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
459 Burr Road, Southbury, CT 06488
Latitude: 41.448666
Longitude: -73.182719
Site #: CT13058-A_BOHVN00043A_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 459 Burr Road, Southbury, 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 149-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 May 23, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated November 15, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Connecticut Siting Council, Docket No. 222A on January 6, 2006. 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 Jeff Manville, First Selectman and Mark Cody, Building Official for the Town of Southbury, as well as the tower owner (SBA) and property owner (Holly Hageman).

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 149-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 27.77% 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 Southbury. 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 149-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 Southbury.

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: Jeff Manville, First Selectman
Southbury Town Hall
501 Main Street South
Southbury, CT 06488

Mark Cody, Building Official
Southbury Town Hall
501 Main Street South
Southbury, CT 06488

Holly Hageman – Property Owner
459 Burr Road
Southbury, CT 06488

SBA - Tower Owner

Exhibit A

Original Facility Approval

Connecticut Siting Council (/CSC)

DOCKET NO. 222A - Optasite, Inc. Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility at 459 Burr Road, Southbury, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		January 4, 2006

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes **§** 16-50k, be issued to Optasite Inc., hereinafter referred to as the Certificate Holder, for a telecommunications facility at 459 Burr Road, Southbury, 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 constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC, Sprint Spectrum L.P., Omnipoint Communications Inc. and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level. Antennas mounted on the tower shall not exceed a height of 150 feet above ground level.

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 Town of Southbury for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, 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 if and when 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 Town of Southbury 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. 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. 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.

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

10. Any request for extension of the time periods referred to in Conditions 7, 8, & 9 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Southbury. Any proposed modifications to this Decision and Order shall likewise be so served.

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.

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

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

The parties and intervenors to this proceeding are:

Certificate Holder	**Its Representative**
Optasite Inc.	Christopher B. Fisher Cuddy & Feder LLP 90 Maple Avenue White Plains, New York 10601-5196 Jennifer Young Gaudet 345 Taylor Street Talcottville CT 06066

Party	**Its Representative**
Jeff Ryer 679 Jacob Road, Southbury, CT 06488	Monte E. Frank Cohen and Wolf, P.C. 158 Deer Hill Avenue Danbury, CT 06810
Intervenor	**Its Representative**
New Cingular Wireless PCS, LLC	Wendell G. Davis Blackwell, Davis & Spadaccini, LLC 158 East Center Street Manchester, CT 06040
Intervenor	**Its Representative**
Omnipoint Communications, Inc.	Kenneth Ira Spigle, Esq. Attorney At Law 687 Highland Avenue, Suite 1 Needham, MA 02494
Intervenor	**Its Representative**
Sprint Spectrum, L.P. d/b/a Sprint PCS	Meredith Denecke Cacace, Tusch & Santagata 777 Summer Street P.O. Box 15859 Stamford, CT 06901

Exhibit B

Property Card

459 BURR ROAD

Location	459 BURR ROAD	**Mblu**	43/ 18/ 16/ /
Acct#	00503100	**Owner**	HAGEMAN HOLLY E
Assessment	$327,770	**Appraisal**	$689,150
PID	5914	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$251,320	$437,830	$689,150
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$175,920	$151,850	$327,770

Owner of Record

Owner	HAGEMAN HOLLY E
Co-Owner	
Address	459 BURR ROAD SOUTHBURY, CT 06488

Sale Price	$0
Certificate	EASEMENT
Book & Page	0708/0421
Sale Date	07/27/2020
Instrument	19

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
HAGEMAN HOLLY E	$0	EASEMENT	0708/0421	19	07/27/2020
SBA TOWERS IV LLC	$20,000		0708/0417	07	07/27/2020
HAGEMAN HOLLY E	$0		0642/1023	25	06/02/2015
CUSATO SUSAN & HAGEMAN HOLLY	$0		0571/0213	25	03/04/2010
CUSATO SUSAN & HOLLY	$0		0571/0212	25	03/04/2010

Building Information

Building 1 : Section 1

Year Built: 1972

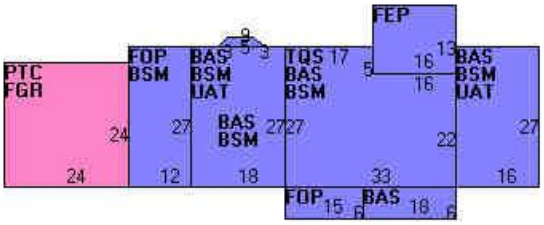
Building Photo

Living Area:	2,419
Replacement Cost:	$329,200
Building Percent Good:	76
Replacement Cost Less Depreciation:	$250,190

Building Attributes	
Field	**Description**
Style	Cape
Model	Residential
Grade:	B
Stories	1.65
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Arch Shingles
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Carpet
Heat Fuel	Oil
Heat Type:	Hot Water
AC Percent	0
Total Bedrooms:	3 Bedrooms
Full Bthrms:	2
Half Baths:	1
Extra Fixtures	0
Total Rooms:	7
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Pln FPL:	0
Det FPL:	3
Gas Fireplace(s)	0
% Attic Fin	0
LF Dormer	35
Foundation	Stone/Brick
Bsmt Gar(s)	0
Bsmt %	0
SF FBM	0.00
SF Rec Rm	0
Fin Bsmt Qual	

(https://images.vgsi.com/photos/SouthburyCTPhotos//\00\00\40\77.JPG)

Building Layout



(https://images.vgsi.com/photos/SouthburyCTPhotos//Sketches/5914_5914

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,851	1,851
TQS	Three Quarter Story	811	568
BSM	Basement	2,067	0
FEP	Finished Enclosed Porch	208	0
FGR	Garage	576	0
FOP	Open Porch	414	0
PTC	Concrete Patio	576	0
UAT	Unfinished Attic	918	0
		7,421	2,419

Bsmt Access	Walkout
Fndtn Cndtn	
Basement	

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
MSC3	CELL TOWER	1.00 UNIT	$0	1

Land

Land Use

Use Code	101
Description	Res Dwelling
Zone	R-60
Neighborhood	75
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	37.30
Frontage	0
Depth	0
Assessed Value	$151,850
Appraised Value	$437,830

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD1	Shed	FR	Frame	240.00 S.F.	$900	1
SHD1	Shed	FR	Frame	192.00 S.F.	$230	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$251,320	$437,830	$689,150
2017	$264,680	$437,830	$702,510
2016	$247,130	$453,550	$700,680

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$175,920	$151,850	$327,770
2017	$185,280	$151,850	$337,130
2016	$172,990	$160,330	$333,320

bing maps

459 Burr Rd, Southbury, CT 06488

Location: 41.4448115, -73.1826967

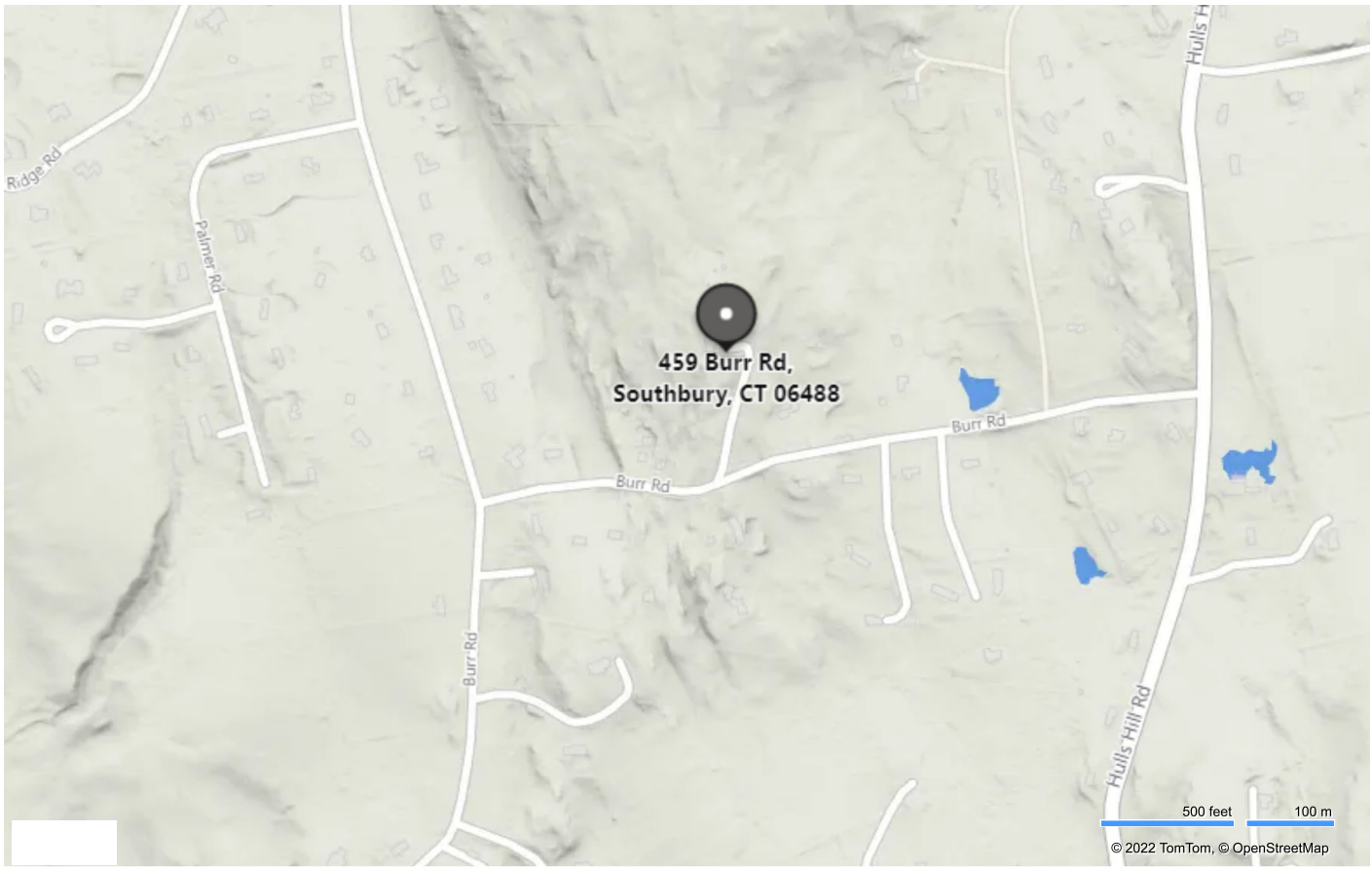


Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00043A

DISH Wireless L.L.C. SITE ADDRESS:

459 BURR ROAD
SOUTHBURY, CT 06488

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

SHEET INDEX

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 PHOTO

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

811

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.

SITE INFORMATION

PROPERTY OWNER:	HAGEMAN HOLLY E
ADDRESS:	459 BURR ROAD SOUTHBURY, CT 06488
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT13058-A
TOWER APP NUMBER:	168286
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 26' 55.18" N 41.44866078
LONGITUDE (NAD 83):	73° 10' 57.5" W -73.18263822
ZONING JURISDICTION:	CITY OF SOUTHBURY
ZONING DISTRICT:	R-60
PARCEL NUMBER:	43-18-16
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CL&P
TELEPHONE COMPANY:	VERIZON

PROJECT DIRECTORY

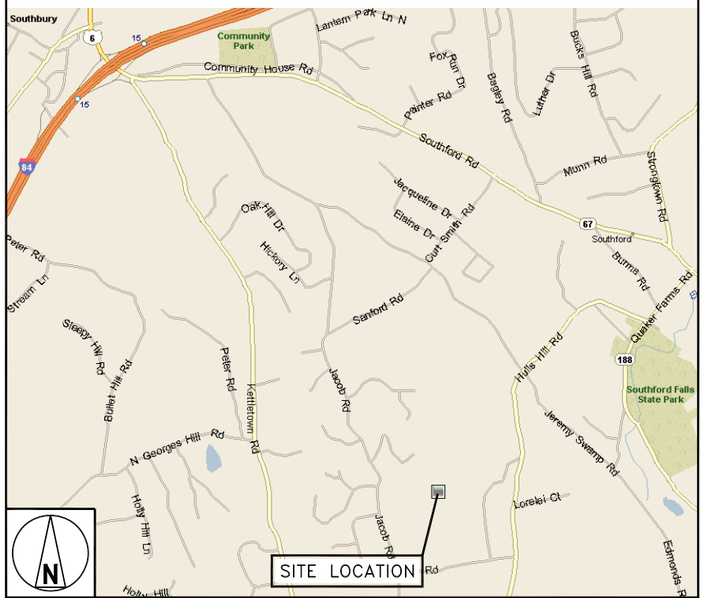
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH ryan.lynch@dish.com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

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO EAST GRANBY, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, CONTINUE STRAIGHT, FOLLOW I-91 S AND I-84 TO CT-67 S IN SOUTHBURY. TAKE EXIT 15 FROM I-84, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD, TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY, MERGE WITH I-84, KEEP LEFT TO STAY ON I-84, TAKE EXIT 15 FOR US-6 E/CT-67 TOWARD SOUTHBURY, KEEP LEFT AT THE Y JUNCTION, FOLLOW SIGNS FOR SOUTHFORD/KETTLETOWN STATE PK, CONTINUE ON CT-67 S TO YOUR DESTINATION, TURN LEFT ONTO CT-67 S TURN RIGHT ONTO JEREMY SWAMP RD, SLIGHT RIGHT ONTO JACOB RD, TURN RIGHT TO STAY ON JACOB RD TURN LEFT, TURN RIGHT AND ARRIVE AT BOHVN00043A.

VICINITY MAP



NO SCALE

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

STATE OF CONNECTICUT
CHAD C. TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/12/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

NOTE:

THIS PLAN AND THE SURVEY ON WHICH IT IS BASED, HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTION 20-300B-1 THROUGH 200-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. SEPTEMBER 26, 1996:
CLASS OF ACCURACY: A-2 HORIZ.

TYPE OF SURVEY: LIMITED PROPERTY / BOUNDARY SURVEY - EASEMENT MAP

BOUNDARY DETERMINATION CATAGORY: DEPENDENT RESURVEY

MAP REFERENCE:

1. MAP ENTITLED "UTILITY LOCATION SURVEY OF PROPERTY LOCATION AT 459 BURR ROAD - SOUTHBURY CONNECTICUT" AS PREPARED BY LAFERRIERE ASSOCIATES ON AUGUST 8, 2008.

2. MAP ENTITLED "OPTISITE - SOUTHBURY - 459 BURR ROAD SOUTHBURY CONNECTICUT" AS PREPARED BY URS CORPORATION AES ON JULY 7, 2006 AND LAST REVISED ON OCTOBER 3,, 2006.

3. MAP ENTITLED "SOUTHBURY - SITE: CT 13058 AND DATED OCTOBER 16, 2008, PREPARED BY INFINIGY ENGINEERING AND SURVEYING.

NOTES:

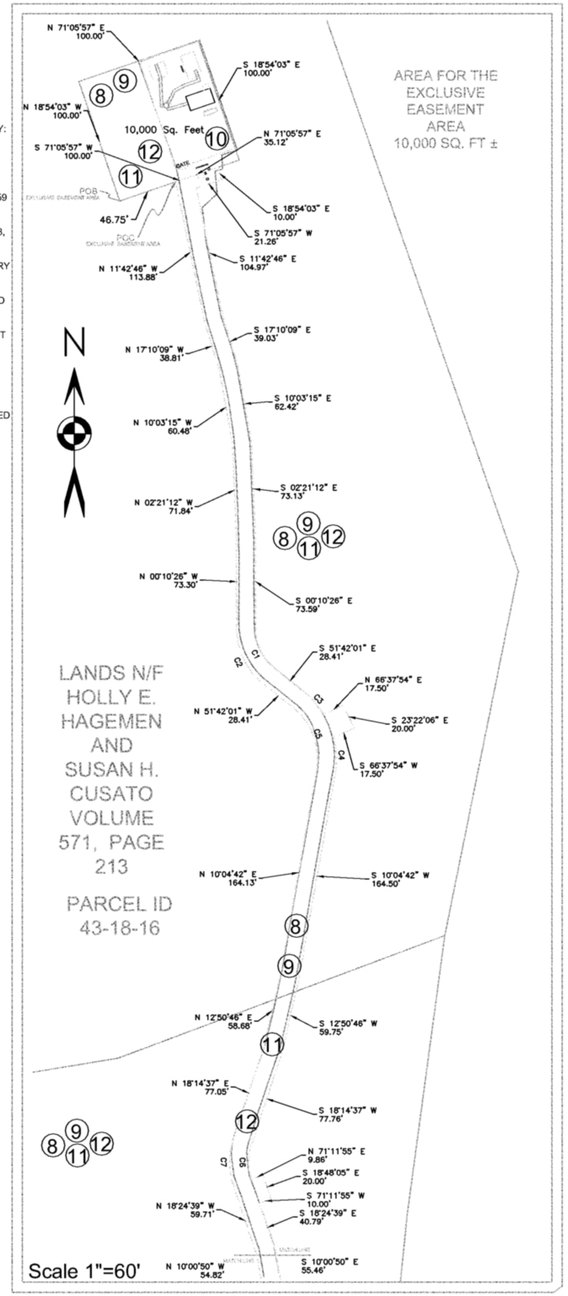
1. NORTH IS BASED OF A PLAN PREPARED BY INFINIGY ENGINEERING AND SURVEYING, OCTOBER 16, 2008.

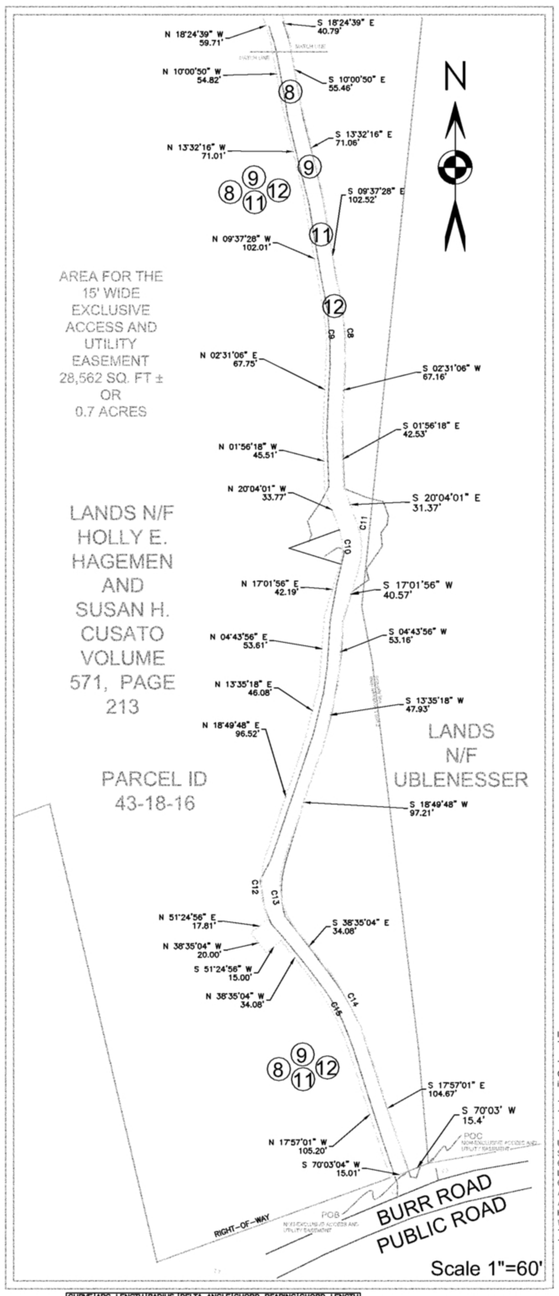
2. SUBJECT TO ANY AND ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS; RECORDED OR UNRECORDED.

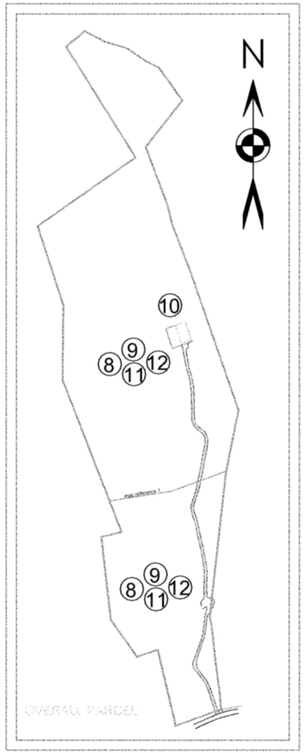
AREAS:

AREA FOR THE 15' WIDE EXCLUSIVE ACCESS AND UTILITY EASEMENT 28,562 SQ. FT ± OR 0.7 ACRES.

AREA FOR THE EXCLUSIVE EASEMENT AREA 10,000 SQ. FT ±







CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	36.23'	42.50'	51°35'41"	S 28°59'03" E	35.06'
C2	51.75'	57.50'	51°31'55"	N 25°56'13" W	49.99'
C3	23.54'	57.50'	19°32'30"	S 41°47'00" E	23.22'
C4	29.33'	67.50'	24°53'52"	S 02°23'07" E	29.14'
C5	56.60'	52.50'	61°46'20"	N 20°48'40" W	53.90'
C6	27.53'	42.50'	36°41'10"	S 00°05'04" E	26.75'
C7	36.78'	57.50'	36°39'12"	N 00°05'01" W	36.16'
C8	22.78'	107.50'	12°08'14"	S 03°33'11" E	22.74'
C9	19.61'	92.50'	12°08'41"	N 03°33'11" W	19.57'
C10	27.52'	42.50'	37°05'54"	N 01°31'03" W	27.04'
C11	37.23'	57.50'	37°05'57"	S 01°31'03" E	36.58'
C12	52.38'	72.50'	41°23'48"	N 01°52'14" W	51.25'
C13	57.62'	57.50'	57°24'58"	S 09°26'38" E	55.24'
C14	74.72'	207.50'	20°37'58"	S 28°19'02" E	74.32'
C15	69.32'	192.50'	20°38'01"	N 28°18'02" W	68.95'

TOWER INFORMATION

BASE OF TOWER ELEVATION: 761.8 MSL
LATITUDE: N:41°26'55.1737"
LONGITUDE: W:73°10'57.5034"

TOWER HEIGHT: 148.8 FT.
ANTENNA HEIGHT: 149.3 FT.
LIGHTNING ROD HEIGHT: 150.2 FT.

GRAPHIC SCALE

60 0 30 60 120 240

SURVEYOR'S CERTIFICATION

I hereby certify to SBA Towers IV, LLC., a Delaware Limited Liability Company and Commonwealth Land Title Insurance Company: the following:

This surveyor has received and reviewed that certain Title Commitment No. CT5278472CL-RH issued by Commonwealth Land Title Insurance Company with an effective date of May 12, 2015, which proposes to insure the lands described under its Schedule A.

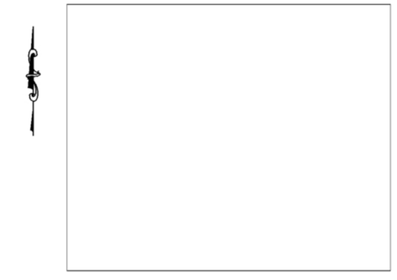
THIS SURVEYOR KNOWS OF HIS OWN KNOWLEDGE THAT THE LANDS DESCRIBED UNDER SAID SCHEDULE A OF THE TITLE COMMITMENT CONTAIN OR INCLUDE THE LANDS DESCRIBED IN AND DEPICTED ON THIS SURVEY.

THE SURVEYOR FURTHER KNOWS OF HIS OWN KNOWLEDGE THAT THE EASEMENTS IDENTIFIED UNDER SCHEDULE B-2 OF SAID TITLE COMMITMENT ENCUMBER THE LANDS DESCRIBED ON THIS SURVEY AND ARE SHOWN HEREON. WE MAKE NO REPORT AS TO THE MARKETABILITY OF TITLE OR TO OWNERSHIP, OR TO OUTSTANDING UNPAID TAXES, MORTGAGES, MUNICIPAL OR FEDERAL LIENS OR OUTSTANDING LEASEHOLDS, NOR DO WE MAKE ANY WARRANTEE, EITHER EXPRESS OR OTHERWISE, THAT THE EASEMENTS, RESTRICTIONS OR ENCROACHMENTS LISTED HEREON OR IN ANY OF THE EXHIBITS ATTACHED HEREWITH OR ANY OTHER SUCH FACTS PRESENTED HEREIN, ARE THE ONLY ONES WHICH AFFECT THE SUBJECT PREMISES, ONLY THAT THEY ARE WHAT WE HAVE OBSERVED DURING THE NORMAL COURSE OF OUR FIELD SURVEY OF THE PROPERTY OR AS WE HAVE OBSERVED IN THE EXISTING DEEDS AND PLANS OF RECORDS AS HAVE BEEN PROVIDED THEM. ALL EASEMENTS AND OTHER DOCUMENTS THAT MIGHT AFFECT THE QUALITY OF TITLE TO TRACTS SHOWN HEREON WERE GAINED FROM SAID TITLE COMMITMENT.

MATTHEW R. BATTEY
LICENSED LAND SURVEYOR
No. 70369

STATE OF CONNECTICUT
MATTHEW R. BATTEY
No. 70369
LICENSED LAND SURVEYOR

LOCATION MAP



EXCEPTIONS - SCHEDULE BII

9. Access and Testing Agreement by and between Holly E. Hageman and Susan Hageman a/k/a Susan H. Cusato, as Property Owners, and Jane E. Dwyer Co., Inc., as Prospective Tenant, dated March 4, 2002 and recorded in Volume 403 at Page 177 of the Southbury Land Records.(Blanket in nature and affects lease and access).

10. Memorandum of Agreement by and between Connecticut Architectural Towers, LLC and Sprint Spectrum L.P. dated February 21, 2003 and recorded in Volume 441 at Page 170 of said Land Records.(Blanket in nature and affects lease).

11. Terms and conditions of a lease by and between Susan H. Hageman a/k/a Susan H. Cusato and Holly E. Hageman a/k/a Holly Hageman, as Landlord, and Connecticut Architectural Towers, LLC, as Tenant, dated as of September 26, 2003, as evidenced by a Notice of Lease between said parties dated September 25, 2003 and recorded in Volume 449 at Page 321 of the Southbury Land Records. Said lease was assigned to Optasite, Inc. by Assignment of Lease from Connecticut Architectural Towers, LLC dated August 31, 2004 and recorded in Volume 471 at Page 994 of said Land Records. Reference is further made to a Notice of Assignment of Lease by and between Optasite, Inc. ("Assignor") and Optasite Towers LLC ("Assignee") dated as of June 1, 2007 and recorded on May 6, 2008 in Volume 545 at Page 716; as further assigned to SBA Towers IV, LLC dated August 9, 2012 and recorded in Volume 613 at Page 847 of the Southbury Land Records. (Blanket in nature and affects lease and access).

12. Terms and conditions of a lease by and between Optasite, Inc., as Landlord, and Omnipoint Communications, Inc., as Tenant, dated as of September 23, 2005, as evidenced by a Memorandum of Lease between said parties recorded in Volume 502 at Page 410 of the Southbury Land Records.(Blanket in nature and affects lease and access).

13. Terms and conditions of a lease by and between Susan Cusato and Holly Hageman, as Landlord, and Optasite, Inc., as Tenant, dated September 26, 2006, as evidenced by a Notice of Lease between said parties recorded in Volume 518 at Page 245 of the Southbury Land Records. Reference is further made to a Notice of Assignment of Lease by and between Optasite, Inc. ("Assignor") and Optasite Towers LLC ("Assignee") dated as of June 1, 2007 and recorded on May 6, 2008 in Volume 545 at Page 716; as further assigned to SBA Towers IV, LLC dated August 9, 2012 and recorded in Volume 613 at Page 847 of said Land Records.(Blanket in nature and affects lease and access).

14. Easement in favor of the Connecticut Light and Power Company as set forth in a grant dated February 17, 2007 and recorded in Volume 525 at Page 568 of the Southbury Land Records.(Blanket in nature and affects lease and access).

15. Easement in favor of the Southern New England Telephone Company, d/b/a AT&T Connecticut, as set forth in a grant dated February 1, 2007 and recorded in Volume 525 at Page 572 of the Southbury Land Records.(Blanket in nature and affects lease and access).

16. Any right, title or interest as may be vested in Howard A. Hageman by virtue of Survivorship Warranty Deeds to Howard
A. Hageman and Catherine M. Hageman dated June 11, 1954 and recorded in Volume 62 at Page 69; dated June 11, 1954 and recorded in Volume 62 at Page 70; and dated September 7, 1954 and recorded in Volume 62 at Page 108, all of the Southbury Land Records. By Survivorship Quit Claim Deed dated March 2, 1992 and recorded in Volume 258 at Page 691, Howard A. Hageman and Catherine M. Hageman conveyed said premises to Howard A. Hageman, Catherine M. Hageman, Susan H. Hageman and Holly E. Hageman.

By Correcting Deeds dated December 31, 1992 and recorded in Volume 266 at Page 779 and Page 782, Howard A. Hageman and Catherine M. Hageman purport to amend the deed recorded in Volume 258 at Page 691 by conveying a 1/8 interest to Susan H. Hageman and to Holly E. Hageman, respectively. The 1/4 interest granted to Holly E. Hageman and Susan H. Hageman was never re-conveyed to Howard A. Hageman and Catherine M. Hageman. An additional 1/8 interest was conveyed by Howard A. Hageman and Catherine M. Hageman to Holly E. Hageman and Susan H. Hageman by deeds dated January 4, 1993 and recorded in Volume 268 at Page 231 and in Volume 268 at Page 234, respectively.
Howard A. Hageman subsequently executes a Power of Attorney appointing Susan H. Hageman and Holly E. Hageman to act as his Attorney In Fact jointly. Said Power of Attorney is dated August 4, 1995 and recorded in Volume 315 at Page 262 of the Southbury Land Records. Howard A. Hageman then conveys his remaining interest, if any, to Holly E. Hageman by Quit Claim Deed dated December 31, 1996 and recorded in Volume 315 at Page 264 of said land records. Said deed is executed by Holly E. Hageman and Susan H. Hageman, acting as his Attorney In Fact. Please refer to Connecticut Standard of Title Chapter 6 Section 5.
Catherine H. Hageman died June 14, 1996. Please refer to Probate Tax Certificate dated February 11, 1997 and recorded in Volume 319 at Page 249 of the Southbury Land Records. (Blanket in nature and affects lease and access).

17. Real Estate Tax Lien in favor of the Town of Southbury for the Grand List of October 1, 2012 in the amount of $8,956.74, dated and recorded May 8, 2014 in Volume 630 at Page 1038 of the Southbury Land Records.(Blanket in nature and affects lease and access).

18. Real Estate Tax Lien in favor of the Town of Southbury for the Grand List of October 1, 2013 in the amount of $7,796.46, dated and recorded May 12, 2015 in Volume 642 at Page 157 of the Southbury Land Records. (Blanket in nature and affects lease and access).

19. Mortgage from Susan H. Cusato and Holly E. Hageman to Naugatuck Savings Bank in the original principal amount of $20,000.00, dated April 8, 2010 and recorded April 30, 2010 in Volume 573 at Page 84 of the Southbury Land Records.(Blanket in nature and affects lease and access).

20. Lis Pendens in favor of Susan H. Cusato dated November 13, 2012 and recorded in Volume 611 at Page 736 of the Southbury Land Records.(Blanket in nature and affects lease and access).

21. Mortgage Deed, Fixture Filing and Assignment of Leases and Rents from SBA Towers IV, LLC to Deutsche Bank Trust Company Americas in the original principal amount of $3,170,000,000.00, dated April 18, 2013 and recorded July 8, 2013 in Volume 620 at Page 916; as amended by Amendment dated October 15, 2014 and recorded December 19, 2014 in Volume 638 at Page 205 of the Southbury Land Records.(Blanket in nature and affects lease and access).

HSS

DATE: MAY 14, 2015
DRAWN BY: EAS
CHECK BY: RJH
DWG. No. 2015-135
REVISED: JUNE 3, 2015

Seal

HSS Land Surveyors, LLC
250 Scott Avenue
Bloomsburg, PA 17815
V: 570.387.9900 F: 570.387.0355
Email: hssbob1996@yahoo.com

CT 13058-A
Southbury

Title:

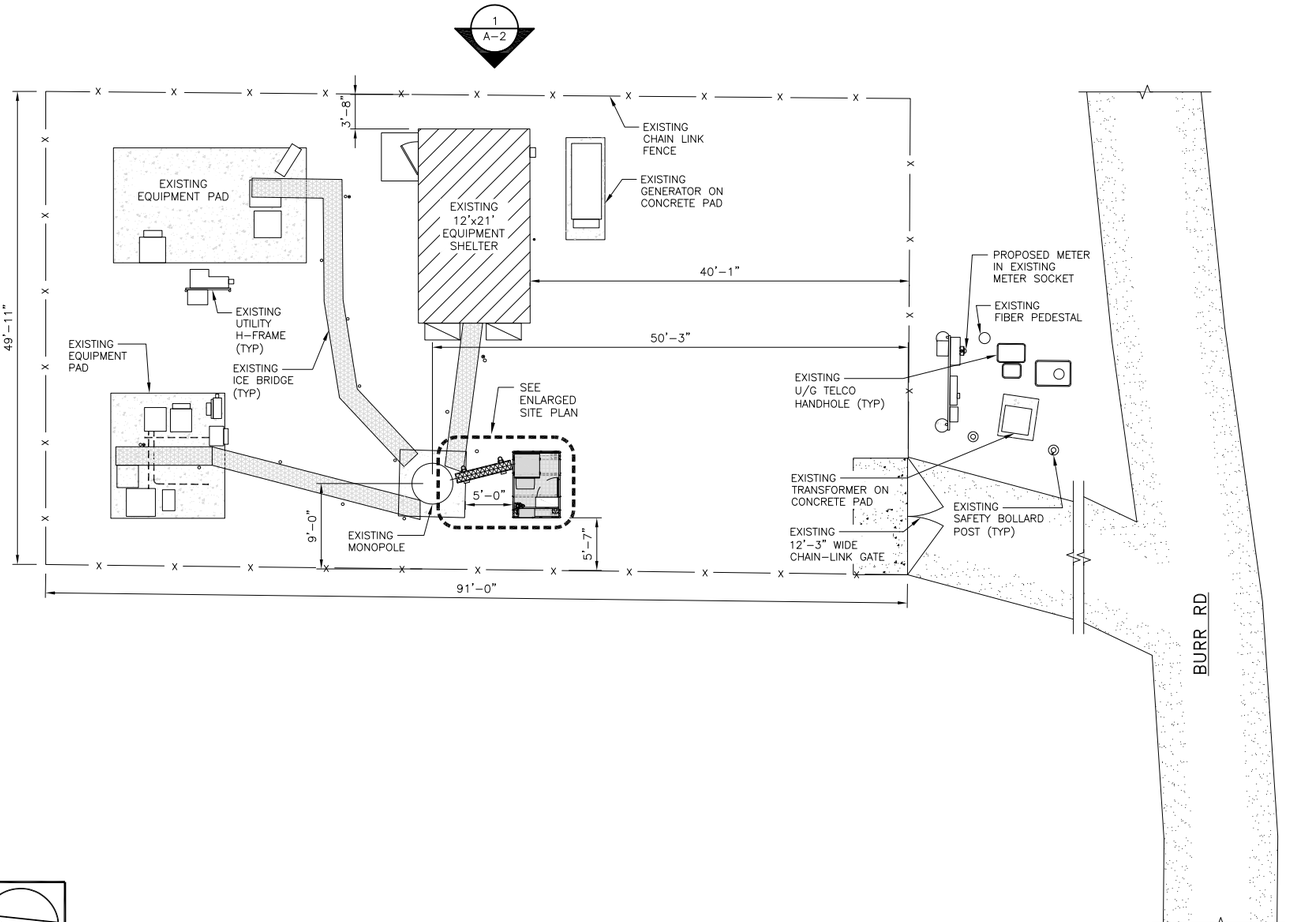
CT13058-A / SOUTHBURY
459 BURR ROAD
SOUTHBURY
CONNECTICUT

Client

Sheet

NOTES

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



N

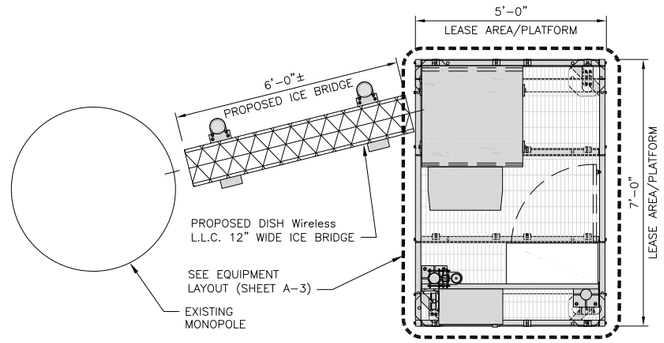
OVERALL SITE PLAN

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

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
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PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
CHAD W. TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/12/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

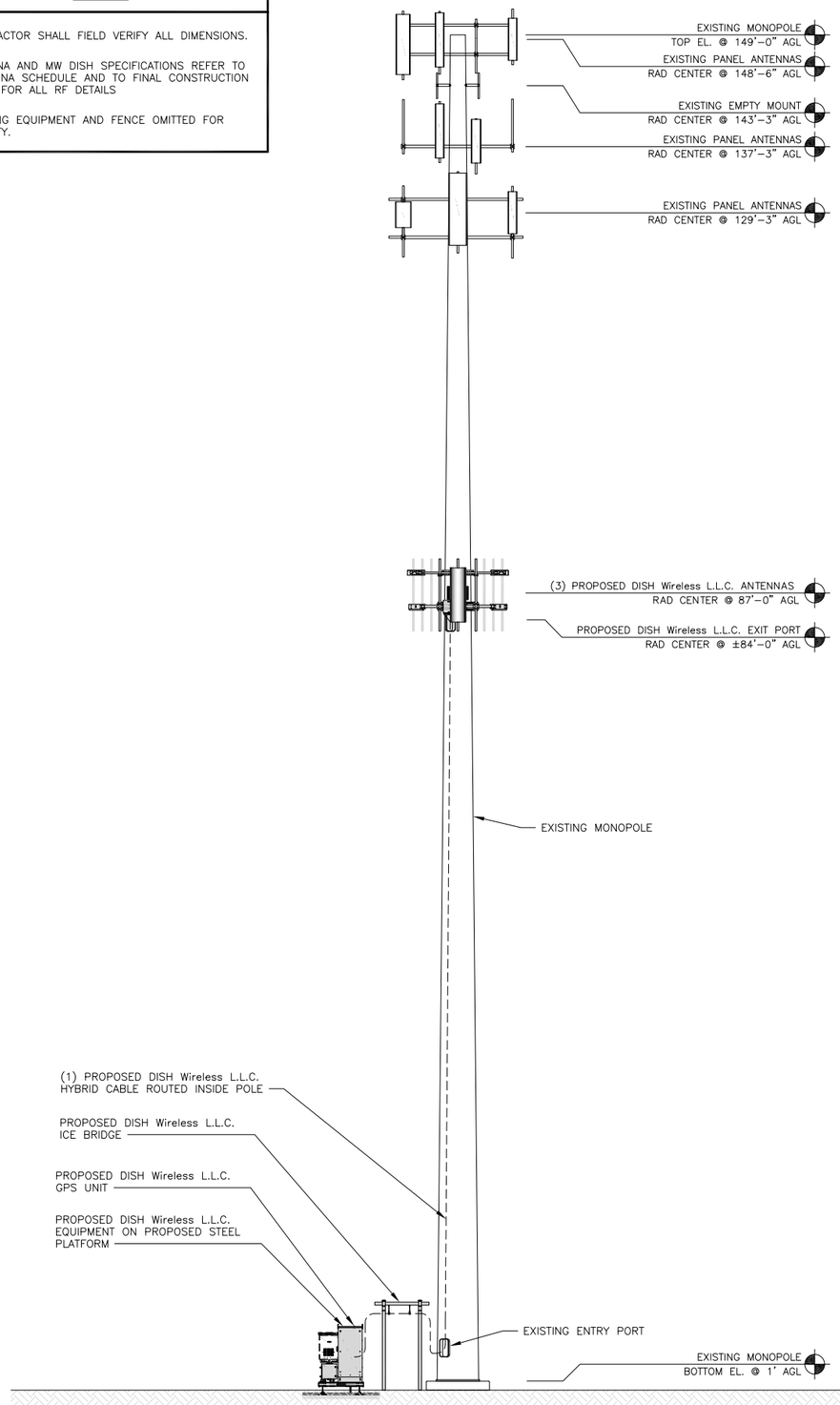
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

