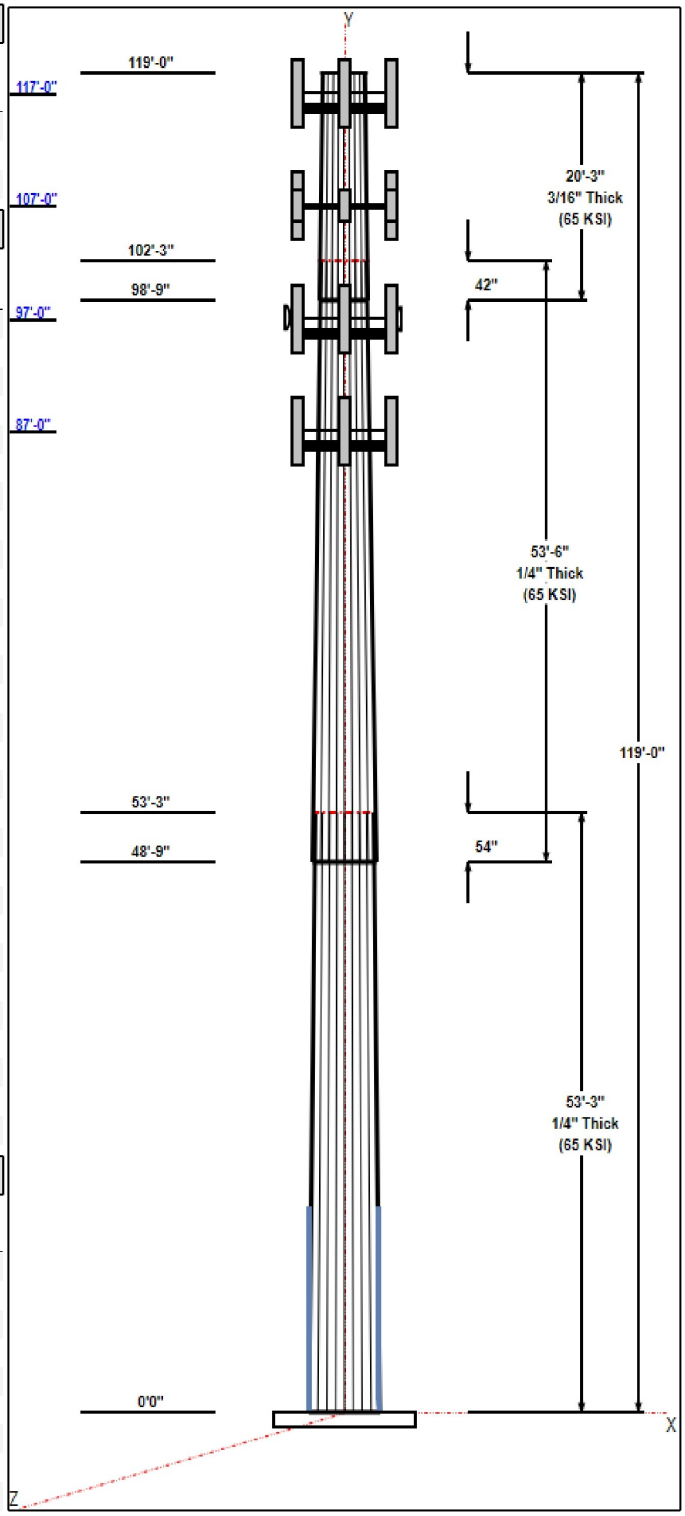
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
117.00	117.00	3	AIR6449 B41	T-Mobile
117.00	117.00	3	Air 32	T-Mobile
117.00	117.00	3	APXVAALL18-43-U-NA20	T-Mobile
117.00	117.00	1	Sitepro RMQP-4096-HK	T-Mobile
117.00	117.00	3	KRY 112 144/1	T-Mobile
117.00	117.00	3	SDX1926Q-43 Diplexer	T-Mobile
117.00	117.00	3	Radio 4449 B71+B85	T-Mobile
117.00	117.00	3	Ericsson 4415 B25 RRU	T-Mobile
107.00	107.00	1	PV-LPP12M-B	Verizon
107.00	107.00	3	VZS01	Verizon
107.00	107.00	6	JAHH-65B-R3B	Verizon
107.00	107.00	3	Commscope	Verizon
107.00	107.00	3	Samsung RFV01U-D1A	Verizon
107.00	107.00	3	Samsung RFV01UA-D2A	Verizon
107.00	107.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon
107.00	107.00	1	Mount Mods1	Verizon
97.00	97.00	3	1900 MHz	Sprint Nextel
97.00	97.00	6	800 MHz RRU	Sprint Nextel
97.00	97.00	3	TD-RRH8x20-25	Sprint Nextel
97.00	97.00	3	NNVV-65B-R4	Sprint Nextel
97.00	97.00	3	AAHC	Sprint Nextel
97.00	97.00	1	UDS-NPL (3 Sectors)	Sprint Nextel
97.00	97.00	2	VHLP2-18	Sprint Nextel
97.00	97.00	1	VHLP1-23	Sprint Nextel
87.00	87.00	3	MX08FRO665-21	Dish Wireless
87.00	87.00	3	Fujitsu TA08025-B605	Dish Wireless
87.00	87.00	3	Fujitsu TA08025-B604	Dish Wireless
87.00	87.00	1	Raycap	Dish Wireless
87.00	87.00	1	MC-PK8-DSH	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	117.00	Inside	1 5/8" Coax	T-Mobile
0.00	117.00	Inside	1 5/8" Fiber	T-Mobile
0.00	107.00	Inside	1 5/8" Coax	Verizon
0.00	107.00	Outside	1 5/8" Hybrid	Verizon
0.00	97.00	Inside	1 5/8" Fiber	Sprint Nextel
0.00	97.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	97.00	Inside	1/2" Coax	Sprint Nextel
0.00	87.00	Inside	1.411"	Dish Wireless
0.00	20.00	Outside	1" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Cluster



Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	47.0	60.0	Clipped

Reactions

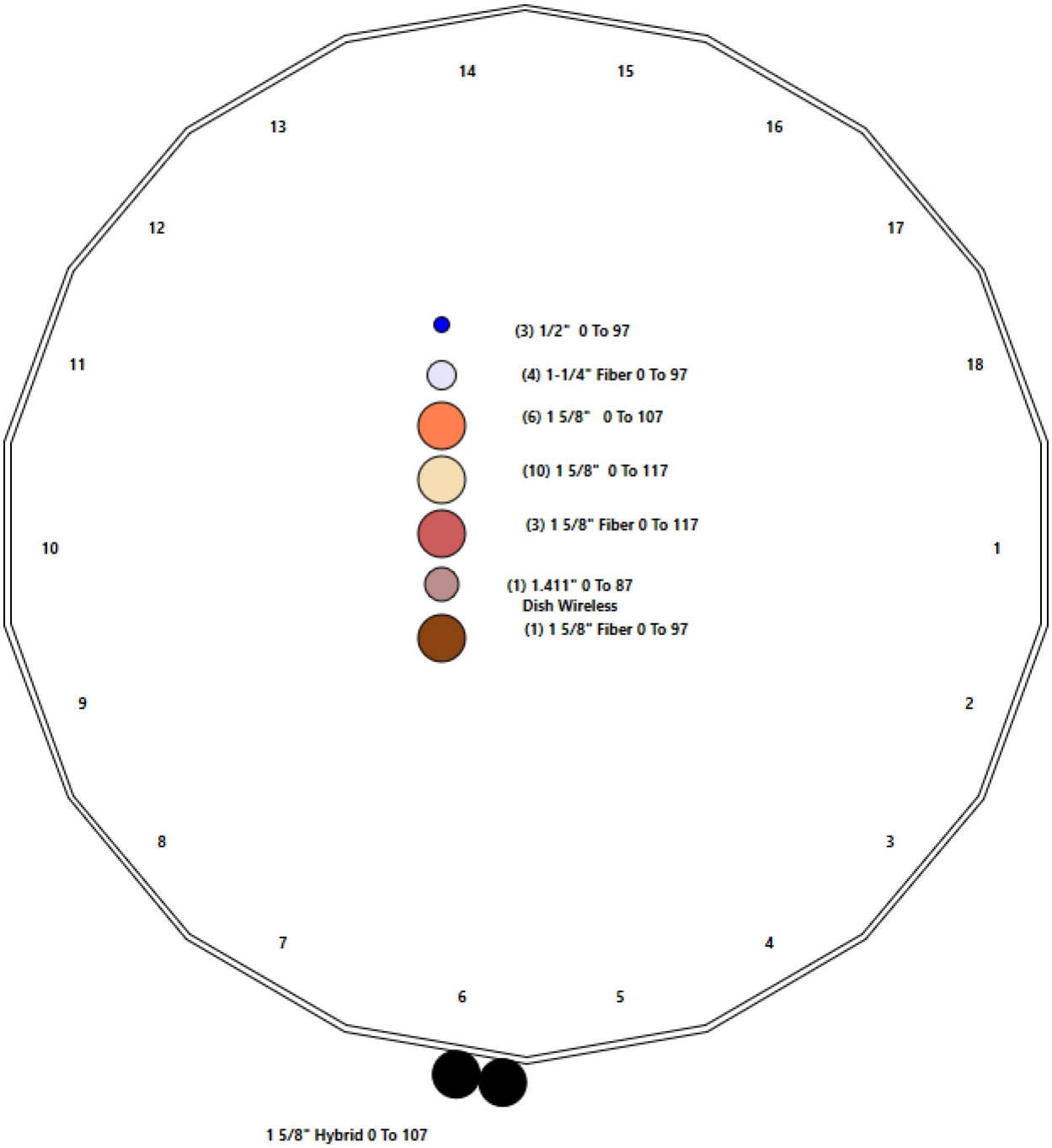
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	1855.2	20.0	30.8
0.9D + 1.6W 97 mph Wind	1828.5	20.0	23.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	532.6	5.7	52.1
1.2D + 1.0E	177.0	1.6	30.9
0.9D + 1.0E	174.2	1.6	23.1
1.0D + 1.0W 60 mph Wind	439.9	4.8	25.7

Structure: CT13069-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Meriden
Height: 119.00 (ft)

4/27/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.2500	65		0.00	5,564
2	18	53.500	0.2500	65	Slip	54.00	4,519
3	18	20.250	0.1875	65	Slip	42.00	1,079
					Total Shaft Weight:		**11,161**

	Bottom						Top						
Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	43.26	0.00	34.13	7976.14	29.10	173.04	34.63	53.25	27.28	4075.54	23.02	138.5	0.161975
2	35.86	48.75	28.26	4528.32	23.88	143.45	27.20	102.25	21.38	1961.86	17.77	108.7	0.161975
3	28.14	98.75	16.63	1642.13	25.05	150.08	24.86	119.00	14.68	1129.24	21.97	132.5	0.161975

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	1.00	3	SOL 1 3/4" William R71	128	150	0.00	5/8" Hollo Bolt	12.00	5/8" Hollo Bolt	3.00		
1.00	18.25	3	LNP LP6X100-B-20T	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		11

Load Summary

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	117.00	AIR6449 B41	3	103.00	5.65	0.71	236.75	6.577	0.71	0.00	0.00
2	117.00	Air 32 KRD901146-1_B66A_B2A	3	132.00	6.51	0.87	309.94	7.602	0.87	0.00	0.00
3	117.00	APXVAALL18-43-U-NA20	3	92.60	15.24	0.73	413.84	16.192	0.73	0.00	0.00
4	117.00	Sitepro RMQP-4096-HK	1	2645.00	48.00	1.00	5346.69	82.647	1.00	0.00	0.00
5	117.00	KRY 112 144/1	3	11.00	0.41	0.50	21.52	0.874	0.50	0.00	0.00
6	117.00	SDX1926Q-43 Diplexer	3	6.00	0.29	1.00	15.56	0.699	1.00	0.00	0.00
7	117.00	Radio 4449 B71+B85	3	74.00	1.97	0.50	130.94	2.525	0.50	0.00	0.00
8	117.00	Ericsson 4415 B25 RRU	3	46.00	1.64	0.50	86.09	2.143	0.50	0.00	0.00
9	107.00	PV-LPP12M-B	1	1615.00	28.00	1.00	3140.94	62.015	1.00	0.00	0.00
10	107.00	VZS01	3	87.10	4.30	0.69	193.67	5.153	0.69	0.00	0.00
11	107.00	JAHH-65B-R3B	6	63.30	9.11	0.83	284.83	10.410	0.83	0.00	0.00
12	107.00	Commscope CBC78T-DS-43-2X	3	10.40	0.37	0.85	30.14	0.641	0.85	0.00	0.00
13	107.00	Samsung RFV01U-D1A	3	70.30	1.87	0.50	136.79	2.422	0.50	0.00	0.00
14	107.00	Samsung RFV01UA-D2A	3	84.50	1.88	0.50	134.06	2.413	0.50	0.00	0.00
15	107.00	RFS DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.71	135.96	5.772	0.71	0.00	0.00
16	107.00	Mount Mods1	1	415.06	9.85	1.00	807.23	21.816	1.00	0.00	0.00
17	97.00	1900 MHz	3	60.00	2.71	0.50	137.31	3.920	0.50	0.00	0.00
18	97.00	800 MHz RRU	6	53.00	2.49	0.50	123.81	3.585	0.50	0.00	0.00
19	97.00	TD-RRH8x20-25	3	70.00	4.05	0.50	174.81	4.826	0.50	0.00	0.00
20	97.00	NNVV-65B-R4	3	77.40	12.27	0.74	350.78	13.664	0.74	0.00	0.00
21	97.00	AAHC	3	104.00	4.20	0.75	226.78	4.993	0.75	0.00	0.00
22	97.00	UDS-NPL (3 Sectors)	1	576.00	12.79	0.75	1114.92	28.176	0.75	0.00	0.00
23	97.00	VHLP2-18	2	31.00	4.69	1.00	124.68	5.912	1.00	1.00	0.00
24	97.00	VHLP1-23	1	14.20	1.61	1.00	48.07	2.336	1.00	0.00	0.00
25	87.00	MX08FRO665-21	3	64.50	12.49	0.74	339.95	13.877	0.74	0.00	0.00
26	87.00	Fujitsu TA08025-B605	3	75.00	1.96	0.50	124.53	2.491	0.50	0.00	0.00
27	87.00	Fujitsu TA08025-B604	3	63.90	1.96	0.50	111.85	2.491	0.50	0.00	0.00
28	87.00	Raycap RDIDC-9181-PF-48	1	21.90	2.01	1.00	72.33	2.548	1.00	0.00	0.00
29	87.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3325.35	82.320	1.00	0.00	0.00
		Totals:	**77**	**11,506.86**			**26,354.56**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	117.00	(10) 1 5/8" Coax	0.00	Inside
0.00	117.00	(3) 1 5/8" Fiber	0.00	Inside
0.00	107.00	(6) 1 5/8" Coax	0.00	Inside
0.00	107.00	(2) 1 5/8" Hybrid	0.00	Outside
0.00	97.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	97.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	97.00	(3) 1/2" Coax	0.00	Inside
0.00	87.00	(1) 1.411"	0.00	Inside
0.00	20.00	(1) 1" Reinforcing plate	1.00	Outside

Shaft Section Properties

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 7

TES Tower Engineering Solutions

Increment Length: **2 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.2500	43.260	34.127	7976.1	29.10	173.04	65	67	0.0	7.80	2418.2	1517.2	
1.00	RT1 RB2	0.2500	43.098	33.999	7886.4	28.99	172.39	65	67	115.9	18.00	5363.2	3376.0	61.2
2.00		0.2500	42.936	33.870	7797.3	28.87	171.74	65	67	115.5	18.00	5324.0	3351.5	61.2
4.00		0.2500	42.612	33.613	7621.1	28.64	170.45	65	68	229.6	18.00	5245.9	3302.6	122.5
6.00		0.2500	42.288	33.356	7447.6	28.42	169.15	65	68	227.9	18.00	5168.5	3254.0	122.5
8.00		0.2500	41.964	33.099	7276.7	28.19	167.86	65	68	226.1	18.00	5091.7	3205.9	122.5
10.00		0.2500	41.640	32.842	7108.5	27.96	166.56	65	69	224.4	18.00	5015.4	3158.1	122.5
12.00		0.2500	41.316	32.585	6942.9	27.73	165.27	65	69	222.6	18.00	4939.7	3110.6	122.5
14.00		0.2500	40.992	32.328	6779.9	27.50	163.97	65	69	220.9	18.00	4864.6	3063.5	122.5
16.00		0.2500	40.668	32.071	6619.4	27.27	162.67	65	69	219.1	18.00	4790.1	3016.8	122.5
18.00		0.2500	40.344	31.814	6461.6	27.04	161.38	65	70	217.4	18.00	4716.1	2970.5	122.5
18.25	RT2	0.2500	40.304	31.782	6442.0	27.02	161.22	65	70	27.1	18.00	4706.9	2964.7	15.3
20.00		0.2500	40.021	31.557	6306.2	26.82	160.08	65	70	188.6				
22.00		0.2500	39.697	31.300	6153.3	26.59	158.79	65	70	213.9				
24.00		0.2500	39.373	31.043	6003.0	26.36	157.49	65	70	212.1				
26.00		0.2500	39.049	30.786	5855.1	26.13	156.19	65	71	210.4				
28.00		0.2500	38.725	30.529	5709.7	25.90	154.90	65	71	208.6				
30.00		0.2500	38.401	30.272	5566.6	25.67	153.60	65	71	206.9				
32.00		0.2500	38.077	30.014	5426.0	25.45	152.31	65	71	205.1				
34.00		0.2500	37.753	29.757	5287.8	25.22	151.01	65	72	203.4				
36.00		0.2500	37.429	29.500	5152.0	24.99	149.72	65	72	201.6				
38.00		0.2500	37.105	29.243	5018.5	24.76	148.42	65	72	199.9				
40.00		0.2500	36.781	28.986	4887.3	24.53	147.12	65	73	198.1				
42.00		0.2500	36.457	28.729	4758.4	24.30	145.83	65	73	196.4				
44.00		0.2500	36.133	28.472	4631.9	24.07	144.53	65	73	194.6				
46.00		0.2500	35.809	28.215	4507.5	23.85	143.24	65	73	192.9				
48.00		0.2500	35.485	27.958	4385.5	23.62	141.94	65	74	191.1				
48.75	Bot - Section 2	0.2500	35.364	27.862	4340.3	23.53	141.45	65	74	71.2				
50.00		0.2500	35.161	27.701	4265.6	23.39	140.65	65	74	238.0				
52.00		0.2500	34.837	27.444	4148.0	23.16	139.35	65	74	378.0				
53.25	Top - Section 1	0.2500	35.135	27.680	4255.9	23.37	140.54	65	74	234.5				
54.00		0.2500	35.013	27.584	4211.6	23.28	140.05	65	74	70.5				
56.00		0.2500	34.689	27.327	4095.0	23.06	138.76	65	74	186.8				
58.00		0.2500	34.365	27.070	3980.5	22.83	137.46	65	75	185.1				
60.00		0.2500	34.042	26.813	3868.2	22.60	136.17	65	75	183.3				
62.00		0.2500	33.718	26.556	3758.0	22.37	134.87	65	75	181.6				
64.00		0.2500	33.394	26.299	3649.9	22.14	133.57	65	75	179.9				
66.00		0.2500	33.070	26.041	3543.9	21.91	132.28	65	76	178.1				
68.00		0.2500	32.746	25.784	3440.0	21.69	130.98	65	76	176.4				
70.00		0.2500	32.422	25.527	3338.2	21.46	129.69	65	76	174.6				
72.00		0.2500	32.098	25.270	3238.3	21.23	128.39	65	76	172.9				
74.00		0.2500	31.774	25.013	3140.5	21.00	127.10	65	77	171.1				
76.00		0.2500	31.450	24.756	3044.7	20.77	125.80	65	77	169.4				
78.00		0.2500	31.126	24.499	2950.8	20.54	124.50	65	77	167.6				
80.00		0.2500	30.802	24.242	2858.9	20.31	123.21	65	78	165.9				
82.00		0.2500	30.478	23.985	2769.0	20.09	121.91	65	78	164.1				
84.00		0.2500	30.154	23.728	2680.9	19.86	120.62	65	78	162.4				
86.00		0.2500	29.830	23.471	2594.7	19.63	119.32	65	78	160.6				
87.00		0.2500	29.668	23.342	2552.3	19.51	118.67	65	78	79.6				
88.00		0.2500	29.506	23.214	2510.4	19.40	118.02	65	79	79.2				

Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
90.00		0.2500	29.182	22.957	2427.9	19.17	116.73	65	79	157.1				
92.00		0.2500	28.858	22.700	2347.3	18.94	115.43	65	79	155.4				
94.00		0.2500	28.534	22.443	2268.4	18.71	114.14	65	79	153.6				
96.00		0.2500	28.210	22.186	2191.4	18.49	112.84	65	80	151.9				
97.00		0.2500	28.048	22.057	2153.5	18.37	112.19	65	80	75.3				
98.00		0.2500	27.886	21.929	2116.1	18.26	111.55	65	80	74.8				
98.75	Bot - Section 3	0.2500	27.765	21.832	2088.3	18.17	111.06	65	80	55.8				
100.00		0.2500	27.563	21.672	2042.5	18.03	110.25	65	80	163.0				
102.00		0.2500	27.239	21.415	1970.7	17.80	108.95	65	80	258.3				
102.25	Top - Section 2	0.1875	27.573	16.297	1544.2	24.52	147.06	65	73	32.1				
104.00		0.1875	27.290	16.129	1496.8	24.25	145.54	65	73	96.5				
106.00		0.1875	26.966	15.936	1443.7	23.95	143.82	65	73	109.1				
107.00		0.1875	26.804	15.839	1417.7	23.80	142.95	65	73	54.1				
108.00		0.1875	26.642	15.743	1392.0	23.64	142.09	65	74	53.7				
110.00		0.1875	26.318	15.550	1341.5	23.34	140.36	65	74	106.5				
112.00		0.1875	25.994	15.357	1292.2	23.03	138.63	65	74	105.2				
114.00		0.1875	25.670	15.165	1244.1	22.73	136.91	65	75	103.9				
116.00		0.1875	25.346	14.972	1197.3	22.42	135.18	65	75	102.5				
117.00		0.1875	25.184	14.875	1174.3	22.27	134.31	65	75	50.8				
118.00		0.1875	25.022	14.779	1151.6	22.12	133.45	65	75	50.5				
119.00		0.1875	24.860	14.683	1129.2	21.97	132.59	65	76	50.1				
									Total Weight	**11161.3**				**1117.8**

Wind Loading - Shaft

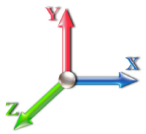
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	16.018	17.62	297.08	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.70	16.018	17.62	295.97	0.650	0.000	1.00	3.654	2.37	67.0	0.0	139.1
2.00		1.00	0.70	16.018	17.62	294.86	0.650	0.000	1.00	3.640	2.37	66.7	0.0	138.6
4.00		1.00	0.70	16.018	17.62	292.63	0.650	0.000	2.00	7.239	4.71	132.7	0.0	275.6
6.00		1.00	0.70	16.018	17.62	290.41	0.650	0.000	2.00	7.184	4.67	131.6	0.0	273.5
8.00		1.00	0.70	16.018	17.62	288.18	0.650	0.000	2.00	7.129	4.63	130.6	0.0	271.4
10.00		1.00	0.70	16.018	17.62	285.96	0.650	0.000	2.00	7.075	4.60	129.6	0.0	269.3
12.00		1.00	0.70	16.018	17.62	283.73	0.650	0.000	2.00	7.020	4.56	128.6	0.0	267.2
14.00		1.00	0.70	16.018	17.62	281.51	0.650	0.000	2.00	6.965	4.53	127.6	0.0	265.1
16.00		1.00	0.70	16.018	17.62	279.28	0.650	0.000	2.00	6.910	4.49	126.6	0.0	263.0
18.00		1.00	0.70	16.018	17.62	277.06	0.650	0.000	2.00	6.855	4.46	125.6	0.0	260.9
18.25	RT2	1.00	0.70	16.018	17.62	276.78	0.650	0.000	0.25	0.853	0.55	15.6	0.0	32.5
20.00		1.00	0.70	16.018	17.62	274.83	0.650	0.000	1.75	5.947	3.87	109.0	0.0	226.3
22.00		1.00	0.70	16.018	17.62	272.61	0.650	0.000	2.00	6.746	4.38	123.6	0.0	256.7
24.00		1.00	0.70	16.018	17.62	270.38	0.650	0.000	2.00	6.691	4.35	122.6	0.0	254.6
26.00		1.00	0.70	16.018	17.62	268.16	0.650	0.000	2.00	6.636	4.31	121.6	0.0	252.5
28.00		1.00	0.70	16.018	17.62	265.94	0.650	0.000	2.00	6.581	4.28	120.6	0.0	250.4
30.00		1.00	0.70	16.031	17.63	263.82	0.650	0.000	2.00	6.526	4.24	119.7	0.0	248.3
32.00		1.00	0.71	16.330	17.96	264.02	0.650	0.000	2.00	6.471	4.21	120.9	0.0	246.2
34.00		1.00	0.73	16.615	18.28	264.05	0.650	0.000	2.00	6.417	4.17	122.0	0.0	244.1
36.00		1.00	0.74	16.889	18.58	263.93	0.650	0.000	2.00	6.362	4.14	122.9	0.0	242.0
38.00		1.00	0.75	17.152	18.87	263.68	0.650	0.000	2.00	6.307	4.10	123.8	0.0	239.9
40.00		1.00	0.76	17.405	19.15	263.30	0.650	0.000	2.00	6.252	4.06	124.5	0.0	237.8
42.00		1.00	0.77	17.649	19.41	262.80	0.650	0.000	2.00	6.197	4.03	125.1	0.0	235.7
44.00		1.00	0.78	17.885	19.67	262.20	0.650	0.000	2.00	6.142	3.99	125.7	0.0	233.6
46.00		1.00	0.79	18.114	19.93	261.51	0.650	0.000	2.00	6.088	3.96	126.2	0.0	231.5
48.00		1.00	0.80	18.335	20.17	260.72	0.650	0.000	2.00	6.033	3.92	126.5	0.0	229.4
48.75	Bot - Section 2	1.00	0.80	18.417	20.26	260.41	0.650	0.000	0.75	2.248	1.46	47.4	0.0	85.5
50.00		1.00	0.81	18.551	20.41	259.85	0.650	0.000	1.25	3.783	2.46	80.3	0.0	285.6
52.00		1.00	0.82	18.760	20.64	258.91	0.650	0.000	2.00	6.008	3.91	128.9	0.0	453.6
53.25	Top - Section 1	1.00	0.83	18.887	20.78	258.28	0.650	0.000	1.25	3.727	2.42	80.5	0.0	281.4
54.00		1.00	0.83	18.963	20.86	261.62	0.650	0.000	0.75	2.226	1.45	48.3	0.0	84.6
56.00		1.00	0.84	19.161	21.08	260.55	0.650	0.000	2.00	5.898	3.83	129.3	0.0	224.2
58.00		1.00	0.85	19.354	21.29	259.41	0.650	0.000	2.00	5.843	3.80	129.4	0.0	222.1
60.00		1.00	0.85	19.543	21.50	258.22	0.650	0.000	2.00	5.789	3.76	129.4	0.0	220.0
62.00		1.00	0.86	19.726	21.70	256.96	0.650	0.000	2.00	5.734	3.73	129.4	0.0	217.9
64.00		1.00	0.87	19.906	21.90	255.65	0.650	0.000	2.00	5.679	3.69	129.3	0.0	215.8
66.00		1.00	0.88	20.082	22.09	254.28	0.650	0.000	2.00	5.624	3.66	129.2	0.0	213.7
68.00		1.00	0.89	20.254	22.28	252.87	0.650	0.000	2.00	5.569	3.62	129.0	0.0	211.6
70.00		1.00	0.89	20.422	22.46	251.41	0.650	0.000	2.00	5.514	3.58	128.8	0.0	209.5
72.00		1.00	0.90	20.587	22.65	249.90	0.650	0.000	2.00	5.460	3.55	128.6	0.0	207.4
74.00		1.00	0.91	20.749	22.82	248.35	0.650	0.000	2.00	5.405	3.51	128.3	0.0	205.3
76.00		1.00	0.91	20.908	23.00	246.75	0.650	0.000	2.00	5.350	3.48	128.0	0.0	203.2
78.00		1.00	0.92	21.064	23.17	245.12	0.650	0.000	2.00	5.295	3.44	127.6	0.0	201.1
80.00		1.00	0.93	21.217	23.34	243.45	0.650	0.000	2.00	5.240	3.41	127.2	0.0	199.0
82.00		1.00	0.93	21.367	23.50	241.74	0.650	0.000	2.00	5.185	3.37	126.8	0.0	196.9
84.00		1.00	0.94	21.514	23.67	239.99	0.650	0.000	2.00	5.131	3.33	126.3	0.0	194.8

Wind Loading - Shaft

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

86.00		1.00	0.95	21.660	23.83	238.21	0.650	0.000	2.00	5.076	3.30	125.8	0.0	192.7
87.00	Appurtenance(s)	1.00	0.95	21.731	23.90	237.31	0.650	0.000	1.00	2.517	1.64	62.6	0.0	95.6
88.00		1.00	0.95	21.802	23.98	236.40	0.650	0.000	1.00	2.504	1.63	62.4	0.0	95.1
90.00		1.00	0.96	21.943	24.14	234.56	0.650	0.000	2.00	4.966	3.23	124.7	0.0	188.5
92.00		1.00	0.96	22.081	24.29	232.68	0.650	0.000	2.00	4.911	3.19	124.1	0.0	186.4
94.00		1.00	0.97	22.217	24.44	230.78	0.650	0.000	2.00	4.857	3.16	123.4	0.0	184.3
96.00		1.00	0.98	22.351	24.59	228.85	0.650	0.000	2.00	4.802	3.12	122.8	0.0	182.2
97.00	Appurtenance(s)	1.00	0.98	22.417	24.66	227.87	0.650	0.000	1.00	2.380	1.55	61.0	0.0	90.3
98.00		1.00	0.98	22.483	24.73	226.89	0.650	0.000	1.00	2.367	1.54	60.9	0.0	89.8
98.75	Bot - Section 3	1.00	0.98	22.532	24.79	226.14	0.650	0.000	0.75	1.766	1.15	45.5	0.0	67.0
100.00		1.00	0.99	22.613	24.87	224.90	0.650	0.000	1.25	2.966	1.93	76.7	0.0	195.6
102.00		1.00	0.99	22.742	25.02	222.89	0.650	0.000	2.00	4.701	3.06	122.3	0.0	310.0
102.25	Top - Section 2	1.00	0.99	22.758	25.03	222.63	0.650	0.000	0.25	0.584	0.38	15.2	0.0	38.5
104.00		1.00	1.00	22.868	25.16	223.92	0.650	0.000	1.75	4.062	2.64	106.3	0.0	115.9
106.00		1.00	1.00	22.993	25.29	221.87	0.650	0.000	2.00	4.591	2.98	120.8	0.0	130.9
107.00	Appurtenance(s)	1.00	1.01	23.055	25.36	220.83	0.650	0.000	1.00	2.275	1.48	60.0	0.0	64.9
108.00		1.00	1.01	23.116	25.43	219.79	0.650	0.000	1.00	2.261	1.47	59.8	0.0	64.5
110.00		1.00	1.02	23.238	25.56	217.69	0.650	0.000	2.00	4.481	2.91	119.1	0.0	127.8
112.00		1.00	1.02	23.358	25.69	215.56	0.650	0.000	2.00	4.427	2.88	118.3	0.0	126.2
114.00		1.00	1.03	23.476	25.82	213.41	0.650	0.000	2.00	4.372	2.84	117.4	0.0	124.6
116.00		1.00	1.03	23.593	25.95	211.24	0.650	0.000	2.00	4.317	2.81	116.5	0.0	123.1
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	210.15	0.650	0.000	1.00	2.138	1.39	57.8	0.0	60.9
118.00		1.00	1.04	23.708	26.08	209.05	0.650	0.000	1.00	2.124	1.38	57.6	0.0	60.5
119.00		1.00	1.04	23.766	26.14	207.95	0.650	0.000	1.00	2.110	1.37	57.4	0.0	60.2
								Totals:	**119.00**			**7,447.3**		**13,393.5**

