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 5, 2022

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

RE: Tower Share Application
229 Cheshire Road, Prospect, CT 06712
Latitude: 41.507880
Longitude: -72.951022
Site #: CT20694-B_BOHVN00114B_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 229 Cheshire Road, Prospect, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 100-foot level of the existing 162-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 April 21, 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 approved by the Town of Prospect Planning & Zoning Commission on October 20, 1999. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Robert Chatfield and Mary Barton, Land Use Inspector for the Town of Prospect, as well as the tower owner (SBA) and property owner (Boardman Kathan).

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 162-feet and the Dish Wireless LLC antennas will be located at a center line height of 100-feet.

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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 15.45% 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 Prospect. 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 100-foot level of the existing 162-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 Prospect.

Sincerely,

Denise Sabo

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Mayor Robert Chatfield
Prospect Town Hall
36 Center Street
Prospect, CT 06712

Mary Barton, Land Use Inspector
Prospect Town Hall
36 Center Street
Prospect, CT 06712

Boardman Kathan – Property Owner
229 Cheshire Road
Prospect, CT 06712

SBA - Tower Owner

Exhibit A

Original Facility Approval

PROSPECT PLANNING & ZONING COMMISSION

36 CENTER STREET
PROSPECT, CONNECTICUT 06712-1699

NOTICE OF APPROVAL

SITE # 1025-036

FILE TYPE _____

SECTION Zoning

Property Owner: **Boardman W. Kathan**
Property Location: **229 Cheshire Road**
Date of Approval: **October 20, 1999**
Date of Notice: **October 22, 1999**

RESOLVED TO APPROVE, request for Special Permit under Section 300 for a Telecommunications Monopole and supporting equipment within a 100' x 100' parcel of land on property located at **229 Cheshire Road** in a residential zone and accessed from Cheshire Road. Owner: Boardman W. Kathan. Authorized agent: Sprint Spectrum L.P., 9 Barnes Industrial Road, Wallingford, CT 06492
PROVIDED THAT:

1. Construction of the access road and telecommunications facility will conform to drawings and detail sheets submitted by URS Greiner Woodward Clyde, 500 Enterprise Drive, Suite 3B, Rocky Hill, CT 06067, included in plans entitled "Sprint PCS, Site I.D. # CT33XC512, Kathan Parcel, 229 Cheshire Road, Prospect, Connecticut" with the latest revision date of 10/19/99.

2 The applicant will adhere to any and all requirements or conditions described in the permit granted to Boardman W. Kathan by Inland Wetlands on September 27, 1999 to construct an access road and install overhead utilities to this telecommunications monopole and facility.

3. The height of the monopole and accessory antennas will not exceed 150 feet above ground level. The monopole must be located a distance from the property line at least equal to the tower's height. No structure, other than those associated with this installation, shall be placed within the fall radius of the monopole and monopole attachments.

4. Utility connections from the property line to the proposed installation will be above ground.

5. The monopole will meet the design standards of the National Standards Institute and meet all pertinent FCC and OHSA requirements. A Geotechnical Study submitted to URS Greiner Woodward Clyde on the proposed telecommunications tower site dated October 14, 1999 and performed by Dr. Clarence Welti, P.E., P.C. offers acceptable alternate methods for installing the building and pole foundation over existing soil and bedrock conditions. The Land Use Office shall be advised as to the method utilized relative to this referenced report.

6. Prior to the initiation of any construction activity all erosion and sedimentation control measures shall be properly installed and fully functioning, and said measures shall be maintained in effective condition throughout the construction process.

7. The site supervisor and/or Project Manager shall ensure that no additional water runoff or increased water velocity will flow into the abutting Town of Prospect's Public Works property as a result of proposed roadway and drainage improvements, utility or facility installations. The Assistant Director of Public Works for Prospect is to be contacted by the Project Manager prior to initial construction and it is required that URS Greiner Woodward Clyde will accommodate any reasonable request or suggestion by the Town of Prospect to help prevent or divert increased water runoff from entering onto Town property.

8. It is advised that a gate and/or other means be installed at the beginning of the access road to restrict or alert incoming traffic to the presence of on site vehicles and thus prevent the situation where one or more vehicles must drive off the access road to allow other traffic to pass by. Town officials must have a means to access the property in the event of an emergency.

9. No public or private thoroughfare or driveway is to be blocked during any phase of this project by construction equipment or vehicles.

10. On-site storage of fuel or chemicals for any reason is prohibited.

11. All future tenant occupants must apply for and receive a Zoning Permit from the Land Use Inspector prior to their installation of equipment cabinets and antennas. Installation plans must also be submitted to Prospect's Building Official for approval.

12. The above-listed agent will be responsible for, and ensure his facility and his tenants comply with all FCC standards and guidelines for wireless facilities. Upon termination of the lease, or should the agent abandon use of the facility, Sprint Spectrum, L.P. as agent, shall remove all apparatus and aboveground structures from the site and restore the leased space to its original condition.

13. A performance bond in an amount to be determined by staff and in such form acceptable to the Town Attorney shall be posted with the Town of Prospect. The bond shall not be released until sufficient time (normally one year after completion) has elapsed to assure that all site stabilization and restoration requirements have been met.

14. **Reasons:** In granting the above Special Permit, the Planning & Zoning Commission of the Town of Prospect wishes to state upon its records that in the Commission's judgement, the subject project complies with Prospect's zoning regulations, provides an acceptable facility for wireless communications providers to utilize and will not exert a detrimental effect on the development of the area nor on the value of nearby properties.

Edward Miller (WA)

Edward Miller

Edward Miller, Chairman
Planning & Zoning Commission

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2020.

Information on the Property Records for the Municipality of Prospect was last updated on 1/22/2022.

Parcel Information

Location:	229 CHESHIRE RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	K0150100	Map Block Lot:	118 33 229	Acres:	64.76
490 Acres:	63.84	Zone:	RA-1	Volume / Page:	0070/0767
Developers Map / Lot:		Census:	3471		

Value Information

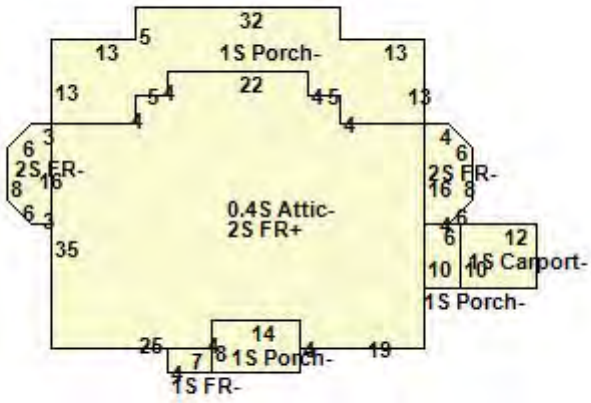
	Appraised Value	Assessed Value
Land	231,084	85,340
Buildings	180,605	126,420
Detached Outbuildings	311,383	217,970

	Appraised Value	Assessed Value
Total	723,072	429,730

Owner's Information

Owner's Data
KATHAN BOARDMAN W 229 CHESHIRE RD PROSPECT, CT 06712

Building 1



Building Use:	Single Family	Style:	Colonial	Living Area:	4,824
Stories:	2.00	Construction:	Wood Frame	Year Built:	1906
Total Rooms:	12	Bedrooms:	4	Full Baths:	2
Half Baths:	2	Fireplaces:	0	Heating:	Hot Water
Fuel:	Oil	Cooling Percent:	0	Basement Area:	2,190
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	
Siding:	Wood Shingles	Units:	w/ Accessory Apt		

Special Features

Fireplace	2

Attached Components

Type:	Year Built:	Area:
Unfinished Attic	1906	876
Frame Carport	1906	120
Open Porch	1906	112
Open Porch	1906	60

Detached Outbuildings

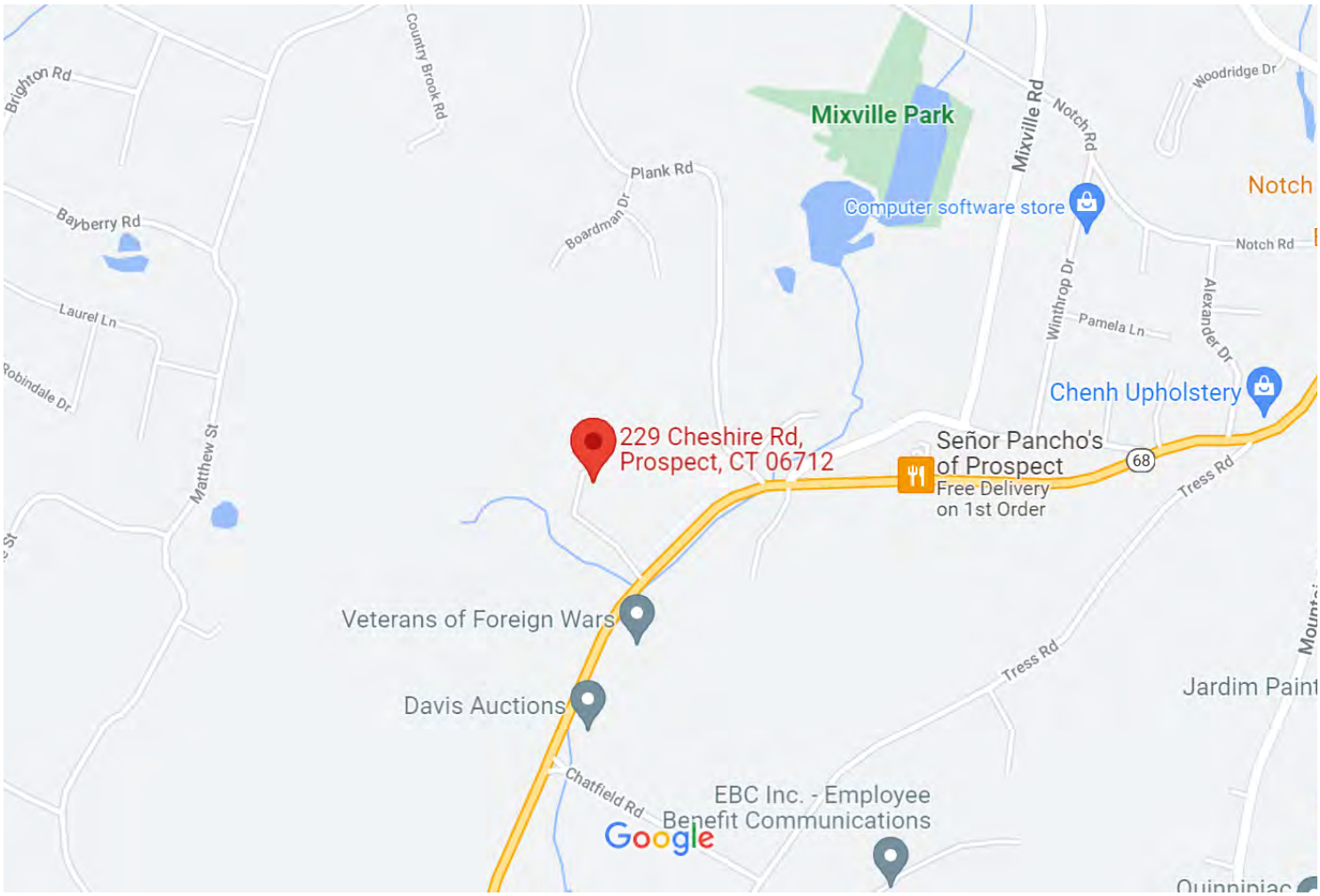
Type:	Year Built:	Length:	Width:	Area:
Frame Garage	1907	0.00	0.00	315
Frame Garage	1907	0.00	0.00	1,152
Cell Tower	1990	0.00	0.00	1

Building Permits

Permit Number	Permit Type	Date Opened	Reason
7589	Commercial	06/09/2016	REINFORCING TOWER TO BASE
7570	Commercial	05/18/2016	INSTALL 6 NEWER CELL ANTENNAS REMOVE 3 OLD ONES
6869	Electrical	07/19/2013	REPLACE 6 EXISTING CELL ANNTENNAS WITH 3 NEWER TECH ANTENNAE & EQUIP
6844	Electrical	06/19/2013	REINFORCEMENT OF EXISTING COMMUNICATION TOWER
6678	Residential	09/25/2012	REMOVE /REPLACE (6) ANTENNAS WITH 6 NEW ADD'L EQUIP EXSTNG SHEIT
6051		03/12/2010	REMOVE 10 ANTENNAE REPLACE WITH;10 ANTENNAE;

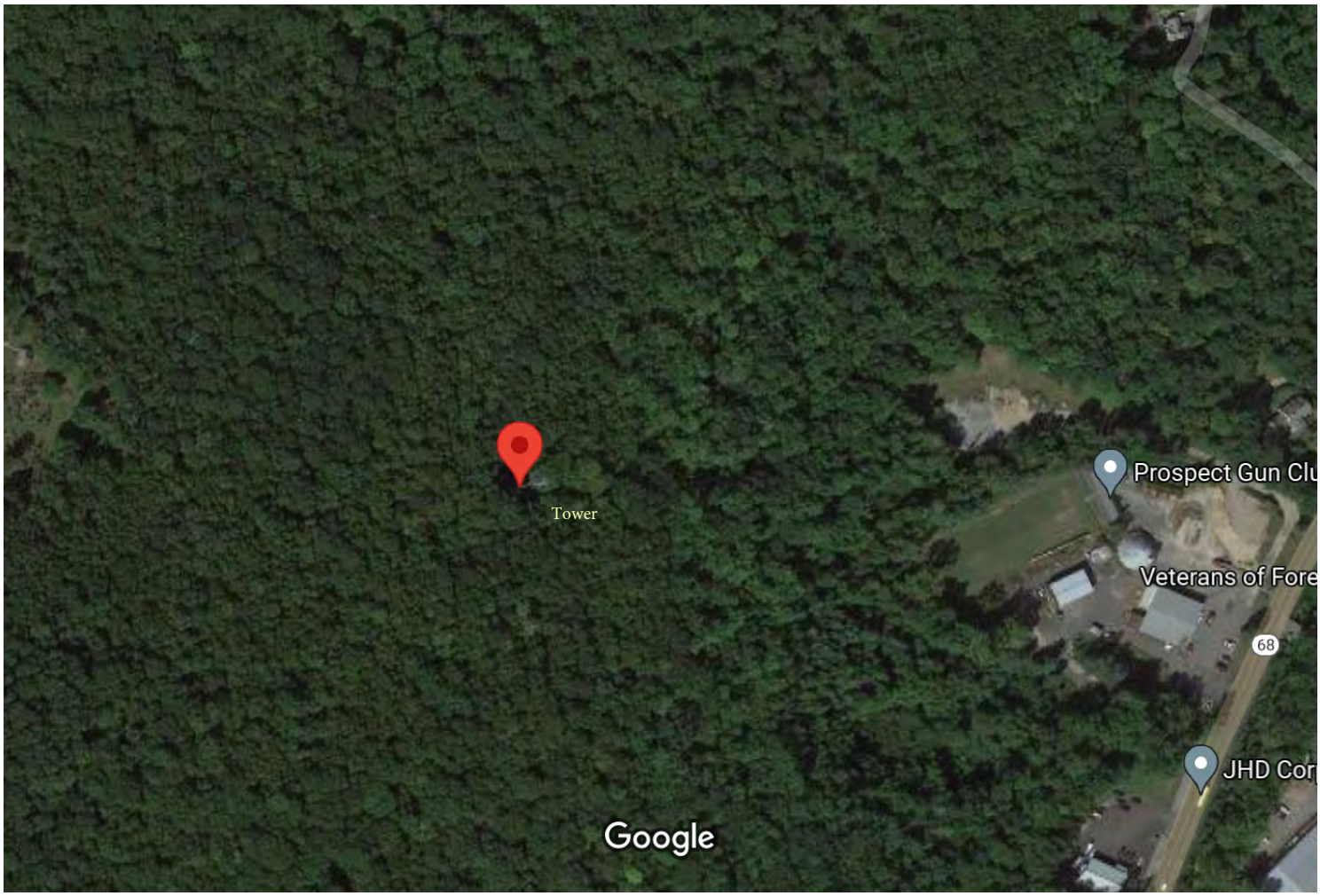
Permit Number	Permit Type	Date Opened	Reason
4847		04/05/2005	INSTALLATION OF VERIZON WIRELESS 12X20 COMMUNICATI;ONS EQUIP SHELTER & ANTENNAS AT EXIST COMM FAC.;C
4847		04/05/2005	INSTALLATION OF VERIZON WIRELESS 12X20 COMMUNICATI;ONS EQUIP SHELTER & ANTENNAS AT EXIST COMM FAC.;
3776		10/09/1999	CONSTRUCTED A 150' TELECOMMUNICATION TOWER; 1 ACRE PRICED AS INCOME INTENSIVE WITH TOWER. 150000 ADD

Google Maps 229 Cheshire Rd



Map data ©2022 1000 ft

Google Maps 41°30'28.4"N 72°57'03.7"W



Imagery ©2022 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2022 200 ft

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00114B

DISH Wireless L.L.C. SITE ADDRESS:

229 CHESHIRE ROAD
PROSPECT, CT 06712

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:	KATHAN BOARDMAN
ADDRESS:	229 CHESHIRE RD PROSPECT, CT 06712
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT02694-B
TOWER APP NUMBER:	169192
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 30' 28.37" N 41.50788056
LONGITUDE (NAD 83):	72° 57' 3.69" W -72.95102500
ZONING JURISDICTION:	NEW HAVEN COUNTY
ZONING DISTRICT:	RA-1
PARCEL NUMBER:	118 33 227
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE
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, TAKE I-91 S AND I-84 TO CT-70 E/STATE HWY 801 IN CHESHIRE. TAKE EXIT 26 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, TAKE EXIT 26 FOR CT-70 TOWARD CHESHIRE/PROSPECT, TAKE SUMMIT RD AND MATTHEW ST TO YOUR DESTINATION IN PROSPECT, TURN LEFT ONTO CT-70 E/STATE HWY 801, CONTINUE TO FOLLOW CT-70 E, TURN RIGHT ONTO SUMMIT RD, TURN LEFT ONTO JUGGERNAUT RD, TURN RIGHT ONTO MATTHEW ST, TURN LEFT. ARRIVE AT BOHVN00114B.

VICINITY MAP

N

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 — No. 23924 — LICENSED PROFESSIONAL ENGINEER

4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

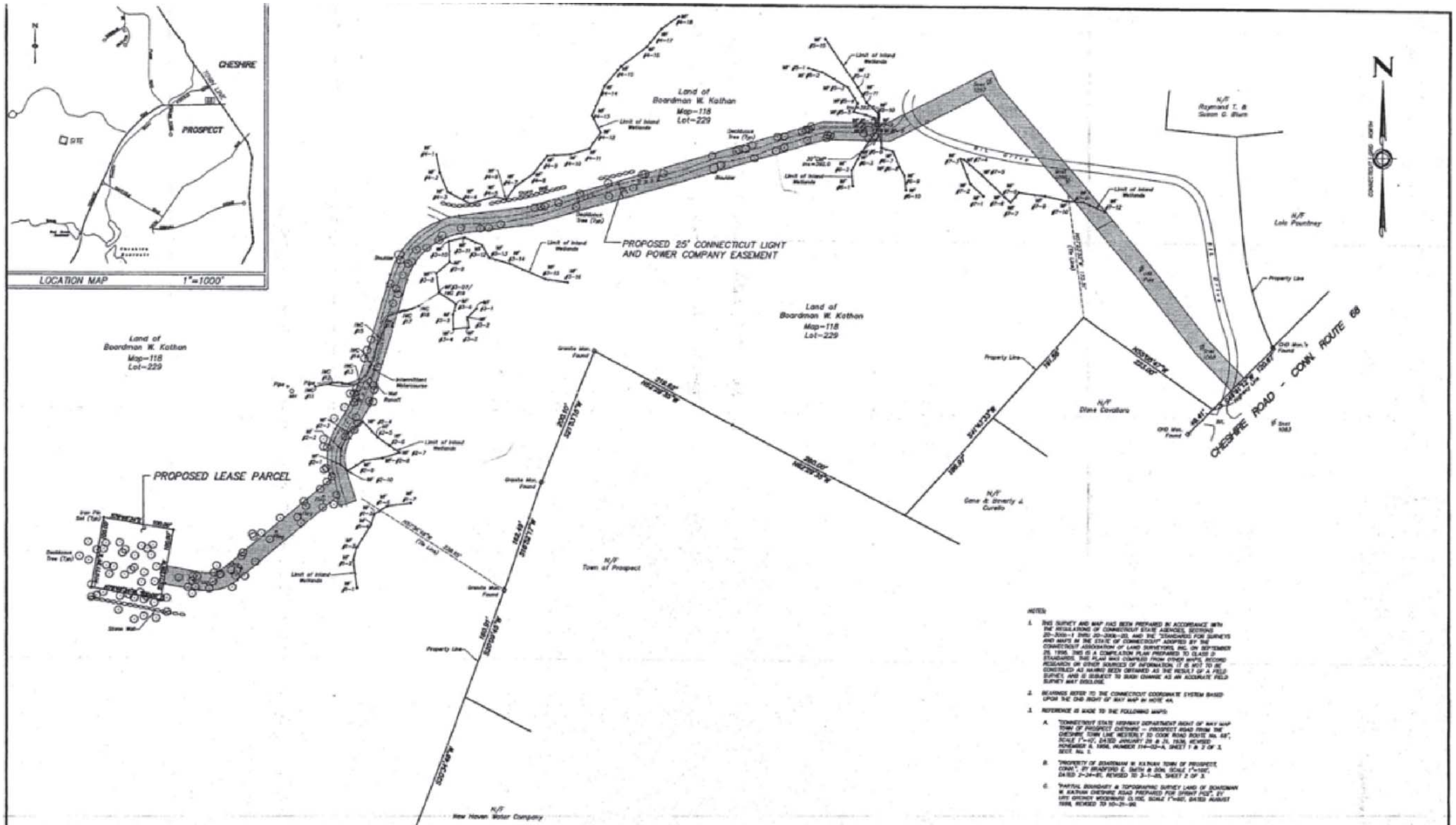
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



NOTES:

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THRU 20-300b-20, AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. THIS IS A COMPILATION PLAN PREPARED TO CLASS D STANDARDS. THIS PLAN WAS COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
2. BEARINGS REFER TO THE CONNECTICUT COORDINATE SYSTEM BASED UPON THE CHD RIGHT OF WAY MAP IN NOTE 4A.
3. REFERENCE IS MADE TO THE FOLLOWING MAPS:
   A. "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF PROSPECT CHESHIRE – PROSPECT ROAD FROM THE CHESHIRE TOWN LINE WESTERLY TO COOK ROAD ROUTE No. 68", SCALE 1"=40', DATED JANUARY 20 & 21, 1936, REVISED NOVEMBER 8, 1956, NUMBER 114-02-A, SHEET 1 & 2 OF 3, SECT. No. 1.
   B. "PROPERTY OF BOARDMAN W. KATHAN TOWN OF PROSPECT, CONN.", BY BRADFORD E. SMITH & SON, SCALE 1"=100', DATED 2-24-81, REVISED TO 3-1-85, SHEET 2 OF 3.
   C. "PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY LAND OF BOARDMAN W. KATHAN CHESHIRE ROAD PREPARED FOR SPRINT PCS", BY [illegible] WOODWARD CLYDE, SCALE 1"=40', DATED AUGUST 1998, REVISED TO 10-21-98.