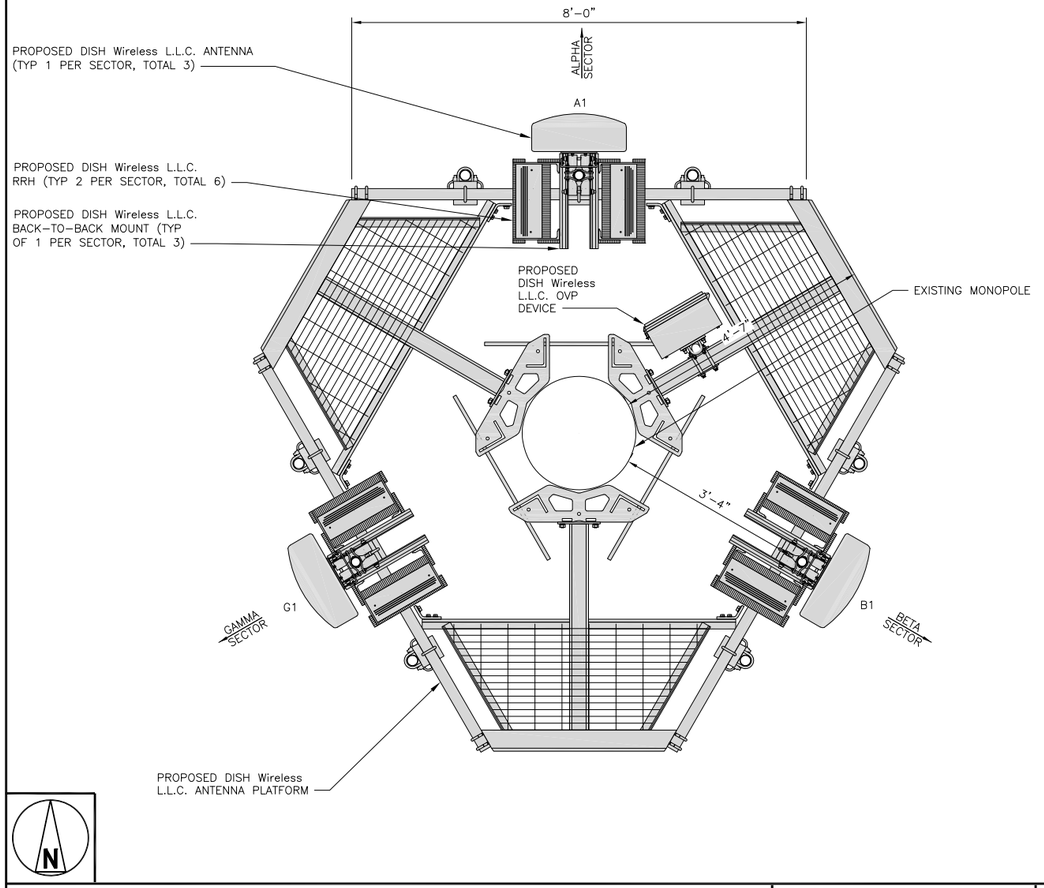
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED EAST ELEVATION

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

1



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	A1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	0°	87'-0"	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	87'-0"	
GAMMA	G1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	87'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025-B605	5G
	A1	FUJITSU – TA08025-B604	5G
BETA	B1	FUJITSU – TA08025-B605	5G
	B1	FUJITSU – TA08025-B604	5G
GAMMA	G1	FUJITSU – TA08025-B605	5G
	G1	FUJITSU – TA08025-B604	5G

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

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

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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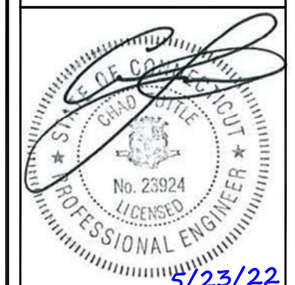

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

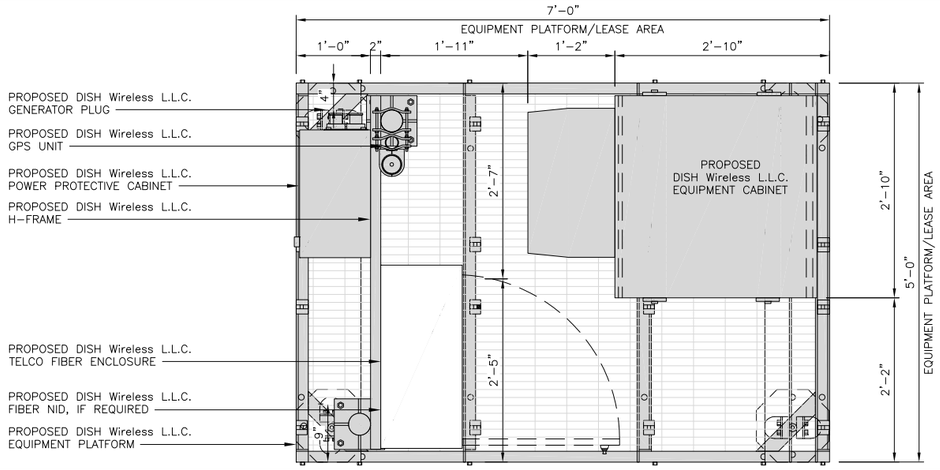
BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



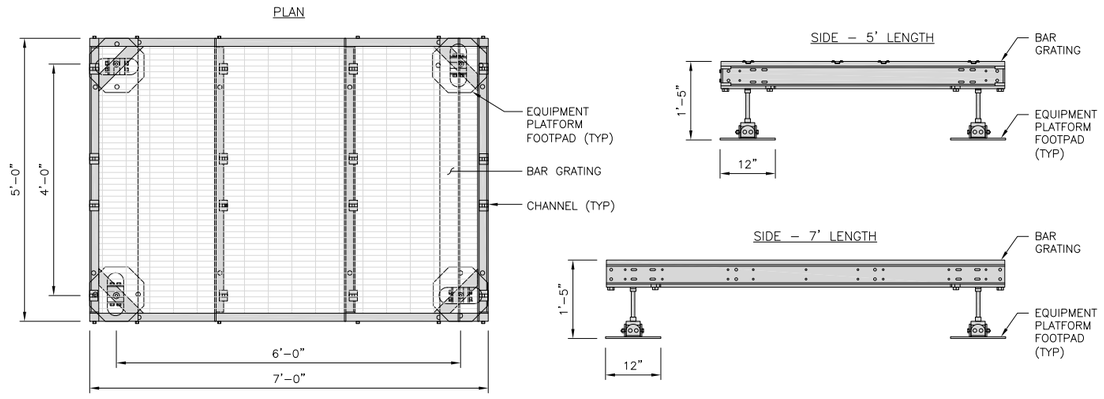
PLATFORM EQUIPMENT PLAN

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"



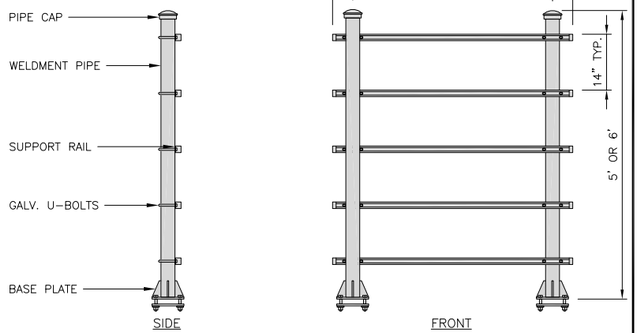
PLATFORM DETAIL

NO SCALE

2

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

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



H-FRAME DETAIL

NO SCALE

3

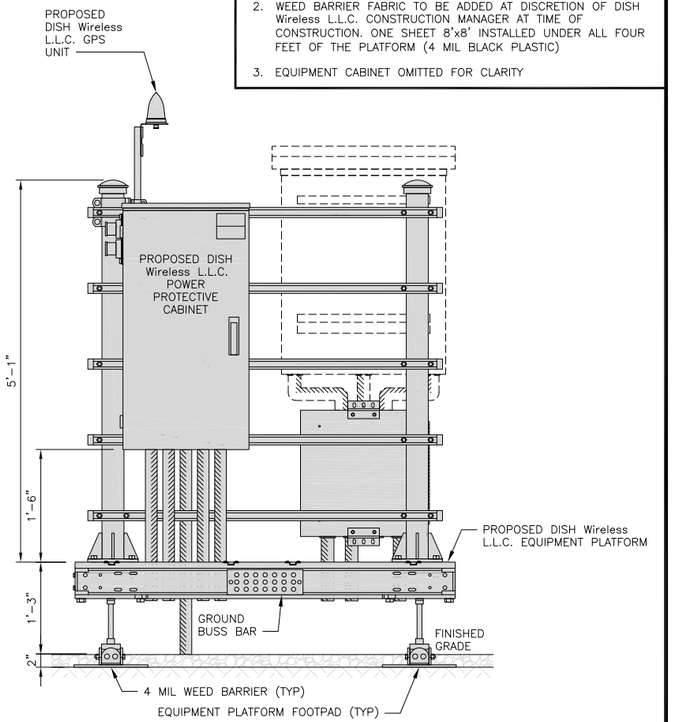
NOT USED

NO SCALE

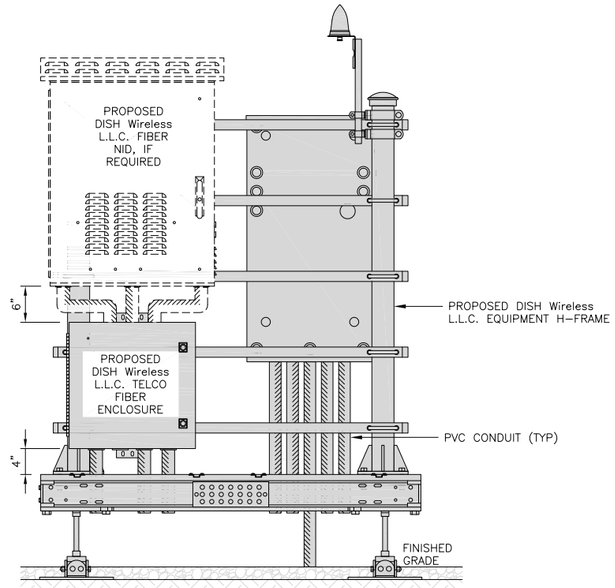
4

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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5701 SOUTH SANTA FE DRIVE
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STATE OF CONNECTICUT
CHAD W. TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

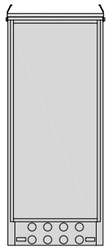
BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

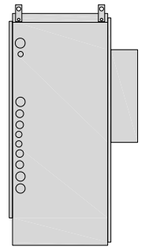
SHEET NUMBER
A-3

ENERSYS HVAC 2000005995	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HVAC	600W
TOTAL WEIGHT (EMPTY)	371 lbs

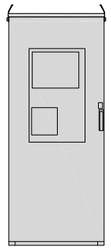
PLAN



BACK



SIDE

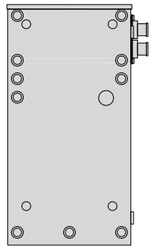


FRONT

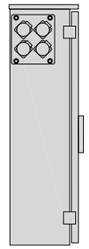
CABINET DETAIL | NO SCALE | 1

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

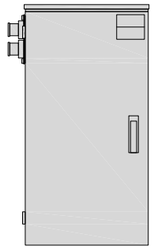
TOP



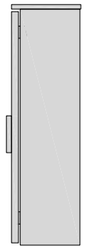
BACK



SIDE



FRONT



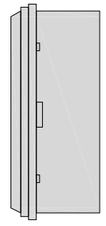
SIDE

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

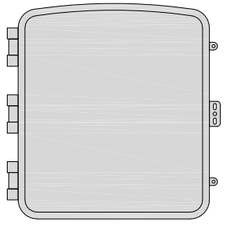
NOT USED | NO SCALE | 3

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

TOP



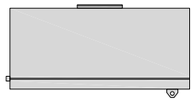
SIDE



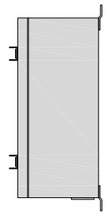
FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

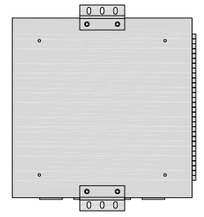
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FRONT



SIDE



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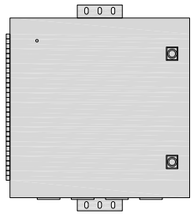


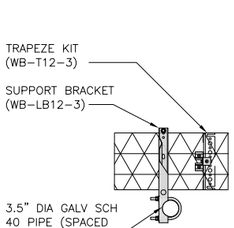
FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

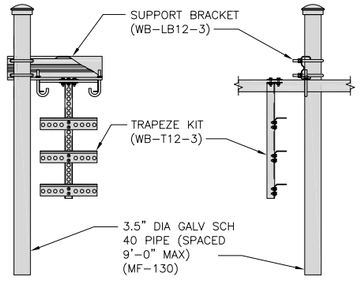
NOT USED | NO SCALE | 4

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"

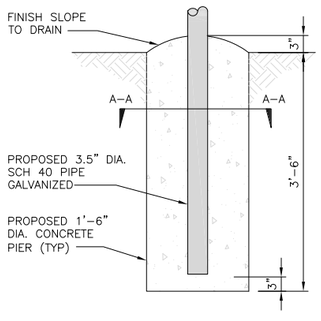


PLAN

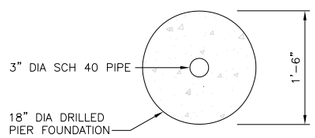


FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7

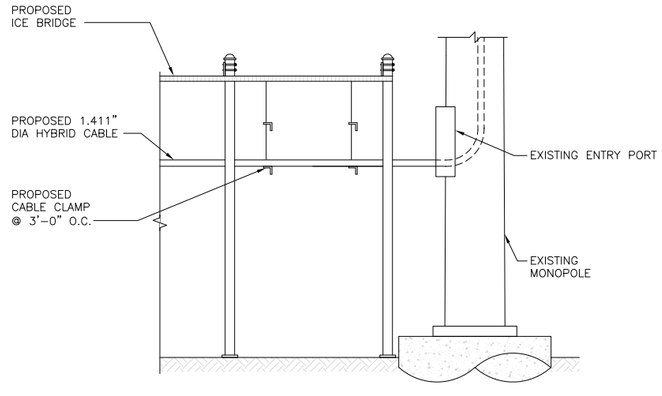


CONCRETE PIER



A-A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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www.btgrp.com

STATE OF CONNECTICUT
CHAD M. TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/12/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

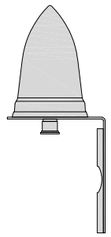
EQUIPMENT DETAILS

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

TOP



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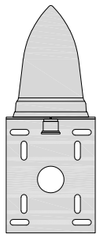
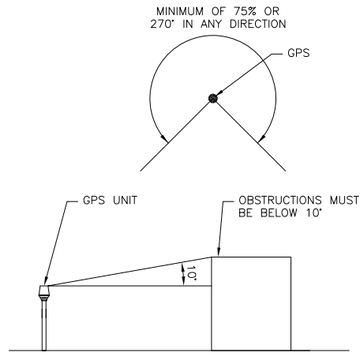
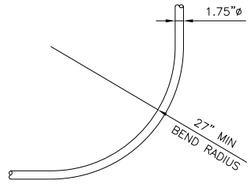


SIDE

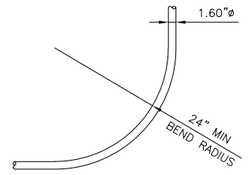
GPS DETAIL | NO SCALE | 1



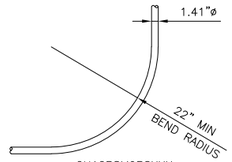
GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CU12PSM6P4XXX
(4 AWG CONDUCTORS)



CU12PSM9P6XXX
(6 AWG CONDUCTORS)



CU12PSM9P8XXX
(8 AWG CONDUCTORS)

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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5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

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BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

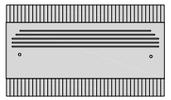
EQUIPMENT DETAILS

SHEET NUMBER

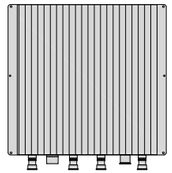
A-5

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



PLAN



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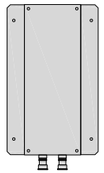
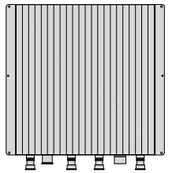


SIDE

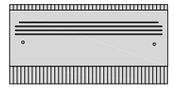


FRONT

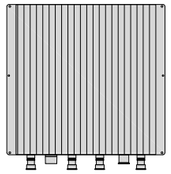
RRH DETAIL | NO SCALE | 1

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



PLAN



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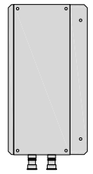
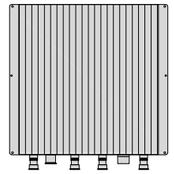


SIDE



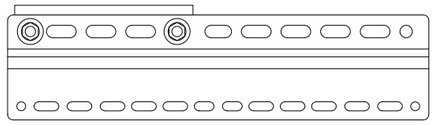
FRONT

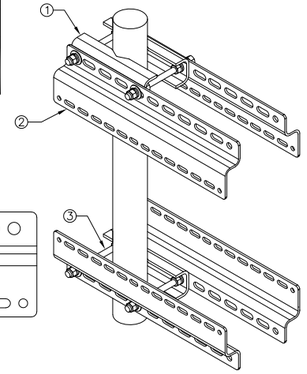
RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155

DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"





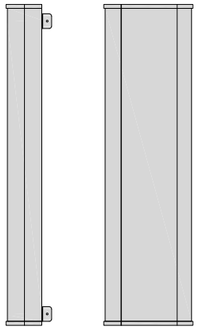
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

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

PLAN



SIDE

FRONT

ANTENNA DETAIL | NO SCALE | 4

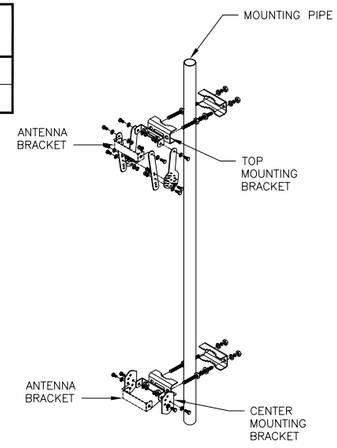
NOT USED | NO SCALE | 5

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

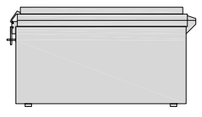


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

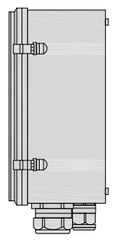
ANTENNA BRACKET DETAIL | NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



PLAN



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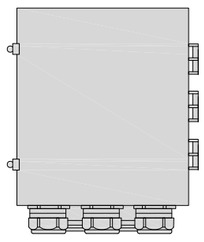

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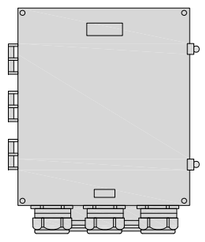


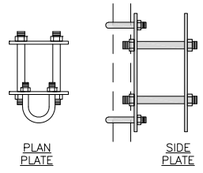
FRONT

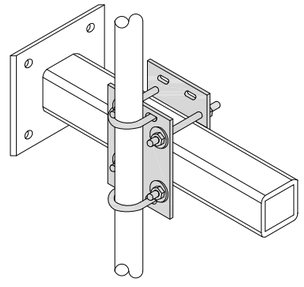
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



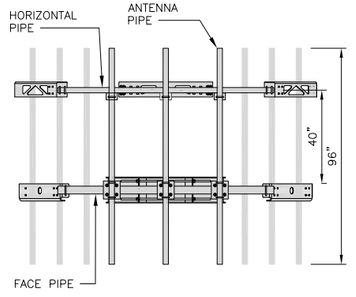


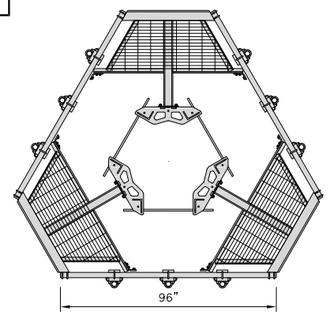
RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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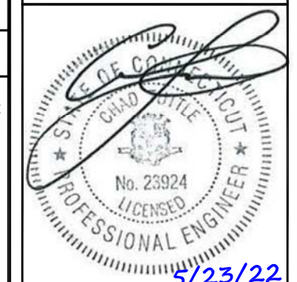

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A	11/12/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

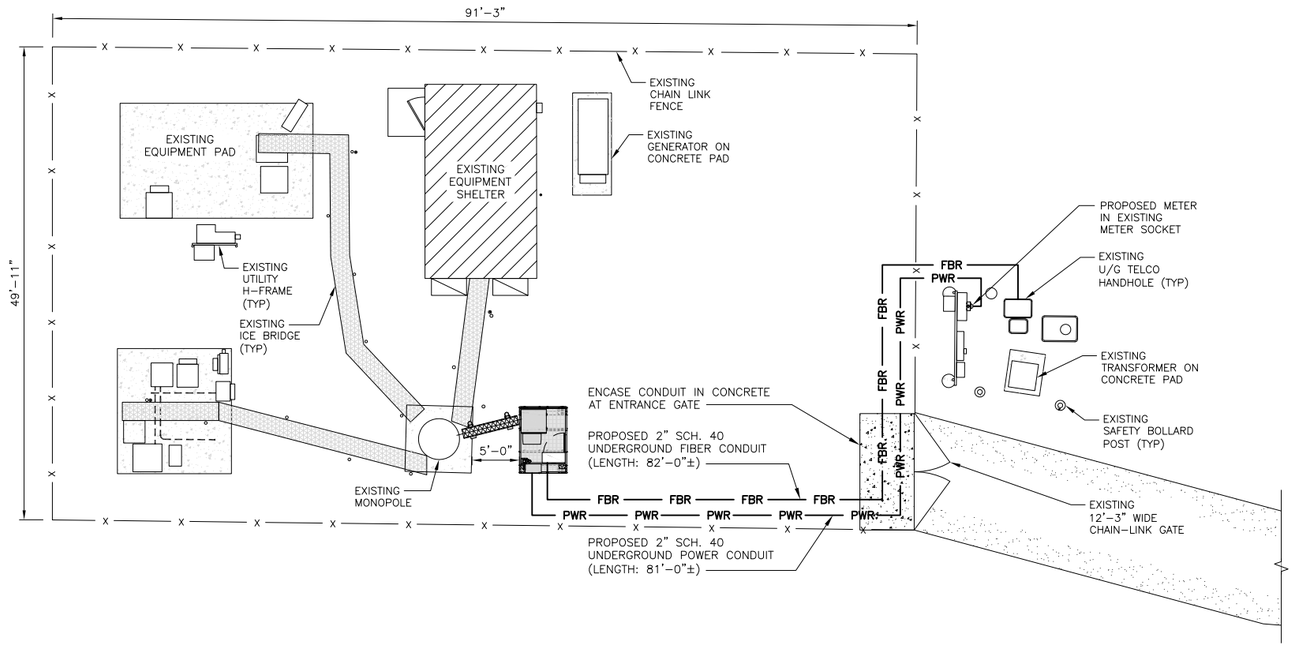
EQUIPMENT DETAILS

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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STATE OF CONNECTICUT
CHAD W. TILLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/12/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

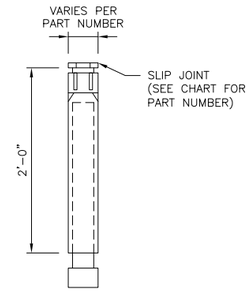
SHEET NUMBER

E-1

UTILITY ROUTE PLAN | 8' 4' 0 8' 16' 1/8"=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"

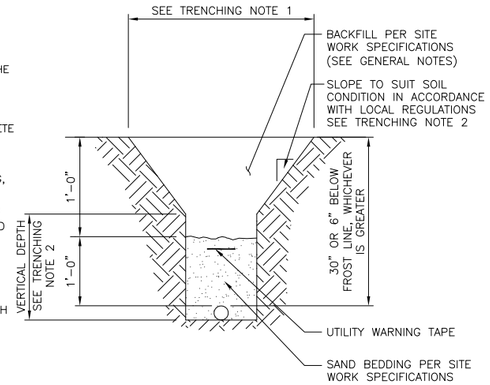


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

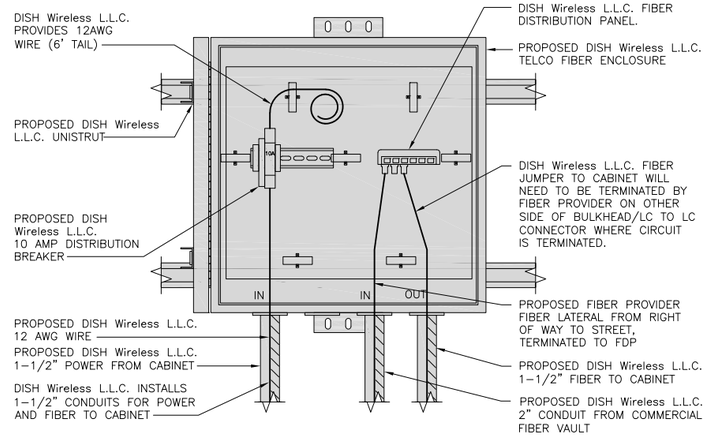
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

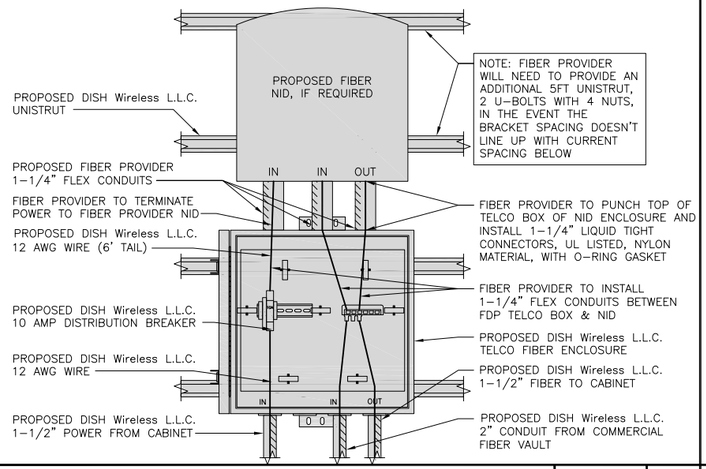
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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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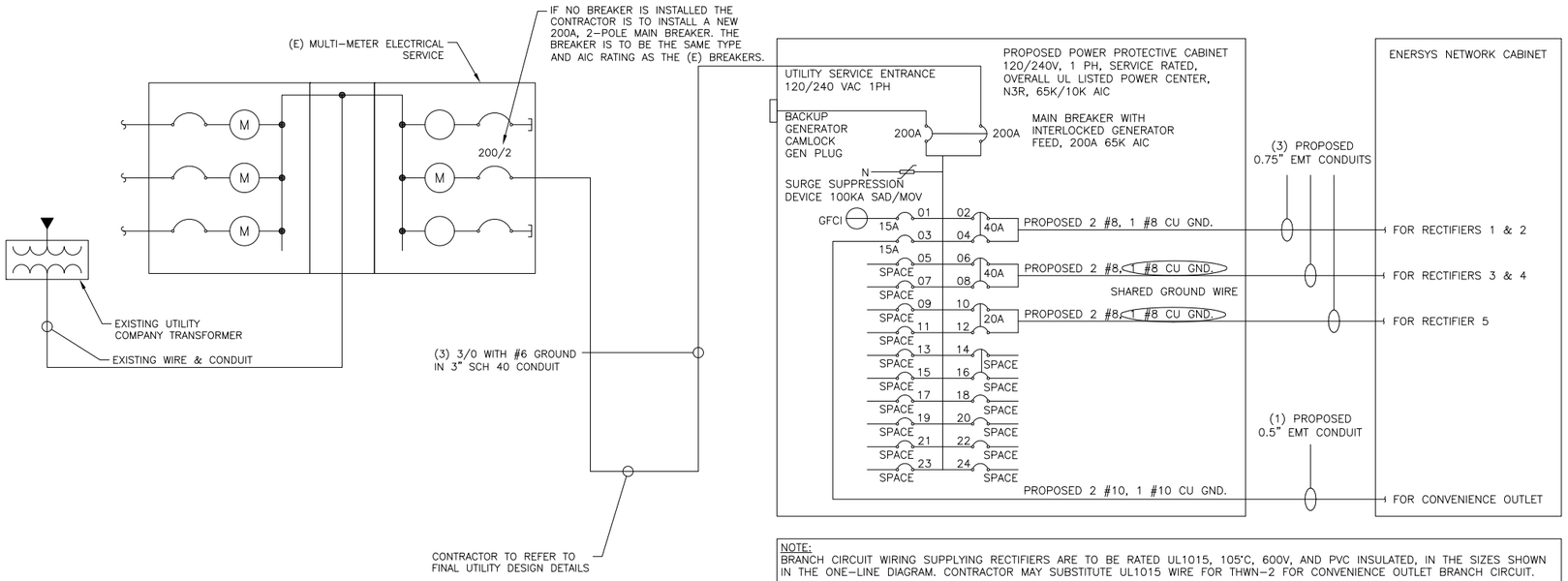
SOUTHBURY, CT 06488

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:
(2) 40A, 2P BREAKER - SQUARE D P/N:QO240
(1) 20A, 2P BREAKER - SQUARE D P/N:QO220
(1) 20A, 1P BREAKER - SQUARE D P/N:QO120

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.

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 (3 CONDUITS): USING UL1015, CU.

#8	- 0.0552 SQ. IN X 2	= 0.1103 SQ. IN
#8	- 0.0131 SQ. IN X 1	= 0.0131 SQ. IN <BARE GROUND
TOTAL		= 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) 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 ENERSYS 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	40A	3840		ENERSYS ALPHA CORDEX
ENERSYS GFCI OUTLET		180	15A	3	B	4			3840	RECTIFIERS 1 & 2
-SPACE-				5	A	6	40A	3840		ENERSYS ALPHA CORDEX
-SPACE-				7	B	8			3840	RECTIFIER 3 & 4
-SPACE-				9	A	10	20A	1920		ENERSYS ALPHA CORDEX
-SPACE-				11	B	12			1920	RECTIFIER 5
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1φ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			9680		9680		VOLTAGE AMPS			
			81		81		AMPS			
			81				MAX AMPS			
			102				MAX 125%			

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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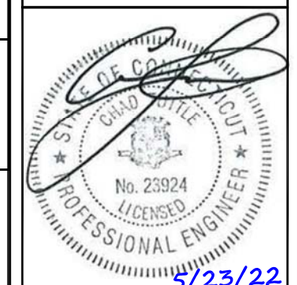

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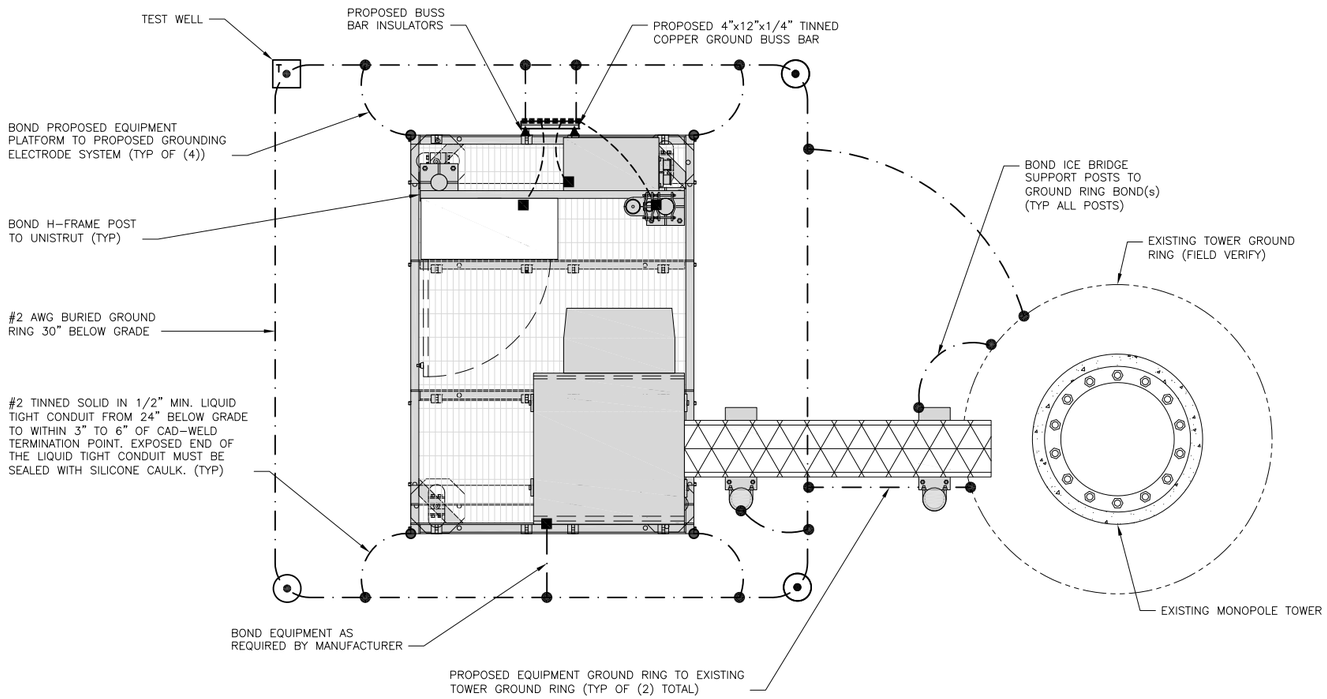
PROJECT INFORMATION
BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

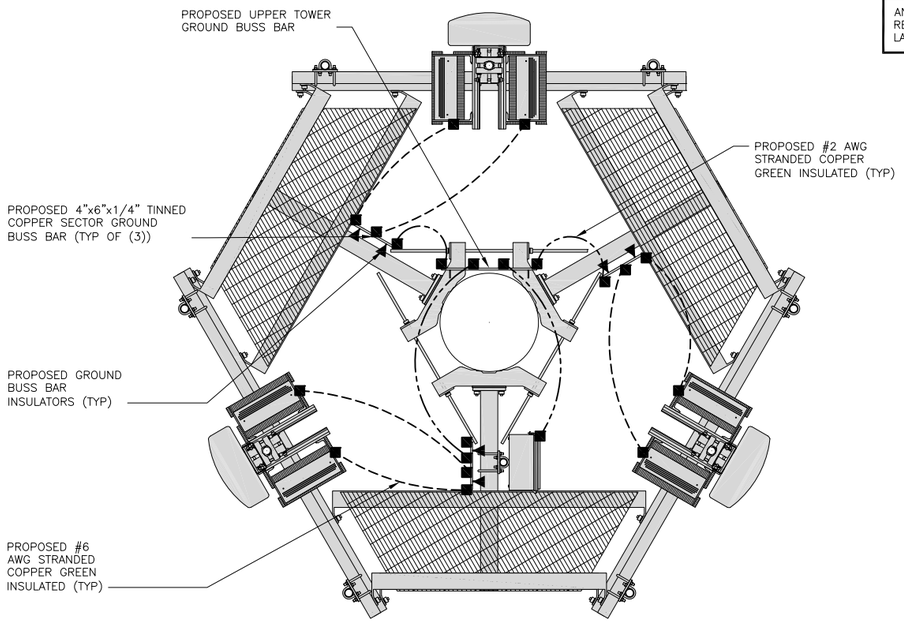
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