Discrete Appurtenance Forces

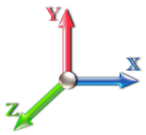
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Sitepro RMQP-4096-HK	1	23.651	26.016	1.00	1.00	48.00	3174.00	0.000	0.000	1998.03	0.00	0.00
2	117.00	AIR6449 B41	3	23.651	26.016	0.53	0.75	9.03	370.80	0.000	0.000	375.71	0.00	0.00
3	117.00	Air 32	3	23.651	26.016	0.65	0.75	12.74	475.20	0.000	0.000	530.45	0.00	0.00
4	117.00	APXVAALL18-43-U-NA20	3	23.651	26.016	0.55	0.75	25.03	333.36	0.000	0.000	1041.96	0.00	0.00
5	117.00	Ericsson 4415 B25 RRU	3	23.651	26.016	0.38	0.75	1.84	165.60	0.000	0.000	76.80	0.00	0.00
6	117.00	KRY 112 144/1	3	23.651	26.016	0.38	0.75	0.46	39.60	0.000	0.000	19.20	0.00	0.00
7	117.00	SDX1926Q-43 Diplexer	3	23.651	26.016	0.75	0.75	0.65	21.60	0.000	0.000	27.16	0.00	0.00
8	117.00	Radio 4449 B71+B85	3	23.651	26.016	0.38	0.75	2.22	266.40	0.000	0.000	92.25	0.00	0.00
9	107.00	Mount Mods1	1	23.055	25.360	0.75	0.75	7.39	498.07	0.000	0.000	299.76	0.00	0.00
10	107.00	RFS DB-T1-6Z-8AB-0Z	2	23.055	25.360	0.53	0.75	5.11	45.36	0.000	0.000	207.43	0.00	0.00
11	107.00	Samsung RFV01UA-D2A	3	23.055	25.360	0.38	0.75	2.11	304.20	0.000	0.000	85.82	0.00	0.00
12	107.00	Samsung RFV01U-D1A	3	23.055	25.360	0.38	0.75	2.10	253.08	0.000	0.000	85.36	0.00	0.00
13	107.00	Commscope	3	23.055	25.360	0.64	0.75	0.71	37.44	0.000	0.000	28.71	0.00	0.00
14	107.00	JAHH-65B-R3B	6	23.055	25.360	0.62	0.75	34.03	455.76	0.000	0.000	1380.65	0.00	0.00
15	107.00	VZS01	3	23.055	25.360	0.52	0.75	6.68	313.56	0.000	0.000	270.88	0.00	0.00
16	107.00	PV-LPP12M-B	1	23.055	25.360	1.00	1.00	28.00	1938.00	0.000	0.000	1136.14	0.00	0.00
17	97.00	NNVV-65B-R4	3	22.417	24.659	0.59	0.80	21.79	278.64	0.000	0.000	859.78	0.00	0.00
18	97.00	1900 MHz	3	22.417	24.659	0.40	0.80	3.25	216.00	0.000	0.000	128.31	0.00	0.00
19	97.00	800 MHz RRU	6	22.417	24.659	0.40	0.80	5.98	381.60	0.000	0.000	235.78	0.00	0.00
20	97.00	TD-RRH8x20-25	3	22.417	24.659	0.40	0.80	4.86	252.00	0.000	0.000	191.75	0.00	0.00
21	97.00	AAHC	3	22.417	24.659	0.60	0.80	7.56	374.40	0.000	0.000	298.28	0.00	0.00
22	97.00	UDS-NPL (3 Sectors)	1	22.417	24.659	0.56	0.75	7.19	691.20	0.000	0.000	283.85	0.00	0.00
23	97.00	VHLP2-18	2	22.417	24.659	1.00	1.00	9.38	74.40	2.187	0.000	370.09	505.79	0.00
24	97.00	VHLP1-23	1	22.417	24.659	1.00	1.00	1.61	17.04	0.000	0.000	63.52	0.00	0.00
25	87.00	MC-PK8-DSH	1	21.731	23.904	1.00	1.00	37.59	2072.40	0.000	0.000	1437.71	0.00	0.00
26	87.00	Raycap	1	21.731	23.904	0.75	0.75	1.51	26.28	0.000	0.000	57.66	0.00	0.00
27	87.00	Fujitsu TA08025-B604	3	21.731	23.904	0.38	0.75	2.21	230.04	0.000	0.000	84.33	0.00	0.00
28	87.00	Fujitsu TA08025-B605	3	21.731	23.904	0.38	0.75	2.21	270.00	0.000	0.000	84.33	0.00	0.00
29	87.00	MX08FRO665-21	3	21.731	23.904	0.55	0.75	20.80	232.20	0.000	0.000	795.38	0.00	0.00
							Totals:		**13,808.23**			**12,547.06**		

Total Applied Force Summary

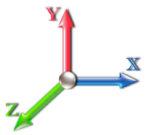
Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		66.95	172.33	0.00	0.00
2.00		66.70	171.80	0.00	0.00
4.00		132.65	342.03	0.00	0.00
6.00		131.65	339.93	0.00	0.00
8.00		130.64	337.83	0.00	0.00
10.00		129.64	335.73	0.00	0.00
12.00		128.63	333.63	0.00	0.00
14.00		127.63	331.53	0.00	0.00
16.00		126.62	329.43	0.00	0.00
18.00		125.62	327.33	0.00	0.00
18.25		15.63	40.77	0.00	0.00
20.00		108.98	284.46	0.00	0.00
22.00		123.61	323.13	0.00	0.00
24.00		122.60	321.04	0.00	0.00
26.00		121.60	318.94	0.00	0.00
28.00		120.59	316.84	0.00	0.00
30.00		119.69	314.74	0.00	0.00
32.00		120.89	312.64	0.00	0.00
34.00		121.96	310.54	0.00	0.00
36.00		122.91	308.44	0.00	0.00
38.00		123.75	306.34	0.00	0.00
40.00		124.49	304.24	0.00	0.00
42.00		125.13	302.14	0.00	0.00
44.00		125.68	300.04	0.00	0.00
46.00		126.15	297.94	0.00	0.00
48.00		126.54	295.84	0.00	0.00
48.75		47.37	110.40	0.00	0.00
50.00		80.28	327.17	0.00	0.00
52.00		128.93	520.06	0.00	0.00
53.25		80.53	322.91	0.00	0.00
54.00		48.29	109.55	0.00	0.00
56.00		129.29	290.69	0.00	0.00
58.00		129.38	288.59	0.00	0.00
60.00		129.41	286.49	0.00	0.00
62.00		129.39	284.39	0.00	0.00
64.00		129.32	282.29	0.00	0.00
66.00		129.21	280.19	0.00	0.00
68.00		129.04	278.09	0.00	0.00
70.00		128.83	275.99	0.00	0.00
72.00		128.58	273.89	0.00	0.00
74.00		128.29	271.80	0.00	0.00
76.00		127.96	269.70	0.00	0.00
78.00		127.60	267.60	0.00	0.00
80.00		127.19	265.50	0.00	0.00
82.00		126.75	263.40	0.00	0.00
84.00		126.28	261.30	0.00	0.00

Total Applied Force Summary

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

86.00		125.77	259.20	0.00	0.00
87.00	(11) attachments	2522.00	2959.73	0.00	0.00
88.00		62.45	128.10	0.00	0.00
90.00		124.66	254.62	0.00	0.00
92.00		124.06	252.52	0.00	0.00
94.00		123.43	250.42	0.00	0.00
96.00		122.78	248.32	0.00	0.00
97.00	(22) attachments	2492.40	2408.65	505.79	0.00
98.00		60.87	116.37	0.00	0.00
98.75		45.52	86.94	0.00	0.00
100.00		76.72	228.83	0.00	0.00
102.00		122.30	363.15	0.00	0.00
102.25		15.20	45.14	0.00	0.00
104.00		106.27	162.35	0.00	0.00
106.00		120.76	184.07	0.00	0.00
107.00	(22) attachments	3554.74	3936.91	0.00	0.00
108.00		59.80	80.92	0.00	0.00
110.00		119.13	160.66	0.00	0.00
112.00		118.28	159.09	0.00	0.00
114.00		117.41	157.51	0.00	0.00
116.00		116.51	155.94	0.00	0.00
117.00	(22) attachments	4219.40	4923.94	0.00	0.00
118.00		57.61	60.54	0.00	0.00
119.00		57.38	60.15	0.00	0.00
	Totals:	**19,994.35**	**30,853.71**	**505.79**	**0.00**

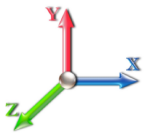
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	2.64
1.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	16.018	0.00	0.00
2.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	2.64
2.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	16.018	0.00	0.00
4.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	5.28
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
6.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	5.28
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
8.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	5.28
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
10.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	5.28
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
12.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	5.28
12.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
14.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	5.28
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
16.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	5.28
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
18.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	5.28
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
18.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	0.66
18.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.024	0.000	16.018	0.00	0.00
20.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	16.018	0.00	4.62
20.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.025	0.000	16.018	0.00	0.00
22.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	5.28
24.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	5.28
26.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	5.28
28.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	5.28
30.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.031	0.00	5.28
32.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.330	0.00	5.28
34.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.615	0.00	5.28
36.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.889	0.00	5.28
38.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.152	0.00	5.28
40.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.405	0.00	5.28
42.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.649	0.00	5.28
44.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.885	0.00	5.28
46.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.114	0.00	5.28
48.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.335	0.00	5.28
48.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	18.417	0.00	1.98
50.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	18.551	0.00	3.30
52.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.760	0.00	5.28
53.25	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	18.887	0.00	3.30
54.00	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	18.963	0.00	1.98
56.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.161	0.00	5.28
58.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.354	0.00	5.28
60.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.543	0.00	5.28
62.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.726	0.00	5.28

Linear Appurtenance Segment Forces (Factored)

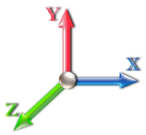
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
64.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.906	0.00	5.28
66.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.082	0.00	5.28
68.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.254	0.00	5.28
70.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.422	0.00	5.28
72.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.587	0.00	5.28
74.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.749	0.00	5.28
76.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.908	0.00	5.28
78.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.064	0.00	5.28
80.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.217	0.00	5.28
82.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.367	0.00	5.28
84.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.514	0.00	5.28
86.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.660	0.00	5.28
87.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	21.731	0.00	2.64
88.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	21.802	0.00	2.64
90.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.943	0.00	5.28
92.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.081	0.00	5.28
94.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.217	0.00	5.28
96.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.351	0.00	5.28
97.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	22.417	0.00	2.64
98.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	22.483	0.00	2.64
98.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	22.532	0.00	1.98
100.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	22.613	0.00	3.30
102.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.742	0.00	5.28
102.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	22.758	0.00	0.66
104.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	22.868	0.00	4.62
106.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.993	0.00	5.28
107.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	23.055	0.00	2.64
										Totals:	**0.0**	**282.5**

Calculated Forces

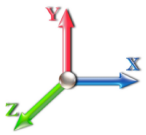
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.84	-20.01	-0.50	-1855.2	-0.01	1855.21	2063.18	1031.59	3653.66	1829.55	0.00	0.000	0.000	0.864
1.00	-30.65	-19.97	-0.50	-1835.2	-0.01	1835.20	2059.52	1029.76	3633.37	1819.38	0.01	-0.055	0.000	0.716
2.00	-30.46	-19.94	-0.50	-1815.2	-0.01	1815.23	2055.83	1027.92	3613.07	1809.22	0.02	-0.101	0.000	0.711
4.00	-30.08	-19.85	-0.50	-1775.3	-0.01	1775.35	2048.36	1024.18	3572.46	1788.88	0.09	-0.193	0.000	0.701
6.00	-29.71	-19.77	-0.50	-1735.6	-0.01	1735.65	2040.76	1020.38	3531.83	1768.54	0.19	-0.284	0.000	0.692
8.00	-29.35	-19.68	-0.50	-1696.1	-0.01	1696.11	2033.04	1016.52	3491.19	1748.19	0.32	-0.375	0.000	0.682
10.00	-28.98	-19.60	-0.50	-1656.7	-0.01	1656.75	2025.20	1012.60	3450.55	1727.84	0.50	-0.466	0.000	0.673
12.00	-28.62	-19.51	-0.50	-1617.5	-0.01	1617.56	2017.23	1008.61	3409.91	1707.49	0.72	-0.557	0.000	0.663
14.00	-28.26	-19.42	-0.50	-1578.5	-0.01	1578.54	2009.13	1004.57	3369.28	1687.14	0.97	-0.647	0.000	0.653
16.00	-27.90	-19.34	-0.50	-1539.6	-0.01	1539.69	2000.92	1000.46	3328.65	1666.80	1.26	-0.737	0.000	0.643
18.00	-27.56	-19.23	-0.50	-1501.0	-0.01	1501.02	1992.57	996.29	3288.04	1646.46	1.59	-0.827	0.000	0.633
18.25	-27.50	-19.24	-0.50	-1496.2	-0.01	1496.21	1991.52	995.76	3282.97	1643.92	1.63	-0.838	0.000	0.632
18.25	-27.50	-19.24	-0.50	-1496.2	-0.01	1496.21	1991.52	995.76	3282.97	1643.92	1.63	-0.838	0.000	0.632
20.00	-27.18	-19.17	-0.50	-1462.5	-0.01	1462.55	1984.11	992.05	3247.45	1626.14	1.95	-0.916	0.000	0.913
22.00	-26.82	-19.10	-0.50	-1424.2	-0.01	1424.21	1975.52	987.76	3206.89	1605.83	2.37	-1.047	0.000	0.901
24.00	-26.46	-19.04	-0.50	-1386.0	-0.01	1386.00	1966.80	983.40	3166.36	1585.53	2.83	-1.176	0.000	0.888
26.00	-26.10	-18.97	-0.50	-1347.9	-0.01	1347.93	1957.96	978.98	3125.86	1565.25	3.35	-1.306	-0.001	0.875
28.00	-25.74	-18.90	-0.50	-1310.0	-0.01	1310.00	1948.99	974.50	3085.40	1544.99	3.93	-1.435	-0.001	0.861
30.00	-25.39	-18.82	-0.50	-1272.2	-0.01	1272.21	1939.91	969.95	3044.99	1524.76	4.56	-1.564	-0.001	0.848
32.00	-25.04	-18.75	-0.50	-1234.5	-0.01	1234.56	1930.69	965.35	3004.63	1504.55	5.24	-1.692	-0.001	0.834
34.00	-24.69	-18.67	-0.50	-1197.0	-0.01	1197.06	1921.36	960.68	2964.32	1484.36	5.98	-1.819	-0.001	0.820
36.00	-24.34	-18.59	-0.50	-1159.7	-0.01	1159.72	1911.89	955.95	2924.07	1464.21	6.77	-1.946	-0.001	0.805
38.00	-24.00	-18.51	-0.50	-1122.5	-0.01	1122.53	1902.31	951.15	2883.89	1444.09	7.61	-2.072	-0.001	0.790
40.00	-23.66	-18.43	-0.50	-1085.5	-0.01	1085.50	1892.60	946.30	2843.78	1424.00	8.51	-2.197	-0.001	0.775
42.00	-23.32	-18.34	-0.50	-1048.6	-0.01	1048.65	1882.76	941.38	2803.75	1403.96	9.45	-2.322	-0.001	0.760
44.00	-22.99	-18.25	-0.50	-1011.9	-0.01	1011.96	1872.80	936.40	2763.79	1383.95	10.45	-2.445	-0.001	0.744
46.00	-22.66	-18.16	-0.50	-975.46	-0.01	975.46	1862.72	931.36	2723.92	1363.99	11.50	-2.567	-0.001	0.728
48.00	-22.34	-18.05	-0.50	-939.13	-0.01	939.13	1852.51	926.26	2684.14	1344.07	12.60	-2.688	-0.001	0.711
48.75	-22.22	-18.03	-0.50	-925.59	-0.01	925.59	1848.65	924.33	2669.25	1336.61	13.03	-2.733	-0.001	0.705
50.00	-21.86	-17.97	-0.50	-903.06	-0.01	903.06	1842.18	921.09	2644.46	1324.20	13.76	-2.808	-0.001	0.694
52.00	-21.32	-17.85	-0.50	-867.13	-0.01	867.13	1831.72	915.86	2604.88	1304.37	14.96	-2.926	-0.001	0.677
53.25	-20.99	-17.77	-0.50	-844.82	-0.01	844.82	1841.33	920.67	2641.23	1322.58	15.73	-3.000	-0.001	0.651
54.00	-20.85	-17.75	-0.50	-831.49	-0.01	831.49	1837.42	918.71	2626.38	1315.14	16.21	-3.043	-0.001	0.644
56.00	-20.54	-17.64	-0.50	-796.00	-0.01	796.00	1826.91	913.45	2586.84	1295.34	17.51	-3.153	-0.001	0.626
58.00	-20.22	-17.53	-0.50	-760.72	-0.02	760.72	1816.27	908.14	2547.41	1275.60	18.85	-3.262	-0.001	0.608
60.00	-19.91	-17.42	-0.50	-725.66	-0.02	725.66	1805.51	902.75	2508.10	1255.91	20.24	-3.368	-0.002	0.589
62.00	-19.61	-17.31	-0.50	-690.81	-0.02	690.81	1794.62	897.31	2468.90	1236.28	21.67	-3.472	-0.002	0.570
64.00	-19.30	-17.20	-0.50	-656.19	-0.02	656.19	1783.61	891.81	2429.82	1216.72	23.15	-3.574	-0.002	0.551
66.00	-19.00	-17.09	-0.50	-621.79	-0.02	621.79	1772.48	886.24	2390.88	1197.22	24.67	-3.674	-0.002	0.530
68.00	-18.70	-16.97	-0.50	-587.62	-0.02	587.62	1761.22	880.61	2352.06	1177.78	26.23	-3.771	-0.002	0.510
70.00	-18.41	-16.85	-0.50	-553.68	-0.02	553.68	1749.83	874.92	2313.39	1158.41	27.83	-3.865	-0.002	0.489
72.00	-18.12	-16.74	-0.50	-519.97	-0.02	519.97	1738.33	869.16	2274.85	1139.12	29.46	-3.957	-0.002	0.467
74.00	-17.83	-16.62	-0.50	-486.50	-0.02	486.50	1726.69	863.35	2236.47	1119.90	31.14	-4.045	-0.002	0.445
76.00	-17.55	-16.49	-0.50	-453.27	-0.02	453.27	1714.94	857.47	2198.23	1100.75	32.85	-4.130	-0.002	0.422
78.00	-17.27	-16.37	-0.50	-420.28	-0.02	420.28	1703.06	851.53	2160.16	1081.68	34.60	-4.212	-0.002	0.399
80.00	-16.99	-16.25	-0.50	-387.54	-0.03	387.54	1691.05	845.53	2122.25	1062.70	36.38	-4.290	-0.002	0.375
82.00	-16.72	-16.12	-0.50	-355.05	-0.03	355.05	1678.92	839.46	2084.50	1043.80	38.19	-4.364	-0.003	0.350
84.00	-16.45	-16.00	-0.50	-322.81	-0.03	322.81	1666.67	833.33	2046.93	1024.99	40.03	-4.433	-0.003	0.325

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

86.00	-16.19	-15.86	-0.50	-290.82	-0.03	290.82	1654.29	827.14	2009.53	1006.26	41.90	-4.498	-0.003	0.299
87.00	-13.43	-13.12	-0.50	-274.95	-0.03	274.95	1648.05	824.03	1990.91	996.93	42.85	-4.529	-0.003	0.284
88.00	-13.29	-13.06	-0.50	-261.83	-0.03	261.83	1641.79	820.89	1972.32	987.63	43.80	-4.559	-0.003	0.273
90.00	-13.04	-12.93	-0.50	-235.71	-0.03	235.71	1629.16	814.58	1935.30	969.09	45.72	-4.616	-0.003	0.251
92.00	-12.79	-12.80	-0.50	-209.85	-0.03	209.85	1616.41	808.20	1898.47	950.64	47.66	-4.668	-0.003	0.229
94.00	-12.54	-12.66	-0.50	-184.26	-0.03	184.26	1603.53	801.77	1861.83	932.30	49.63	-4.716	-0.003	0.206
96.00	-12.29	-12.53	-0.50	-158.94	-0.03	158.94	1590.53	795.27	1825.40	914.06	51.61	-4.759	-0.003	0.182
97.00	-10.10	-9.85	0.00	-146.41	0.01	146.41	1583.99	791.99	1807.27	904.98	52.61	-4.778	-0.003	0.168
98.00	-9.98	-9.78	0.00	-136.57	0.01	136.57	1577.41	788.70	1789.18	895.92	53.61	-4.797	-0.003	0.159
98.75	-9.90	-9.73	0.00	-129.24	0.01	129.24	1572.46	786.23	1775.65	889.15	54.36	-4.811	-0.003	0.152
100.00	-9.67	-9.64	0.00	-117.08	0.01	117.08	1564.16	782.08	1753.17	877.89	55.62	-4.832	-0.003	0.140
102.00	-9.32	-9.49	0.00	-97.80	0.00	97.80	1550.79	775.39	1717.38	859.97	57.65	-4.861	-0.003	0.120
102.25	-9.27	-9.47	0.00	-95.43	0.00	95.43	1064.30	532.15	1198.84	600.31	57.91	-4.865	-0.003	0.168
104.00	-9.11	-9.35	0.00	-78.86	0.00	78.86	1057.83	528.92	1179.14	590.45	59.69	-4.887	-0.003	0.142
106.00	-8.94	-9.22	0.00	-60.15	0.00	60.15	1050.33	525.16	1156.68	579.20	61.74	-4.913	-0.003	0.113
107.00	-5.32	-5.34	0.00	-50.93	0.00	50.93	1046.53	523.26	1145.48	573.59	62.77	-4.924	-0.003	0.094
108.00	-5.24	-5.28	0.00	-45.59	0.00	45.59	1042.70	521.35	1134.29	567.99	63.80	-4.934	-0.003	0.085
110.00	-5.09	-5.15	0.00	-35.03	0.00	35.03	1034.95	517.47	1111.97	556.81	65.87	-4.951	-0.003	0.068
112.00	-4.94	-5.02	0.00	-24.74	0.00	24.74	1027.07	513.53	1089.73	545.68	67.95	-4.963	-0.003	0.050
114.00	-4.79	-4.89	0.00	-14.71	0.00	14.71	1019.06	509.53	1067.57	534.58	70.03	-4.972	-0.003	0.032
116.00	-4.65	-4.76	0.00	-4.94	0.00	4.94	1010.94	505.47	1045.49	523.52	72.11	-4.976	-0.003	0.014
117.00	-0.11	-0.12	0.00	-0.19	0.00	0.19	1006.83	503.41	1034.49	518.01	73.15	-4.977	-0.003	0.000
118.00	-0.05	-0.06	0.00	-0.06	0.00	0.06	1002.69	501.34	1023.51	512.52	74.19	-4.977	-0.003	0.000
119.00	0.00	-0.06	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	75.23	-4.977	-0.003	0.000

Wind Loading - Shaft

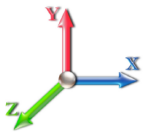
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	16.018	17.62	297.08	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.70	16.018	17.62	295.97	0.650	0.000	1.00	3.654	2.37	67.0	0.0	104.3
2.00		1.00	0.70	16.018	17.62	294.86	0.650	0.000	1.00	3.640	2.37	66.7	0.0	103.9
4.00		1.00	0.70	16.018	17.62	292.63	0.650	0.000	2.00	7.239	4.71	132.7	0.0	206.7
6.00		1.00	0.70	16.018	17.62	290.41	0.650	0.000	2.00	7.184	4.67	131.6	0.0	205.1
8.00		1.00	0.70	16.018	17.62	288.18	0.650	0.000	2.00	7.129	4.63	130.6	0.0	203.5
10.00		1.00	0.70	16.018	17.62	285.96	0.650	0.000	2.00	7.075	4.60	129.6	0.0	201.9
12.00		1.00	0.70	16.018	17.62	283.73	0.650	0.000	2.00	7.020	4.56	128.6	0.0	200.4
14.00		1.00	0.70	16.018	17.62	281.51	0.650	0.000	2.00	6.965	4.53	127.6	0.0	198.8
16.00		1.00	0.70	16.018	17.62	279.28	0.650	0.000	2.00	6.910	4.49	126.6	0.0	197.2
18.00		1.00	0.70	16.018	17.62	277.06	0.650	0.000	2.00	6.855	4.46	125.6	0.0	195.6
18.25	RT2	1.00	0.70	16.018	17.62	276.78	0.650	0.000	0.25	0.853	0.55	15.6	0.0	24.3
20.00		1.00	0.70	16.018	17.62	274.83	0.650	0.000	1.75	5.947	3.87	109.0	0.0	169.7
22.00		1.00	0.70	16.018	17.62	272.61	0.650	0.000	2.00	6.746	4.38	123.6	0.0	192.5
24.00		1.00	0.70	16.018	17.62	270.38	0.650	0.000	2.00	6.691	4.35	122.6	0.0	190.9
26.00		1.00	0.70	16.018	17.62	268.16	0.650	0.000	2.00	6.636	4.31	121.6	0.0	189.3
28.00		1.00	0.70	16.018	17.62	265.94	0.650	0.000	2.00	6.581	4.28	120.6	0.0	187.8
30.00		1.00	0.70	16.031	17.63	263.82	0.650	0.000	2.00	6.526	4.24	119.7	0.0	186.2
32.00		1.00	0.71	16.330	17.96	264.02	0.650	0.000	2.00	6.471	4.21	120.9	0.0	184.6
34.00		1.00	0.73	16.615	18.28	264.05	0.650	0.000	2.00	6.417	4.17	122.0	0.0	183.1
36.00		1.00	0.74	16.889	18.58	263.93	0.650	0.000	2.00	6.362	4.14	122.9	0.0	181.5
38.00		1.00	0.75	17.152	18.87	263.68	0.650	0.000	2.00	6.307	4.10	123.8	0.0	179.9
40.00		1.00	0.76	17.405	19.15	263.30	0.650	0.000	2.00	6.252	4.06	124.5	0.0	178.3
42.00		1.00	0.77	17.649	19.41	262.80	0.650	0.000	2.00	6.197	4.03	125.1	0.0	176.8
44.00		1.00	0.78	17.885	19.67	262.20	0.650	0.000	2.00	6.142	3.99	125.7	0.0	175.2
46.00		1.00	0.79	18.114	19.93	261.51	0.650	0.000	2.00	6.088	3.96	126.2	0.0	173.6
48.00		1.00	0.80	18.335	20.17	260.72	0.650	0.000	2.00	6.033	3.92	126.5	0.0	172.0
48.75	Bot - Section 2	1.00	0.80	18.417	20.26	260.41	0.650	0.000	0.75	2.248	1.46	47.4	0.0	64.1
50.00		1.00	0.81	18.551	20.41	259.85	0.650	0.000	1.25	3.783	2.46	80.3	0.0	214.2
52.00		1.00	0.82	18.760	20.64	258.91	0.650	0.000	2.00	6.008	3.91	128.9	0.0	340.2
53.25	Top - Section 1	1.00	0.83	18.887	20.78	258.28	0.650	0.000	1.25	3.727	2.42	80.5	0.0	211.0
54.00		1.00	0.83	18.963	20.86	261.62	0.650	0.000	0.75	2.226	1.45	48.3	0.0	63.5
56.00		1.00	0.84	19.161	21.08	260.55	0.650	0.000	2.00	5.898	3.83	129.3	0.0	168.2
58.00		1.00	0.85	19.354	21.29	259.41	0.650	0.000	2.00	5.843	3.80	129.4	0.0	166.6
60.00		1.00	0.85	19.543	21.50	258.22	0.650	0.000	2.00	5.789	3.76	129.4	0.0	165.0
62.00		1.00	0.86	19.726	21.70	256.96	0.650	0.000	2.00	5.734	3.73	129.4	0.0	163.4
64.00		1.00	0.87	19.906	21.90	255.65	0.650	0.000	2.00	5.679	3.69	129.3	0.0	161.9
66.00		1.00	0.88	20.082	22.09	254.28	0.650	0.000	2.00	5.624	3.66	129.2	0.0	160.3
68.00		1.00	0.89	20.254	22.28	252.87	0.650	0.000	2.00	5.569	3.62	129.0	0.0	158.7
70.00		1.00	0.89	20.422	22.46	251.41	0.650	0.000	2.00	5.514	3.58	128.8	0.0	157.1
72.00		1.00	0.90	20.587	22.65	249.90	0.650	0.000	2.00	5.460	3.55	128.6	0.0	155.6
74.00		1.00	0.91	20.749	22.82	248.35	0.650	0.000	2.00	5.405	3.51	128.3	0.0	154.0
76.00		1.00	0.91	20.908	23.00	246.75	0.650	0.000	2.00	5.350	3.48	128.0	0.0	152.4
78.00		1.00	0.92	21.064	23.17	245.12	0.650	0.000	2.00	5.295	3.44	127.6	0.0	150.8
80.00		1.00	0.93	21.217	23.34	243.45	0.650	0.000	2.00	5.240	3.41	127.2	0.0	149.3
82.00		1.00	0.93	21.367	23.50	241.74	0.650	0.000	2.00	5.185	3.37	126.8	0.0	147.7
84.00		1.00	0.94	21.514	23.67	239.99	0.650	0.000	2.00	5.131	3.33	126.3	0.0	146.1

Wind Loading - Shaft

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

86.00		1.00	0.95	21.660	23.83	238.21	0.650	0.000	2.00	5.076	3.30	125.8	0.0	144.5
87.00	Appurtenance(s)	1.00	0.95	21.731	23.90	237.31	0.650	0.000	1.00	2.517	1.64	62.6	0.0	71.7
88.00		1.00	0.95	21.802	23.98	236.40	0.650	0.000	1.00	2.504	1.63	62.4	0.0	71.3
90.00		1.00	0.96	21.943	24.14	234.56	0.650	0.000	2.00	4.966	3.23	124.7	0.0	141.4
92.00		1.00	0.96	22.081	24.29	232.68	0.650	0.000	2.00	4.911	3.19	124.1	0.0	139.8
94.00		1.00	0.97	22.217	24.44	230.78	0.650	0.000	2.00	4.857	3.16	123.4	0.0	138.2
96.00		1.00	0.98	22.351	24.59	228.85	0.650	0.000	2.00	4.802	3.12	122.8	0.0	136.7
97.00	Appurtenance(s)	1.00	0.98	22.417	24.66	227.87	0.650	0.000	1.00	2.380	1.55	61.0	0.0	67.7
98.00		1.00	0.98	22.483	24.73	226.89	0.650	0.000	1.00	2.367	1.54	60.9	0.0	67.4
98.75	Bot - Section 3	1.00	0.98	22.532	24.79	226.14	0.650	0.000	0.75	1.766	1.15	45.5	0.0	50.3
100.00		1.00	0.99	22.613	24.87	224.90	0.650	0.000	1.25	2.966	1.93	76.7	0.0	146.7
102.00		1.00	0.99	22.742	25.02	222.89	0.650	0.000	2.00	4.701	3.06	122.3	0.0	232.5
102.25	Top - Section 2	1.00	0.99	22.758	25.03	222.63	0.650	0.000	0.25	0.584	0.38	15.2	0.0	28.9
104.00		1.00	1.00	22.868	25.16	223.92	0.650	0.000	1.75	4.062	2.64	106.3	0.0	86.9
106.00		1.00	1.00	22.993	25.29	221.87	0.650	0.000	2.00	4.591	2.98	120.8	0.0	98.2
107.00	Appurtenance(s)	1.00	1.01	23.055	25.36	220.83	0.650	0.000	1.00	2.275	1.48	60.0	0.0	48.7
108.00		1.00	1.01	23.116	25.43	219.79	0.650	0.000	1.00	2.261	1.47	59.8	0.0	48.4
110.00		1.00	1.02	23.238	25.56	217.69	0.650	0.000	2.00	4.481	2.91	119.1	0.0	95.8
112.00		1.00	1.02	23.358	25.69	215.56	0.650	0.000	2.00	4.427	2.88	118.3	0.0	94.7
114.00		1.00	1.03	23.476	25.82	213.41	0.650	0.000	2.00	4.372	2.84	117.4	0.0	93.5
116.00		1.00	1.03	23.593	25.95	211.24	0.650	0.000	2.00	4.317	2.81	116.5	0.0	92.3
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	210.15	0.650	0.000	1.00	2.138	1.39	57.8	0.0	45.7
118.00		1.00	1.04	23.708	26.08	209.05	0.650	0.000	1.00	2.124	1.38	57.6	0.0	45.4
119.00		1.00	1.04	23.766	26.14	207.95	0.650	0.000	1.00	2.110	1.37	57.4	0.0	45.1
								Totals:	**119.00**			**7,447.3**		**10,045.1**

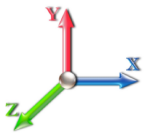
Discrete Appurtenance Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Sitepro RMQP-4096-HK	1	23.651	26.016	1.00	1.00	48.00	2380.50	0.000	0.000	1998.03	0.00	0.00
2	117.00	AIR6449 B41	3	23.651	26.016	0.53	0.75	9.03	278.10	0.000	0.000	375.71	0.00	0.00
3	117.00	Air 32	3	23.651	26.016	0.65	0.75	12.74	356.40	0.000	0.000	530.45	0.00	0.00
4	117.00	APXVAALL18-43-U-NA20	3	23.651	26.016	0.55	0.75	25.03	250.02	0.000	0.000	1041.96	0.00	0.00
5	117.00	Ericsson 4415 B25 RRU	3	23.651	26.016	0.38	0.75	1.84	124.20	0.000	0.000	76.80	0.00	0.00
6	117.00	KRY 112 144/1	3	23.651	26.016	0.38	0.75	0.46	29.70	0.000	0.000	19.20	0.00	0.00
7	117.00	SDX1926Q-43 Diplexer	3	23.651	26.016	0.75	0.75	0.65	16.20	0.000	0.000	27.16	0.00	0.00
8	117.00	Radio 4449 B71+B85	3	23.651	26.016	0.38	0.75	2.22	199.80	0.000	0.000	92.25	0.00	0.00
9	107.00	Mount Mods1	1	23.055	25.360	0.75	0.75	7.39	373.55	0.000	0.000	299.76	0.00	0.00
10	107.00	RFS DB-T1-6Z-8AB-0Z	2	23.055	25.360	0.53	0.75	5.11	34.02	0.000	0.000	207.43	0.00	0.00
11	107.00	Samsung RFV01UA-D2A	3	23.055	25.360	0.38	0.75	2.11	228.15	0.000	0.000	85.82	0.00	0.00
12	107.00	Samsung RFV01U-D1A	3	23.055	25.360	0.38	0.75	2.10	189.81	0.000	0.000	85.36	0.00	0.00
13	107.00	Commscope	3	23.055	25.360	0.64	0.75	0.71	28.08	0.000	0.000	28.71	0.00	0.00
14	107.00	JAHH-65B-R3B	6	23.055	25.360	0.62	0.75	34.03	341.82	0.000	0.000	1380.65	0.00	0.00
15	107.00	VZS01	3	23.055	25.360	0.52	0.75	6.68	235.17	0.000	0.000	270.88	0.00	0.00
16	107.00	PV-LPP12M-B	1	23.055	25.360	1.00	1.00	28.00	1453.50	0.000	0.000	1136.14	0.00	0.00
17	97.00	NNVV-65B-R4	3	22.417	24.659	0.59	0.80	21.79	208.98	0.000	0.000	859.78	0.00	0.00
18	97.00	1900 MHz	3	22.417	24.659	0.40	0.80	3.25	162.00	0.000	0.000	128.31	0.00	0.00
19	97.00	800 MHz RRU	6	22.417	24.659	0.40	0.80	5.98	286.20	0.000	0.000	235.78	0.00	0.00
20	97.00	TD-RRH8x20-25	3	22.417	24.659	0.40	0.80	4.86	189.00	0.000	0.000	191.75	0.00	0.00
21	97.00	AAHC	3	22.417	24.659	0.60	0.80	7.56	280.80	0.000	0.000	298.28	0.00	0.00
22	97.00	UDS-NPL (3 Sectors)	1	22.417	24.659	0.56	0.75	7.19	518.40	0.000	0.000	283.85	0.00	0.00
23	97.00	VHLP2-18	2	22.417	24.659	1.00	1.00	9.38	55.80	2.187	0.000	370.09	505.79	0.00
24	97.00	VHLP1-23	1	22.417	24.659	1.00	1.00	1.61	12.78	0.000	0.000	63.52	0.00	0.00
25	87.00	MC-PK8-DSH	1	21.731	23.904	1.00	1.00	37.59	1554.30	0.000	0.000	1437.71	0.00	0.00
26	87.00	Raycap	1	21.731	23.904	0.75	0.75	1.51	19.71	0.000	0.000	57.66	0.00	0.00
27	87.00	Fujitsu TA08025-B604	3	21.731	23.904	0.38	0.75	2.21	172.53	0.000	0.000	84.33	0.00	0.00
28	87.00	Fujitsu TA08025-B605	3	21.731	23.904	0.38	0.75	2.21	202.50	0.000	0.000	84.33	0.00	0.00
29	87.00	MX08FRO665-21	3	21.731	23.904	0.55	0.75	20.80	174.15	0.000	0.000	795.38	0.00	0.00
							Totals:		**10,356.17**			**12,547.06**		