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 TUTTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

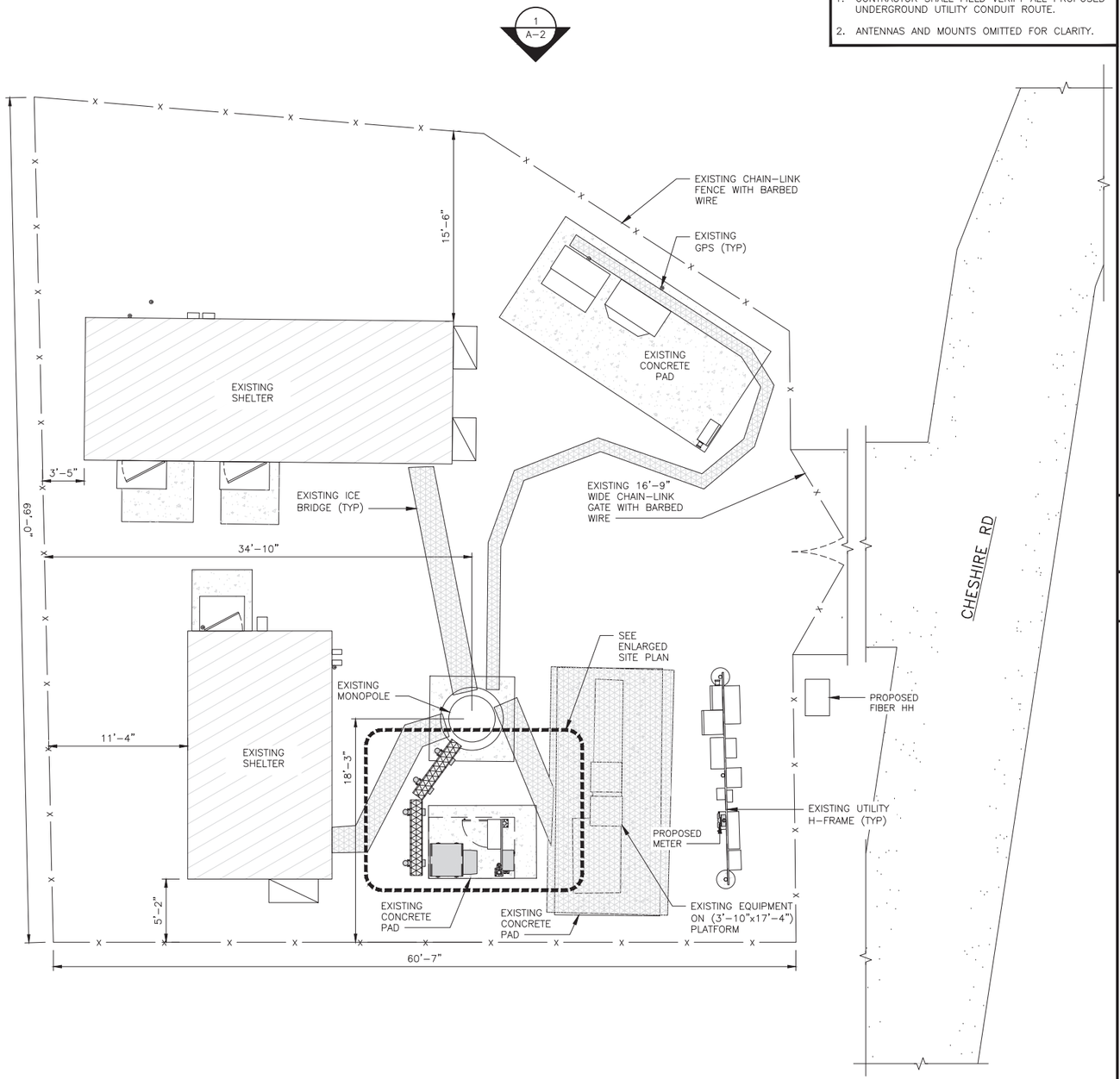
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE
SITE SURVEY

SHEET NUMBER
LS-1

NOTES

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



N

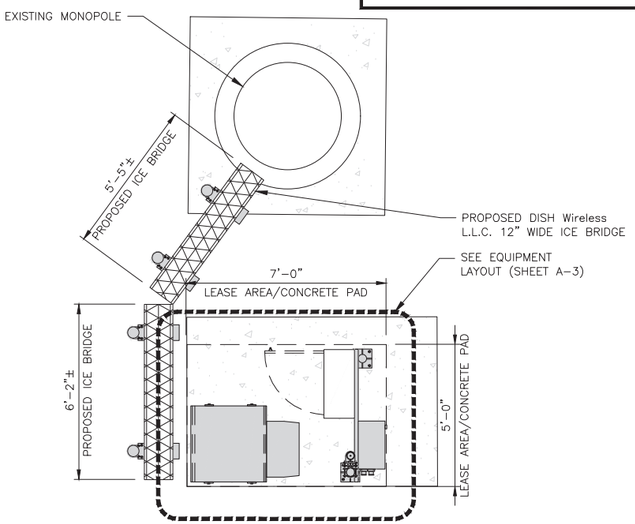
OVERALL SITE PLAN

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

1

NOTES

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



N

ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=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
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

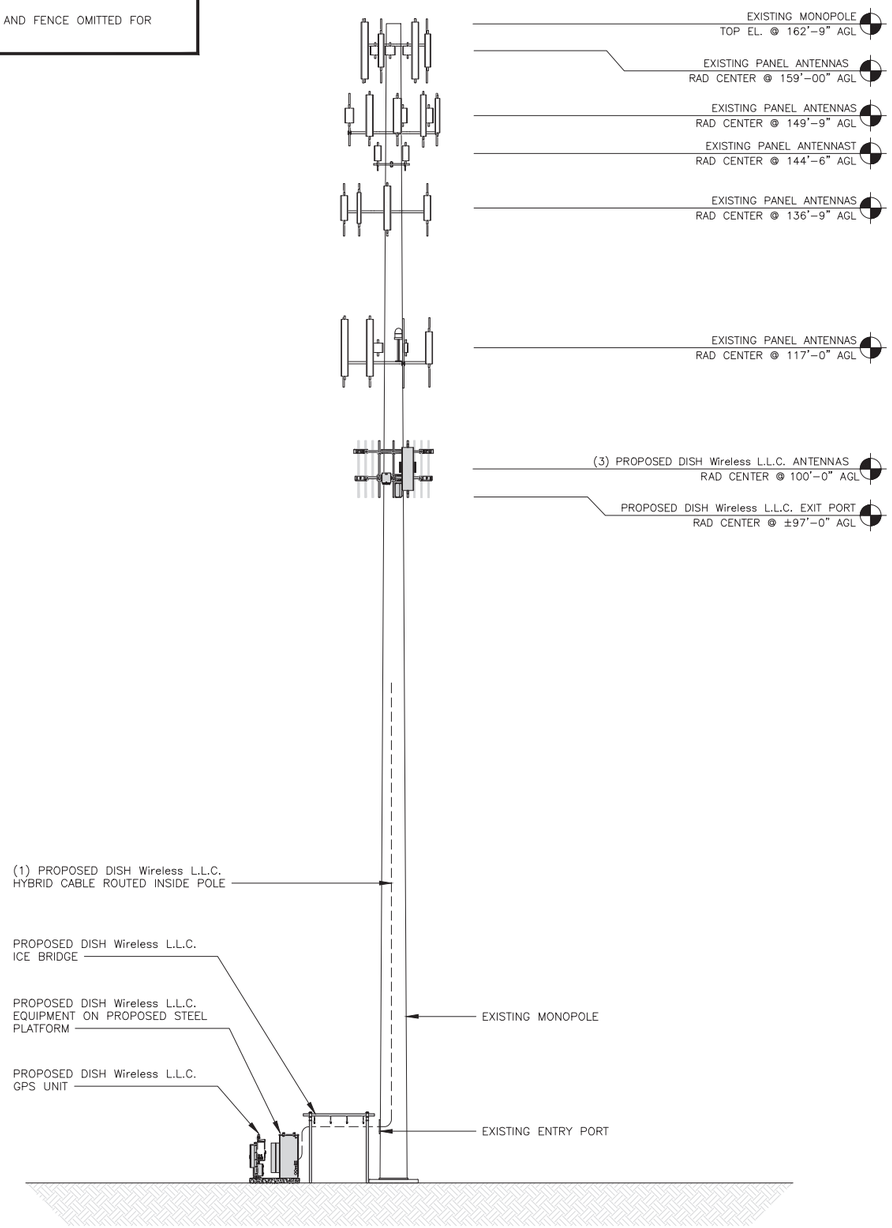
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

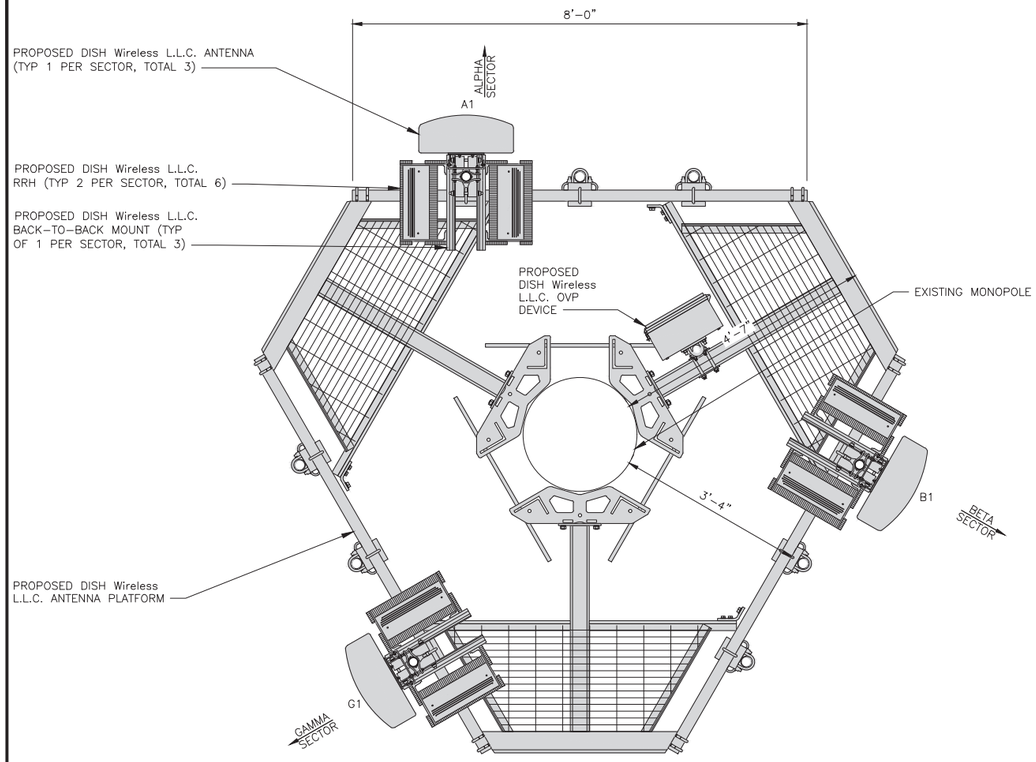
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

12' 8' 4' 0 10' 20'
3/32"=1'-0"

1



N

ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	0°	100'-0"	(1) HIGH-CAPACITY HYBRID CABLE (135' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	100'-0"	
GAMMA	G1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	100'-0"	

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

B+T GRP

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

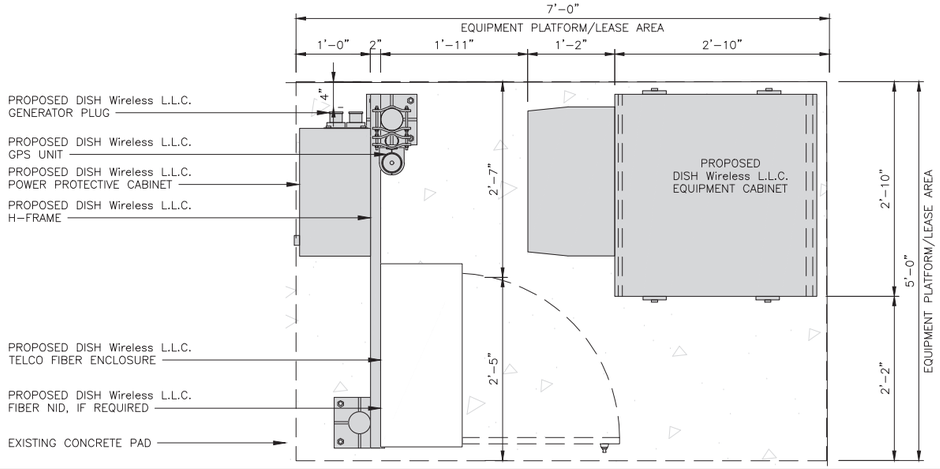
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

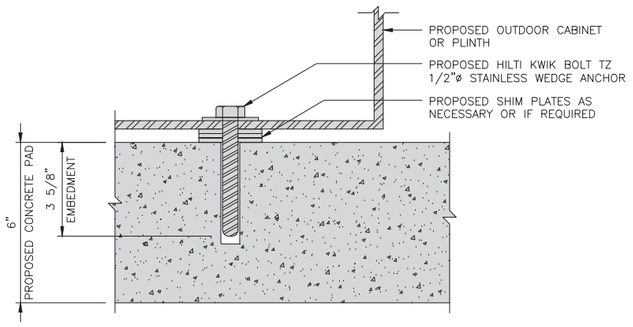
A-2



PLATFORM EQUIPMENT PLAN

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

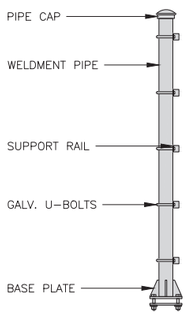
1



TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

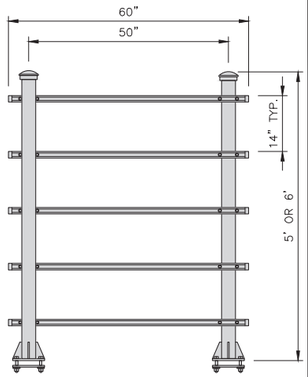
2

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



SIDE

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



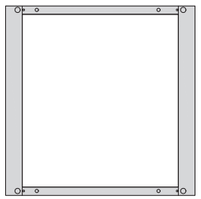
FRONT

H-FRAME DETAIL

NO SCALE

3

CHARLES INDUSTRY LT-97-002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	



PLAN

FRONT/BACK

SIDE

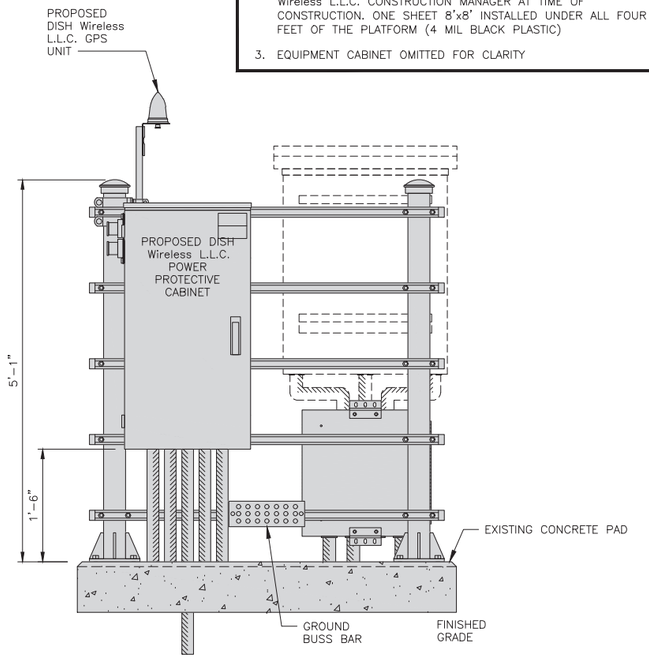
PLINTH DETAIL

NO SCALE

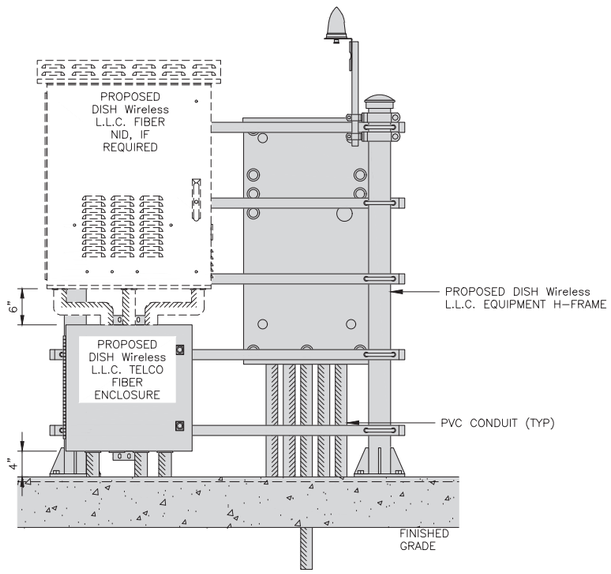
4

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

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

H-FRAME EQUIPMENT ELEVATION

5

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 No. 23924 LICENSED PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

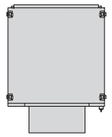
A&E PROJECT NUMBER
149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

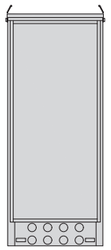
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

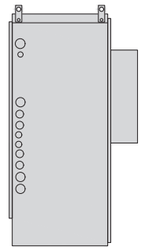
ENERSYS HVAC 2000005995	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HVAC	600W
TOTAL WEIGHT (EMPTY)	371 lbs



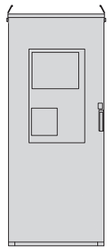
PLAN



BACK



SIDE

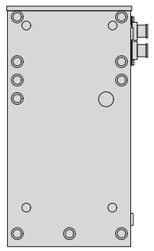


FRONT

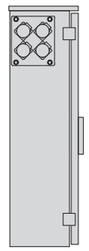
CABINET DETAIL | NO SCALE | 1

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

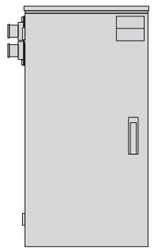
TOP



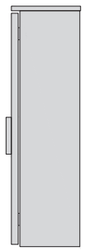
BACK



SIDE



FRONT

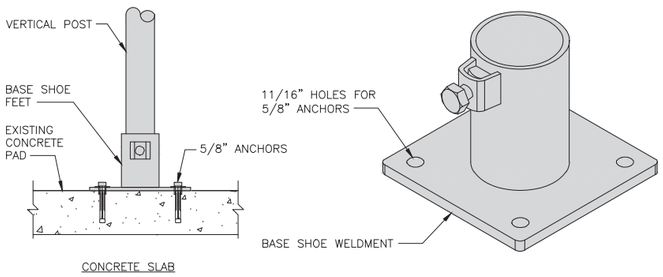


SIDE

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

NOT USED | NO SCALE | 3

SITEPRO1 BSF35 BASE SHOE FEET	
DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2-7/8" OR 3-1/2"

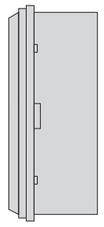


CONCRETE SLAB

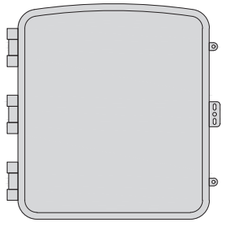
ICE BRIDGE PIPE MOUNT DETAIL | NO SCALE | 4

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

TOP



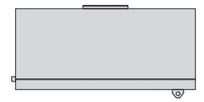
SIDE



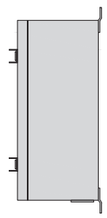
FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

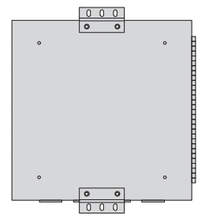
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



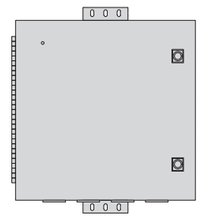
FRONT



SIDE



BACK

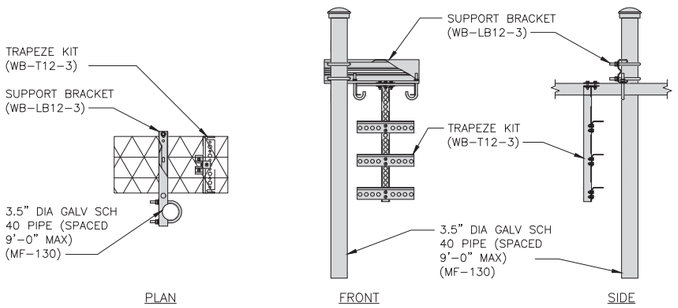


FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

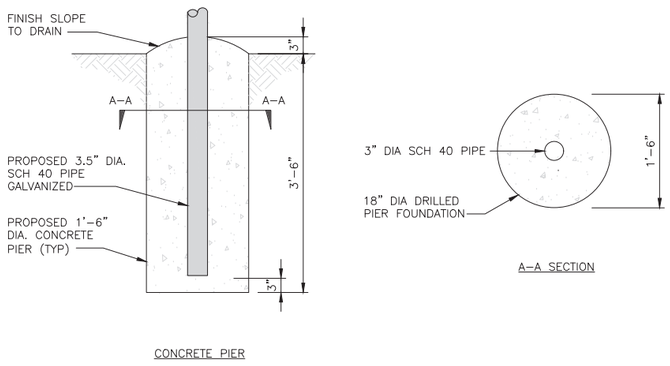
COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