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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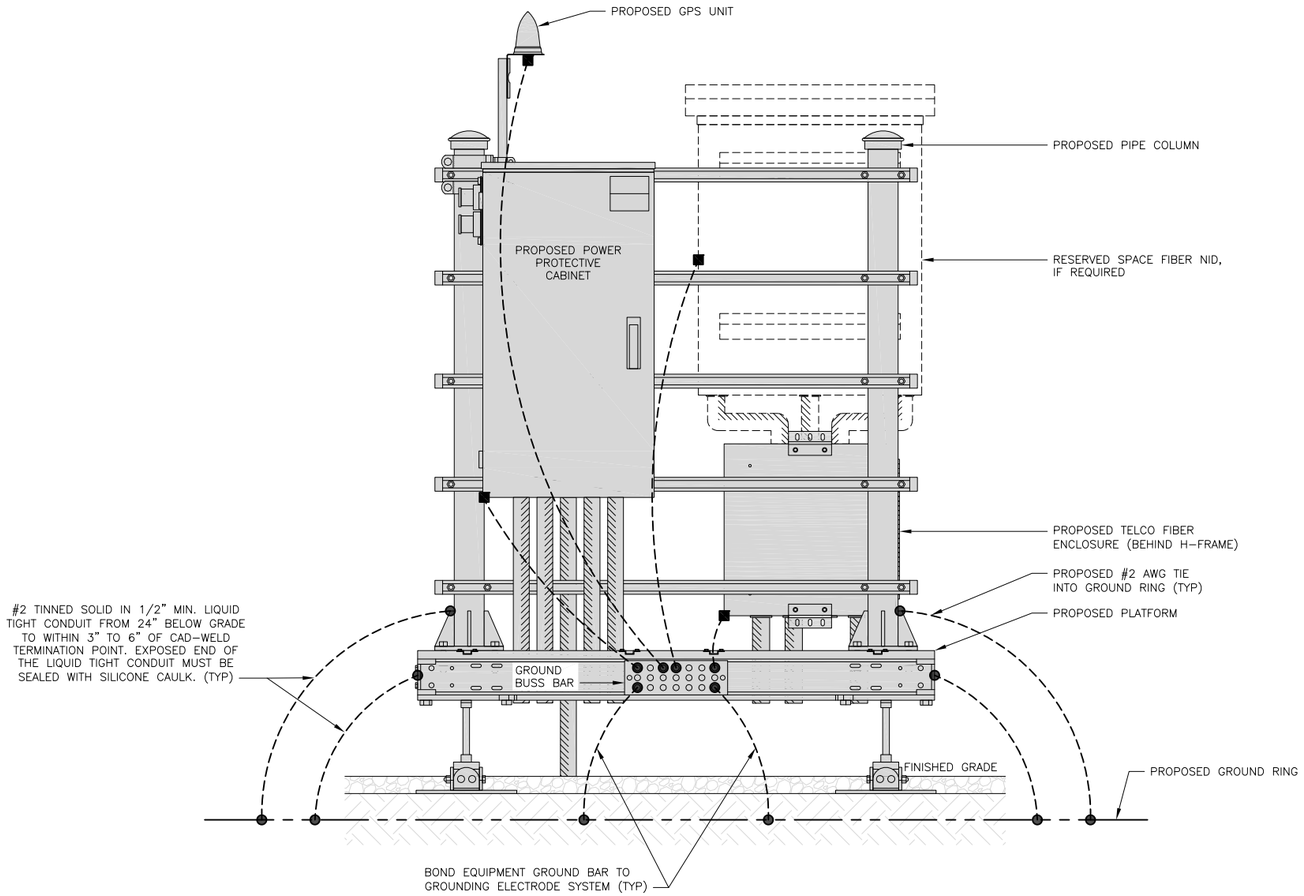
SHEET TITLE
GROUNDING PLANS AND NOTES

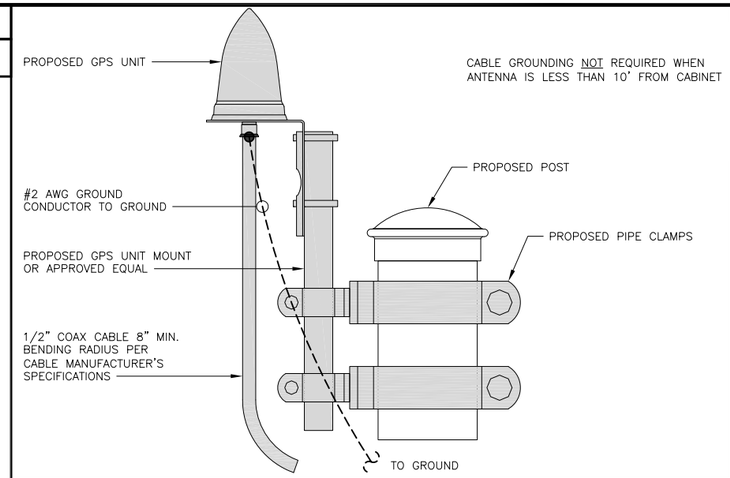
SHEET NUMBER
G-1

NOTES

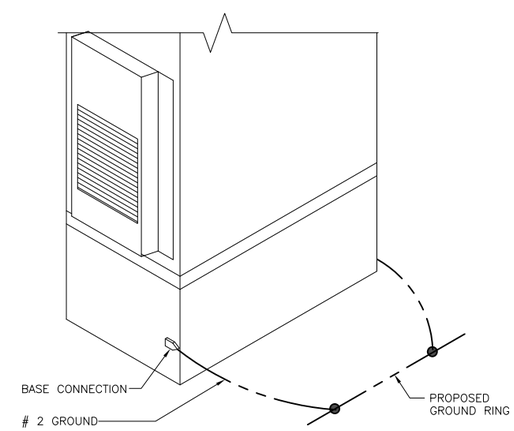
EQUIPMENT CABINET OMITTED FOR CLARITY



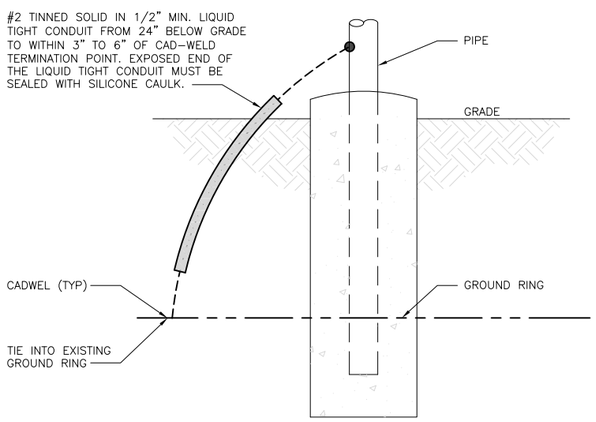
H-FRAME GROUNDING DETAIL | NO SCALE | 1



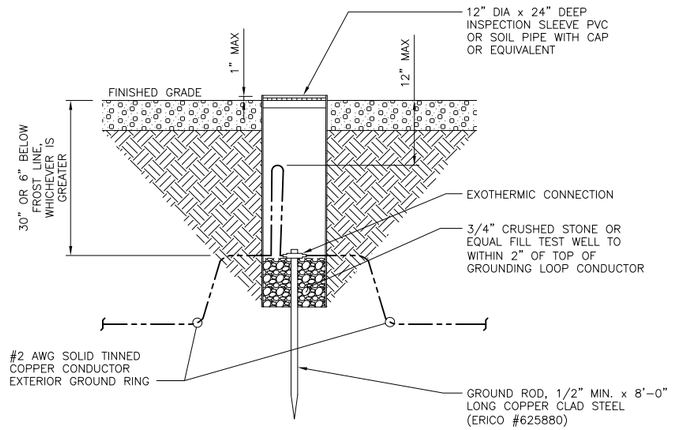
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



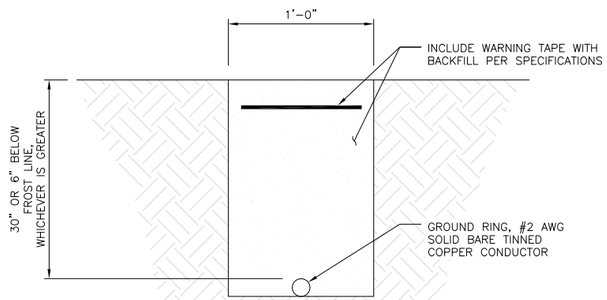
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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SHEET TITLE

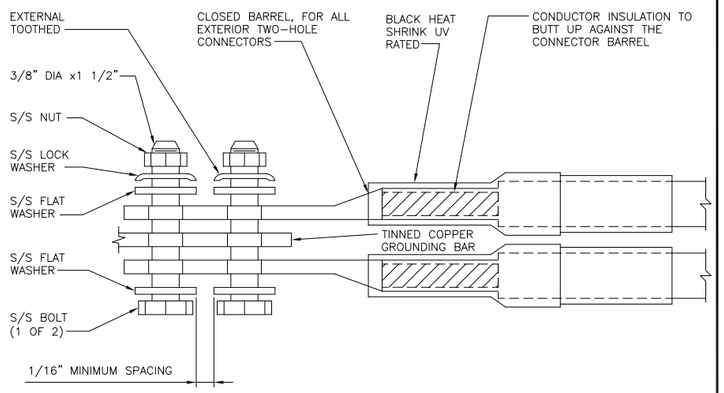
GROUNDING DETAILS

SHEET NUMBER

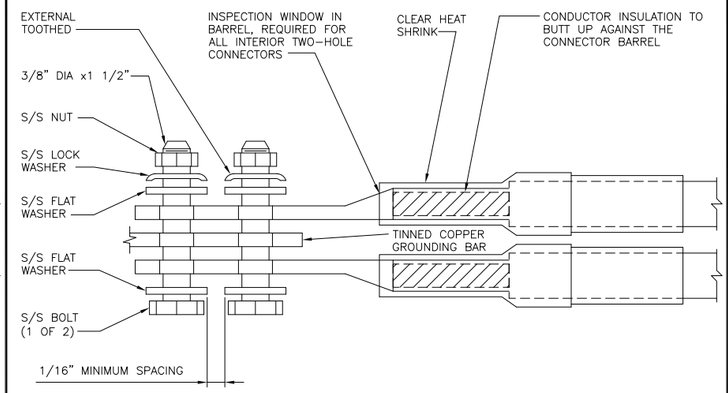
G-2

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).

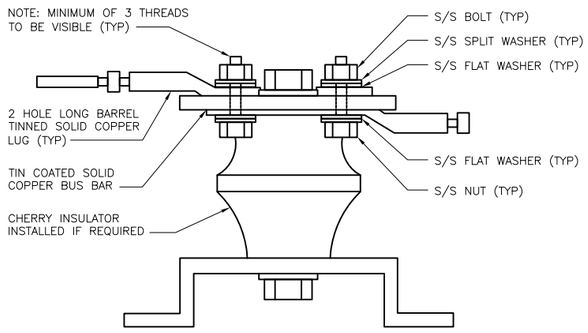
TYPICAL GROUNDING NOTES | NO SCALE | 1



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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STATE OF CONNECTICUT
CHAD W. TILE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/12/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149461.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

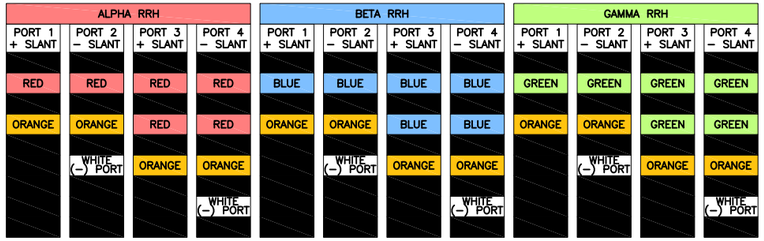
G-3

HYBRID/DISCREET CABLES

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

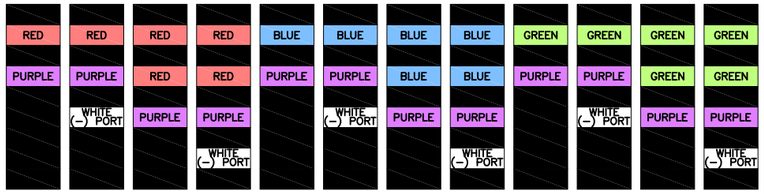
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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)



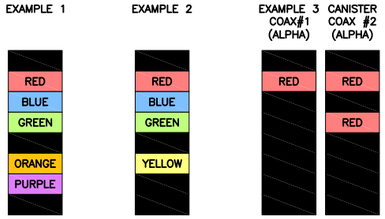
HYBRID/DISCREET CABLES

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.



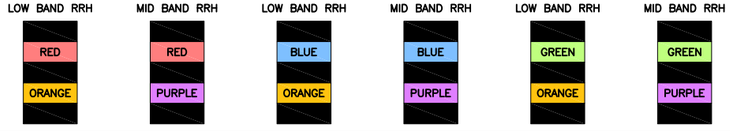
CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

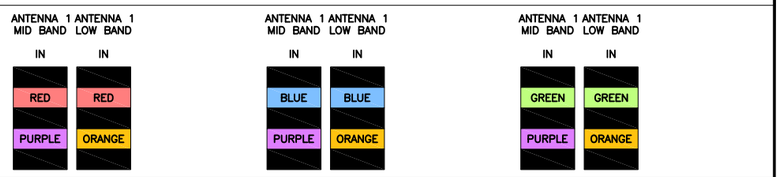
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

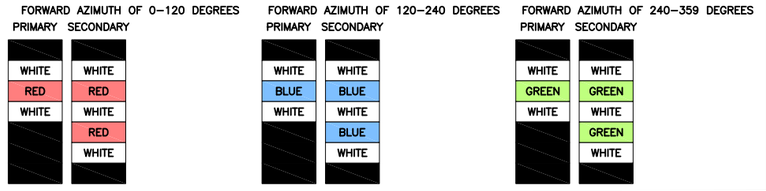
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



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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SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

XX
X–X

DETAIL REFERENCE

XX
X–X

LEGEND

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

ABBREVIATIONS

dish wireless.
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PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

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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STATE OF CONNECTICUT
CHAD W. TIER
No. 23924
LICENSED PROFESSIONAL ENGINEER
5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	VP	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

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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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

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.

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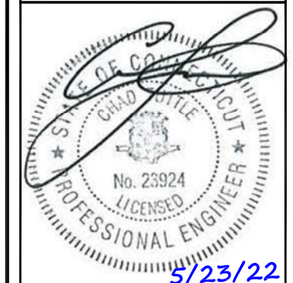

5/23/22

B&T ENGINEERING, INC.

DRAWN BY:	CHECKED BY:	APPROVED BY:
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PROJECT INFORMATION

BOHVN00043A
459 BURR ROAD
SOUTHBURY, CT 06488

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

Structural Analysis Report

Existing 149 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13058-A

Customer Site Name: Southbury

Carrier Name: Dish Wireless (App#: 168286, V1)

Carrier Site ID / Name: BOHVN00043A / 0

Site Location: 459 Burr Road

Southbury, Connecticut

New Haven County

Latitude: 41.448661

Longitude: -73.182638

Analysis Result:

Max Structural Usage: 81.9% [Pass]

Max Foundation Usage: 81.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Sital Shrestha

Tower Engineering Solutions
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1320 Greenway Drive, Suite 600, Irving, Texas 75038

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Report Prepared By: Sital Shrestha

Introduction

The purpose of this report is to summarize the analysis results on the 149 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre, Job # 07-07055-01, dated 07/14/2006
Foundation Drawing	Sabre, Job # 07-07055-MM, dated 07/14/2006
Geotechnical Report	JGI eastern, job# 06439G, dated 09/08/2006
Modification Drawings	N/A
Mount Analysis	N/A

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} =120.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 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:	2
Crest Height:	89 ft
Seismic Parameters:	S_S = 0.197, S_1 = 0.065

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	147.0	6	Powerwave 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" (1) 1/2" Fiber (2) 3/4" DC (1)3'' Conduit	AT&T
2		3	KMW AM-X-CD-16-65-00T-RET - Panel			
3		6	Powerwave LGP21401			
4		6	Powerwave LGP13519			
5		6	Ericsson RRUS-11			
6		1	Raycap DC6-48-60-18-8F			
7	138.0	3	RFS APXVSPP18-C-A20 - Panel	Low Profile Platform	(4) 1 1/4"	Sprint*
8		3	RFS APXVTM14-C-120 - Panel			
9		3	ALU 800MHz			
10		4	RFS ACU-A20-N			
11		3	ALU TD-RRH8x20-25			
12		3	ALU 1900MHz			
13		3	ALU 800MHz RRH			
14	127.5	3	RFS APX16DWV-16DWVS-E-A20	Platform w/ Hand Rail and V-Stabilizer [Commscope VSR-MS-B & MT-195-14]	(16) 1 5/8" (2) 1-5/8'' Fiber	T-Mobile
15		3	RFS APXVAARR24_43-U-NA20			
16		3	Ericsson AIR6449 B41			
17		3	RFS ATMAA1412D-1A20 TMA			
18		3	RFS ATMPP1412D-1CWA			
19		3	Remec S20057A1			
20		3	Ericsson Radio 4424 B25			
21		3	Ericsson Radio 4449 B71+B85			
22		3	Ericsson Radio 4415 B66A			
23		3	Kathrein 782 11054			

*Sprint is terminated but not removed from the tower.

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
24	87.0	3	JMA Wireless MX08FRO665-21-Panel	(1) Commscope MC-PK8-DSH (Platform w/HRK)	(1) 1.411" Hybrid	Dish Wireless
25		3	Fujitsu TA08025-B605-RRH			
26		3	Fujitsu TA08025-B604-RRH			
27		1	Raycap RDIDC-9181-PF-48-OVP			

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:	**81.9%**	**75.6%**	**56.4%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2717.9	26.7	64.3

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 1.0277 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

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 ANSI/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 81.86% at 0.0ft

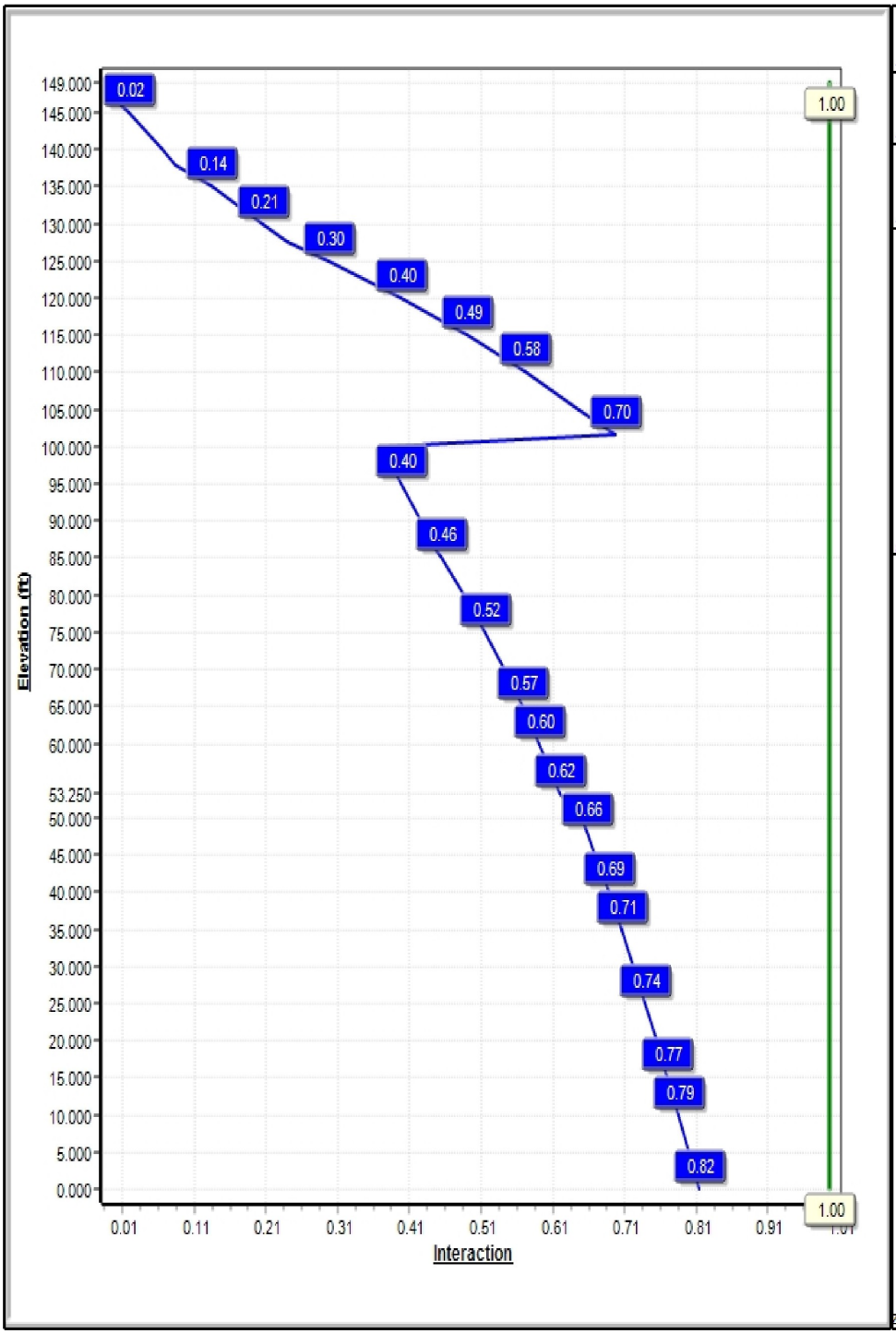
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury	**Exposure:**	B	
Height:	149.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

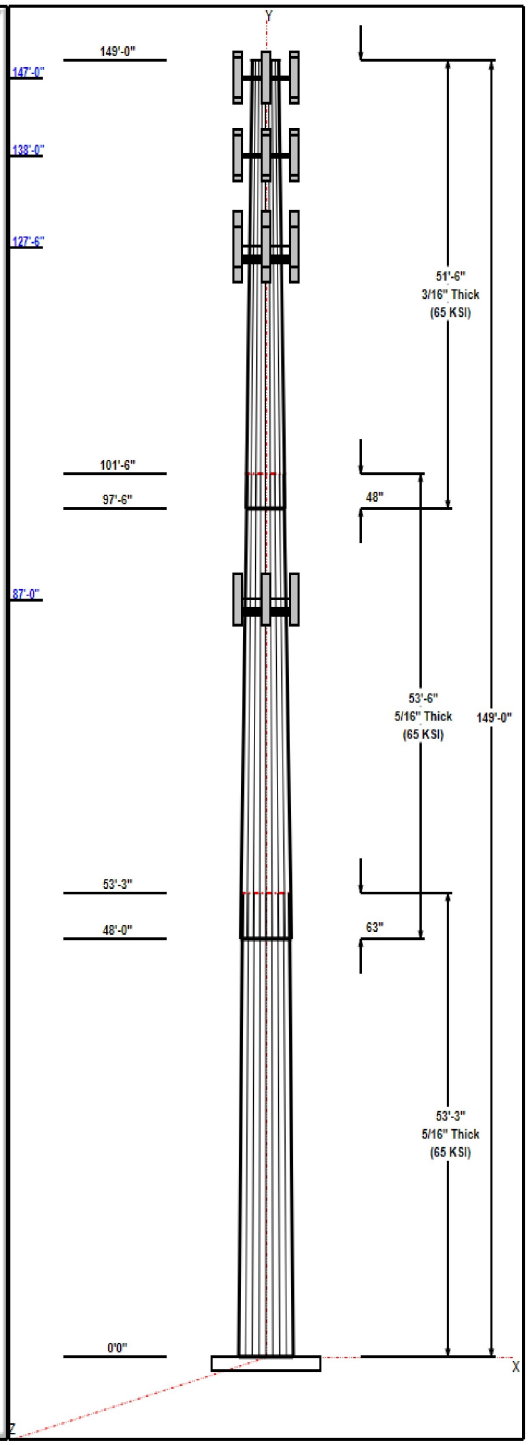
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 93 mph Wind

Iterations: 26





Structure: CT13058-A-SBA

Type: Tapered
Site Name: Southbury
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22000

11/15/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	40.31	52.03	0.313		0.22000	65
2	53.50	30.32	42.09	0.313	Slip	0.22000	65
3	51.50	20.25	31.58	0.188	Slip	0.22000	65

Discrete Appurtenances

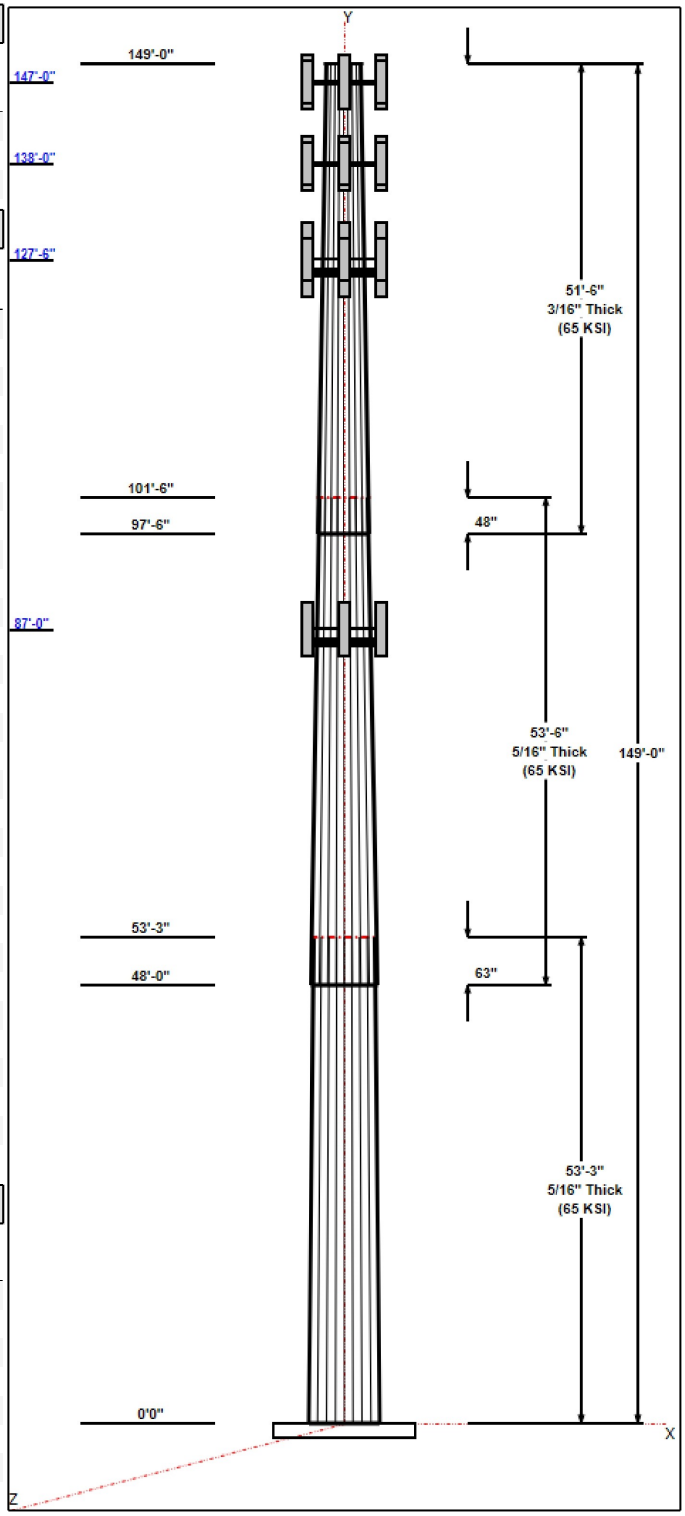
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
147.00	147.00	6	Powerwave 7770.00	AT&T
147.00	147.00	3	KMW	AT&T
147.00	147.00	6	Powerwave LGP21401	AT&T
147.00	147.00	6	Powerwave LGP13519	AT&T
147.00	147.00	6	Ericsson RRUS-11	AT&T
147.00	147.00	1	Low Profile Platform	AT&T
138.00	138.00	3	RFS APXVSPP18-C-A20	Sprint
138.00	138.00	3	RFS APXVTM14-C-120	Sprint
138.00	138.00	3	ALU 800MHz	Sprint
138.00	138.00	4	RFS ACU-A20-N	Sprint
138.00	138.00	3	ALU TD-RRH8x20-25	Sprint
138.00	138.00	3	ALU 1900MHz	Sprint
138.00	138.00	3	ALU 800MHz RRH	Sprint
138.00	138.00	1	Low Profile Platform	Sprint
127.50	127.50	3	4424 B25	T-Mobile
127.50	127.50	3	4449	T-Mobile
127.50	127.50	3	4415 B66A	T-Mobile
127.50	127.50	3	RFS	T-Mobile
127.50	127.50	3	AIR 6449 B41	T-Mobile
127.50	127.50	3	APXVAARR24_43-U-NA20	T-Mobile
127.50	127.50	3	RFS ATMAA1412D-1A20	T-Mobile
127.50	127.50	3	RFS ATMPP1412D-1CWA	T-Mobile
127.50	127.50	3	Remec S20057A1	T-Mobile
127.50	127.50	3	Kathrein 782 11054	T-Mobile
127.50	127.50	1	Platform w/ Hand Rail and	T-Mobile
87.00	87.00	3	MX08FRO665-21	Dish Wireless
87.00	87.00	3	TA08025-B604	Dish Wireless
87.00	87.00	3	TA08025-B605	Dish Wireless
87.00	87.00	1	RDIDC-9181-OF-48	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	147.00	Inside	1 5/8" Coax	AT&T
0.00	147.00	Inside	1/2" Fiber	AT&T
0.00	147.00	Inside	3" Coax	AT&T
0.00	147.00	Inside	3/4" DC	AT&T
0.00	138.00	Inside	1-1/4" Hybrid	Sprint
0.00	127.50	Inside	1 5/8" Coax	T-Mobile
0.00	127.50	Inside	1 5/8" Fiber	T-Mobile
0.00	87.00	Outside	1.411" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Cluster



Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	56.0	60.0	Clipped

Reactions

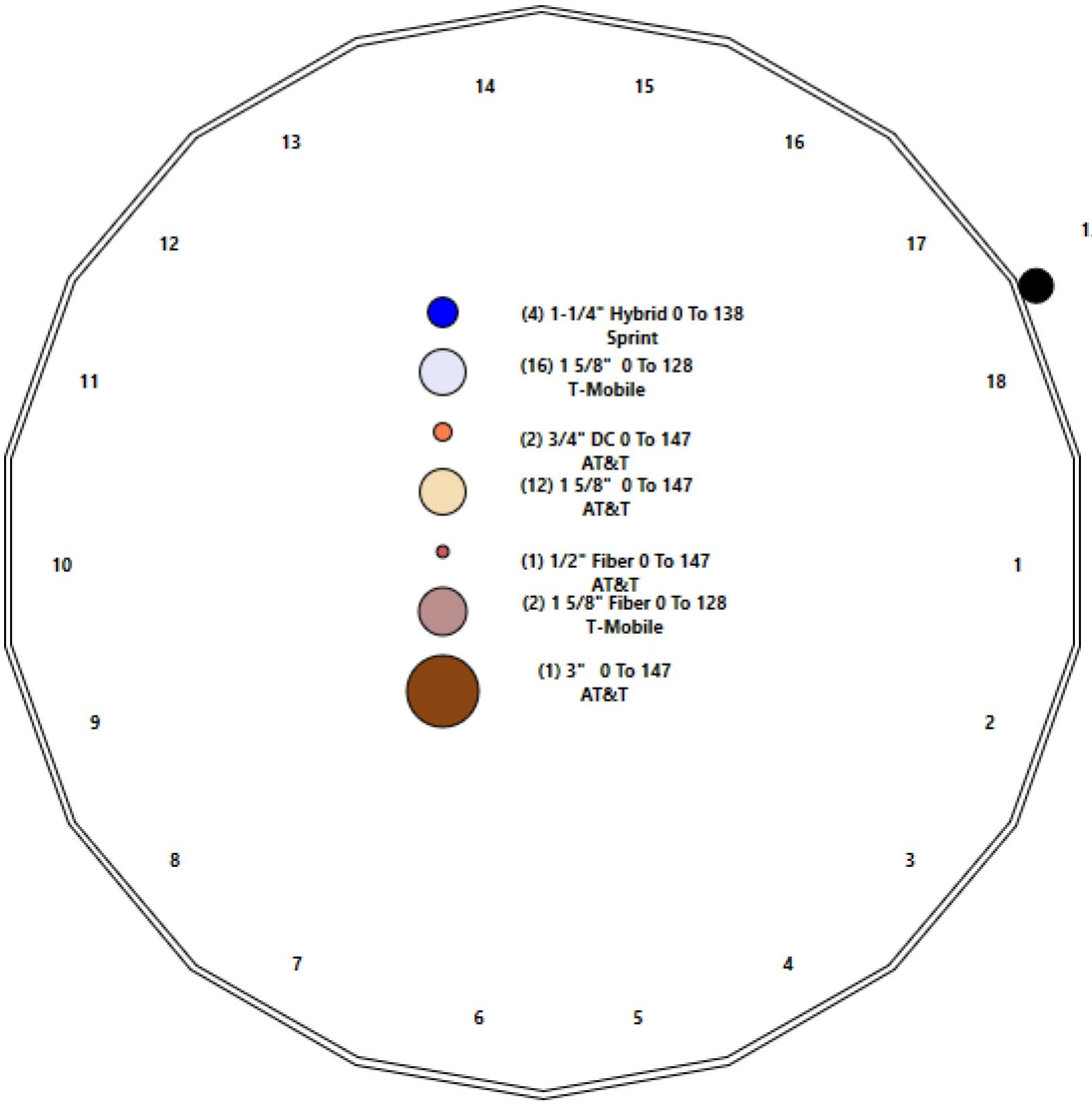
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	2717.9	26.7	39.3
0.9D + 1.6W 93 mph Wind	2682.1	26.7	29.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	863.7	8.5	64.8
1.2D + 1.0E	205.7	1.7	39.4
0.9D + 1.0E	202.7	1.7	29.5
1.0D + 1.0W 60 mph Wind	701.7	7.0	32.8

Structure: CT13058-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Southbury
Height: 149.00 (ft)

11/15/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.3125	65		0.00	8,242
2	18	53.500	0.3125	65	Slip	63.00	6,482
3	18	51.500	0.1875	65	Slip	48.00	2,683
					Total Shaft Weight:		**17,407**

	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	52.03	0.00	51.30	17334.33	27.95	166.50	40.31	53.25	39.68	8021.50	21.34	129.0	0.220000
2	42.09	48.00	41.44	9140.66	22.34	134.70	30.32	101.50	29.77	3387.67	15.70	97.04	0.220000
3	31.58	97.50	18.68	2326.07	28.29	168.43	20.25	149.00	11.94	607.16	17.63	108.0	0.220000

Load Summary

Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

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	147.00	Powerwave 7770.00	6	35.00	5.50	0.73	175.52	6.602	0.73	0.00	0.00
2	147.00	KMW AM-X-CD-16-65-00T-RET	3	48.50	8.02	0.75	244.64	9.359	0.75	0.00	0.00
3	147.00	Powerwave LGP21401	6	14.10	1.29	0.67	39.90	2.152	0.67	0.00	0.00
4	147.00	Powerwave LGP13519	6	5.30	0.34	0.67	15.10	0.809	0.67	0.00	0.00
5	147.00	Ericsson RRUS-11	6	51.00	2.52	0.67	125.59	3.174	0.67	0.00	0.00
6	147.00	Low Profile Platform	1	1500.00	22.00	1.00	2850.85	40.227	1.00	0.00	0.00
7	138.00	RFS APXVSPP18-C-A20	3	57.00	8.02	0.83	263.89	9.356	0.83	0.00	0.00
8	138.00	RFS APXVTM14-C-120	3	56.00	6.34	0.79	222.24	7.489	0.79	0.00	0.00
9	138.00	ALU 800MHz	3	8.80	0.78	0.67	26.97	1.446	0.67	0.00	0.00
10	138.00	RFS ACU-A20-N	4	1.00	0.14	0.67	5.43	0.446	0.67	0.00	0.00
11	138.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.67	184.50	4.890	0.67	0.00	0.00
12	138.00	ALU 1900MHz	3	44.00	3.80	0.67	156.45	5.232	0.67	0.00	0.00
13	138.00	ALU 800MHz RRH	3	68.30	3.46	0.67	161.47	4.814	0.67	0.00	0.00
14	138.00	Low Profile Platform	1	1500.00	22.00	1.00	2848.26	40.193	1.00	0.00	0.00
15	127.50	4424 B25	3	45.00	2.19	0.67	101.93	3.189	0.67	0.00	0.00
16	127.50	4449	3	70.00	1.65	0.67	140.66	2.204	0.67	0.00	0.00
17	127.50	4415 B66A	3	44.10	1.86	0.67	92.87	2.449	0.67	0.00	0.00
18	127.50	RFS APX16DWV-16DWVS-C-A20	3	40.70	6.46	0.62	181.57	7.607	0.62	0.00	0.00
19	127.50	AIR 6449 B41	3	133.20	6.53	0.70	302.75	7.631	0.70	0.00	0.00
20	127.50	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	559.14	22.195	0.70	0.00	0.00
21	127.50	RFS ATMAA1412D-1A20	3	13.00	1.17	0.67	40.32	1.974	0.67	0.00	0.00
22	127.50	RFS ATMPP1412D-1CWA	3	12.50	1.17	0.67	37.66	1.992	0.67	0.00	0.00
23	127.50	Remec S20057A1	3	11.00	0.82	0.67	30.40	1.537	0.67	0.00	0.00
24	127.50	Kathrein 782 11054	3	2.60	0.28	0.67	9.31	0.693	0.67	0.00	0.00
25	127.50	Platform w/ Hand Rail and	1	1600.00	35.00	1.00	3758.51	66.394	1.00	0.00	0.00
26	87.00	MX08FRO665-21	3	64.50	12.49	0.74	361.58	13.986	0.74	0.00	0.00
27	87.00	TA08025-B604	3	63.90	1.96	0.67	115.61	2.533	0.67	0.00	0.00
28	87.00	TA08025-B605	3	75.00	1.96	0.67	128.42	2.533	0.67	0.00	0.00
29	87.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	76.29	2.590	1.00	0.00	0.00
30	87.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3450.87	85.832	1.00	0.00	0.00
		Totals:	**93**	**10,153.60**			**25,230.30**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	147.00	(12) 1 5/8" Coax	0.00	Inside
0.00	147.00	(1) 1/2" Fiber	0.00	Inside
0.00	147.00	(1) 3" Coax	0.00	Inside
0.00	147.00	(2) 3/4" DC	0.00	Inside
0.00	138.00	(4) 1-1/4" Hybrid	0.00	Inside
0.00	127.50	(16) 1 5/8" Coax	0.00	Inside
0.00	127.50	(2) 1 5/8" Fiber	0.00	Inside
0.00	87.00	(1) 1.411" Hybrid	1.41	Outside