Total Applied Force Summary

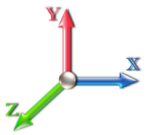
Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		66.95	129.24	0.00	0.00
2.00		66.70	128.85	0.00	0.00
4.00		132.65	256.52	0.00	0.00
6.00		131.65	254.95	0.00	0.00
8.00		130.64	253.37	0.00	0.00
10.00		129.64	251.80	0.00	0.00
12.00		128.63	250.22	0.00	0.00
14.00		127.63	248.65	0.00	0.00
16.00		126.62	247.07	0.00	0.00
18.00		125.62	245.50	0.00	0.00
18.25		15.63	30.58	0.00	0.00
20.00		108.98	213.35	0.00	0.00
22.00		123.61	242.35	0.00	0.00
24.00		122.60	240.78	0.00	0.00
26.00		121.60	239.20	0.00	0.00
28.00		120.59	237.63	0.00	0.00
30.00		119.69	236.05	0.00	0.00
32.00		120.89	234.48	0.00	0.00
34.00		121.96	232.90	0.00	0.00
36.00		122.91	231.33	0.00	0.00
38.00		123.75	229.76	0.00	0.00
40.00		124.49	228.18	0.00	0.00
42.00		125.13	226.61	0.00	0.00
44.00		125.68	225.03	0.00	0.00
46.00		126.15	223.46	0.00	0.00
48.00		126.54	221.88	0.00	0.00
48.75		47.37	82.80	0.00	0.00
50.00		80.28	245.38	0.00	0.00
52.00		128.93	390.05	0.00	0.00
53.25		80.53	242.18	0.00	0.00
54.00		48.29	82.16	0.00	0.00
56.00		129.29	218.02	0.00	0.00
58.00		129.38	216.44	0.00	0.00
60.00		129.41	214.87	0.00	0.00
62.00		129.39	213.29	0.00	0.00
64.00		129.32	211.72	0.00	0.00
66.00		129.21	210.14	0.00	0.00
68.00		129.04	208.57	0.00	0.00
70.00		128.83	207.00	0.00	0.00
72.00		128.58	205.42	0.00	0.00
74.00		128.29	203.85	0.00	0.00
76.00		127.96	202.27	0.00	0.00
78.00		127.60	200.70	0.00	0.00
80.00		127.19	199.12	0.00	0.00
82.00		126.75	197.55	0.00	0.00
84.00		126.28	195.97	0.00	0.00

Total Applied Force Summary

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

86.00		125.77	194.40	0.00	0.00
87.00	(11) attachments	2522.00	2219.80	0.00	0.00
88.00		62.45	96.07	0.00	0.00
90.00		124.66	190.96	0.00	0.00
92.00		124.06	189.39	0.00	0.00
94.00		123.43	187.81	0.00	0.00
96.00		122.78	186.24	0.00	0.00
97.00	(22) attachments	2492.40	1806.49	505.79	0.00
98.00		60.87	87.28	0.00	0.00
98.75		45.52	65.20	0.00	0.00
100.00		76.72	171.63	0.00	0.00
102.00		122.30	272.36	0.00	0.00
102.25		15.20	33.85	0.00	0.00
104.00		106.27	121.76	0.00	0.00
106.00		120.76	138.05	0.00	0.00
107.00	(22) attachments	3554.74	2952.69	0.00	0.00
108.00		59.80	60.69	0.00	0.00
110.00		119.13	120.50	0.00	0.00
112.00		118.28	119.31	0.00	0.00
114.00		117.41	118.13	0.00	0.00
116.00		116.51	116.95	0.00	0.00
117.00	(22) attachments	4219.40	3692.95	0.00	0.00
118.00		57.61	45.41	0.00	0.00
119.00		57.38	45.11	0.00	0.00
	Totals:	**19,994.35**	**23,140.28**	**505.79**	**0.00**

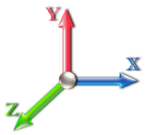
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	1.98
1.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	16.018	0.00	0.00
2.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	1.98
2.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	16.018	0.00	0.00
4.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	3.96
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
6.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	3.96
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
8.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	16.018	0.00	3.96
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	16.018	0.00	0.00
10.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	3.96
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
12.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	3.96
12.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
14.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	3.96
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
16.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	3.96
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
18.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	3.96
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	16.018	0.00	0.00
18.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.024	0.000	16.018	0.00	0.50
18.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.024	0.000	16.018	0.00	0.00
20.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	16.018	0.00	3.47
20.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.025	0.000	16.018	0.00	0.00
22.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	3.96
24.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	3.96
26.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	3.96
28.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.018	0.00	3.96
30.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.031	0.00	3.96
32.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.330	0.00	3.96
34.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.615	0.00	3.96
36.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	16.889	0.00	3.96
38.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.152	0.00	3.96
40.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.405	0.00	3.96
42.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.649	0.00	3.96
44.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	17.885	0.00	3.96
46.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.114	0.00	3.96
48.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.335	0.00	3.96
48.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	18.417	0.00	1.49
50.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	18.551	0.00	2.48
52.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	18.760	0.00	3.96
53.25	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	18.887	0.00	2.48
54.00	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	18.963	0.00	1.49
56.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.161	0.00	3.96
58.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.354	0.00	3.96
60.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.543	0.00	3.96
62.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.726	0.00	3.96

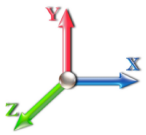
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
64.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	19.906	0.00	3.96
66.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.082	0.00	3.96
68.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.254	0.00	3.96
70.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.422	0.00	3.96
72.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.587	0.00	3.96
74.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.749	0.00	3.96
76.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	20.908	0.00	3.96
78.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.064	0.00	3.96
80.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.217	0.00	3.96
82.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.367	0.00	3.96
84.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.514	0.00	3.96
86.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.660	0.00	3.96
87.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	21.731	0.00	1.98
88.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	21.802	0.00	1.98
90.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	21.943	0.00	3.96
92.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.081	0.00	3.96
94.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.217	0.00	3.96
96.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.351	0.00	3.96
97.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	22.417	0.00	1.98
98.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	22.483	0.00	1.98
98.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	22.532	0.00	1.49
100.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	22.613	0.00	2.48
102.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.742	0.00	3.96
102.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	22.758	0.00	0.50
104.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	22.868	0.00	3.47
106.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.993	0.00	3.96
107.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	23.055	0.00	1.98
									Totals:		**0.0**	**211.9**

Calculated Forces

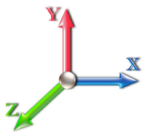
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.13	-20.01	-0.50	-1828.4	-0.01	1828.47	2063.18	1031.59	3653.66	1829.55	0.00	0.000	0.000	0.849
1.00	-22.98	-19.96	-0.50	-1808.4	-0.01	1808.46	2059.52	1029.76	3633.37	1819.38	0.01	-0.054	0.000	0.703
2.00	-22.83	-19.92	-0.50	-1788.5	-0.01	1788.50	2055.83	1027.92	3613.07	1809.22	0.02	-0.100	0.000	0.698
4.00	-22.54	-19.82	-0.50	-1748.6	-0.01	1748.67	2048.36	1024.18	3572.46	1788.88	0.08	-0.190	0.000	0.689
6.00	-22.26	-19.72	-0.50	-1709.0	-0.01	1709.03	2040.76	1020.38	3531.83	1768.54	0.18	-0.280	0.000	0.679
8.00	-21.98	-19.63	-0.50	-1669.5	-0.01	1669.58	2033.04	1016.52	3491.19	1748.19	0.32	-0.370	0.000	0.670
10.00	-21.69	-19.53	-0.50	-1630.3	0.00	1630.33	2025.20	1012.60	3450.55	1727.84	0.49	-0.459	0.000	0.660
12.00	-21.41	-19.43	-0.50	-1591.2	0.00	1591.27	2017.23	1008.61	3409.91	1707.49	0.71	-0.548	0.000	0.650
14.00	-21.14	-19.33	-0.50	-1552.4	0.00	1552.41	2009.13	1004.57	3369.28	1687.14	0.95	-0.637	0.000	0.640
16.00	-20.86	-19.24	-0.50	-1513.7	0.00	1513.75	2000.92	1000.46	3328.65	1666.80	1.24	-0.726	0.000	0.630
18.00	-20.60	-19.12	-0.50	-1475.2	0.00	1475.28	1992.57	996.29	3288.04	1646.46	1.56	-0.814	0.000	0.620
18.25	-20.56	-19.12	-0.50	-1470.5	0.00	1470.50	1991.52	995.76	3282.97	1643.92	1.61	-0.825	0.000	0.619
18.25	-20.56	-19.12	-0.50	-1470.5	0.00	1470.50	1991.52	995.76	3282.97	1643.92	1.61	-0.825	0.000	0.619
20.00	-20.31	-19.05	-0.50	-1437.0	0.00	1437.03	1984.11	992.05	3247.45	1626.14	1.92	-0.902	0.000	0.894
22.00	-20.03	-18.97	-0.50	-1398.9	0.00	1398.94	1975.52	987.76	3206.89	1605.83	2.33	-1.030	0.000	0.882
24.00	-19.75	-18.88	-0.50	-1361.0	0.00	1361.01	1966.80	983.40	3166.36	1585.53	2.79	-1.157	0.000	0.869
26.00	-19.47	-18.80	-0.50	-1323.2	-0.01	1323.24	1957.96	978.98	3125.86	1565.25	3.30	-1.284	-0.001	0.856
28.00	-19.19	-18.72	-0.50	-1285.6	-0.01	1285.64	1948.99	974.50	3085.40	1544.99	3.87	-1.411	-0.001	0.842
30.00	-18.92	-18.63	-0.50	-1248.2	-0.01	1248.21	1939.91	969.95	3044.99	1524.76	4.49	-1.538	-0.001	0.829
32.00	-18.65	-18.54	-0.50	-1210.9	-0.01	1210.95	1930.69	965.35	3004.63	1504.55	5.16	-1.663	-0.001	0.815
34.00	-18.38	-18.46	-0.50	-1173.8	-0.01	1173.87	1921.36	960.68	2964.32	1484.36	5.88	-1.788	-0.001	0.801
36.00	-18.11	-18.36	-0.50	-1136.9	-0.01	1136.95	1911.89	955.95	2924.07	1464.21	6.66	-1.913	-0.001	0.786
38.00	-17.85	-18.27	-0.50	-1100.2	-0.01	1100.23	1902.31	951.15	2883.89	1444.09	7.48	-2.036	-0.001	0.772
40.00	-17.59	-18.18	-0.50	-1063.6	-0.01	1063.68	1892.60	946.30	2843.78	1424.00	8.36	-2.159	-0.001	0.757
42.00	-17.33	-18.08	-0.50	-1027.3	-0.01	1027.33	1882.76	941.38	2803.75	1403.96	9.30	-2.281	-0.001	0.741
44.00	-17.07	-17.98	-0.50	-991.18	-0.01	991.18	1872.80	936.40	2763.79	1383.95	10.28	-2.401	-0.001	0.726
46.00	-16.81	-17.88	-0.50	-955.22	-0.01	955.22	1862.72	931.36	2723.92	1363.99	11.31	-2.521	-0.001	0.710
48.00	-16.57	-17.77	-0.50	-919.46	-0.01	919.46	1852.51	926.26	2684.14	1344.07	12.39	-2.639	-0.001	0.693
48.75	-16.47	-17.73	-0.50	-906.13	-0.01	906.13	1848.65	924.33	2669.25	1336.61	12.81	-2.683	-0.001	0.687
50.00	-16.20	-17.67	-0.50	-883.97	-0.01	883.97	1842.18	921.09	2644.46	1324.20	13.52	-2.757	-0.001	0.677
52.00	-15.79	-17.55	-0.50	-848.64	-0.01	848.64	1831.72	915.86	2604.88	1304.37	14.70	-2.872	-0.001	0.660
53.25	-15.54	-17.47	-0.50	-826.70	-0.01	826.70	1841.33	920.67	2641.23	1322.58	15.46	-2.944	-0.001	0.634
54.00	-15.43	-17.44	-0.50	-813.60	-0.01	813.60	1837.42	918.71	2626.38	1315.14	15.93	-2.987	-0.001	0.627
56.00	-15.19	-17.32	-0.50	-778.73	-0.01	778.73	1826.91	913.45	2586.84	1295.34	17.20	-3.095	-0.001	0.610
58.00	-14.95	-17.21	-0.50	-744.09	-0.01	744.09	1816.27	908.14	2547.41	1275.60	18.52	-3.201	-0.001	0.592
60.00	-14.71	-17.09	-0.50	-709.67	-0.01	709.67	1805.51	902.75	2508.10	1255.91	19.88	-3.304	-0.002	0.574
62.00	-14.48	-16.98	-0.50	-675.48	-0.02	675.48	1794.62	897.31	2468.90	1236.28	21.29	-3.406	-0.002	0.555
64.00	-14.24	-16.86	-0.50	-641.52	-0.02	641.52	1783.61	891.81	2429.82	1216.72	22.74	-3.506	-0.002	0.536
66.00	-14.02	-16.74	-0.50	-607.80	-0.02	607.80	1772.48	886.24	2390.88	1197.22	24.23	-3.603	-0.002	0.516
68.00	-13.79	-16.62	-0.50	-574.32	-0.02	574.32	1761.22	880.61	2352.06	1177.78	25.76	-3.698	-0.002	0.496
70.00	-13.56	-16.50	-0.50	-541.07	-0.02	541.07	1749.83	874.92	2313.39	1158.41	27.33	-3.791	-0.002	0.475
72.00	-13.34	-16.38	-0.50	-508.07	-0.02	508.07	1738.33	869.16	2274.85	1139.12	28.93	-3.880	-0.002	0.454
74.00	-13.12	-16.26	-0.50	-475.30	-0.02	475.30	1726.69	863.35	2236.47	1119.90	30.58	-3.966	-0.002	0.432
76.00	-12.91	-16.14	-0.50	-442.79	-0.02	442.79	1714.94	857.47	2198.23	1100.75	32.25	-4.049	-0.002	0.410
78.00	-12.69	-16.01	-0.50	-410.52	-0.02	410.52	1703.06	851.53	2160.16	1081.68	33.97	-4.129	-0.002	0.387
80.00	-12.49	-15.89	-0.50	-378.50	-0.02	378.50	1691.05	845.53	2122.25	1062.70	35.71	-4.205	-0.002	0.364
82.00	-12.28	-15.76	-0.50	-346.72	-0.03	346.72	1678.92	839.46	2084.50	1043.80	37.49	-4.277	-0.003	0.340
84.00	-12.07	-15.63	-0.50	-315.21	-0.03	315.21	1666.67	833.33	2046.93	1024.99	39.29	-4.345	-0.003	0.315

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Tower Engineering Solutions

86.00	-11.88	-15.50	-0.50	-283.94	-0.03	283.94	1654.29	827.14	2009.53	1006.26	41.13	-4.409	-0.003	0.290
87.00	-9.85	-12.82	-0.50	-268.44	-0.03	268.44	1648.05	824.03	1990.91	996.93	42.05	-4.439	-0.003	0.275
88.00	-9.75	-12.76	-0.50	-255.62	-0.03	255.62	1641.79	820.89	1972.32	987.63	42.99	-4.469	-0.003	0.265
90.00	-9.56	-12.63	-0.50	-230.10	-0.03	230.10	1629.16	814.58	1935.30	969.09	44.87	-4.524	-0.003	0.244
92.00	-9.37	-12.50	-0.50	-204.84	-0.03	204.84	1616.41	808.20	1898.47	950.64	46.77	-4.575	-0.003	0.222
94.00	-9.18	-12.37	-0.50	-179.85	-0.03	179.85	1603.53	801.77	1861.83	932.30	48.70	-4.621	-0.003	0.199
96.00	-9.00	-12.23	-0.50	-155.11	-0.03	155.11	1590.53	795.27	1825.40	914.06	50.64	-4.663	-0.003	0.176
97.00	-7.40	-9.61	0.00	-142.88	0.01	142.88	1583.99	791.99	1807.27	904.98	51.62	-4.683	-0.003	0.163
98.00	-7.32	-9.54	0.00	-133.27	0.01	133.27	1577.41	788.70	1789.18	895.92	52.60	-4.701	-0.003	0.154
98.75	-7.25	-9.49	0.00	-126.12	0.01	126.12	1572.46	786.23	1775.65	889.15	53.34	-4.714	-0.003	0.147
100.00	-7.08	-9.40	0.00	-114.25	0.01	114.25	1564.16	782.08	1753.17	877.89	54.58	-4.734	-0.003	0.135
102.00	-6.82	-9.26	0.00	-95.45	0.01	95.45	1550.79	775.39	1717.38	859.97	56.56	-4.764	-0.003	0.116
102.25	-6.78	-9.24	0.00	-93.13	0.00	93.13	1064.30	532.15	1198.84	600.31	56.81	-4.767	-0.003	0.162
104.00	-6.67	-9.13	0.00	-76.95	0.00	76.95	1057.83	528.92	1179.14	590.45	58.56	-4.789	-0.003	0.137
106.00	-6.54	-9.00	0.00	-58.69	0.00	58.69	1050.33	525.16	1156.68	579.20	60.57	-4.814	-0.003	0.108
107.00	-3.89	-5.21	0.00	-49.69	0.00	49.69	1046.53	523.26	1145.48	573.59	61.58	-4.825	-0.003	0.090
108.00	-3.84	-5.15	0.00	-44.48	0.00	44.48	1042.70	521.35	1134.29	567.99	62.59	-4.834	-0.003	0.082
110.00	-3.73	-5.02	0.00	-34.18	0.00	34.18	1034.95	517.47	1111.97	556.81	64.62	-4.851	-0.003	0.065
112.00	-3.62	-4.89	0.00	-24.14	0.00	24.14	1027.07	513.53	1089.73	545.68	66.65	-4.863	-0.003	0.048
114.00	-3.51	-4.77	0.00	-14.36	0.00	14.36	1019.06	509.53	1067.57	534.58	68.69	-4.871	-0.003	0.030
116.00	-3.40	-4.64	0.00	-4.82	0.00	4.82	1010.94	505.47	1045.49	523.52	70.73	-4.876	-0.003	0.013
117.00	-0.08	-0.12	0.00	-0.18	0.00	0.18	1006.83	503.41	1034.49	518.01	71.75	-4.876	-0.003	0.000
118.00	-0.04	-0.06	0.00	-0.06	0.00	0.06	1002.69	501.34	1023.51	512.52	72.77	-4.876	-0.003	0.000
119.00	0.00	-0.06	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	73.79	-4.876	-0.003	0.000

Wind Loading - Shaft

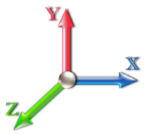
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.70	4.256	4.68	0.00	1.200	1.057	1.00	3.830	4.60	21.5	58.5	197.6
2.00		1.00	0.70	4.256	4.68	0.00	1.200	1.133	1.00	3.829	4.59	21.5	62.6	201.1
4.00		1.00	0.70	4.256	4.68	0.00	1.200	1.215	2.00	7.644	9.17	42.9	133.4	408.9
6.00		1.00	0.70	4.256	4.68	0.00	1.200	1.265	2.00	7.606	9.13	42.7	138.0	411.5
8.00		1.00	0.70	4.256	4.68	0.00	1.200	1.302	2.00	7.563	9.08	42.5	141.1	412.5
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	2.00	7.518	9.02	42.2	143.3	412.6
12.00		1.00	0.70	4.256	4.68	0.00	1.200	1.356	2.00	7.472	8.97	42.0	144.9	412.1
14.00		1.00	0.70	4.256	4.68	0.00	1.200	1.377	2.00	7.424	8.91	41.7	146.1	411.2
16.00		1.00	0.70	4.256	4.68	0.00	1.200	1.395	2.00	7.375	8.85	41.4	147.0	410.0
18.00		1.00	0.70	4.256	4.68	0.00	1.200	1.412	2.00	7.326	8.79	41.2	147.7	408.6
18.25	RT2	1.00	0.70	4.256	4.68	0.00	1.200	1.414	0.25	0.912	1.09	5.1	18.5	50.9
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	1.75	6.363	7.64	35.7	129.6	355.9
22.00		1.00	0.70	4.256	4.68	0.00	1.200	1.440	2.00	7.226	8.67	40.6	148.4	405.1
24.00		1.00	0.70	4.256	4.68	0.00	1.200	1.453	2.00	7.175	8.61	40.3	148.6	403.2
26.00		1.00	0.70	4.256	4.68	0.00	1.200	1.465	2.00	7.124	8.55	40.0	148.7	401.1
28.00		1.00	0.70	4.256	4.68	0.00	1.200	1.476	2.00	7.073	8.49	39.7	148.6	399.0
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	2.00	7.022	8.43	39.5	148.5	396.7
32.00		1.00	0.71	4.339	4.77	0.00	1.200	1.495	2.00	6.970	8.36	39.9	148.2	394.4
34.00		1.00	0.73	4.415	4.86	0.00	1.200	1.504	2.00	6.918	8.30	40.3	148.0	392.0
36.00		1.00	0.74	4.487	4.94	0.00	1.200	1.513	2.00	6.866	8.24	40.7	147.6	389.6
38.00		1.00	0.75	4.557	5.01	0.00	1.200	1.521	2.00	6.814	8.18	41.0	147.2	387.1
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	2.00	6.762	8.11	41.3	146.8	384.5
42.00		1.00	0.77	4.689	5.16	0.00	1.200	1.537	2.00	6.710	8.05	41.5	146.3	381.9
44.00		1.00	0.78	4.752	5.23	0.00	1.200	1.544	2.00	6.657	7.99	41.8	145.7	379.3
46.00		1.00	0.79	4.813	5.29	0.00	1.200	1.551	2.00	6.605	7.93	42.0	145.1	376.6
48.00		1.00	0.80	4.872	5.36	0.00	1.200	1.557	2.00	6.552	7.86	42.1	144.5	373.9
48.75	Bot - Section 2	1.00	0.80	4.893	5.38	0.00	1.200	1.560	0.75	2.443	2.93	15.8	54.1	139.6
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	1.25	4.108	4.93	26.7	91.1	376.8
52.00		1.00	0.82	4.984	5.48	0.00	1.200	1.570	2.00	6.531	7.84	43.0	145.1	598.7
53.25	Top - Section 1	1.00	0.83	5.018	5.52	0.00	1.200	1.574	1.25	4.055	4.87	26.9	90.4	371.8
54.00		1.00	0.83	5.039	5.54	0.00	1.200	1.576	0.75	2.423	2.91	16.1	54.2	138.8
56.00		1.00	0.84	5.091	5.60	0.00	1.200	1.581	2.00	6.425	7.71	43.2	143.7	367.9
58.00		1.00	0.85	5.142	5.66	0.00	1.200	1.587	2.00	6.372	7.65	43.3	142.9	365.0
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	2.00	6.319	7.58	43.3	142.1	362.2
62.00		1.00	0.86	5.241	5.77	0.00	1.200	1.598	2.00	6.266	7.52	43.4	141.3	359.3
64.00		1.00	0.87	5.289	5.82	0.00	1.200	1.603	2.00	6.213	7.46	43.4	140.5	356.3
66.00		1.00	0.88	5.336	5.87	0.00	1.200	1.608	2.00	6.160	7.39	43.4	139.6	353.4
68.00		1.00	0.89	5.382	5.92	0.00	1.200	1.612	2.00	6.107	7.33	43.4	138.8	350.4
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	2.00	6.053	7.26	43.4	137.9	347.4
72.00		1.00	0.90	5.470	6.02	0.00	1.200	1.622	2.00	6.000	7.20	43.3	137.0	344.4
74.00		1.00	0.91	5.513	6.06	0.00	1.200	1.626	2.00	5.947	7.14	43.3	136.0	341.4
76.00		1.00	0.91	5.555	6.11	0.00	1.200	1.631	2.00	5.893	7.07	43.2	135.1	338.3
78.00		1.00	0.92	5.597	6.16	0.00	1.200	1.635	2.00	5.840	7.01	43.1	134.1	335.3
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	2.00	5.787	6.94	43.1	133.2	332.2
82.00		1.00	0.93	5.677	6.24	0.00	1.200	1.643	2.00	5.733	6.88	43.0	132.2	329.1
84.00		1.00	0.94	5.716	6.29	0.00	1.200	1.647	2.00	5.680	6.82	42.9	131.2	326.0

Wind Loading - Shaft

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

86.00		1.00	0.95	5.755	6.33	0.00	1.200	1.651	2.00	5.626	6.75	42.7	130.2	322.9
87.00	Appurtenance(s)	1.00	0.95	5.774	6.35	0.00	1.200	1.653	1.00	2.793	3.35	21.3	64.8	160.4
88.00		1.00	0.95	5.793	6.37	0.00	1.200	1.655	1.00	2.779	3.34	21.3	64.6	159.6
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	2.00	5.519	6.62	42.5	128.1	316.6
92.00		1.00	0.96	5.867	6.45	0.00	1.200	1.662	2.00	5.465	6.56	42.3	127.0	313.5
94.00		1.00	0.97	5.903	6.49	0.00	1.200	1.666	2.00	5.412	6.49	42.2	126.0	310.3
96.00		1.00	0.98	5.939	6.53	0.00	1.200	1.669	2.00	5.358	6.43	42.0	124.9	307.1
97.00	Appurtenance(s)	1.00	0.98	5.956	6.55	0.00	1.200	1.671	1.00	2.659	3.19	20.9	62.2	152.5
98.00		1.00	0.98	5.974	6.57	0.00	1.200	1.672	1.00	2.645	3.17	20.9	61.9	151.7
98.75	Bot - Section 3	1.00	0.98	5.987	6.59	0.00	1.200	1.674	0.75	1.975	2.37	15.6	46.3	113.3
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	1.25	3.315	3.98	26.3	77.7	273.3
102.00		1.00	0.99	6.043	6.65	0.00	1.200	1.679	2.00	5.260	6.31	42.0	123.2	433.2
102.25	Top - Section 2	1.00	0.99	6.047	6.65	0.00	1.200	1.680	0.25	0.654	0.78	5.2	15.4	53.9
104.00		1.00	1.00	6.076	6.68	0.00	1.200	1.682	1.75	4.553	5.46	36.5	106.8	222.7
106.00		1.00	1.00	6.109	6.72	0.00	1.200	1.686	2.00	5.153	6.18	41.6	121.0	251.9
107.00	Appurtenance(s)	1.00	1.01	6.126	6.74	0.00	1.200	1.687	1.00	2.556	3.07	20.7	60.2	125.1
108.00		1.00	1.01	6.142	6.76	0.00	1.200	1.689	1.00	2.543	3.05	20.6	59.9	124.4
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	2.00	5.045	6.05	41.1	118.7	246.5
112.00		1.00	1.02	6.206	6.83	0.00	1.200	1.695	2.00	4.992	5.99	40.9	117.5	243.7
114.00		1.00	1.03	6.238	6.86	0.00	1.200	1.698	2.00	4.938	5.93	40.7	116.4	241.0
116.00		1.00	1.03	6.269	6.90	0.00	1.200	1.701	2.00	4.884	5.86	40.4	115.2	238.3
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200	1.702	1.00	2.422	2.91	20.1	57.3	118.2
118.00		1.00	1.04	6.299	6.93	0.00	1.200	1.704	1.00	2.408	2.89	20.0	57.0	117.6
119.00		1.00	1.04	6.315	6.95	0.00	1.200	1.705	1.00	2.395	2.87	20.0	56.7	116.9
								Totals:	**119.00**			**2,495.8**		**21,506.1**

Discrete Appurtenance Forces

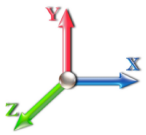
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Sitepro RMQP-4096-HK	1	6.284	6.913	1.00	1.00	82.65	5120.69	0.000	0.000	571.30	0.00	0.00
2	117.00	AIR6449 B41	3	6.284	6.913	0.53	0.75	10.51	676.96	0.000	0.000	72.63	0.00	0.00
3	117.00	Air 32	3	6.284	6.913	0.65	0.75	14.88	1009.01	0.000	0.000	102.87	0.00	0.00
4	117.00	APXVAALL18-43-U-NA20	3	6.284	6.913	0.55	0.75	26.60	1297.09	0.000	0.000	183.85	0.00	0.00
5	117.00	Ericsson 4415 B25 RRU	3	6.284	6.913	0.38	0.75	2.41	257.68	0.000	0.000	16.66	0.00	0.00
6	117.00	KRY 112 144/1	3	6.284	6.913	0.38	0.75	0.98	61.85	0.000	0.000	6.79	0.00	0.00
7	117.00	SDX1926Q-43 Diplexer	3	6.284	6.913	0.75	0.75	1.57	41.87	0.000	0.000	10.88	0.00	0.00
8	117.00	Radio 4449 B71+B85	3	6.284	6.913	0.38	0.75	2.84	264.42	0.000	0.000	19.64	0.00	0.00
9	107.00	Mount Mods1	1	6.126	6.738	0.75	0.75	16.36	705.30	0.000	0.000	110.25	0.00	0.00
10	107.00	RFS DB-T1-6Z-8AB-0Z	2	6.126	6.738	0.53	0.75	6.15	225.28	0.000	0.000	41.42	0.00	0.00
11	107.00	Samsung RFV01UA-D2A	3	6.126	6.738	0.38	0.75	2.71	415.37	0.000	0.000	18.29	0.00	0.00
12	107.00	Samsung RFV01U-D1A	3	6.126	6.738	0.38	0.75	2.73	452.54	0.000	0.000	18.36	0.00	0.00
13	107.00	Commscope	3	6.126	6.738	0.64	0.75	1.23	96.65	0.000	0.000	8.27	0.00	0.00
14	107.00	JAHH-65B-R3B	6	6.126	6.738	0.62	0.75	38.88	1784.96	0.000	0.000	261.99	0.00	0.00
15	107.00	VZS01	3	6.126	6.738	0.52	0.75	8.00	633.27	0.000	0.000	53.90	0.00	0.00
16	107.00	PV-LPP12M-B	1	6.126	6.738	1.00	1.00	62.01	3278.94	0.000	0.000	417.87	0.00	0.00
17	97.00	NNVV-65B-R4	3	5.956	6.552	0.59	0.80	24.27	901.37	0.000	0.000	159.00	0.00	0.00
18	97.00	1900 MHz	3	5.956	6.552	0.40	0.80	4.70	378.63	0.000	0.000	30.82	0.00	0.00
19	97.00	800 MHz RRU	6	5.956	6.552	0.40	0.80	8.60	679.83	0.000	0.000	56.37	0.00	0.00
20	97.00	TD-RRH8x20-25	3	5.956	6.552	0.40	0.80	5.79	566.43	0.000	0.000	37.94	0.00	0.00
21	97.00	AAHC	3	5.956	6.552	0.60	0.80	8.99	742.75	0.000	0.000	58.88	0.00	0.00
22	97.00	UDS-NPL (3 Sectors)	1	5.956	6.552	0.56	0.75	15.85	1173.12	0.000	0.000	103.84	0.00	0.00
23	97.00	VHLP2-18	2	5.956	6.552	1.00	1.00	11.82	214.17	2.187	0.000	77.48	169.42	0.00
24	97.00	VHLP1-23	1	5.956	6.552	1.00	1.00	2.34	40.81	0.000	0.000	15.31	0.00	0.00
25	87.00	MC-PK8-DSH	1	5.774	6.351	1.00	1.00	82.32	3297.75	0.000	0.000	522.85	0.00	0.00
26	87.00	Raycap	1	5.774	6.351	0.75	0.75	1.91	64.01	0.000	0.000	12.14	0.00	0.00
27	87.00	Fujitsu TA08025-B604	3	5.774	6.351	0.38	0.75	2.80	337.58	0.000	0.000	17.80	0.00	0.00
28	87.00	Fujitsu TA08025-B605	3	5.774	6.351	0.38	0.75	2.80	380.79	0.000	0.000	17.80	0.00	0.00
29	87.00	MX08FRO665-21	3	5.774	6.351	0.55	0.75	23.11	856.95	0.000	0.000	146.75	0.00	0.00
							Totals:		**25,956.09**			**3,171.97**		

Total Applied Force Summary

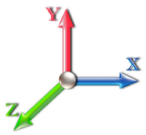
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

IES Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		21.52	238.42	0.00	0.00
2.00		21.51	242.67	0.00	0.00
4.00		42.94	493.57	0.00	0.00
6.00		42.73	497.12	0.00	0.00
8.00		42.49	498.86	0.00	0.00
10.00		42.24	499.57	0.00	0.00
12.00		41.97	499.60	0.00	0.00
14.00		41.71	499.15	0.00	0.00
16.00		41.43	498.34	0.00	0.00
18.00		41.16	497.25	0.00	0.00
18.25		5.12	62.02	0.00	0.00
20.00		35.75	433.83	0.00	0.00
22.00		40.59	486.95	0.00	0.00
24.00		40.31	485.18	0.00	0.00
26.00		40.02	483.29	0.00	0.00
28.00		39.74	481.28	0.00	0.00
30.00		39.48	479.18	0.00	0.00
32.00		39.92	476.99	0.00	0.00
34.00		40.31	474.73	0.00	0.00
36.00		40.67	472.40	0.00	0.00
38.00		40.99	470.01	0.00	0.00
40.00		41.28	467.56	0.00	0.00
42.00		41.53	465.06	0.00	0.00
44.00		41.76	462.52	0.00	0.00
46.00		41.96	459.93	0.00	0.00
48.00		42.13	457.30	0.00	0.00
48.75		15.78	170.87	0.00	0.00
50.00		26.73	428.95	0.00	0.00
52.00		42.97	682.32	0.00	0.00
53.25		26.86	424.08	0.00	0.00
54.00		16.11	170.16	0.00	0.00
56.00		43.18	451.66	0.00	0.00
58.00		43.26	448.88	0.00	0.00
60.00		43.31	446.07	0.00	0.00
62.00		43.35	443.23	0.00	0.00
64.00		43.38	440.37	0.00	0.00
66.00		43.39	437.49	0.00	0.00
68.00		43.38	434.59	0.00	0.00
70.00		43.36	431.66	0.00	0.00
72.00		43.32	428.72	0.00	0.00
74.00		43.28	425.76	0.00	0.00
76.00		43.22	422.77	0.00	0.00
78.00		43.14	419.78	0.00	0.00
80.00		43.06	416.76	0.00	0.00
82.00		42.96	413.73	0.00	0.00
84.00		42.86	410.69	0.00	0.00