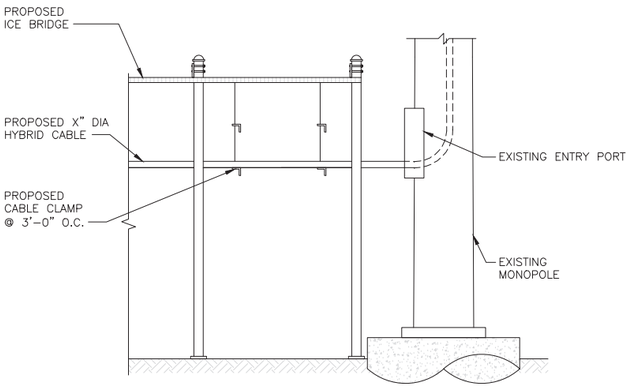
PLAN FRONT SIDE

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

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 No. 23924 LICENSED PROFESSIONAL ENGINEER

4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

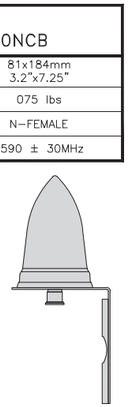
SHEET TITLE

EQUIPMENT DETAILS

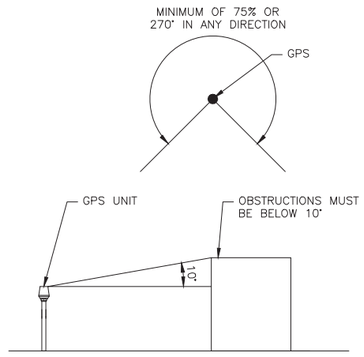
SHEET NUMBER

A-4

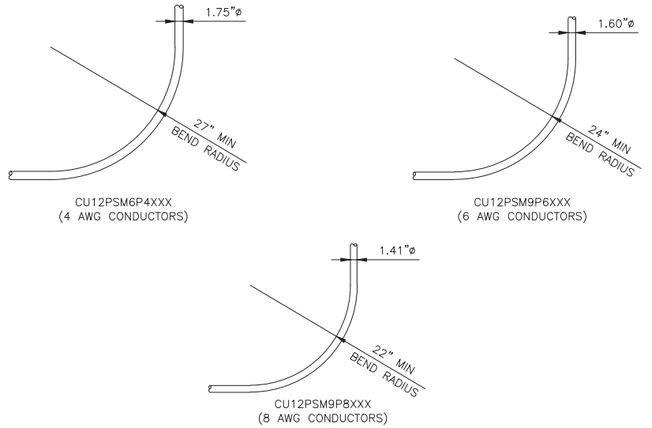
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

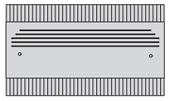
SHEET TITLE

EQUIPMENT DETAILS

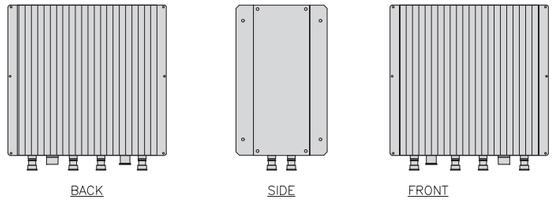
SHEET NUMBER

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



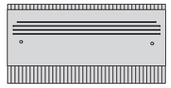
PLAN



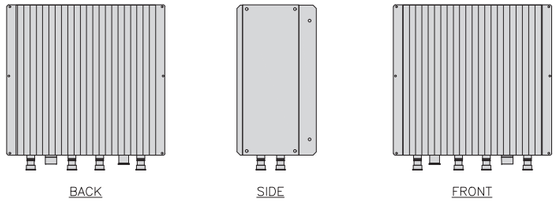
BACK SIDE FRONT

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

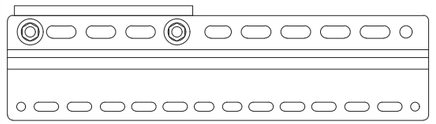


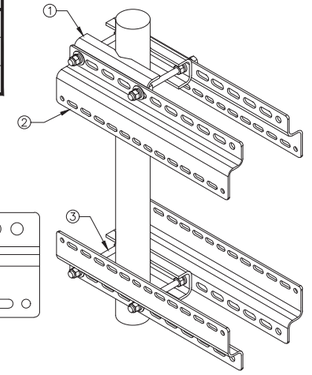
BACK SIDE FRONT

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"

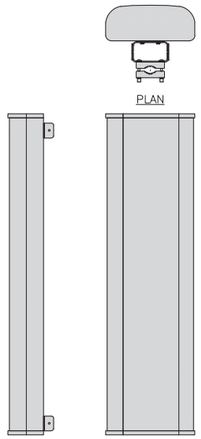




NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

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

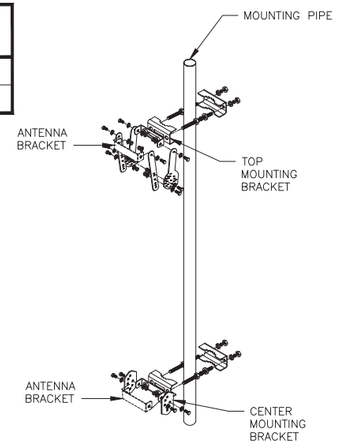
ANTENNA DETAIL | NO SCALE | 4

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

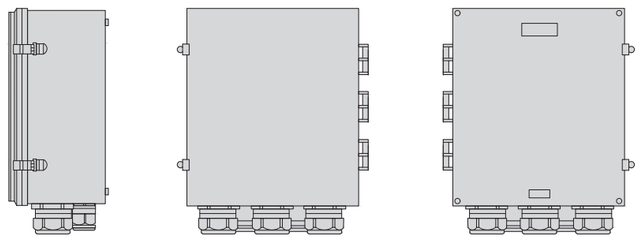


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

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

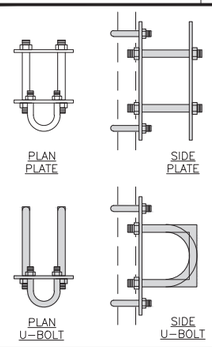


SIDE BACK FRONT

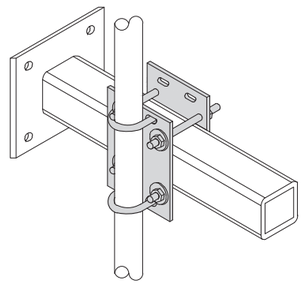
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

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



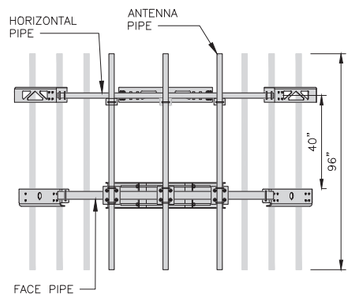
PLAN PLATE SIDE PLATE PLAN U-BOLT SIDE U-BOLT

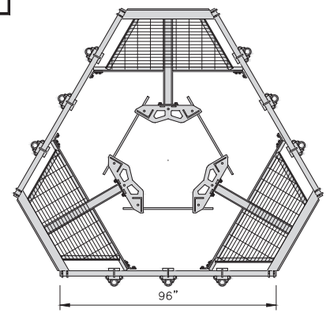


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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 No. 23924 LICENSED PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149540.001.01

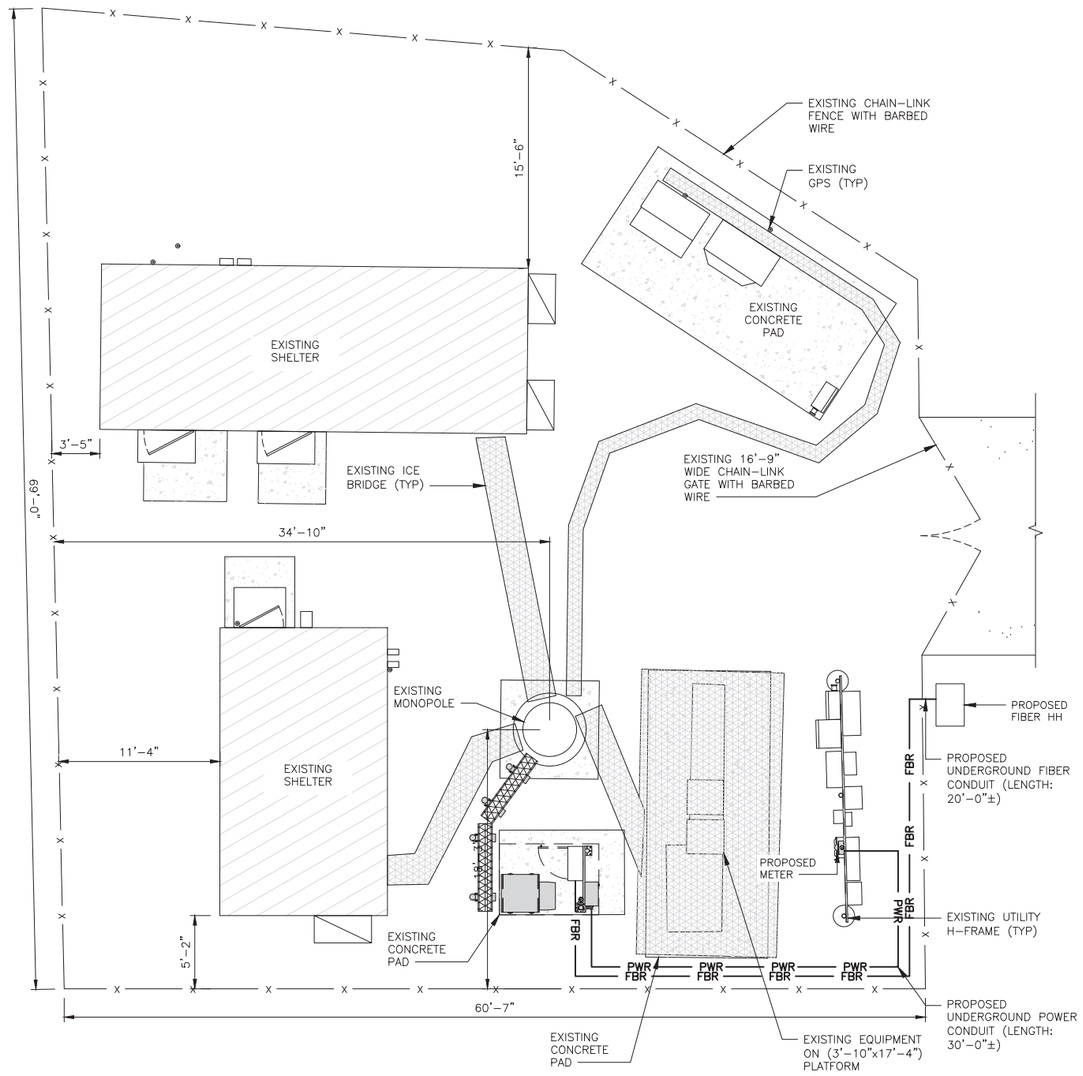
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

UTILITY ROUTE PLAN

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

1

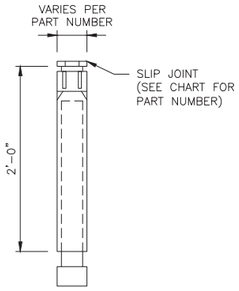
ELECTRICAL NOTES

NO SCALE

2

CARLON EXPANSION FITTINGS

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

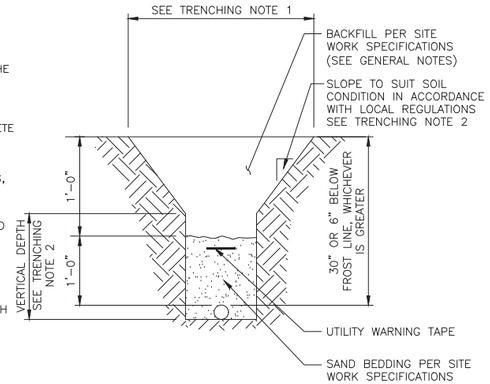


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

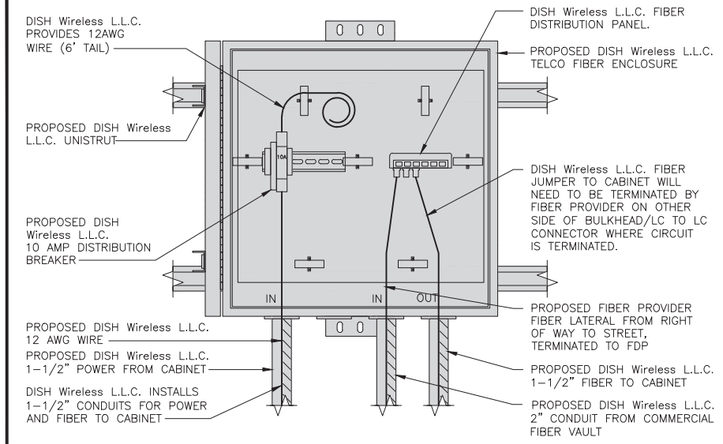
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

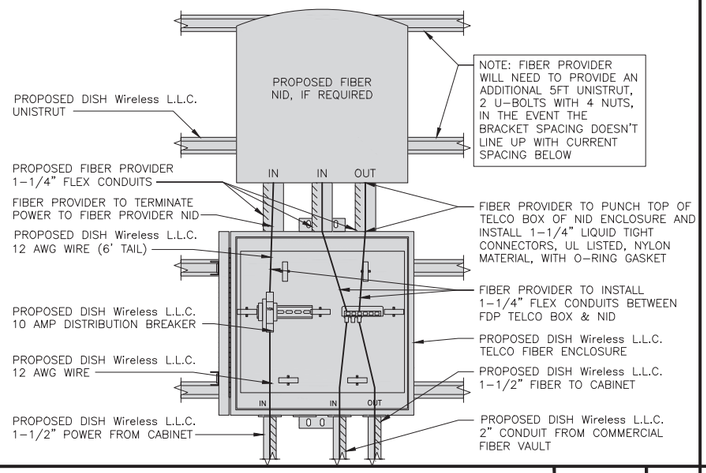
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

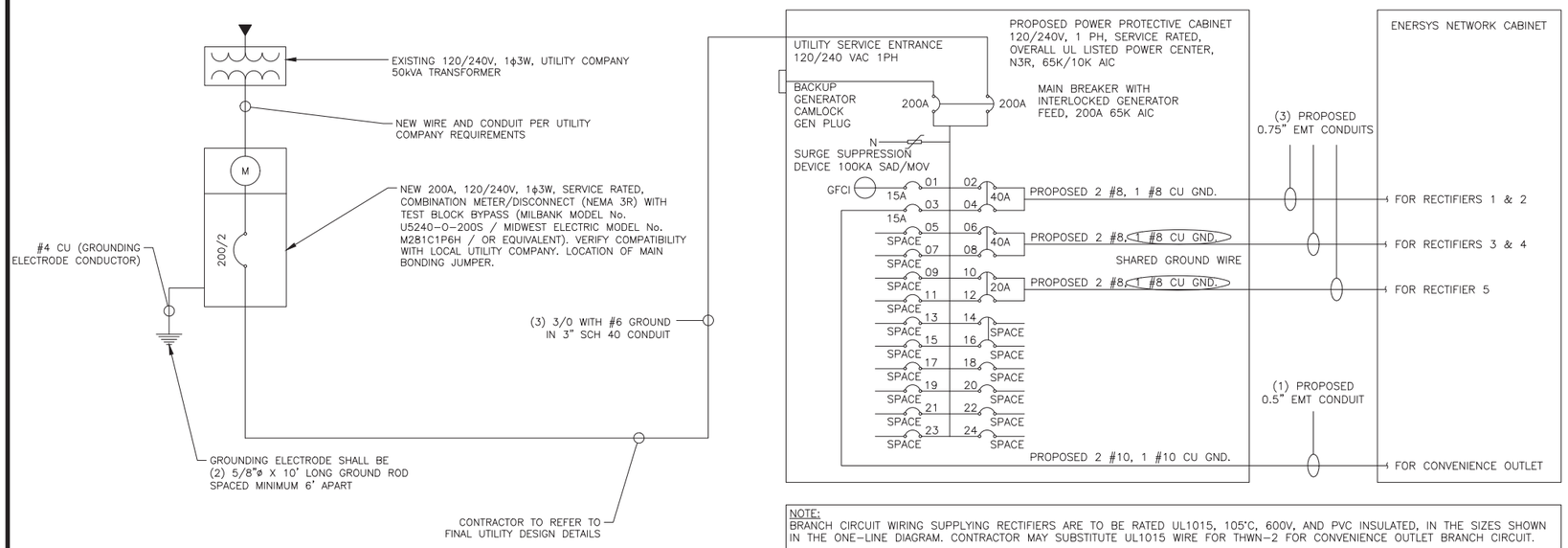
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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

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 — No. 23924 — LICENSED PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

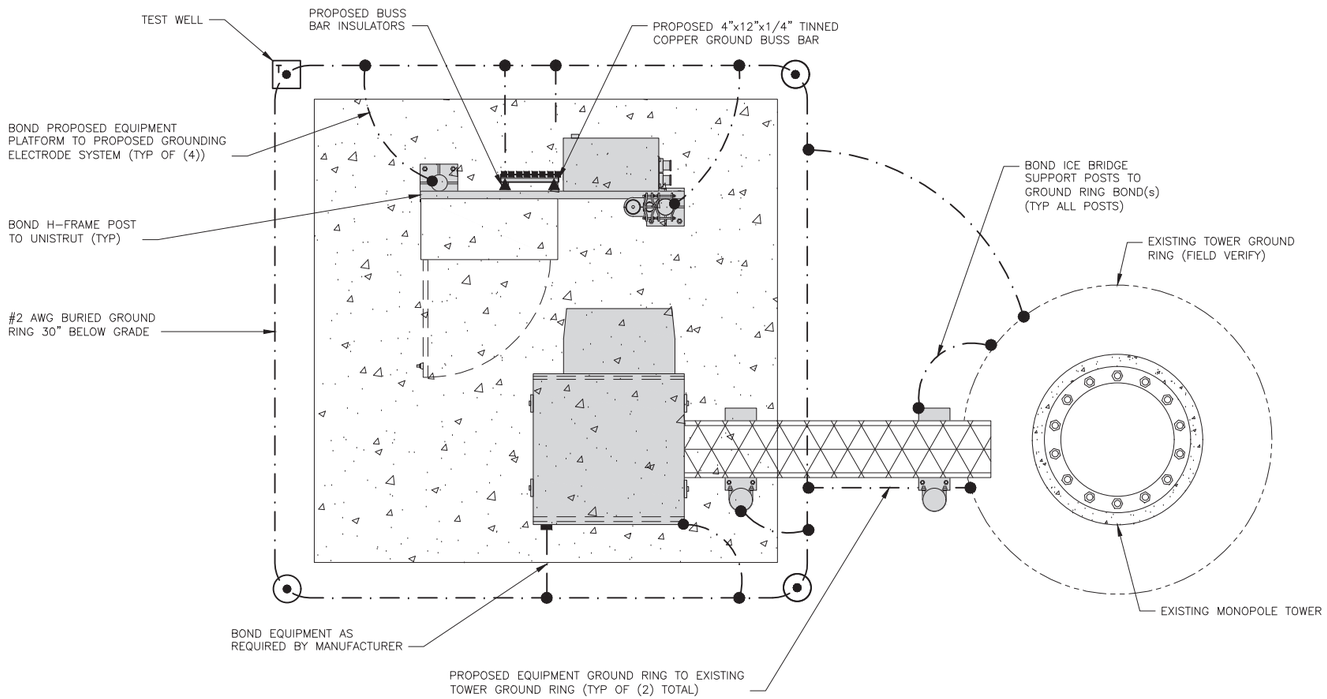
REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

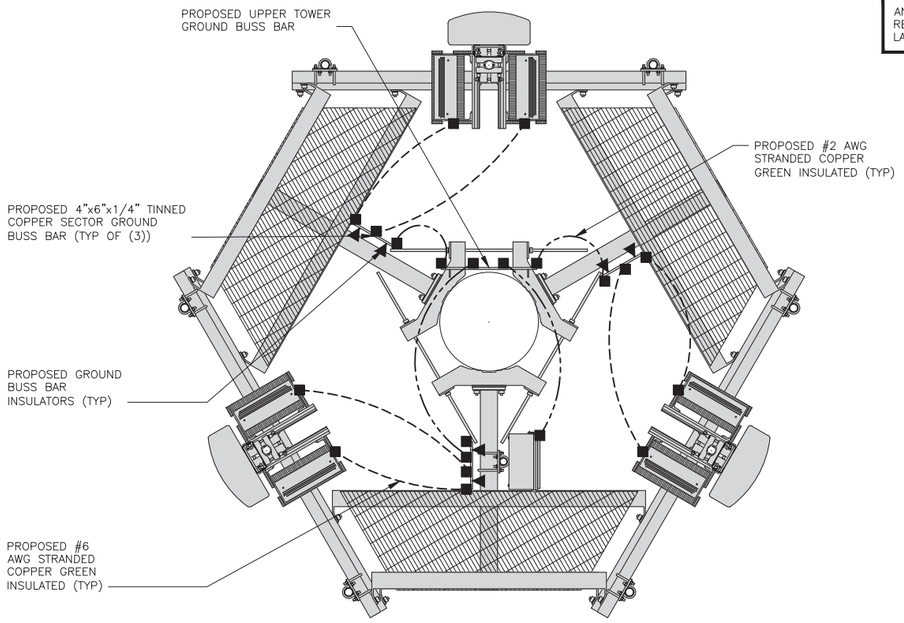
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