Shaft Section Properties

Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3125	52.030	51.295	17334.3	27.95	166.50	68.5	656.2	0.0
5.00		0.3125	50.930	50.204	16251.6	27.33	162.98	69.3	628.5	863.5
10.00		0.3125	49.830	49.113	15214.9	26.71	159.46	70.0	601.4	844.9
15.00		0.3125	48.730	48.022	14223.3	26.09	155.94	70.7	574.9	826.3
20.00		0.3125	47.630	46.931	13275.8	25.46	152.42	71.5	549.0	807.8
25.00		0.3125	46.530	45.840	12371.3	24.84	148.90	72.2	523.7	789.2
30.00		0.3125	45.430	44.749	11508.8	24.22	145.38	72.9	499.0	770.6
35.00		0.3125	44.330	43.658	10687.4	23.60	141.86	73.6	474.8	752.1
40.00		0.3125	43.230	42.567	9906.0	22.98	138.34	74.4	451.3	733.5
45.00		0.3125	42.130	41.476	9163.7	22.36	134.82	75.1	428.4	715.0
48.00	Bot - Section 2	0.3125	41.470	40.822	8736.6	21.99	132.70	75.5	414.9	420.1
50.00		0.3125	41.030	40.385	8459.4	21.74	131.30	75.8	406.1	556.9
53.25	Top - Section 1	0.3125	40.940	40.296	8403.4	21.69	131.01	0.0	0.0	892.3
55.00		0.3125	40.555	39.914	8166.7	21.47	129.78	76.1	396.6	238.8
60.00		0.3125	39.455	38.823	7515.2	20.85	126.26	76.9	375.2	669.8
65.00		0.3125	38.355	37.732	6899.2	20.23	122.74	77.6	354.3	651.3
70.00		0.3125	37.255	36.641	6317.9	19.61	119.22	78.3	334.0	632.7
75.00		0.3125	36.155	35.550	5770.2	18.99	115.70	79.1	314.3	614.1
80.00		0.3125	35.055	34.459	5255.1	18.37	112.18	79.8	295.3	595.6
85.00		0.3125	33.955	33.368	4771.5	17.75	108.66	80.5	276.8	577.0
87.00		0.3125	33.515	32.932	4586.8	17.50	107.25	80.8	269.6	225.6
90.00		0.3125	32.855	32.277	4318.6	17.13	105.14	81.3	258.9	332.8
95.00		0.3125	31.755	31.186	3895.3	16.51	101.62	82.0	241.6	539.9
97.50	Bot - Section 3	0.3125	31.205	30.640	3694.5	16.20	99.86	82.4	233.2	263.0
100.00		0.3125	30.655	30.095	3500.6	15.89	98.10	82.5	224.9	415.9
101.50	Top - Section 2	0.1875	30.700	18.158	2135.9	27.46	163.73	0.0	0.0	246.0
105.00		0.1875	29.930	17.700	1978.2	26.74	159.63	70.0	130.2	213.5
110.00		0.1875	28.830	17.045	1766.8	25.70	153.76	71.2	120.7	295.6
115.00		0.1875	27.730	16.391	1570.9	24.67	147.89	72.4	111.6	284.4
120.00		0.1875	26.630	15.736	1390.1	23.63	142.03	73.6	102.8	273.3
125.00		0.1875	25.530	15.081	1223.8	22.60	136.16	74.8	94.4	262.2
127.50		0.1875	24.980	14.754	1145.8	22.08	133.23	75.4	90.3	126.9
130.00		0.1875	24.430	14.427	1071.2	21.56	130.29	76.0	86.4	124.1
135.00		0.1875	23.330	13.772	931.9	20.53	124.43	77.3	78.7	239.9
138.00		0.1875	22.670	13.379	854.4	19.91	120.91	78.0	74.2	138.6
140.00		0.1875	22.230	13.118	805.2	19.49	118.56	78.5	71.3	90.2
145.00		0.1875	21.130	12.463	690.6	18.46	112.69	79.7	64.4	217.6
147.00		0.1875	20.690	12.201	648.0	18.05	110.35	80.2	61.7	83.9
149.00		0.1875	20.250	11.939	607.2	17.63	108.00	80.7	59.1	82.1
										17406.7

Wind Loading - Shaft

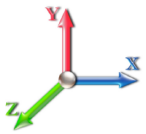
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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		1.92	0.70	28.326	31.16	475.15	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.85	0.70	27.264	29.99	456.30	0.650	0.000	5.00	21.781	14.16	679.3	0.0	1036.1
10.00		1.79	0.70	26.293	28.92	438.42	0.650	0.000	5.00	21.315	13.86	641.1	0.0	1013.9
15.00		1.73	0.70	25.403	27.94	421.43	0.650	0.000	5.00	20.850	13.55	605.9	0.0	991.6
20.00		1.67	0.70	24.587	27.05	405.25	0.650	0.000	5.00	20.385	13.25	573.4	0.0	969.3
25.00		1.62	0.70	23.839	26.22	389.82	0.650	0.000	5.00	19.919	12.95	543.2	0.0	947.0
30.00		1.57	0.70	23.171	25.49	375.24	0.650	0.000	5.00	19.454	12.65	515.7	0.0	924.8
35.00		1.53	0.73	23.554	25.91	369.16	0.650	0.000	5.00	18.988	12.34	511.7	0.0	902.5
40.00		1.49	0.76	23.839	26.22	362.17	0.650	0.000	5.00	18.523	12.04	505.2	0.0	880.2
45.00		1.45	0.79	24.054	26.46	354.55	0.650	0.000	5.00	18.058	11.74	496.9	0.0	857.9
48.00	Bot - Section 2	1.43	0.80	24.158	26.57	349.75	0.650	0.000	3.00	10.611	6.90	293.3	0.0	504.1
50.00		1.42	0.81	24.219	26.64	346.47	0.650	0.000	2.00	7.087	4.61	196.4	0.0	668.3
53.25	Top - Section 1	1.40	0.83	24.306	26.74	341.04	0.650	0.000	3.25	11.357	7.38	315.8	0.0	1070.7
55.00		1.39	0.83	24.348	26.78	343.37	0.650	0.000	1.75	6.034	3.92	168.1	0.0	286.6
60.00		1.36	0.85	24.450	26.89	334.75	0.650	0.000	5.00	16.926	11.00	473.4	0.0	803.8
65.00		1.33	0.87	24.533	26.99	325.97	0.650	0.000	5.00	16.460	10.70	462.0	0.0	781.5
70.00		1.31	0.89	24.603	27.06	317.08	0.650	0.000	5.00	15.995	10.40	450.2	0.0	759.2
75.00		1.29	0.91	24.664	27.13	308.10	0.650	0.000	5.00	15.530	10.09	438.2	0.0	737.0
80.00		1.27	0.93	24.720	27.19	299.06	0.650	0.000	5.00	15.064	9.79	426.0	0.0	714.7
85.00		1.25	0.94	24.772	27.25	289.98	0.650	0.000	5.00	14.599	9.49	413.7	0.0	692.4
87.00	Appurtenance(s)	1.24	0.95	24.792	27.27	286.34	0.650	0.000	2.00	5.709	3.71	161.9	0.0	270.7
90.00		1.23	0.96	24.823	27.30	280.87	0.650	0.000	3.00	8.424	5.48	239.2	0.0	399.4
95.00		1.21	0.97	24.873	27.36	271.75	0.650	0.000	5.00	13.668	8.88	388.9	0.0	647.8
97.50	Bot - Section 3	1.21	0.98	24.899	27.39	267.18	0.650	0.000	2.50	6.660	4.33	189.7	0.0	315.6
100.00		1.20	0.99	24.925	27.42	262.60	0.650	0.000	2.50	6.622	4.30	188.8	0.0	499.0
101.50	Top - Section 2	1.19	0.99	24.941	27.43	259.86	0.650	0.000	1.50	3.918	2.55	111.8	0.0	295.1
105.00		1.18	1.00	24.978	27.48	256.67	0.650	0.000	3.50	8.978	5.84	256.6	0.0	256.2
110.00		1.17	1.02	25.034	27.54	247.51	0.650	0.000	5.00	12.431	8.08	356.0	0.0	354.7
115.00		1.16	1.03	25.092	27.60	238.34	0.650	0.000	5.00	11.965	7.78	343.5	0.0	341.3
120.00		1.15	1.04	25.154	27.67	229.17	0.650	0.000	5.00	11.500	7.47	330.9	0.0	328.0
125.00		1.14	1.05	25.218	27.74	219.98	0.650	0.000	5.00	11.034	7.17	318.3	0.0	314.6
127.50	Appurtenance(s)	1.13	1.06	25.252	27.78	215.39	0.650	0.000	2.50	5.343	3.47	154.3	0.0	152.3
130.00		1.13	1.07	25.286	27.81	210.79	0.650	0.000	2.50	5.226	3.40	151.2	0.0	148.9
135.00		1.12	1.08	25.357	27.89	201.58	0.650	0.000	5.00	10.103	6.57	293.1	0.0	287.9
138.00	Appurtenance(s)	1.11	1.08	25.401	27.94	196.05	0.650	0.000	3.00	5.839	3.80	169.7	0.0	166.3
140.00		1.11	1.09	25.431	27.97	192.36	0.650	0.000	2.00	3.799	2.47	110.5	0.0	108.2
145.00		1.10	1.10	25.509	28.06	183.12	0.650	0.000	5.00	9.173	5.96	267.7	0.0	261.1
147.00	Appurtenance(s)	1.10	1.10	25.541	28.09	179.42	0.650	0.000	2.00	3.539	2.30	103.4	0.0	100.7
149.00		1.10	1.11	25.573	28.13	175.71	0.650	0.000	2.00	3.464	2.25	101.4	0.0	98.6
								Totals:	**149.00**			**12,946.3**		**20,888.1**

Discrete Appurtenance Forces

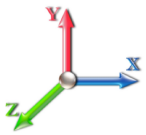
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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	147.00	Ericsson RRUS-11	6	25.541	28.095	0.54	0.80	8.10	367.20	0.000	0.000	364.30	0.00	0.00
2	147.00	Powerwave LGP13519	6	25.541	28.095	0.54	0.80	1.09	38.16	0.000	0.000	49.15	0.00	0.00
3	147.00	Powerwave LGP21401	6	25.541	28.095	0.54	0.80	4.15	101.52	0.000	0.000	186.49	0.00	0.00
4	147.00	KMW	3	25.541	28.095	0.68	0.90	16.24	174.60	0.000	0.000	730.04	0.00	0.00
5	147.00	Powerwave 7770.00	6	25.541	28.095	0.66	0.90	21.68	252.00	0.000	0.000	974.60	0.00	0.00
6	147.00	Low Profile Platform	1	25.541	28.095	1.00	1.00	22.00	1800.00	0.000	0.000	988.94	0.00	0.00
7	138.00	RFS ACU-A20-N	4	25.401	27.941	0.54	0.80	0.30	4.80	0.000	0.000	13.42	0.00	0.00
8	138.00	RFS APXVSPP18-C-A20	3	25.401	27.941	0.66	0.80	15.98	205.20	0.000	0.000	714.22	0.00	0.00
9	138.00	RFS APXVTM14-C-120	3	25.401	27.941	0.63	0.80	12.02	201.60	0.000	0.000	537.40	0.00	0.00
10	138.00	ALU 800MHz	3	25.401	27.941	0.54	0.80	1.25	31.68	0.000	0.000	56.07	0.00	0.00
11	138.00	ALU 800MHz RRH	3	25.401	27.941	0.54	0.80	5.56	245.88	0.000	0.000	248.73	0.00	0.00
12	138.00	ALU TD-RRH8x20-25	3	25.401	27.941	0.54	0.80	6.51	252.00	0.000	0.000	291.14	0.00	0.00
13	138.00	ALU 1900MHz	3	25.401	27.941	0.54	0.80	6.11	158.40	0.000	0.000	273.17	0.00	0.00
14	138.00	Low Profile Platform	1	25.401	27.941	1.00	1.00	22.00	1800.00	0.000	0.000	983.54	0.00	0.00
15	127.50	Platform w/ Hand Rail and	1	25.252	27.777	1.00	1.00	35.00	1920.00	0.000	0.000	1555.50	0.00	0.00
16	127.50	Kathrein 782 11054	3	25.252	27.777	0.50	0.75	0.42	9.36	0.000	0.000	18.76	0.00	0.00
17	127.50	RFS	3	25.252	27.777	0.46	0.75	9.01	146.52	0.000	0.000	400.51	0.00	0.00
18	127.50	4424 B25	3	25.252	27.777	0.50	0.75	3.30	162.00	0.000	0.000	146.72	0.00	0.00
19	127.50	4449	3	25.252	27.777	0.50	0.75	2.49	252.00	0.000	0.000	110.55	0.00	0.00
20	127.50	4415 B66A	3	25.252	27.777	0.50	0.75	2.80	158.76	0.000	0.000	124.62	0.00	0.00
21	127.50	Remec S20057A1	3	25.252	27.777	0.50	0.75	1.24	39.60	0.000	0.000	54.94	0.00	0.00
22	127.50	AIR 6449 B41	3	25.252	27.777	0.52	0.75	10.28	479.52	0.000	0.000	457.08	0.00	0.00
23	127.50	APXVAARR24_43-U-NA2	3	25.252	27.777	0.52	0.75	31.88	460.80	0.000	0.000	1416.75	0.00	0.00
24	127.50	RFS ATMAA1412D-1A20	3	25.252	27.777	0.50	0.75	1.76	46.80	0.000	0.000	78.39	0.00	0.00
25	127.50	RFS ATMPP1412D-1CWA	3	25.252	27.777	0.50	0.75	1.76	45.00	0.000	0.000	78.39	0.00	0.00
26	87.00	MC-PK8-DSH	1	24.792	27.272	1.00	1.00	37.59	2072.40	0.000	0.000	1640.22	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	24.792	27.272	0.75	0.75	1.51	26.28	0.000	0.000	65.78	0.00	0.00
28	87.00	TA08025-B605	3	24.792	27.272	0.50	0.75	2.95	270.00	0.000	0.000	128.93	0.00	0.00
29	87.00	TA08025-B604	3	24.792	27.272	0.50	0.75	2.95	230.04	0.000	0.000	128.93	0.00	0.00
30	87.00	MX08FRO665-21	3	24.792	27.272	0.55	0.75	20.80	232.20	0.000	0.000	907.42	0.00	0.00
							Totals:		**12,184.32**			**13,724.68**		

Total Applied Force Summary

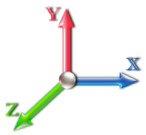
Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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
5.00		679.35	1269.64	0.00	0.00
10.00		641.14	1247.37	0.00	0.00
15.00		605.92	1225.09	0.00	0.00
20.00		573.38	1202.82	0.00	0.00
25.00		543.23	1180.54	0.00	0.00
30.00		515.68	1158.27	0.00	0.00
35.00		511.66	1135.99	0.00	0.00
40.00		505.16	1113.72	0.00	0.00
45.00		496.91	1091.44	0.00	0.00
48.00		293.26	644.17	0.00	0.00
50.00		196.35	761.65	0.00	0.00
53.25		315.80	1222.48	0.00	0.00
55.00		168.07	368.31	0.00	0.00
60.00		473.43	1037.27	0.00	0.00
65.00		461.98	1015.00	0.00	0.00
70.00		450.20	992.72	0.00	0.00
75.00		438.19	970.45	0.00	0.00
80.00		426.01	948.17	0.00	0.00
85.00		413.72	925.90	0.00	0.00
87.00	(11) attachments	3033.20	3195.04	0.00	0.00
90.00		239.22	535.40	0.00	0.00
95.00		388.92	874.51	0.00	0.00
97.50		189.69	428.90	0.00	0.00
100.00		188.83	612.37	0.00	0.00
101.50		111.78	363.15	0.00	0.00
105.00		256.55	414.89	0.00	0.00
110.00		355.99	581.35	0.00	0.00
115.00		343.46	567.98	0.00	0.00
120.00		330.91	554.62	0.00	0.00
125.00		318.33	541.25	0.00	0.00
127.50	(31) attachments	4596.53	3985.97	0.00	0.00
130.00		151.18	205.75	0.00	0.00
135.00		293.09	401.48	0.00	0.00
138.00	(23) attachments	3287.36	3134.03	0.00	0.00
140.00		110.54	144.48	0.00	0.00
145.00		267.68	351.85	0.00	0.00
147.00	(28) attachments	3396.92	2870.48	0.00	0.00
149.00		101.35	98.57	0.00	0.00
	Totals:	**26,670.99**	**39,373.05**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

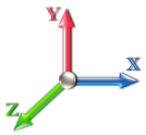
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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)
5.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.027	0.000	27.264	0.00	6.84
10.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	26.293	0.00	6.84
15.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	25.403	0.00	6.84
20.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	24.587	0.00	6.84
25.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	23.839	0.00	6.84
30.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	23.171	0.00	6.84
35.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	23.554	0.00	6.84
40.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	23.839	0.00	6.84
45.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	24.054	0.00	6.84
48.00	1.411" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.033	0.000	24.158	0.00	4.10
50.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.034	0.000	24.219	0.00	2.74
53.25	1.411" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.034	0.000	24.306	0.00	4.45
55.00	1.411" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.034	0.000	24.348	0.00	2.39
60.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	24.450	0.00	6.84
65.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	24.533	0.00	6.84
70.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.037	0.000	24.603	0.00	6.84
75.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.038	0.000	24.664	0.00	6.84
80.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.039	0.000	24.720	0.00	6.84
85.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	24.772	0.00	6.84
87.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.041	0.000	24.792	0.00	2.74
										Totals:	**0.0**	**119.0**

Calculated Forces

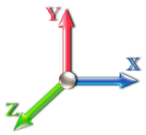
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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	-39.32	-26.75	0.00	-2717.9	0.00	2717.90	3163.75	1581.88	6735.38	3372.69	0.00	0.000	0.000	0.819
5.00	-37.95	-26.21	0.00	-2584.1	0.00	2584.17	3129.45	1564.72	6519.79	3264.74	0.12	-0.218	0.000	0.804
10.00	-36.61	-25.70	0.00	-2453.1	0.00	2453.12	3093.71	1546.85	6304.40	3156.89	0.46	-0.438	0.000	0.789
15.00	-35.29	-25.23	0.00	-2324.6	0.00	2324.60	3056.53	1528.27	6089.41	3049.23	1.04	-0.661	0.000	0.774
20.00	-34.00	-24.77	0.00	-2198.4	0.00	2198.47	3017.92	1508.96	5875.02	2941.88	1.86	-0.888	0.000	0.759
25.00	-32.73	-24.34	0.00	-2074.6	0.00	2074.62	2977.88	1488.94	5661.42	2834.92	2.91	-1.116	0.000	0.743
30.00	-31.49	-23.93	0.00	-1952.9	0.00	1952.93	2936.41	1468.20	5448.81	2728.46	4.20	-1.348	0.000	0.727
35.00	-30.27	-23.51	0.00	-1833.3	0.00	1833.30	2893.50	1446.75	5237.39	2622.59	5.74	-1.582	0.000	0.710
40.00	-29.07	-23.09	0.00	-1715.7	0.00	1715.75	2849.16	1424.58	5027.34	2517.41	7.52	-1.818	0.000	0.692
45.00	-27.92	-22.65	0.00	-1600.2	0.00	1600.29	2803.38	1401.69	4818.87	2413.02	9.56	-2.056	0.000	0.673
48.00	-27.24	-22.39	0.00	-1532.3	0.00	1532.33	2775.23	1387.61	4694.62	2350.80	10.90	-2.202	0.000	0.662
50.00	-26.44	-22.23	0.00	-1487.5	0.00	1487.55	2756.17	1378.09	4612.17	2309.51	11.84	-2.301	0.000	0.654
53.25	-25.19	-21.91	0.00	-1415.3	0.00	1415.31	2752.25	1376.12	4595.34	2301.09	13.46	-2.459	0.000	0.624
55.00	-24.76	-21.80	0.00	-1376.9	0.00	1376.96	2735.34	1367.67	4523.51	2265.12	14.38	-2.546	0.000	0.617
60.00	-23.67	-21.37	0.00	-1267.9	0.00	1267.97	2686.08	1343.04	4319.69	2163.06	17.17	-2.776	0.000	0.595
65.00	-22.59	-20.95	0.00	-1161.1	0.00	1161.10	2635.39	1317.69	4118.12	2062.12	20.20	-3.006	0.000	0.572
70.00	-21.54	-20.53	0.00	-1056.3	0.00	1056.34	2583.26	1291.63	3918.99	1962.41	23.47	-3.235	0.000	0.547
75.00	-20.52	-20.12	0.00	-953.68	0.00	953.68	2529.69	1264.85	3722.50	1864.02	26.98	-3.461	0.000	0.520
80.00	-19.53	-19.71	0.00	-853.08	0.00	853.08	2474.70	1237.35	3528.85	1767.05	30.72	-3.684	0.000	0.491
85.00	-18.58	-19.29	0.00	-754.53	0.00	754.53	2418.27	1209.13	3338.22	1671.59	34.69	-3.901	0.000	0.459
87.00	-15.57	-16.07	0.00	-715.95	0.00	715.95	2395.29	1197.65	3262.87	1633.86	36.34	-3.989	0.000	0.445
90.00	-15.01	-15.84	0.00	-667.75	0.00	667.75	2360.40	1180.20	3150.83	1577.76	38.89	-4.118	0.000	0.430
95.00	-14.12	-15.42	0.00	-588.56	0.00	588.56	2301.11	1150.55	2966.86	1485.64	43.31	-4.325	0.000	0.402
97.50	-13.68	-15.23	0.00	-550.00	0.00	550.00	2270.92	1135.46	2876.22	1440.25	45.60	-4.429	0.000	0.388
100.00	-13.06	-15.01	0.00	-511.94	0.00	511.94	2235.90	1117.95	2780.94	1392.54	47.95	-4.531	0.000	0.374
101.50	-12.68	-14.89	0.00	-489.43	0.00	489.43	1129.30	564.65	1418.29	710.20	49.38	-4.592	0.000	0.701
105.00	-12.24	-14.65	0.00	-437.31	0.00	437.31	1114.37	557.18	1364.00	683.02	52.79	-4.728	0.000	0.652
110.00	-11.62	-14.30	0.00	-364.08	0.00	364.08	1091.82	545.91	1286.67	644.29	57.90	-5.016	0.000	0.576
115.00	-11.02	-13.95	0.00	-292.59	0.00	292.59	1067.84	533.92	1209.76	605.78	63.29	-5.280	0.000	0.494
120.00	-10.45	-13.61	0.00	-222.82	0.00	222.82	1042.42	521.21	1133.48	567.58	68.94	-5.514	0.000	0.403
125.00	-9.91	-13.26	0.00	-154.76	0.00	154.76	1015.57	507.79	1058.03	529.80	74.82	-5.707	0.000	0.303
127.50	-6.40	-8.30	0.00	-121.60	0.00	121.60	1001.61	500.80	1020.67	511.09	77.82	-5.787	0.000	0.245
130.00	-6.19	-8.14	0.00	-100.85	0.00	100.85	987.29	493.64	983.59	492.52	80.87	-5.856	0.000	0.211
135.00	-5.82	-7.81	0.00	-60.16	0.00	60.16	957.57	478.78	910.36	455.86	87.05	-5.963	0.000	0.138
138.00	-3.04	-4.22	0.00	-36.72	0.00	36.72	939.05	469.53	867.09	434.19	90.81	-6.008	0.000	0.088
140.00	-2.91	-4.09	0.00	-28.28	0.00	28.28	926.42	463.21	838.55	419.90	93.33	-6.029	0.000	0.071
145.00	-2.58	-3.79	0.00	-7.81	0.00	7.81	893.83	446.92	768.34	384.74	99.65	-6.061	0.000	0.023
147.00	-0.09	-0.11	0.00	-0.22	0.00	0.22	880.40	440.20	740.75	370.92	102.19	-6.064	0.000	0.001
149.00	0.00	-0.10	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26	104.72	-6.065	0.000	0.000

Wind Loading - Shaft

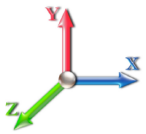
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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		1.92	0.70	28.326	31.16	475.15	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.85	0.70	27.264	29.99	456.30	0.650	0.000	5.00	21.781	14.16	679.3	0.0	777.1
10.00		1.79	0.70	26.293	28.92	438.42	0.650	0.000	5.00	21.315	13.86	641.1	0.0	760.4
15.00		1.73	0.70	25.403	27.94	421.43	0.650	0.000	5.00	20.850	13.55	605.9	0.0	743.7
20.00		1.67	0.70	24.587	27.05	405.25	0.650	0.000	5.00	20.385	13.25	573.4	0.0	727.0
25.00		1.62	0.70	23.839	26.22	389.82	0.650	0.000	5.00	19.919	12.95	543.2	0.0	710.3
30.00		1.57	0.70	23.171	25.49	375.24	0.650	0.000	5.00	19.454	12.65	515.7	0.0	693.6
35.00		1.53	0.73	23.554	25.91	369.16	0.650	0.000	5.00	18.988	12.34	511.7	0.0	676.9
40.00		1.49	0.76	23.839	26.22	362.17	0.650	0.000	5.00	18.523	12.04	505.2	0.0	660.2
45.00		1.45	0.79	24.054	26.46	354.55	0.650	0.000	5.00	18.058	11.74	496.9	0.0	643.5
48.00	Bot - Section 2	1.43	0.80	24.158	26.57	349.75	0.650	0.000	3.00	10.611	6.90	293.3	0.0	378.1
50.00		1.42	0.81	24.219	26.64	346.47	0.650	0.000	2.00	7.087	4.61	196.4	0.0	501.2
53.25	Top - Section 1	1.40	0.83	24.306	26.74	341.04	0.650	0.000	3.25	11.357	7.38	315.8	0.0	803.0
55.00		1.39	0.83	24.348	26.78	343.37	0.650	0.000	1.75	6.034	3.92	168.1	0.0	214.9
60.00		1.36	0.85	24.450	26.89	334.75	0.650	0.000	5.00	16.926	11.00	473.4	0.0	602.8
65.00		1.33	0.87	24.533	26.99	325.97	0.650	0.000	5.00	16.460	10.70	462.0	0.0	586.1
70.00		1.31	0.89	24.603	27.06	317.08	0.650	0.000	5.00	15.995	10.40	450.2	0.0	569.4
75.00		1.29	0.91	24.664	27.13	308.10	0.650	0.000	5.00	15.530	10.09	438.2	0.0	552.7
80.00		1.27	0.93	24.720	27.19	299.06	0.650	0.000	5.00	15.064	9.79	426.0	0.0	536.0
85.00		1.25	0.94	24.772	27.25	289.98	0.650	0.000	5.00	14.599	9.49	413.7	0.0	519.3
87.00	Appurtenance(s)	1.24	0.95	24.792	27.27	286.34	0.650	0.000	2.00	5.709	3.71	161.9	0.0	203.0
90.00		1.23	0.96	24.823	27.30	280.87	0.650	0.000	3.00	8.424	5.48	239.2	0.0	299.6
95.00		1.21	0.97	24.873	27.36	271.75	0.650	0.000	5.00	13.668	8.88	388.9	0.0	485.9
97.50	Bot - Section 3	1.21	0.98	24.899	27.39	267.18	0.650	0.000	2.50	6.660	4.33	189.7	0.0	236.7
100.00		1.20	0.99	24.925	27.42	262.60	0.650	0.000	2.50	6.622	4.30	188.8	0.0	374.3
101.50	Top - Section 2	1.19	0.99	24.941	27.43	259.86	0.650	0.000	1.50	3.918	2.55	111.8	0.0	221.4
105.00		1.18	1.00	24.978	27.48	256.67	0.650	0.000	3.50	8.978	5.84	256.6	0.0	192.2
110.00		1.17	1.02	25.034	27.54	247.51	0.650	0.000	5.00	12.431	8.08	356.0	0.0	266.0
115.00		1.16	1.03	25.092	27.60	238.34	0.650	0.000	5.00	11.965	7.78	343.5	0.0	256.0
120.00		1.15	1.04	25.154	27.67	229.17	0.650	0.000	5.00	11.500	7.47	330.9	0.0	246.0
125.00		1.14	1.05	25.218	27.74	219.98	0.650	0.000	5.00	11.034	7.17	318.3	0.0	235.9
127.50	Appurtenance(s)	1.13	1.06	25.252	27.78	215.39	0.650	0.000	2.50	5.343	3.47	154.3	0.0	114.2
130.00		1.13	1.07	25.286	27.81	210.79	0.650	0.000	2.50	5.226	3.40	151.2	0.0	111.7
135.00		1.12	1.08	25.357	27.89	201.58	0.650	0.000	5.00	10.103	6.57	293.1	0.0	215.9
138.00	Appurtenance(s)	1.11	1.08	25.401	27.94	196.05	0.650	0.000	3.00	5.839	3.80	169.7	0.0	124.7
140.00		1.11	1.09	25.431	27.97	192.36	0.650	0.000	2.00	3.799	2.47	110.5	0.0	81.1
145.00		1.10	1.10	25.509	28.06	183.12	0.650	0.000	5.00	9.173	5.96	267.7	0.0	195.9
147.00	Appurtenance(s)	1.10	1.10	25.541	28.09	179.42	0.650	0.000	2.00	3.539	2.30	103.4	0.0	75.5
149.00		1.10	1.11	25.573	28.13	175.71	0.650	0.000	2.00	3.464	2.25	101.4	0.0	73.9
								Totals:	**149.00**			**12,946.3**		**15,666.1**

Discrete Appurtenance Forces

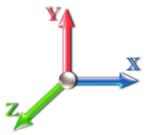
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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	147.00	Ericsson RRUS-11	6	25.541	28.095	0.54	0.80	8.10	275.40	0.000	0.000	364.30	0.00	0.00
2	147.00	Powerwave LGP13519	6	25.541	28.095	0.54	0.80	1.09	28.62	0.000	0.000	49.15	0.00	0.00
3	147.00	Powerwave LGP21401	6	25.541	28.095	0.54	0.80	4.15	76.14	0.000	0.000	186.49	0.00	0.00
4	147.00	KMW	3	25.541	28.095	0.68	0.90	16.24	130.95	0.000	0.000	730.04	0.00	0.00
5	147.00	Powerwave 7770.00	6	25.541	28.095	0.66	0.90	21.68	189.00	0.000	0.000	974.60	0.00	0.00
6	147.00	Low Profile Platform	1	25.541	28.095	1.00	1.00	22.00	1350.00	0.000	0.000	988.94	0.00	0.00
7	138.00	RFS ACU-A20-N	4	25.401	27.941	0.54	0.80	0.30	3.60	0.000	0.000	13.42	0.00	0.00
8	138.00	RFS APXVSPP18-C-A20	3	25.401	27.941	0.66	0.80	15.98	153.90	0.000	0.000	714.22	0.00	0.00
9	138.00	RFS APXVTM14-C-120	3	25.401	27.941	0.63	0.80	12.02	151.20	0.000	0.000	537.40	0.00	0.00
10	138.00	ALU 800MHz	3	25.401	27.941	0.54	0.80	1.25	23.76	0.000	0.000	56.07	0.00	0.00
11	138.00	ALU 800MHz RRH	3	25.401	27.941	0.54	0.80	5.56	184.41	0.000	0.000	248.73	0.00	0.00
12	138.00	ALU TD-RRH8x20-25	3	25.401	27.941	0.54	0.80	6.51	189.00	0.000	0.000	291.14	0.00	0.00
13	138.00	ALU 1900MHz	3	25.401	27.941	0.54	0.80	6.11	118.80	0.000	0.000	273.17	0.00	0.00
14	138.00	Low Profile Platform	1	25.401	27.941	1.00	1.00	22.00	1350.00	0.000	0.000	983.54	0.00	0.00
15	127.50	Platform w/ Hand Rail and	1	25.252	27.777	1.00	1.00	35.00	1440.00	0.000	0.000	1555.50	0.00	0.00
16	127.50	Kathrein 782 11054	3	25.252	27.777	0.50	0.75	0.42	7.02	0.000	0.000	18.76	0.00	0.00
17	127.50	RFS	3	25.252	27.777	0.46	0.75	9.01	109.89	0.000	0.000	400.51	0.00	0.00
18	127.50	4424 B25	3	25.252	27.777	0.50	0.75	3.30	121.50	0.000	0.000	146.72	0.00	0.00
19	127.50	4449	3	25.252	27.777	0.50	0.75	2.49	189.00	0.000	0.000	110.55	0.00	0.00
20	127.50	4415 B66A	3	25.252	27.777	0.50	0.75	2.80	119.07	0.000	0.000	124.62	0.00	0.00
21	127.50	Remec S20057A1	3	25.252	27.777	0.50	0.75	1.24	29.70	0.000	0.000	54.94	0.00	0.00
22	127.50	AIR 6449 B41	3	25.252	27.777	0.52	0.75	10.28	359.64	0.000	0.000	457.08	0.00	0.00
23	127.50	APXVAARR24_43-U-NA2	3	25.252	27.777	0.52	0.75	31.88	345.60	0.000	0.000	1416.75	0.00	0.00
24	127.50	RFS ATMAA1412D-1A20	3	25.252	27.777	0.50	0.75	1.76	35.10	0.000	0.000	78.39	0.00	0.00
25	127.50	RFS ATMPP1412D-1CWA	3	25.252	27.777	0.50	0.75	1.76	33.75	0.000	0.000	78.39	0.00	0.00
26	87.00	MC-PK8-DSH	1	24.792	27.272	1.00	1.00	37.59	1554.30	0.000	0.000	1640.22	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	24.792	27.272	0.75	0.75	1.51	19.71	0.000	0.000	65.78	0.00	0.00
28	87.00	TA08025-B605	3	24.792	27.272	0.50	0.75	2.95	202.50	0.000	0.000	128.93	0.00	0.00
29	87.00	TA08025-B604	3	24.792	27.272	0.50	0.75	2.95	172.53	0.000	0.000	128.93	0.00	0.00
30	87.00	MX08FRO665-21	3	24.792	27.272	0.55	0.75	20.80	174.15	0.000	0.000	907.42	0.00	0.00
							Totals:		**9,138.24**			**13,724.68**		

Total Applied Force Summary

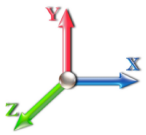
Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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
5.00		679.35	952.23	0.00	0.00
10.00		641.14	935.52	0.00	0.00
15.00		605.92	918.82	0.00	0.00
20.00		573.38	902.11	0.00	0.00
25.00		543.23	885.41	0.00	0.00
30.00		515.68	868.70	0.00	0.00
35.00		511.66	851.99	0.00	0.00
40.00		505.16	835.29	0.00	0.00
45.00		496.91	818.58	0.00	0.00
48.00		293.26	483.13	0.00	0.00
50.00		196.35	571.24	0.00	0.00
53.25		315.80	916.86	0.00	0.00
55.00		168.07	276.23	0.00	0.00
60.00		473.43	777.95	0.00	0.00
65.00		461.98	761.25	0.00	0.00
70.00		450.20	744.54	0.00	0.00
75.00		438.19	727.83	0.00	0.00
80.00		426.01	711.13	0.00	0.00
85.00		413.72	694.42	0.00	0.00
87.00	(11) attachments	3033.20	2396.28	0.00	0.00
90.00		239.22	401.55	0.00	0.00
95.00		388.92	655.88	0.00	0.00
97.50		189.69	321.67	0.00	0.00
100.00		188.83	459.28	0.00	0.00
101.50		111.78	272.36	0.00	0.00
105.00		256.55	311.17	0.00	0.00
110.00		355.99	436.01	0.00	0.00
115.00		343.46	425.99	0.00	0.00
120.00		330.91	415.96	0.00	0.00
125.00		318.33	405.94	0.00	0.00
127.50	(31) attachments	4596.53	2989.48	0.00	0.00
130.00		151.18	154.31	0.00	0.00
135.00		293.09	301.11	0.00	0.00
138.00	(23) attachments	3287.36	2350.52	0.00	0.00
140.00		110.54	108.36	0.00	0.00
145.00		267.68	263.89	0.00	0.00
147.00	(28) attachments	3396.92	2152.86	0.00	0.00
149.00		101.35	73.93	0.00	0.00
	Totals:	**26,670.99**	**29,529.79**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

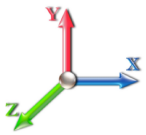
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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)
5.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.027	0.000	27.264	0.00	5.13
10.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	26.293	0.00	5.13
15.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	25.403	0.00	5.13
20.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	24.587	0.00	5.13
25.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	23.839	0.00	5.13
30.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	23.171	0.00	5.13
35.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	23.554	0.00	5.13
40.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	23.839	0.00	5.13
45.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	24.054	0.00	5.13
48.00	1.411" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.033	0.000	24.158	0.00	3.08
50.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.034	0.000	24.219	0.00	2.05
53.25	1.411" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.034	0.000	24.306	0.00	3.33
55.00	1.411" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.034	0.000	24.348	0.00	1.80
60.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	24.450	0.00	5.13
65.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	24.533	0.00	5.13
70.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.037	0.000	24.603	0.00	5.13
75.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.038	0.000	24.664	0.00	5.13
80.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.039	0.000	24.720	0.00	5.13
85.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	24.772	0.00	5.13
87.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.041	0.000	24.792	0.00	2.05
										Totals:	**0.0**	**89.3**