Total Applied Force Summary

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

86.00		42.74	407.63	0.00	0.00
87.00	(11) attachments	738.63	5139.86	0.00	0.00
88.00		21.25	201.82	0.00	0.00
90.00		42.47	401.08	0.00	0.00
92.00		42.33	397.98	0.00	0.00
94.00		42.17	394.87	0.00	0.00
96.00		42.00	391.75	0.00	0.00
97.00	(22) attachments	560.55	4891.95	169.42	0.00
98.00		20.86	187.57	0.00	0.00
98.75		15.61	140.19	0.00	0.00
100.00		26.29	318.16	0.00	0.00
102.00		41.96	505.01	0.00	0.00
102.25		5.22	62.85	0.00	0.00
104.00		36.52	285.55	0.00	0.00
106.00		41.55	323.79	0.00	0.00
107.00	(22) attachments	951.03	7753.34	0.00	0.00
108.00		20.62	140.83	0.00	0.00
110.00		41.12	279.34	0.00	0.00
112.00		40.89	276.62	0.00	0.00
114.00		40.66	273.89	0.00	0.00
116.00		40.41	271.15	0.00	0.00
117.00	(22) attachments	1004.70	8864.27	0.00	0.00
118.00		20.02	117.56	0.00	0.00
119.00		19.96	116.87	0.00	0.00
	Totals:	**5,667.73**	**52,075.23**	**169.42**	**0.00**

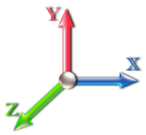
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	4.256	0.00	7.96
1.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.26	0.00	0.023	0.000	4.256	0.00	2.27
2.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	4.256	0.00	8.40
2.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.27	0.00	0.023	0.000	4.256	0.00	2.53
4.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	4.256	0.00	17.78
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.57	0.00	0.023	0.000	4.256	0.00	5.66
6.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	4.256	0.00	18.40
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.59	0.00	0.023	0.000	4.256	0.00	6.04
8.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	4.256	0.00	18.86
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.60	0.00	0.023	0.000	4.256	0.00	6.33
10.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	19.23
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.61	0.00	0.024	0.000	4.256	0.00	6.57
12.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	19.54
12.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.62	0.00	0.024	0.000	4.256	0.00	6.77
14.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	19.81
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.63	0.00	0.024	0.000	4.256	0.00	6.94
16.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	20.05
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.63	0.00	0.024	0.000	4.256	0.00	7.09
18.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	20.27
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.64	0.00	0.024	0.000	4.256	0.00	7.23
18.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.024	0.000	4.256	0.00	2.54
18.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.08	0.00	0.024	0.000	4.256	0.00	0.91
20.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	4.256	0.00	17.91
20.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.56	0.00	0.025	0.000	4.256	0.00	6.44
22.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.256	0.00	20.65
24.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.256	0.00	20.81
26.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.256	0.00	20.97
28.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.256	0.00	21.12
30.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.260	0.00	21.25
32.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.339	0.00	21.38
34.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.415	0.00	21.51
36.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.487	0.00	21.62
38.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.557	0.00	21.74
40.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.625	0.00	21.84
42.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.689	0.00	21.95
44.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.752	0.00	22.04
46.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.813	0.00	22.14
48.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.872	0.00	22.23
48.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	4.893	0.00	8.35
50.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	4.929	0.00	13.95
52.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	4.984	0.00	22.40
53.25	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	5.018	0.00	14.03
54.00	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	5.039	0.00	8.43
56.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.091	0.00	22.57
58.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.142	0.00	22.64
60.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.193	0.00	22.72
62.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.241	0.00	22.79

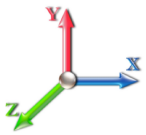
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
64.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.289	0.00	22.86
66.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.336	0.00	22.93
68.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.382	0.00	23.00
70.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.426	0.00	23.07
72.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.470	0.00	23.13
74.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.513	0.00	23.20
76.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.555	0.00	23.26
78.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.597	0.00	23.32
80.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.637	0.00	23.38
82.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.677	0.00	23.43
84.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.716	0.00	23.49
86.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.755	0.00	23.55
87.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	5.774	0.00	11.79
88.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	5.793	0.00	11.80
90.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.830	0.00	23.65
92.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.867	0.00	23.71
94.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.903	0.00	23.76
96.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.939	0.00	23.81
97.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	5.956	0.00	11.92
98.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	5.974	0.00	11.93
98.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	5.987	0.00	8.95
100.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	6.008	0.00	14.94
102.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.043	0.00	23.95
102.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	6.047	0.00	2.99
104.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.076	0.00	21.00
106.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.109	0.00	24.05
107.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.126	0.00	12.03
										Totals:	**0.0**	**1,243.6**

Calculated Forces

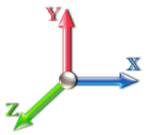
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.07	-5.67	-0.17	-532.56	0.00	532.56	2063.18	1031.59	3653.66	1829.55	0.00	0.000	0.000	0.265
1.00	-51.83	-5.67	-0.17	-526.88	0.00	526.88	2059.52	1029.76	3633.37	1819.38	0.00	-0.016	0.000	0.219
2.00	-51.59	-5.66	-0.17	-521.22	0.00	521.22	2055.83	1027.92	3613.07	1809.22	0.01	-0.029	0.000	0.218
4.00	-51.09	-5.64	-0.17	-509.89	0.00	509.89	2048.36	1024.18	3572.46	1788.88	0.02	-0.055	0.000	0.215
6.00	-50.59	-5.62	-0.17	-498.61	0.00	498.61	2040.76	1020.38	3531.83	1768.54	0.05	-0.082	0.000	0.212
8.00	-50.09	-5.60	-0.17	-487.36	0.00	487.36	2033.04	1016.52	3491.19	1748.19	0.09	-0.108	0.000	0.209
10.00	-49.59	-5.58	-0.17	-476.16	0.00	476.16	2025.20	1012.60	3450.55	1727.84	0.14	-0.134	0.000	0.206
12.00	-49.09	-5.56	-0.17	-465.00	0.00	465.00	2017.23	1008.61	3409.91	1707.49	0.21	-0.160	0.000	0.204
14.00	-48.59	-5.54	-0.17	-453.88	0.00	453.88	2009.13	1004.57	3369.28	1687.14	0.28	-0.186	0.000	0.201
16.00	-48.09	-5.52	-0.17	-442.80	0.00	442.80	2000.92	1000.46	3328.65	1666.80	0.36	-0.212	0.000	0.198
18.00	-47.59	-5.49	-0.17	-431.76	0.00	431.76	1992.57	996.29	3288.04	1646.46	0.46	-0.238	0.000	0.195
18.25	-47.52	-5.49	-0.17	-430.39	0.00	430.39	1991.52	995.76	3282.97	1643.92	0.47	-0.241	0.000	0.194
18.25	-47.52	-5.49	-0.17	-430.39	0.00	430.39	1991.52	995.76	3282.97	1643.92	0.47	-0.241	0.000	0.194
20.00	-47.09	-5.48	-0.17	-420.78	0.00	420.78	1984.11	992.05	3247.45	1626.14	0.56	-0.263	0.000	0.283
22.00	-46.60	-5.47	-0.17	-409.82	0.00	409.82	1975.52	987.76	3206.89	1605.83	0.68	-0.301	0.000	0.279
24.00	-46.11	-5.45	-0.17	-398.89	0.00	398.89	1966.80	983.40	3166.36	1585.53	0.81	-0.338	0.000	0.275
26.00	-45.62	-5.44	-0.17	-387.98	0.00	387.98	1957.96	978.98	3125.86	1565.25	0.96	-0.375	0.000	0.271
28.00	-45.14	-5.43	-0.17	-377.10	0.00	377.10	1948.99	974.50	3085.40	1544.99	1.13	-0.413	0.000	0.267
30.00	-44.66	-5.41	-0.17	-366.25	0.00	366.25	1939.91	969.95	3044.99	1524.76	1.31	-0.450	0.000	0.263
32.00	-44.18	-5.40	-0.17	-355.43	0.00	355.43	1930.69	965.35	3004.63	1504.55	1.51	-0.487	0.000	0.259
34.00	-43.70	-5.38	-0.17	-344.64	0.00	344.64	1921.36	960.68	2964.32	1484.36	1.72	-0.523	0.000	0.255
36.00	-43.22	-5.36	-0.17	-333.88	0.00	333.88	1911.89	955.95	2924.07	1464.21	1.95	-0.560	0.000	0.251
38.00	-42.75	-5.34	-0.17	-323.15	0.00	323.15	1902.31	951.15	2883.89	1444.09	2.19	-0.596	0.000	0.246
40.00	-42.28	-5.32	-0.17	-312.47	0.00	312.47	1892.60	946.30	2843.78	1424.00	2.45	-0.632	0.000	0.242
42.00	-41.81	-5.30	-0.17	-301.82	0.00	301.82	1882.76	941.38	2803.75	1403.96	2.72	-0.668	0.000	0.237
44.00	-41.35	-5.28	-0.17	-291.21	0.00	291.21	1872.80	936.40	2763.79	1383.95	3.01	-0.703	0.000	0.233
46.00	-40.88	-5.26	-0.17	-280.65	0.00	280.65	1862.72	931.36	2723.92	1363.99	3.31	-0.738	0.000	0.228
48.00	-40.43	-5.23	-0.17	-270.13	0.00	270.13	1852.51	926.26	2684.14	1344.07	3.62	-0.773	0.000	0.223
48.75	-40.25	-5.22	-0.17	-266.21	0.00	266.21	1848.65	924.33	2669.25	1336.61	3.75	-0.786	0.000	0.221
50.00	-39.82	-5.21	-0.17	-259.69	0.00	259.69	1842.18	921.09	2644.46	1324.20	3.96	-0.808	0.000	0.218
52.00	-39.14	-5.17	-0.17	-249.27	0.00	249.27	1831.72	915.86	2604.88	1304.37	4.30	-0.842	0.000	0.213
53.25	-38.71	-5.15	-0.17	-242.81	0.00	242.81	1841.33	920.67	2641.23	1322.58	4.53	-0.863	0.000	0.205
54.00	-38.54	-5.15	-0.17	-238.94	0.00	238.94	1837.42	918.71	2626.38	1315.14	4.66	-0.875	0.000	0.203
56.00	-38.09	-5.12	-0.17	-228.65	0.00	228.65	1826.91	913.45	2586.84	1295.34	5.04	-0.907	0.000	0.197
58.00	-37.64	-5.09	-0.17	-218.41	0.00	218.41	1816.27	908.14	2547.41	1275.60	5.42	-0.938	-0.001	0.192
60.00	-37.19	-5.06	-0.17	-208.23	0.00	208.23	1805.51	902.75	2508.10	1255.91	5.82	-0.969	-0.001	0.186
62.00	-36.74	-5.03	-0.17	-198.12	0.00	198.12	1794.62	897.31	2468.90	1236.28	6.23	-0.999	-0.001	0.181
64.00	-36.30	-4.99	-0.17	-188.07	0.00	188.07	1783.61	891.81	2429.82	1216.72	6.66	-1.028	-0.001	0.175
66.00	-35.86	-4.96	-0.17	-178.08	0.00	178.08	1772.48	886.24	2390.88	1197.22	7.10	-1.056	-0.001	0.169
68.00	-35.43	-4.92	-0.17	-168.17	0.00	168.17	1761.22	880.61	2352.06	1177.78	7.54	-1.084	-0.001	0.163
70.00	-34.99	-4.89	-0.17	-158.32	0.00	158.32	1749.83	874.92	2313.39	1158.41	8.00	-1.111	-0.001	0.157
72.00	-34.56	-4.85	-0.17	-148.54	0.00	148.54	1738.33	869.16	2274.85	1139.12	8.48	-1.137	-0.001	0.150
74.00	-34.14	-4.82	-0.17	-138.84	0.00	138.84	1726.69	863.35	2236.47	1119.90	8.96	-1.162	-0.001	0.144
76.00	-33.71	-4.78	-0.17	-129.21	0.00	129.21	1714.94	857.47	2198.23	1100.75	9.45	-1.187	-0.001	0.137
78.00	-33.29	-4.74	-0.17	-119.65	0.00	119.65	1703.06	851.53	2160.16	1081.68	9.95	-1.210	-0.001	0.130
80.00	-32.87	-4.70	-0.17	-110.17	0.00	110.17	1691.05	845.53	2122.25	1062.70	10.46	-1.232	-0.001	0.123
82.00	-32.46	-4.66	-0.17	-100.77	0.00	100.77	1678.92	839.46	2084.50	1043.80	10.99	-1.253	-0.001	0.116
84.00	-32.05	-4.62	-0.17	-91.46	0.00	91.46	1666.67	833.33	2046.93	1024.99	11.51	-1.273	-0.001	0.108

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

Tower Engineering Solutions

86.00	-31.64	-4.57	-0.17	-82.22	0.00	82.22	1654.29	827.14	2009.53	1006.26	12.05	-1.291	-0.001	0.101
87.00	-26.52	-3.72	-0.17	-77.65	0.00	77.65	1648.05	824.03	1990.91	996.93	12.32	-1.300	-0.001	0.094
88.00	-26.32	-3.70	-0.17	-73.93	0.00	73.93	1641.79	820.89	1972.32	987.63	12.60	-1.309	-0.001	0.091
90.00	-25.92	-3.66	-0.17	-66.52	0.00	66.52	1629.16	814.58	1935.30	969.09	13.15	-1.324	-0.001	0.085
92.00	-25.52	-3.61	-0.17	-59.21	0.00	59.21	1616.41	808.20	1898.47	950.64	13.71	-1.339	-0.001	0.078
94.00	-25.12	-3.57	-0.17	-51.98	0.00	51.98	1603.53	801.77	1861.83	932.30	14.27	-1.353	-0.001	0.071
96.00	-24.73	-3.52	-0.17	-44.85	0.00	44.85	1590.53	795.27	1825.40	914.06	14.84	-1.365	-0.001	0.065
97.00	-19.85	-2.84	0.00	-41.33	0.00	41.33	1583.99	791.99	1807.27	904.98	15.13	-1.370	-0.001	0.058
98.00	-19.67	-2.82	0.00	-38.48	0.00	38.48	1577.41	788.70	1789.18	895.92	15.41	-1.376	-0.001	0.055
98.75	-19.53	-2.80	0.00	-36.37	0.00	36.37	1572.46	786.23	1775.65	889.15	15.63	-1.379	-0.001	0.053
100.00	-19.21	-2.77	0.00	-32.87	0.00	32.87	1564.16	782.08	1753.17	877.89	15.99	-1.385	-0.001	0.050
102.00	-18.71	-2.72	0.00	-27.32	0.00	27.32	1550.79	775.39	1717.38	859.97	16.57	-1.394	-0.001	0.044
102.25	-18.64	-2.71	0.00	-26.64	0.00	26.64	1064.30	532.15	1198.84	600.31	16.65	-1.395	-0.001	0.062
104.00	-18.36	-2.67	0.00	-21.90	0.00	21.90	1057.83	528.92	1179.14	590.45	17.16	-1.401	-0.001	0.054
106.00	-18.03	-2.62	0.00	-16.55	0.00	16.55	1050.33	525.16	1156.68	579.20	17.75	-1.408	-0.001	0.046
107.00	-10.31	-1.48	0.00	-13.93	0.00	13.93	1046.53	523.26	1145.48	573.59	18.04	-1.411	-0.001	0.034
108.00	-10.17	-1.46	0.00	-12.45	0.00	12.45	1042.70	521.35	1134.29	567.99	18.34	-1.414	-0.001	0.032
110.00	-9.89	-1.41	0.00	-9.53	0.00	9.53	1034.95	517.47	1111.97	556.81	18.93	-1.418	-0.001	0.027
112.00	-9.61	-1.36	0.00	-6.70	0.00	6.70	1027.07	513.53	1089.73	545.68	19.53	-1.422	-0.001	0.022
114.00	-9.34	-1.32	0.00	-3.97	0.00	3.97	1019.06	509.53	1067.57	534.58	20.12	-1.424	-0.001	0.017
116.00	-9.07	-1.27	0.00	-1.34	0.00	1.34	1010.94	505.47	1045.49	523.52	20.72	-1.425	-0.001	0.012
117.00	-0.23	-0.05	0.00	-0.07	0.00	0.07	1006.83	503.41	1034.49	518.01	21.02	-1.426	-0.001	0.000
118.00	-0.12	-0.02	0.00	-0.02	0.00	0.02	1002.69	501.34	1023.51	512.52	21.32	-1.426	-0.001	0.000
119.00	0.00	-0.02	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	21.62	-1.426	-0.001	0.000

Seismic Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	25
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	115.91	0.00	0.01	0.01	0.84	
2.00		115.47	0.00	0.02	0.01	1.48	
4.00		229.63	0.00	0.03	0.02	4.73	
6.00		227.88	0.00	0.04	0.02	5.86	
8.00		226.13	0.01	0.05	0.03	6.61	
10.00		224.38	0.01	0.06	0.03	7.10	
12.00		222.63	0.02	0.06	0.04	7.43	
14.00		220.88	0.03	0.07	0.04	7.63	
16.00		219.13	0.03	0.07	0.04	7.76	
18.00		217.39	0.04	0.07	0.04	7.85	
18.25	RT2	27.05	0.04	0.07	0.04	0.98	
20.00		188.59	0.05	0.07	0.04	6.91	
22.00		213.89	0.06	0.07	0.04	7.94	
24.00		212.14	0.08	0.07	0.04	7.97	
26.00		210.39	0.09	0.07	0.04	8.00	
28.00		208.64	0.10	0.07	0.04	8.03	
30.00		206.89	0.12	0.07	0.03	8.06	
32.00		205.14	0.14	0.07	0.03	8.09	
34.00		203.39	0.15	0.07	0.03	8.10	
36.00		201.64	0.17	0.07	0.03	8.09	
38.00		199.89	0.19	0.06	0.02	8.04	
40.00		198.14	0.21	0.06	0.02	7.94	
42.00		196.39	0.24	0.06	0.02	7.77	
44.00		194.64	0.26	0.05	0.02	7.52	
46.00		192.89	0.28	0.05	0.01	7.16	
48.00		191.15	0.31	0.04	0.01	6.67	
48.75	Bot - Section 2	71.23	0.32	0.04	0.01	2.41	
50.00		238.02	0.33	0.04	0.01	7.57	
52.00		377.99	0.36	0.03	0.01	10.50	
53.25	Top - Section 1	234.47	0.38	0.02	0.01	5.80	
54.00		70.52	0.39	0.02	0.01	1.60	
56.00		186.85	0.42	0.01	0.01	3.12	
58.00		185.10	0.45	0.00	0.01	1.80	
60.00		183.35	0.48	-0.01	0.01	0.39	
62.00		181.60	0.51	-0.02	0.01	-1.06	
64.00		179.85	0.55	-0.03	0.01	-2.48	
66.00		178.10	0.58	-0.05	0.01	-3.78	
68.00		176.35	0.62	-0.06	0.02	-4.92	
70.00		174.60	0.65	-0.07	0.02	-5.85	
72.00		172.85	0.69	-0.08	0.03	-6.54	
74.00		171.10	0.73	-0.10	0.04	-6.98	
76.00		169.35	0.77	-0.11	0.05	-7.18	
78.00		167.61	0.81	-0.11	0.06	-7.13	
80.00		165.86	0.85	-0.12	0.07	-6.85	
82.00		164.11	0.90	-0.12	0.09	-6.36	

Seismic Segment Forces (Factored)

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

84.00			162.36	0.94	-0.12	0.10	-5.66		
86.00			160.61	0.99	-0.11	0.13	-4.76		
87.00	Appurtenance(s)		2438.7	1.01	-0.11	0.14	-64.79		
88.00			79.21	1.03	-0.10	0.15	-1.83		
90.00			157.11	1.08	-0.08	0.18	-2.42		
92.00			155.36	1.13	-0.05	0.21	-0.99		
94.00			153.61	1.18	-0.01	0.24	0.60		
96.00			151.86	1.23	0.03	0.28	2.35		
97.00	Appurtenance(s)		1979.6	1.26	0.06	0.30	43.10		
98.00			74.84	1.28	0.10	0.32	2.12		
98.75	Bot - Section 3		55.84	1.30	0.12	0.34	1.87		
100.00			163.02	1.33	0.17	0.37	6.93		
102.00			258.35	1.39	0.26	0.42	14.98		
102.25	Top - Section 2		32.08	1.40	0.28	0.43	1.92		
104.00			96.55	1.44	0.37	0.48	7.22		
106.00			109.11	1.50	0.50	0.54	10.13		
107.00	Appurtenance(s)		3258.6	1.53	0.57	0.58	333.83		
108.00			53.73	1.56	0.65	0.61	6.04		
110.00			106.48	1.61	0.83	0.69	14.18		
112.00			105.17	1.67	1.03	0.78	16.35		
114.00			103.86	1.73	1.26	0.87	18.60		
116.00			102.55	1.80	1.52	0.97	20.93		
117.00	Appurtenance(s)		4089.5	1.83	1.66	1.02	888.20		
118.00			50.45	1.86	1.82	1.08	11.64		
119.00			50.13	1.89	1.98	1.14	12.25		
		Totals:	**22,668.1**				**1,481.4**	**Total Wind:**	**19,994.3**

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 25

Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.85	-1.62	0.00	-176.96	0.00	176.96	2063.18	1031.59	3653.66	1829.55		0.00	0.00	0.093
1.00	-30.68	-1.62	0.00	-175.34	0.00	175.34	2059.52	1029.76	3633.37	1819.38		0.00	-0.01	0.077
2.00	-30.51	-1.62	0.00	-173.72	0.00	173.72	2055.83	1027.92	3613.07	1809.22		0.00	-0.01	0.077
4.00	-30.17	-1.62	0.00	-170.47	0.00	170.47	2048.36	1024.18	3572.46	1788.88		0.01	-0.02	0.076
6.00	-29.83	-1.62	0.00	-167.22	0.00	167.22	2040.76	1020.38	3531.83	1768.54		0.02	-0.03	0.075
8.00	-29.49	-1.62	0.00	-163.97	0.00	163.97	2033.04	1016.52	3491.19	1748.19		0.03	-0.04	0.074
10.00	-29.15	-1.62	0.00	-160.73	0.00	160.73	2025.20	1012.60	3450.55	1727.84		0.05	-0.04	0.074
12.00	-28.82	-1.61	0.00	-157.50	0.00	157.50	2017.23	1008.61	3409.91	1707.49		0.07	-0.05	0.073
14.00	-28.49	-1.61	0.00	-154.27	0.00	154.27	2009.13	1004.57	3369.28	1687.14		0.09	-0.06	0.072
16.00	-28.16	-1.61	0.00	-151.04	0.00	151.04	2000.92	1000.46	3328.65	1666.80		0.12	-0.07	0.071
18.00	-27.83	-1.60	0.00	-147.83	0.00	147.83	1992.57	996.29	3288.04	1646.46		0.15	-0.08	0.070
18.25	-27.79	-1.60	0.00	-147.43	0.00	147.43	1991.52	995.76	3282.97	1643.92		0.16	-0.08	0.070
18.25	-27.79	-1.60	0.00	-147.43	0.00	147.43	1991.52	995.76	3282.97	1643.92		0.16	-0.08	0.070
20.00	-27.50	-1.60	0.00	-144.62	0.00	144.62	1984.11	992.05	3247.45	1626.14		0.19	-0.09	0.103
22.00	-27.18	-1.60	0.00	-141.42	0.00	141.42	1975.52	987.76	3206.89	1605.83		0.23	-0.10	0.102
24.00	-26.86	-1.60	0.00	-138.23	0.00	138.23	1966.80	983.40	3166.36	1585.53		0.27	-0.11	0.101
26.00	-26.54	-1.59	0.00	-135.03	0.00	135.03	1957.96	978.98	3125.86	1565.25		0.32	-0.13	0.100
28.00	-26.22	-1.59	0.00	-131.85	0.00	131.85	1948.99	974.50	3085.40	1544.99		0.38	-0.14	0.099
30.00	-25.91	-1.59	0.00	-128.67	0.00	128.67	1939.91	969.95	3044.99	1524.76		0.44	-0.15	0.098
32.00	-25.59	-1.58	0.00	-125.49	0.00	125.49	1930.69	965.35	3004.63	1504.55		0.51	-0.17	0.097
34.00	-25.28	-1.58	0.00	-122.33	0.00	122.33	1921.36	960.68	2964.32	1484.36		0.58	-0.18	0.096
36.00	-24.98	-1.58	0.00	-119.17	0.00	119.17	1911.89	955.95	2924.07	1464.21		0.66	-0.19	0.094
38.00	-24.67	-1.57	0.00	-116.01	0.00	116.01	1902.31	951.15	2883.89	1444.09		0.74	-0.21	0.093
40.00	-24.36	-1.57	0.00	-112.86	0.00	112.86	1892.60	946.30	2843.78	1424.00		0.83	-0.22	0.092
42.00	-24.06	-1.57	0.00	-109.72	0.00	109.72	1882.76	941.38	2803.75	1403.96		0.93	-0.23	0.091
44.00	-23.76	-1.56	0.00	-106.59	0.00	106.59	1872.80	936.40	2763.79	1383.95		1.03	-0.24	0.090
46.00	-23.46	-1.56	0.00	-103.46	0.00	103.46	1862.72	931.36	2723.92	1363.99		1.13	-0.26	0.088
48.00	-23.17	-1.56	0.00	-100.34	0.00	100.34	1852.51	926.26	2684.14	1344.07		1.24	-0.27	0.087
48.75	-23.06	-1.56	0.00	-99.18	0.00	99.18	1848.65	924.33	2669.25	1336.61		1.29	-0.28	0.087
50.00	-22.73	-1.55	0.00	-97.23	0.00	97.23	1842.18	921.09	2644.46	1324.20		1.36	-0.28	0.086
52.00	-22.21	-1.54	0.00	-94.13	0.00	94.13	1831.72	915.86	2604.88	1304.37		1.48	-0.30	0.084
53.25	-21.89	-1.54	0.00	-92.21	0.00	92.21	1841.33	920.67	2641.23	1322.58		1.56	-0.30	0.082
54.00	-21.78	-1.54	0.00	-91.06	0.00	91.06	1837.42	918.71	2626.38	1315.14		1.61	-0.31	0.081
56.00	-21.48	-1.54	0.00	-87.98	0.00	87.98	1826.91	913.45	2586.84	1295.34		1.74	-0.32	0.080
58.00	-21.20	-1.54	0.00	-84.91	0.00	84.91	1816.27	908.14	2547.41	1275.60		1.88	-0.33	0.078
60.00	-20.91	-1.54	0.00	-81.83	0.00	81.83	1805.51	902.75	2508.10	1255.91		2.02	-0.34	0.077
62.00	-20.62	-1.54	0.00	-78.75	0.00	78.75	1794.62	897.31	2468.90	1236.28		2.17	-0.36	0.075
64.00	-20.34	-1.55	0.00	-75.67	0.00	75.67	1783.61	891.81	2429.82	1216.72		2.32	-0.37	0.074
66.00	-20.06	-1.55	0.00	-72.58	0.00	72.58	1772.48	886.24	2390.88	1197.22		2.47	-0.38	0.072
68.00	-19.78	-1.55	0.00	-69.48	0.00	69.48	1761.22	880.61	2352.06	1177.78		2.64	-0.39	0.070
70.00	-19.51	-1.55	0.00	-66.38	0.00	66.38	1749.83	874.92	2313.39	1158.41		2.80	-0.40	0.068
72.00	-19.23	-1.55	0.00	-63.28	0.00	63.28	1738.33	869.16	2274.85	1139.12		2.97	-0.41	0.067
74.00	-18.96	-1.55	0.00	-60.17	0.00	60.17	1726.69	863.35	2236.47	1119.90		3.15	-0.42	0.065
76.00	-18.69	-1.56	0.00	-57.07	0.00	57.07	1714.94	857.47	2198.23	1100.75		3.33	-0.43	0.063
78.00	-18.42	-1.56	0.00	-53.95	0.00	53.95	1703.06	851.53	2160.16	1081.68		3.51	-0.45	0.061
80.00	-18.16	-1.56	0.00	-50.84	0.00	50.84	1691.05	845.53	2122.25	1062.70		3.70	-0.46	0.059
82.00	-17.89	-1.56	0.00	-47.72	0.00	47.72	1678.92	839.46	2084.50	1043.80		3.89	-0.47	0.056

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 39

84.00	-17.63	-1.56	0.00	-44.60	0.00	44.60	1666.67	833.33	2046.93	1024.99	4.09	-0.47	0.054
86.00	-17.37	-1.56	0.00	-41.48	0.00	41.48	1654.29	827.14	2009.53	1006.26	4.29	-0.48	0.052
87.00	-14.41	-1.54	0.00	-39.92	0.00	39.92	1648.05	824.03	1990.91	996.93	4.39	-0.49	0.049
88.00	-14.28	-1.54	0.00	-38.39	0.00	38.39	1641.79	820.89	1972.32	987.63	4.50	-0.49	0.048
90.00	-14.03	-1.54	0.00	-35.32	0.00	35.32	1629.16	814.58	1935.30	969.09	4.71	-0.50	0.045
92.00	-13.78	-1.54	0.00	-32.24	0.00	32.24	1616.41	808.20	1898.47	950.64	4.92	-0.51	0.042
94.00	-13.53	-1.53	0.00	-29.17	0.00	29.17	1603.53	801.77	1861.83	932.30	5.13	-0.52	0.040
96.00	-13.28	-1.53	0.00	-26.10	0.00	26.10	1590.53	795.27	1825.40	914.06	5.35	-0.52	0.037
97.00	-10.87	-1.47	0.00	-24.57	0.00	24.57	1583.99	791.99	1807.27	904.98	5.46	-0.53	0.034
98.00	-10.75	-1.46	0.00	-23.10	0.00	23.10	1577.41	788.70	1789.18	895.92	5.57	-0.53	0.033
98.75	-10.67	-1.46	0.00	-22.01	0.00	22.01	1572.46	786.23	1775.65	889.15	5.65	-0.53	0.032
100.00	-10.44	-1.45	0.00	-20.18	0.00	20.18	1564.16	782.08	1753.17	877.89	5.79	-0.54	0.030
102.00	-10.07	-1.44	0.00	-17.27	0.00	17.27	1550.79	775.39	1717.38	859.97	6.02	-0.54	0.027
102.25	-10.03	-1.43	0.00	-16.91	0.00	16.91	1064.30	532.15	1198.84	600.31	6.05	-0.54	0.038
104.00	-9.87	-1.43	0.00	-14.40	0.00	14.40	1057.83	528.92	1179.14	590.45	6.25	-0.55	0.034
106.00	-9.68	-1.41	0.00	-11.55	0.00	11.55	1050.33	525.16	1156.68	579.20	6.48	-0.55	0.029
107.00	-5.75	-1.04	0.00	-10.13	0.00	10.13	1046.53	523.26	1145.48	573.59	6.59	-0.55	0.023
108.00	-5.67	-1.04	0.00	-9.09	0.00	9.09	1042.70	521.35	1134.29	567.99	6.71	-0.55	0.021
110.00	-5.51	-1.02	0.00	-7.02	0.00	7.02	1034.95	517.47	1111.97	556.81	6.94	-0.56	0.018
112.00	-5.35	-1.00	0.00	-4.97	0.00	4.97	1027.07	513.53	1089.73	545.68	7.18	-0.56	0.014
114.00	-5.19	-0.98	0.00	-2.97	0.00	2.97	1019.06	509.53	1067.57	534.58	7.41	-0.56	0.011
116.00	-5.04	-0.96	0.00	-1.00	0.00	1.00	1010.94	505.47	1045.49	523.52	7.65	-0.56	0.007
117.00	-0.12	-0.02	0.00	-0.04	0.00	0.04	1006.83	503.41	1034.49	518.01	7.76	-0.56	0.000
118.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	1002.69	501.34	1023.51	512.52	7.88	-0.56	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	8.00	-0.56	0.000

Seismic Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	25
Gust Response Factor	1.10			**Sds**	0.20	**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	115.91	0.00	0.01	0.01	0.84	
2.00		115.47	0.00	0.02	0.01	1.48	
4.00		229.63	0.00	0.03	0.02	4.73	
6.00		227.88	0.00	0.04	0.02	5.86	
8.00		226.13	0.01	0.05	0.03	6.61	
10.00		224.38	0.01	0.06	0.03	7.10	
12.00		222.63	0.02	0.06	0.04	7.43	
14.00		220.88	0.03	0.07	0.04	7.63	
16.00		219.13	0.03	0.07	0.04	7.76	
18.00		217.39	0.04	0.07	0.04	7.85	
18.25	RT2	27.05	0.04	0.07	0.04	0.98	
20.00		188.59	0.05	0.07	0.04	6.91	
22.00		213.89	0.06	0.07	0.04	7.94	
24.00		212.14	0.08	0.07	0.04	7.97	
26.00		210.39	0.09	0.07	0.04	8.00	
28.00		208.64	0.10	0.07	0.04	8.03	
30.00		206.89	0.12	0.07	0.03	8.06	
32.00		205.14	0.14	0.07	0.03	8.09	
34.00		203.39	0.15	0.07	0.03	8.10	
36.00		201.64	0.17	0.07	0.03	8.09	
38.00		199.89	0.19	0.06	0.02	8.04	
40.00		198.14	0.21	0.06	0.02	7.94	
42.00		196.39	0.24	0.06	0.02	7.77	
44.00		194.64	0.26	0.05	0.02	7.52	
46.00		192.89	0.28	0.05	0.01	7.16	
48.00		191.15	0.31	0.04	0.01	6.67	
48.75	Bot - Section 2	71.23	0.32	0.04	0.01	2.41	
50.00		238.02	0.33	0.04	0.01	7.57	
52.00		377.99	0.36	0.03	0.01	10.50	
53.25	Top - Section 1	234.47	0.38	0.02	0.01	5.80	
54.00		70.52	0.39	0.02	0.01	1.60	
56.00		186.85	0.42	0.01	0.01	3.12	
58.00		185.10	0.45	0.00	0.01	1.80	
60.00		183.35	0.48	-0.01	0.01	0.39	
62.00		181.60	0.51	-0.02	0.01	-1.06	
64.00		179.85	0.55	-0.03	0.01	-2.48	
66.00		178.10	0.58	-0.05	0.01	-3.78	
68.00		176.35	0.62	-0.06	0.02	-4.92	
70.00		174.60	0.65	-0.07	0.02	-5.85	
72.00		172.85	0.69	-0.08	0.03	-6.54	
74.00		171.10	0.73	-0.10	0.04	-6.98	
76.00		169.35	0.77	-0.11	0.05	-7.18	
78.00		167.61	0.81	-0.11	0.06	-7.13	
80.00		165.86	0.85	-0.12	0.07	-6.85	
82.00		164.11	0.90	-0.12	0.09	-6.36	