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

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

4/21/2022

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

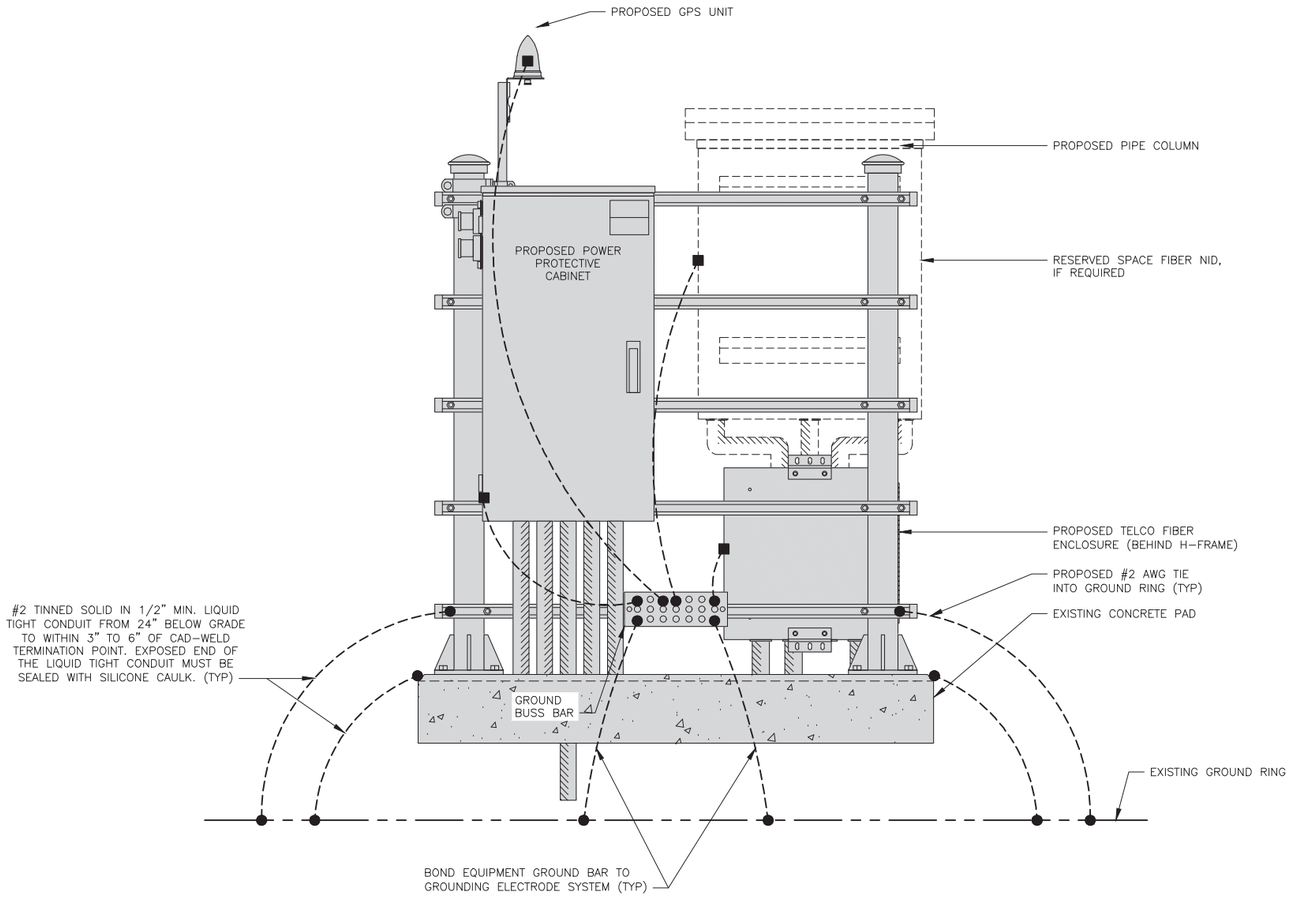
GROUNDING PLANS AND NOTES

SHEET NUMBER

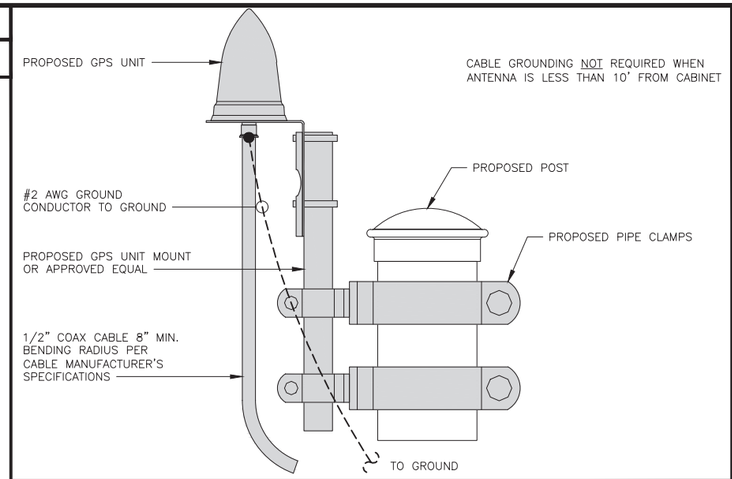
G-1

NOTES

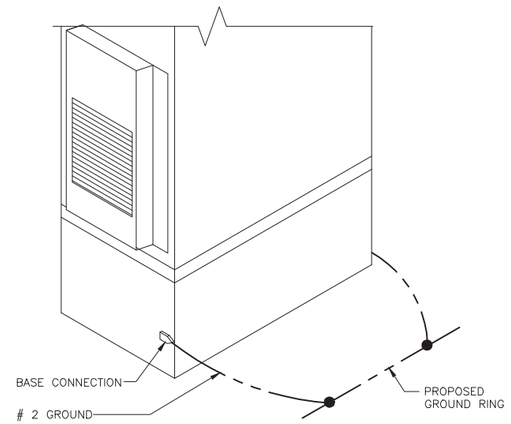
EQUIPMENT CABINET OMITTED FOR CLARITY



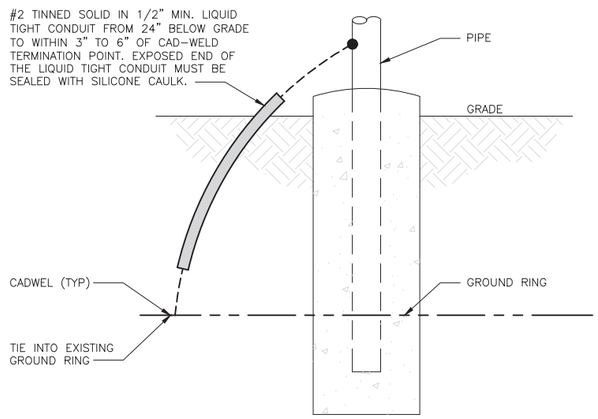
H-FRAME GROUNDING DETAIL | NO SCALE | 1



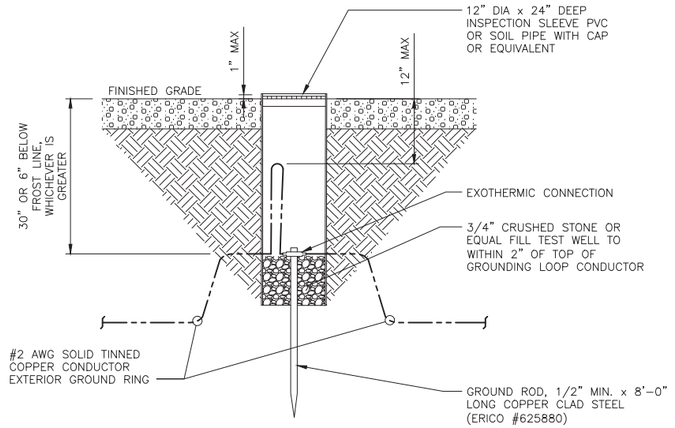
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



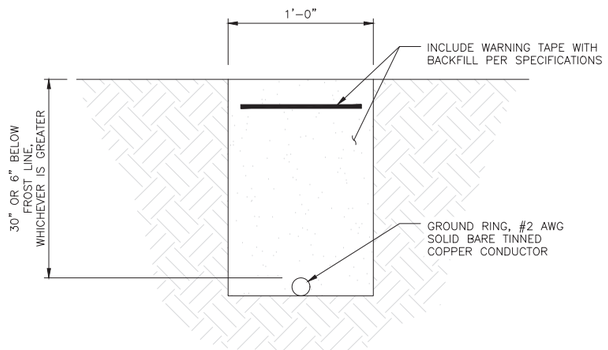
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

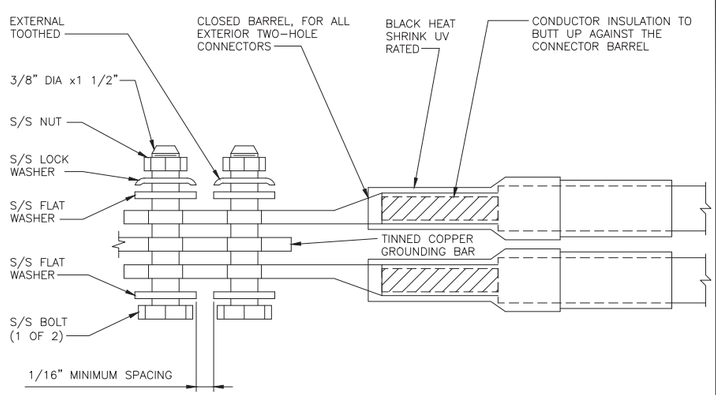
GROUNDING DETAILS

SHEET NUMBER

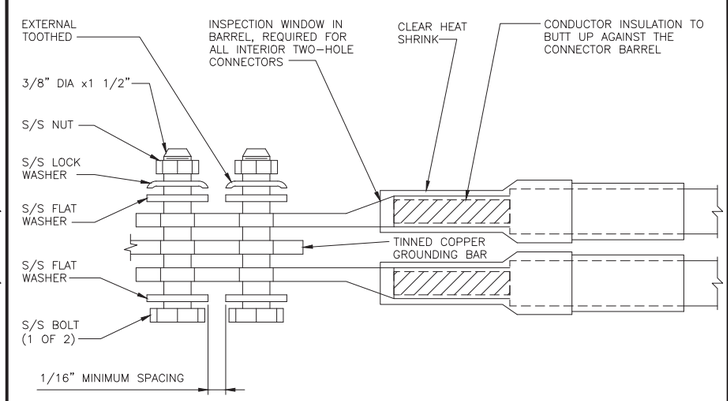
G-2

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).

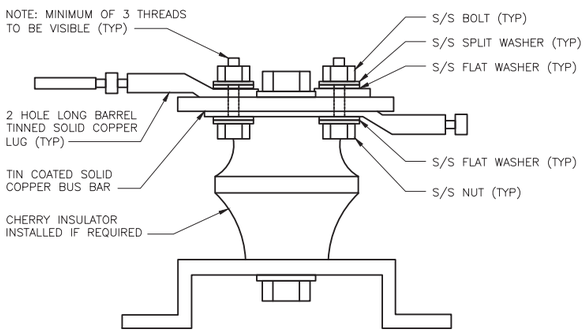
TYPICAL GROUNDING NOTES | NO SCALE | 1



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

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

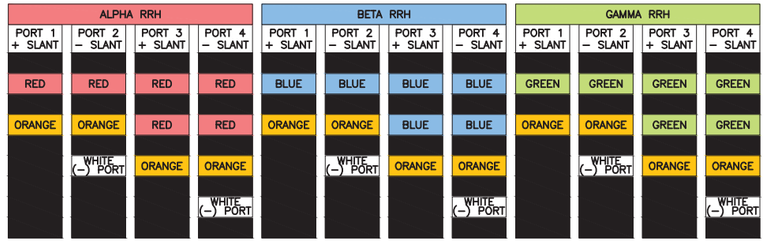
G-3

HYBRID/DISCREET CABLES

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

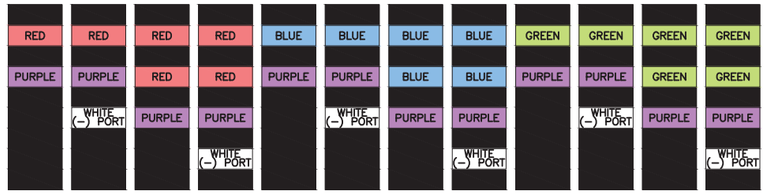
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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)



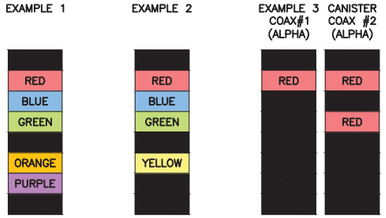
HYBRID/DISCREET CABLES

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.

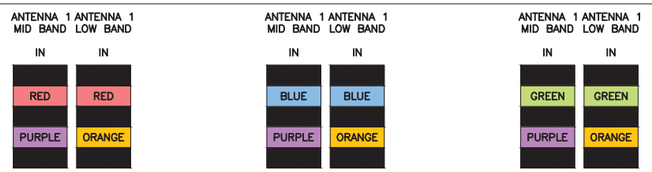
POWER CABLES TO RRHs

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.

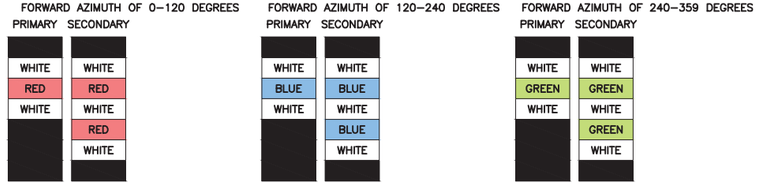
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



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

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 — No. 23924 — LICENSED PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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 — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X X X X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W W W W W

UNDERGROUND POWER — UGP UGP UGP UGP UGP

UNDERGROUND TELCO — UGT UGT UGT UGT UGT

OVERHEAD POWER — OHP OHP OHP OHP

OVERHEAD TELCO — OHT OHT OHT OHT

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

ABOVE GROUND POWER — AGP AGP AGP AGP AGP

ABOVE GROUND TELCO — AGT AGT AGT AGT AGT

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

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

ABBREVIATIONS

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

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 — No. 23924 — LICENSED PROFESSIONAL ENGINEER

4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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.

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
No. 23924
LICENSED
PROFESSIONAL ENGINEER
4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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.

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

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP

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

4/21/2022

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	VS	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/9/21	ISSUED FOR REVIEW
0	3/25/22	ISSUED FOR REVIEW
1	4/21/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149540.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00114B
229 CHESHIRE ROAD
PROSPECT, CT 06712

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 162 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02694-B

Customer Site Name: E-Prospect

Carrier Name: Dish Wireless (App#: 169192, V1)

Carrier Site ID / Name: BOHVN00114B / 0

Site Location: 229 Cheshire Road

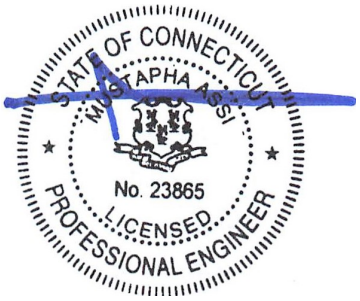
Prospect, Connecticut

New Haven County

Latitude: 41.507881

Longitude: -72.951025

Exp.10/31/2022



11/15/2021

Analysis Result:

Max Structural Usage: 89.3% [Pass]

Max Foundation Usage: 64.0% [Pass]

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

Report Prepared By : Linfeng Chen

Introduction

The purpose of this report is to summarize the analysis results on the 162 ft 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	EEI, Job # 5816, dated 10/15/1999
Foundation Drawing	EEI, Job # 5816, dated 10/21/1999
Geotechnical Report	DR. Clarence Welti, P.E, Dated 10/14/1999
Modification Drawings	FDH, Job # 05-09107E, dated 9/30/2005:FDH, Job # 1320001400, dated 6/13/2013 TES, MI, Job # 22620, dated 7/22/2016
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} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.186, S_1 = 0.062

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	160.0	3	RFS ATMAA1412D-1A20-TMAs	(3) CommScope MC-HPM1250-B	(12) 1 5/8"* (1) 1 5/8" Fiber*	T-Mobile
2		3	RFS ATMPP1412D-1CWA-TMAs			
3		3	Ericsson Air 21 B4A/B2P - Panel			
4		3	Ericsson S11B12-RRU			
5		3	Ericsson S11 B2-RRU			
6	158.0	3	Commscope LNX-6515DS-VTM - Panel			
-	147.0	3	ALU 1900 MHz RRUs	Low Profile Platform	(3) 1-1/4"	Sprint**
-		4	ALU 800 MHz Filters			
-		3	ALU 800 MHz RRUs			
-		3	ALU TD-RRH8x20-25 RRUs			
-		4	RFS ACU-A20-N RETs			
-		3	RFS APXVSPP18-C-A20 - Panel			
-		3	RFS APXVTM14-C-120 - Panel			
7	137.0	6	Commscope JAHH-65B-R3B - Panel	Low Profile Platform +(12) VZWSMART VZWSMART-MSK1 + (3) VZWSMART VZWSMART-PLK3 + (3) VZWSMART VZWSMART-MSK2 +(1) SITE PRO 1 SQCX4-K + (3) 160" LONG, P2.5 STD Pipes + (3) 72" LONG, P2.5 STD Pipes + (1) 36" LONG, P2.0 STD Pipe + (3) 15" LONG, L3x3x1/4 Angles	(2) 1-5/8" hybrid (1) 1/2" Coax (12) 1-5/8" Coax	Verizon
8		3	Samsung MT6407-77A - Panel			
9		3	Samsung B2/B66A RRHBR049			
10		3	Samsung B5/B13 RRHBR04C			
11		1	RFS DB-C1-12C-24AB-0Z			
12		3	Commscope CBC78T-DS-43-2X			
13	117.0	4	Andrew SBNH-1D6565C - Panel	Low Profile Platform	(12) 1 5/8" (1) 3" Innerduct ((2) 3/4" DC (1) 1/2" Fiber, inside of Innerduct)	AT&T
14		6	CCI DTMABP7819VG12A			
15		3	CSS DBC-750			
16		3	Kathrein 800-10121 - Panel			
17		6	Kathrein 860 10025 RET			
18		2	KMW AM-X-CD-16-6500T - Panel			
19		3	Powerwave LGP 13519			
20	114.5	6	Ericsson RRUS 11 RRU			
21		3	Raycap DC6-48-60-18-8F			

*Lines outside of the pole

**Sprint is terminating 1/1/2022

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
22	100.0	3	JMA Wireless MX08FRO665-21 - Panel	Commscope MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless*
23		3	Fujitsu TA08025-B605 RRU			
24		3	Fujitsu TA08025-B604 RRU			
25		1	Raycap RDIDC-9181-PF-48			

*Dish is to remove Sprint loading at 147' as part of their install in order to get SA pass.

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:	**89.3%**	**62.0%**	**86.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3234.8	29.9	64.8

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 1.0512 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.