Calculated Forces

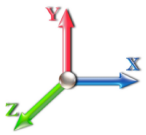
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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	-29.48	-26.73	0.00	-2682.1	0.00	2682.13	3163.75	1581.88	6735.38	3372.69	0.00	0.000	0.000	0.805
5.00	-28.43	-26.15	0.00	-2548.5	0.00	2548.50	3129.45	1564.72	6519.79	3264.74	0.12	-0.215	0.000	0.790
10.00	-27.40	-25.61	0.00	-2417.7	0.00	2417.74	3093.71	1546.85	6304.40	3156.89	0.46	-0.432	0.000	0.775
15.00	-26.39	-25.10	0.00	-2289.6	0.00	2289.68	3056.53	1528.27	6089.41	3049.23	1.03	-0.652	0.000	0.760
20.00	-25.40	-24.61	0.00	-2164.1	0.00	2164.19	3017.92	1508.96	5875.02	2941.88	1.83	-0.875	0.000	0.744
25.00	-24.43	-24.15	0.00	-2041.1	0.00	2041.13	2977.88	1488.94	5661.42	2834.92	2.87	-1.100	0.000	0.728
30.00	-23.48	-23.71	0.00	-1920.3	0.00	1920.38	2936.41	1468.20	5448.81	2728.46	4.14	-1.328	0.000	0.712
35.00	-22.54	-23.27	0.00	-1801.8	0.00	1801.83	2893.50	1446.75	5237.39	2622.59	5.66	-1.558	0.000	0.695
40.00	-21.63	-22.83	0.00	-1685.4	0.00	1685.49	2849.16	1424.58	5027.34	2517.41	7.41	-1.790	0.000	0.677
45.00	-20.76	-22.37	0.00	-1571.3	0.00	1571.35	2803.38	1401.69	4818.87	2413.02	9.41	-2.024	0.000	0.659
48.00	-20.24	-22.10	0.00	-1504.2	0.00	1504.24	2775.23	1387.61	4694.62	2350.80	10.73	-2.167	0.000	0.647
50.00	-19.63	-21.93	0.00	-1460.0	0.00	1460.03	2756.17	1378.09	4612.17	2309.51	11.66	-2.264	0.000	0.640
53.25	-18.68	-21.61	0.00	-1388.7	0.00	1388.76	2752.25	1376.12	4595.34	2301.09	13.25	-2.419	0.000	0.611
55.00	-18.35	-21.49	0.00	-1350.9	0.00	1350.94	2735.34	1367.67	4523.51	2265.12	14.16	-2.504	0.000	0.603
60.00	-17.51	-21.05	0.00	-1243.5	0.00	1243.51	2686.08	1343.04	4319.69	2163.06	16.90	-2.730	0.000	0.582
65.00	-16.69	-20.61	0.00	-1138.2	0.00	1138.28	2635.39	1317.69	4118.12	2062.12	19.88	-2.956	0.000	0.559
70.00	-15.90	-20.19	0.00	-1035.2	0.00	1035.22	2583.26	1291.63	3918.99	1962.41	23.10	-3.180	0.000	0.534
75.00	-15.12	-19.76	0.00	-934.30	0.00	934.30	2529.69	1264.85	3722.50	1864.02	26.54	-3.401	0.000	0.507
80.00	-14.36	-19.35	0.00	-835.48	0.00	835.48	2474.70	1237.35	3528.85	1767.05	30.22	-3.620	0.000	0.479
85.00	-13.65	-18.93	0.00	-738.73	0.00	738.73	2418.27	1209.13	3338.22	1671.59	34.13	-3.833	0.000	0.448
87.00	-11.43	-15.76	0.00	-700.88	0.00	700.88	2395.29	1197.65	3262.87	1633.86	35.75	-3.918	0.000	0.434
90.00	-11.00	-15.52	0.00	-653.60	0.00	653.60	2360.40	1180.20	3150.83	1577.76	38.25	-4.045	0.000	0.419
95.00	-10.34	-15.12	0.00	-575.98	0.00	575.98	2301.11	1150.55	2966.86	1485.64	42.59	-4.247	0.000	0.392
97.50	-10.01	-14.92	0.00	-538.19	0.00	538.19	2270.92	1135.46	2876.22	1440.25	44.84	-4.349	0.000	0.378
100.00	-9.54	-14.71	0.00	-500.89	0.00	500.89	2235.90	1117.95	2780.94	1392.54	47.14	-4.449	0.000	0.364
101.50	-9.25	-14.59	0.00	-478.82	0.00	478.82	1129.30	564.65	1418.29	710.20	48.55	-4.508	0.000	0.683
105.00	-8.91	-14.35	0.00	-427.74	0.00	427.74	1114.37	557.18	1364.00	683.02	51.90	-4.642	0.000	0.635
110.00	-8.44	-14.00	0.00	-356.01	0.00	356.01	1091.82	545.91	1286.67	644.29	56.91	-4.923	0.000	0.561
115.00	-7.99	-13.65	0.00	-286.03	0.00	286.03	1067.84	533.92	1209.76	605.78	62.21	-5.182	0.000	0.480
120.00	-7.56	-13.31	0.00	-217.78	0.00	217.78	1042.42	521.21	1133.48	567.58	67.75	-5.410	0.000	0.392
125.00	-7.15	-12.97	0.00	-151.23	0.00	151.23	1015.57	507.79	1058.03	529.80	73.52	-5.599	0.000	0.293
127.50	-4.62	-8.11	0.00	-118.81	0.00	118.81	1001.61	500.80	1020.67	511.09	76.47	-5.677	0.000	0.237
130.00	-4.47	-7.95	0.00	-98.54	0.00	98.54	987.29	493.64	983.59	492.52	79.45	-5.745	0.000	0.205
135.00	-4.19	-7.63	0.00	-58.79	0.00	58.79	957.57	478.78	910.36	455.86	85.52	-5.849	0.000	0.134
138.00	-2.19	-4.12	0.00	-35.90	0.00	35.90	939.05	469.53	867.09	434.19	89.21	-5.893	0.000	0.085
140.00	-2.09	-4.00	0.00	-27.65	0.00	27.65	926.42	463.21	838.55	419.90	91.67	-5.914	0.000	0.068
145.00	-1.85	-3.71	0.00	-7.64	0.00	7.64	893.83	446.92	768.34	384.74	97.88	-5.945	0.000	0.022
147.00	-0.06	-0.11	0.00	-0.22	0.00	0.22	880.40	440.20	740.75	370.92	100.36	-5.948	0.000	0.001
149.00	0.00	-0.10	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26	102.85	-5.948	0.000	0.000

Wind Loading - Shaft

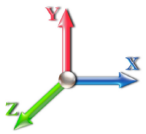
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 18	

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 25

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		1.92	0.70	8.188	9.01	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.85	0.70	7.881	8.67	0.00	1.200	1.541	5.00	23.065	27.68	239.9	506.5	1542.6
10.00		1.79	0.70	7.600	8.36	0.00	1.200	1.631	5.00	22.674	27.21	227.5	525.6	1539.5
15.00		1.73	0.70	7.343	8.08	0.00	1.200	1.678	5.00	22.248	26.70	215.6	529.7	1521.3
20.00		1.67	0.70	7.107	7.82	0.00	1.200	1.707	5.00	21.807	26.17	204.6	527.5	1496.9
25.00		1.62	0.70	6.891	7.58	0.00	1.200	1.727	5.00	21.358	25.63	194.3	522.0	1469.0
30.00		1.57	0.70	6.698	7.37	0.00	1.200	1.741	5.00	20.905	25.09	184.8	514.3	1439.1
35.00		1.53	0.73	6.808	7.49	0.00	1.200	1.751	5.00	20.447	24.54	183.8	505.3	1407.8
40.00		1.49	0.76	6.891	7.58	0.00	1.200	1.758	5.00	19.988	23.99	181.8	495.4	1375.6
45.00		1.45	0.79	6.953	7.65	0.00	1.200	1.764	5.00	19.527	23.43	179.2	484.8	1342.8
48.00	Bot - Section 2	1.43	0.80	6.983	7.68	0.00	1.200	1.766	3.00	11.494	13.79	105.9	287.0	791.1
50.00		1.42	0.81	7.001	7.70	0.00	1.200	1.768	2.00	7.676	9.21	70.9	192.3	860.6
53.25	Top - Section 1	1.40	0.83	7.026	7.73	0.00	1.200	1.770	3.25	12.316	14.78	114.2	307.8	1378.5
55.00		1.39	0.83	7.038	7.74	0.00	1.200	1.771	1.75	6.551	7.86	60.9	164.3	450.9
60.00		1.36	0.85	7.067	7.77	0.00	1.200	1.774	5.00	18.404	22.08	171.7	458.0	1261.8
65.00		1.33	0.87	7.091	7.80	0.00	1.200	1.776	5.00	17.940	21.53	167.9	446.3	1227.8
70.00		1.31	0.89	7.112	7.82	0.00	1.200	1.778	5.00	17.477	20.97	164.1	434.5	1193.8
75.00		1.29	0.91	7.129	7.84	0.00	1.200	1.779	5.00	17.012	20.41	160.1	422.7	1159.6
80.00		1.27	0.93	7.145	7.86	0.00	1.200	1.781	5.00	16.548	19.86	156.1	410.7	1125.4
85.00		1.25	0.94	7.160	7.88	0.00	1.200	1.782	5.00	16.084	19.30	152.0	398.8	1091.2
87.00	Appurtenance(s)	1.24	0.95	7.166	7.88	0.00	1.200	1.782	2.00	6.303	7.56	59.6	157.6	428.3
90.00		1.23	0.96	7.175	7.89	0.00	1.200	1.783	3.00	9.316	11.18	88.2	232.1	631.5
95.00		1.21	0.97	7.190	7.91	0.00	1.200	1.785	5.00	15.155	18.19	143.8	374.8	1022.6
97.50	Bot - Section 3	1.21	0.98	7.197	7.92	0.00	1.200	1.785	2.50	7.403	8.88	70.3	184.4	499.9
100.00		1.20	0.99	7.205	7.92	0.00	1.200	1.786	2.50	7.367	8.84	70.1	183.5	682.5
101.50	Top - Section 2	1.19	0.99	7.209	7.93	0.00	1.200	1.786	1.50	4.364	5.24	41.5	109.0	404.1
105.00		1.18	1.00	7.220	7.94	0.00	1.200	1.787	3.50	10.021	12.02	95.5	248.4	504.7
110.00		1.17	1.02	7.236	7.96	0.00	1.200	1.789	5.00	13.921	16.71	133.0	342.9	697.6
115.00		1.16	1.03	7.253	7.98	0.00	1.200	1.790	5.00	13.457	16.15	128.8	330.8	672.2
120.00		1.15	1.04	7.271	8.00	0.00	1.200	1.792	5.00	12.993	15.59	124.7	318.8	646.7
125.00		1.14	1.05	7.289	8.02	0.00	1.200	1.793	5.00	12.529	15.03	120.5	306.7	621.3
127.50	Appurtenance(s)	1.13	1.06	7.299	8.03	0.00	1.200	1.794	2.50	6.090	7.31	58.7	150.3	302.6
130.00		1.13	1.07	7.309	8.04	0.00	1.200	1.795	2.50	5.974	7.17	57.6	147.3	296.3
135.00		1.12	1.08	7.329	8.06	0.00	1.200	1.797	5.00	11.601	13.92	112.2	282.6	570.4
138.00	Appurtenance(s)	1.11	1.08	7.342	8.08	0.00	1.200	1.798	3.00	6.738	8.09	65.3	165.2	331.5
140.00		1.11	1.09	7.351	8.09	0.00	1.200	1.798	2.00	4.399	5.28	42.7	108.2	216.4
145.00		1.10	1.10	7.373	8.11	0.00	1.200	1.800	5.00	10.673	12.81	103.9	258.4	519.5
147.00	Appurtenance(s)	1.10	1.10	7.383	8.12	0.00	1.200	1.801	2.00	4.139	4.97	40.3	101.4	202.1
149.00		1.10	1.11	7.392	8.13	0.00	1.200	1.802	2.00	4.065	4.88	39.7	99.5	198.1
								Totals:	**149.00**			**4,731.9**		**33,123.5**

Discrete Appurtenance Forces

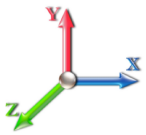
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 19	

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 25

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	147.00	Ericsson RRUS-11	6	7.383	8.121	0.54	0.80	10.21	718.73	0.000	0.000	82.88	0.00	0.00
2	147.00	Powerwave LGP13519	6	7.383	8.121	0.54	0.80	2.60	80.77	0.000	0.000	21.12	0.00	0.00
3	147.00	Powerwave LGP21401	6	7.383	8.121	0.54	0.80	6.92	213.73	0.000	0.000	56.22	0.00	0.00
4	147.00	KMW	3	7.383	8.121	0.68	0.90	18.95	763.01	0.000	0.000	153.91	0.00	0.00
5	147.00	Powerwave 7770.00	6	7.383	8.121	0.66	0.90	26.02	1095.15	0.000	0.000	211.33	0.00	0.00
6	147.00	Low Profile Platform	1	7.383	8.121	1.00	1.00	40.23	2850.85	0.000	0.000	326.68	0.00	0.00
7	138.00	RFS ACU-A20-N	4	7.342	8.076	0.54	0.80	0.96	17.30	0.000	0.000	7.72	0.00	0.00
8	138.00	RFS APXVSPP18-C-A20	3	7.342	8.076	0.66	0.80	18.64	825.86	0.000	0.000	150.53	0.00	0.00
9	138.00	RFS APXVTM14-C-120	3	7.342	8.076	0.63	0.80	14.20	700.32	0.000	0.000	114.68	0.00	0.00
10	138.00	ALU 800MHz	3	7.342	8.076	0.54	0.80	2.33	71.20	0.000	0.000	18.78	0.00	0.00
11	138.00	ALU 800MHz RRH	3	7.342	8.076	0.54	0.80	7.74	447.68	0.000	0.000	62.51	0.00	0.00
12	138.00	ALU TD-RRH8x20-25	3	7.342	8.076	0.54	0.80	7.86	595.49	0.000	0.000	63.50	0.00	0.00
13	138.00	ALU 1900MHz	3	7.342	8.076	0.54	0.80	8.41	402.14	0.000	0.000	67.95	0.00	0.00
14	138.00	Low Profile Platform	1	7.342	8.076	1.00	1.00	40.19	2848.26	0.000	0.000	324.61	0.00	0.00
15	127.50	Platform w/ Hand Rail and	1	7.299	8.029	1.00	1.00	66.39	3478.51	0.000	0.000	533.07	0.00	0.00
16	127.50	Kathrein 782 11054	3	7.299	8.029	0.50	0.75	1.04	23.80	0.000	0.000	8.38	0.00	0.00
17	127.50	RFS	3	7.299	8.029	0.46	0.75	10.61	569.12	0.000	0.000	85.20	0.00	0.00
18	127.50	4424 B25	3	7.299	8.029	0.50	0.75	4.81	285.39	0.000	0.000	38.60	0.00	0.00
19	127.50	4449	3	7.299	8.029	0.50	0.75	3.32	463.98	0.000	0.000	26.68	0.00	0.00
20	127.50	4415 B66A	3	7.299	8.029	0.50	0.75	3.69	274.46	0.000	0.000	29.64	0.00	0.00
21	127.50	Remec S20057A1	3	7.299	8.029	0.50	0.75	2.32	81.61	0.000	0.000	18.61	0.00	0.00
22	127.50	AIR 6449 B41	3	7.299	8.029	0.52	0.75	12.02	988.18	0.000	0.000	96.50	0.00	0.00
23	127.50	APXVAARR24_43-U-NA2	3	7.299	8.029	0.52	0.75	34.96	1754.21	0.000	0.000	280.67	0.00	0.00
24	127.50	RFS ATMAA1412D-1A20	3	7.299	8.029	0.50	0.75	2.98	105.97	0.000	0.000	23.90	0.00	0.00
25	127.50	RFS ATMPP1412D-1CWA	3	7.299	8.029	0.50	0.75	3.00	99.48	0.000	0.000	24.11	0.00	0.00
26	87.00	MC-PK8-DSH	1	7.166	7.883	1.00	1.00	85.83	3423.27	0.000	0.000	676.61	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	7.166	7.883	0.75	0.75	1.94	67.97	0.000	0.000	15.31	0.00	0.00
28	87.00	TA08025-B605	3	7.166	7.883	0.50	0.75	3.82	392.46	0.000	0.000	30.10	0.00	0.00
29	87.00	TA08025-B604	3	7.166	7.883	0.50	0.75	3.82	348.87	0.000	0.000	30.10	0.00	0.00
30	87.00	MX08FRO665-21	3	7.166	7.883	0.55	0.75	23.29	921.85	0.000	0.000	183.57	0.00	0.00
							Totals:		**24,909.62**			**3,763.47**		

Total Applied Force Summary

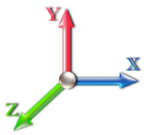
Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 20

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 25

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
5.00		239.93	1799.88	0.00	0.00
10.00		227.47	1799.00	0.00	0.00
15.00		215.64	1782.06	0.00	0.00
20.00		204.58	1758.36	0.00	0.00
25.00		194.27	1731.01	0.00	0.00
30.00		184.82	1701.45	0.00	0.00
35.00		183.76	1670.44	0.00	0.00
40.00		181.81	1638.45	0.00	0.00
45.00		179.22	1605.79	0.00	0.00
48.00		105.95	948.90	0.00	0.00
50.00		70.93	965.81	0.00	0.00
53.25		114.22	1549.53	0.00	0.00
55.00		60.85	543.03	0.00	0.00
60.00		171.69	1525.04	0.00	0.00
65.00		167.93	1491.15	0.00	0.00
70.00		164.06	1457.14	0.00	0.00
75.00		160.10	1423.04	0.00	0.00
80.00		156.08	1388.87	0.00	0.00
85.00		152.02	1354.67	0.00	0.00
87.00	(11) attachments	995.32	5688.14	0.00	0.00
90.00		88.23	767.46	0.00	0.00
95.00		143.83	1249.27	0.00	0.00
97.50		70.33	613.28	0.00	0.00
100.00		70.06	795.84	0.00	0.00
101.50		41.53	472.14	0.00	0.00
105.00		95.50	663.33	0.00	0.00
110.00		132.97	924.22	0.00	0.00
115.00		128.83	898.81	0.00	0.00
120.00		124.69	873.40	0.00	0.00
125.00		120.55	847.97	0.00	0.00
127.50	(31) attachments	1224.04	8540.66	0.00	0.00
130.00		57.64	353.08	0.00	0.00
135.00		112.24	684.06	0.00	0.00
138.00	(23) attachments	875.58	6307.92	0.00	0.00
140.00		42.68	252.68	0.00	0.00
145.00		103.88	610.25	0.00	0.00
147.00	(28) attachments	892.47	5960.66	0.00	0.00
149.00		39.66	198.05	0.00	0.00
	Totals:	**8,495.34**	**64,834.87**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

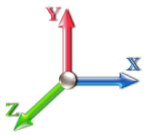
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 21	

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 25

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)
5.00	1.411" Hybrid	Yes	5.00	0.000	1.41	1.87	0.00	0.027	0.000	7.881	0.00	30.62
10.00	1.411" Hybrid	Yes	5.00	0.000	1.41	1.95	0.00	0.028	0.000	7.600	0.00	32.86
15.00	1.411" Hybrid	Yes	5.00	0.000	1.41	1.99	0.00	0.028	0.000	7.343	0.00	34.07
20.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.01	0.00	0.029	0.000	7.107	0.00	34.83
25.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.03	0.00	0.029	0.000	6.891	0.00	35.36
30.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.04	0.00	0.030	0.000	6.698	0.00	35.73
35.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.05	0.00	0.031	0.000	6.808	0.00	35.99
40.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.05	0.00	0.032	0.000	6.891	0.00	36.19
45.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.06	0.00	0.033	0.000	6.953	0.00	36.34
48.00	1.411" Hybrid	Yes	3.00	0.000	1.41	1.24	0.00	0.033	0.000	6.983	0.00	21.85
50.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.82	0.00	0.034	0.000	7.001	0.00	14.58
53.25	1.411" Hybrid	Yes	3.25	0.000	1.41	1.34	0.00	0.034	0.000	7.026	0.00	23.74
55.00	1.411" Hybrid	Yes	1.75	0.000	1.41	0.72	0.00	0.034	0.000	7.038	0.00	12.79
60.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.035	0.000	7.067	0.00	36.62
65.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.036	0.000	7.091	0.00	36.67
70.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.037	0.000	7.112	0.00	36.72
75.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.038	0.000	7.129	0.00	36.76
80.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.039	0.000	7.145	0.00	36.80
85.00	1.411" Hybrid	Yes	5.00	0.000	1.41	2.07	0.00	0.040	0.000	7.160	0.00	36.84
87.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.83	0.00	0.041	0.000	7.166	0.00	14.74
										Totals:	**0.0**	**620.1**

Calculated Forces

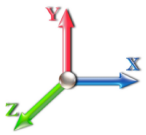
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 22	

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 25

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	-64.83	-8.53	0.00	-863.74	0.00	863.74	3163.75	1581.88	6735.38	3372.69	0.00	0.000	0.000	0.277
5.00	-63.02	-8.37	0.00	-821.06	0.00	821.06	3129.45	1564.72	6519.79	3264.74	0.04	-0.069	0.000	0.272
10.00	-61.21	-8.21	0.00	-779.21	0.00	779.21	3093.71	1546.85	6304.40	3156.89	0.15	-0.139	0.000	0.267
15.00	-59.42	-8.07	0.00	-738.14	0.00	738.14	3056.53	1528.27	6089.41	3049.23	0.33	-0.210	0.000	0.262
20.00	-57.65	-7.93	0.00	-697.80	0.00	697.80	3017.92	1508.96	5875.02	2941.88	0.59	-0.282	0.000	0.256
25.00	-55.91	-7.80	0.00	-658.16	0.00	658.16	2977.88	1488.94	5661.42	2834.92	0.92	-0.355	0.000	0.251
30.00	-54.20	-7.67	0.00	-619.18	0.00	619.18	2936.41	1468.20	5448.81	2728.46	1.33	-0.428	0.000	0.245
35.00	-52.52	-7.54	0.00	-580.84	0.00	580.84	2893.50	1446.75	5237.39	2622.59	1.82	-0.502	0.000	0.240
40.00	-50.88	-7.41	0.00	-543.14	0.00	543.14	2849.16	1424.58	5027.34	2517.41	2.39	-0.577	0.000	0.234
45.00	-49.27	-7.27	0.00	-506.09	0.00	506.09	2803.38	1401.69	4818.87	2413.02	3.03	-0.652	0.000	0.227
48.00	-48.31	-7.18	0.00	-484.30	0.00	484.30	2775.23	1387.61	4694.62	2350.80	3.46	-0.698	0.000	0.223
50.00	-47.34	-7.13	0.00	-469.94	0.00	469.94	2756.17	1378.09	4612.17	2309.51	3.76	-0.729	0.000	0.221
53.25	-45.79	-7.03	0.00	-446.76	0.00	446.76	2752.25	1376.12	4595.34	2301.09	4.27	-0.780	0.000	0.211
55.00	-45.24	-7.00	0.00	-434.47	0.00	434.47	2735.34	1367.67	4523.51	2265.12	4.56	-0.807	0.000	0.208
60.00	-43.71	-6.86	0.00	-399.47	0.00	399.47	2686.08	1343.04	4319.69	2163.06	5.45	-0.880	0.000	0.201
65.00	-42.22	-6.72	0.00	-365.18	0.00	365.18	2635.39	1317.69	4118.12	2062.12	6.41	-0.952	0.000	0.193
70.00	-40.75	-6.58	0.00	-331.57	0.00	331.57	2583.26	1291.63	3918.99	1962.41	7.44	-1.024	0.000	0.185
75.00	-39.33	-6.44	0.00	-298.66	0.00	298.66	2529.69	1264.85	3722.50	1864.02	8.55	-1.095	0.000	0.176
80.00	-37.93	-6.31	0.00	-266.43	0.00	266.43	2474.70	1237.35	3528.85	1767.05	9.74	-1.164	0.000	0.166
85.00	-36.58	-6.16	0.00	-234.90	0.00	234.90	2418.27	1209.13	3338.22	1671.59	10.99	-1.232	0.000	0.156
87.00	-30.91	-5.06	0.00	-222.59	0.00	222.59	2395.29	1197.65	3262.87	1633.86	11.52	-1.260	0.000	0.149
90.00	-30.14	-4.98	0.00	-207.42	0.00	207.42	2360.40	1180.20	3150.83	1577.76	12.32	-1.300	0.000	0.144
95.00	-28.89	-4.83	0.00	-182.53	0.00	182.53	2301.11	1150.55	2966.86	1485.64	13.72	-1.364	0.000	0.135
97.50	-28.27	-4.76	0.00	-170.45	0.00	170.45	2270.92	1135.46	2876.22	1440.25	14.44	-1.396	0.000	0.131
100.00	-27.48	-4.68	0.00	-158.55	0.00	158.55	2235.90	1117.95	2780.94	1392.54	15.18	-1.428	0.000	0.126
101.50	-27.00	-4.64	0.00	-151.53	0.00	151.53	1129.30	564.65	1418.29	710.20	15.63	-1.447	0.000	0.237
105.00	-26.34	-4.56	0.00	-135.28	0.00	135.28	1114.37	557.18	1364.00	683.02	16.71	-1.489	0.000	0.222
110.00	-25.41	-4.44	0.00	-112.47	0.00	112.47	1091.82	545.91	1286.67	644.29	18.31	-1.578	0.000	0.198
115.00	-24.51	-4.32	0.00	-90.26	0.00	90.26	1067.84	533.92	1209.76	605.78	20.01	-1.659	0.000	0.172
120.00	-23.64	-4.20	0.00	-68.65	0.00	68.65	1042.42	521.21	1133.48	567.58	21.79	-1.731	0.000	0.144
125.00	-22.79	-4.07	0.00	-47.66	0.00	47.66	1015.57	507.79	1058.03	529.80	23.64	-1.791	0.000	0.112
127.50	-14.29	-2.58	0.00	-37.49	0.00	37.49	1001.61	500.80	1020.67	511.09	24.58	-1.816	0.000	0.088
130.00	-13.94	-2.52	0.00	-31.04	0.00	31.04	987.29	493.64	983.59	492.52	25.54	-1.837	0.000	0.077
135.00	-13.26	-2.39	0.00	-18.45	0.00	18.45	957.57	478.78	910.36	455.86	27.48	-1.870	0.000	0.054
138.00	-6.98	-1.31	0.00	-11.28	0.00	11.28	939.05	469.53	867.09	434.19	28.66	-1.883	0.000	0.033
140.00	-6.73	-1.26	0.00	-8.66	0.00	8.66	926.42	463.21	838.55	419.90	29.45	-1.890	0.000	0.028
145.00	-6.12	-1.14	0.00	-2.36	0.00	2.36	893.83	446.92	768.34	384.74	31.44	-1.900	0.000	0.013
147.00	-0.20	-0.05	0.00	-0.09	0.00	0.09	880.40	440.20	740.75	370.92	32.23	-1.901	0.000	0.000
149.00	0.00	-0.04	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26	33.03	-1.901	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 23

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.21		**Ss**	0.20
Dead Load Factor	1.20	**Seismic Load Factor**		1.00	**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**		0.33	**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		0.00	0.00	0.00	0.00	0.00	
5.00		863.45	0.00	0.03	0.02	18.87	
10.00		844.89	0.01	0.05	0.03	26.30	
15.00		826.33	0.02	0.06	0.04	29.40	
20.00		807.77	0.03	0.07	0.04	30.55	
25.00		789.20	0.05	0.07	0.04	30.88	
30.00		770.64	0.08	0.07	0.04	30.93	
35.00		752.08	0.10	0.07	0.04	30.93	
40.00		733.52	0.14	0.07	0.03	30.87	
45.00		714.95	0.17	0.07	0.03	30.60	
48.00	Bot - Section 2	420.06	0.20	0.06	0.02	18.03	
50.00		556.88	0.21	0.06	0.02	23.82	
53.25	Top - Section 1	892.26	0.24	0.06	0.02	37.50	
55.00		238.82	0.26	0.05	0.02	9.86	
60.00		669.81	0.31	0.04	0.01	25.00	
65.00		651.25	0.36	0.03	0.01	19.48	
70.00		632.69	0.42	0.01	0.01	11.60	
75.00		614.13	0.48	-0.01	0.01	1.90	
80.00		595.56	0.54	-0.03	0.01	-8.14	
85.00		577.00	0.62	-0.06	0.02	-16.61	
87.00	Appurtenance(s)	2584.7	0.64	-0.07	0.02	-87.18	
90.00		332.83	0.69	-0.08	0.03	-13.18	
95.00		539.87	0.77	-0.11	0.05	-24.14	
97.50	Bot - Section 3	262.98	0.81	-0.11	0.06	-11.85	
100.00		415.87	0.85	-0.12	0.07	-18.26	
101.50	Top - Section 2	245.96	0.88	-0.12	0.08	-10.46	
105.00		213.53	0.94	-0.12	0.10	-7.96	
110.00		295.57	1.03	-0.10	0.15	-7.39	
115.00		284.44	1.13	-0.05	0.20	-2.06	
120.00		273.30	1.23	0.03	0.27	4.36	
125.00		262.16	1.33	0.16	0.36	11.72	
127.50	Appurtenance(s)	3227.2	1.38	0.25	0.42	197.48	
130.00		124.12	1.44	0.36	0.47	9.82	
135.00		239.89	1.55	0.64	0.61	28.59	
138.00	Appurtenance(s)	2554.8	1.62	0.85	0.70	373.20	
140.00		90.16	1.67	1.01	0.77	14.89	
145.00		217.61	1.79	1.49	0.96	47.27	
147.00	Appurtenance(s)	2361.8	1.84	1.72	1.05	566.21	
149.00		82.14	1.89	1.98	1.14	21.63	
	Totals:	**27,560.3**				**1,474.5**	**Total Wind:** **26,671.0**

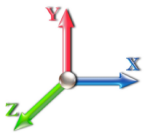
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.21	**Iterations**	23		
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.20		
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**S1**	0.07	**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	-39.37	-1.69	0.00	-205.69	0.00	205.69	3163.75	1581.88	6735.38	3372.69		0.00	0.00	0.073
5.00	-38.10	-1.68	0.00	-197.26	0.00	197.26	3129.45	1564.72	6519.79	3264.74		0.01	-0.02	0.073
10.00	-36.85	-1.66	0.00	-188.87	0.00	188.87	3093.71	1546.85	6304.40	3156.89		0.04	-0.03	0.072
15.00	-35.63	-1.64	0.00	-180.56	0.00	180.56	3056.53	1528.27	6089.41	3049.23		0.08	-0.05	0.071
20.00	-34.43	-1.62	0.00	-172.34	0.00	172.34	3017.92	1508.96	5875.02	2941.88		0.14	-0.07	0.070
25.00	-33.24	-1.60	0.00	-164.23	0.00	164.23	2977.88	1488.94	5661.42	2834.92		0.22	-0.09	0.069
30.00	-32.09	-1.58	0.00	-156.23	0.00	156.23	2936.41	1468.20	5448.81	2728.46		0.32	-0.10	0.068
35.00	-30.95	-1.55	0.00	-148.35	0.00	148.35	2893.50	1446.75	5237.39	2622.59		0.44	-0.12	0.067
40.00	-29.84	-1.53	0.00	-140.57	0.00	140.57	2849.16	1424.58	5027.34	2517.41		0.58	-0.14	0.066
45.00	-28.74	-1.51	0.00	-132.92	0.00	132.92	2803.38	1401.69	4818.87	2413.02		0.74	-0.16	0.065
48.00	-28.10	-1.49	0.00	-128.40	0.00	128.40	2775.23	1387.61	4694.62	2350.80		0.85	-0.17	0.065
50.00	-27.34	-1.47	0.00	-125.42	0.00	125.42	2756.17	1378.09	4612.17	2309.51		0.92	-0.18	0.064
53.25	-26.12	-1.43	0.00	-120.64	0.00	120.64	2752.25	1376.12	4595.34	2301.09		1.05	-0.20	0.062
55.00	-25.75	-1.43	0.00	-118.13	0.00	118.13	2735.34	1367.67	4523.51	2265.12		1.13	-0.20	0.062
60.00	-24.71	-1.41	0.00	-110.99	0.00	110.99	2686.08	1343.04	4319.69	2163.06		1.35	-0.22	0.061
65.00	-23.69	-1.39	0.00	-103.95	0.00	103.95	2635.39	1317.69	4118.12	2062.12		1.60	-0.24	0.059
70.00	-22.70	-1.39	0.00	-96.99	0.00	96.99	2583.26	1291.63	3918.99	1962.41		1.86	-0.26	0.058
75.00	-21.73	-1.39	0.00	-90.06	0.00	90.06	2529.69	1264.85	3722.50	1864.02		2.15	-0.29	0.057
80.00	-20.78	-1.39	0.00	-83.13	0.00	83.13	2474.70	1237.35	3528.85	1767.05		2.46	-0.31	0.055
85.00	-19.85	-1.39	0.00	-76.18	0.00	76.18	2418.27	1209.13	3338.22	1671.59		2.80	-0.33	0.054
87.00	-16.66	-1.37	0.00	-73.40	0.00	73.40	2395.29	1197.65	3262.87	1633.86		2.94	-0.34	0.052
90.00	-16.12	-1.38	0.00	-69.28	0.00	69.28	2360.40	1180.20	3150.83	1577.76		3.15	-0.35	0.051
95.00	-15.25	-1.38	0.00	-62.40	0.00	62.40	2301.11	1150.55	2966.86	1485.64		3.53	-0.37	0.049
97.50	-14.82	-1.38	0.00	-58.96	0.00	58.96	2270.92	1135.46	2876.22	1440.25		3.73	-0.38	0.047
100.00	-14.21	-1.37	0.00	-55.52	0.00	55.52	2235.90	1117.95	2780.94	1392.54		3.93	-0.39	0.046
101.50	-13.84	-1.37	0.00	-53.46	0.00	53.46	1129.30	564.65	1418.29	710.20		4.06	-0.40	0.088
105.00	-13.43	-1.38	0.00	-48.66	0.00	48.66	1114.37	557.18	1364.00	683.02		4.36	-0.42	0.083
110.00	-12.85	-1.38	0.00	-41.78	0.00	41.78	1091.82	545.91	1286.67	644.29		4.81	-0.45	0.077
115.00	-12.28	-1.38	0.00	-34.88	0.00	34.88	1067.84	533.92	1209.76	605.78		5.30	-0.48	0.069
120.00	-11.72	-1.38	0.00	-27.98	0.00	27.98	1042.42	521.21	1133.48	567.58		5.82	-0.51	0.061
125.00	-11.18	-1.36	0.00	-21.10	0.00	21.10	1015.57	507.79	1058.03	529.80		6.36	-0.53	0.051
127.50	-7.20	-1.13	0.00	-17.69	0.00	17.69	1001.61	500.80	1020.67	511.09		6.65	-0.54	0.042
130.00	-6.99	-1.12	0.00	-14.86	0.00	14.86	987.29	493.64	983.59	492.52		6.93	-0.55	0.037
135.00	-6.59	-1.09	0.00	-9.26	0.00	9.26	957.57	478.78	910.36	455.86		7.52	-0.57	0.027
138.00	-3.46	-0.68	0.00	-5.99	0.00	5.99	939.05	469.53	867.09	434.19		7.89	-0.58	0.017
140.00	-3.31	-0.67	0.00	-4.62	0.00	4.62	926.42	463.21	838.55	419.90		8.13	-0.58	0.015
145.00	-2.96	-0.62	0.00	-1.28	0.00	1.28	893.83	446.92	768.34	384.74		8.74	-0.59	0.007
147.00	-0.10	-0.02	0.00	-0.05	0.00	0.05	880.40	440.20	740.75	370.92		8.99	-0.59	0.000
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26		9.23	-0.59	0.000

Seismic Segment Forces (Factored)

Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.21	**Iterations**	23
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**S1**	0.07
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		863.45	0.00	0.03	0.02	18.87	
10.00		844.89	0.01	0.05	0.03	26.30	
15.00		826.33	0.02	0.06	0.04	29.40	
20.00		807.77	0.03	0.07	0.04	30.55	
25.00		789.20	0.05	0.07	0.04	30.88	
30.00		770.64	0.08	0.07	0.04	30.93	
35.00		752.08	0.10	0.07	0.04	30.93	
40.00		733.52	0.14	0.07	0.03	30.87	
45.00		714.95	0.17	0.07	0.03	30.60	
48.00	Bot - Section 2	420.06	0.20	0.06	0.02	18.03	
50.00		556.88	0.21	0.06	0.02	23.82	
53.25	Top - Section 1	892.26	0.24	0.06	0.02	37.50	
55.00		238.82	0.26	0.05	0.02	9.86	
60.00		669.81	0.31	0.04	0.01	25.00	
65.00		651.25	0.36	0.03	0.01	19.48	
70.00		632.69	0.42	0.01	0.01	11.60	
75.00		614.13	0.48	-0.01	0.01	1.90	
80.00		595.56	0.54	-0.03	0.01	-8.14	
85.00		577.00	0.62	-0.06	0.02	-16.61	
87.00	Appurtenance(s)	2584.7	0.64	-0.07	0.02	-87.18	
90.00		332.83	0.69	-0.08	0.03	-13.18	
95.00		539.87	0.77	-0.11	0.05	-24.14	
97.50	Bot - Section 3	262.98	0.81	-0.11	0.06	-11.85	
100.00		415.87	0.85	-0.12	0.07	-18.26	
101.50	Top - Section 2	245.96	0.88	-0.12	0.08	-10.46	
105.00		213.53	0.94	-0.12	0.10	-7.96	
110.00		295.57	1.03	-0.10	0.15	-7.39	
115.00		284.44	1.13	-0.05	0.20	-2.06	
120.00		273.30	1.23	0.03	0.27	4.36	
125.00		262.16	1.33	0.16	0.36	11.72	
127.50	Appurtenance(s)	3227.2	1.38	0.25	0.42	197.48	
130.00		124.12	1.44	0.36	0.47	9.82	
135.00		239.89	1.55	0.64	0.61	28.59	
138.00	Appurtenance(s)	2554.8	1.62	0.85	0.70	373.20	
140.00		90.16	1.67	1.01	0.77	14.89	
145.00		217.61	1.79	1.49	0.96	47.27	
147.00	Appurtenance(s)	2361.8	1.84	1.72	1.05	566.21	
149.00		82.14	1.89	1.98	1.14	21.63	
	Totals:	**27,560.3**				**1,474.5**	**Total Wind:** **26,671.0**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor	1.10			**Sds**	0.21			**Ss**	0.20
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**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	-29.53	-1.68	0.00	-202.67	0.00	202.67	3163.75	1581.88	6735.38	3372.69		0.00	0.00	0.069
5.00	-28.58	-1.67	0.00	-194.25	0.00	194.25	3129.45	1564.72	6519.79	3264.74		0.01	-0.02	0.069
10.00	-27.64	-1.66	0.00	-185.88	0.00	185.88	3093.71	1546.85	6304.40	3156.89		0.03	-0.03	0.068
15.00	-26.72	-1.63	0.00	-177.60	0.00	177.60	3056.53	1528.27	6089.41	3049.23		0.08	-0.05	0.067
20.00	-25.82	-1.61	0.00	-169.44	0.00	169.44	3017.92	1508.96	5875.02	2941.88		0.14	-0.07	0.066
25.00	-24.93	-1.59	0.00	-161.39	0.00	161.39	2977.88	1488.94	5661.42	2834.92		0.22	-0.08	0.065
30.00	-24.06	-1.56	0.00	-153.46	0.00	153.46	2936.41	1468.20	5448.81	2728.46		0.32	-0.10	0.064
35.00	-23.21	-1.54	0.00	-145.65	0.00	145.65	2893.50	1446.75	5237.39	2622.59		0.44	-0.12	0.064
40.00	-22.38	-1.51	0.00	-137.97	0.00	137.97	2849.16	1424.58	5027.34	2517.41		0.57	-0.14	0.063
45.00	-21.56	-1.48	0.00	-130.42	0.00	130.42	2803.38	1401.69	4818.87	2413.02		0.73	-0.16	0.062
48.00	-21.07	-1.47	0.00	-125.97	0.00	125.97	2775.23	1387.61	4694.62	2350.80		0.84	-0.17	0.061
50.00	-20.50	-1.45	0.00	-123.04	0.00	123.04	2756.17	1378.09	4612.17	2309.51		0.91	-0.18	0.061
53.25	-19.59	-1.41	0.00	-118.34	0.00	118.34	2752.25	1376.12	4595.34	2301.09		1.04	-0.19	0.059
55.00	-19.31	-1.40	0.00	-115.87	0.00	115.87	2735.34	1367.67	4523.51	2265.12		1.11	-0.20	0.058
60.00	-18.53	-1.38	0.00	-108.85	0.00	108.85	2686.08	1343.04	4319.69	2163.06		1.33	-0.22	0.057
65.00	-17.77	-1.37	0.00	-101.95	0.00	101.95	2635.39	1317.69	4118.12	2062.12		1.57	-0.24	0.056
70.00	-17.02	-1.36	0.00	-95.12	0.00	95.12	2583.26	1291.63	3918.99	1962.41		1.83	-0.26	0.055
75.00	-16.30	-1.36	0.00	-88.34	0.00	88.34	2529.69	1264.85	3722.50	1864.02		2.11	-0.28	0.054
80.00	-15.58	-1.36	0.00	-81.55	0.00	81.55	2474.70	1237.35	3528.85	1767.05		2.42	-0.30	0.052
85.00	-14.89	-1.36	0.00	-74.76	0.00	74.76	2418.27	1209.13	3338.22	1671.59		2.75	-0.32	0.051
87.00	-12.49	-1.35	0.00	-72.04	0.00	72.04	2395.29	1197.65	3262.87	1633.86		2.88	-0.33	0.049
90.00	-12.09	-1.35	0.00	-67.99	0.00	67.99	2360.40	1180.20	3150.83	1577.76		3.10	-0.34	0.048
95.00	-11.43	-1.35	0.00	-61.25	0.00	61.25	2301.11	1150.55	2966.86	1485.64		3.47	-0.37	0.046
97.50	-11.11	-1.35	0.00	-57.88	0.00	57.88	2270.92	1135.46	2876.22	1440.25		3.66	-0.38	0.045
100.00	-10.65	-1.35	0.00	-54.51	0.00	54.51	2235.90	1117.95	2780.94	1392.54		3.86	-0.39	0.044
101.50	-10.38	-1.35	0.00	-52.49	0.00	52.49	1129.30	564.65	1418.29	710.20		3.99	-0.39	0.083
105.00	-10.07	-1.35	0.00	-47.77	0.00	47.77	1114.37	557.18	1364.00	683.02		4.28	-0.41	0.079
110.00	-9.63	-1.35	0.00	-41.02	0.00	41.02	1091.82	545.91	1286.67	644.29		4.73	-0.44	0.073
115.00	-9.21	-1.35	0.00	-34.27	0.00	34.27	1067.84	533.92	1209.76	605.78		5.21	-0.47	0.065
120.00	-8.79	-1.35	0.00	-27.50	0.00	27.50	1042.42	521.21	1133.48	567.58		5.71	-0.50	0.057
125.00	-8.38	-1.34	0.00	-20.76	0.00	20.76	1015.57	507.79	1058.03	529.80		6.25	-0.52	0.047
127.50	-5.39	-1.11	0.00	-17.42	0.00	17.42	1001.61	500.80	1020.67	511.09		6.53	-0.53	0.039
130.00	-5.24	-1.10	0.00	-14.64	0.00	14.64	987.29	493.64	983.59	492.52		6.81	-0.54	0.035
135.00	-4.94	-1.07	0.00	-9.13	0.00	9.13	957.57	478.78	910.36	455.86		7.39	-0.56	0.025
138.00	-2.59	-0.68	0.00	-5.91	0.00	5.91	939.05	469.53	867.09	434.19		7.75	-0.57	0.016
140.00	-2.48	-0.66	0.00	-4.56	0.00	4.56	926.42	463.21	838.55	419.90		7.98	-0.57	0.014
145.00	-2.22	-0.61	0.00	-1.26	0.00	1.26	893.83	446.92	768.34	384.74		8.59	-0.58	0.006
147.00	-0.07	-0.02	0.00	-0.04	0.00	0.04	880.40	440.20	740.75	370.92		8.83	-0.58	0.000
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26		9.07	-0.58	0.000