Seismic Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

84.00			162.36	0.94	-0.12	0.10	-5.66	
86.00			160.61	0.99	-0.11	0.13	-4.76	
87.00	Appurtenance(s)		2438.7	1.01	-0.11	0.14	-64.79	
88.00			79.21	1.03	-0.10	0.15	-1.83	
90.00			157.11	1.08	-0.08	0.18	-2.42	
92.00			155.36	1.13	-0.05	0.21	-0.99	
94.00			153.61	1.18	-0.01	0.24	0.60	
96.00			151.86	1.23	0.03	0.28	2.35	
97.00	Appurtenance(s)		1979.6	1.26	0.06	0.30	43.10	
98.00			74.84	1.28	0.10	0.32	2.12	
98.75	Bot - Section 3		55.84	1.30	0.12	0.34	1.87	
100.00			163.02	1.33	0.17	0.37	6.93	
102.00			258.35	1.39	0.26	0.42	14.98	
102.25	Top - Section 2		32.08	1.40	0.28	0.43	1.92	
104.00			96.55	1.44	0.37	0.48	7.22	
106.00			109.11	1.50	0.50	0.54	10.13	
107.00	Appurtenance(s)		3258.6	1.53	0.57	0.58	333.83	
108.00			53.73	1.56	0.65	0.61	6.04	
110.00			106.48	1.61	0.83	0.69	14.18	
112.00			105.17	1.67	1.03	0.78	16.35	
114.00			103.86	1.73	1.26	0.87	18.60	
116.00			102.55	1.80	1.52	0.97	20.93	
117.00	Appurtenance(s)		4089.5	1.83	1.66	1.02	888.20	
118.00			50.45	1.86	1.82	1.08	11.64	
119.00			50.13	1.89	1.98	1.14	12.25	
		Totals:	**22,668.1**				**1,481.4**	**Total Wind:** **19,994.3**

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 25

Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.14	-1.62	0.00	-174.18	0.00	174.18	2063.18	1031.59	3653.66	1829.55		0.00	0.00	0.089
1.00	-23.01	-1.62	0.00	-172.56	0.00	172.56	2059.52	1029.76	3633.37	1819.38		0.00	-0.01	0.074
2.00	-22.88	-1.62	0.00	-170.93	0.00	170.93	2055.83	1027.92	3613.07	1809.22		0.00	-0.01	0.073
4.00	-22.63	-1.62	0.00	-167.69	0.00	167.69	2048.36	1024.18	3572.46	1788.88		0.01	-0.02	0.073
6.00	-22.37	-1.62	0.00	-164.44	0.00	164.44	2040.76	1020.38	3531.83	1768.54		0.02	-0.03	0.072
8.00	-22.12	-1.62	0.00	-161.21	0.00	161.21	2033.04	1016.52	3491.19	1748.19		0.03	-0.04	0.071
10.00	-21.86	-1.61	0.00	-157.97	0.00	157.97	2025.20	1012.60	3450.55	1727.84		0.05	-0.04	0.070
12.00	-21.61	-1.61	0.00	-154.75	0.00	154.75	2017.23	1008.61	3409.91	1707.49		0.07	-0.05	0.069
14.00	-21.36	-1.60	0.00	-151.54	0.00	151.54	2009.13	1004.57	3369.28	1687.14		0.09	-0.06	0.069
16.00	-21.12	-1.60	0.00	-148.33	0.00	148.33	2000.92	1000.46	3328.65	1666.80		0.12	-0.07	0.068
18.00	-20.87	-1.59	0.00	-145.14	0.00	145.14	1992.57	996.29	3288.04	1646.46		0.15	-0.08	0.067
18.25	-20.84	-1.59	0.00	-144.74	0.00	144.74	1991.52	995.76	3282.97	1643.92		0.15	-0.08	0.067
18.25	-20.84	-1.59	0.00	-144.74	0.00	144.74	1991.52	995.76	3282.97	1643.92		0.15	-0.08	0.067
20.00	-20.63	-1.59	0.00	-141.95	0.00	141.95	1984.11	992.05	3247.45	1626.14		0.19	-0.09	0.098
22.00	-20.38	-1.58	0.00	-138.77	0.00	138.77	1975.52	987.76	3206.89	1605.83		0.22	-0.10	0.097
24.00	-20.14	-1.58	0.00	-135.61	0.00	135.61	1966.80	983.40	3166.36	1585.53		0.27	-0.11	0.096
26.00	-19.90	-1.58	0.00	-132.44	0.00	132.44	1957.96	978.98	3125.86	1565.25		0.32	-0.13	0.095
28.00	-19.67	-1.57	0.00	-129.29	0.00	129.29	1948.99	974.50	3085.40	1544.99		0.37	-0.14	0.094
30.00	-19.43	-1.57	0.00	-126.15	0.00	126.15	1939.91	969.95	3044.99	1524.76		0.44	-0.15	0.093
32.00	-19.20	-1.56	0.00	-123.01	0.00	123.01	1930.69	965.35	3004.63	1504.55		0.50	-0.16	0.092
34.00	-18.96	-1.56	0.00	-119.88	0.00	119.88	1921.36	960.68	2964.32	1484.36		0.57	-0.18	0.091
36.00	-18.73	-1.55	0.00	-116.76	0.00	116.76	1911.89	955.95	2924.07	1464.21		0.65	-0.19	0.090
38.00	-18.50	-1.55	0.00	-113.66	0.00	113.66	1902.31	951.15	2883.89	1444.09		0.73	-0.20	0.088
40.00	-18.27	-1.54	0.00	-110.56	0.00	110.56	1892.60	946.30	2843.78	1424.00		0.82	-0.21	0.087
42.00	-18.04	-1.54	0.00	-107.47	0.00	107.47	1882.76	941.38	2803.75	1403.96		0.91	-0.23	0.086
44.00	-17.82	-1.54	0.00	-104.39	0.00	104.39	1872.80	936.40	2763.79	1383.95		1.01	-0.24	0.085
46.00	-17.60	-1.53	0.00	-101.31	0.00	101.31	1862.72	931.36	2723.92	1363.99		1.11	-0.25	0.084
48.00	-17.37	-1.53	0.00	-98.25	0.00	98.25	1852.51	926.26	2684.14	1344.07		1.22	-0.27	0.082
48.75	-17.29	-1.53	0.00	-97.11	0.00	97.11	1848.65	924.33	2669.25	1336.61		1.26	-0.27	0.082
50.00	-17.05	-1.52	0.00	-95.20	0.00	95.20	1842.18	921.09	2644.46	1324.20		1.33	-0.28	0.081
52.00	-16.65	-1.51	0.00	-92.16	0.00	92.16	1831.72	915.86	2604.88	1304.37		1.45	-0.29	0.080
53.25	-16.41	-1.51	0.00	-90.27	0.00	90.27	1841.33	920.67	2641.23	1322.58		1.53	-0.30	0.077
54.00	-16.33	-1.51	0.00	-89.14	0.00	89.14	1837.42	918.71	2626.38	1315.14		1.58	-0.30	0.077
56.00	-16.11	-1.50	0.00	-86.13	0.00	86.13	1826.91	913.45	2586.84	1295.34		1.71	-0.31	0.075
58.00	-15.90	-1.50	0.00	-83.12	0.00	83.12	1816.27	908.14	2547.41	1275.60		1.84	-0.33	0.074
60.00	-15.68	-1.51	0.00	-80.11	0.00	80.11	1805.51	902.75	2508.10	1255.91		1.98	-0.34	0.072
62.00	-15.47	-1.51	0.00	-77.10	0.00	77.10	1794.62	897.31	2468.90	1236.28		2.12	-0.35	0.071
64.00	-15.25	-1.51	0.00	-74.08	0.00	74.08	1783.61	891.81	2429.82	1216.72		2.27	-0.36	0.069
66.00	-15.04	-1.51	0.00	-71.06	0.00	71.06	1772.48	886.24	2390.88	1197.22		2.43	-0.37	0.068
68.00	-14.83	-1.51	0.00	-68.04	0.00	68.04	1761.22	880.61	2352.06	1177.78		2.59	-0.38	0.066
70.00	-14.63	-1.51	0.00	-65.01	0.00	65.01	1749.83	874.92	2313.39	1158.41		2.75	-0.39	0.064
72.00	-14.42	-1.52	0.00	-61.99	0.00	61.99	1738.33	869.16	2274.85	1139.12		2.92	-0.41	0.063
74.00	-14.22	-1.52	0.00	-58.95	0.00	58.95	1726.69	863.35	2236.47	1119.90		3.09	-0.42	0.061
76.00	-14.02	-1.52	0.00	-55.92	0.00	55.92	1714.94	857.47	2198.23	1100.75		3.27	-0.43	0.059
78.00	-13.81	-1.52	0.00	-52.88	0.00	52.88	1703.06	851.53	2160.16	1081.68		3.45	-0.44	0.057
80.00	-13.61	-1.52	0.00	-49.85	0.00	49.85	1691.05	845.53	2122.25	1062.70		3.63	-0.45	0.055
82.00	-13.42	-1.52	0.00	-46.81	0.00	46.81	1678.92	839.46	2084.50	1043.80		3.82	-0.46	0.053

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

84.00	-13.22	-1.52	0.00	-43.77	0.00	43.77	1666.67	833.33	2046.93	1024.99	4.01	-0.47	0.051
86.00	-13.03	-1.52	0.00	-40.72	0.00	40.72	1654.29	827.14	2009.53	1006.26	4.21	-0.47	0.048
87.00	-10.81	-1.50	0.00	-39.20	0.00	39.20	1648.05	824.03	1990.91	996.93	4.31	-0.48	0.046
88.00	-10.71	-1.50	0.00	-37.70	0.00	37.70	1641.79	820.89	1972.32	987.63	4.41	-0.48	0.045
90.00	-10.52	-1.50	0.00	-34.69	0.00	34.69	1629.16	814.58	1935.30	969.09	4.62	-0.49	0.042
92.00	-10.33	-1.50	0.00	-31.69	0.00	31.69	1616.41	808.20	1898.47	950.64	4.82	-0.50	0.040
94.00	-10.14	-1.50	0.00	-28.68	0.00	28.68	1603.53	801.77	1861.83	932.30	5.03	-0.51	0.037
96.00	-9.96	-1.50	0.00	-25.67	0.00	25.67	1590.53	795.27	1825.40	914.06	5.25	-0.51	0.034
97.00	-8.15	-1.44	0.00	-24.17	0.00	24.17	1583.99	791.99	1807.27	904.98	5.35	-0.52	0.032
98.00	-8.06	-1.44	0.00	-22.73	0.00	22.73	1577.41	788.70	1789.18	895.92	5.46	-0.52	0.030
98.75	-8.00	-1.44	0.00	-21.66	0.00	21.66	1572.46	786.23	1775.65	889.15	5.55	-0.52	0.029
100.00	-7.82	-1.43	0.00	-19.86	0.00	19.86	1564.16	782.08	1753.17	877.89	5.68	-0.53	0.028
102.00	-7.55	-1.41	0.00	-17.01	0.00	17.01	1550.79	775.39	1717.38	859.97	5.90	-0.53	0.025
102.25	-7.52	-1.41	0.00	-16.65	0.00	16.65	1064.30	532.15	1198.84	600.31	5.93	-0.53	0.035
104.00	-7.40	-1.40	0.00	-14.19	0.00	14.19	1057.83	528.92	1179.14	590.45	6.13	-0.53	0.031
106.00	-7.26	-1.39	0.00	-11.38	0.00	11.38	1050.33	525.16	1156.68	579.20	6.35	-0.54	0.027
107.00	-4.31	-1.03	0.00	-9.99	0.00	9.99	1046.53	523.26	1145.48	573.59	6.47	-0.54	0.022
108.00	-4.25	-1.02	0.00	-8.97	0.00	8.97	1042.70	521.35	1134.29	567.99	6.58	-0.54	0.020
110.00	-4.13	-1.01	0.00	-6.92	0.00	6.92	1034.95	517.47	1111.97	556.81	6.81	-0.55	0.016
112.00	-4.01	-0.99	0.00	-4.91	0.00	4.91	1027.07	513.53	1089.73	545.68	7.04	-0.55	0.013
114.00	-3.89	-0.97	0.00	-2.93	0.00	2.93	1019.06	509.53	1067.57	534.58	7.27	-0.55	0.009
116.00	-3.77	-0.95	0.00	-0.99	0.00	0.99	1010.94	505.47	1045.49	523.52	7.50	-0.55	0.006
117.00	-0.09	-0.02	0.00	-0.04	0.00	0.04	1006.83	503.41	1034.49	518.01	7.62	-0.55	0.000
118.00	-0.04	-0.01	0.00	-0.01	0.00	0.01	1002.69	501.34	1023.51	512.52	7.73	-0.55	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	7.85	-0.55	0.000

Wind Loading - Shaft

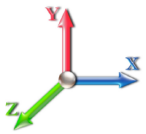
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	6.129	6.74	183.76	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.70	6.129	6.74	183.07	0.650	0.000	1.00	3.654	2.37	16.0	0.0	115.9
2.00		1.00	0.70	6.129	6.74	182.39	0.650	0.000	1.00	3.640	2.37	16.0	0.0	115.5
4.00		1.00	0.70	6.129	6.74	181.01	0.650	0.000	2.00	7.239	4.71	31.7	0.0	229.6
6.00		1.00	0.70	6.129	6.74	179.63	0.650	0.000	2.00	7.184	4.67	31.5	0.0	227.9
8.00		1.00	0.70	6.129	6.74	178.26	0.650	0.000	2.00	7.129	4.63	31.2	0.0	226.1
10.00		1.00	0.70	6.129	6.74	176.88	0.650	0.000	2.00	7.075	4.60	31.0	0.0	224.4
12.00		1.00	0.70	6.129	6.74	175.50	0.650	0.000	2.00	7.020	4.56	30.8	0.0	222.6
14.00		1.00	0.70	6.129	6.74	174.13	0.650	0.000	2.00	6.965	4.53	30.5	0.0	220.9
16.00		1.00	0.70	6.129	6.74	172.75	0.650	0.000	2.00	6.910	4.49	30.3	0.0	219.1
18.00		1.00	0.70	6.129	6.74	171.38	0.650	0.000	2.00	6.855	4.46	30.0	0.0	217.4
18.25	RT2	1.00	0.70	6.129	6.74	171.20	0.650	0.000	0.25	0.853	0.55	3.7	0.0	27.1
20.00		1.00	0.70	6.129	6.74	170.00	0.650	0.000	1.75	5.947	3.87	26.1	0.0	188.6
22.00		1.00	0.70	6.129	6.74	168.62	0.650	0.000	2.00	6.746	4.38	29.6	0.0	213.9
24.00		1.00	0.70	6.129	6.74	167.25	0.650	0.000	2.00	6.691	4.35	29.3	0.0	212.1
26.00		1.00	0.70	6.129	6.74	165.87	0.650	0.000	2.00	6.636	4.31	29.1	0.0	210.4
28.00		1.00	0.70	6.129	6.74	164.50	0.650	0.000	2.00	6.581	4.28	28.8	0.0	208.6
30.00		1.00	0.70	6.134	6.75	163.19	0.650	0.000	2.00	6.526	4.24	28.6	0.0	206.9
32.00		1.00	0.71	6.248	6.87	163.31	0.650	0.000	2.00	6.471	4.21	28.9	0.0	205.1
34.00		1.00	0.73	6.357	6.99	163.33	0.650	0.000	2.00	6.417	4.17	29.2	0.0	203.4
36.00		1.00	0.74	6.462	7.11	163.26	0.650	0.000	2.00	6.362	4.14	29.4	0.0	201.6
38.00		1.00	0.75	6.562	7.22	163.10	0.650	0.000	2.00	6.307	4.10	29.6	0.0	199.9
40.00		1.00	0.76	6.659	7.33	162.86	0.650	0.000	2.00	6.252	4.06	29.8	0.0	198.1
42.00		1.00	0.77	6.753	7.43	162.56	0.650	0.000	2.00	6.197	4.03	29.9	0.0	196.4
44.00		1.00	0.78	6.843	7.53	162.19	0.650	0.000	2.00	6.142	3.99	30.1	0.0	194.6
46.00		1.00	0.79	6.931	7.62	161.76	0.650	0.000	2.00	6.088	3.96	30.2	0.0	192.9
48.00		1.00	0.80	7.015	7.72	161.27	0.650	0.000	2.00	6.033	3.92	30.3	0.0	191.1
48.75	Bot - Section 2	1.00	0.80	7.047	7.75	161.08	0.650	0.000	0.75	2.248	1.46	11.3	0.0	71.2
50.00		1.00	0.81	7.098	7.81	160.73	0.650	0.000	1.25	3.783	2.46	19.2	0.0	238.0
52.00		1.00	0.82	7.178	7.90	160.15	0.650	0.000	2.00	6.008	3.91	30.8	0.0	378.0
53.25	Top - Section 1	1.00	0.83	7.227	7.95	159.76	0.650	0.000	1.25	3.727	2.42	19.3	0.0	234.5
54.00		1.00	0.83	7.255	7.98	161.83	0.650	0.000	0.75	2.226	1.45	11.5	0.0	70.5
56.00		1.00	0.84	7.331	8.06	161.17	0.650	0.000	2.00	5.898	3.83	30.9	0.0	186.8
58.00		1.00	0.85	7.405	8.15	160.46	0.650	0.000	2.00	5.843	3.80	30.9	0.0	185.1
60.00		1.00	0.85	7.477	8.22	159.72	0.650	0.000	2.00	5.789	3.76	30.9	0.0	183.3
62.00		1.00	0.86	7.548	8.30	158.94	0.650	0.000	2.00	5.734	3.73	30.9	0.0	181.6
64.00		1.00	0.87	7.616	8.38	158.13	0.650	0.000	2.00	5.679	3.69	30.9	0.0	179.9
66.00		1.00	0.88	7.684	8.45	157.29	0.650	0.000	2.00	5.624	3.66	30.9	0.0	178.1
68.00		1.00	0.89	7.749	8.52	156.41	0.650	0.000	2.00	5.569	3.62	30.9	0.0	176.4
70.00		1.00	0.89	7.814	8.60	155.51	0.650	0.000	2.00	5.514	3.58	30.8	0.0	174.6
72.00		1.00	0.90	7.877	8.66	154.58	0.650	0.000	2.00	5.460	3.55	30.7	0.0	172.9
74.00		1.00	0.91	7.939	8.73	153.62	0.650	0.000	2.00	5.405	3.51	30.7	0.0	171.1
76.00		1.00	0.91	8.000	8.80	152.63	0.650	0.000	2.00	5.350	3.48	30.6	0.0	169.4
78.00		1.00	0.92	8.059	8.87	151.62	0.650	0.000	2.00	5.295	3.44	30.5	0.0	167.6
80.00		1.00	0.93	8.118	8.93	150.59	0.650	0.000	2.00	5.240	3.41	30.4	0.0	165.9
82.00		1.00	0.93	8.175	8.99	149.53	0.650	0.000	2.00	5.185	3.37	30.3	0.0	164.1
84.00		1.00	0.94	8.232	9.05	148.45	0.650	0.000	2.00	5.131	3.33	30.2	0.0	162.4

Wind Loading - Shaft

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

86.00		1.00	0.95	8.287	9.12	147.35	0.650	0.000	2.00	5.076	3.30	30.1	0.0	160.6
87.00	Appurtenance(s)	1.00	0.95	8.315	9.15	146.79	0.650	0.000	1.00	2.517	1.64	15.0	0.0	79.6
88.00		1.00	0.95	8.342	9.18	146.23	0.650	0.000	1.00	2.504	1.63	14.9	0.0	79.2
90.00		1.00	0.96	8.396	9.24	145.09	0.650	0.000	2.00	4.966	3.23	29.8	0.0	157.1
92.00		1.00	0.96	8.448	9.29	143.93	0.650	0.000	2.00	4.911	3.19	29.7	0.0	155.4
94.00		1.00	0.97	8.501	9.35	142.75	0.650	0.000	2.00	4.857	3.16	29.5	0.0	153.6
96.00		1.00	0.98	8.552	9.41	141.55	0.650	0.000	2.00	4.802	3.12	29.4	0.0	151.9
97.00	Appurtenance(s)	1.00	0.98	8.577	9.43	140.95	0.650	0.000	1.00	2.380	1.55	14.6	0.0	75.3
98.00		1.00	0.98	8.602	9.46	140.34	0.650	0.000	1.00	2.367	1.54	14.6	0.0	74.8
98.75	Bot - Section 3	1.00	0.98	8.621	9.48	139.88	0.650	0.000	0.75	1.766	1.15	10.9	0.0	55.8
100.00		1.00	0.99	8.652	9.52	139.11	0.650	0.000	1.25	2.966	1.93	18.3	0.0	163.0
102.00		1.00	0.99	8.701	9.57	137.87	0.650	0.000	2.00	4.701	3.06	29.2	0.0	258.3
102.25	Top - Section 2	1.00	0.99	8.707	9.58	137.71	0.650	0.000	0.25	0.584	0.38	3.6	0.0	32.1
104.00		1.00	1.00	8.750	9.62	138.51	0.650	0.000	1.75	4.062	2.64	25.4	0.0	96.5
106.00		1.00	1.00	8.797	9.68	137.24	0.650	0.000	2.00	4.591	2.98	28.9	0.0	109.1
107.00	Appurtenance(s)	1.00	1.01	8.821	9.70	136.60	0.650	0.000	1.00	2.275	1.48	14.3	0.0	54.1
108.00		1.00	1.01	8.845	9.73	135.95	0.650	0.000	1.00	2.261	1.47	14.3	0.0	53.7
110.00		1.00	1.02	8.891	9.78	134.65	0.650	0.000	2.00	4.481	2.91	28.5	0.0	106.5
112.00		1.00	1.02	8.937	9.83	133.34	0.650	0.000	2.00	4.427	2.88	28.3	0.0	105.2
114.00		1.00	1.03	8.982	9.88	132.01	0.650	0.000	2.00	4.372	2.84	28.1	0.0	103.9
116.00		1.00	1.03	9.027	9.93	130.67	0.650	0.000	2.00	4.317	2.81	27.9	0.0	102.5
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	129.99	0.650	0.000	1.00	2.138	1.39	13.8	0.0	50.8
118.00		1.00	1.04	9.071	9.98	129.31	0.650	0.000	1.00	2.124	1.38	13.8	0.0	50.5
119.00		1.00	1.04	9.093	10.00	128.63	0.650	0.000	1.00	2.110	1.37	13.7	0.0	50.1
								Totals:	**119.00**			**1,780.9**		**11,161.3**

Discrete Appurtenance Forces

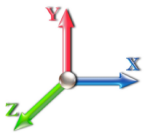
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Sitepro RMQP-4096-HK	1	9.049	9.954	1.00	1.00	48.00	2645.00	0.000	0.000	477.79	0.00	0.00
2	117.00	AIR6449 B41	3	9.049	9.954	0.53	0.75	9.03	309.00	0.000	0.000	89.84	0.00	0.00
3	117.00	Air 32	3	9.049	9.954	0.65	0.75	12.74	396.00	0.000	0.000	126.85	0.00	0.00
4	117.00	APXVAALL18-43-U-NA20	3	9.049	9.954	0.55	0.75	25.03	277.80	0.000	0.000	249.17	0.00	0.00
5	117.00	Ericsson 4415 B25 RRU	3	9.049	9.954	0.38	0.75	1.84	138.00	0.000	0.000	18.37	0.00	0.00
6	117.00	KRY 112 144/1	3	9.049	9.954	0.38	0.75	0.46	33.00	0.000	0.000	4.59	0.00	0.00
7	117.00	SDX1926Q-43 Diplexer	3	9.049	9.954	0.75	0.75	0.65	18.00	0.000	0.000	6.50	0.00	0.00
8	117.00	Radio 4449 B71+B85	3	9.049	9.954	0.38	0.75	2.22	222.00	0.000	0.000	22.06	0.00	0.00
9	107.00	Mount Mods1	1	8.821	9.703	0.75	0.75	7.39	415.06	0.000	0.000	71.68	0.00	0.00
10	107.00	RFS DB-T1-6Z-8AB-0Z	2	8.821	9.703	0.53	0.75	5.11	37.80	0.000	0.000	49.60	0.00	0.00
11	107.00	Samsung RFV01UA-D2A	3	8.821	9.703	0.38	0.75	2.11	253.50	0.000	0.000	20.52	0.00	0.00
12	107.00	Samsung RFV01U-D1A	3	8.821	9.703	0.38	0.75	2.10	210.90	0.000	0.000	20.41	0.00	0.00
13	107.00	Commscope	3	8.821	9.703	0.64	0.75	0.71	31.20	0.000	0.000	6.87	0.00	0.00
14	107.00	JAHH-65B-R3B	6	8.821	9.703	0.62	0.75	34.03	379.80	0.000	0.000	330.16	0.00	0.00
15	107.00	VZS01	3	8.821	9.703	0.52	0.75	6.68	261.30	0.000	0.000	64.78	0.00	0.00
16	107.00	PV-LPP12M-B	1	8.821	9.703	1.00	1.00	28.00	1615.00	0.000	0.000	271.69	0.00	0.00
17	97.00	NNVV-65B-R4	3	8.577	9.435	0.59	0.80	21.79	232.20	0.000	0.000	205.60	0.00	0.00
18	97.00	1900 MHz	3	8.577	9.435	0.40	0.80	3.25	180.00	0.000	0.000	30.68	0.00	0.00
19	97.00	800 MHz RRU	6	8.577	9.435	0.40	0.80	5.98	318.00	0.000	0.000	56.38	0.00	0.00
20	97.00	TD-RRH8x20-25	3	8.577	9.435	0.40	0.80	4.86	210.00	0.000	0.000	45.85	0.00	0.00
21	97.00	AAHC	3	8.577	9.435	0.60	0.80	7.56	312.00	0.000	0.000	71.33	0.00	0.00
22	97.00	UDS-NPL (3 Sectors)	1	8.577	9.435	0.56	0.75	7.19	576.00	0.000	0.000	67.88	0.00	0.00
23	97.00	VHLP2-18	2	8.577	9.435	1.00	1.00	9.38	62.00	2.187	0.000	88.50	193.52	0.00
24	97.00	VHLP1-23	1	8.577	9.435	1.00	1.00	1.61	14.20	0.000	0.000	15.19	0.00	0.00
25	87.00	MC-PK8-DSH	1	8.315	9.146	1.00	1.00	37.59	1727.00	0.000	0.000	343.80	0.00	0.00
26	87.00	Raycap	1	8.315	9.146	0.75	0.75	1.51	21.90	0.000	0.000	13.79	0.00	0.00
27	87.00	Fujitsu TA08025-B604	3	8.315	9.146	0.38	0.75	2.21	191.70	0.000	0.000	20.17	0.00	0.00
28	87.00	Fujitsu TA08025-B605	3	8.315	9.146	0.38	0.75	2.21	225.00	0.000	0.000	20.17	0.00	0.00
29	87.00	MX08FRO665-21	3	8.315	9.146	0.55	0.75	20.80	193.50	0.000	0.000	190.20	0.00	0.00
							Totals:		**11,506.86**			**3,000.41**		

Total Applied Force Summary

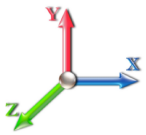
Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 47

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		16.01	143.60	0.00	0.00
2.00		15.95	143.17	0.00	0.00
4.00		31.72	285.02	0.00	0.00
6.00		31.48	283.27	0.00	0.00
8.00		31.24	281.52	0.00	0.00
10.00		31.00	279.77	0.00	0.00
12.00		30.76	278.03	0.00	0.00
14.00		30.52	276.28	0.00	0.00
16.00		30.28	274.53	0.00	0.00
18.00		30.04	272.78	0.00	0.00
18.25		3.74	33.97	0.00	0.00
20.00		26.06	237.05	0.00	0.00
22.00		29.56	269.28	0.00	0.00
24.00		29.32	267.53	0.00	0.00
26.00		29.08	265.78	0.00	0.00
28.00		28.84	264.03	0.00	0.00
30.00		28.62	262.28	0.00	0.00
32.00		28.91	260.53	0.00	0.00
34.00		29.17	258.78	0.00	0.00
36.00		29.39	257.03	0.00	0.00
38.00		29.59	255.28	0.00	0.00
40.00		29.77	253.53	0.00	0.00
42.00		29.92	251.79	0.00	0.00
44.00		30.05	250.04	0.00	0.00
46.00		30.17	248.29	0.00	0.00
48.00		30.26	246.54	0.00	0.00
48.75		11.33	92.00	0.00	0.00
50.00		19.20	272.64	0.00	0.00
52.00		30.83	433.39	0.00	0.00
53.25		19.26	269.09	0.00	0.00
54.00		11.55	91.29	0.00	0.00
56.00		30.92	242.24	0.00	0.00
58.00		30.94	240.49	0.00	0.00
60.00		30.95	238.74	0.00	0.00
62.00		30.94	236.99	0.00	0.00
64.00		30.93	235.24	0.00	0.00
66.00		30.90	233.49	0.00	0.00
68.00		30.86	231.74	0.00	0.00
70.00		30.81	229.99	0.00	0.00
72.00		30.75	228.25	0.00	0.00
74.00		30.68	226.50	0.00	0.00
76.00		30.60	224.75	0.00	0.00
78.00		30.51	223.00	0.00	0.00
80.00		30.42	221.25	0.00	0.00
82.00		30.31	219.50	0.00	0.00
84.00		30.20	217.75	0.00	0.00

Total Applied Force Summary

Structure:	CT13069-A-SBA		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

Tower Engineering Solutions

86.00		30.08	216.00	0.00	0.00
87.00	(11) attachments	603.09	2466.44	0.00	0.00
88.00		14.93	106.75	0.00	0.00
90.00		29.81	212.18	0.00	0.00
92.00		29.67	210.43	0.00	0.00
94.00		29.52	208.68	0.00	0.00
96.00		29.36	206.93	0.00	0.00
97.00	(22) attachments	596.01	2007.21	193.52	0.00
98.00		14.56	96.98	0.00	0.00
98.75		10.89	72.45	0.00	0.00
100.00		18.35	190.70	0.00	0.00
102.00		29.24	302.63	0.00	0.00
102.25		3.63	37.61	0.00	0.00
104.00		25.41	135.29	0.00	0.00
106.00		28.88	153.39	0.00	0.00
107.00	(22) attachments	850.06	3280.76	0.00	0.00
108.00		14.30	67.43	0.00	0.00
110.00		28.49	133.88	0.00	0.00
112.00		28.29	132.57	0.00	0.00
114.00		28.08	131.26	0.00	0.00
116.00		27.86	129.95	0.00	0.00
117.00	(22) attachments	1009.00	4103.28	0.00	0.00
118.00		13.78	50.45	0.00	0.00
119.00		13.72	50.13	0.00	0.00
	Totals:	**4,781.30**	**25,711.43**	**193.52**	**0.00**

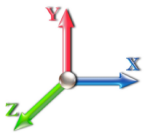
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	6.129	0.00	2.20
1.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	6.129	0.00	0.00
2.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.023	0.000	6.129	0.00	2.20
2.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.023	0.000	6.129	0.00	0.00
4.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	6.129	0.00	4.40
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	6.129	0.00	0.00
6.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	6.129	0.00	4.40
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	6.129	0.00	0.00
8.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.023	0.000	6.129	0.00	4.40
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.023	0.000	6.129	0.00	0.00
10.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	4.40
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	6.129	0.00	0.00
12.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	4.40
12.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	6.129	0.00	0.00
14.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	4.40
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	6.129	0.00	0.00
16.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	4.40
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	6.129	0.00	0.00
18.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	4.40
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.024	0.000	6.129	0.00	0.00
18.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.024	0.000	6.129	0.00	0.55
18.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.024	0.000	6.129	0.00	0.00
20.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	6.129	0.00	3.85
20.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.025	0.000	6.129	0.00	0.00
22.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.129	0.00	4.40
24.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.129	0.00	4.40
26.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.129	0.00	4.40
28.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.129	0.00	4.40
30.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.134	0.00	4.40
32.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.248	0.00	4.40
34.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.357	0.00	4.40
36.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.462	0.00	4.40
38.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.562	0.00	4.40
40.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.659	0.00	4.40
42.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.753	0.00	4.40
44.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.843	0.00	4.40
46.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.931	0.00	4.40
48.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.015	0.00	4.40
48.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	7.047	0.00	1.65
50.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	7.098	0.00	2.75
52.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.178	0.00	4.40
53.25	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	7.227	0.00	2.75
54.00	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	7.255	0.00	1.65
56.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.331	0.00	4.40
58.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.405	0.00	4.40
60.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.477	0.00	4.40
62.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.548	0.00	4.40