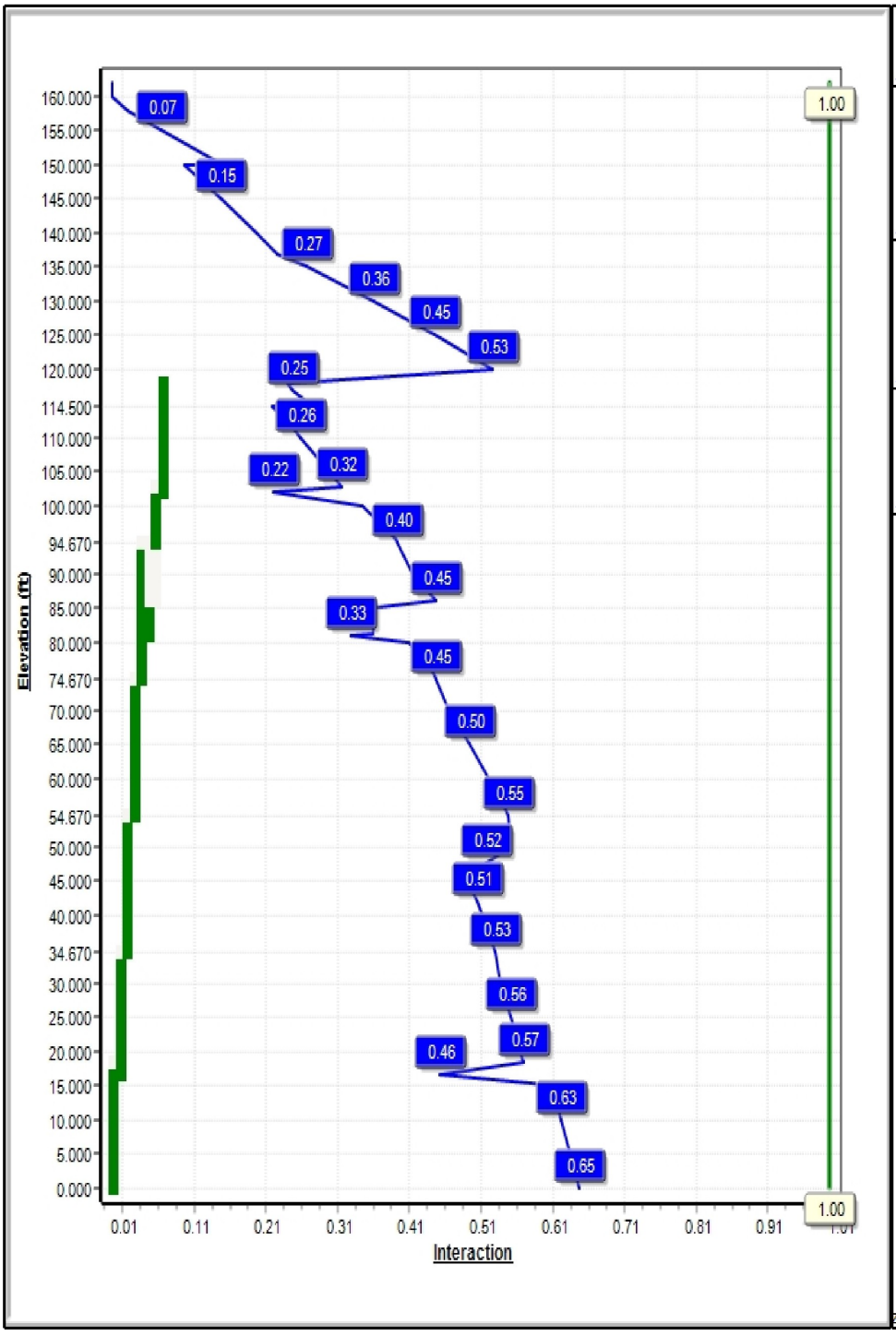
Usage Diagram - Max Ratio 65.11% at 0.0ft

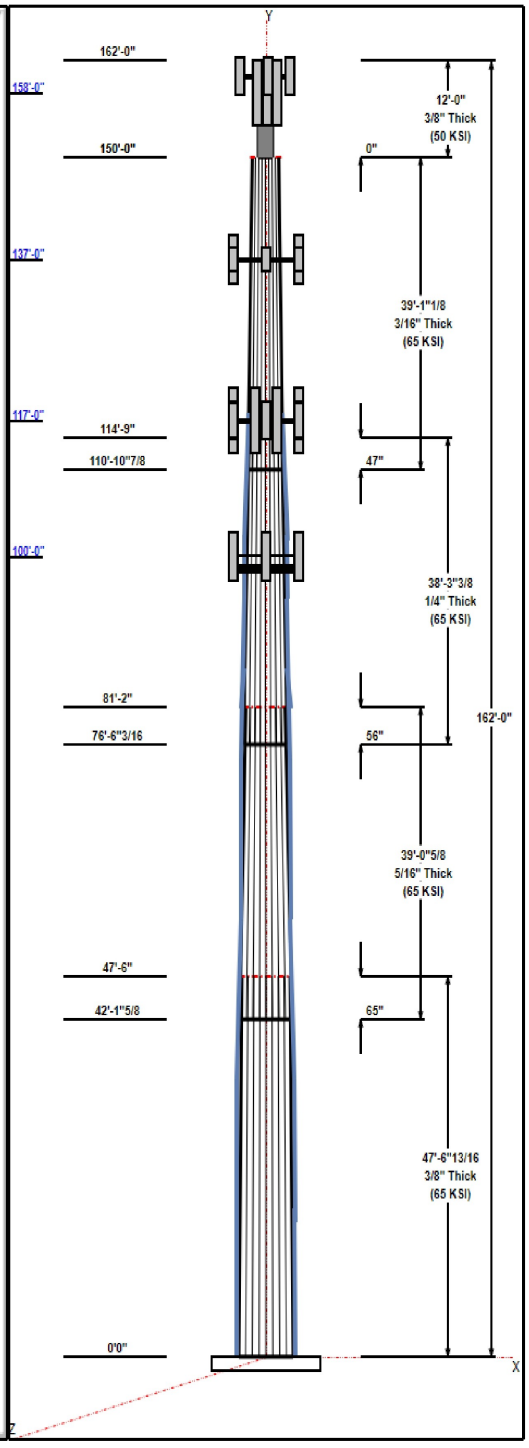
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect	**Exposure:**	B	
Height:	162.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	27
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT02694-B-SBA

Type: Custom
Site Name: E-Prospect
Height: 162.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19333

11/15/2021

Tower Engineering Solutions

Shaft Properties

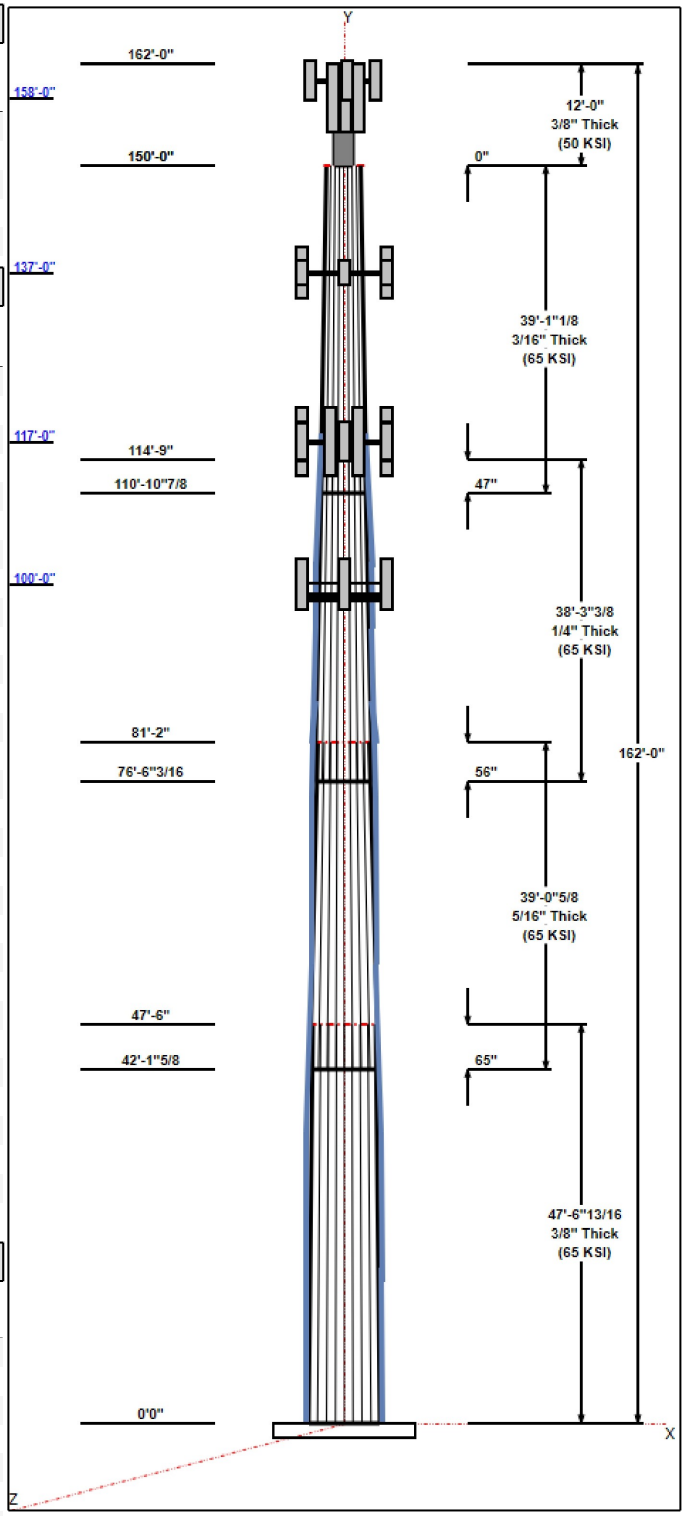
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	47.57	37.80	47.00	0.375		0.19333	65
2	39.05	31.93	39.48	0.313	Slip	0.19333	65
3	38.28	25.93	33.33	0.250	Slip	0.19333	65
4	39.09	19.50	27.06	0.188	Slip	0.19333	65
5	12.00	12.75	12.75	0.375	Butt	0.00000	50

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
160.00	160.00	3	Ericsson S11B12-RRU	T-Mobile
160.00	160.00	3	Ericsson S11 B2-RRU	T-Mobile
160.00	160.00	3	RFS	T-Mobile
160.00	160.00	3	RFS	T-Mobile
160.00	160.00	3	CommScope	T-Mobile
160.00	160.00	3	Ericsson Air 21 B4A/B2P	T-Mobile
158.00	158.00	3	Commscope	T-Mobile
137.00	137.00	1	Low Profile Platform	Verizon
137.00	137.00	6	JAHH-65B-R3B	Verizon
137.00	137.00	3	MT6407-77A	Verizon
137.00	137.00	3	B2/B66A RRH-BR049	Verizon
137.00	137.00	3	B5/B13 RRH-BR04C	Verizon
137.00	137.00	1	DB-C1-12C-24AB-0Z	Verizon
137.00	137.00	3	CBC78T-DS-43	Verizon
137.00	137.00	1	MS-HRECP	Verizon
117.00	117.00	1	Low Profile Platform	AT&T
117.00	117.00	2	KMW AM-X-CD-16-6500T	AT&T
117.00	117.00	4	Andrew SBNH-1D6565C	AT&T
117.00	117.00	3	Kathrein 800-10121	AT&T
117.00	117.00	6	CCI DTMABP7819VG12A	AT&T
117.00	117.00	3	Powerwave LGP 13519	AT&T
117.00	117.00	3	CSS DBC-750	AT&T
117.00	117.00	6	Kathrein 860 10025 RET	AT&T
114.50	114.50	3	Raycap DC6-48-60-18-8F	AT&T
114.50	114.50	6	Ericsson RRUS 11	AT&T
100.00	100.00	3	JMA Wireless	Dish Wireless
100.00	100.00	3	Fujitsu TA08025-B605	Dish Wireless
100.00	100.00	3	Fujitsu TA08025-B604	Dish Wireless
100.00	100.00	1	Raycap	Dish Wireless
100.00	100.00	1	Commscope MC-PK8-DSH	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	160.00	Outside	1 5/8" Coax	T-Mobile
0.00	160.00	Outside	1 5/8" Fiber	T-Mobile
0.00	137.00	Inside	1 5/8" Coax	Verizon
0.00	137.00	Inside	1 5/8" Hybrid	Verizon
0.00	137.00	Inside	1/2" Coax	Verizon
100.00	120.00	Outside	Reinforcing plate	
0.00	117.00	Inside	1 5/8" Coax	AT&T
0.00	117.00	Inside	1/2" Fiber	AT&T
0.00	117.00	Inside	3" Innerduct	AT&T
0.00	117.00	Inside	3/4" DC	AT&T
0.00	104.70	Outside	Reinforcing plate	



0.00	100.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	62.0	60.0	Round

Reactions

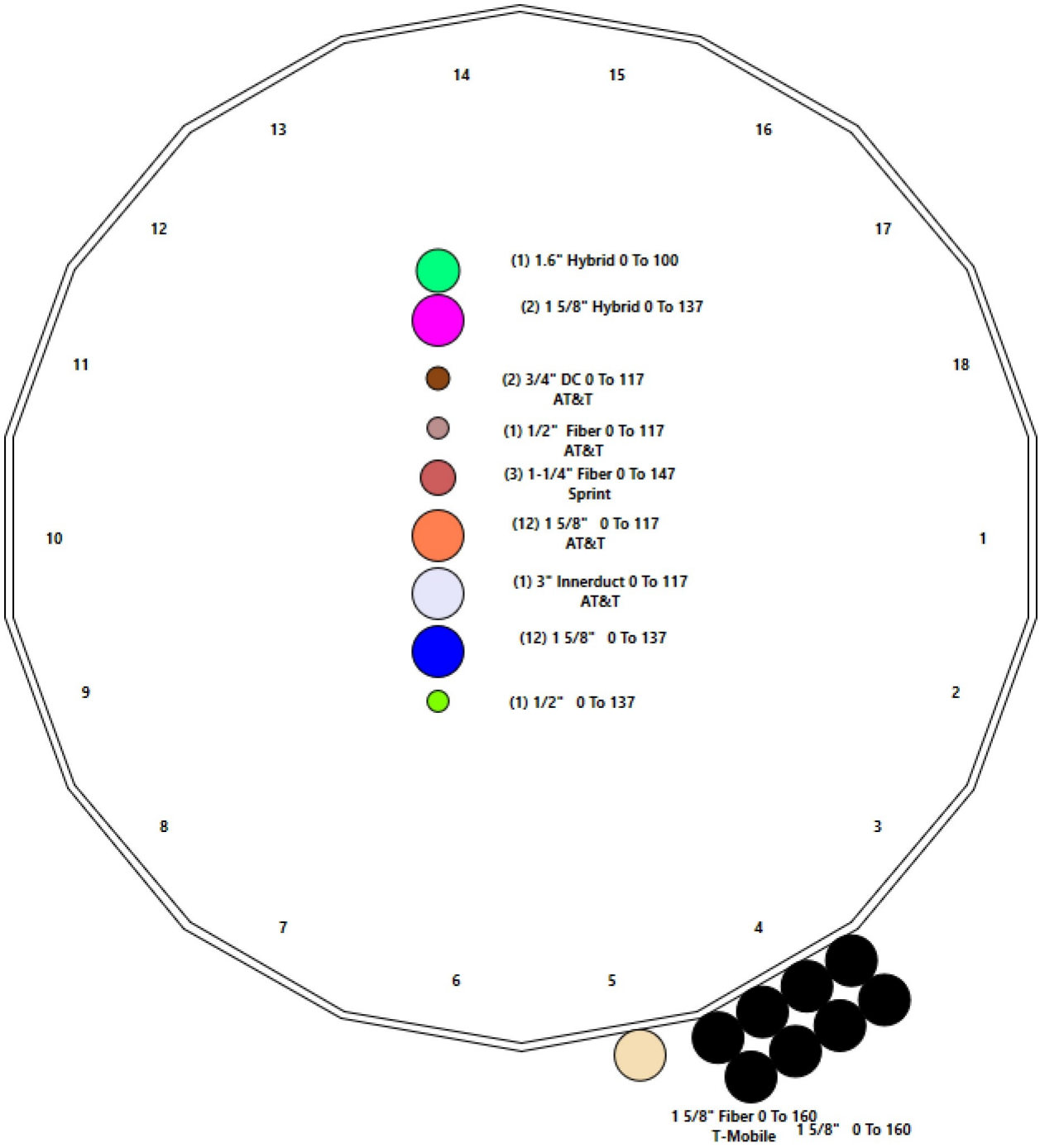
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	3234.8	29.9	38.8
0.9D + 1.6W 97 mph Wind	3202.5	29.9	29.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	822.1	7.6	64.8
1.2D + 1.0E	120.6	1.1	38.8
0.9D + 1.0E	119.2	1.1	29.1
1.0D + 1.0W 60 mph Wind	792.4	7.3	32.3

Structure: CT02694-B-SBA - Coax Line Placement

Type: Monopole
Site Name: E-Prospect
Height: 162.00 (ft)

11/15/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	47.570	0.3750	65		0.00	8,097
2	18	39.050	0.3125	65	Slip	65.20	4,664
3	18	38.280	0.2500	65	Slip	56.04	3,037
4	18	39.095	0.1875	65	Slip	46.70	1,828
5	R	12.000	0.3750	50	Flange	0.00	595
					Total Shaft Weight:		**18,221**

	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	47.00	0.00	55.49	15241.66	20.69	125.33	37.80	47.57	44.55	7884.43	16.36	100.8	0.193333
2	39.48	42.14	38.85	7528.78	20.87	126.33	31.93	81.19	31.36	3960.34	16.61	102.1	0.193333
3	33.33	76.52	26.25	3629.53	22.10	133.33	25.93	114.80	20.38	1697.93	16.88	103.7	0.193333
4	27.06	110.9	15.99	1458.78	24.04	144.31	19.50	150.00	11.49	541.58	16.93	104.0	0.193333
5	12.75	150.0	14.58	279.29	0.00	34.00	12.75	162.00	14.58	279.29	0.00	34.00	0.000000

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	**Elev To (ft)**	**Qty**	**Description**	**Fy (ksi)**	**Fu (ksi)**	**Offset (in)**	**Description**	**Spacing (in)**	**Description**	**Spacing (in)**	**Lower Qty**	**Upper Qty**
0.00	18.50	3	PLT 6.5x1.25(1.25 Hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve		12	12
16.67	34.67	3	PLT 6"X1-1/4"(1.25" Hole	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve		11	
34.67	54.67	3	PLT 5.75x1.25(1.25 Hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve			
54.67	74.67	3	PLT 5.25"x1 1/4"(1.25"ho	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve			
74.67	94.67	3	PLT 5"x1-1/4"(1.25"Hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve			
81.00	86.00	3	PLT C6x13 (1.25" hole)	50	65	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt		8	8
94.67	102.6	3	PLT 4.5"x 1-1/4"(1.25"ho	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve			8
102.0	118.0	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt		8	8

Load Summary

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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	160.00	Ericsson S11B12-RRU	3	51.00	2.83	0.50	121.05	3.506	0.50	0.00	0.00
2	160.00	Ericsson S11 B2-RRU	3	50.00	2.83	0.50	118.68	3.506	0.50	0.00	0.00
3	160.00	RFS ATMPP1412D-1CWA-TMAs	3	12.50	1.17	0.50	37.14	1.975	0.50	0.00	0.00
4	160.00	RFS ATMAA1412D-1A20-TMAs	3	13.00	1.17	0.50	39.75	1.958	0.50	0.00	0.00
5	160.00	CommScope MC-HPM1250-B	3	200.00	8.50	0.75	375.65	15.517	0.75	0.00	0.00
6	160.00	Ericsson Air 21 B4A/B2P	3	90.40	6.09	0.86	260.59	7.195	0.86	0.00	0.00
7	158.00	Commscope LNX-6515DS-VTM	3	49.80	11.47	0.80	280.90	14.738	0.80	0.00	0.00
8	137.00	Low Profile Platform	1	1200.00	22.00	1.00	2237.68	39.502	1.00	0.00	0.00
9	137.00	JAHH-65B-R3B	6	63.30	9.11	0.83	291.33	10.444	0.83	0.00	0.00
10	137.00	MT6407-77A	3	79.40	4.69	0.70	197.64	5.628	0.70	0.00	0.00
11	137.00	B2/B66A RRH-BR049	3	84.40	1.87	0.67	160.10	2.438	0.67	0.00	0.00
12	137.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	70.30	1.87	0.67	138.87	2.438	0.67	0.00	0.00
13	137.00	DB-C1-12C-24AB-0Z	1	32.00	4.06	1.00	144.90	4.875	1.00	0.00	0.00
14	137.00	CBC78T-DS-43	3	10.40	0.37	0.50	30.87	0.650	0.50	0.00	0.00
15	137.00	MS-HRECP	1	514.00	12.25	1.00	1118.48	24.114	1.00	0.00	0.00
16	117.00	Low Profile Platform	1	1200.00	22.00	1.00	2221.43	39.228	1.00	0.00	0.00
17	117.00	KMW AM-X-CD-16-6500T	2	33.00	6.05	0.81	174.23	8.098	0.81	0.00	0.00
18	117.00	Andrew SBNH-1D6565C	4	66.10	11.47	0.80	290.35	14.641	0.80	0.00	0.00
19	117.00	Kathrein 800-10121	3	44.10	5.15	0.79	156.14	7.205	0.79	0.00	0.00
20	117.00	CCI DTMABP7819VG12A	6	19.20	1.14	0.67	44.09	1.891	0.67	0.00	0.00
21	117.00	Powerwave LGP 13519	3	5.30	0.34	0.50	14.56	0.783	0.50	0.00	0.00
22	117.00	CSS DBC-750	3	4.80	0.51	0.50	14.23	1.026	0.50	0.00	0.00
23	117.00	Kathrein 860 10025 RET	6	1.20	0.18	0.50	7.05	0.550	0.50	0.00	0.00
24	114.50	Raycap DC6-48-60-18-8F	3	20.00	1.26	0.67	71.36	1.902	0.67	0.00	0.00
25	114.50	Ericsson RRUS 11	6	50.70	2.52	0.67	137.00	3.152	0.67	0.00	0.00
26	100.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	343.81	13.897	0.74	0.00	0.00
27	100.00	Fujitsu TA08025-B605 RRU	3	75.00	1.96	0.67	125.23	2.499	0.67	0.00	0.00
28	100.00	Fujitsu TA08025-B604 RRU	3	63.90	1.96	0.67	112.52	2.499	0.67	0.00	0.00
29	100.00	Raycap RDIDC-9181-PF-48	1	21.90	2.01	1.00	73.03	2.556	1.00	0.00	0.00
30	100.00	Commscope MC-PK8-DSH	1	1727.00	37.59	1.00	3347.77	82.947	1.00	0.00	0.00
		Totals:	**90**	**8,798.10**			**21,327.23**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	160.00	(8) 1 5/8" Coax	5.94	Outside
0.00	160.00	(1) 1 5/8" Fiber	0.00	Outside
0.00	137.00	(12) 1 5/8" Coax	0.00	Inside
0.00	137.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	137.00	(1) 1/2" Coax	0.00	Inside
100.0	120.00	(1) Reinforcing plate	1.00	Outside
0.00	117.00	(12) 1 5/8" Coax	0.00	Inside
0.00	117.00	(1) 1/2" Fiber	0.00	Inside
0.00	117.00	(1) 3" Innerduct	0.00	Inside
0.00	117.00	(2) 3/4" DC	0.00	Inside
0.00	104.70	(1) Reinforcing plate	1.25	Outside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	100.00	(1) 1.6" Hybrid			0.00	Inside					