Wind Loading - Shaft

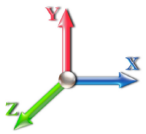
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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		1.92	0.70	11.790	12.97	306.55	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.85	0.70	11.348	12.48	294.39	0.650	0.000	5.00	21.781	14.16	176.7	0.0	863.5
10.00		1.79	0.70	10.944	12.04	282.85	0.650	0.000	5.00	21.315	13.86	166.8	0.0	844.9
15.00		1.73	0.70	10.573	11.63	271.89	0.650	0.000	5.00	20.850	13.55	157.6	0.0	826.3
20.00		1.67	0.70	10.234	11.26	261.45	0.650	0.000	5.00	20.385	13.25	149.2	0.0	807.8
25.00		1.62	0.70	9.923	10.91	251.50	0.650	0.000	5.00	19.919	12.95	141.3	0.0	789.2
30.00		1.57	0.70	9.645	10.61	242.09	0.650	0.000	5.00	19.454	12.65	134.2	0.0	770.6
35.00		1.53	0.73	9.804	10.78	238.17	0.650	0.000	5.00	18.988	12.34	133.1	0.0	752.1
40.00		1.49	0.76	9.923	10.91	233.66	0.650	0.000	5.00	18.523	12.04	131.4	0.0	733.5
45.00		1.45	0.79	10.012	11.01	228.74	0.650	0.000	5.00	18.058	11.74	129.3	0.0	715.0
48.00	Bot - Section 2	1.43	0.80	10.055	11.06	225.64	0.650	0.000	3.00	10.611	6.90	76.3	0.0	420.1
50.00		1.42	0.81	10.081	11.09	223.53	0.650	0.000	2.00	7.087	4.61	51.1	0.0	556.9
53.25	Top - Section 1	1.40	0.83	10.117	11.13	220.03	0.650	0.000	3.25	11.357	7.38	82.2	0.0	892.3
55.00		1.39	0.83	10.134	11.15	221.53	0.650	0.000	1.75	6.034	3.92	43.7	0.0	238.8
60.00		1.36	0.85	10.177	11.19	215.97	0.650	0.000	5.00	16.926	11.00	123.2	0.0	669.8
65.00		1.33	0.87	10.211	11.23	210.31	0.650	0.000	5.00	16.460	10.70	120.2	0.0	651.3
70.00		1.31	0.89	10.241	11.26	204.57	0.650	0.000	5.00	15.995	10.40	117.1	0.0	632.7
75.00		1.29	0.91	10.266	11.29	198.77	0.650	0.000	5.00	15.530	10.09	114.0	0.0	614.1
80.00		1.27	0.93	10.289	11.32	192.94	0.650	0.000	5.00	15.064	9.79	110.8	0.0	595.6
85.00		1.25	0.94	10.311	11.34	187.08	0.650	0.000	5.00	14.599	9.49	107.6	0.0	577.0
87.00	Appurtenance(s)	1.24	0.95	10.319	11.35	184.74	0.650	0.000	2.00	5.709	3.71	42.1	0.0	225.6
90.00		1.23	0.96	10.332	11.37	181.21	0.650	0.000	3.00	8.424	5.48	62.2	0.0	332.8
95.00		1.21	0.97	10.353	11.39	175.32	0.650	0.000	5.00	13.668	8.88	101.2	0.0	539.9
97.50	Bot - Section 3	1.21	0.98	10.364	11.40	172.37	0.650	0.000	2.50	6.660	4.33	49.3	0.0	263.0
100.00		1.20	0.99	10.375	11.41	169.42	0.650	0.000	2.50	6.622	4.30	49.1	0.0	415.9
101.50	Top - Section 2	1.19	0.99	10.381	11.42	167.65	0.650	0.000	1.50	3.918	2.55	29.1	0.0	246.0
105.00		1.18	1.00	10.397	11.44	165.59	0.650	0.000	3.50	8.978	5.84	66.7	0.0	213.5
110.00		1.17	1.02	10.420	11.46	159.68	0.650	0.000	5.00	12.431	8.08	92.6	0.0	295.6
115.00		1.16	1.03	10.444	11.49	153.77	0.650	0.000	5.00	11.965	7.78	89.4	0.0	284.4
120.00		1.15	1.04	10.470	11.52	147.85	0.650	0.000	5.00	11.500	7.47	86.1	0.0	273.3
125.00		1.14	1.05	10.497	11.55	141.93	0.650	0.000	5.00	11.034	7.17	82.8	0.0	262.2
127.50	Appurtenance(s)	1.13	1.06	10.511	11.56	138.96	0.650	0.000	2.50	5.343	3.47	40.2	0.0	126.9
130.00		1.13	1.07	10.525	11.58	135.99	0.650	0.000	2.50	5.226	3.40	39.3	0.0	124.1
135.00		1.12	1.08	10.554	11.61	130.05	0.650	0.000	5.00	10.103	6.57	76.2	0.0	239.9
138.00	Appurtenance(s)	1.11	1.08	10.573	11.63	126.48	0.650	0.000	3.00	5.839	3.80	44.1	0.0	138.6
140.00		1.11	1.09	10.585	11.64	124.10	0.650	0.000	2.00	3.799	2.47	28.8	0.0	90.2
145.00		1.10	1.10	10.618	11.68	118.14	0.650	0.000	5.00	9.173	5.96	69.6	0.0	217.6
147.00	Appurtenance(s)	1.10	1.10	10.631	11.69	115.75	0.650	0.000	2.00	3.539	2.30	26.9	0.0	83.9
149.00		1.10	1.11	10.644	11.71	113.36	0.650	0.000	2.00	3.464	2.25	26.4	0.0	82.1
								Totals:	**149.00**			**3,367.9**		**17,406.7**

Discrete Appurtenance Forces

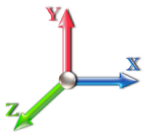
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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	147.00	Ericsson RRUS-11	6	10.631	11.694	0.54	0.80	8.10	306.00	0.000	0.000	94.77	0.00	0.00
2	147.00	Powerwave LGP13519	6	10.631	11.694	0.54	0.80	1.09	31.80	0.000	0.000	12.79	0.00	0.00
3	147.00	Powerwave LGP21401	6	10.631	11.694	0.54	0.80	4.15	84.60	0.000	0.000	48.51	0.00	0.00
4	147.00	KMW	3	10.631	11.694	0.68	0.90	16.24	145.50	0.000	0.000	189.92	0.00	0.00
5	147.00	Powerwave 7770.00	6	10.631	11.694	0.66	0.90	21.68	210.00	0.000	0.000	253.54	0.00	0.00
6	147.00	Low Profile Platform	1	10.631	11.694	1.00	1.00	22.00	1500.00	0.000	0.000	257.27	0.00	0.00
7	138.00	RFS ACU-A20-N	4	10.573	11.630	0.54	0.80	0.30	4.00	0.000	0.000	3.49	0.00	0.00
8	138.00	RFS APXVSPP18-C-A20	3	10.573	11.630	0.66	0.80	15.98	171.00	0.000	0.000	185.80	0.00	0.00
9	138.00	RFS APXVTM14-C-120	3	10.573	11.630	0.63	0.80	12.02	168.00	0.000	0.000	139.80	0.00	0.00
10	138.00	ALU 800MHz	3	10.573	11.630	0.54	0.80	1.25	26.40	0.000	0.000	14.59	0.00	0.00
11	138.00	ALU 800MHz RRH	3	10.573	11.630	0.54	0.80	5.56	204.90	0.000	0.000	64.71	0.00	0.00
12	138.00	ALU TD-RRH8x20-25	3	10.573	11.630	0.54	0.80	6.51	210.00	0.000	0.000	75.74	0.00	0.00
13	138.00	ALU 1900MHz	3	10.573	11.630	0.54	0.80	6.11	132.00	0.000	0.000	71.06	0.00	0.00
14	138.00	Low Profile Platform	1	10.573	11.630	1.00	1.00	22.00	1500.00	0.000	0.000	255.86	0.00	0.00
15	127.50	Platform w/ Hand Rail and	1	10.511	11.562	1.00	1.00	35.00	1600.00	0.000	0.000	404.66	0.00	0.00
16	127.50	Kathrein 782 11054	3	10.511	11.562	0.50	0.75	0.42	7.80	0.000	0.000	4.88	0.00	0.00
17	127.50	RFS	3	10.511	11.562	0.46	0.75	9.01	122.10	0.000	0.000	104.19	0.00	0.00
18	127.50	4424 B25	3	10.511	11.562	0.50	0.75	3.30	135.00	0.000	0.000	38.17	0.00	0.00
19	127.50	4449	3	10.511	11.562	0.50	0.75	2.49	210.00	0.000	0.000	28.76	0.00	0.00
20	127.50	4415 B66A	3	10.511	11.562	0.50	0.75	2.80	132.30	0.000	0.000	32.42	0.00	0.00
21	127.50	Remec S20057A1	3	10.511	11.562	0.50	0.75	1.24	33.00	0.000	0.000	14.29	0.00	0.00
22	127.50	AIR 6449 B41	3	10.511	11.562	0.52	0.75	10.28	399.60	0.000	0.000	118.91	0.00	0.00
23	127.50	APXVAARR24_43-U-NA2	3	10.511	11.562	0.52	0.75	31.88	384.00	0.000	0.000	368.56	0.00	0.00
24	127.50	RFS ATMAA1412D-1A20	3	10.511	11.562	0.50	0.75	1.76	39.00	0.000	0.000	20.39	0.00	0.00
25	127.50	RFS ATMPP1412D-1CWA	3	10.511	11.562	0.50	0.75	1.76	37.50	0.000	0.000	20.39	0.00	0.00
26	87.00	MC-PK8-DSH	1	10.319	11.351	1.00	1.00	37.59	1727.00	0.000	0.000	426.70	0.00	0.00
27	87.00	RDIDC-9181-OF-48	1	10.319	11.351	0.75	0.75	1.51	21.90	0.000	0.000	17.11	0.00	0.00
28	87.00	TA08025-B605	3	10.319	11.351	0.50	0.75	2.95	225.00	0.000	0.000	33.54	0.00	0.00
29	87.00	TA08025-B604	3	10.319	11.351	0.50	0.75	2.95	191.70	0.000	0.000	33.54	0.00	0.00
30	87.00	MX08FRO665-21	3	10.319	11.351	0.55	0.75	20.80	193.50	0.000	0.000	236.06	0.00	0.00
							Totals:		**10,153.60**			**3,570.42**		

Total Applied Force Summary

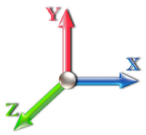
Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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
5.00		176.73	1058.03	0.00	0.00
10.00		166.79	1039.47	0.00	0.00
15.00		157.63	1020.91	0.00	0.00
20.00		149.16	1002.35	0.00	0.00
25.00		141.32	983.78	0.00	0.00
30.00		134.15	965.22	0.00	0.00
35.00		133.11	946.66	0.00	0.00
40.00		131.42	928.10	0.00	0.00
45.00		129.27	909.53	0.00	0.00
48.00		76.29	536.81	0.00	0.00
50.00		51.08	634.71	0.00	0.00
53.25		82.15	1018.73	0.00	0.00
55.00		43.72	306.92	0.00	0.00
60.00		123.16	864.39	0.00	0.00
65.00		120.18	845.83	0.00	0.00
70.00		117.12	827.27	0.00	0.00
75.00		113.99	808.71	0.00	0.00
80.00		110.82	790.14	0.00	0.00
85.00		107.63	771.58	0.00	0.00
87.00	(11) attachments	789.07	2662.53	0.00	0.00
90.00		62.23	446.16	0.00	0.00
95.00		101.18	728.75	0.00	0.00
97.50		49.35	357.42	0.00	0.00
100.00		49.12	510.31	0.00	0.00
101.50		29.08	302.62	0.00	0.00
105.00		66.74	345.75	0.00	0.00
110.00		92.61	484.45	0.00	0.00
115.00		89.35	473.32	0.00	0.00
120.00		86.09	462.18	0.00	0.00
125.00		82.81	451.04	0.00	0.00
127.50	(31) attachments	1195.77	3321.64	0.00	0.00
130.00		39.33	171.46	0.00	0.00
135.00		76.25	334.57	0.00	0.00
138.00	(23) attachments	855.19	2611.69	0.00	0.00
140.00		28.76	120.40	0.00	0.00
145.00		69.64	293.21	0.00	0.00
147.00	(28) attachments	883.69	2392.07	0.00	0.00
149.00		26.37	82.14	0.00	0.00
	Totals:	**6,938.34**	**32,810.87**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

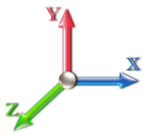
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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)
5.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.027	0.000	11.348	0.00	5.70
10.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	10.944	0.00	5.70
15.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	10.573	0.00	5.70
20.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	10.234	0.00	5.70
25.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	9.923	0.00	5.70
30.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	9.645	0.00	5.70
35.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	9.804	0.00	5.70
40.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	9.923	0.00	5.70
45.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	10.012	0.00	5.70
48.00	1.411" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.033	0.000	10.055	0.00	3.42
50.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.034	0.000	10.081	0.00	2.28
53.25	1.411" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.034	0.000	10.117	0.00	3.70
55.00	1.411" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.034	0.000	10.134	0.00	1.99
60.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	10.177	0.00	5.70
65.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	10.211	0.00	5.70
70.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.037	0.000	10.241	0.00	5.70
75.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.038	0.000	10.266	0.00	5.70
80.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.039	0.000	10.289	0.00	5.70
85.00	1.411" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	10.311	0.00	5.70
87.00	1.411" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.041	0.000	10.319	0.00	2.28
										Totals:	**0.0**	**99.2**

Calculated Forces

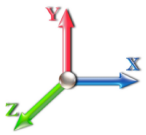
Structure:	CT13058-A-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	Southbury	**Exposure:**	B		
Height:	149.00 (ft)	**Crest Height:**	89.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 2	**Struct Class:**	II	Page: 31	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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	-32.81	-6.95	0.00	-701.74	0.00	701.74	3163.75	1581.88	6735.38	3372.69	0.00	0.000	0.000	0.218
5.00	-31.74	-6.81	0.00	-666.97	0.00	666.97	3129.45	1564.72	6519.79	3264.74	0.03	-0.056	0.000	0.214
10.00	-30.70	-6.67	0.00	-632.94	0.00	632.94	3093.71	1546.85	6304.40	3156.89	0.12	-0.113	0.000	0.210
15.00	-29.67	-6.54	0.00	-599.59	0.00	599.59	3056.53	1528.27	6089.41	3049.23	0.27	-0.171	0.000	0.206
20.00	-28.66	-6.42	0.00	-566.89	0.00	566.89	3017.92	1508.96	5875.02	2941.88	0.48	-0.229	0.000	0.202
25.00	-27.67	-6.30	0.00	-534.80	0.00	534.80	2977.88	1488.94	5661.42	2834.92	0.75	-0.288	0.000	0.198
30.00	-26.70	-6.19	0.00	-503.31	0.00	503.31	2936.41	1468.20	5448.81	2728.46	1.08	-0.348	0.000	0.194
35.00	-25.75	-6.08	0.00	-472.37	0.00	472.37	2893.50	1446.75	5237.39	2622.59	1.48	-0.408	0.000	0.189
40.00	-24.82	-5.96	0.00	-441.99	0.00	441.99	2849.16	1424.58	5027.34	2517.41	1.94	-0.469	0.000	0.184
45.00	-23.90	-5.85	0.00	-412.17	0.00	412.17	2803.38	1401.69	4818.87	2413.02	2.47	-0.530	0.000	0.179
48.00	-23.36	-5.78	0.00	-394.63	0.00	394.63	2775.23	1387.61	4694.62	2350.80	2.81	-0.568	0.000	0.176
50.00	-22.73	-5.73	0.00	-383.07	0.00	383.07	2756.17	1378.09	4612.17	2309.51	3.05	-0.593	0.000	0.174
53.25	-21.70	-5.65	0.00	-364.44	0.00	364.44	2752.25	1376.12	4595.34	2301.09	3.47	-0.634	0.000	0.166
55.00	-21.39	-5.62	0.00	-354.54	0.00	354.54	2735.34	1367.67	4523.51	2265.12	3.71	-0.656	0.000	0.164
60.00	-20.53	-5.51	0.00	-326.44	0.00	326.44	2686.08	1343.04	4319.69	2163.06	4.43	-0.716	0.000	0.159
65.00	-19.68	-5.40	0.00	-298.89	0.00	298.89	2635.39	1317.69	4118.12	2062.12	5.21	-0.775	0.000	0.152
70.00	-18.84	-5.29	0.00	-271.90	0.00	271.90	2583.26	1291.63	3918.99	1962.41	6.05	-0.834	0.000	0.146
75.00	-18.03	-5.18	0.00	-245.46	0.00	245.46	2529.69	1264.85	3722.50	1864.02	6.96	-0.892	0.000	0.139
80.00	-17.24	-5.07	0.00	-219.56	0.00	219.56	2474.70	1237.35	3528.85	1767.05	7.92	-0.949	0.000	0.131
85.00	-16.47	-4.96	0.00	-194.19	0.00	194.19	2418.27	1209.13	3338.22	1671.59	8.95	-1.005	0.000	0.123
87.00	-13.82	-4.14	0.00	-184.26	0.00	184.26	2395.29	1197.65	3262.87	1633.86	9.37	-1.028	0.000	0.119
90.00	-13.37	-4.08	0.00	-171.85	0.00	171.85	2360.40	1180.20	3150.83	1577.76	10.03	-1.061	0.000	0.115
95.00	-12.64	-3.97	0.00	-151.48	0.00	151.48	2301.11	1150.55	2966.86	1485.64	11.17	-1.114	0.000	0.107
97.50	-12.28	-3.92	0.00	-141.55	0.00	141.55	2270.92	1135.46	2876.22	1440.25	11.76	-1.141	0.000	0.104
100.00	-11.77	-3.86	0.00	-131.76	0.00	131.76	2235.90	1117.95	2780.94	1392.54	12.36	-1.167	0.000	0.100
101.50	-11.47	-3.83	0.00	-125.96	0.00	125.96	1129.30	564.65	1418.29	710.20	12.73	-1.183	0.000	0.188
105.00	-11.12	-3.77	0.00	-112.55	0.00	112.55	1114.37	557.18	1364.00	683.02	13.61	-1.218	0.000	0.175
110.00	-10.63	-3.68	0.00	-93.70	0.00	93.70	1091.82	545.91	1286.67	644.29	14.93	-1.292	0.000	0.155
115.00	-10.16	-3.59	0.00	-75.30	0.00	75.30	1067.84	533.92	1209.76	605.78	16.32	-1.360	0.000	0.134
120.00	-9.69	-3.50	0.00	-57.35	0.00	57.35	1042.42	521.21	1133.48	567.58	17.78	-1.420	0.000	0.110
125.00	-9.24	-3.41	0.00	-39.83	0.00	39.83	1015.57	507.79	1058.03	529.80	19.29	-1.470	0.000	0.084
127.50	-5.95	-2.14	0.00	-31.29	0.00	31.29	1001.61	500.80	1020.67	511.09	20.07	-1.491	0.000	0.067
130.00	-5.78	-2.09	0.00	-25.96	0.00	25.96	987.29	493.64	983.59	492.52	20.85	-1.508	0.000	0.059
135.00	-5.45	-2.01	0.00	-15.49	0.00	15.49	957.57	478.78	910.36	455.86	22.45	-1.536	0.000	0.040
138.00	-2.86	-1.09	0.00	-9.45	0.00	9.45	939.05	469.53	867.09	434.19	23.42	-1.547	0.000	0.025
140.00	-2.74	-1.05	0.00	-7.28	0.00	7.28	926.42	463.21	838.55	419.90	24.07	-1.553	0.000	0.020
145.00	-2.45	-0.98	0.00	-2.01	0.00	2.01	893.83	446.92	768.34	384.74	25.70	-1.561	0.000	0.008
147.00	-0.08	-0.03	0.00	-0.06	0.00	0.06	880.40	440.20	740.75	370.92	26.35	-1.562	0.000	0.000
149.00	0.00	-0.03	0.00	0.00	0.00	0.00	866.73	433.37	713.46	357.26	27.01	-1.562	0.000	0.000

Final Analysis Summary

Structure:	CT13058-A-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 32

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 93 mph Wind	26.7	0.00	39.32	0.00	0.00	2717.90
0.9D + 1.6W 93 mph Wind	26.7	0.00	29.48	0.00	0.00	2682.13
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.5	0.00	64.83	0.00	0.00	863.74
1.2D + 1.0E	1.7	0.00	39.37	0.00	0.00	205.69
0.9D + 1.0E	1.7	0.00	29.53	0.00	0.00	202.67
1.0D + 1.0W 60 mph Wind	7.0	0.00	32.81	0.00	0.00	701.74

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 93 mph Wind	-39.32	-26.75	0.00	-2717.9	0.00	-2717.9	3163.75	1581.8	6735.38	3372.69	0.00	0.819
0.9D + 1.6W 93 mph Wind	-29.48	-26.73	0.00	-2682.1	0.00	-2682.1	3163.75	1581.8	6735.38	3372.69	0.00	0.805
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-64.83	-8.53	0.00	-863.74	0.00	-863.74	3163.75	1581.8	6735.38	3372.69	0.00	0.277
1.2D + 1.0E	-13.84	-1.37	0.00	-53.46	0.00	-53.46	1129.30	564.65	1418.29	710.20	101.50	0.088
0.9D + 1.0E	-10.38	-1.35	0.00	-52.49	0.00	-52.49	1129.30	564.65	1418.29	710.20	101.50	0.083
1.0D + 1.0W 60 mph Wind	-32.81	-6.95	0.00	-701.74	0.00	-701.74	3163.75	1581.8	6735.38	3372.69	0.00	0.218

Base Plate Summary

Structure:	CT13058-A-SB		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	Southbury		**Exposure:**	B	
Height:	149.00 (ft)		**Crest Height:**	89.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 2	**Struct Class:**	II	Page: 33

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	2497.00
Axial (kip):	29.00
Shear (kip):	23.00
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	2717.90
Axial (kip):	39.32
Shear (kip):	26.75

Base Plate	
Yield (ksi):	60.00
Width (in):	56.00
Style:	Clipped
Polygon Sides:	4.00
Clip Length (in):	8.00
Effective Len (in):	10.38
Moment (kip-in):	597.24
Allow Stress (ksi):	81.00
Applied Stress (ksi):	45.36
Stress Ratio:	0.56

Anchor Bolts	
Bolt Circle:	58.25
Number Bolts:	12.00
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):	192.04
Allowable (kip):	260.00
Ratio:	0.76
Tension	
Force (kip):	181.23
Allowable (kip):	260.00
Ratio:	0.71

Monopole Mat Foundation Design

				Date
				11/15/2021
	Customer Name:	Dish Wireless	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	149
	Site Number:	CT13058-A-SBA	**Engineer Name:**	J. Tibbetts
	Engr. Number:	119251	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

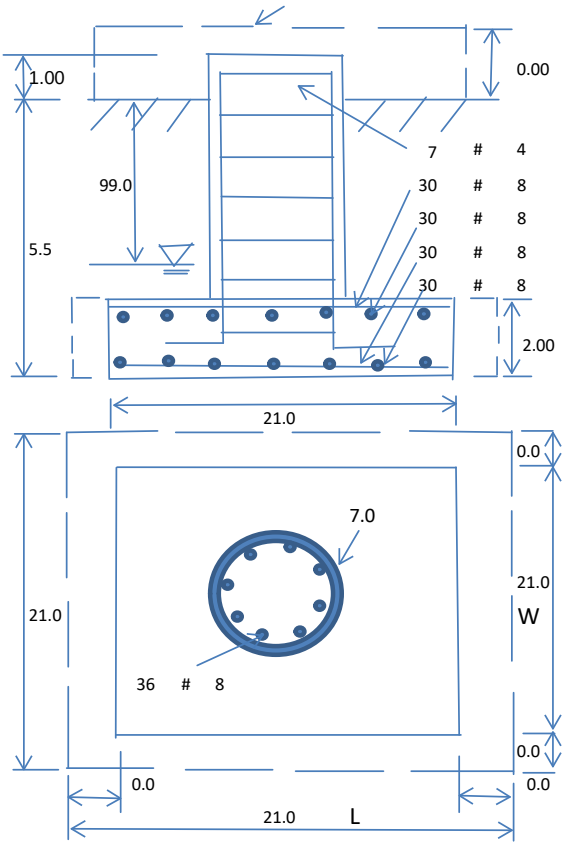
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	39.3	Shear Force (Kips):	26.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2717.9
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	21	Width of Pad (ft.):	21
Final Length of pad (ft)	21.0	Final width of pad (ft):	21.0



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:	36	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):	30	Qty. of Rebar in Pad (W):	30

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		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.):	1408.80	Total Dry Soil Weight (Kips):	176.10
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	176.10	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1055.18	Total Dry Concrete Weight (Kips):	158.28
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	158.28	Total Vertical Load on Base (Kips):	373.68

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3579	<	Allowable Factored Soil Bearing (psf):	9000	0.40	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	3572.5	>	Design Factored Momont (kips-ft):	2891	0.81	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.24	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):	4845.7	>	Design Factored Moment (Mu, Kips-F	2838.1	0.59	OK!
Calculated Shear Capacity (Kips):	660.1	>	Design Factored Shear (Kips):	26.7	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1535.8	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9747.6	>	Design Factored Axial Load (Pu Kips):	39.3	0.00	OK!
Moment & Axial Strength Combination:	0.59	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):	490.1	>	One-Way Factored Shear (L-D. Kips):	201.5	0.41	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	490.1	>	One-Way Factored Shear (W-D., Kips)	201.5	0.41	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	450.0	>	One-Way Factored Shear (C-C, Kips):	204.4	0.45	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0046	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0046		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2097.8	>	Moment at Bottom (L-Dir. K-Ft):	796.8	0.38	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2097.8	>	Moment at Bottom (W-Dir. K-Ft):	796.8	0.38	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	2928.2	>	Moment at Bottom (C-C Dir. K-Ft):	1126.9	0.38	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0046	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0046		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2097.8	>	Moment at the top (L-Dir K-Ft):	368.5	0.18	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2097.8	>	Moment at the top (W-Dir K-Ft):	368.5	0.18	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2928.2	>	Moment at the top (C-C Dir. K-Ft):	349.0	0.12	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1087.2	k-ft.	Max. factored shear stress v_{u_CD}:		2.6	Psi
Max. factored shear stress v_{u_AB}:	12.3	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	12.3	Psi	Check Usage of Punching Shear Capacity:		0.06	OK!

Exhibit E

Mount Analysis

November 10, 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:	BOHVN00043A
	Site Name:	N/A
***SBA Network Services Designation*:**	**Site Number:**	CT13058-A
	Site Name:	Southbury
	Application Number:	168286, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149461.003.01
Site Data:	**459 Burr Road, Southbury, CT, 06488, New Haven County** **Latitude *41.44866*°, Longitude *-73.18263*°** **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 61.1%)**

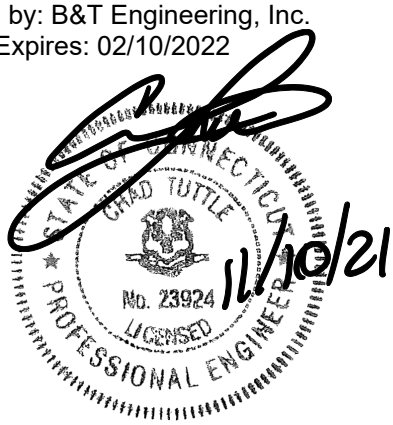
"This analysis utilizes an ultimate 3-second gust wind speed of 117 mph as required by the 2018 Connecticut State Building Code (2018 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria."

We at *B+T Group* 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: Austin Steward

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

Chad E. Tuttle, P.E.



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1) INTRODUCTION

The mount consists of Commscope Platform mounts (Part #MC-PK8-DSH) at 87 ft., attached to monopole at 459 Burr Road, Southbury, CT, 06488, New Haven County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group 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 117 mph with no ice and 50 mph with 1-inch escalated ice thickness. Exposure Category B, Topographic Category 5 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	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 drawing 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

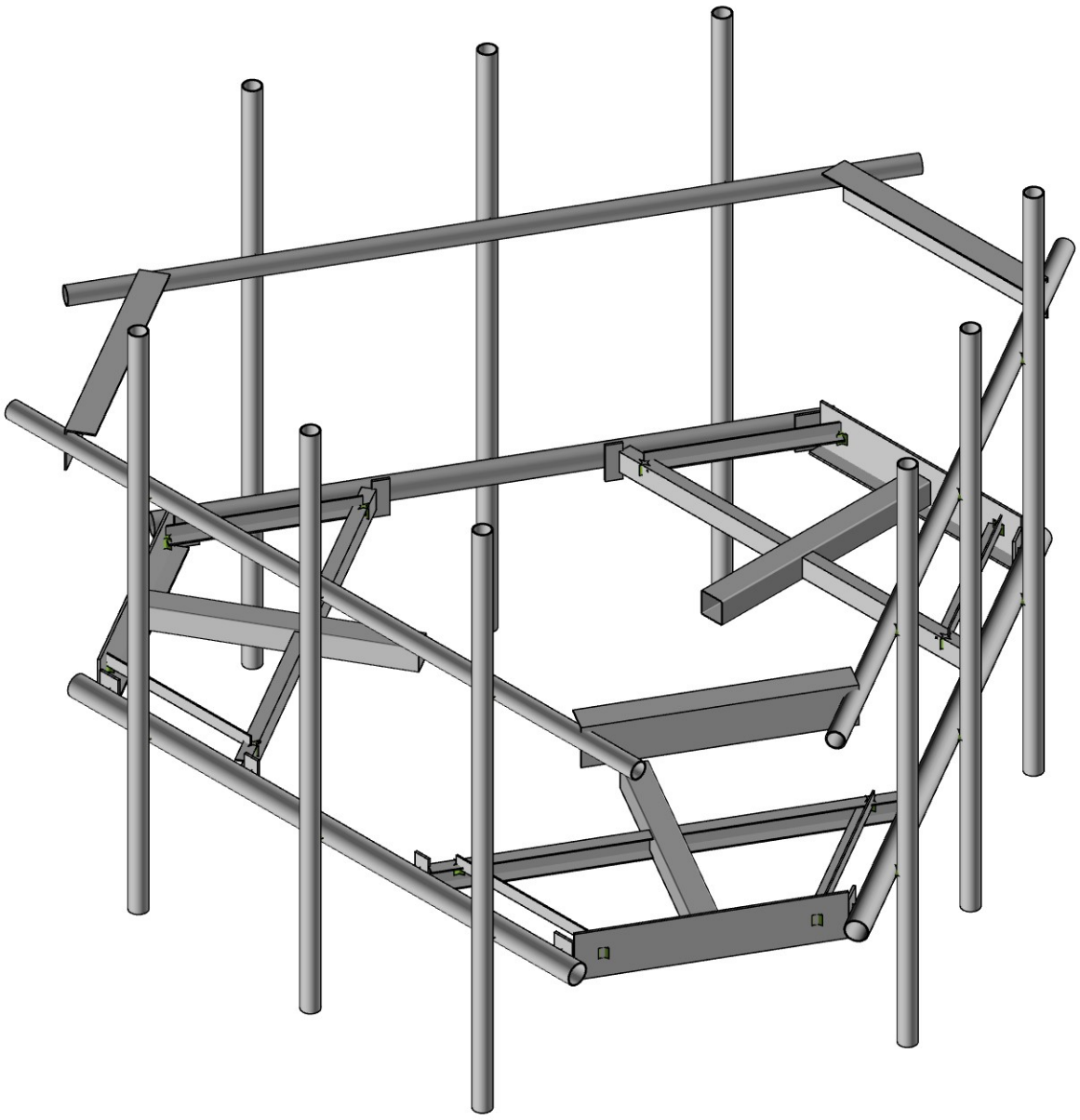
Component	Elevation (ft.)	% Capacity	Pass / Fail
Main Horizontals	87	9.7	Pass
Support Rails	87	18.0	Pass
Support Tubes	87	61.1	Pass
Support Channels	87	42.0	Pass
Support Angles	87	48.1	Pass
Mount Pipes	87	19.8	Pass
Connection Plates	87	20.1	Pass
Connection Angles	87	30.9	Pass
Connection Bolts	87	32.9	Pass

5) RECOMMENDATIONS

The Commscope Platform mounts, 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).