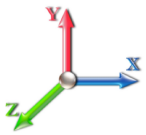
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
64.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.616	0.00	4.40
66.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.684	0.00	4.40
68.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.749	0.00	4.40
70.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.814	0.00	4.40
72.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.877	0.00	4.40
74.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.939	0.00	4.40
76.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.000	0.00	4.40
78.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.059	0.00	4.40
80.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.118	0.00	4.40
82.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.175	0.00	4.40
84.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.232	0.00	4.40
86.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.287	0.00	4.40
87.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.315	0.00	2.20
88.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.342	0.00	2.20
90.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.396	0.00	4.40
92.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.448	0.00	4.40
94.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.501	0.00	4.40
96.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.552	0.00	4.40
97.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.577	0.00	2.20
98.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.602	0.00	2.20
98.75	1 5/8" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	8.621	0.00	1.65
100.00	1 5/8" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.000	0.000	8.652	0.00	2.75
102.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.701	0.00	4.40
102.25	1 5/8" Hybrid	Yes	0.25	0.000	0.00	0.00	0.00	0.000	0.000	8.707	0.00	0.55
104.00	1 5/8" Hybrid	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	8.750	0.00	3.85
106.00	1 5/8" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.797	0.00	4.40
107.00	1 5/8" Hybrid	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.821	0.00	2.20
									Totals:		**0.0**	**235.4**

Calculated Forces

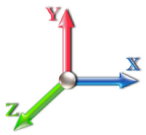
Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-25.71	-4.78	-0.19	-439.86	0.00	439.86	2063.18	1031.59	3653.66	1829.55	0.00	0.000	0.000	0.212
1.00	-25.57	-4.77	-0.19	-435.08	0.00	435.08	2059.52	1029.76	3633.37	1819.38	0.00	-0.013	0.000	0.175
2.00	-25.42	-4.76	-0.19	-430.31	0.00	430.31	2055.83	1027.92	3613.07	1809.22	0.01	-0.024	0.000	0.174
4.00	-25.13	-4.74	-0.19	-420.78	0.00	420.78	2048.36	1024.18	3572.46	1788.88	0.02	-0.046	0.000	0.172
6.00	-24.85	-4.72	-0.19	-411.30	0.00	411.30	2040.76	1020.38	3531.83	1768.54	0.04	-0.067	0.000	0.170
8.00	-24.57	-4.70	-0.19	-401.86	0.00	401.86	2033.04	1016.52	3491.19	1748.19	0.08	-0.089	0.000	0.167
10.00	-24.29	-4.67	-0.19	-392.46	0.00	392.46	2025.20	1012.60	3450.55	1727.84	0.12	-0.110	0.000	0.165
12.00	-24.01	-4.65	-0.19	-383.12	0.00	383.12	2017.23	1008.61	3409.91	1707.49	0.17	-0.132	0.000	0.162
14.00	-23.73	-4.63	-0.19	-373.81	0.00	373.81	2009.13	1004.57	3369.28	1687.14	0.23	-0.153	0.000	0.160
16.00	-23.45	-4.61	-0.19	-364.55	0.00	364.55	2000.92	1000.46	3328.65	1666.80	0.30	-0.175	0.000	0.158
18.00	-23.18	-4.58	-0.19	-355.34	0.00	355.34	1992.57	996.29	3288.04	1646.46	0.38	-0.196	0.000	0.155
18.25	-23.14	-4.58	-0.19	-354.19	0.00	354.19	1991.52	995.76	3282.97	1643.92	0.39	-0.199	0.000	0.155
18.25	-23.14	-4.58	-0.19	-354.19	0.00	354.19	1991.52	995.76	3282.97	1643.92	0.39	-0.199	0.000	0.155
20.00	-22.90	-4.56	-0.19	-346.17	0.00	346.17	1984.11	992.05	3247.45	1626.14	0.46	-0.217	0.000	0.224
22.00	-22.63	-4.55	-0.19	-337.04	0.00	337.04	1975.52	987.76	3206.89	1605.83	0.56	-0.248	0.000	0.221
24.00	-22.36	-4.53	-0.19	-327.95	0.00	327.95	1966.80	983.40	3166.36	1585.53	0.67	-0.279	0.000	0.218
26.00	-22.09	-4.51	-0.19	-318.90	0.00	318.90	1957.96	978.98	3125.86	1565.25	0.79	-0.309	0.000	0.215
28.00	-21.83	-4.49	-0.19	-309.88	0.00	309.88	1948.99	974.50	3085.40	1544.99	0.93	-0.340	0.000	0.212
30.00	-21.56	-4.47	-0.19	-300.90	0.00	300.90	1939.91	969.95	3044.99	1524.76	1.08	-0.370	0.000	0.208
32.00	-21.30	-4.45	-0.19	-291.96	0.00	291.96	1930.69	965.35	3004.63	1504.55	1.24	-0.401	0.000	0.205
34.00	-21.04	-4.43	-0.19	-283.05	0.00	283.05	1921.36	960.68	2964.32	1484.36	1.42	-0.431	0.000	0.202
36.00	-20.78	-4.41	-0.19	-274.19	0.00	274.19	1911.89	955.95	2924.07	1464.21	1.60	-0.461	0.000	0.198
38.00	-20.52	-4.39	-0.19	-265.36	0.00	265.36	1902.31	951.15	2883.89	1444.09	1.80	-0.491	0.000	0.195
40.00	-20.27	-4.37	-0.19	-256.58	0.00	256.58	1892.60	946.30	2843.78	1424.00	2.01	-0.520	0.000	0.191
42.00	-20.01	-4.35	-0.19	-247.85	0.00	247.85	1882.76	941.38	2803.75	1403.96	2.24	-0.549	0.000	0.187
44.00	-19.76	-4.32	-0.19	-239.15	0.00	239.15	1872.80	936.40	2763.79	1383.95	2.48	-0.579	0.000	0.183
46.00	-19.51	-4.30	-0.19	-230.50	0.00	230.50	1862.72	931.36	2723.92	1363.99	2.72	-0.607	0.000	0.179
48.00	-19.27	-4.28	-0.19	-221.90	0.00	221.90	1852.51	926.26	2684.14	1344.07	2.98	-0.636	0.000	0.176
48.75	-19.17	-4.27	-0.19	-218.69	0.00	218.69	1848.65	924.33	2669.25	1336.61	3.09	-0.647	0.000	0.174
50.00	-18.90	-4.25	-0.19	-213.36	0.00	213.36	1842.18	921.09	2644.46	1324.20	3.26	-0.664	0.000	0.171
52.00	-18.46	-4.22	-0.19	-204.85	0.00	204.85	1831.72	915.86	2604.88	1304.37	3.54	-0.692	0.000	0.167
53.25	-18.19	-4.21	-0.19	-199.57	0.00	199.57	1841.33	920.67	2641.23	1322.58	3.73	-0.710	-0.001	0.161
54.00	-18.10	-4.20	-0.19	-196.42	0.00	196.42	1837.42	918.71	2626.38	1315.14	3.84	-0.720	-0.001	0.159
56.00	-17.86	-4.17	-0.19	-188.02	0.00	188.02	1826.91	913.45	2586.84	1295.34	4.14	-0.746	-0.001	0.155
58.00	-17.62	-4.15	-0.19	-179.68	0.00	179.68	1816.27	908.14	2547.41	1275.60	4.46	-0.772	-0.001	0.151
60.00	-17.38	-4.12	-0.19	-171.38	0.00	171.38	1805.51	902.75	2508.10	1255.91	4.79	-0.797	-0.001	0.146
62.00	-17.14	-4.09	-0.19	-163.14	0.00	163.14	1794.62	897.31	2468.90	1236.28	5.13	-0.821	-0.001	0.142
64.00	-16.90	-4.07	-0.19	-154.96	0.00	154.96	1783.61	891.81	2429.82	1216.72	5.48	-0.845	-0.001	0.137
66.00	-16.67	-4.04	-0.19	-146.83	0.00	146.83	1772.48	886.24	2390.88	1197.22	5.84	-0.869	-0.001	0.132
68.00	-16.43	-4.01	-0.19	-138.75	0.00	138.75	1761.22	880.61	2352.06	1177.78	6.21	-0.892	-0.001	0.127
70.00	-16.20	-3.98	-0.19	-130.73	0.00	130.73	1749.83	874.92	2313.39	1158.41	6.59	-0.914	-0.001	0.122
72.00	-15.97	-3.95	-0.19	-122.77	0.00	122.77	1738.33	869.16	2274.85	1139.12	6.97	-0.936	-0.001	0.117
74.00	-15.75	-3.92	-0.19	-114.86	0.00	114.86	1726.69	863.35	2236.47	1119.90	7.37	-0.957	-0.001	0.112
76.00	-15.52	-3.90	-0.19	-107.01	0.00	107.01	1714.94	857.47	2198.23	1100.75	7.78	-0.977	-0.001	0.106
78.00	-15.30	-3.87	-0.19	-99.22	0.00	99.22	1703.06	851.53	2160.16	1081.68	8.19	-0.996	-0.001	0.101
80.00	-15.07	-3.84	-0.19	-91.49	0.00	91.49	1691.05	845.53	2122.25	1062.70	8.61	-1.014	-0.001	0.095
82.00	-14.85	-3.81	-0.19	-83.81	0.00	83.81	1678.92	839.46	2084.50	1043.80	9.04	-1.032	-0.001	0.089
84.00	-14.64	-3.78	-0.19	-76.20	0.00	76.20	1666.67	833.33	2046.93	1024.99	9.48	-1.048	-0.001	0.083

Calculated Forces

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 52

Tower Engineering Solutions

86.00	-14.42	-3.75	-0.19	-68.65	0.00	68.65	1654.29	827.14	2009.53	1006.26	9.92	-1.064	-0.001	0.077
87.00	-11.96	-3.10	-0.19	-64.90	0.00	64.90	1648.05	824.03	1990.91	996.93	10.14	-1.071	-0.001	0.072
88.00	-11.86	-3.08	-0.19	-61.80	0.00	61.80	1641.79	820.89	1972.32	987.63	10.37	-1.078	-0.001	0.070
90.00	-11.65	-3.05	-0.19	-55.64	0.00	55.64	1629.16	814.58	1935.30	969.09	10.82	-1.091	-0.001	0.065
92.00	-11.44	-3.02	-0.19	-49.53	0.00	49.53	1616.41	808.20	1898.47	950.64	11.28	-1.104	-0.001	0.059
94.00	-11.23	-2.99	-0.19	-43.49	0.00	43.49	1603.53	801.77	1861.83	932.30	11.75	-1.115	-0.001	0.054
96.00	-11.02	-2.96	-0.19	-37.51	0.00	37.51	1590.53	795.27	1825.40	914.06	12.22	-1.125	-0.001	0.048
97.00	-9.02	-2.32	0.00	-34.55	0.00	34.55	1583.99	791.99	1807.27	904.98	12.45	-1.130	-0.001	0.044
98.00	-8.93	-2.31	0.00	-32.23	0.00	32.23	1577.41	788.70	1789.18	895.92	12.69	-1.134	-0.001	0.042
98.75	-8.86	-2.30	0.00	-30.50	0.00	30.50	1572.46	786.23	1775.65	889.15	12.87	-1.137	-0.001	0.040
100.00	-8.66	-2.27	0.00	-27.63	0.00	27.63	1564.16	782.08	1753.17	877.89	13.17	-1.142	-0.001	0.037
102.00	-8.36	-2.24	0.00	-23.08	0.00	23.08	1550.79	775.39	1717.38	859.97	13.65	-1.149	-0.001	0.032
102.25	-8.33	-2.24	0.00	-22.52	0.00	22.52	1064.30	532.15	1198.84	600.31	13.71	-1.150	-0.001	0.045
104.00	-8.19	-2.21	0.00	-18.61	0.00	18.61	1057.83	528.92	1179.14	590.45	14.13	-1.155	-0.001	0.039
106.00	-8.04	-2.18	0.00	-14.20	0.00	14.20	1050.33	525.16	1156.68	579.20	14.61	-1.162	-0.001	0.032
107.00	-4.77	-1.26	0.00	-12.02	0.00	12.02	1046.53	523.26	1145.48	573.59	14.86	-1.164	-0.001	0.026
108.00	-4.71	-1.25	0.00	-10.76	0.00	10.76	1042.70	521.35	1134.29	567.99	15.10	-1.166	-0.001	0.023
110.00	-4.57	-1.21	0.00	-8.27	0.00	8.27	1034.95	517.47	1111.97	556.81	15.59	-1.170	-0.001	0.019
112.00	-4.44	-1.18	0.00	-5.84	0.00	5.84	1027.07	513.53	1089.73	545.68	16.08	-1.173	-0.001	0.015
114.00	-4.31	-1.15	0.00	-3.47	0.00	3.47	1019.06	509.53	1067.57	534.58	16.57	-1.175	-0.001	0.011
116.00	-4.18	-1.12	0.00	-1.17	0.00	1.17	1010.94	505.47	1045.49	523.52	17.07	-1.176	-0.001	0.006
117.00	-0.10	-0.03	0.00	-0.04	0.00	0.04	1006.83	503.41	1034.49	518.01	17.31	-1.177	-0.001	0.000
118.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	1002.69	501.34	1023.51	512.52	17.56	-1.177	-0.001	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	998.51	499.26	1012.55	507.03	17.81	-1.177	-0.001	0.000

Final Analysis Summary

Structure:	CT13069-A-SBA	**Code:**	TIA-222-G	4/27/2022	
Site Name:	Meriden	**Exposure:**	B		
Height:	119.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	20.0	0.00	30.84	0.01	0.50	1855.21
0.9D + 1.6W 97 mph Wind	20.0	0.00	23.13	0.01	0.50	1828.47
1.2D + 1.0Di + 1.0Wi 50 mph Wind	5.7	0.00	52.07	0.00	0.17	532.56
1.2D + 1.0E	1.6	0.00	30.85	0.00	0.00	176.96
0.9D + 1.0E	1.6	0.00	23.14	0.00	0.00	174.18
1.0D + 1.0W 60 mph Wind	4.8	0.00	25.71	0.00	0.19	439.86

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-27.18	-19.17	-0.50	-1462.5	-0.01	-1462.5	1984.11	992.05	3247.45	1626.14	20.00	0.913
0.9D + 1.6W 97 mph Wind	-20.31	-19.05	-0.50	-1437.0	0.00	-1437.0	1984.11	992.05	3247.45	1626.14	20.00	0.894
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-47.09	-5.48	-0.17	-420.78	0.00	-420.78	1984.11	992.05	3247.45	1626.14	20.00	0.283
1.2D + 1.0E	-27.50	-1.60	0.00	-144.62	0.00	-144.62	1984.11	992.05	3247.45	1626.14	20.00	0.103
0.9D + 1.0E	-20.63	-1.59	0.00	-141.95	0.00	-141.95	1984.11	992.05	3247.45	1626.14	20.00	0.098
1.0D + 1.0W 60 mph Wind	-22.90	-4.56	-0.19	-346.17	0.00	-346.17	1984.11	992.05	3247.45	1626.14	20.00	0.224

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	1.0	(3) SOL-1 3/4" William R71	-220.4	-2.64	25.3	132.5	25.3	6	0	243.1	25.3			132.49	288.5	298.82	0.459
1.0	18.3	(3) LNP-LP6X100-B-20T	-237.4	-5.70	25.3	243.1	25.3			221.6	25.3	9	11	243.05	297.8	288.75	0.842

Base Plate Summary

Structure:	CT13069-A-SB		**Code:**	TIA-222-G	4/27/2022
Site Name:	Meriden		**Exposure:**	B	
Height:	119.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 54

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	1627.50
Axial (kip):	26.65
Shear (kip):	19.08

Analysis (1.2D + 1.6W)

Moment (kip-ft):	1855.21
Axial (kip):	30.84
Shear (kip):	20.01

Base Plate

Yield (ksi):	60.00
Width (in):	47.00
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	7.00
Effective Len (in):	12.84
Moment (kip-in):	498.63
Allow Stress (ksi):	81.00
Applied Stress (ksi):	46.17
Stress Ratio:	0.57

Anchor Bolts

Bolt Circle:	49.12
Number Bolts:	8.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	171.21
Allowable (kip):	260.00
Ratio:	0.68

Tension

Force (kip):	158.19
Allowable (kip):	260.00
Ratio:	0.63

Monopole Mat Foundation Design

			Date: 4/27/2022
Customer Name:	Dish Wireless	**EIA/TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	119
Site Number:	CT13069-A-SBA	**Engineer Name:**	H. You
Engr. Number:	119368	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

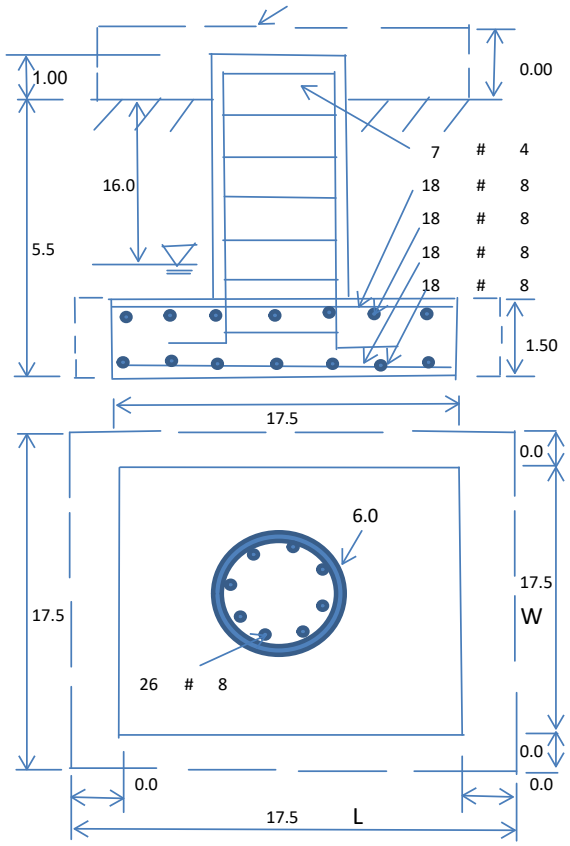
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	30.8	Shear Force (Kips):	20.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1855.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	1.50
Length of Pad (ft.):	17.5	Width of Pad (ft.):	17.5
Final Length of pad (ft)	17.5	Final width of pad (ft):	17.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	26	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	18	Qty. of Rebar in Pad (W):	18

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	18	Qty. of Rebar in Pad (W):	18
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	57.6	Pcf		
Water Table B.G.S. (ft):	16.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	1111.90	Total Dry Soil Weight (Kips):	133.43
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	133.43	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	600.75	Total Dry Concrete Weight (Kips):	90.11
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	90.11	Total Vertical Load on Base (Kips):	254.38

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	5104	<	Allowable Factored Soil Bearing (psf):	9000	0.57	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	2030.2	>	Design Factored Momont (kips-ft):	1985	0.98	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.02	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	2994.3	>	Design Factored Moment (Mu, Kips-F	1955.3	0.65	OK!
Calculated Shear Capacity (Kips):	501.5	>	Design Factored Shear (Kips):	20.0	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1109.2	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7162.1	>	Design Factored Axial Load (Pu Kips):	30.8	0.00	OK!
Moment & Axial Strength Combination:	0.65	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	288.9	>	One-Way Factored Shear (L-D. Kips):	177.2	0.61	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	288.9	>	One-Way Factored Shear (W-D., Kips)	177.2	0.61	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	269.6	>	One-Way Factored Shear (C-C, Kips):	183.8	0.68	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0047	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0047		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	889.6	>	Moment at Bottom (L-Dir. K-Ft):	541.7	0.61	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	889.6	>	Moment at Bottom (W-Dir. K-Ft):	541.7	0.61	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	1240.8	>	Moment at Bottom (C-C Dir. K-Ft):	766.1	0.62	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0047	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0047		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	889.6	>	Moment at the top (L-Dir K-Ft):	239.3	0.27	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	889.6	>	Moment at the top (W-Dir K-Ft):	239.3	0.27	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	1240.8	>	Moment at the top (C-C Dir. K-Ft):	227.2	0.18	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	742.1	k-ft.	Max. factored shear stress v_{u_CD}:		2.4	Psi
Max. factored shear stress v_{u_AB}:	15.8	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	15.8	Psi	Check Usage of Punching Shear Capacity:		0.08	OK!

Exhibit E

Mount Analysis

November 11, 2021

Sherri Knapik
SBA Network Services, LLC.
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOHVN00044A
	Site Name:	--
SBA Network Services Designation:	**Site Number:**	CT13069-A
	Site Name:	Meriden
	Application Number:	168287, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149462.003.01
Site Data:	**651 Paddock Avenue, Meriden, CT, 06451, New Haven County** **Latitude *41.51275*°, Longitude *-72.77944*°** **Monopole** **8 ft. Platform Mount**	

Dear Ms. Knapik,

B+T Group is pleased to submit this **"Appurtenance Mount Analysis Report"** to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 43.8%)**

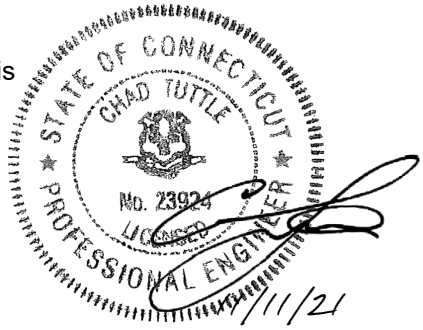
This analysis has been performed in accordance with the ANSI/TIA-222-H Standard.

All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We appreciate the opportunity of providing our continuing professional services to you and *SBA Network Services, LLC*. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Michael Harris

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount, Part# MC-PK8-DSH at 87 ft., attached to monopole at 651 Paddock Avenue, Meriden, CT, 06451, New Haven County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to us was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 119 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category B & Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	87	1	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		-	1	Raycap RDIDC-9181-PF-48	3

Note:
(1) Proposed Antenna to be installed on the Mount Pipe.
(2) Proposed Equipment to be installed directly behind the Antenna.
(3) Proposed Equipment to be installed on the mount.

Table 2 – Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading Mount Info	Date: 08/04/2021	SBA Network Services, LLC.
RFDS		Date: 07/23/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturer's drawings were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

6. Serviceability with respect to antenna twist, tilt, roll, or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
   a) Connection Bolts : ASTM A325
   b) Steel Pipe : ASTM A53 (GR. 35)
   c) HSS (Round) : ASTM 500 (GR. B-42)
   d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   e) Channel : ASTM A36 (GR. 36)
   f) Steel Solid Rod : ASTM A36 (GR. 36)
   g) Steel Plate : ASTM A36 (GR. 36)
   h) Steel Angle : ASTM A36 (GR. 36)
   i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

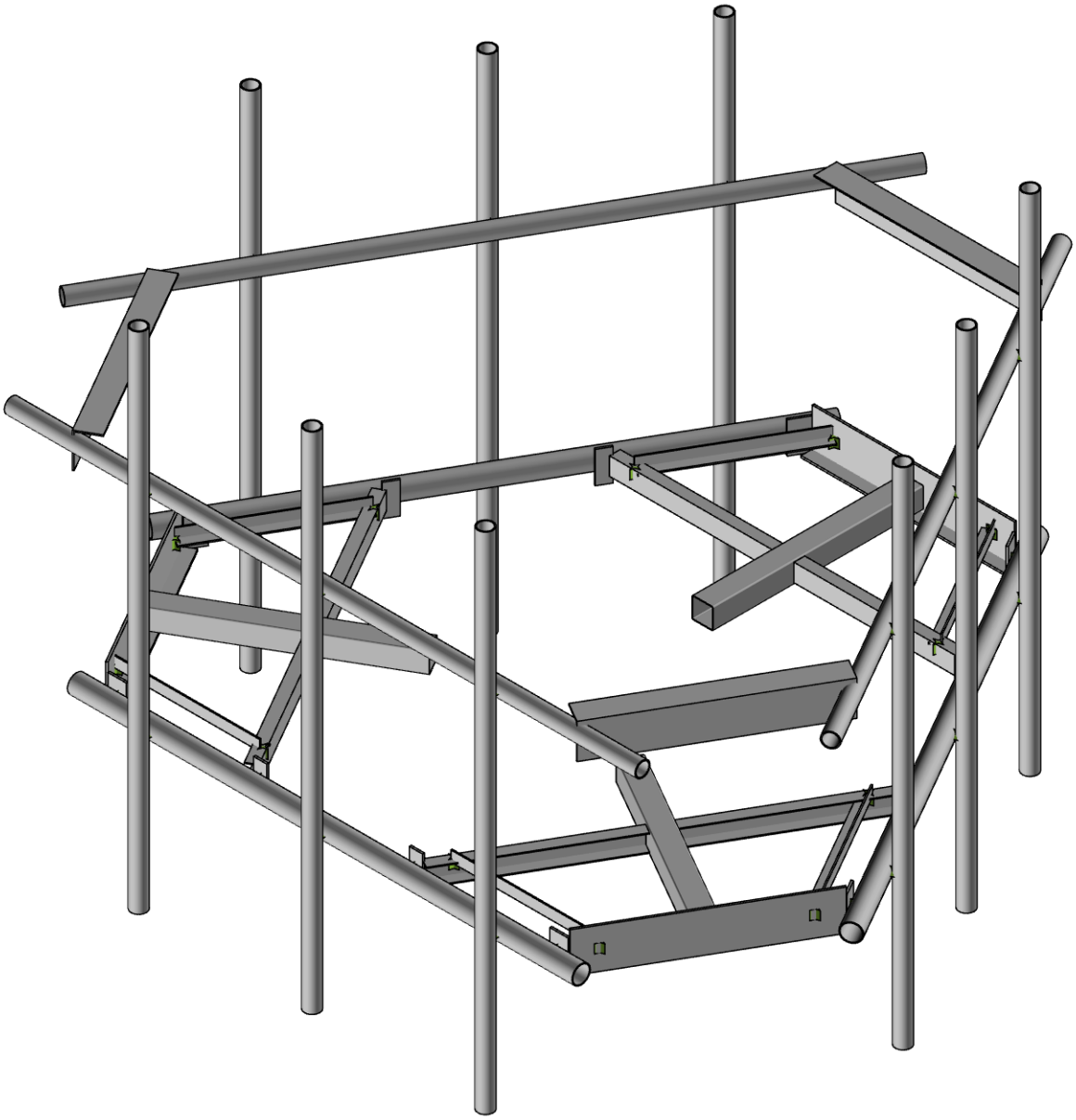
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	87	6.6	Pass
-	Support Rails	87	10.5	Pass
-	Support Tubes	87	43.8	Pass
-	Support Channels	87	32.2	Pass
-	Support Angels	87	27.0	Pass
-	Mount Pipes	87	12.2	Pass
-	Connection Plates	87	19.7	Pass
-	Connection Angles	87	17.8	Pass

5) RECOMMENDATIONS

The Commscope platform mount, Part# MC-PK8-DSH has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

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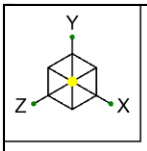

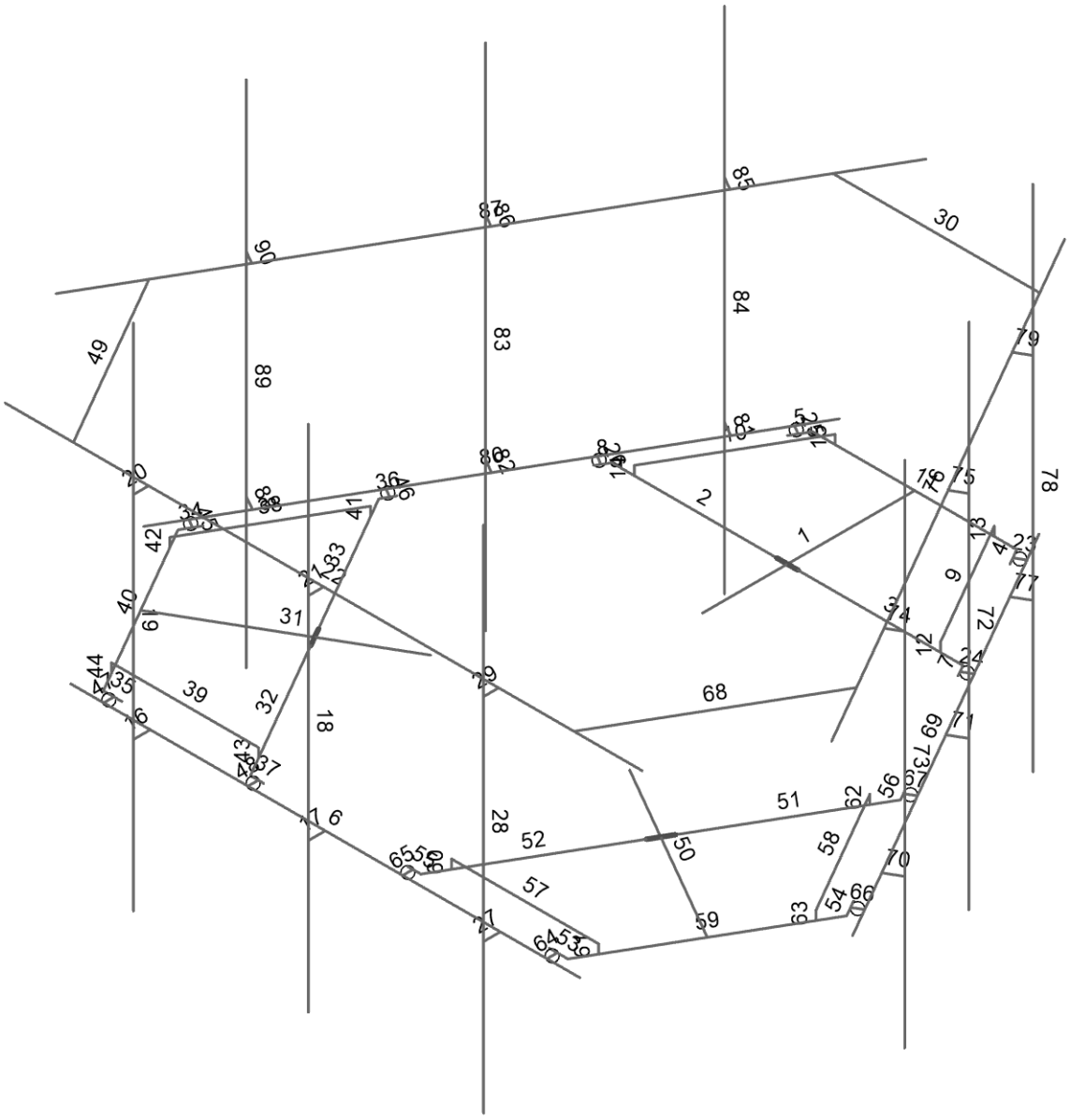

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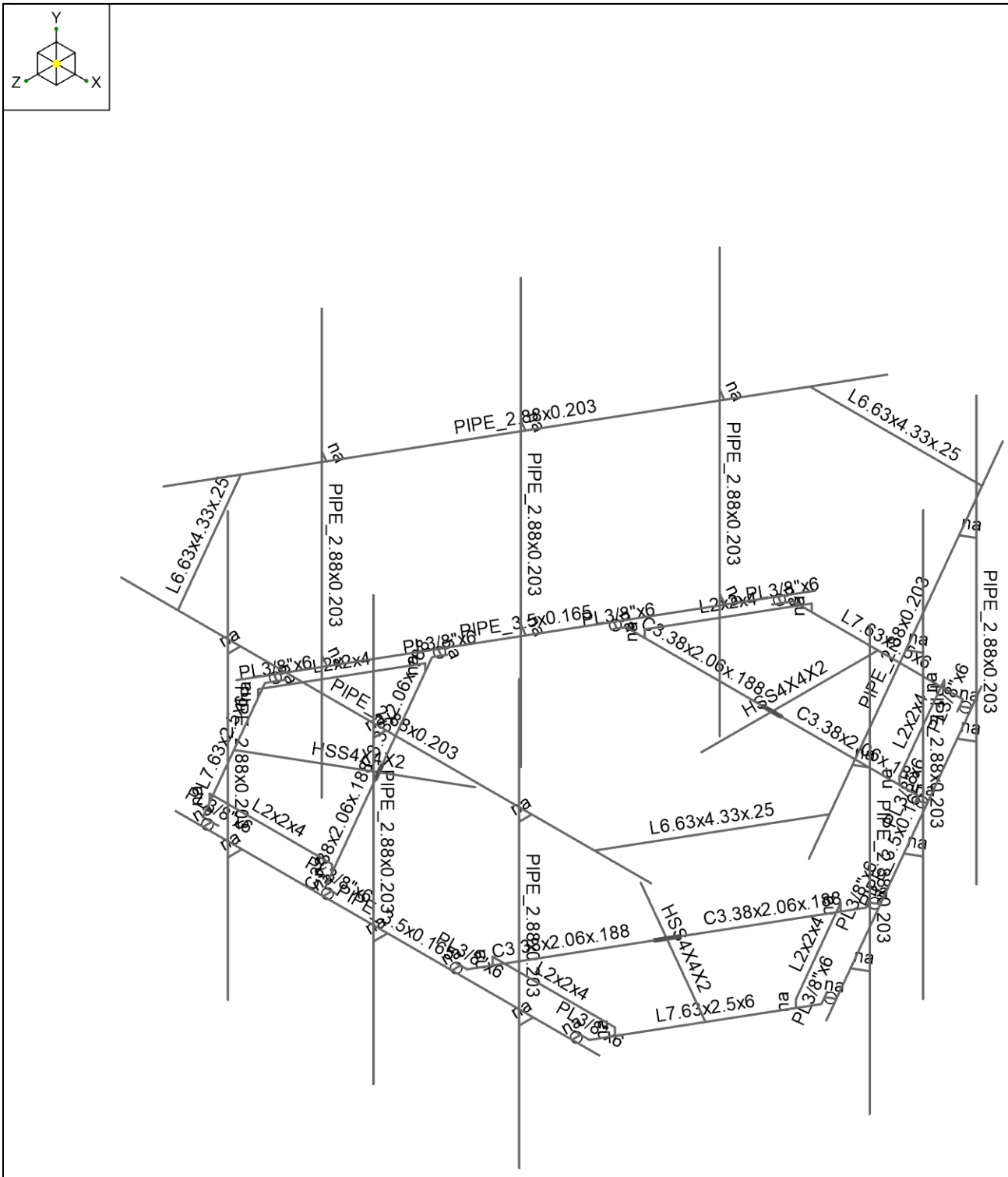