Shaft Section Properties

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: **5 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.3750	47.000	55.493	15241.7	20.69	125.33	65	77	0.0	24.38	8697.5	5479.8	
5.00		0.3750	46.033	54.343	14313.2	20.23	122.76	65	78	934.4	24.38	8353.3	5264.0	414.7
10.00		0.3750	45.067	53.192	13423.2	19.78	120.18	65	78	914.8	24.38	8016.1	5052.6	414.7
15.00		0.3750	44.100	52.042	12570.9	19.33	117.60	65	79	895.2	24.38	7685.9	4845.5	414.7
16.67	RB2	0.3750	43.777	51.658	12294.4	19.17	116.74	65	79	294.6	46.88	13327.7	10528.4	266.4
18.50	RT1	0.3750	43.423	51.236	11996.2	19.01	115.80	65	79	320.4	22.50	5648.1	5648.1	140.1
20.00		0.3750	43.133	50.891	11755.4	18.87	115.02	65	79	260.6	22.50	5575.5	5575.5	114.8
25.00		0.3750	42.167	49.741	10976.0	18.42	112.44	65	80	856.1	22.50	5336.8	5336.8	382.8
30.00		0.3750	41.200	48.590	10231.9	17.96	109.87	65	80	836.5	22.50	5103.3	5103.3	382.8
34.67	RT2 RB3	0.3750	40.297	47.516	9567.9	17.54	107.46	65	81	763.6	21.56	4683.7	4683.7	342.6
35.00		0.3750	40.233	47.440	9522.1	17.51	107.29	65	81	53.3	21.56	4669.4	4669.4	24.2
40.00		0.3750	39.267	46.289	8846.0	17.05	104.71	65	81	797.3	21.56	4455.7	4455.7	366.9
42.14	Bot - Section 2	0.3750	38.854	45.797	8567.1	16.86	103.61	65	82	334.8	21.56	4366.0	4366.0	156.8
45.00		0.3750	38.300	45.139	8202.6	16.60	102.13	65	82	818.8	21.56	4381.4	4381.4	210.1
47.57	Top - Section 1	0.3125	38.428	37.805	6939.1	20.27	122.97	65	78	724.9	21.56	4274.5	4274.5	188.6
50.00		0.3125	37.958	37.339	6685.7	20.01	121.47	65	78	310.7	21.56	4174.6	4174.6	178.3
54.67	RT3 RB4	0.3125	37.055	36.443	6216.1	19.50	118.58	65	78	586.2	19.69	3634.8	3634.8	312.8
55.00		0.3125	36.992	36.380	6183.8	19.46	118.37	65	79	40.9	19.69	3622.8	3622.8	22.1
60.00		0.3125	36.025	35.421	5707.6	18.92	115.28	65	79	610.8	19.69	3443.2	3443.2	334.9
65.00		0.3125	35.058	34.462	5256.6	18.37	112.19	65	80	594.5	19.69	3268.1	3268.1	334.9
70.00		0.3125	34.092	33.504	4829.9	17.83	109.09	65	80	578.2	19.69	3097.7	3097.7	334.9
74.67	RT4 RB5	0.3125	33.189	32.608	4452.9	17.32	106.20	65	81	525.3	18.75	2800.5	2800.5	297.9
75.00		0.3125	33.125	32.545	4427.0	17.28	106.00	65	81	36.6	18.75	2790.2	2790.2	21.0
76.52	Bot - Section 3	0.3125	32.832	32.254	4309.4	17.11	105.06	65	81	167.2	18.75	2743.2	2743.2	96.7
80.00		0.3125	32.158	31.586	4047.2	16.73	102.91	65	82	686.3	18.75	2715.5	2715.5	222.2
81.00	RB6	0.3125	31.965	31.394	3973.9	16.63	102.29	65	82	194.4	30.24	5083.0	4191.2	102.8
81.19	Top - Section 2	0.2500	32.429	25.533	3340.4	21.46	129.72	65	76	36.2	30.24	5072.6	4182.6	19.2
85.00		0.2500	31.692	24.948	3116.0	20.94	126.77	65	77	327.5	30.24	4862.4	4007.5	391.9
86.00	RT6	0.2500	31.498	24.795	3058.9	20.81	125.99	65	77	84.6	18.75	2534.3	2534.3	63.8
90.00		0.2500	30.725	24.181	2837.4	20.26	122.90	65	78	333.3	18.75	2417.0	2417.0	255.1
94.67	RT5 RB7	0.2500	29.822	23.465	2592.6	19.62	119.29	65	78	378.6	16.88	2051.9	2051.9	268.2
95.00		0.2500	29.758	23.414	2575.8	19.58	119.03	65	78	26.3	16.88	2043.5	2043.5	18.9
100.00		0.2500	28.792	22.647	2330.9	18.90	115.17	65	79	391.8	16.88	1919.1	1919.1	287.1
102.00	RB8	0.2500	28.405	22.340	2237.4	18.62	113.62	65	79	153.1	34.88	3843.6	3843.6	237.3
102.67	RT7	0.2500	28.275	22.237	2206.7	18.53	113.10	65	80	50.8	18.00	1956.1	1956.1	41.0
105.00		0.2500	27.825	21.880	2102.0	18.21	111.30	65	80	174.9	18.00	1897.2	1897.2	142.7
110.00		0.2500	26.858	21.113	1888.6	17.53	107.43	65	81	365.7	18.00	1773.9	1773.9	306.2
110.91	Bot - Section 4	0.2500	26.683	20.974	1851.6	17.41	106.73	65	81	64.8	18.00	1752.1	1752.1	55.4
114.50		0.2500	25.988	20.423	1709.3	16.92	103.95	65	82	446.3	18.00	1712.4	1712.4	220.2
114.80	Top - Section 3	0.1875	26.306	15.543	1339.6	23.33	140.30	65	74	36.3	18.00	1705.4	1705.4	18.2
115.00		0.1875	26.267	15.520	1333.6	23.29	140.09	65	74	10.7	18.00	1700.6	1700.6	12.5
117.00		0.1875	25.880	15.290	1275.2	22.93	138.03	65	74	104.8	18.00	1653.5	1653.5	122.5
118.00	RT8	0.1875	25.687	15.175	1246.6	22.75	137.00	65	75	51.8	18.00	1630.2	1630.2	61.2
120.00		0.1875	25.300	14.945	1190.7	22.38	134.93	65	75	102.5				
125.00		0.1875	24.333	14.369	1058.5	21.47	129.78	65	76	249.4				
130.00		0.1875	23.367	13.794	936.4	20.56	124.62	65	77	239.6				
135.00		0.1875	22.400	13.219	824.0	19.65	119.47	65	78	229.8				
137.00		0.1875	22.013	12.989	781.7	19.29	117.40	65	79	89.2				
140.00		0.1875	21.433	12.643	721.1	18.75	114.31	65	79	130.8				
145.00		0.1875	20.467	12.068	627.0	17.84	109.16	65	80	210.2				

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
150.00	Top - Section 4	0.1875	19.500	11.493	541.6	16.93	104.00	65	81	200.4				
150.00	Bot - Section 5	0.3750	12.750	14.579	279.3	8.46	52.00	50	50					
155.00		0.3750	12.750	14.579	279.3	0.00	34.00	50	50	248.0				
158.00		0.3750	12.750	14.579	279.3	0.00	34.00	50	50	148.8				
160.00		0.3750	12.750	14.579	279.3	0.00	34.00	50	50	99.2				
162.00		0.3750	12.750	14.579	279.3	0.00	34.00	50	50	99.2				
									Total Weight	**18221.3**				**8600.4**

Wind Loading - Shaft

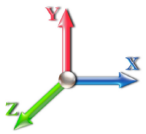
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	16.018	17.62	322.76	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	316.13	0.752 *	0.000	5.00	19.681	14.80	417.1	0.0	1121.2
10.00		1.00	0.70	16.018	17.62	309.49	0.758 *	0.000	5.00	19.272	14.61	411.9	0.0	1097.8
15.00		1.00	0.70	16.018	17.62	302.85	0.765 *	0.000	5.00	18.863	14.42	406.6	0.0	1074.3
16.67	RB2	1.00	0.70	16.018	17.62	300.63	0.769 *	0.000	1.67	6.209	4.78	134.7	0.0	353.6
18.50	RT1	1.00	0.70	16.018	17.62	298.20	0.772 *	0.000	1.83	6.752	5.21	146.9	0.0	384.4
20.00		1.00	0.70	16.018	17.62	296.21	0.774 *	0.000	1.50	5.493	4.25	119.9	0.0	312.8
25.00		1.00	0.70	16.018	17.62	289.57	0.779 *	0.000	5.00	18.045	14.05	396.2	0.0	1027.3
30.00		1.00	0.70	16.031	17.63	283.05	0.786 *	0.000	5.00	17.636	13.87	391.2	0.0	1003.8
34.67	RT2 RB3	1.00	0.73	16.708	18.38	282.63	0.794 *	0.000	4.67	16.103	12.78	375.9	0.0	916.3
35.00		1.00	0.73	16.753	18.43	282.57	0.798 *	0.000	0.33	1.124	0.90	26.5	0.0	64.0
40.00		1.00	0.76	17.405	19.15	281.09	0.802 *	0.000	5.00	16.818	13.49	413.4	0.0	956.8
42.14	Bot - Section 2	1.00	0.77	17.665	19.43	280.21	0.808 *	0.000	2.14	7.062	5.71	177.5	0.0	401.7
45.00		1.00	0.79	18.000	19.80	278.82	0.813 *	0.000	2.86	9.498	7.72	244.6	0.0	982.6
47.57	Top - Section 1	1.00	0.80	18.288	20.12	277.40	0.818 *	0.000	2.57	8.411	6.88	221.4	0.0	869.9
50.00		1.00	0.81	18.551	20.41	280.52	0.817 *	0.000	2.43	7.853	6.41	209.4	0.0	372.8
54.67	RT3 RB4	1.00	0.83	19.030	20.93	277.37	0.823 *	0.000	4.67	14.822	12.20	408.6	0.0	703.5
55.00		1.00	0.83	19.063	20.97	277.13	0.828 *	0.000	0.33	1.034	0.86	28.7	0.0	49.1
60.00		1.00	0.85	19.543	21.50	273.26	0.833 *	0.000	5.00	15.446	12.87	442.7	0.0	733.0
65.00		1.00	0.87	19.995	21.99	268.99	0.843 *	0.000	5.00	15.037	12.68	446.4	0.0	713.4
70.00		1.00	0.89	20.422	22.46	264.36	1.200 *	0.000	5.00	14.628	17.55	631.0	0.0	693.8
74.67	RT4 RB5	1.00	0.91	20.803	22.88	259.74	1.200 *	0.000	4.67	13.294	15.95	584.1	0.0	630.3
75.00		1.00	0.91	20.829	22.91	259.40	1.200 *	0.000	0.33	0.926	1.11	40.7	0.0	43.9
76.52	Bot - Section 3	1.00	0.92	20.949	23.04	257.84	1.200 *	0.000	1.52	4.232	5.08	187.3	0.0	200.7
80.00		1.00	0.93	21.217	23.34	254.17	1.200 *	0.000	3.48	9.725	11.67	435.8	0.0	823.6
81.00	RB6	1.00	0.93	21.292	23.42	253.09	1.200 *	0.000	1.00	2.755	3.31	123.9	0.0	233.3
81.19	Top - Section 2	1.00	0.93	21.306	23.44	252.88	1.200 *	0.000	0.19	0.513	0.62	23.1	0.0	43.4
85.00		1.00	0.94	21.587	23.75	252.66	1.200 *	0.000	3.81	10.345	12.41	471.7	0.0	393.0
86.00	RT6	1.00	0.95	21.660	23.83	251.54	1.200 *	0.000	1.00	2.674	3.21	122.3	0.0	101.6
90.00		1.00	0.96	21.943	24.14	246.96	1.200 *	0.000	4.00	10.531	12.64	488.0	0.0	400.0
94.67	RT5 RB7	1.00	0.97	22.262	24.49	241.44	1.200 *	0.000	4.67	11.963	14.36	562.5	0.0	454.3
95.00		1.00	0.97	22.284	24.51	241.04	1.200 *	0.000	0.33	0.832	1.00	39.2	0.0	31.6
100.00	Appurtenance(s)	1.00	0.99	22.613	24.87	234.93	1.200 *	0.000	5.00	12.386	14.86	591.6	0.0	470.2
102.00	RB8	1.00	0.99	22.742	25.02	232.43	1.200 *	0.000	2.00	4.840	5.81	232.5	0.0	183.7
102.67	RT7	1.00	1.00	22.784	25.06	231.59	1.200 *	0.000	0.67	1.607	1.93	77.3	0.0	61.0
105.00		1.00	1.00	22.931	25.22	228.63	1.200 *	0.000	2.33	5.530	6.64	267.8	0.0	209.9
110.00		1.00	1.02	23.238	25.56	222.16	1.200 *	0.000	5.00	11.568	13.88	567.7	0.0	438.9
110.91	Bot - Section 4	1.00	1.02	23.292	25.62	220.97	1.200 *	0.000	0.91	2.050	2.46	100.9	0.0	77.8
114.50	Appurtenance(s)	1.00	1.03	23.505	25.86	216.20	1.200 *	0.000	3.59	8.126	9.75	403.4	0.0	535.5
114.80	Top - Section 3	1.00	1.03	23.523	25.88	215.80	1.200 *	0.000	0.30	0.661	0.79	32.8	0.0	43.6
115.00		1.00	1.03	23.535	25.89	218.65	1.200 *	0.000	0.20	0.452	0.54	22.5	0.0	12.9
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	215.96	1.200 *	0.000	2.00	4.413	5.30	220.4	0.0	125.8
118.00	RT8	1.00	1.04	23.708	26.08	214.61	1.200 *	0.000	1.00	2.182	2.62	109.2	0.0	62.2
120.00		1.00	1.04	23.823	26.20	211.89	1.200 *	0.000	2.00	4.314	5.18	217.1	0.0	123.0
125.00		1.00	1.05	24.102	26.51	204.98	1.200 *	0.000	5.00	10.500	12.60	534.5	0.0	299.2
130.00		1.00	1.07	24.374	26.81	197.94	1.200 *	0.000	5.00	10.091	12.11	519.4	0.0	287.5
135.00		1.00	1.08	24.638	27.10	190.78	1.200 *	0.000	5.00	9.682	11.62	503.8	0.0	275.8

Wind Loading - Shaft

Structure: CT02694-B-SBA
Site Name: E-Prospect
Height: 162.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
11/15/2021

Tower Engineering Solutions

137.00 Appurtenance(s)	1.00	1.08	24.742	27.22	187.88	1.200 *	0.000	2.00	3.758	4.51	196.4	0.0	107.0
140.00	1.00	1.09	24.895	27.38	183.50	1.200 *	0.000	3.00	5.515	6.62	290.0	0.0	157.0
145.00	1.00	1.10	25.146	27.66	176.10	1.200 *	0.000	5.00	8.864	10.64	470.7	0.0	252.3
150.00 Top - Section 4	1.00	1.11	25.391	27.93	168.60	1.200 *	0.000	5.00	8.455	10.15	453.4	0.0	240.5
155.00	1.00	1.12	25.630	28.19	109.07	1.200 *	0.000	5.00	5.313	6.38	287.6	0.0	297.7
158.00 Appurtenance(s)	1.00	1.13	25.771	28.35	109.37	1.200 *	0.000	3.00	3.188	3.82	173.5	0.0	178.6
160.00 Appurtenance(s)	1.00	1.13	25.863	28.45	109.57	1.200 *	0.000	2.00	2.125	2.55	116.1	0.0	119.1
162.00	1.00	1.13	25.955	28.55	109.76	0.600	0.000	2.00	2.125	1.27	58.2	0.0	119.1
							Totals:	**162.00**			**15,575.6**		**21,865.6**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

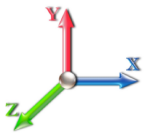
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	CommScope	3	25.863	28.450	0.56	0.75	14.34	720.00	0.000	0.000	652.92	0.00	0.00
2	160.00	RFS	3	25.863	28.450	0.40	0.80	1.40	46.80	0.000	0.000	63.91	0.00	0.00
3	160.00	RFS	3	25.863	28.450	0.40	0.80	1.40	45.00	0.000	0.000	63.91	0.00	0.00
4	160.00	Ericsson S11 B2-RRU	3	25.863	28.450	0.40	0.80	3.40	180.00	0.000	0.000	154.58	0.00	0.00
5	160.00	Ericsson S11B12-RRU	3	25.863	28.450	0.40	0.80	3.40	183.60	0.000	0.000	154.58	0.00	0.00
6	160.00	Ericsson Air 21 B4A/B2P	3	25.863	28.450	0.69	0.80	12.57	325.44	0.000	0.000	572.17	0.00	0.00
7	158.00	Commscope	3	25.771	28.348	0.64	0.80	22.02	179.28	0.000	0.000	998.85	0.00	0.00
8	137.00	B2/B66A RRH-BR049	3	24.742	27.216	0.50	0.75	2.82	303.84	0.000	0.000	122.76	0.00	0.00
9	137.00	B5/B13 RRH-BR04C	3	24.742	27.216	0.50	0.75	2.82	253.08	0.000	0.000	122.76	0.00	0.00
10	137.00	DB-C1-12C-24AB-0Z	1	24.742	27.216	0.75	0.75	3.04	38.40	0.000	0.000	132.60	0.00	0.00
11	137.00	MT6407-77A	3	24.742	27.216	0.52	0.75	7.39	285.84	0.000	0.000	321.66	0.00	0.00
12	137.00	Low Profile Platform	1	24.742	27.216	1.00	1.00	22.00	1440.00	0.000	0.000	958.00	0.00	0.00
13	137.00	CBC78T-DS-43	3	24.742	27.216	0.38	0.75	0.42	37.44	0.000	0.000	18.13	0.00	0.00
14	137.00	MS-HRECP	1	24.742	27.216	1.00	1.00	12.25	616.80	0.000	0.000	533.43	0.00	0.00
15	137.00	JAHH-65B-R3B	6	24.742	27.216	0.62	0.75	34.03	455.76	0.000	0.000	1481.67	0.00	0.00
16	117.00	Kathrein 860 10025 RET	6	23.651	26.016	0.40	0.80	0.43	8.64	0.000	0.000	17.98	0.00	0.00
17	117.00	Andrew SBNH-1D6565C	4	23.651	26.016	0.64	0.80	29.36	317.28	0.000	0.000	1222.26	0.00	0.00
18	117.00	Low Profile Platform	1	23.651	26.016	1.00	1.00	22.00	1440.00	0.000	0.000	915.76	0.00	0.00
19	117.00	KMW AM-X-CD-16-6500T	2	23.651	26.016	0.65	0.80	7.84	79.20	0.000	0.000	326.38	0.00	0.00
20	117.00	CSS DBC-750	3	23.651	26.016	0.40	0.80	0.61	17.28	0.000	0.000	25.47	0.00	0.00
21	117.00	Kathrein 800-10121	3	23.651	26.016	0.63	0.80	9.76	158.76	0.000	0.000	406.45	0.00	0.00
22	117.00	CCI DTMABP7819VG12A	6	23.651	26.016	0.54	0.80	3.67	138.24	0.000	0.000	152.61	0.00	0.00
23	117.00	Powerwave LGP 13519	3	23.651	26.016	0.40	0.80	0.41	19.08	0.000	0.000	16.98	0.00	0.00
24	114.50	Ericsson RRUS 11	6	23.505	25.856	0.54	0.80	8.10	365.04	0.000	0.000	335.27	0.00	0.00
25	114.50	Raycap DC6-48-60-18-8F	3	23.505	25.856	0.54	0.80	2.03	72.00	0.000	0.000	83.82	0.00	0.00
26	100.00	Commscope	1	22.613	24.875	1.00	1.00	37.59	2072.40	0.000	0.000	1496.07	0.00	0.00
27	100.00	Raycap	1	22.613	24.875	1.00	1.00	2.01	26.28	0.000	0.000	80.00	0.00	0.00
28	100.00	Fujitsu TA08025-B604	3	22.613	24.875	0.50	0.75	2.95	230.04	0.000	0.000	117.60	0.00	0.00
29	100.00	Fujitsu TA08025-B605	3	22.613	24.875	0.50	0.75	2.95	270.00	0.000	0.000	117.60	0.00	0.00
30	100.00	JMA Wireless	3	22.613	24.875	0.55	0.75	20.80	232.20	0.000	0.000	827.67	0.00	0.00
							Totals:		**10,557.72**			**12,493.82**		

Total Applied Force Summary

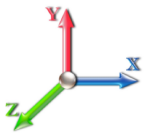
Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		417.14	1359.87	0.00	0.00
10.00		411.89	1336.38	0.00	0.00
15.00		406.65	1312.89	0.00	0.00
16.67		134.65	433.27	0.00	0.00
18.50		146.88	471.77	0.00	0.00
20.00		119.87	384.35	0.00	0.00
25.00		396.16	1265.91	0.00	0.00
30.00		391.24	1242.42	0.00	0.00
34.67		375.90	1139.20	0.00	0.00
35.00		26.45	79.73	0.00	0.00
40.00		413.36	1195.43	0.00	0.00
42.14		177.52	503.69	0.00	0.00
45.00		244.62	1119.24	0.00	0.00
47.57		221.42	992.55	0.00	0.00
50.00		209.36	488.77	0.00	0.00
54.67		408.62	926.35	0.00	0.00
55.00		28.72	64.81	0.00	0.00
60.00		442.66	971.59	0.00	0.00
65.00		446.35	952.01	0.00	0.00
70.00		728.73	932.44	0.00	0.00
74.67		676.43	853.22	0.00	0.00
75.00		47.26	59.65	0.00	0.00
76.52		217.38	273.03	0.00	0.00
80.00		505.53	989.82	0.00	0.00
81.00		143.97	281.00	0.00	0.00
81.19		26.81	52.30	0.00	0.00
85.00		548.83	575.01	0.00	0.00
86.00		142.58	149.28	0.00	0.00
90.00		569.78	590.86	0.00	0.00
94.67		658.80	677.15	0.00	0.00
95.00		45.96	47.33	0.00	0.00
100.00	(11) attachments	3334.59	3539.75	0.00	0.00
102.00		282.26	274.78	0.00	0.00
102.67		94.02	91.49	0.00	0.00
105.00		324.67	315.98	0.00	0.00
110.00		668.52	666.59	0.00	0.00
110.91		119.12	118.98	0.00	0.00
114.50	(9) attachments	895.43	1136.30	0.00	0.00
114.80		38.87	57.07	0.00	0.00
115.00		26.61	22.16	0.00	0.00
117.00	(28) attachments	3345.05	2395.37	0.00	0.00
118.00		129.65	91.31	0.00	0.00
120.00		257.99	181.21	0.00	0.00
125.00		616.29	444.81	0.00	0.00
130.00		601.72	433.06	0.00	0.00
135.00		586.51	421.32	0.00	0.00

Total Applied Force Summary

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

137.00	(21) attachments	3920.52	3596.40	0.00	0.00
140.00		339.84	190.91	0.00	0.00
145.00		554.31	308.79	0.00	0.00
150.00		537.37	297.04	0.00	0.00
155.00		371.93	354.17	0.00	0.00
158.00	(3) attachments	1223.10	391.78	0.00	0.00
160.00	(18) attachments	1812.05	1642.51	0.00	0.00
162.00		58.24	119.06	0.00	0.00
	Totals:	**29,870.19**	**38,812.12**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