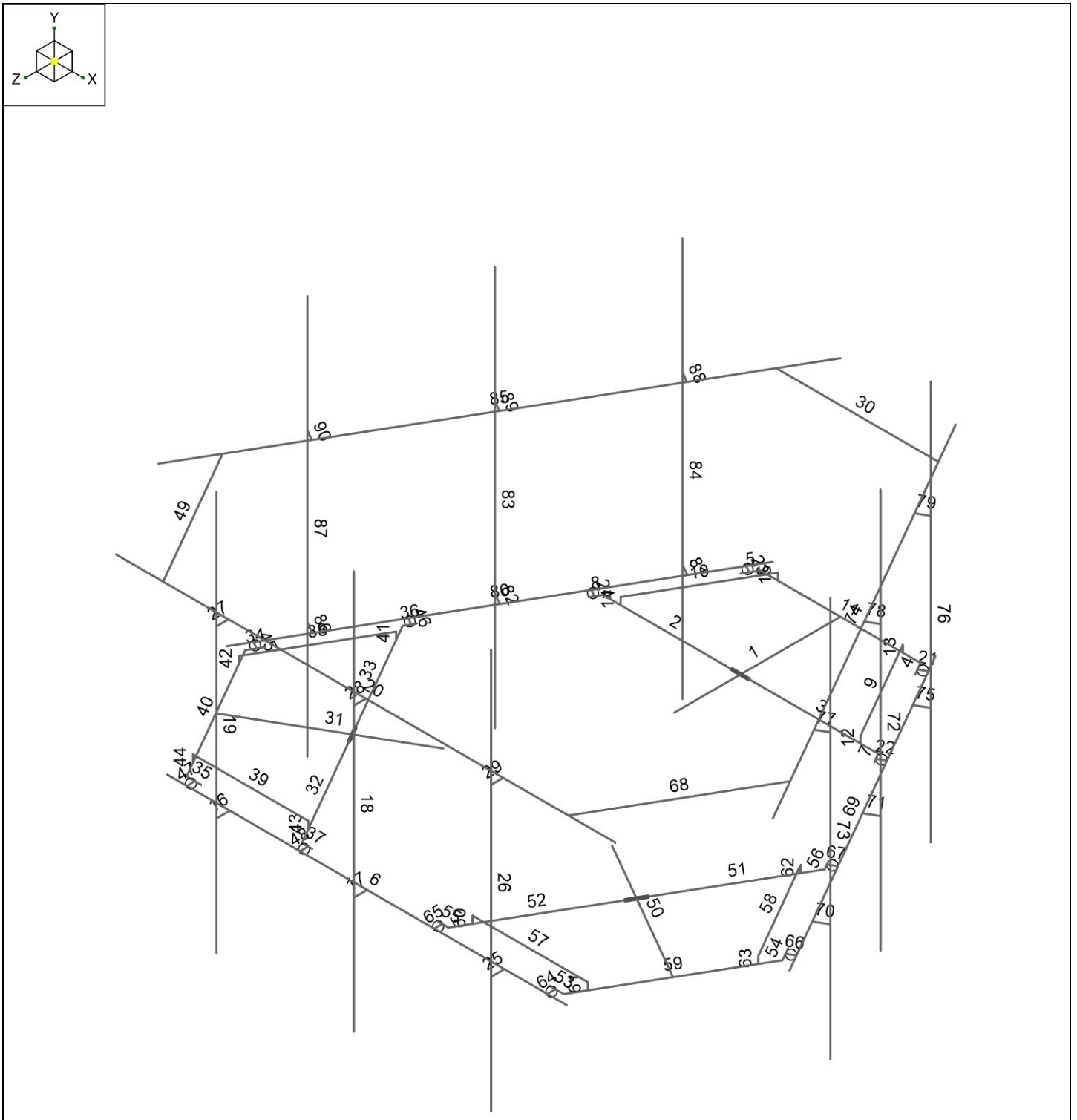
APPENDIX A

(RISA-3D Output)



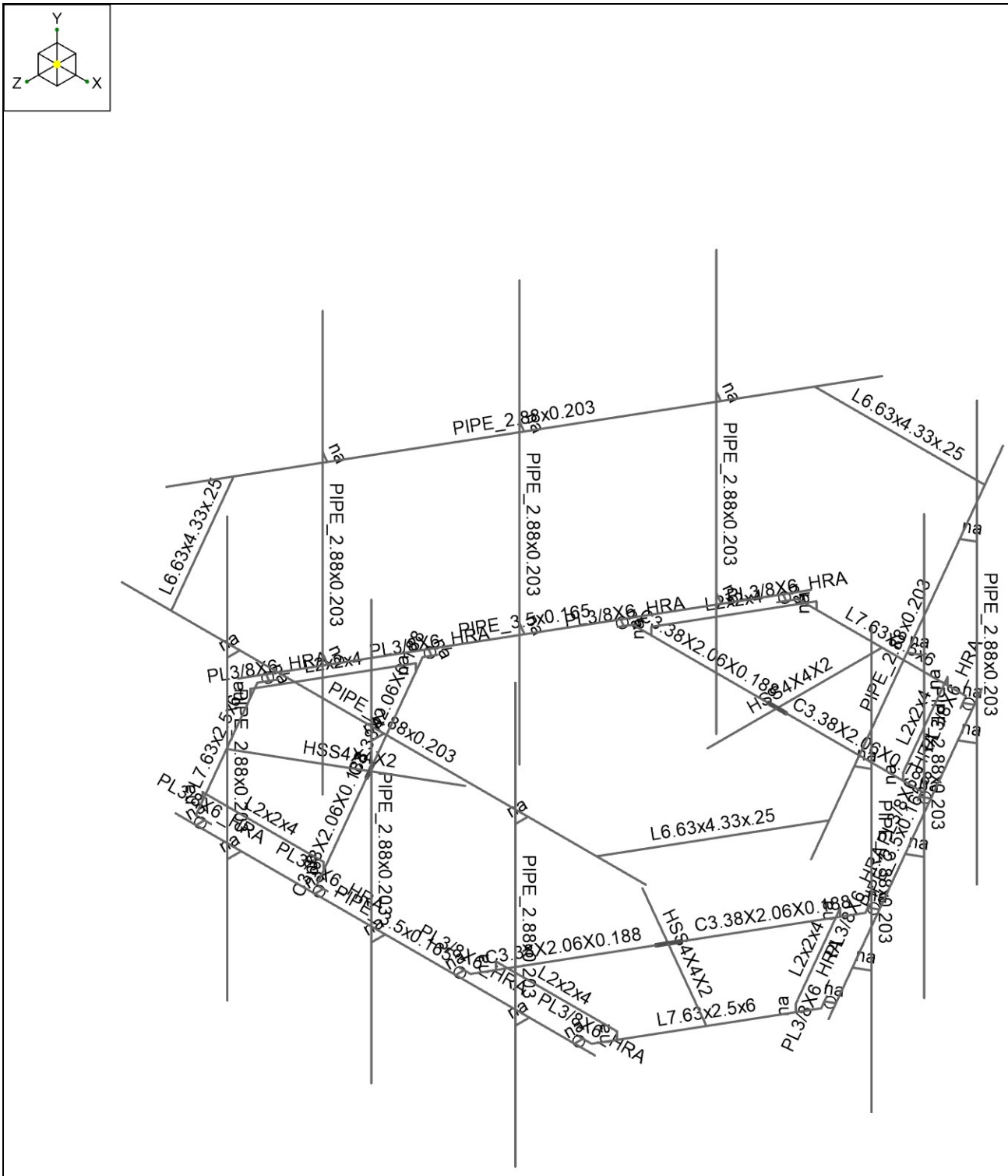
Envelope Only Solution

B+T Group	CT13058-A - Southbury	SK-1
APK		Nov 10, 2021
149461.003.01		149461_003_01_Southbury_CT.R3D



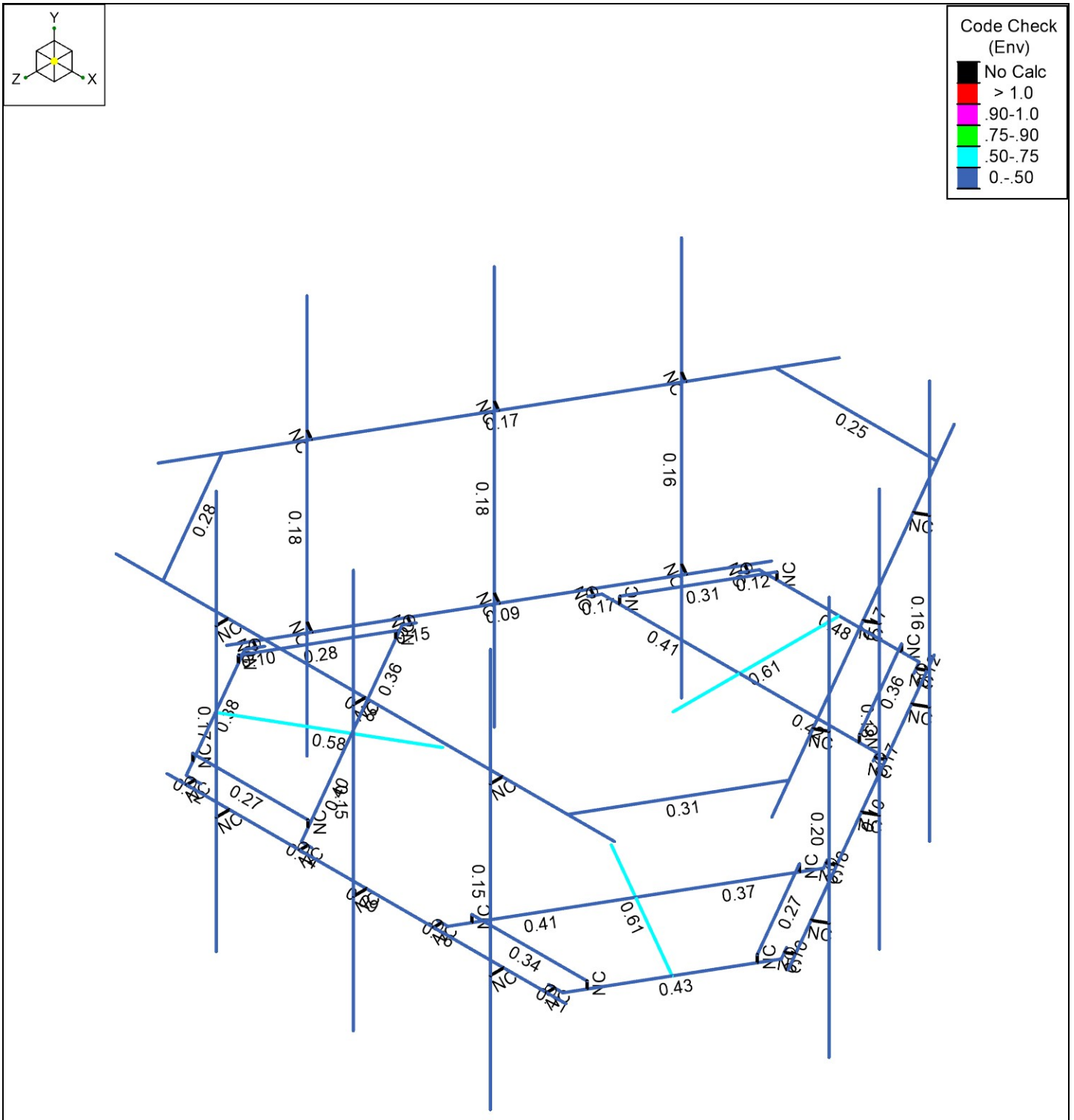
Envelope Only Solution

B+T Group	CT13058-A - Southbury	SK-2
APK		Nov 10, 2021
149461.003.01		149461_003_01_Southbury_CT.R3D



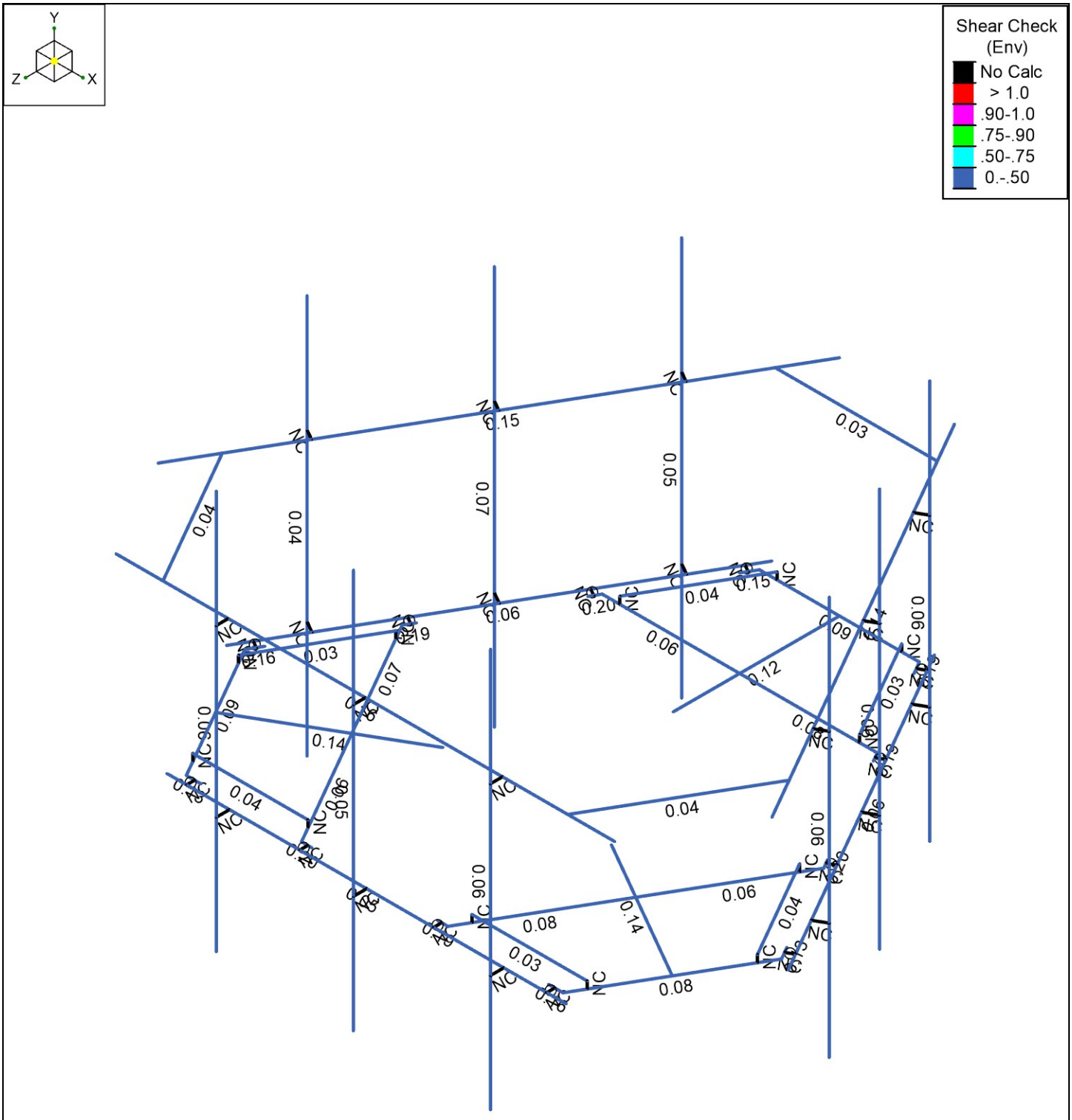
Envelope Only Solution

B+T Group	CT13058-A - Southbury	SK-3
APK		Nov 10, 2021
149461.003.01		149461_003_01_Southbury_CT.R3D



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT13058-A - Southbury	SK-4
APK		Nov 10, 2021
149461.003.01		149461_003_01_Southbury_CT.R3D



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT13058-A - Southbury	SK-5
APK		Nov 10, 2021
149461.003.01		149461_003_01_Southbury_CT.R3D

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.954588	
2	2	0	0	-5.287921	
3	3	0	0	-3.287921	
4	4	2.758333	0	-3.287921	
5	5	-2.758333	0	-3.287921	
6	6	-1.603633	0	-5.287921	
7	7	1.603633	0	-5.287921	
8	8	1.749466	0	-5.035331	
9	9	-1.749466	0	-5.035331	
10	10	1.686966	0	-5.143584	
11	11	1.826789	0	-5.224311	
12	12	-1.686966	0	-5.143584	
13	13	-1.826789	0	-5.224311	
14	14	-3.999998	0	4.194201	
15	15	3.999998	0	4.194201	
16	16	2.8625	0	-3.107499	
17	17	2.820833	0	-3.179669	
18	18	2.960656	0	-3.260396	
19	19	-2.8625	0	-3.107499	
20	20	-2.820833	0	-3.179669	
21	21	-2.960656	0	-3.260396	
22	22	-1.25	0.140833	-5.287921	
23	23	-2.404701	0.140833	-3.287921	
24	24	2.404701	0.140833	-3.287921	
25	25	1.25	0.140833	-5.287921	
26	26	-1.25	0	-5.287921	
27	27	-2.404701	0	-3.287921	
28	28	2.404701	0	-3.287921	
29	29	1.25	0	-5.287921	
30	30	-2.749998	0	4.194201	
31	31	0.000002	0	4.194201	
32	32	-2.749998	0	4.460034	
33	33	0.000002	0	4.460034	
34	34	-2.749998	5.666663	4.460034	
35	35	0.000002	5.666663	4.460034	
36	36	-2.749998	-2.333337	4.460034	
37	37	0.000002	-2.333337	4.460034	
38	38	-5	3.33333	4.220034	
39	39	5	3.33333	4.220034	
40	40	2.749998	0	4.194201	
41	41	2.749998	0	4.460034	
42	42	2.749998	5.666663	4.460034	
43	43	2.749998	-2.333337	4.460034	
44	44	0	0	0	
45	45	-2.749998	3.3333	4.460034	
46	46	0.000002	3.3333	4.460034	
47	47	2.749998	3.3333	4.460034	
48	48	-2.749998	3.3333	4.220034	
49	49	0.000002	3.33333	4.220034	
50	50	2.749998	3.33333	4.220034	
51	51	-1.625	3.33333	-5.625487	
52	52	1.625	3.33333	-5.625487	
53	56	-1.692723	0	0.977294	
54	57	-4.579474	0	2.643961	
55	58	-2.847423	0	1.643961	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	59	-4.22659	0	-0.744826	
57	60	-1.468257	0	4.032747	
58	61	-3.777658	0	4.032747	
59	62	-5.381291	0	1.255174	
60	63	-5.235457	0	1.002583	
61	64	-3.485991	0	4.032747	
62	65	-5.297957	0	1.110836	
63	66	-5.437781	0	1.030109	
64	67A	-3.610991	0	4.032747	
65	68	-3.610991	0	4.194201	
66	69	-4.122423	0	-0.925248	
67	70	-4.164091	0	-0.853078	
68	71	-4.303914	0	-0.933805	
69	72	-1.259923	0	4.032747	
70	73	-1.343258	0	4.032747	
71	74	-1.343258	0	4.194201	
72	75	-3.954474	0.140833	3.726492	
73	76	-1.645073	0.140833	3.726492	
74	77	-4.049774	0.140833	-0.438571	
75	78	-5.204474	0.140833	1.561429	
76	79	-3.954474	0	3.726492	
77	80	-1.645073	0	3.726492	
78	81	-4.049774	0	-0.438571	
79	82	-5.204474	0	1.561429	
80	83	-4.059315	3.33333	4.220035	
81	84	-5.684315	3.33333	1.405453	
82	85	1.692723	0	0.977294	
83	86	4.579474	0	2.643961	
84	87	2.847423	0	1.643961	
85	88	1.468257	0	4.032747	
86	89	4.22659	0	-0.744826	
87	90	5.381291	0	1.255174	
88	91	3.777658	0	4.032747	
89	92	3.485991	0	4.032747	
90	93	5.235457	0	1.002583	
91	94	3.610991	0	4.032747	
92	95	3.610991	0	4.194201	
93	96	5.297957	0	1.110836	
94	97	5.437781	0	1.030109	
95	98	1.259923	0	4.032747	
96	99	1.343258	0	4.032747	
97	100	1.343258	0	4.194201	
98	101	4.122423	0	-0.925248	
99	102	4.164091	0	-0.853078	
100	103	4.303914	0	-0.933805	
101	104	5.204474	0.140833	1.561429	
102	105	4.049774	0.140833	-0.438571	
103	106	1.645073	0.140833	3.726492	
104	107	3.954474	0.140833	3.726492	
105	108	5.204474	0	1.561429	
106	109	4.049774	0	-0.438571	
107	110	1.645073	0	3.726492	
108	111	3.954474	0	3.726492	
109	112	5.684315	3.33333	1.405453	
110	113	4.059315	3.33333	4.220035	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111A	5.632283	0	1.367	
112	112A	1.632285	0	-5.5612	
113	113A	5.007283	0	0.284468	
114	114	3.632283	0	-2.097102	
115	115	5.237502	0	0.151551	
116	116	3.862502	0	-2.230019	
117	117	5.237502	5.666663	0.151551	
118	118	3.862502	5.666663	-2.230019	
119	119	5.237502	-2.333337	0.151551	
120	120	3.862502	-2.333337	-2.230019	
121	121	6.154657	3.33333	2.22011	
122	122	1.154657	3.33333	-6.440144	
123	123	2.257285	0	-4.478669	
124	124	2.487503	0	-4.611585	
125	125	2.487503	5.666663	-4.611585	
126	126	2.487503	-2.333337	-4.611585	
127	127	5.237502	3.3333	0.151551	
128	128	3.862502	3.3333	-2.230019	
129	129	2.487503	3.3333	-4.611585	
130	130	5.029656	3.3333	0.271551	
131	131	3.654656	3.33333	-2.110019	
132	132	2.279658	3.33333	-4.491585	
133	133	-1.632285	0	-5.5612	
134	134	-5.632283	0	1.367	
135	135	-2.257285	0	-4.478669	
136	136	-3.632285	0	-2.097099	
137	137	-2.487503	0	-4.611585	
138	138	-3.862503	0	-2.230015	
139	139	-2.487503	5.666663	-4.611585	
140	140	-3.862503	5.666663	-2.230015	
141	141	-2.487503	-2.333337	-4.611585	
142	142	-3.862503	-2.333337	-2.230015	
143	143	-1.154657	3.33333	-6.440144	
144	144	-6.154657	3.33333	2.22011	
145	145	-5.007283	0	0.284468	
146	146	-5.237502	0	0.151551	
147	147	-5.237502	5.666663	0.151551	
148	148	-5.237502	-2.333337	0.151551	
149	149	-2.487503	3.3333	-4.611585	
150	150	-3.862503	3.3333	-2.230015	
151	151	-5.237502	3.3333	0.151551	
152	152	-2.279658	3.3333	-4.491585	
153	153	-3.654658	3.33333	-2.110015	
154	154	-5.029656	3.33333	0.271551	

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	56	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	57						
16	58						
17	59						
18	60						
19	69						
20	70						
21	72						
22	73						
23	75						
24	78						
25	79						
26	82						
27	85	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	86						
29	87						
30	88						
31	89						
32	98						
33	99						
34	101						
35	102						
36	104						
37	107						
38	108						
39	111						

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	1.707	1.538	1.538	3.076
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X0.188	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	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8X6_HRA	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105

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	35	37		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	34	36		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	39		MF-H2	Beam	Pipe	A500 Gr.C	Typical
21	21	11	10		RIGID	None	None	RIGID	Typical
22	22	18	17		RIGID	None	None	RIGID	Typical
23	23	13	12		RIGID	None	None	RIGID	Typical
24	24	21	20		RIGID	None	None	RIGID	Typical
25	25	41	40		RIGID	None	None	RIGID	Typical
26	26	42	43		MF-P1	Column	Pipe	A500 Gr.C	Typical
27	27	45	48		RIGID	None	None	RIGID	Typical
28	28	46	49		RIGID	None	None	RIGID	Typical
29	29	47	50		RIGID	None	None	RIGID	Typical
30	30	52	51	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	56	57		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	60	58	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	58	59	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	62	63		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	61	64		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	69	59		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	60	72		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	78	77		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	76	75		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	61	62		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	81	77		RIGID	None	None	RIGID	Typical
42	42	82	78		RIGID	None	None	RIGID	Typical
43	43	80	76		RIGID	None	None	RIGID	Typical
44	44	79	75		RIGID	None	None	RIGID	Typical
45	45	66	65		RIGID	None	None	RIGID	Typical
46	46	71	70		RIGID	None	None	RIGID	Typical
47	47	68	67A		RIGID	None	None	RIGID	Typical
48	48	74	73		RIGID	None	None	RIGID	Typical
49	49	84	83	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	85	86		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	89	87	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	87	88	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	91	92		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	90	93		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	98	88		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	89	101		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	107	106		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	105	104		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	90	91		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	110	106		RIGID	None	None	RIGID	Typical
61	61	111	107		RIGID	None	None	RIGID	Typical
62	62	109	105		RIGID	None	None	RIGID	Typical
63	63	108	104		RIGID	None	None	RIGID	Typical
64	64	95	94		RIGID	None	None	RIGID	Typical
65	65	100	99		RIGID	None	None	RIGID	Typical
66	66	97	96		RIGID	None	None	RIGID	Typical
67	67	103	102		RIGID	None	None	RIGID	Typical
68	68	113	112	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111A	112A		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113A		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	118	120		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	117	119		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	122		MF-H2	Beam	Pipe	A500 Gr.C	Typical
75	75	124	123		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-P1	Column	Pipe	A500 Gr.C	Typical
77	77	127	130		RIGID	None	None	RIGID	Typical
78	78	128	131		RIGID	None	None	RIGID	Typical
79	79	129	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	140	142		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	139	141		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	144		MF-H2	Beam	Pipe	A500 Gr.C	Typical
86	86	146	145		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-P1	Column	Pipe	A500 Gr.C	Typical
88	88	149	152		RIGID	None	None	RIGID	Typical
89	89	150	153		RIGID	None	None	RIGID	Typical
90	90	151	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	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	Default	None
5	5				Yes	Default	None
6	6				Yes	N/A	None
7	7				Yes	Default	None
8	8				Yes	Default	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	N/A	None
21	21	OOOOOX			Yes	** NA **	None
22	22	OOOOOX			Yes	** NA **	None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25				Yes	** NA **	None
26	26				Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	Default	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	Default	None
35	35				Yes	Default	None
36	36				Yes	Default	None
37	37				Yes	Default	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	Default	None
50	50				Yes	N/A	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	Default	None
54	54				Yes	Default	None
55	55				Yes	Default	None
56	56				Yes	Default	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	Default	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	N/A	None
75	75				Yes	** NA **	None
76	76				Yes	** NA **	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	N/A	None
86	86				Yes	** NA **	None
87	87				Yes	** NA **	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	20	MF-H2	10	Lbyy	Lateral
15	26	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	74	MF-H2	10	Lbyy	Lateral
43	76	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	85	MF-H2	10	Lbyy	Lateral
48	87	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.032	%15
2	26	Y	-0.032	%85
3	26	Y	-0.075	%20
4	26	Y	-0.064	%50
5	26	Y	0	0
6	31	Y	-0.022	%15
7	31	Y	0	0
8	31	Y	0	0
9	31	Y	0	0
10	31	Y	0	0
11	87	Y	-0.032	%15
12	87	Y	-0.032	%85
13	87	Y	-0.075	%20
14	87	Y	-0.064	%50
15	87	Y	0	0
16	76	Y	-0.032	%15
17	76	Y	-0.032	%85
18	76	Y	-0.075	%20
19	76	Y	-0.064	%50
20	76	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.226	%15
2	26	Z	-0.226	%85
3	26	Z	-0.1	%20
4	26	Z	-0.1	%50
5	26	Z	0	0
6	31	Z	-0.102	%15
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	31	Z	0	0
11	87	Z	-0.226	%15
12	87	Z	-0.226	%85
13	87	Z	-0.1	%20
14	87	Z	-0.1	%50
15	87	Z	0	0
16	76	Z	-0.226	%15
17	76	Z	-0.226	%85
18	76	Z	-0.1	%20
19	76	Z	-0.1	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.091	%15
2	26	X	-0.091	%85
3	26	X	-0.06	%20
4	26	X	-0.053	%50
5	26	X	0	0
6	31	X	-0.057	%15
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	87	X	-0.091	%15
12	87	X	-0.091	%85
13	87	X	-0.06	%20
14	87	X	-0.053	%50
15	87	X	0	0
16	76	X	-0.091	%15
17	76	X	-0.091	%85
18	76	X	-0.06	%20
19	76	X	-0.053	%50
20	76	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.047	%15
2	26	Z	-0.047	%85
3	26	Z	-0.018	%20
4	26	Z	-0.018	%50
5	26	Z	0	0
6	31	Z	-0.019	%15
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	87	Z	-0.047	%15
12	87	Z	-0.047	%85
13	87	Z	-0.018	%20
14	87	Z	-0.018	%50
15	87	Z	0	0
16	76	Z	-0.047	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	76	Z	-0.047	%85
18	76	Z	-0.018	%20
19	76	Z	-0.018	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.021	%15
2	26	X	-0.021	%85
3	26	X	-0.011	%20
4	26	X	-0.01	%50
5	26	X	0	0
6	31	X	-0.01	%15
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	87	X	-0.021	%15
12	87	X	-0.021	%85
13	87	X	-0.011	%20
14	87	X	-0.01	%50
15	87	X	0	0
16	76	X	-0.021	%15
17	76	X	-0.021	%85
18	76	X	-0.011	%20
19	76	X	-0.01	%50
20	76	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.015	%15
2	26	Z	-0.015	%85
3	26	Z	-0.007	%20
4	26	Z	-0.007	%50
5	26	Z	0	0
6	31	Z	-0.007	%15
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	87	Z	-0.015	%15
12	87	Z	-0.015	%85
13	87	Z	-0.007	%20
14	87	Z	-0.007	%50
15	87	Z	0	0
16	76	Z	-0.015	%15
17	76	Z	-0.015	%85
18	76	Z	-0.007	%20
19	76	Z	-0.007	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.006	%15
2	26	X	-0.006	%85
3	26	X	-0.004	%20
4	26	X	-0.003	%50
5	26	X	0	0
6	31	X	-0.004	%15
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	87	X	-0.006	%15
12	87	X	-0.006	%85
13	87	X	-0.004	%20
14	87	X	-0.003	%50
15	87	X	0	0
16	76	X	-0.006	%15
17	76	X	-0.006	%85
18	76	X	-0.004	%20
19	76	X	-0.003	%50
20	76	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.118	%15
2	26	Y	-0.118	%85
3	26	Y	-0.041	%20
4	26	Y	-0.04	%50
5	26	Y	0	0
6	31	Y	-0.042	%15
7	31	Y	0	0
8	31	Y	0	0
9	31	Y	0	0
10	31	Y	0	0
11	87	Y	-0.118	%15
12	87	Y	-0.118	%85
13	87	Y	-0.041	%20
14	87	Y	-0.04	%50
15	87	Y	0	0
16	76	Y	-0.118	%15
17	76	Y	-0.118	%85
18	76	Y	-0.041	%20
19	76	Y	-0.04	%50
20	76	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.009	%15
2	26	Z	-0.009	%85
3	26	Z	-0.011	%20
4	26	Z	-0.009	%50
5	26	Z	0	0
6	31	Z	-0.003	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	87	Z	-0.009	%15
12	87	Z	-0.009	%85
13	87	Z	-0.011	%20
14	87	Z	-0.009	%50
15	87	Z	0	0
16	76	Z	-0.009	%15
17	76	Z	-0.009	%85
18	76	Z	-0.011	%20
19	76	Z	-0.009	%50
20	76	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.009	%15
2	26	X	-0.009	%85
3	26	X	-0.011	%20
4	26	X	-0.009	%50
5	26	X	0	0
6	31	X	-0.003	%15
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	87	X	-0.009	%15
12	87	X	-0.009	%85
13	87	X	-0.011	%20
14	87	X	-0.009	%50
15	87	X	0	0
16	76	X	-0.009	%15
17	76	X	-0.009	%85
18	76	X	-0.011	%20
19	76	X	-0.009	%50
20	76	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

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

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

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

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

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

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

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

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

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

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	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	%90

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%90

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%90

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	-0.025	-0.025	0	%100
2	2	Z	-0.021	-0.021	0	%100
3	3	Z	-0.021	-0.021	0	%100
4	4	Z	-0.031	-0.031	0	%100
5	5	Z	-0.031	-0.031	0	%100
6	6	Z	-0.015	-0.015	0	%100
7	7	Z	-0.031	-0.031	0	%100
8	8	Z	-0.031	-0.031	0	%100
9	9	Z	-0.014	-0.014	0	%100
10	10	Z	-0.014	-0.014	0	%100
11	11	Z	-0.042	-0.042	0	%100
12	18	Z	-0.015	-0.015	0	%100
13	19	Z	-0.015	-0.015	0	%100
14	20	Z	-0.015	-0.015	0	%100
15	26	Z	-0.015	-0.015	0	%100
16	30	Z	-0.037	-0.037	0	%100
17	31	Z	-0.025	-0.025	0	%100
18	32	Z	-0.021	-0.021	0	%100
19	33	Z	-0.021	-0.021	0	%100
20	34	Z	-0.031	-0.031	0	%100
21	35	Z	-0.031	-0.031	0	%100
22	36	Z	-0.031	-0.031	0	%100
23	37	Z	-0.031	-0.031	0	%100
24	38	Z	-0.014	-0.014	0	%100
25	39	Z	-0.014	-0.014	0	%100
26	40	Z	-0.042	-0.042	0	%100
27	49	Z	-0.037	-0.037	0	%100
28	50	Z	-0.025	-0.025	0	%100
29	51	Z	-0.021	-0.021	0	%100
30	52	Z	-0.021	-0.021	0	%100
31	53	Z	-0.031	-0.031	0	%100
32	54	Z	-0.031	-0.031	0	%100
33	55	Z	-0.031	-0.031	0	%100
34	56	Z	-0.031	-0.031	0	%100
35	57	Z	-0.014	-0.014	0	%100
36	58	Z	-0.014	-0.014	0	%100
37	59	Z	-0.042	-0.042	0	%100
38	68	Z	-0.037	-0.037	0	%100
39	69	Z	-0.015	-0.015	0	%100
40	72	Z	-0.015	-0.015	0	%100
41	73	Z	-0.015	-0.015	0	%100
42	74	Z	-0.015	-0.015	0	%100
43	76	Z	-0.015	-0.015	0	%100
44	80	Z	-0.015	-0.015	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	-0.015	-0.015	0	%100
46	84	Z	-0.015	-0.015	0	%100
47	85	Z	-0.015	-0.015	0	%100
48	87	Z	-0.015	-0.015	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	-0.025	-0.025	0	%100
2	2	X	-0.021	-0.021	0	%100
3	3	X	-0.021	-0.021	0	%100
4	4	X	-0.031	-0.031	0	%100
5	5	X	-0.031	-0.031	0	%100
6	6	X	-0.015	-0.015	0	%100
7	7	X	-0.031	-0.031	0	%100
8	8	X	-0.031	-0.031	0	%100
9	9	X	-0.014	-0.014	0	%100
10	10	X	-0.014	-0.014	0	%100
11	11	X	-0.042	-0.042	0	%100
12	18	X	-0.015	-0.015	0	%100
13	19	X	-0.015	-0.015	0	%100
14	20	X	-0.015	-0.015	0	%100
15	26	X	-0.015	-0.015	0	%100
16	30	X	-0.037	-0.037	0	%100
17	31	X	-0.025	-0.025	0	%100
18	32	X	-0.021	-0.021	0	%100
19	33	X	-0.021	-0.021	0	%100
20	34	X	-0.031	-0.031	0	%100
21	35	X	-0.031	-0.031	0	%100
22	36	X	-0.031	-0.031	0	%100
23	37	X	-0.031	-0.031	0	%100
24	38	X	-0.014	-0.014	0	%100
25	39	X	-0.014	-0.014	0	%100
26	40	X	-0.042	-0.042	0	%100
27	49	X	-0.037	-0.037	0	%100
28	50	X	-0.025	-0.025	0	%100
29	51	X	-0.021	-0.021	0	%100
30	52	X	-0.021	-0.021	0	%100
31	53	X	-0.031	-0.031	0	%100
32	54	X	-0.031	-0.031	0	%100
33	55	X	-0.031	-0.031	0	%100
34	56	X	-0.031	-0.031	0	%100
35	57	X	-0.014	-0.014	0	%100
36	58	X	-0.014	-0.014	0	%100
37	59	X	-0.042	-0.042	0	%100
38	68	X	-0.037	-0.037	0	%100
39	69	X	-0.015	-0.015	0	%100
40	72	X	-0.015	-0.015	0	%100
41	73	X	-0.015	-0.015	0	%100
42	74	X	-0.015	-0.015	0	%100
43	76	X	-0.015	-0.015	0	%100
44	80	X	-0.015	-0.015	0	%100
45	83	X	-0.015	-0.015	0	%100
46	84	X	-0.015	-0.015	0	%100
47	85	X	-0.015	-0.015	0	%100
48	87	X	-0.015	-0.015	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	-0.008	-0.008	0	%100
2	2	Z	-0.008	-0.008	0	%100
3	3	Z	-0.008	-0.008	0	%100
4	4	Z	-0.014	-0.014	0	%100
5	5	Z	-0.014	-0.014	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.017	-0.017	0	%100
8	8	Z	-0.017	-0.017	0	%100
9	9	Z	-0.006	-0.006	0	%100
10	10	Z	-0.006	-0.006	0	%100
11	11	Z	-0.011	-0.011	0	%100
12	18	Z	-0.003	-0.003	0	%100
13	19	Z	-0.003	-0.003	0	%100
14	20	Z	-0.003	-0.003	0	%100
15	26	Z	-0.003	-0.003	0	%100
16	30	Z	-0.01	-0.01	0	%100
17	31	Z	-0.008	-0.008	0	%100
18	32	Z	-0.008	-0.008	0	%100
19	33	Z	-0.008	-0.008	0	%100
20	34	Z	-0.014	-0.014	0	%100
21	35	Z	-0.014	-0.014	0	%100
22	36	Z	-0.017	-0.017	0	%100
23	37	Z	-0.017	-0.017	0	%100
24	38	Z	-0.006	-0.006	0	%100
25	39	Z	-0.006	-0.006	0	%100
26	40	Z	-0.011	-0.011	0	%100
27	49	Z	-0.01	-0.01	0	%100
28	50	Z	-0.008	-0.008	0	%100
29	51	Z	-0.008	-0.008	0	%100
30	52	Z	-0.008	-0.008	0	%100
31	53	Z	-0.014	-0.014	0	%100
32	54	Z	-0.014	-0.014	0	%100
33	55	Z	-0.017	-0.017	0	%100
34	56	Z	-0.017	-0.017	0	%100
35	57	Z	-0.006	-0.006	0	%100
36	58	Z	-0.006	-0.006	0	%100
37	59	Z	-0.011	-0.011	0	%100
38	68	Z	-0.01	-0.01	0	%100
39	69	Z	-0.003	-0.003	0	%100
40	72	Z	-0.003	-0.003	0	%100
41	73	Z	-0.003	-0.003	0	%100
42	74	Z	-0.003	-0.003	0	%100
43	76	Z	-0.003	-0.003	0	%100
44	80	Z	-0.003	-0.003	0	%100
45	83	Z	-0.003	-0.003	0	%100
46	84	Z	-0.003	-0.003	0	%100
47	85	Z	-0.003	-0.003	0	%100
48	87	Z	-0.003	-0.003	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	-0.008	-0.008	0	%100
2	2	X	-0.008	-0.008	0	%100
3	3	X	-0.008	-0.008	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	-0.014	-0.014	0	%100
5	5	X	-0.014	-0.014	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.017	-0.017	0	%100
8	8	X	-0.017	-0.017	0	%100
9	9	X	-0.006	-0.006	0	%100
10	10	X	-0.006	-0.006	0	%100
11	11	X	-0.011	-0.011	0	%100
12	18	X	-0.003	-0.003	0	%100
13	19	X	-0.003	-0.003	0	%100
14	20	X	-0.003	-0.003	0	%100
15	26	X	-0.003	-0.003	0	%100
16	30	X	-0.01	-0.01	0	%100
17	31	X	-0.008	-0.008	0	%100
18	32	X	-0.008	-0.008	0	%100
19	33	X	-0.008	-0.008	0	%100
20	34	X	-0.014	-0.014	0	%100
21	35	X	-0.014	-0.014	0	%100
22	36	X	-0.017	-0.017	0	%100
23	37	X	-0.017	-0.017	0	%100
24	38	X	-0.006	-0.006	0	%100
25	39	X	-0.006	-0.006	0	%100
26	40	X	-0.011	-0.011	0	%100
27	49	X	-0.01	-0.01	0	%100
28	50	X	-0.008	-0.008	0	%100
29	51	X	-0.008	-0.008	0	%100
30	52	X	-0.008	-0.008	0	%100
31	53	X	-0.014	-0.014	0	%100
32	54	X	-0.014	-0.014	0	%100
33	55	X	-0.017	-0.017	0	%100
34	56	X	-0.017	-0.017	0	%100
35	57	X	-0.006	-0.006	0	%100
36	58	X	-0.006	-0.006	0	%100
37	59	X	-0.011	-0.011	0	%100
38	68	X	-0.01	-0.01	0	%100
39	69	X	-0.003	-0.003	0	%100
40	72	X	-0.003	-0.003	0	%100
41	73	X	-0.003	-0.003	0	%100
42	74	X	-0.003	-0.003	0	%100
43	76	X	-0.003	-0.003	0	%100
44	80	X	-0.003	-0.003	0	%100
45	83	X	-0.003	-0.003	0	%100
46	84	X	-0.003	-0.003	0	%100
47	85	X	-0.003	-0.003	0	%100
48	87	X	-0.003	-0.003	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	-0.002	-0.002	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0006	-0.0006	0	%100
7	7	Z	-0.002	-0.002	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	-0.002	-0.002	0	%100
9	9	Z	-0.0009	-0.0009	0	%100
10	10	Z	-0.0009	-0.0009	0	%100
11	11	Z	-0.003	-0.003	0	%100
12	18	Z	-0.0005	-0.0005	0	%100
13	19	Z	-0.0005	-0.0005	0	%100
14	20	Z	-0.0005	-0.0005	0	%100
15	26	Z	-0.0005	-0.0005	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.002	-0.002	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
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	-0.0009	-0.0009	0	%100
25	39	Z	-0.0009	-0.0009	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.002	-0.002	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	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	-0.0009	-0.0009	0	%100
36	58	Z	-0.0009	-0.0009	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0006	-0.0006	0	%100
40	72	Z	-0.0005	-0.0005	0	%100
41	73	Z	-0.0005	-0.0005	0	%100
42	74	Z	-0.0005	-0.0005	0	%100
43	76	Z	-0.0005	-0.0005	0	%100
44	80	Z	-0.0006	-0.0006	0	%100
45	83	Z	-0.0005	-0.0005	0	%100
46	84	Z	-0.0005	-0.0005	0	%100
47	85	Z	-0.0005	-0.0005	0	%100
48	87	Z	-0.0005	-0.0005	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	-0.002	-0.002	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0006	-0.0006	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0009	-0.0009	0	%100
10	10	X	-0.0009	-0.0009	0	%100
11	11	X	-0.003	-0.003	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	-0.0005	-0.0005	0	%100
13	19	X	-0.0005	-0.0005	0	%100
14	20	X	-0.0005	-0.0005	0	%100
15	26	X	-0.0005	-0.0005	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.002	-0.002	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	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
24	38	X	-0.0009	-0.0009	0	%100
25	39	X	-0.0009	-0.0009	0	%100
26	40	X	-0.003	-0.003	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.002	-0.002	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	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	-0.0009	-0.0009	0	%100
36	58	X	-0.0009	-0.0009	0	%100
37	59	X	-0.003	-0.003	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0006	-0.0006	0	%100
40	72	X	-0.0005	-0.0005	0	%100
41	73	X	-0.0005	-0.0005	0	%100
42	74	X	-0.0005	-0.0005	0	%100
43	76	X	-0.0005	-0.0005	0	%100
44	80	X	-0.0006	-0.0006	0	%100
45	83	X	-0.0005	-0.0005	0	%100
46	84	X	-0.0005	-0.0005	0	%100
47	85	X	-0.0005	-0.0005	0	%100
48	87	X	-0.0005	-0.0005	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	-0.012	-0.012	0	%100
2	2	Y	-0.009	-0.009	0	%100
3	3	Y	-0.009	-0.009	0	%100
4	4	Y	-0.012	-0.012	0	%100
5	5	Y	-0.012	-0.012	0	%100
6	6	Y	-0.008	-0.008	0	%100
7	7	Y	-0.012	-0.012	0	%100
8	8	Y	-0.012	-0.012	0	%100
9	9	Y	-0.007	-0.007	0	%100
10	10	Y	-0.007	-0.007	0	%100
11	11	Y	-0.016	-0.016	0	%100
12	18	Y	-0.007	-0.007	0	%100
13	19	Y	-0.007	-0.007	0	%100
14	20	Y	-0.007	-0.007	0	%100
15	26	Y	-0.007	-0.007	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	-0.015	-0.015	0	%100
17	31	Y	-0.012	-0.012	0	%100
18	32	Y	-0.009	-0.009	0	%100
19	33	Y	-0.009	-0.009	0	%100
20	34	Y	-0.012	-0.012	0	%100
21	35	Y	-0.012	-0.012	0	%100
22	36	Y	-0.012	-0.012	0	%100
23	37	Y	-0.012	-0.012	0	%100
24	38	Y	-0.007	-0.007	0	%100
25	39	Y	-0.007	-0.007	0	%100
26	40	Y	-0.016	-0.016	0	%100
27	49	Y	-0.015	-0.015	0	%100
28	50	Y	-0.012	-0.012	0	%100
29	51	Y	-0.009	-0.009	0	%100
30	52	Y	-0.009	-0.009	0	%100
31	53	Y	-0.012	-0.012	0	%100
32	54	Y	-0.012	-0.012	0	%100
33	55	Y	-0.012	-0.012	0	%100
34	56	Y	-0.012	-0.012	0	%100
35	57	Y	-0.007	-0.007	0	%100
36	58	Y	-0.007	-0.007	0	%100
37	59	Y	-0.016	-0.016	0	%100
38	68	Y	-0.015	-0.015	0	%100
39	69	Y	-0.008	-0.008	0	%100
40	72	Y	-0.007	-0.007	0	%100
41	73	Y	-0.007	-0.007	0	%100
42	74	Y	-0.007	-0.007	0	%100
43	76	Y	-0.007	-0.007	0	%100
44	80	Y	-0.008	-0.008	0	%100
45	83	Y	-0.007	-0.007	0	%100
46	84	Y	-0.007	-0.007	0	%100
47	85	Y	-0.007	-0.007	0	%100
48	87	Y	-0.007	-0.007	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	-0.0009	-0.0009	0	%100
2	2	Z	-0.0006	-0.0006	0	%100
3	3	Z	-0.0006	-0.0006	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0008	-0.0008	0	%100
7	7	Z	-0.001	-0.001	0	%100
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	-0.0008	-0.0008	0	%100
13	19	Z	-0.0008	-0.0008	0	%100
14	20	Z	-0.0008	-0.0008	0	%100
15	26	Z	-0.0008	-0.0008	0	%100
16	30	Z	-0.001	-0.001	0	%100
17	31	Z	-0.0009	-0.0009	0	%100
18	32	Z	-0.0006	-0.0006	0	%100
19	33	Z	-0.0006	-0.0006	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	-0.001	-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	-0.0006	-0.0006	0	%100
30	52	Z	-0.0006	-0.0006	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	-0.0008	-0.0008	0	%100
40	72	Z	-0.0008	-0.0008	0	%100
41	73	Z	-0.0008	-0.0008	0	%100
42	74	Z	-0.0008	-0.0008	0	%100
43	76	Z	-0.0008	-0.0008	0	%100
44	80	Z	-0.0008	-0.0008	0	%100
45	83	Z	-0.0008	-0.0008	0	%100
46	84	Z	-0.0008	-0.0008	0	%100
47	85	Z	-0.0008	-0.0008	0	%100
48	87	Z	-0.0008	-0.0008	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	-0.0009	-0.0009	0	%100
2	2	X	-0.0006	-0.0006	0	%100
3	3	X	-0.0006	-0.0006	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0008	-0.0008	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
12	18	X	-0.0008	-0.0008	0	%100
13	19	X	-0.0008	-0.0008	0	%100
14	20	X	-0.0008	-0.0008	0	%100
15	26	X	-0.0008	-0.0008	0	%100
16	30	X	-0.001	-0.001	0	%100
17	31	X	-0.0009	-0.0009	0	%100
18	32	X	-0.0006	-0.0006	0	%100
19	33	X	-0.0006	-0.0006	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