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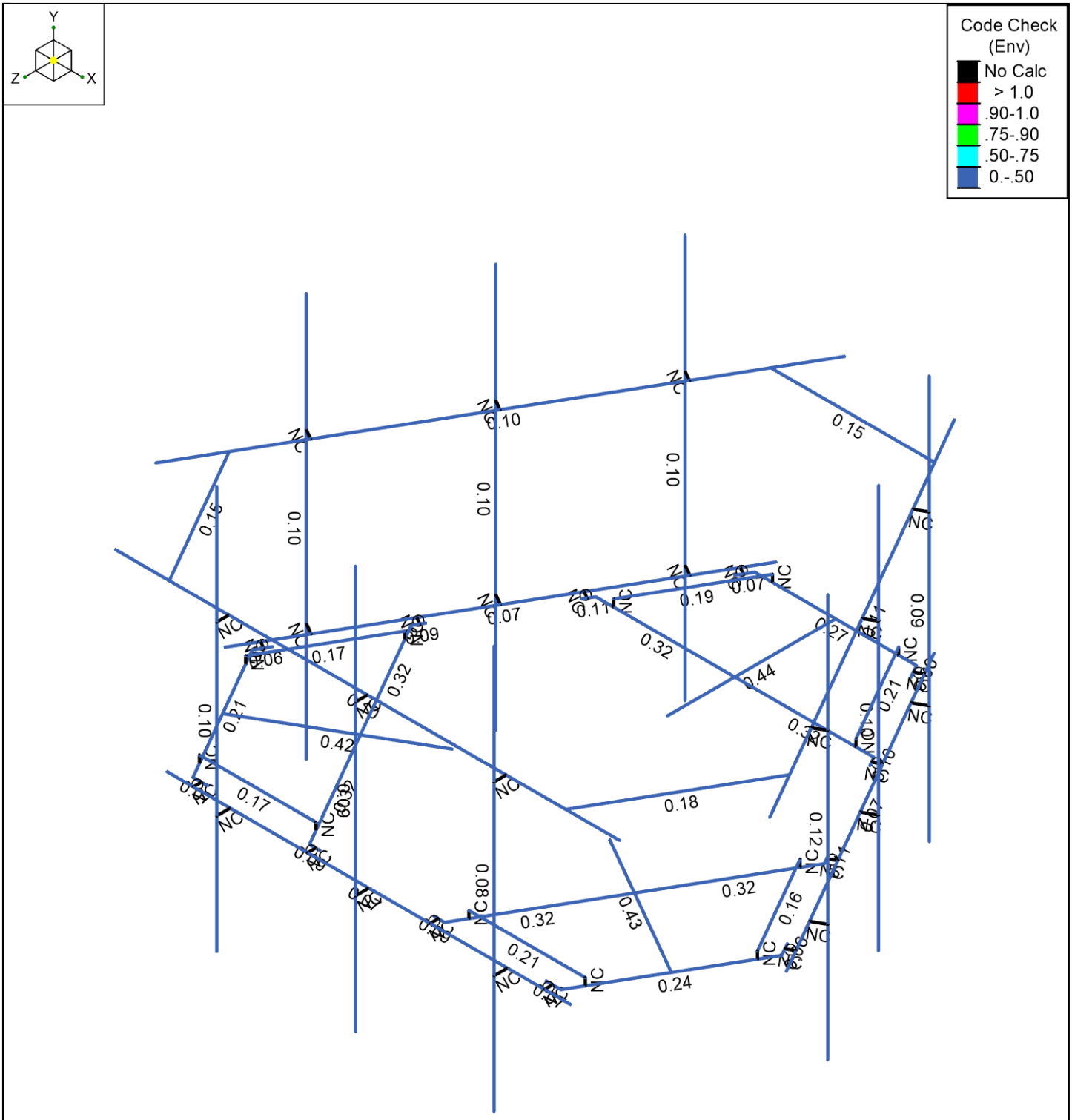

Member Code Checks Displayed (Enveloped)
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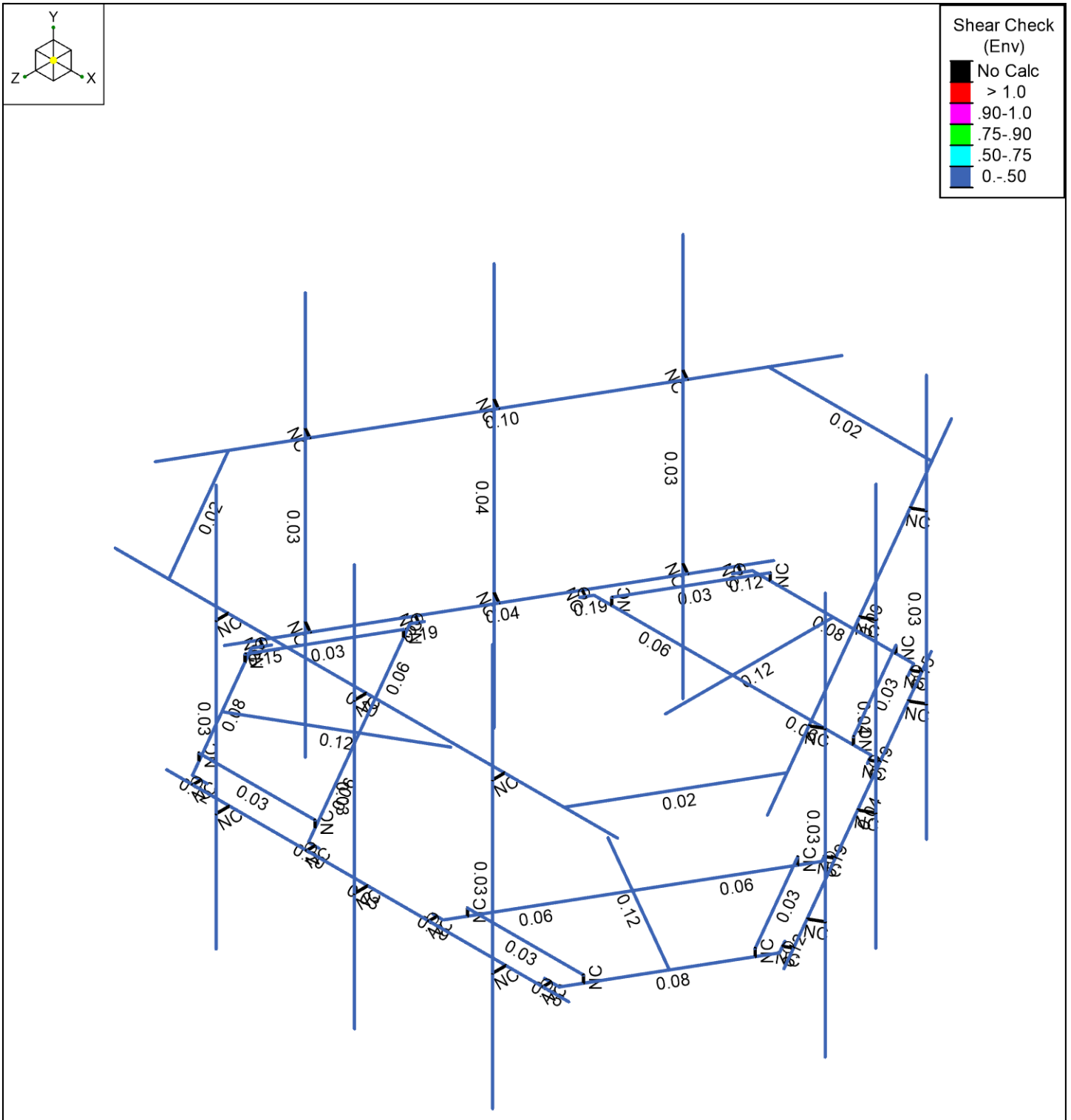


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT13069-A - Meriden	SK-5
MP		Nov 11, 2021
149462.003.01		149462_003_01_Meriden_CT.R3D

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0.167	-1.806417	
2	2	0	0.167	-5.13975	
3	3	0	0.167	-3.13975	
4	4	2.758333	0.167	-3.13975	
5	5	-2.758333	0.167	-3.13975	
6	6	-1.603633	0.167	-5.13975	
7	7	1.603633	0.167	-5.13975	
8	8	1.749466	0.167	-4.88716	
9	9	-1.749466	0.167	-4.88716	
10	10	1.686966	0.167	-4.995413	
11	11	1.826832	0.167	-5.076164	
12	12	-1.686966	0.167	-4.995413	
13	13	-1.826832	0.167	-5.076164	
14	14	-3.999998	0.167	4.120165	
15	15	3.999998	0.167	4.120165	
16	16	2.8625	0.167	-2.959328	
17	17	2.820833	0.167	-3.031498	
18	18	2.960698	0.167	-3.11225	
19	19	-2.8625	0.167	-2.959328	
20	20	-2.820833	0.167	-3.031498	
21	21	-2.960698	0.167	-3.11225	
22	22	-1.25	0.307833	-5.13975	
23	23	-2.404701	0.307833	-3.13975	
24	24	2.404701	0.307833	-3.13975	
25	25	1.25	0.307833	-5.13975	
26	26	-1.25	0.167	-5.13975	
27	27	-2.404701	0.167	-3.13975	
28	28	2.404701	0.167	-3.13975	
29	29	1.25	0.167	-5.13975	
30	30	-2.749998	0.167	4.120165	
31	31	0.000002	0.167	4.120165	
32	32	-2.749998	0.167	4.38579	
33	33	0.000002	0.167	4.38579	
34	34	-2.749998	-2.1667	4.38579	
35	35	0.000002	-2.1667	4.38579	
36	36	-2.749998	5.8333	4.38579	
37	37	0.000002	5.8333	4.38579	
38	38	-2.749998	3.500227	4.38579	
39	39	0.000002	3.500227	4.38579	
40	40	-2.749998	3.500227	4.146665	
41	41	0.000002	3.500227	4.146665	
42	42	-5	3.500227	4.146665	
43	43	5	3.500227	4.146665	
44	44	2.749998	0.167	4.120165	
45	45	2.749998	0.167	4.38579	
46	46	2.749998	-2.1667	4.38579	
47	47	2.749998	5.8333	4.38579	
48	48	2.749998	3.500227	4.38579	
49	49	2.749998	3.500227	4.146665	
50	50	0	0.167	0	
51	51	1.62501	3.500227	-5.478731	
52	52	-1.62501	3.500227	-5.478731	
53	53	-1.564403	0.167	0.903209	
54	54	-4.451154	0.167	2.569875	
55	55	-2.719104	0.167	1.569875	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.09827	0.167	-0.818912	
57	57	-1.339937	0.167	3.958662	
58	58	-3.649338	0.167	3.958662	
59	59	-5.252971	0.167	1.181088	
60	60	-5.107137	0.167	0.928498	
61	61	-3.357671	0.167	3.958662	
62	62	-5.169637	0.167	1.036751	
63	63	-5.309503	0.167	0.955999	
64	64	-3.482671	0.167	3.958662	
65	65	-3.482671	0.167	4.120165	
66	66	-3.994104	0.167	-0.999333	
67	67	-4.035771	0.167	-0.927164	
68	68	-4.175636	0.167	-1.007915	
69	69	-1.131604	0.167	3.958662	
70	70	-1.214938	0.167	3.958662	
71	71	-1.214938	0.167	4.120165	
72	72	-3.826154	0.307833	3.652407	
73	73	-1.516753	0.307833	3.652407	
74	74	-3.921454	0.307833	-0.512657	
75	75	-5.076154	0.307833	1.487343	
76	76	-3.826154	0.167	3.652407	
77	77	-1.516753	0.167	3.652407	
78	78	-3.921454	0.167	-0.512657	
79	79	-5.076154	0.167	1.487343	
80	80	-5.557225	3.500227	1.332066	
81	81	-3.932215	3.500227	4.146665	
82	82	1.564403	0.167	0.903209	
83	83	4.451154	0.167	2.569875	
84	84	2.719104	0.167	1.569875	
85	85	1.339937	0.167	3.958662	
86	86	4.09827	0.167	-0.818912	
87	87	5.252971	0.167	1.181088	
88	88	3.649338	0.167	3.958662	
89	89	3.357671	0.167	3.958662	
90	90	5.107137	0.167	0.928498	
91	91	3.482671	0.167	3.958662	
92	92	3.482671	0.167	4.120165	
93	93	5.169637	0.167	1.036751	
94	94	5.309503	0.167	0.955999	
95	95	1.131604	0.167	3.958662	
96	96	1.214938	0.167	3.958662	
97	97	1.214938	0.167	4.120165	
98	98	3.994104	0.167	-0.999333	
99	99	4.035771	0.167	-0.927164	
100	100	4.175636	0.167	-1.007915	
101	101	5.076154	0.307833	1.487343	
102	102	3.921454	0.307833	-0.512657	
103	103	1.516753	0.307833	3.652407	
104	104	3.826154	0.307833	3.652407	
105	105	5.076154	0.167	1.487343	
106	106	3.921454	0.167	-0.512657	
107	107	1.516753	0.167	3.652407	
108	108	3.826154	0.167	3.652407	
109	109	3.932215	3.500227	4.146665	
110	110	5.557225	3.500227	1.332066	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.568166	0.167	1.404018	
112	112	1.568168	0.167	-5.524182	
113	113	4.943166	0.167	0.321486	
114	114	3.568166	0.167	-2.060084	
115	115	5.173204	0.167	0.188673	
116	116	3.798204	0.167	-2.192897	
117	117	5.173204	-2.1667	0.188673	
118	118	3.798204	-2.1667	-2.192897	
119	119	5.173204	5.8333	0.188673	
120	120	3.798204	5.8333	-2.192897	
121	121	5.173204	3.500227	0.188673	
122	122	3.798204	3.500227	-2.192897	
123	123	4.966116	3.500227	0.308236	
124	124	3.591116	3.500227	-2.073334	
125	125	6.091117	3.500227	2.256795	
126	126	1.091117	3.500227	-6.40346	
127	127	2.193168	0.167	-4.441651	
128	128	2.423206	0.167	-4.574463	
129	129	2.423206	-2.1667	-4.574463	
130	130	2.423206	5.8333	-4.574463	
131	131	2.423206	3.500227	-4.574463	
132	132	2.216118	3.500227	-4.454901	
133	133	-1.568168	0.167	-5.524182	
134	134	-5.568166	0.167	1.404018	
135	135	-2.193168	0.167	-4.441651	
136	136	-3.568168	0.167	-2.060081	
137	137	-2.423206	0.167	-4.574463	
138	138	-3.798206	0.167	-2.192893	
139	139	-2.423206	-2.1667	-4.574463	
140	140	-3.798206	-2.1667	-2.192893	
141	141	-2.423206	5.8333	-4.574463	
142	142	-3.798206	5.8333	-2.192893	
143	143	-2.423206	3.500227	-4.574463	
144	144	-3.798206	3.500227	-2.192893	
145	145	-2.216118	3.500227	-4.454901	
146	146	-3.591118	3.500227	-2.073331	
147	147	-1.091117	3.500227	-6.40346	
148	148	-6.091117	3.500227	2.256795	
149	149	-4.943166	0.167	0.321486	
150	150	-5.173204	0.167	0.188673	
151	151	-5.173204	-2.1667	0.188673	
152	152	-5.173204	5.8333	0.188673	
153	153	-5.173204	3.500227	0.188673	
154	154	-4.966116	3.500227	0.308236	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	MF-H1	PIPE_3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE_2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	Default	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	N/A	None
5	5				Yes	N/A	None
6	6				Yes	N/A	None
7	7				Yes	N/A	None
8	8				Yes	N/A	None
9	9				Yes	N/A	None
10	10				Yes	N/A	None
11	11				Yes	N/A	None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes	N/A	None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	N/A	None
31	31				Yes	Default	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	N/A	None
35	35				Yes	N/A	None
36	36				Yes	N/A	None
37	37				Yes	N/A	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	OOOOOX			Yes	** NA **	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49				Yes	N/A	None
50	50				Yes	Default	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	N/A	None
54	54				Yes	N/A	None
55	55				Yes	N/A	None
56	56				Yes	N/A	None
57	57				Yes	N/A	None
58	58				Yes	N/A	None
59	59				Yes	N/A	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	OOOOOX			Yes	** NA **	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68				Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
69	69				Yes	N/A	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	N/A	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	N/A	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	N/A	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	28	MF-P1	8	Lbyy	Lateral
16	30	MF-H3	3.25	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	49	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral
30	52	SF-H2	2.758	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	68	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.032	%15
2	28	Y	-0.032	%85
3	28	Y	-0.075	%20
4	28	Y	-0.064	%50
5	28	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85
8	89	Y	-0.075	%20
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%20
14	78	Y	-0.064	%50
15	78	Y	0	0
16	31	Y	-0.022	%10
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.129	%15
2	28	Z	-0.129	%85
3	28	Z	-0.057	%20
4	28	Z	-0.057	%50
5	28	Z	0	0
6	89	Z	-0.129	%15
7	89	Z	-0.129	%85
8	89	Z	-0.057	%20
9	89	Z	-0.057	%50

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	89	Z	0	0
11	78	Z	-0.129	%15
12	78	Z	-0.129	%85
13	78	Z	-0.057	%20
14	78	Z	-0.057	%50
15	78	Z	0	0
16	31	Z	-0.059	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.052	%15
2	28	X	-0.052	%85
3	28	X	-0.035	%20
4	28	X	-0.03	%50
5	28	X	0	0
6	89	X	-0.052	%15
7	89	X	-0.052	%85
8	89	X	-0.035	%20
9	89	X	-0.03	%50
10	89	X	0	0
11	78	X	-0.052	%15
12	78	X	-0.052	%85
13	78	X	-0.035	%20
14	78	X	-0.03	%50
15	78	X	0	0
16	31	X	-0.033	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.026	%15
2	28	Z	-0.026	%85
3	28	Z	-0.01	%20
4	28	Z	-0.01	%50
5	28	Z	0	0
6	89	Z	-0.026	%15
7	89	Z	-0.026	%85
8	89	Z	-0.01	%20
9	89	Z	-0.01	%50
10	89	Z	0	0
11	78	Z	-0.026	%15
12	78	Z	-0.026	%85
13	78	Z	-0.01	%20
14	78	Z	-0.01	%50
15	78	Z	0	0
16	31	Z	-0.01	%10

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.012	%15
2	28	X	-0.012	%85
3	28	X	-0.006	%20
4	28	X	-0.005	%50
5	28	X	0	0
6	89	X	-0.012	%15
7	89	X	-0.012	%85
8	89	X	-0.006	%20
9	89	X	-0.005	%50
10	89	X	0	0
11	78	X	-0.012	%15
12	78	X	-0.012	%85
13	78	X	-0.006	%20
14	78	X	-0.005	%50
15	78	X	0	0
16	31	X	-0.006	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.008	%15
2	28	Z	-0.008	%85
3	28	Z	-0.004	%20
4	28	Z	-0.004	%50
5	28	Z	0	0
6	89	Z	-0.008	%15
7	89	Z	-0.008	%85
8	89	Z	-0.004	%20
9	89	Z	-0.004	%50
10	89	Z	0	0
11	78	Z	-0.008	%15
12	78	Z	-0.008	%85
13	78	Z	-0.004	%20
14	78	Z	-0.004	%50
15	78	Z	0	0
16	31	Z	-0.004	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.003	%15
2	28	X	-0.003	%85
3	28	X	-0.002	%20
4	28	X	-0.002	%50
5	28	X	0	0
6	89	X	-0.003	%15
7	89	X	-0.003	%85
8	89	X	-0.002	%20
9	89	X	-0.002	%50
10	89	X	0	0
11	78	X	-0.003	%15
12	78	X	-0.003	%85
13	78	X	-0.002	%20
14	78	X	-0.002	%50
15	78	X	0	0
16	31	X	-0.002	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.118	%15
2	28	Y	-0.118	%85
3	28	Y	-0.033	%20
4	28	Y	-0.032	%50
5	28	Y	0	0
6	89	Y	-0.118	%15
7	89	Y	-0.118	%85
8	89	Y	-0.033	%20
9	89	Y	-0.032	%50
10	89	Y	0	0
11	78	Y	-0.118	%15
12	78	Y	-0.118	%85
13	78	Y	-0.033	%20
14	78	Y	-0.032	%50
15	78	Y	0	0
16	31	Y	-0.033	%10
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.014	%15
2	28	Z	-0.014	%85
3	28	Z	-0.016	%20
4	28	Z	-0.014	%50
5	28	Z	0	0
6	89	Z	-0.014	%15

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	Z	-0.014	%85
8	89	Z	-0.016	%20
9	89	Z	-0.014	%50
10	89	Z	0	0
11	78	Z	-0.014	%15
12	78	Z	-0.014	%85
13	78	Z	-0.016	%20
14	78	Z	-0.014	%50
15	78	Z	0	0
16	31	Z	-0.005	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.014	%15
2	28	X	-0.014	%85
3	28	X	-0.016	%20
4	28	X	-0.014	%50
5	28	X	0	0
6	89	X	-0.014	%15
7	89	X	-0.014	%85
8	89	X	-0.016	%20
9	89	X	-0.014	%50
10	89	X	0	0
11	78	X	-0.014	%15
12	78	X	-0.014	%85
13	78	X	-0.016	%20
14	78	X	-0.014	%50
15	78	X	0	0
16	31	X	-0.005	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	4	Z	-0.018	-0.018	0	%100
5	5	Z	-0.018	-0.018	0	%100
6	6	Z	-0.01	-0.01	0	%100
7	7	Z	-0.018	-0.018	0	%100
8	8	Z	-0.018	-0.018	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.024	-0.024	0	%100
12	18	Z	-0.008	-0.008	0	%100
13	19	Z	-0.008	-0.008	0	%100
14	22	Z	-0.008	-0.008	0	%100
15	28	Z	-0.008	-0.008	0	%100
16	30	Z	-0.021	-0.021	0	%100
17	31	Z	-0.014	-0.014	0	%100
18	32	Z	-0.012	-0.012	0	%100
19	33	Z	-0.012	-0.012	0	%100
20	34	Z	-0.018	-0.018	0	%100
21	35	Z	-0.018	-0.018	0	%100
22	36	Z	-0.018	-0.018	0	%100
23	37	Z	-0.018	-0.018	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.024	-0.024	0	%100
27	49	Z	-0.021	-0.021	0	%100
28	50	Z	-0.014	-0.014	0	%100
29	51	Z	-0.012	-0.012	0	%100
30	52	Z	-0.012	-0.012	0	%100
31	53	Z	-0.018	-0.018	0	%100
32	54	Z	-0.018	-0.018	0	%100
33	55	Z	-0.018	-0.018	0	%100
34	56	Z	-0.018	-0.018	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.024	-0.024	0	%100
38	68	Z	-0.021	-0.021	0	%100
39	69	Z	-0.01	-0.01	0	%100
40	72	Z	-0.008	-0.008	0	%100
41	73	Z	-0.008	-0.008	0	%100
42	76	Z	-0.008	-0.008	0	%100
43	78	Z	-0.008	-0.008	0	%100
44	80	Z	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.008	-0.008	0	%100
46	84	Z	-0.008	-0.008	0	%100
47	87	Z	-0.008	-0.008	0	%100
48	89	Z	-0.008	-0.008	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.014	-0.014	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	4	X	-0.018	-0.018	0	%100
5	5	X	-0.018	-0.018	0	%100
6	6	X	-0.01	-0.01	0	%100
7	7	X	-0.018	-0.018	0	%100
8	8	X	-0.018	-0.018	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.024	-0.024	0	%100
12	18	X	-0.008	-0.008	0	%100
13	19	X	-0.008	-0.008	0	%100
14	22	X	-0.008	-0.008	0	%100
15	28	X	-0.008	-0.008	0	%100
16	30	X	-0.021	-0.021	0	%100
17	31	X	-0.014	-0.014	0	%100
18	32	X	-0.012	-0.012	0	%100
19	33	X	-0.012	-0.012	0	%100
20	34	X	-0.018	-0.018	0	%100
21	35	X	-0.018	-0.018	0	%100
22	36	X	-0.018	-0.018	0	%100
23	37	X	-0.018	-0.018	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.024	-0.024	0	%100
27	49	X	-0.021	-0.021	0	%100
28	50	X	-0.014	-0.014	0	%100
29	51	X	-0.012	-0.012	0	%100
30	52	X	-0.012	-0.012	0	%100
31	53	X	-0.018	-0.018	0	%100
32	54	X	-0.018	-0.018	0	%100
33	55	X	-0.018	-0.018	0	%100
34	56	X	-0.018	-0.018	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.024	-0.024	0	%100
38	68	X	-0.021	-0.021	0	%100
39	69	X	-0.01	-0.01	0	%100
40	72	X	-0.008	-0.008	0	%100
41	73	X	-0.008	-0.008	0	%100
42	76	X	-0.008	-0.008	0	%100
43	78	X	-0.008	-0.008	0	%100
44	80	X	-0.01	-0.01	0	%100
45	83	X	-0.008	-0.008	0	%100
46	84	X	-0.008	-0.008	0	%100
47	87	X	-0.008	-0.008	0	%100
48	89	X	-0.008	-0.008	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.004	-0.004	0	%100
4	4	Z	-0.007	-0.007	0	%100
5	5	Z	-0.007	-0.007	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.008	-0.008	0	%100
8	8	Z	-0.008	-0.008	0	%100
9	9	Z	-0.003	-0.003	0	%100
10	10	Z	-0.003	-0.003	0	%100
11	11	Z	-0.006	-0.006	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	28	Z	-0.001	-0.001	0	%100
16	30	Z	-0.005	-0.005	0	%100
17	31	Z	-0.004	-0.004	0	%100
18	32	Z	-0.004	-0.004	0	%100
19	33	Z	-0.004	-0.004	0	%100
20	34	Z	-0.007	-0.007	0	%100
21	35	Z	-0.007	-0.007	0	%100
22	36	Z	-0.008	-0.008	0	%100
23	37	Z	-0.008	-0.008	0	%100
24	38	Z	-0.003	-0.003	0	%100
25	39	Z	-0.003	-0.003	0	%100
26	40	Z	-0.006	-0.006	0	%100
27	49	Z	-0.005	-0.005	0	%100
28	50	Z	-0.004	-0.004	0	%100
29	51	Z	-0.004	-0.004	0	%100
30	52	Z	-0.004	-0.004	0	%100
31	53	Z	-0.007	-0.007	0	%100
32	54	Z	-0.007	-0.007	0	%100
33	55	Z	-0.008	-0.008	0	%100
34	56	Z	-0.008	-0.008	0	%100
35	57	Z	-0.003	-0.003	0	%100
36	58	Z	-0.003	-0.003	0	%100
37	59	Z	-0.006	-0.006	0	%100
38	68	Z	-0.005	-0.005	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	X	-0.007	-0.007	0	%100
5	5	X	-0.007	-0.007	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.008	-0.008	0	%100
8	8	X	-0.008	-0.008	0	%100
9	9	X	-0.003	-0.003	0	%100
10	10	X	-0.003	-0.003	0	%100
11	11	X	-0.006	-0.006	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	28	X	-0.001	-0.001	0	%100
16	30	X	-0.005	-0.005	0	%100
17	31	X	-0.004	-0.004	0	%100
18	32	X	-0.004	-0.004	0	%100
19	33	X	-0.004	-0.004	0	%100
20	34	X	-0.007	-0.007	0	%100
21	35	X	-0.007	-0.007	0	%100
22	36	X	-0.008	-0.008	0	%100
23	37	X	-0.008	-0.008	0	%100
24	38	X	-0.003	-0.003	0	%100
25	39	X	-0.003	-0.003	0	%100
26	40	X	-0.006	-0.006	0	%100
27	49	X	-0.005	-0.005	0	%100
28	50	X	-0.004	-0.004	0	%100
29	51	X	-0.004	-0.004	0	%100
30	52	X	-0.004	-0.004	0	%100
31	53	X	-0.007	-0.007	0	%100
32	54	X	-0.007	-0.007	0	%100
33	55	X	-0.008	-0.008	0	%100
34	56	X	-0.008	-0.008	0	%100
35	57	X	-0.003	-0.003	0	%100
36	58	X	-0.003	-0.003	0	%100
37	59	X	-0.006	-0.006	0	%100
38	68	X	-0.005	-0.005	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0009	-0.0009	0	%100
2	2	Z	-0.0008	-0.0008	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0003	-0.0003	0	%100
7	7	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.0005	-0.0005	0	%100
10	10	Z	-0.0005	-0.0005	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0003	-0.0003	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	22	Z	-0.0003	-0.0003	0	%100
15	28	Z	-0.0003	-0.0003	0	%100
16	30	Z	-0.001	-0.001	0	%100
17	31	Z	-0.0009	-0.0009	0	%100
18	32	Z	-0.0008	-0.0008	0	%100
19	33	Z	-0.0008	-0.0008	0	%100
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0005	-0.0005	0	%100
25	39	Z	-0.0005	-0.0005	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.001	-0.001	0	%100
28	50	Z	-0.0009	-0.0009	0	%100
29	51	Z	-0.0008	-0.0008	0	%100
30	52	Z	-0.0008	-0.0008	0	%100
31	53	Z	-0.001	-0.001	0	%100
32	54	Z	-0.001	-0.001	0	%100
33	55	Z	-0.001	-0.001	0	%100
34	56	Z	-0.001	-0.001	0	%100
35	57	Z	-0.0005	-0.0005	0	%100
36	58	Z	-0.0005	-0.0005	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.001	-0.001	0	%100
39	69	Z	-0.0003	-0.0003	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	76	Z	-0.0003	-0.0003	0	%100
43	78	Z	-0.0003	-0.0003	0	%100
44	80	Z	-0.0003	-0.0003	0	%100
45	83	Z	-0.0003	-0.0003	0	%100
46	84	Z	-0.0003	-0.0003	0	%100
47	87	Z	-0.0003	-0.0003	0	%100
48	89	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0009	-0.0009	0	%100
2	2	X	-0.0008	-0.0008	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0003	-0.0003	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.0005	-0.0005	0	%100
10	10	X	-0.0005	-0.0005	0	%100
11	11	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	18	X	-0.0003	-0.0003	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	22	X	-0.0003	-0.0003	0	%100
15	28	X	-0.0003	-0.0003	0	%100
16	30	X	-0.001	-0.001	0	%100
17	31	X	-0.0009	-0.0009	0	%100
18	32	X	-0.0008	-0.0008	0	%100
19	33	X	-0.0008	-0.0008	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.0005	-0.0005	0	%100
25	39	X	-0.0005	-0.0005	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.001	-0.001	0	%100
28	50	X	-0.0009	-0.0009	0	%100
29	51	X	-0.0008	-0.0008	0	%100
30	52	X	-0.0008	-0.0008	0	%100
31	53	X	-0.001	-0.001	0	%100
32	54	X	-0.001	-0.001	0	%100
33	55	X	-0.001	-0.001	0	%100
34	56	X	-0.001	-0.001	0	%100
35	57	X	-0.0005	-0.0005	0	%100
36	58	X	-0.0005	-0.0005	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.001	-0.001	0	%100
39	69	X	-0.0003	-0.0003	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	76	X	-0.0003	-0.0003	0	%100
43	78	X	-0.0003	-0.0003	0	%100
44	80	X	-0.0003	-0.0003	0	%100
45	83	X	-0.0003	-0.0003	0	%100
46	84	X	-0.0003	-0.0003	0	%100
47	87	X	-0.0003	-0.0003	0	%100
48	89	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.009	-0.009	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.006	-0.006	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.005	-0.005	0	%100
10	10	Y	-0.005	-0.005	0	%100
11	11	Y	-0.012	-0.012	0	%100
12	18	Y	-0.005	-0.005	0	%100
13	19	Y	-0.005	-0.005	0	%100
14	22	Y	-0.005	-0.005	0	%100
15	28	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	30	Y	-0.012	-0.012	0	%100
17	31	Y	-0.009	-0.009	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.005	-0.005	0	%100
25	39	Y	-0.005	-0.005	0	%100
26	40	Y	-0.012	-0.012	0	%100
27	49	Y	-0.012	-0.012	0	%100
28	50	Y	-0.009	-0.009	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.005	-0.005	0	%100
36	58	Y	-0.005	-0.005	0	%100
37	59	Y	-0.012	-0.012	0	%100
38	68	Y	-0.012	-0.012	0	%100
39	69	Y	-0.006	-0.006	0	%100
40	72	Y	-0.005	-0.005	0	%100
41	73	Y	-0.005	-0.005	0	%100
42	76	Y	-0.005	-0.005	0	%100
43	78	Y	-0.005	-0.005	0	%100
44	80	Y	-0.006	-0.006	0	%100
45	83	Y	-0.005	-0.005	0	%100
46	84	Y	-0.005	-0.005	0	%100
47	87	Y	-0.005	-0.005	0	%100
48	89	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.0009	-0.0009	0	%100
3	3	Z	-0.0009	-0.0009	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.003	-0.003	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	28	Z	-0.001	-0.001	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0009	-0.0009	0	%100
19	33	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.0009	-0.0009	0	%100
30	52	Z	-0.0009	-0.0009	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.001	-0.001	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.001	-0.001	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.0009	-0.0009	0	%100
3	3	X	-0.0009	-0.0009	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.003	-0.003	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	28	X	-0.001	-0.001	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0009	-0.0009	0	%100
19	33	X	-0.0009	-0.0009	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.003	-0.003	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.0009	-0.0009	0	%100
30	52	X	-0.0009	-0.0009	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.003	-0.003	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.001	-0.001	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.001	-0.001	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	10	Y	-0.02	-0.026	1.27	2.309
2	38	Y	-0.014	-0.02	0	2.078
3	39	Y	0.0006164	-0.016	0	1.155
4	39	Y	-0.016	-0.035	1.155	2.309
5	57	Y	-0.035	-0.016	0	1.155
6	57	Y	-0.016	0.0006163	1.155	2.309
7	58	Y	-0.018	-0.016	0.231	2.309
8	9	Y	-0.015	-0.015	0	2.078
9	10	Y	-0.014	-0.02	0.231	1.27

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.008	-0.008	0	2.078
2	10	Y	-0.007	-0.01	0.231	1.27
3	10	Y	-0.01	-0.013	1.27	2.309
4	38	Y	-0.007	-0.01	0	2.078
5	39	Y	0.0003168	-0.008	0	1.155
6	39	Y	-0.008	-0.018	1.155	2.309
7	57	Y	-0.018	-0.008	0	1.155
8	57	Y	-0.008	0.0003168	1.155	2.309
9	58	Y	-0.009	-0.008	0.231	2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.01
2	73	72	75	74	Y	Two Way	-0.01
3	102	101	104	103	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.005
2	73	72	75	74	Y	Two Way	-0.005
3	102	101	104	103	Y	Two Way	-0.005