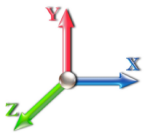
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.152	1.157	16.018	0.00	49.92
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.157	16.018	0.00	6.60
5.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.152	1.157	16.018	0.00	0.00
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.155	1.166	16.018	0.00	49.92
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.166	16.018	0.00	6.60
10.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.155	1.166	16.018	0.00	0.00
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.159	1.176	16.018	0.00	49.92
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.159	1.176	16.018	0.00	6.60
15.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.159	1.176	16.018	0.00	0.00
16.67	1 5/8" Coax	Yes	1.67	0.000	5.94	0.83	0.00	0.161	1.183	16.018	0.00	16.67
16.67	1 5/8" Fiber	Yes	1.67	0.000	0.00	0.00	0.00	0.161	1.183	16.018	0.00	2.20
16.67	Reinforcing plate	Yes	1.67	0.000	1.25	0.17	0.00	0.161	1.183	16.018	0.00	0.00
18.50	1 5/8" Coax	Yes	1.83	0.000	5.94	0.91	0.00	0.162	1.187	16.018	0.00	18.27
18.50	1 5/8" Fiber	Yes	1.83	0.000	0.00	0.00	0.00	0.162	1.187	16.018	0.00	2.42
18.50	Reinforcing plate	Yes	1.83	0.000	1.25	0.19	0.00	0.162	1.187	16.018	0.00	0.00
20.00	1 5/8" Coax	Yes	1.50	0.000	5.94	0.74	0.00	0.164	1.191	16.018	0.00	14.98
20.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.164	1.191	16.018	0.00	1.98
20.00	Reinforcing plate	Yes	1.50	0.000	1.25	0.16	0.00	0.164	1.191	16.018	0.00	0.00
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.166	1.198	16.018	0.00	49.92
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.166	1.198	16.018	0.00	6.60
25.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.166	1.198	16.018	0.00	0.00
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.170	1.210	16.031	0.00	49.92
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.170	1.210	16.031	0.00	6.60
30.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.170	1.210	16.031	0.00	0.00
34.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.174	1.221	16.708	0.00	46.63
34.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.174	1.221	16.708	0.00	6.16
34.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.174	1.221	16.708	0.00	0.00
35.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.176	1.228	16.753	0.00	3.29
35.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.176	1.228	16.753	0.00	0.44
35.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.176	1.228	16.753	0.00	0.00
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.178	1.234	17.405	0.00	49.92
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.234	17.405	0.00	6.60
40.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.178	1.234	17.405	0.00	0.00
42.14	1 5/8" Coax	Yes	2.14	0.000	5.94	1.06	0.00	0.181	1.244	17.665	0.00	21.33
42.14	1 5/8" Fiber	Yes	2.14	0.000	0.00	0.00	0.00	0.181	1.244	17.665	0.00	2.82
42.14	Reinforcing plate	Yes	2.14	0.000	1.25	0.22	0.00	0.181	1.244	17.665	0.00	0.00
45.00	1 5/8" Coax	Yes	2.86	0.000	5.94	1.42	0.00	0.184	1.251	18.000	0.00	28.59
45.00	1 5/8" Fiber	Yes	2.86	0.000	0.00	0.00	0.00	0.184	1.251	18.000	0.00	3.78
45.00	Reinforcing plate	Yes	2.86	0.000	1.25	0.30	0.00	0.184	1.251	18.000	0.00	0.00
47.57	1 5/8" Coax	Yes	2.57	0.000	5.94	1.27	0.00	0.186	1.258	18.288	0.00	25.66
47.57	1 5/8" Fiber	Yes	2.57	0.000	0.00	0.00	0.00	0.186	1.258	18.288	0.00	3.39
47.57	Reinforcing plate	Yes	2.57	0.000	1.25	0.27	0.00	0.186	1.258	18.288	0.00	0.00
50.00	1 5/8" Coax	Yes	2.43	0.000	5.94	1.20	0.00	0.185	1.256	18.551	0.00	24.26
50.00	1 5/8" Fiber	Yes	2.43	0.000	0.00	0.00	0.00	0.185	1.256	18.551	0.00	3.21
50.00	Reinforcing plate	Yes	2.43	0.000	1.25	0.25	0.00	0.185	1.256	18.551	0.00	0.00
54.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.189	1.266	19.030	0.00	46.63
54.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.189	1.266	19.030	0.00	6.16

Linear Appurtenance Segment Forces (Factored)

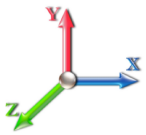
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
54.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.189	1.266	19.030	0.00	0.00
55.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.191	1.274	19.063	0.00	3.29
55.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.191	1.274	19.063	0.00	0.44
55.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.191	1.274	19.063	0.00	0.00
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.194	1.282	19.543	0.00	49.92
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.194	1.282	19.543	0.00	6.60
60.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.194	1.282	19.543	0.00	0.00
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.199	1.298	19.995	0.00	49.92
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.199	1.298	19.995	0.00	6.60
65.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.199	1.298	19.995	0.00	0.00
70.00	1 5/8" Coax	Yes	5.00	0.847	5.94	2.48	2.10	0.205	0.000	20.422	75.31	49.92
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.205	0.000	20.422	0.00	6.60
70.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.205	0.000	20.422	22.46	0.00
74.67	1 5/8" Coax	Yes	4.67	0.839	5.94	2.31	1.94	0.210	0.000	20.803	70.99	46.63
74.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.210	0.000	20.803	0.00	6.16
74.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.210	0.000	20.803	21.37	0.00
75.00	1 5/8" Coax	Yes	0.33	0.838	5.94	0.16	0.14	0.214	0.000	20.829	5.02	3.29
75.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.214	0.000	20.829	0.00	0.44
75.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.214	0.000	20.829	1.51	0.00
76.52	1 5/8" Coax	Yes	1.52	0.836	5.94	0.75	0.63	0.215	0.000	20.949	23.14	15.14
76.52	1 5/8" Fiber	Yes	1.52	0.000	0.00	0.00	0.00	0.215	0.000	20.949	0.00	2.00
76.52	Reinforcing plate	Yes	1.52	1.200	1.25	0.16	0.19	0.215	0.000	20.949	6.99	0.00
80.00	1 5/8" Coax	Yes	3.48	0.831	5.94	1.72	1.43	0.218	0.000	21.217	53.48	34.78
80.00	1 5/8" Fiber	Yes	3.48	0.000	0.00	0.00	0.00	0.218	0.000	21.217	0.00	4.60
80.00	Reinforcing plate	Yes	3.48	1.200	1.25	0.36	0.44	0.218	0.000	21.217	16.26	0.00
81.00	1 5/8" Coax	Yes	1.00	0.829	5.94	0.50	0.41	0.221	0.000	21.292	15.38	9.98
81.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.221	0.000	21.292	0.00	1.32
81.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.221	0.000	21.292	4.68	0.00
81.19	1 5/8" Coax	Yes	0.19	0.829	5.94	0.09	0.08	0.222	0.000	21.306	2.87	1.86
81.19	1 5/8" Fiber	Yes	0.19	0.000	0.00	0.00	0.00	0.222	0.000	21.306	0.00	0.25
81.19	Reinforcing plate	Yes	0.19	1.200	1.25	0.02	0.02	0.222	0.000	21.306	0.87	0.00
85.00	1 5/8" Coax	Yes	3.81	0.823	5.94	1.89	1.55	0.221	0.000	21.587	59.05	38.07
85.00	1 5/8" Fiber	Yes	3.81	0.000	0.00	0.00	0.00	0.221	0.000	21.587	0.00	5.03
85.00	Reinforcing plate	Yes	3.81	1.200	1.25	0.40	0.48	0.221	0.000	21.587	18.11	0.00
86.00	1 5/8" Coax	Yes	1.00	0.822	5.94	0.50	0.41	0.224	0.000	21.660	15.51	9.98
86.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.224	0.000	21.660	0.00	1.32
86.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.224	0.000	21.660	4.77	0.00
90.00	1 5/8" Coax	Yes	4.00	0.817	5.94	1.98	1.62	0.228	0.000	21.943	62.45	39.94
90.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.228	0.000	21.943	0.00	5.28
90.00	Reinforcing plate	Yes	4.00	1.200	1.25	0.42	0.50	0.228	0.000	21.943	19.31	0.00
94.67	1 5/8" Coax	Yes	4.67	0.811	5.94	2.31	1.87	0.234	0.000	22.262	73.44	46.63
94.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.234	0.000	22.262	0.00	6.16
94.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.234	0.000	22.262	22.87	0.00
95.00	1 5/8" Coax	Yes	0.33	0.810	5.94	0.16	0.13	0.238	0.000	22.284	5.19	3.29
95.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.238	0.000	22.284	0.00	0.44
95.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.238	0.000	22.284	1.62	0.00
100.00	1 5/8" Coax	Yes	5.00	0.804	5.94	2.48	1.99	0.242	0.000	22.613	79.25	49.92

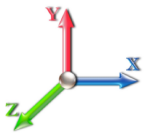
Linear Appurtenance Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.242	0.000	22.613	0.00	6.60
100.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.242	0.000	22.613	24.87	0.00
102.00	1 5/8" Coax	Yes	2.00	0.802	5.94	0.99	0.79	0.282	0.000	22.742	31.79	19.97
102.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.282	0.000	22.742	0.00	2.64
102.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.282	0.000	22.742	8.01	0.00
102.00	Reinforcing plate	Yes	2.00	1.200	1.25	0.21	0.25	0.282	0.000	22.742	10.01	0.00
102.67	1 5/8" Coax	Yes	0.67	0.801	5.94	0.33	0.27	0.285	0.000	22.784	10.66	6.69
102.67	1 5/8" Fiber	Yes	0.67	0.000	0.00	0.00	0.00	0.285	0.000	22.784	0.00	0.88
102.67	Reinforcing plate	Yes	0.67	1.200	1.00	0.06	0.07	0.285	0.000	22.784	2.69	0.00
102.67	Reinforcing plate	Yes	0.67	1.200	1.25	0.07	0.08	0.285	0.000	22.784	3.36	0.00
105.00	1 5/8" Coax	Yes	2.33	0.799	5.94	1.15	0.92	0.282	0.000	22.931	37.19	23.26
105.00	1 5/8" Fiber	Yes	2.33	0.000	0.00	0.00	0.00	0.282	0.000	22.931	0.00	3.08
105.00	Reinforcing plate	Yes	2.33	1.200	1.00	0.19	0.23	0.282	0.000	22.931	9.40	0.00
105.00	Reinforcing plate	Yes	2.03	1.200	1.25	0.21	0.25	0.282	0.000	22.931	10.24	0.00
110.00	1 5/8" Coax	Yes	5.00	0.794	5.94	2.48	1.96	0.250	0.000	23.238	80.33	49.92
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.250	0.000	23.238	0.00	6.60
110.00	Reinforcing plate	Yes	5.00	1.200	1.00	0.42	0.50	0.250	0.000	23.238	20.45	0.00
110.91	1 5/8" Coax	Yes	0.91	0.793	5.94	0.45	0.36	0.255	0.000	23.292	14.56	9.04
110.91	1 5/8" Fiber	Yes	0.91	0.000	0.00	0.00	0.00	0.255	0.000	23.292	0.00	1.19
110.91	Reinforcing plate	Yes	0.91	1.200	1.00	0.08	0.09	0.255	0.000	23.292	3.71	0.00
114.50	1 5/8" Coax	Yes	3.59	0.789	5.94	1.78	1.40	0.260	0.000	23.505	58.09	35.89
114.50	1 5/8" Fiber	Yes	3.59	0.000	0.00	0.00	0.00	0.260	0.000	23.505	0.00	4.75
114.50	Reinforcing plate	Yes	3.59	1.200	1.00	0.30	0.36	0.260	0.000	23.505	14.87	0.00
114.80	1 5/8" Coax	Yes	0.30	0.789	5.94	0.15	0.12	0.263	0.000	23.523	4.80	2.96
114.80	1 5/8" Fiber	Yes	0.30	0.000	0.00	0.00	0.00	0.263	0.000	23.523	0.00	0.39
114.80	Reinforcing plate	Yes	0.30	1.200	1.00	0.02	0.03	0.263	0.000	23.523	1.23	0.00
115.00	1 5/8" Coax	Yes	0.20	0.789	5.94	0.10	0.08	0.260	0.000	23.535	3.29	2.03
115.00	1 5/8" Fiber	Yes	0.20	0.000	0.00	0.00	0.00	0.260	0.000	23.535	0.00	0.27
115.00	Reinforcing plate	Yes	0.20	1.200	1.00	0.02	0.02	0.260	0.000	23.535	0.84	0.00
117.00	1 5/8" Coax	Yes	2.00	0.787	5.94	0.99	0.78	0.262	0.000	23.651	32.42	19.97
117.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.262	0.000	23.651	0.00	2.64
117.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.262	0.000	23.651	8.33	0.00
118.00	1 5/8" Coax	Yes	1.00	0.786	5.94	0.50	0.39	0.265	0.000	23.708	16.23	9.98
118.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.265	0.000	23.708	0.00	1.32
118.00	Reinforcing plate	Yes	1.00	1.200	1.00	0.08	0.10	0.265	0.000	23.708	4.17	0.00
120.00	1 5/8" Coax	Yes	2.00	0.784	5.94	0.99	0.78	0.268	0.000	23.823	32.53	19.97
120.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.268	0.000	23.823	0.00	2.64
120.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.268	0.000	23.823	8.39	0.00
125.00	1 5/8" Coax	Yes	5.00	0.779	5.94	2.48	1.93	0.236	0.000	24.102	81.81	49.92
125.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.236	0.000	24.102	0.00	6.60
130.00	1 5/8" Coax	Yes	5.00	0.775	5.94	2.48	1.92	0.245	0.000	24.374	82.27	49.92
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.245	0.000	24.374	0.00	6.60
135.00	1 5/8" Coax	Yes	5.00	0.771	5.94	2.48	1.91	0.256	0.000	24.638	82.72	49.92
135.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.256	0.000	24.638	0.00	6.60
137.00	1 5/8" Coax	Yes	2.00	0.769	5.94	0.99	0.76	0.263	0.000	24.742	33.16	19.97
137.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.263	0.000	24.742	0.00	2.64
140.00	1 5/8" Coax	Yes	3.00	0.767	5.94	1.49	1.14	0.269	0.000	24.895	49.89	29.95

Linear Appurtenance Segment Forces (Factored)

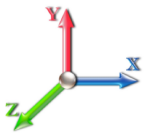
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.269	0.000	24.895	0.00	3.96
145.00	1 5/8" Coax	Yes	5.00	0.763	5.94	2.48	1.89	0.279	0.000	25.146	83.57	49.92
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.279	0.000	25.146	0.00	6.60
150.00	1 5/8" Coax	Yes	5.00	0.759	5.94	2.48	1.88	0.293	0.000	25.391	83.97	49.92
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.293	0.000	25.391	0.00	6.60
155.00	1 5/8" Coax	Yes	5.00	0.756	5.94	2.48	1.87	0.466	0.000	25.630	84.37	49.92
155.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.466	0.000	25.630	0.00	6.60
158.00	1 5/8" Coax	Yes	3.00	0.754	5.94	1.49	1.12	0.466	0.000	25.771	50.76	29.95
158.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.466	0.000	25.771	0.00	3.96
160.00	1 5/8" Coax	Yes	2.00	0.752	5.94	0.99	0.74	0.466	0.000	25.863	33.90	19.97
160.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.466	0.000	25.863	0.00	2.64
										Totals:	**1,800.8**	**1,808.6**

Calculated Forces

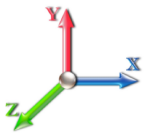
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.75	-29.94	0.00	-3234.8	0.00	3234.82	3849.02	1924.51	7372.73	3691.85	0.00	0.000	0.000	0.651
5.00	-37.28	-29.67	0.00	-3085.1	0.00	3085.10	3795.37	1897.68	7118.03	3564.30	0.12	-0.217	0.000	0.639
10.00	-35.84	-29.38	0.00	-2936.7	0.00	2936.77	3740.61	1870.30	6865.59	3437.90	0.46	-0.435	0.000	0.627
15.00	-34.45	-29.05	0.00	-2789.8	0.00	2789.85	3684.74	1842.37	6615.55	3312.69	1.03	-0.656	0.000	0.614
16.67	-33.99	-28.95	0.00	-2741.3	0.00	2741.33	3665.83	1832.91	6532.59	3271.15	1.28	-0.731	0.000	0.456
18.50	-33.49	-28.84	0.00	-2688.3	0.00	2688.34	3644.97	1822.48	6442.01	3225.79	1.57	-0.793	0.000	0.573
20.00	-33.03	-28.79	0.00	-2645.0	0.00	2645.09	3627.76	1813.88	6368.03	3188.75	1.83	-0.857	0.000	0.569
25.00	-31.67	-28.49	0.00	-2501.1	0.00	2501.12	3569.68	1784.84	6123.18	3066.14	2.84	-1.068	0.000	0.555
30.00	-30.33	-28.18	0.00	-2358.6	0.00	2358.66	3510.49	1755.24	5881.13	2944.94	4.07	-1.280	0.000	0.541
34.67	-29.15	-27.84	0.00	-2227.0	0.00	2227.04	3454.20	1727.10	5657.69	2833.05	5.42	-1.479	0.000	0.534
35.00	-29.02	-27.87	0.00	-2217.8	0.00	2217.86	3450.19	1725.09	5642.00	2825.20	5.53	-1.494	0.000	0.533
40.00	-27.76	-27.49	0.00	-2078.5	0.00	2078.53	3388.79	1694.39	5405.94	2706.99	7.21	-1.709	0.000	0.516
42.14	-27.21	-27.35	0.00	-2019.7	0.00	2019.79	3362.21	1681.10	5306.03	2656.96	7.99	-1.803	0.000	0.509
45.00	-26.04	-27.13	0.00	-1941.4	0.00	1941.47	3326.27	1663.14	5173.07	2590.38	9.11	-1.927	0.000	0.494
47.57	-25.01	-26.92	0.00	-1871.7	0.00	1871.76	2638.80	1319.40	4131.44	2068.79	10.18	-2.038	0.000	0.522
50.00	-24.45	-26.76	0.00	-1806.3	0.00	1806.35	2616.75	1308.38	4046.02	2026.02	11.24	-2.143	0.000	0.555
54.67	-23.49	-26.36	0.00	-1681.3	0.00	1681.39	2573.65	1286.82	3883.14	1944.46	13.45	-2.356	0.000	0.552
55.00	-23.37	-26.38	0.00	-1672.6	0.00	1672.69	2570.56	1285.28	3871.70	1938.73	13.61	-2.372	0.000	0.550
60.00	-22.31	-25.99	0.00	-1540.7	0.00	1540.79	2523.27	1261.63	3699.46	1852.48	16.22	-2.605	0.000	0.525
65.00	-21.28	-25.58	0.00	-1410.8	0.00	1410.86	2474.87	1237.43	3529.43	1767.34	19.07	-2.835	0.000	0.498
70.00	-20.30	-24.88	0.00	-1282.9	0.00	1282.97	2425.36	1212.68	3361.74	1683.37	22.16	-3.059	0.000	0.470
74.67	-19.44	-24.19	0.00	-1166.7	0.00	1166.78	2378.12	1189.06	3207.34	1606.06	25.25	-3.265	0.000	0.452
75.00	-19.36	-24.16	0.00	-1158.8	0.00	1158.80	2374.74	1187.37	3196.52	1600.63	25.48	-3.280	0.000	0.450
76.52	-19.06	-23.96	0.00	-1122.1	0.00	1122.16	2359.17	1179.58	3146.91	1575.79	26.53	-3.348	0.000	0.441
80.00	-18.06	-23.43	0.00	-1038.6	0.00	1038.69	2323.02	1161.51	3033.91	1519.21	29.03	-3.500	0.000	0.414
81.00	-17.78	-23.28	0.00	-1015.2	0.00	1015.26	2312.54	1156.27	3001.71	1503.09	29.77	-3.543	0.000	0.333
81.19	-17.70	-23.27	0.00	-1010.9	0.00	1010.92	1750.09	875.04	2314.24	1158.84	29.91	-3.549	0.000	0.363
85.00	-17.13	-22.71	0.00	-922.20	0.00	922.20	1723.72	861.86	2226.75	1115.03	32.79	-3.678	0.000	0.367
86.00	-16.94	-22.59	0.00	-899.49	0.00	899.49	1716.70	858.35	2203.94	1103.61	33.57	-3.715	0.000	0.452
90.00	-16.32	-22.03	0.00	-809.14	0.00	809.14	1688.18	844.09	2113.26	1058.20	36.75	-3.888	0.000	0.419
94.67	-15.66	-21.35	0.00	-706.26	0.00	706.26	1653.98	826.99	2008.61	1005.80	40.65	-4.080	0.000	0.398
95.00	-15.57	-21.34	0.00	-699.21	0.00	699.21	1651.53	825.76	2001.27	1002.12	40.93	-4.094	0.000	0.395
100.00	-12.24	-17.78	0.00	-592.54	0.00	592.54	1613.77	806.88	1890.91	946.86	45.32	-4.293	0.000	0.348
102.00	-11.98	-17.49	0.00	-556.98	0.00	556.98	1598.36	799.18	1847.26	925.00	47.14	-4.370	0.000	0.225
102.67	-11.88	-17.40	0.00	-545.26	0.00	545.26	1593.15	796.58	1832.70	917.71	47.75	-4.387	0.000	0.320
105.00	-11.55	-17.07	0.00	-504.73	0.00	504.73	1574.90	787.45	1782.33	892.49	49.91	-4.471	0.000	0.302
110.00	-10.91	-16.37	0.00	-419.36	0.00	419.36	1534.93	767.47	1675.65	839.07	54.68	-4.635	0.000	0.262
110.91	-10.78	-16.26	0.00	-404.54	0.00	404.54	1527.58	763.79	1656.56	829.51	55.56	-4.664	0.000	0.255
114.50	-9.71	-15.28	0.00	-346.10	0.00	346.10	1498.01	749.01	1581.38	791.86	59.11	-4.771	0.000	0.222
114.80	-9.65	-15.24	0.00	-341.56	0.00	341.56	1034.66	517.33	1111.16	556.41	59.41	-4.779	0.000	0.246
115.00	-9.62	-15.22	0.00	-338.46	0.00	338.46	1033.71	516.86	1108.46	555.05	59.61	-4.785	0.000	0.273
117.00	-7.51	-11.69	0.00	-308.03	0.00	308.03	1024.27	512.13	1081.93	541.77	61.63	-4.846	0.000	0.251
118.00	-7.42	-11.56	0.00	-296.34	0.00	296.34	1019.48	509.74	1068.72	535.15	62.64	-4.875	0.000	0.244
118.00	-7.42	-11.56	0.00	-296.34	0.00	296.34	1019.48	509.74	1068.72	535.15	62.64	-4.875	0.000	0.244
120.00	-7.23	-11.31	0.00	-273.23	0.00	273.23	1009.78	504.89	1042.37	521.96	64.69	-4.931	0.000	0.531
125.00	-6.79	-10.69	0.00	-216.70	0.00	216.70	984.73	492.37	977.10	489.28	70.01	-5.224	0.000	0.450
130.00	-6.37	-10.07	0.00	-163.27	0.00	163.27	958.58	479.29	912.78	457.07	75.62	-5.479	0.000	0.364
135.00	-5.99	-9.46	0.00	-112.91	0.00	112.91	931.33	465.66	849.55	425.40	81.47	-5.689	0.000	0.272