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	-0.0005	-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	-0.0006	-0.0006	0	%100
30	52	X	-0.0006	-0.0006	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	-0.0008	-0.0008	0	%100
40	72	X	-0.0008	-0.0008	0	%100
41	73	X	-0.0008	-0.0008	0	%100
42	74	X	-0.0008	-0.0008	0	%100
43	76	X	-0.0008	-0.0008	0	%100
44	80	X	-0.0008	-0.0008	0	%100
45	83	X	-0.0008	-0.0008	0	%100
46	84	X	-0.0008	-0.0008	0	%100
47	85	X	-0.0008	-0.0008	0	%100
48	87	X	-0.0008	-0.0008	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	-0.01	-0.01	0	2.078
2	10	Y	-0.009	-0.013	0.231	1.27
3	10	Y	-0.013	-0.017	1.27	2.309
4	38	Y	-0.007	-0.013	0	2.078
5	39	Y	0.0003698	-0.009	0	1.155
6	39	Y	-0.009	-0.021	1.155	2.309
7	57	Y	-0.021	-0.009	0	1.155
8	57	Y	-0.009	0.0003698	1.155	2.309
9	58	Y	-0.011	-0.009	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	76	75	78	77	Y	Two Way	-0.01
3	105	104	107	106	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	-0.006
2	76	75	78	77	Y	Two Way	-0.006
3	105	104	107	106	Y	Two Way	-0.006

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	113A	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	40	L	Y	-0.5
2	123	L	Y	-0.5
3	145	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	1.425	5	1.959	2	1.773	2	4.504	2	1.446	11	0.353	97
2		min	-1.427	11	-0.378	8	-1.899	8	-1.439	8	-1.446	5	-0.209	89
3	56	max	1.525	5	1.953	18	1.802	2	0.542	13	1.738	3	0.712	12
4		min	-1.631	11	-0.133	12	-1.738	8	-1.957	7	-1.737	9	-3.48	6
5	85	max	1.464	5	1.881	22	1.956	2	0.531	3	1.755	7	3.363	10
6		min	-1.355	11	-0.166	4	-1.894	8	-2.21	9	-1.755	13	-0.785	4
7	Totals:	max	4.414	5	5.126	17	5.531	2						
8		min	-4.414	11	2.397	11	-5.531	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	0.611	0	13	0.122	0	y	13	70.173	73.278	8.24	8.24	1.987	H1-1b
2	50	HSS4X4X2	0.606	0	9	0.142	0	z	7	70.173	73.278	8.24	8.24	1.989	H1-1b
3	31	HSS4X4X2	0.584	0	7	0.138	0	z	3	70.173	73.278	8.24	8.24	2.01	H1-1b
4	11	L7.63x2.5x6	0.481	1.604	8	0.089	1.604	z	2	75.414	118.523	1.798	13.712	1.234	H2-1
5	59	L7.63x2.5x6	0.43	1.604	3	0.079	0	z	70	75.414	118.523	1.798	14.086	1.319	H2-1
6	3	C3.38X2.06X0.188	0.42	0	13	0.085	2.241	z	8	35.676	43.394	1.694	4.483	1.591	H1-1b
7	52	C3.38X2.06X0.188	0.413	0	9	0.075	2.241	z	3	35.676	43.394	1.694	4.483	1.59	H1-1b
8	2	C3.38X2.06X0.188	0.405	2.592	3	0.064	0.351	z	8	35.676	43.394	1.694	4.483	1.595	H1-1b
9	32	C3.38X2.06X0.188	0.401	2.592	7	0.06	0.351	y	68	35.676	43.394	1.694	4.483	1.595	H1-1b
10	40	L7.63x2.5x6	0.381	1.604	12	0.085	1.604	z	7	75.414	118.523	1.798	13.755	1.244	H2-1
11	51	C3.38X2.06X0.188	0.367	2.592	23	0.06	0.351	y	73	35.676	43.394	1.694	4.483	1.63	H1-1b
12	33	C3.38X2.06X0.188	0.363	0	5	0.066	2.241	z	12	35.676	43.394	1.694	4.483	1.597	H1-1b
13	9	L2x2x4	0.356	0	8	0.031	2.309	z	13	23.349	30.586	0.691	1.577	1.5	H2-1
14	57	L2x2x4	0.343	0	3	0.031	2.309	z	9	23.349	30.586	0.691	1.577	1.5	H2-1
15	10	L2x2x4	0.314	2.309	8	0.036	2.309	y	16	23.349	30.586	0.691	1.577	1.5	H2-1
16	68	L6.63x4.33x.25	0.309	3.25	2	0.039	3.25	z	8	51.794	86.751	2.311	6.976	1.5	H2-1
17	38	L2x2x4	0.279	0	11	0.031	2.309	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
18	49	L6.63x4.33x.25	0.276	0	2	0.035	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
19	39	L2x2x4	0.269	2.309	13	0.036	2.309	y	20	23.349	30.586	0.691	1.577	1.5	H2-1
20	58	L2x2x4	0.268	2.309	4	0.035	0	y	25	23.349	30.586	0.691	1.577	1.5	H2-1
21	30	L6.63x4.33x.25	0.255	3.25	6	0.031	3.25	z	12	51.794	86.751	2.311	6.976	1.5	H2-1
22	73	PIPE_2.88x0.203	0.198	2.333	2	0.058	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
23	20	PIPE_2.88x0.203	0.18	7.812	13	0.161	8.958		2	24.131	70.68	5.029	5.029	2.452	H1-1b
24	87	PIPE_2.88x0.203	0.179	5.667	2	0.044	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
25	72	PIPE_2.88x0.203	0.178	5.667	9	0.061	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
26	83	PIPE_2.88x0.203	0.177	5.667	13	0.068	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
27	56	PL3/8X6_HRA	0.176	0	9	0.195	0	y	23	71.879	73.872	0.585	9.234	2.823	H1-1b
28	8	PL3/8X6_HRA	0.175	0	13	0.199	0	y	15	71.879	73.872	0.585	9.234	2.814	H1-1b
29	74	PIPE_2.88x0.203	0.174	2.187	13	0.137	2.187		13	24.131	70.68	5.029	5.029	2.256	H1-1b
30	7	PL3/8X6_HRA	0.171	0.208	8	0.19	0.208	y	14	71.879	73.872	0.585	9.234	1.375	H1-1b
31	85	PIPE_2.88x0.203	0.167	7.812	9	0.146	8.958		9	24.131	70.68	5.029	5.029	2.504	H1-1b
32	19	PIPE_2.88x0.203	0.167	2.333	9	0.058	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
33	84	PIPE_2.88x0.203	0.161	2.333	6	0.045	5.667		5	35.519	70.68	5.029	5.029	3	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	76	PIPE_2.88x0.203	0.16	5.667	9	0.06	2.333		13	35.519	70.68	5.029	5.029	3	H1-1b
35	55	PL3/8X6_HRA	0.158	0.085	3	0.19	0.208	y	57	71.879	73.872	0.585	9.234	1.336	H1-1b
36	36	PL3/8X6_HRA	0.152	0.208	7	0.188	0.208	y	54	71.879	73.872	0.585	9.234	2.68	H1-1b
37	26	PIPE_2.88x0.203	0.147	2.333	7	0.058	2.333		8	35.519	70.68	5.029	5.029	3	H1-1b
38	18	PIPE_2.88x0.203	0.146	5.667	5	0.053	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
39	37	PL3/8X6_HRA	0.144	0	5	0.201	0	y	19	71.879	73.872	0.585	9.234	2.877	H1-1b
40	5	PL3/8X6_HRA	0.12	0	3	0.152	0	y	2	70.017	73.872	0.585	9.234	1.959	H1-1b
41	35	PL3/8X6_HRA	0.118	0	7	0.127	0	y	6	70.017	73.872	0.585	9.234	1.884	H1-1b
42	4	PL3/8X6_HRA	0.116	0	2	0.191	0	y	2	70.017	73.872	0.585	9.234	2.376	H1-1b
43	53	PL3/8X6_HRA	0.109	0.164	3	0.162	0	y	10	70.017	73.872	0.585	9.234	2.624	H1-1b
44	34	PL3/8X6_HRA	0.1	0	6	0.163	0	y	6	70.017	73.872	0.585	9.234	2.366	H1-1b
45	54	PL3/8X6_HRA	0.098	0	11	0.132	0	y	9	70.017	73.872	0.585	9.234	1.88	H1-1b
46	69	PIPE_3.5x0.165	0.097	1.25	2	0.062	4		9	45.872	71.57	6.336	6.336	1.713	H1-1b
47	6	PIPE_3.5x0.165	0.091	6.75	7	0.048	4		5	45.872	71.57	6.336	6.336	1.918	H1-1b
48	80	PIPE_3.5x0.165	0.086	4	2	0.059	2.667		13	45.872	71.57	6.336	6.336	1.469	H1-1b

APPENDIX B

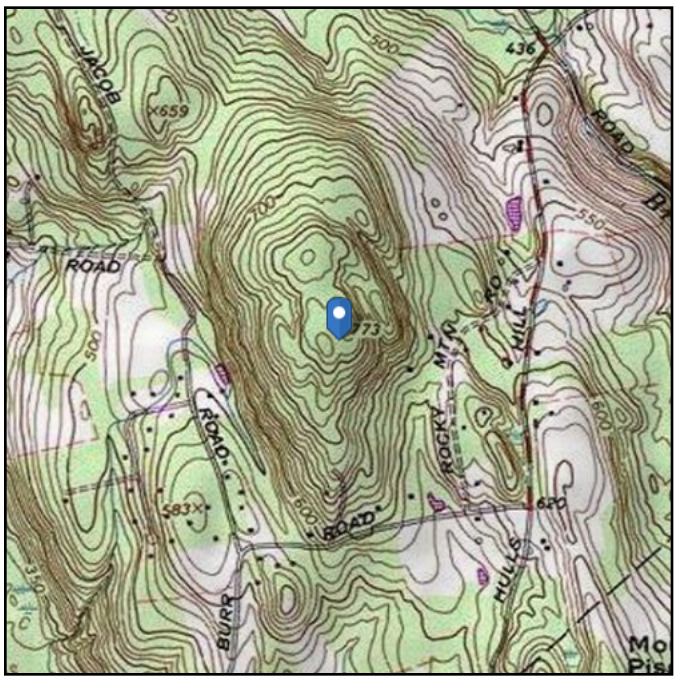
(Additional Calculations)

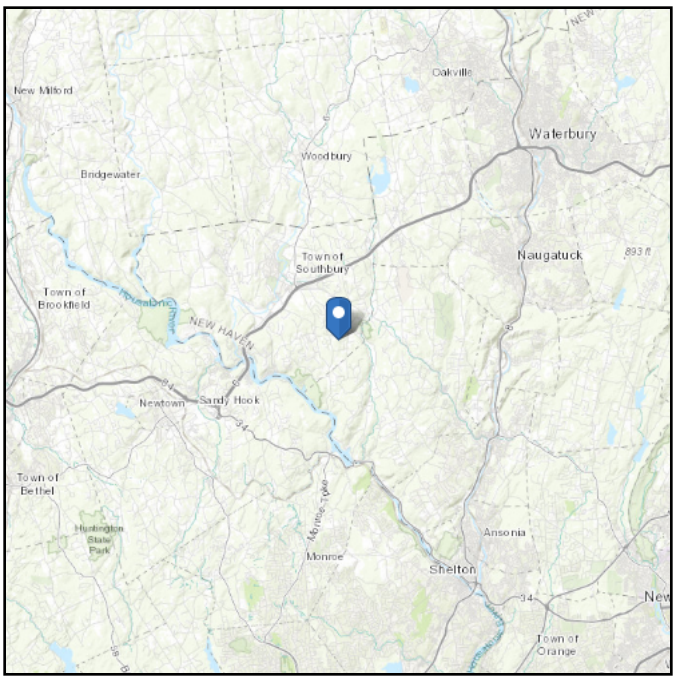
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 762.57 ft (NAVD 88)
Latitude: 41.448661
Longitude: -73.182638





Wind

Results:

Wind Speed:	117 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 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.

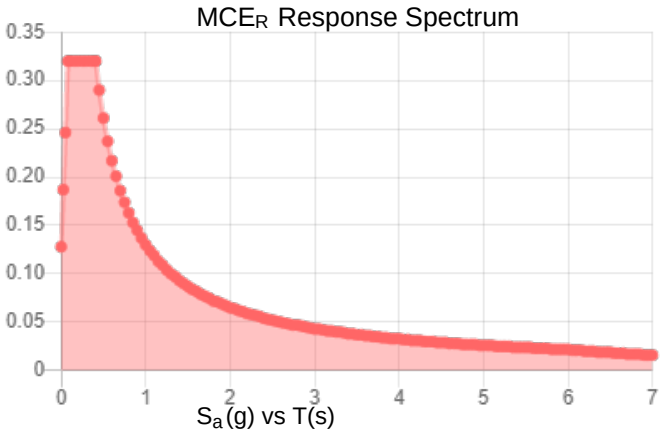
Seismic

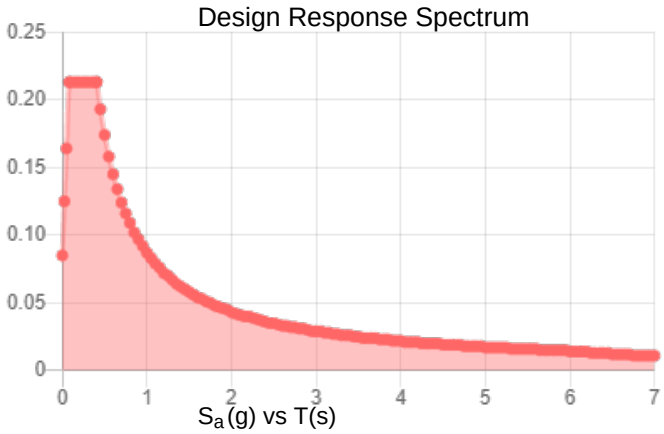
Site Soil Class: D - Default (see Section 11.4.3)

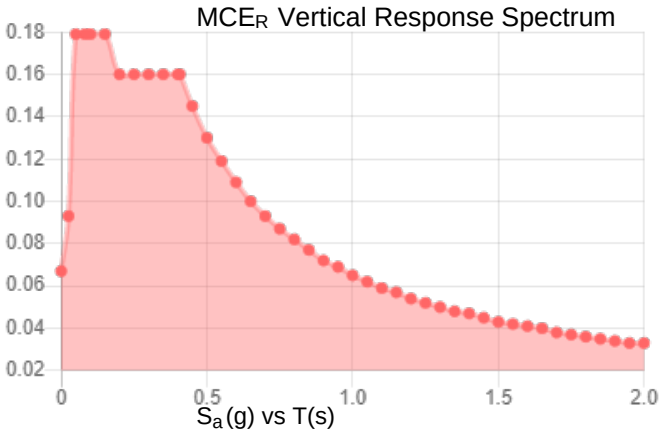
Results:

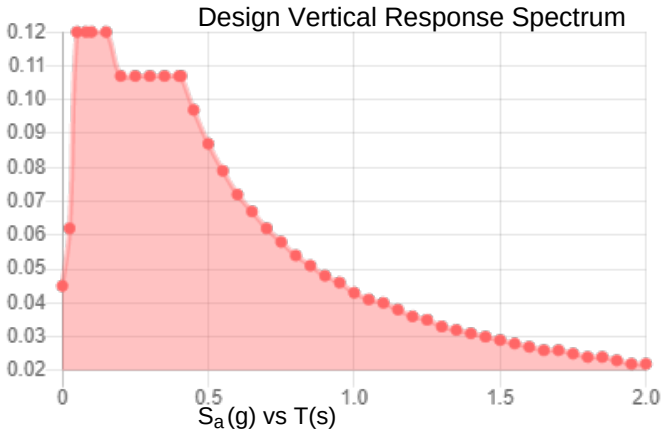
S_S :	0.2	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.176
S_{MS} :	0.32	F_{PGA} :	1.576
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.213	C_v :	0.7

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.

PROJECT	**149461.003.01 - Southbury, C**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**11/10/21**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Tower Type		:	Monopole		
Ground Elevation	z_s	:	763	ft	[ASCE7 Hazard Tool]
Tower Height		:	149.00	ft	
Mount Elevation		:	87.00	ft	
Antenna Elevation		:	87.00	ft	
Crest Height		:	219	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	5.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	117	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	:	0.20		
	S_1	:	0.05		
	S_{DS}	:	0.21		
	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}	:	1.84		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.97		[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}	:	1.36	in	[Sec. 2.6.10]
Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.107		[Sec. 2.7.7.1]
Amplification	A_s	:	1.33557		[Sec. 16.7]
	q_z	:	56.44	psf	

PROJECT	**149461.003.01 - Southbury, C**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**11/10/21**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (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	0.23	0.09	0.05	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.23	0.09	0.05	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.27	1.51	0.10	0.06	0.02	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.27	1.36	0.10	0.05	0.02	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.94	2.32	1.46	0.10	0.06	0.02	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.23	0.09	0.05	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.23	0.09	0.05	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.27	1.51	0.10	0.06	0.02	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.27	1.36	0.10	0.05	0.02	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.23	0.09	0.05	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.23	0.09	0.05	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.27	1.51	0.10	0.06	0.02	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.27	1.36	0.10	0.05	0.02	0.01

PROJECT	**149461.003.01 - Southbury, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**11/10/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.874	k
Vertical Shear	:	1.994	k
Horizontal Shear	:	1.483	k
Torsion	:	0.361	k.ft
Moment from Horizontal Forces	:	1.471	k.ft
Moment from Vertical Forces	:	4.52	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.49	k
Force from Horz. Moment	:	2.66	k
Force from Vert. Moment	:	8.19	k
Shear Load / Bolt	:	0.62	k
Tension Load / Bolt	:	0.47	k
Resultant from Moments / Bolt	:	4.30	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**23.03%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**9.86%**		**OKAY**
Unity Check, Combined	:	**32.90%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**1.79%**		**OKAY**

PROJECT	**149461.003.01 - Southbury, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**11/10/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.50	in^2	
Gross Shear Area, A_{gv}	:	0.75	in^2	
Net Area for tension, A_{nv}	:	4.16	in^2	
Net Area for shear, A_{nt}	:	3.00	in^2	

Plate Check

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**3.27%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**15.34%**		**OKAY**
Available Block Shear, ΦRn	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	**3.21%**		**OKAY**

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOHVN00043A

SBA - Southbury
459 Burr Road
Southbury, CT 06488

May 21, 2022

Fox Hill Telecom Project Number: 221184

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**27.77 %**

Fox Hill Telecom

May 21, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00043A – SBA - Southbury**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **459 Burr Road, Southbury, 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 **459 Burr Road, Southbury, 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 %**
AT&T	3.42 %
T-Mobile	11.94 %
Sprint	0.04 %
Site Total MPE %:	**27.77 %**

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:	27.77 %

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

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:	27.77 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **27.77 %** 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

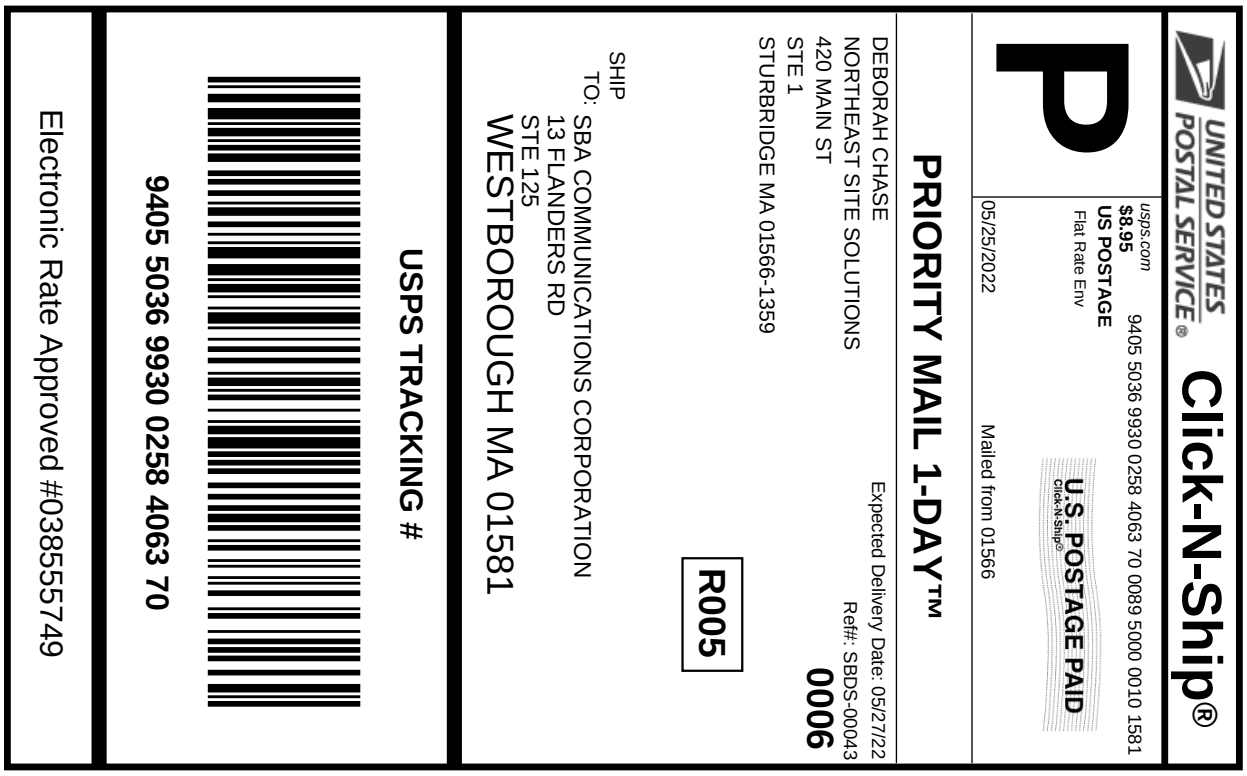
SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

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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STURBRIDGE MA 01566-1359

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

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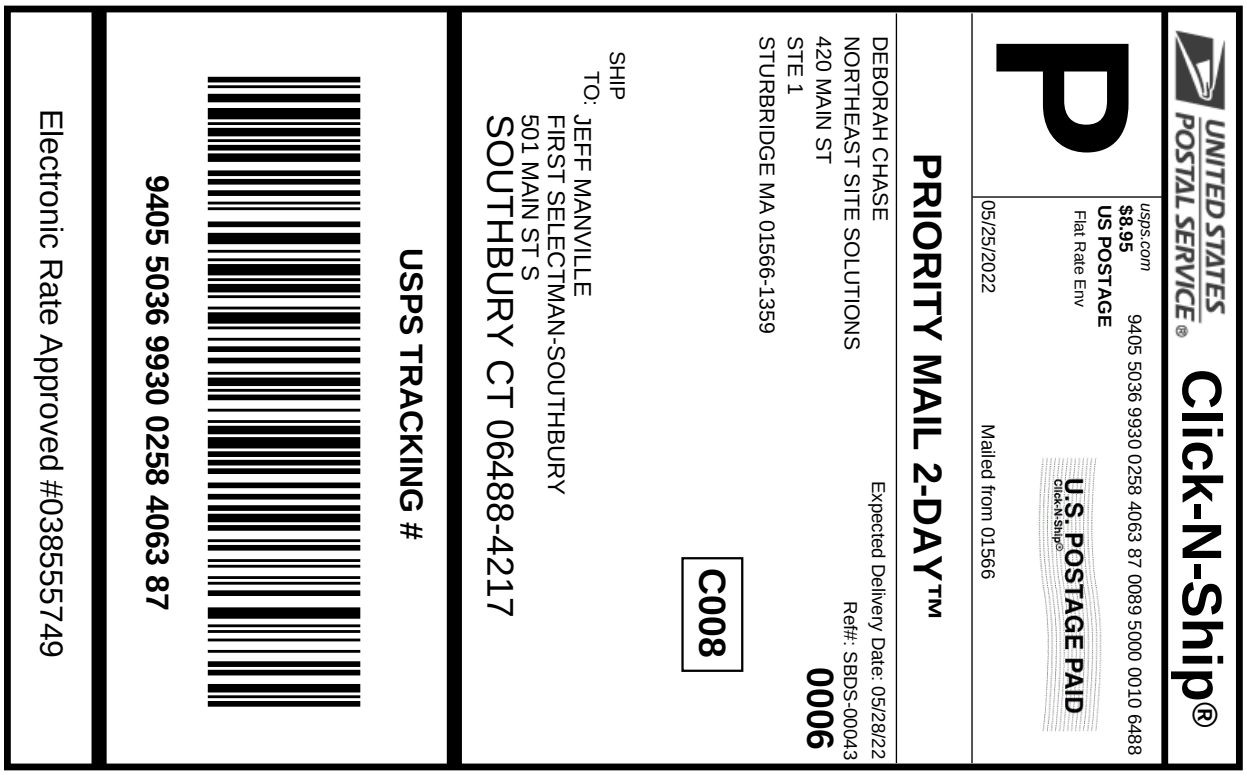

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420 MAIN ST
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STURBRIDGE MA 01566-1359

Ref#: SBDS-00043

To: JEFF MANVILLE
FIRST SELECTMAN-SOUTHBURY
501 MAIN ST S
SOUTHBURY CT 06488-4217

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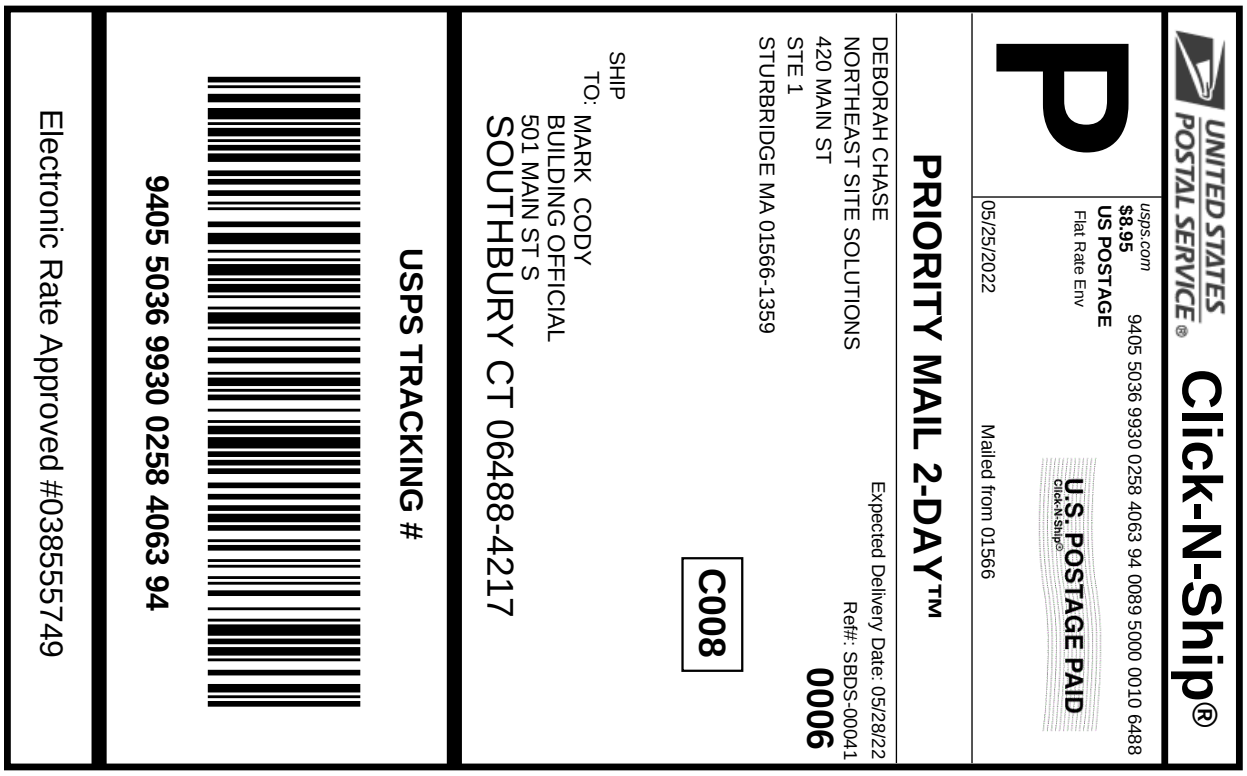

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Trans. #:	564318028
Print Date:	05/25/2022
Ship Date:	05/25/2022
Expected Delivery Date:	05/28/2022

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-00041

To: MARK CODY
BUILDING OFFICIAL
501 MAIN ST S
SOUTHBURY CT 06488-4217

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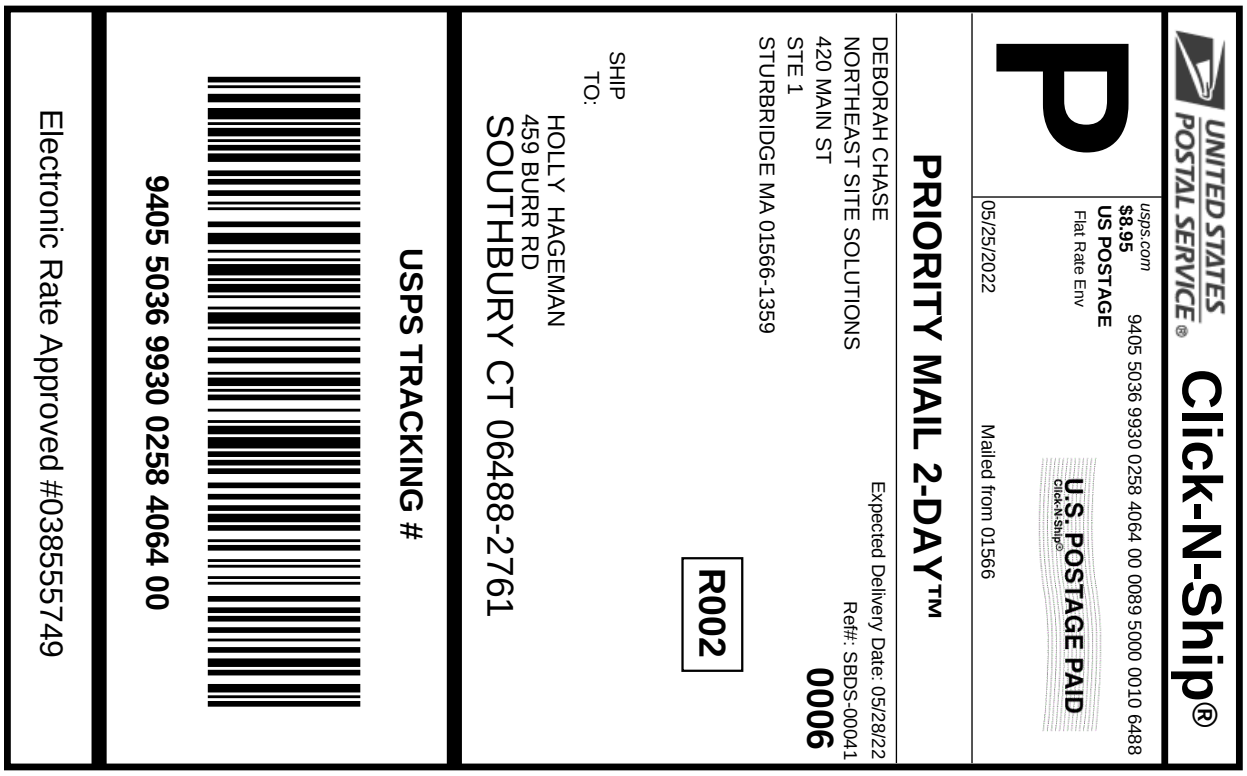

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Ship Date:	05/25/2022
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Total:	**$8.95**

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

Ref#: SBDS-00041

To: HOLLY HAGEMAN
459 BURR RD
SOUTHBURY CT 06488-2761

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Prepaid Mail Westborough, MA 01581 Weight: 0 lb 1.90 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4063 70	1		$0.00
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