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	30	L	Y	-0.5
2	113	L	Y	-0.5
3	135	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	31	L	Y	-0.5
2	114	L	Y	-0.5
3	136	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	44	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	0.852	5	1.649	14	0.972	2	3.307	14	0.862	11	0.333	96
2		min	-0.855	11	0.108	8	-1.095	8	-0.205	8	-0.864	5	-0.201	88
3	53	max	0.85	5	1.689	18	1.078	2	0.033	13	1.027	3	-0.154	12
4		min	-0.954	11	0.262	12	-1.015	8	-1.721	43	-1.031	9	-2.919	18
5	82	max	0.864	5	1.625	22	1.155	2	-0.021	3	1.043	7	2.802	46
6		min	-0.756	11	0.23	4	-1.095	8	-1.848	69	-1.046	13	0.079	4
7	Totals:	max	2.565	5	4.645	55	3.205	2						
8		min	-2.565	11	2.395	13	-3.205	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.438	0	13	0.117	0	y	73	70.173	73.278	8.24	8.24	2.022	H1-1b
2	2	C3.38x2.06x.188	0.322	2.592	61	0.059	0.351	y	64	35.669	43.384	1.704	4.482	1.62	H1-1b
3	3	C3.38x2.06x.188	0.319	0	52	0.063	2.241	y	44	35.669	43.384	1.704	4.482	1.62	H1-1b
4	4	PL3/8"x6	0.065	0	2	0.151	0	y	62	68.997	72.9	0.57	9.113	2.32	H1-1b
5	5	PL3/8"x6	0.069	0	3	0.123	0	y	38	68.997	72.9	0.57	9.113	1.866	H1-1b
6	6	PIPE_3.5x0.165	0.066	6.75	67	0.031	5.25		69	45.872	71.57	6.336	6.336	2.279	H1-1b
7	7	PL3/8"x6	0.104	0.208	8	0.191	0.208	y	50	70.882	72.9	0.57	9.113	1.738	H1-1b
8	8	PL3/8"x6	0.109	0	13	0.195	0	y	51	70.882	72.9	0.57	9.113	3	H1-1b
9	9	L2x2x4	0.214	0	8	0.03	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.186	2.309	8	0.035	0	y	64	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.27	1.604	8	0.077	0	z	62	75.414	118.523	1.798	13.87	1.269	H2-1
12	18	PIPE_2.88x0.203	0.086	5.583	5	0.031	5.583		6	35.361	70.548	5.01	5.01	3	H1-1b
13	19	PIPE_2.88x0.203	0.105	2.333	9	0.034	5.583		9	35.361	70.548	5.01	5.01	3	H1-1b
14	22	PIPE_2.88x0.203	0.103	7.812	13	0.103	8.854		2	23.996	70.548	5.01	5.01	2.387	H1-1b
15	28	PIPE_2.88x0.203	0.084	2.333	7	0.031	5.583		8	35.361	70.548	5.01	5.01	3	H1-1b
16	30	L6.63x4.33x.25	0.146	3.25	6	0.017	3.25	z	12	51.794	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.423	0	7	0.119	0	y	65	70.173	73.278	8.24	8.24	2.045	H1-1b
18	32	C3.38x2.06x.188	0.321	2.592	54	0.06	0.351	y	68	35.669	43.384	1.704	4.482	1.617	H1-1b
19	33	C3.38x2.06x.188	0.32	0	56	0.063	2.241	y	48	35.669	43.384	1.704	4.482	1.621	H1-1b
20	34	PL3/8"x6	0.057	0	6	0.15	0	y	66	68.997	72.9	0.57	9.113	2.297	H1-1b
21	35	PL3/8"x6	0.068	0	7	0.121	0	y	42	68.997	72.9	0.57	9.113	1.805	H1-1b
22	36	PL3/8"x6	0.093	0.208	13	0.19	0.208	y	54	70.882	72.9	0.57	9.113	2.145	H1-1b
23	37	PL3/8"x6	0.091	0	5	0.197	0	y	55	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2x2x4	0.173	0	11	0.031	2.309	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.165	2.309	13	0.034	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.213	1.604	12	0.077	0	z	66	75.414	118.523	1.798	14.046	1.31	H2-1
27	49	L6.63x4.33x.25	0.151	0	2	0.019	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.435	0	9	0.118	0	y	68	70.173	73.278	8.24	8.24	2.026	H1-1b
29	51	C3.38x2.06x.188	0.321	2.592	56	0.059	0.351	y	73	35.669	43.384	1.704	4.482	1.62	H1-1b
30	52	C3.38x2.06x.188	0.319	0	61	0.063	2.241	y	39	35.669	43.384	1.704	4.482	1.62	H1-1b
31	53	PL3/8"x6	0.068	0.164	3	0.148	0	y	70	68.997	72.9	0.57	9.113	1.59	H1-1b
32	54	PL3/8"x6	0.057	0	11	0.123	0	y	45	68.997	72.9	0.57	9.113	1.794	H1-1b
33	55	PL3/8"x6	0.089	0.085	2	0.191	0.208	y	57	70.882	72.9	0.57	9.113	1.945	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
34	56	PL3/8"x6	0.11	0	9	0.194	0	y	59	70.882	72.9	0.57	9.113	3	H1-1b
35	57	L2x2x4	0.211	0	3	0.03	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.159	2.309	4	0.035	0	y	72	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.243	1.604	3	0.078	0	z	70	75.414	118.523	1.798	14.505	1.425	H2-1
38	68	L6.63x4.33x.25	0.178	3.25	2	0.022	3.25	z	8	51.794	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE_3.5x0.165	0.066	6.75	71	0.037	4		9	45.872	71.57	6.336	6.336	2.287	H1-1b
40	72	PIPE_2.88x0.203	0.103	5.583	9	0.035	5.583		9	35.361	70.548	5.01	5.01	3	H1-1b
41	73	PIPE_2.88x0.203	0.122	2.333	2	0.034	5.583		13	35.361	70.548	5.01	5.01	3	H1-1b
42	76	PIPE_2.88x0.203	0.105	2.188	13	0.087	2.188		13	23.996	70.548	5.01	5.01	2.351	H1-1b
43	78	PIPE_2.88x0.203	0.093	5.583	9	0.03	5.583		2	35.361	70.548	5.01	5.01	3	H1-1b
44	80	PIPE_3.5x0.165	0.066	6.75	62	0.036	2.833		13	45.872	71.57	6.336	6.336	2.255	H1-1b
45	83	PIPE_2.88x0.203	0.103	5.583	13	0.039	5.583		13	35.361	70.548	5.01	5.01	3	H1-1b
46	84	PIPE_2.88x0.203	0.101	2.333	6	0.027	5.583		5	35.361	70.548	5.01	5.01	3	H1-1b
47	87	PIPE_2.88x0.203	0.097	7.813	9	0.095	8.854		9	23.996	70.548	5.01	5.01	2.444	H1-1b
48	89	PIPE_2.88x0.203	0.103	5.583	2	0.026	5.583		3	35.361	70.548	5.01	5.01	3	H1-1b

APPENDIX B
(Additional Calculations)

PROJECT	**149462.003.01 - Meriden, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**11/11/21**	PAGE	1	OF	2

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type		:	Monopole		
Ground Elevation	z_s	:	330	ft	[ASCE7 Hazard Tool]
Tower Height		:	119.00	ft	
Mount Elevation		:	87.00	ft	
Antenna Elevation		:	87.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	119	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.21		
	S_1	:	0.06		
	S_{DS}	:	0.22		
	S_{D1}	:	0.09		
Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	0.95		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.10	in	[Sec. 2.6.10]
Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.110		[Sec. 2.7.7.1]
Amplification	A_s	:	1.92437		[Sec. 16.7]
	q_z	:	32.32	psf	

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

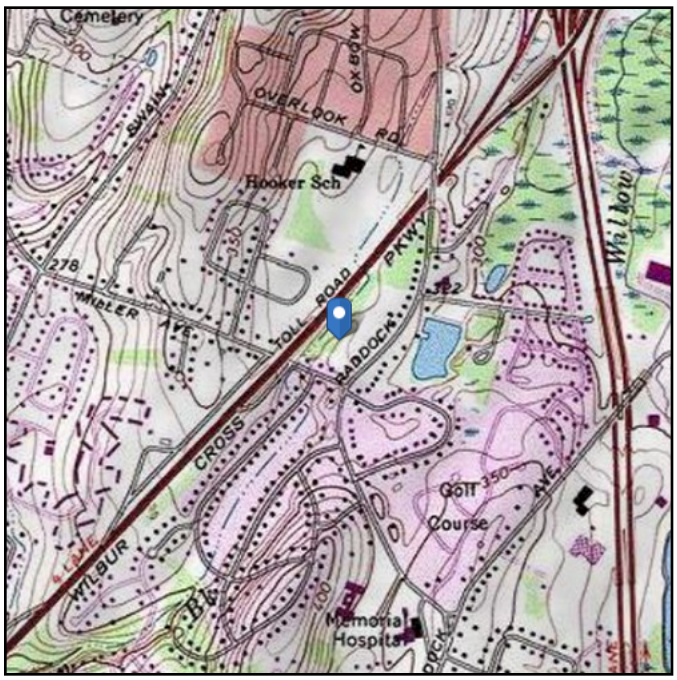
Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	EPA_{N-Ice} (ft^2)	EPA_{T-Ice} (ft^2)	$F_{A\ No\ Ice}$ (N)	$F_{A\ No\ Ice}$ (T)	$F_{A\ Ice}$ (N)	$F_{A\ Ice}$ (T)
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.14	1.40	0.06	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.14	1.26	0.06	0.03	0.01	0.01
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.14	1.40	0.06	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.14	1.26	0.06	0.03	0.01	0.01
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA Wireless	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.14	1.40	0.06	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.14	1.26	0.06	0.03	0.01	0.01
Raycap	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.94	2.19	1.35	0.06	0.03	0.01	0.01

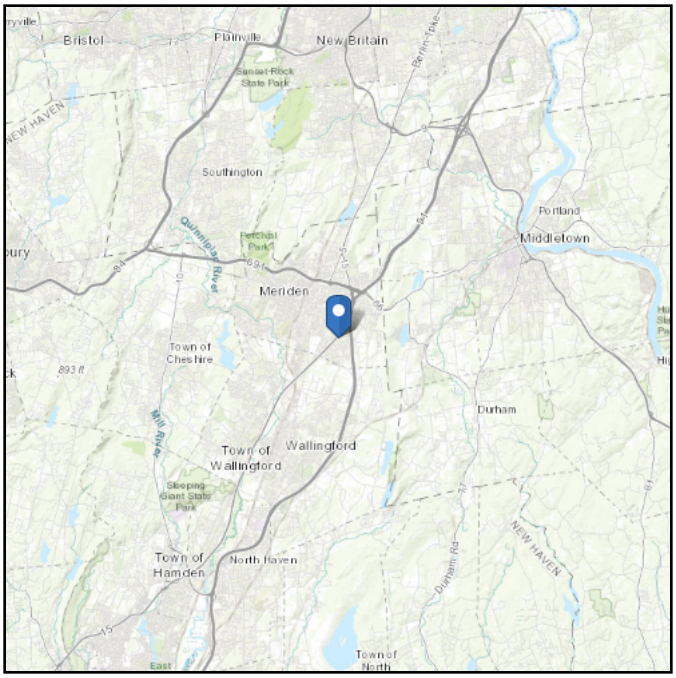
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 329.95 ft (NAVD 88)
Latitude: 41.51275
Longitude: -72.779449





Wind

Results:

Wind Speed:	119 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Wed Nov 10 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

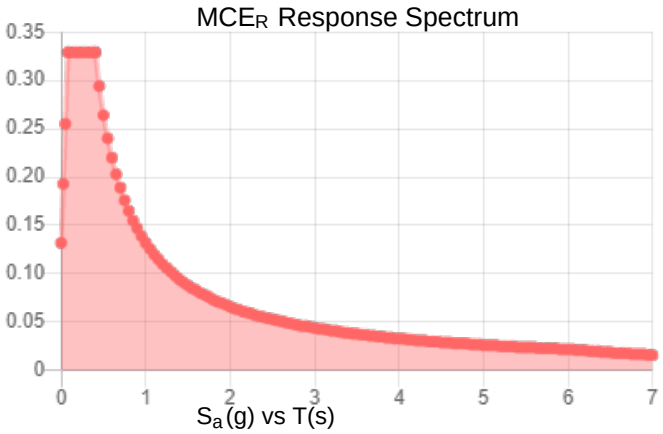
Seismic

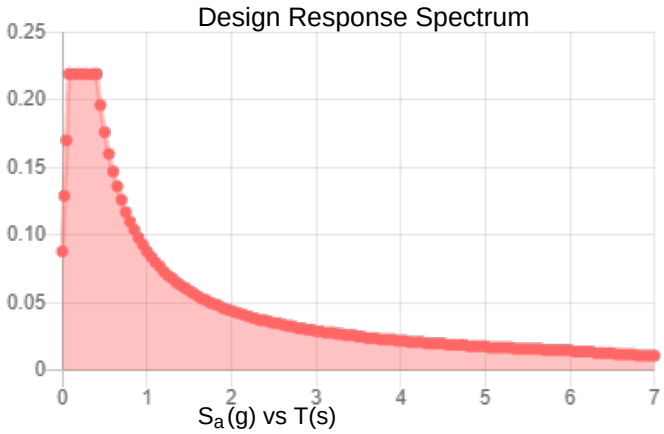
Site Soil Class: D - Default (see Section 11.4.3)

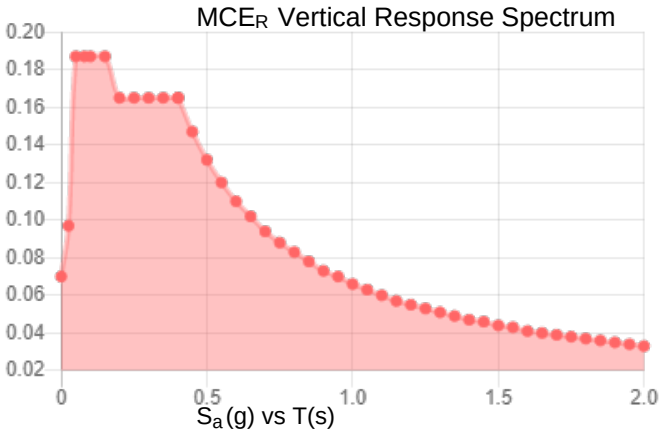
Results:

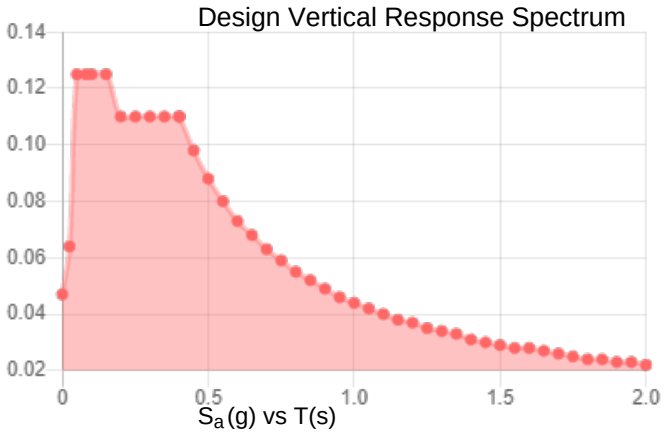
S_S :	0.206	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.114
F_v :	2.4	PGA_M :	0.18
S_{MS} :	0.329	F_{PGA} :	1.571
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.219	C_v :	0.711

Seismic Design Category B









Data Accessed: Wed Nov 10 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Nov 10 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOHVN00044A

SBA - Paddock Avenue
651 Paddock Avenue
Meriden, CT 06451

May 2, 2022

Fox Hill Telecom Project Number: 220966

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**54.09 %**

Fox Hill Telecom

May 2, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00044A – SBA - Paddock Avenue**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **651 Paddock Avenue, Meriden, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **651 Paddock Avenue, Meriden, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	87
B	1	JMA MX08FRO665-21	87
C	1	JMA MX08FRO665-21	87

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	12.37
						Sector A Composite MPE%	**12.37**
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	12.37
						Sector B Composite MPE%	**12.37**
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	12.37
						Sector C Composite MPE%	**12.37**

Table 3: Dish Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum **Dish** MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**12.37 %**
T-Mobile	18.86 %
Sprint	5.55 %
Clearwire	0.09 %
Verizon Wireless	17.22 %
Site Total MPE %:	**54.09 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	12.37 %
Dish Sector B Total:	12.37 %
Dish Sector C Total:	12.37 %
Site Total:	54.09 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	87	18.82	n71 (600 MHz)	400	4.71%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	87	36.13	n70 (AWS-4 / 1995-2020)	1000	3.61%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	87	40.54	n66 (AWS-4 / 2180-2200)	1000	4.05%
						Total:	**12.37%**

Table 6: Dish Maximum Sector MPE Power Values

Fox Hill Telecom

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 Dish 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:

Dish Sector	Power Density Value (%)
Sector A:	12.37 %
Sector B:	12.37 %
Sector C:	12.37 %
Dish Maximum Total (per sector):	12.37 %
Site Total:	54.09 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **54.09 %** 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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

SBA Letter of Authorization

CT - CONNECTICUT SITING COUNCIL
Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Tower Share Application

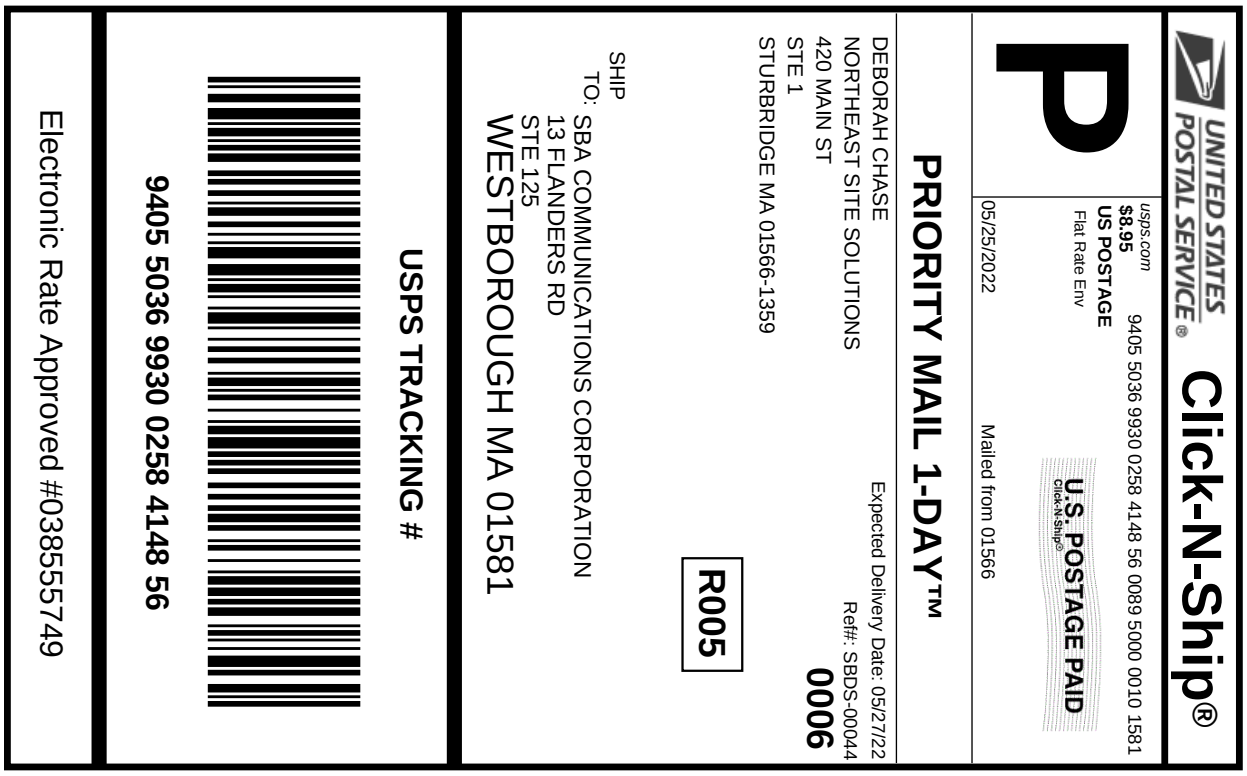
SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

Kri Pelletier
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

SBA
By: _____ Date: _____

Exhibit H

Recipient Mailings



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2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 4148 56

Trans. #:	564318281
Print Date:	05/25/2022
Ship Date:	05/25/2022
Expected Delivery Date:	05/27/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00044

To: SBA COMMUNICATIONS CORPORATION
13 FLANDERS RD
STE 125
WESTBOROUGH MA 01581

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
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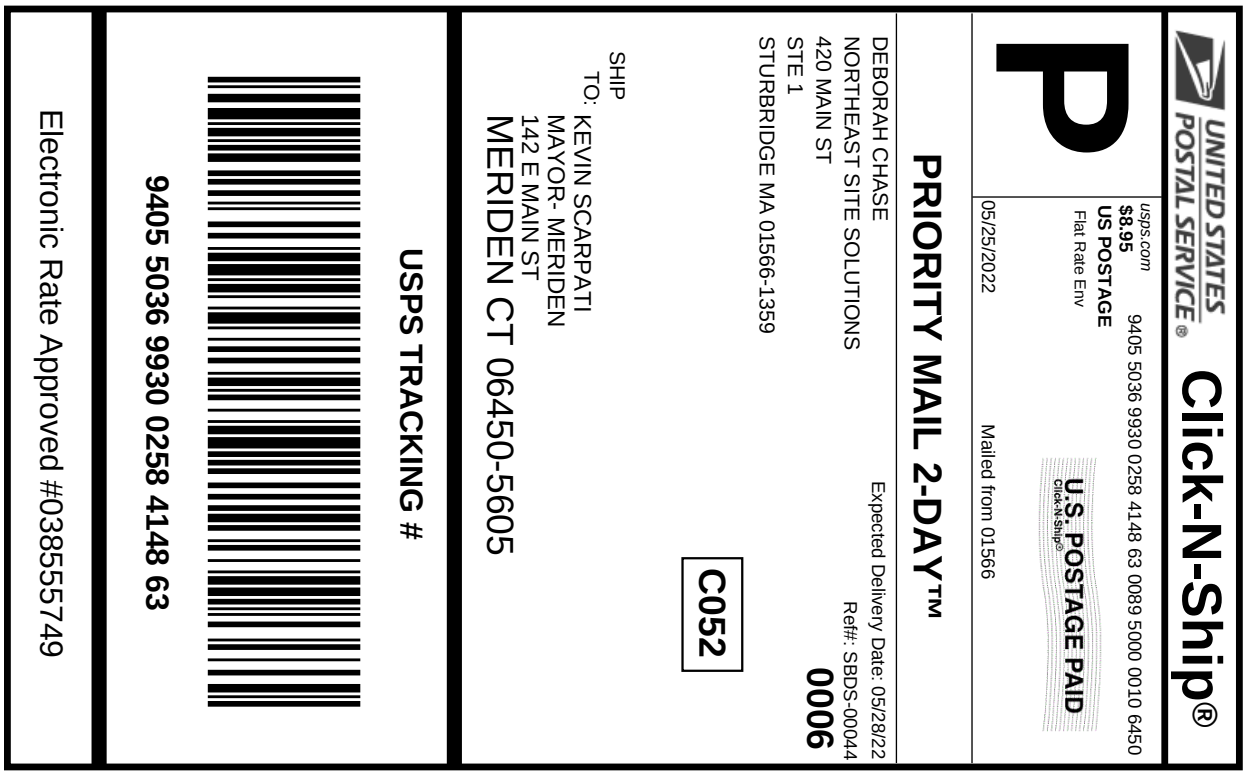

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 4148 63

Trans. #:	564318281
Print Date:	05/25/2022
Ship Date:	05/25/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

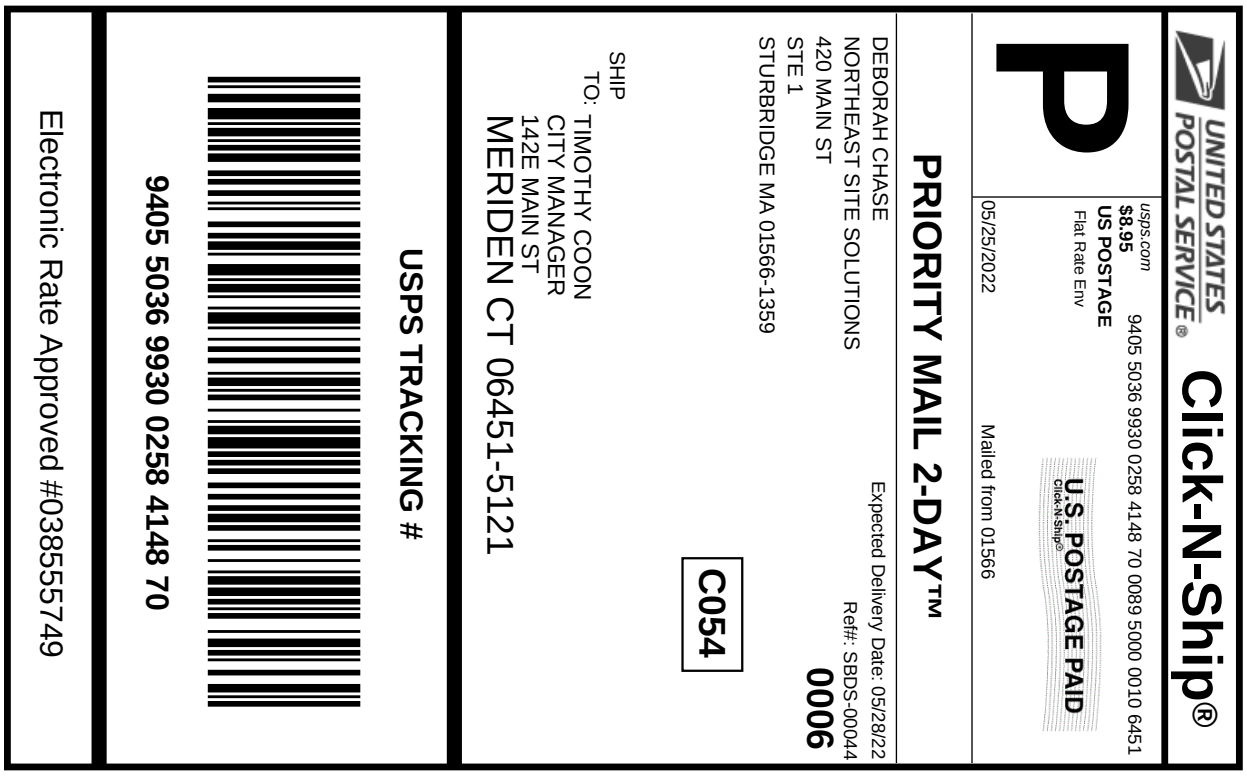
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00044

To: KEVIN SCARPATI
MAYOR- MERIDEN
142 E MAIN ST
MERIDEN CT 06450-5605

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 4148 70

Trans. #:	564318281
Print Date:	05/25/2022
Ship Date:	05/25/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

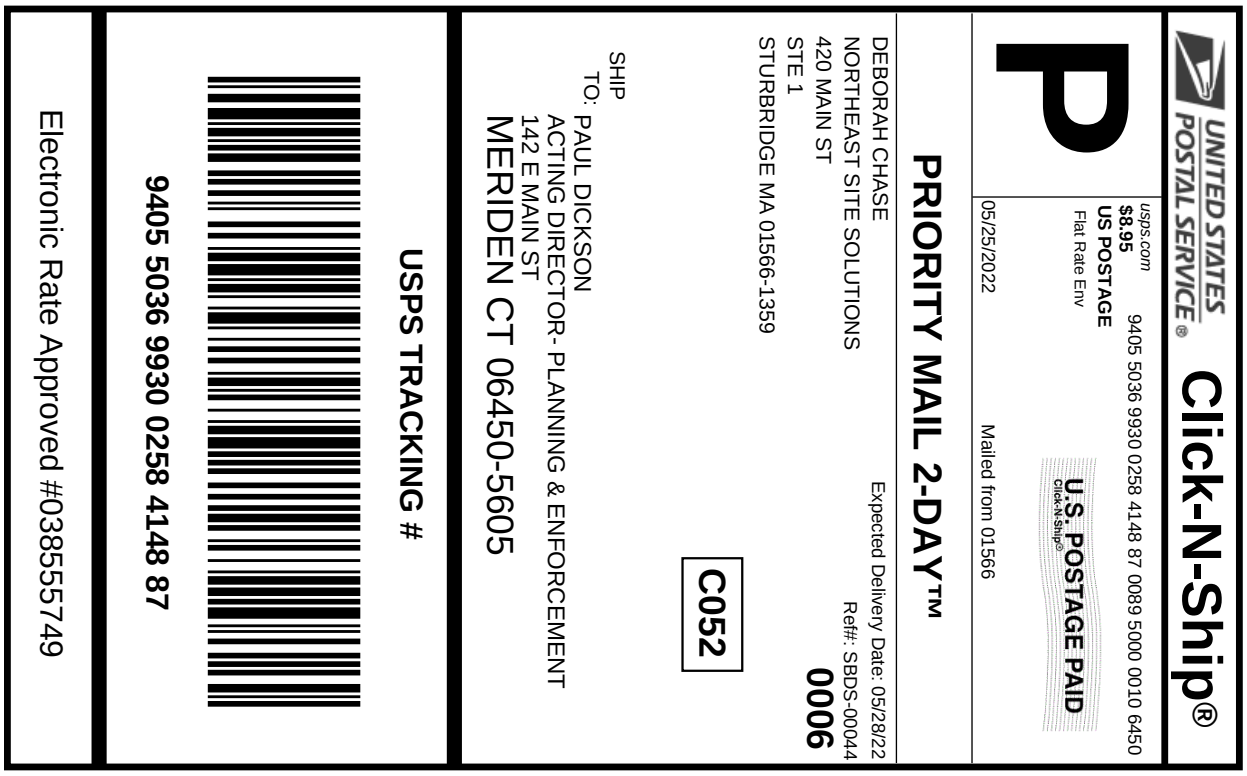
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00044

To: TIMOTHY COON
CITY MANAGER
142E MAIN ST
MERIDEN CT 06451-5121

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

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9405 5036 9930 0258 4148 87

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From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00044

To: PAUL DICKSON
ACTING DIRECTOR- PLANNING & ENFORCEMENT
142 E MAIN ST
MERIDEN CT 06450-5605

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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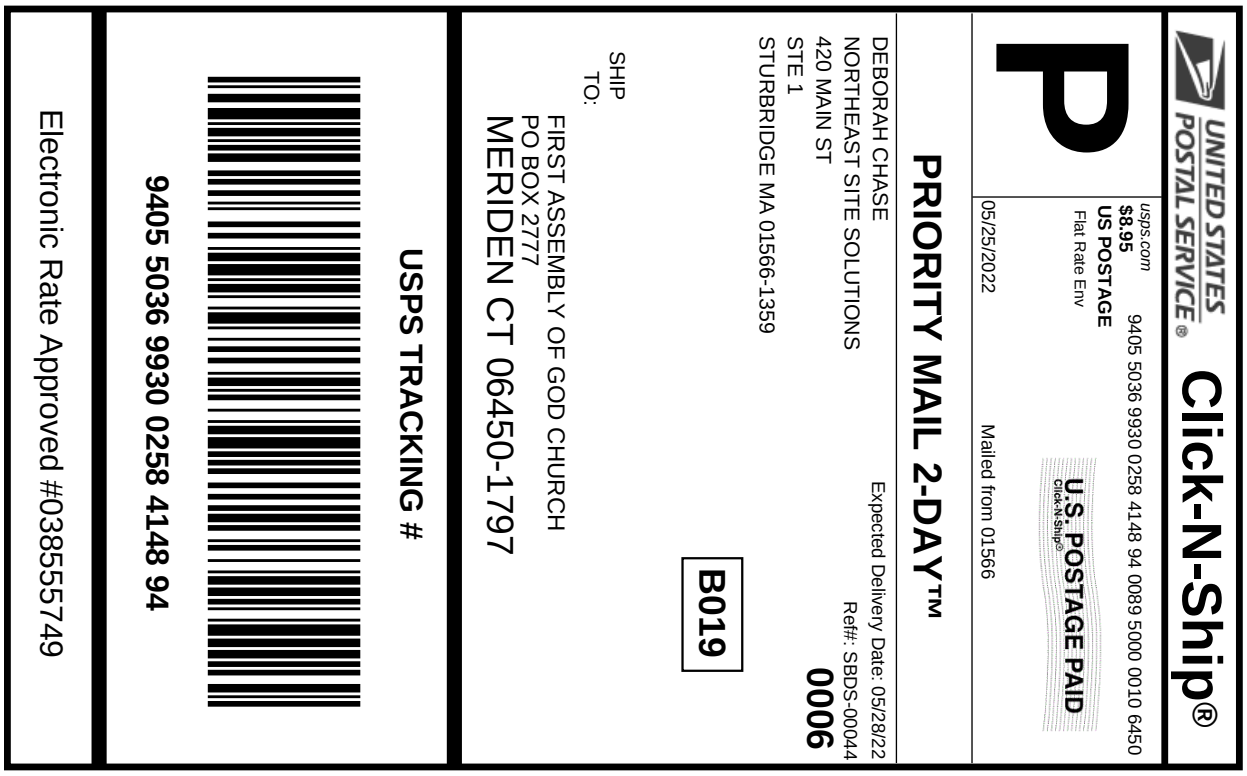

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 4148 94

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Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00044

To: FIRST ASSEMBLY OF GOD CHURCH
PO BOX 2777
MERIDEN CT 06450-1797

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

05/31/2022 08:44 AM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4148 56	1		$0.00
Prepaid Mail Meriden, CT 06450 Weight: 0 lb 8.40 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4148 63	1		$0.00
Prepaid Mail Meriden, CT 06451 Weight: 0 lb 8.40 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4148 70	1		$0.00
Prepaid Mail Meriden, CT 06450 Weight: 0 lb 8.40 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4148 87	1		$0.00
Prepaid Mail Meriden, CT 06450 Weight: 0 lb 8.40 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4148 94	1		$0.00
Grand Total:			$0.00

****
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eligible to receive a third set
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