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

137.00	-2.79	-5.21	0.00	-93.99	0.00	93.99	920.11	460.06	824.58	412.91	83.86	-5.760	0.000	0.231
140.00	-2.63	-4.85	0.00	-78.37	0.00	78.37	902.96	451.48	787.53	394.35	87.51	-5.855	0.000	0.202
145.00	-2.37	-4.28	0.00	-54.10	0.00	54.10	873.49	436.75	726.86	363.97	93.70	-5.985	0.000	0.151
150.00	-2.12	-3.71	0.00	-32.72	0.00	32.72	842.91	421.46	667.67	334.33	100.01	-6.084	0.000	0.100
150.00	-2.12	-3.71	0.00	-32.72	0.00	32.72	656.05	328.03	328.13	215.42	100.01	-6.084	0.000	0.155
155.00	-1.81	-3.31	0.00	-14.16	0.00	14.16	656.05	328.03	328.13	215.42	106.41	-6.145	0.000	0.069
158.00	-1.55	-2.05	0.00	-4.24	0.00	4.24	656.05	328.03	328.13	215.42	110.28	-6.173	0.000	0.022
160.00	-0.11	-0.07	0.00	-0.14	0.00	0.14	656.05	328.03	328.13	215.42	112.86	-6.178	0.000	0.001
162.00	0.00	-0.06	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	115.44	-6.178	0.000	0.000

Wind Loading - Shaft

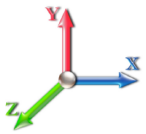
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	16.018	17.62	322.76	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	316.13	0.752 *	0.000	5.00	19.681	14.80	417.1	0.0	840.9
10.00		1.00	0.70	16.018	17.62	309.49	0.758 *	0.000	5.00	19.272	14.61	411.9	0.0	823.3
15.00		1.00	0.70	16.018	17.62	302.85	0.765 *	0.000	5.00	18.863	14.42	406.6	0.0	805.7
16.67	RB2	1.00	0.70	16.018	17.62	300.63	0.769 *	0.000	1.67	6.209	4.78	134.7	0.0	265.2
18.50	RT1	1.00	0.70	16.018	17.62	298.20	0.772 *	0.000	1.83	6.752	5.21	146.9	0.0	288.3
20.00		1.00	0.70	16.018	17.62	296.21	0.774 *	0.000	1.50	5.493	4.25	119.9	0.0	234.6
25.00		1.00	0.70	16.018	17.62	289.57	0.779 *	0.000	5.00	18.045	14.05	396.2	0.0	770.5
30.00		1.00	0.70	16.031	17.63	283.05	0.786 *	0.000	5.00	17.636	13.87	391.2	0.0	752.8
34.67	RT2 RB3	1.00	0.73	16.708	18.38	282.63	0.794 *	0.000	4.67	16.103	12.78	375.9	0.0	687.2
35.00		1.00	0.73	16.753	18.43	282.57	0.798 *	0.000	0.33	1.124	0.90	26.5	0.0	48.0
40.00		1.00	0.76	17.405	19.15	281.09	0.802 *	0.000	5.00	16.818	13.49	413.4	0.0	717.6
42.14	Bot - Section 2	1.00	0.77	17.665	19.43	280.21	0.808 *	0.000	2.14	7.062	5.71	177.5	0.0	301.3
45.00		1.00	0.79	18.000	19.80	278.82	0.813 *	0.000	2.86	9.498	7.72	244.6	0.0	736.9
47.57	Top - Section 1	1.00	0.80	18.288	20.12	277.40	0.818 *	0.000	2.57	8.411	6.88	221.4	0.0	652.4
50.00		1.00	0.81	18.551	20.41	280.52	0.817 *	0.000	2.43	7.853	6.41	209.4	0.0	279.6
54.67	RT3 RB4	1.00	0.83	19.030	20.93	277.37	0.823 *	0.000	4.67	14.822	12.20	408.6	0.0	527.6
55.00		1.00	0.83	19.063	20.97	277.13	0.828 *	0.000	0.33	1.034	0.86	28.7	0.0	36.8
60.00		1.00	0.85	19.543	21.50	273.26	0.833 *	0.000	5.00	15.446	12.87	442.7	0.0	549.7
65.00		1.00	0.87	19.995	21.99	268.99	0.843 *	0.000	5.00	15.037	12.68	446.4	0.0	535.0
70.00		1.00	0.89	20.422	22.46	264.36	1.200 *	0.000	5.00	14.628	17.55	631.0	0.0	520.4
74.67	RT4 RB5	1.00	0.91	20.803	22.88	259.74	1.200 *	0.000	4.67	13.294	15.95	584.1	0.0	472.8
75.00		1.00	0.91	20.829	22.91	259.40	1.200 *	0.000	0.33	0.926	1.11	40.7	0.0	32.9
76.52	Bot - Section 3	1.00	0.92	20.949	23.04	257.84	1.200 *	0.000	1.52	4.232	5.08	187.3	0.0	150.5
80.00		1.00	0.93	21.217	23.34	254.17	1.200 *	0.000	3.48	9.725	11.67	435.8	0.0	617.7
81.00	RB6	1.00	0.93	21.292	23.42	253.09	1.200 *	0.000	1.00	2.755	3.31	123.9	0.0	175.0
81.19	Top - Section 2	1.00	0.93	21.306	23.44	252.88	1.200 *	0.000	0.19	0.513	0.62	23.1	0.0	32.5
85.00		1.00	0.94	21.587	23.75	252.66	1.200 *	0.000	3.81	10.345	12.41	471.7	0.0	294.8
86.00	RT6	1.00	0.95	21.660	23.83	251.54	1.200 *	0.000	1.00	2.674	3.21	122.3	0.0	76.2
90.00		1.00	0.96	21.943	24.14	246.96	1.200 *	0.000	4.00	10.531	12.64	488.0	0.0	300.0
94.67	RT5 RB7	1.00	0.97	22.262	24.49	241.44	1.200 *	0.000	4.67	11.963	14.36	562.5	0.0	340.7
95.00		1.00	0.97	22.284	24.51	241.04	1.200 *	0.000	0.33	0.832	1.00	39.2	0.0	23.7
100.00	Appurtenance(s)	1.00	0.99	22.613	24.87	234.93	1.200 *	0.000	5.00	12.386	14.86	591.6	0.0	352.7
102.00	RB8	1.00	0.99	22.742	25.02	232.43	1.200 *	0.000	2.00	4.840	5.81	232.5	0.0	137.8
102.67	RT7	1.00	1.00	22.784	25.06	231.59	1.200 *	0.000	0.67	1.607	1.93	77.3	0.0	45.7
105.00		1.00	1.00	22.931	25.22	228.63	1.200 *	0.000	2.33	5.530	6.64	267.8	0.0	157.4
110.00		1.00	1.02	23.238	25.56	222.16	1.200 *	0.000	5.00	11.568	13.88	567.7	0.0	329.2
110.91	Bot - Section 4	1.00	1.02	23.292	25.62	220.97	1.200 *	0.000	0.91	2.050	2.46	100.9	0.0	58.3
114.50	Appurtenance(s)	1.00	1.03	23.505	25.86	216.20	1.200 *	0.000	3.59	8.126	9.75	403.4	0.0	401.7
114.80	Top - Section 3	1.00	1.03	23.523	25.88	215.80	1.200 *	0.000	0.30	0.661	0.79	32.8	0.0	32.7
115.00		1.00	1.03	23.535	25.89	218.65	1.200 *	0.000	0.20	0.452	0.54	22.5	0.0	9.7
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	215.96	1.200 *	0.000	2.00	4.413	5.30	220.4	0.0	94.4
118.00	RT8	1.00	1.04	23.708	26.08	214.61	1.200 *	0.000	1.00	2.182	2.62	109.2	0.0	46.6
120.00		1.00	1.04	23.823	26.20	211.89	1.200 *	0.000	2.00	4.314	5.18	217.1	0.0	92.2
125.00		1.00	1.05	24.102	26.51	204.98	1.200 *	0.000	5.00	10.500	12.60	534.5	0.0	224.4
130.00		1.00	1.07	24.374	26.81	197.94	1.200 *	0.000	5.00	10.091	12.11	519.4	0.0	215.6
135.00		1.00	1.08	24.638	27.10	190.78	1.200 *	0.000	5.00	9.682	11.62	503.8	0.0	206.8

Wind Loading - Shaft

Structure: CT02694-B-SBA
Site Name: E-Prospect
Height: 162.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

11/15/2021

Tower Engineering Solutions

137.00 Appurtenance(s)	1.00	1.08	24.742	27.22	187.88	1.200 *	0.000	2.00	3.758	4.51	196.4	0.0	80.3
140.00	1.00	1.09	24.895	27.38	183.50	1.200 *	0.000	3.00	5.515	6.62	290.0	0.0	117.7
145.00	1.00	1.10	25.146	27.66	176.10	1.200 *	0.000	5.00	8.864	10.64	470.7	0.0	189.2
150.00 Top - Section 4	1.00	1.11	25.391	27.93	168.60	1.200 *	0.000	5.00	8.455	10.15	453.4	0.0	180.4
155.00	1.00	1.12	25.630	28.19	109.07	1.200 *	0.000	5.00	5.313	6.38	287.6	0.0	223.2
158.00 Appurtenance(s)	1.00	1.13	25.771	28.35	109.37	1.200 *	0.000	3.00	3.188	3.82	173.5	0.0	133.9
160.00 Appurtenance(s)	1.00	1.13	25.863	28.45	109.57	1.200 *	0.000	2.00	2.125	2.55	116.1	0.0	89.3
162.00	1.00	1.13	25.955	28.55	109.76	0.600	0.000	2.00	2.125	1.27	58.2	0.0	89.3
							Totals:	**162.00**			**15,575.6**		**16,399.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

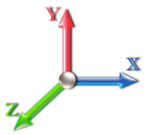
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	CommScope	3	25.863	28.450	0.56	0.75	14.34	540.00	0.000	0.000	652.92	0.00	0.00
2	160.00	RFS	3	25.863	28.450	0.40	0.80	1.40	35.10	0.000	0.000	63.91	0.00	0.00
3	160.00	RFS	3	25.863	28.450	0.40	0.80	1.40	33.75	0.000	0.000	63.91	0.00	0.00
4	160.00	Ericsson S11 B2-RRU	3	25.863	28.450	0.40	0.80	3.40	135.00	0.000	0.000	154.58	0.00	0.00
5	160.00	Ericsson S11B12-RRU	3	25.863	28.450	0.40	0.80	3.40	137.70	0.000	0.000	154.58	0.00	0.00
6	160.00	Ericsson Air 21 B4A/B2P	3	25.863	28.450	0.69	0.80	12.57	244.08	0.000	0.000	572.17	0.00	0.00
7	158.00	Commscope	3	25.771	28.348	0.64	0.80	22.02	134.46	0.000	0.000	998.85	0.00	0.00
8	137.00	B2/B66A RRH-BR049	3	24.742	27.216	0.50	0.75	2.82	227.88	0.000	0.000	122.76	0.00	0.00
9	137.00	B5/B13 RRH-BR04C	3	24.742	27.216	0.50	0.75	2.82	189.81	0.000	0.000	122.76	0.00	0.00
10	137.00	DB-C1-12C-24AB-0Z	1	24.742	27.216	0.75	0.75	3.04	28.80	0.000	0.000	132.60	0.00	0.00
11	137.00	MT6407-77A	3	24.742	27.216	0.52	0.75	7.39	214.38	0.000	0.000	321.66	0.00	0.00
12	137.00	Low Profile Platform	1	24.742	27.216	1.00	1.00	22.00	1080.00	0.000	0.000	958.00	0.00	0.00
13	137.00	CBC78T-DS-43	3	24.742	27.216	0.38	0.75	0.42	28.08	0.000	0.000	18.13	0.00	0.00
14	137.00	MS-HRECP	1	24.742	27.216	1.00	1.00	12.25	462.60	0.000	0.000	533.43	0.00	0.00
15	137.00	JAHH-65B-R3B	6	24.742	27.216	0.62	0.75	34.03	341.82	0.000	0.000	1481.67	0.00	0.00
16	117.00	Kathrein 860 10025 RET	6	23.651	26.016	0.40	0.80	0.43	6.48	0.000	0.000	17.98	0.00	0.00
17	117.00	Andrew SBNH-1D6565C	4	23.651	26.016	0.64	0.80	29.36	237.96	0.000	0.000	1222.26	0.00	0.00
18	117.00	Low Profile Platform	1	23.651	26.016	1.00	1.00	22.00	1080.00	0.000	0.000	915.76	0.00	0.00
19	117.00	KMW AM-X-CD-16-6500T	2	23.651	26.016	0.65	0.80	7.84	59.40	0.000	0.000	326.38	0.00	0.00
20	117.00	CSS DBC-750	3	23.651	26.016	0.40	0.80	0.61	12.96	0.000	0.000	25.47	0.00	0.00
21	117.00	Kathrein 800-10121	3	23.651	26.016	0.63	0.80	9.76	119.07	0.000	0.000	406.45	0.00	0.00
22	117.00	CCI DTMABP7819VG12A	6	23.651	26.016	0.54	0.80	3.67	103.68	0.000	0.000	152.61	0.00	0.00
23	117.00	Powerwave LGP 13519	3	23.651	26.016	0.40	0.80	0.41	14.31	0.000	0.000	16.98	0.00	0.00
24	114.50	Ericsson RRUS 11	6	23.505	25.856	0.54	0.80	8.10	273.78	0.000	0.000	335.27	0.00	0.00
25	114.50	Raycap DC6-48-60-18-8F	3	23.505	25.856	0.54	0.80	2.03	54.00	0.000	0.000	83.82	0.00	0.00
26	100.00	Commscope	1	22.613	24.875	1.00	1.00	37.59	1554.30	0.000	0.000	1496.07	0.00	0.00
27	100.00	Raycap	1	22.613	24.875	1.00	1.00	2.01	19.71	0.000	0.000	80.00	0.00	0.00
28	100.00	Fujitsu TA08025-B604	3	22.613	24.875	0.50	0.75	2.95	172.53	0.000	0.000	117.60	0.00	0.00
29	100.00	Fujitsu TA08025-B605	3	22.613	24.875	0.50	0.75	2.95	202.50	0.000	0.000	117.60	0.00	0.00
30	100.00	JMA Wireless	3	22.613	24.875	0.55	0.75	20.80	174.15	0.000	0.000	827.67	0.00	0.00
							Totals:		**7,918.29**			**12,493.82**		

Total Applied Force Summary

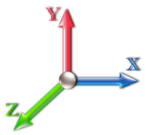
Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		417.14	1019.90	0.00	0.00
10.00		411.89	1002.28	0.00	0.00
15.00		406.65	984.66	0.00	0.00
16.67		134.65	324.95	0.00	0.00
18.50		146.88	353.83	0.00	0.00
20.00		119.87	288.26	0.00	0.00
25.00		396.16	949.43	0.00	0.00
30.00		391.24	931.81	0.00	0.00
34.67		375.90	854.40	0.00	0.00
35.00		26.45	59.79	0.00	0.00
40.00		413.36	896.58	0.00	0.00
42.14		177.52	377.76	0.00	0.00
45.00		244.62	839.43	0.00	0.00
47.57		221.42	744.41	0.00	0.00
50.00		209.36	366.58	0.00	0.00
54.67		408.62	694.76	0.00	0.00
55.00		28.72	48.61	0.00	0.00
60.00		442.66	728.69	0.00	0.00
65.00		446.35	714.01	0.00	0.00
70.00		728.73	699.33	0.00	0.00
74.67		676.43	639.91	0.00	0.00
75.00		47.26	44.73	0.00	0.00
76.52		217.38	204.77	0.00	0.00
80.00		505.53	742.36	0.00	0.00
81.00		143.97	210.75	0.00	0.00
81.19		26.81	39.22	0.00	0.00
85.00		548.83	431.26	0.00	0.00
86.00		142.58	111.96	0.00	0.00
90.00		569.78	443.15	0.00	0.00
94.67		658.80	507.86	0.00	0.00
95.00		45.96	35.50	0.00	0.00
100.00	(11) attachments	3334.59	2654.81	0.00	0.00
102.00		282.26	206.08	0.00	0.00
102.67		94.02	68.62	0.00	0.00
105.00		324.67	236.98	0.00	0.00
110.00		668.52	499.94	0.00	0.00
110.91		119.12	89.23	0.00	0.00
114.50	(9) attachments	895.43	852.23	0.00	0.00
114.80		38.87	42.80	0.00	0.00
115.00		26.61	16.62	0.00	0.00
117.00	(28) attachments	3345.05	1796.52	0.00	0.00
118.00		129.65	68.48	0.00	0.00
120.00		257.99	135.91	0.00	0.00
125.00		616.29	333.60	0.00	0.00
130.00		601.72	324.80	0.00	0.00
135.00		586.51	315.99	0.00	0.00

Total Applied Force Summary

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Tower Engineering Solutions

137.00	(21) attachments	3920.52	2697.30	0.00	0.00
140.00		339.84	143.18	0.00	0.00
145.00		554.31	231.59	0.00	0.00
150.00		537.37	222.78	0.00	0.00
155.00		371.93	265.63	0.00	0.00
158.00	(3) attachments	1223.10	293.84	0.00	0.00
160.00	(18) attachments	1812.05	1231.88	0.00	0.00
162.00		58.24	89.30	0.00	0.00
	Totals:	**29,870.19**	**29,109.09**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

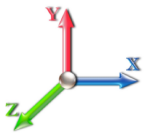
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.152	1.157	16.018	0.00	37.44
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.157	16.018	0.00	4.95
5.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.152	1.157	16.018	0.00	0.00
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.155	1.166	16.018	0.00	37.44
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.166	16.018	0.00	4.95
10.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.155	1.166	16.018	0.00	0.00
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.159	1.176	16.018	0.00	37.44
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.159	1.176	16.018	0.00	4.95
15.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.159	1.176	16.018	0.00	0.00
16.67	1 5/8" Coax	Yes	1.67	0.000	5.94	0.83	0.00	0.161	1.183	16.018	0.00	12.50
16.67	1 5/8" Fiber	Yes	1.67	0.000	0.00	0.00	0.00	0.161	1.183	16.018	0.00	1.65
16.67	Reinforcing plate	Yes	1.67	0.000	1.25	0.17	0.00	0.161	1.183	16.018	0.00	0.00
18.50	1 5/8" Coax	Yes	1.83	0.000	5.94	0.91	0.00	0.162	1.187	16.018	0.00	13.70
18.50	1 5/8" Fiber	Yes	1.83	0.000	0.00	0.00	0.00	0.162	1.187	16.018	0.00	1.81
18.50	Reinforcing plate	Yes	1.83	0.000	1.25	0.19	0.00	0.162	1.187	16.018	0.00	0.00
20.00	1 5/8" Coax	Yes	1.50	0.000	5.94	0.74	0.00	0.164	1.191	16.018	0.00	11.23
20.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.164	1.191	16.018	0.00	1.49
20.00	Reinforcing plate	Yes	1.50	0.000	1.25	0.16	0.00	0.164	1.191	16.018	0.00	0.00
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.166	1.198	16.018	0.00	37.44
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.166	1.198	16.018	0.00	4.95
25.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.166	1.198	16.018	0.00	0.00
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.170	1.210	16.031	0.00	37.44
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.170	1.210	16.031	0.00	4.95
30.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.170	1.210	16.031	0.00	0.00
34.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.174	1.221	16.708	0.00	34.97
34.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.174	1.221	16.708	0.00	4.62
34.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.174	1.221	16.708	0.00	0.00
35.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.176	1.228	16.753	0.00	2.47
35.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.176	1.228	16.753	0.00	0.33
35.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.176	1.228	16.753	0.00	0.00
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.178	1.234	17.405	0.00	37.44
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.234	17.405	0.00	4.95
40.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.178	1.234	17.405	0.00	0.00
42.14	1 5/8" Coax	Yes	2.14	0.000	5.94	1.06	0.00	0.181	1.244	17.665	0.00	16.00
42.14	1 5/8" Fiber	Yes	2.14	0.000	0.00	0.00	0.00	0.181	1.244	17.665	0.00	2.12
42.14	Reinforcing plate	Yes	2.14	0.000	1.25	0.22	0.00	0.181	1.244	17.665	0.00	0.00
45.00	1 5/8" Coax	Yes	2.86	0.000	5.94	1.42	0.00	0.184	1.251	18.000	0.00	21.44
45.00	1 5/8" Fiber	Yes	2.86	0.000	0.00	0.00	0.00	0.184	1.251	18.000	0.00	2.83
45.00	Reinforcing plate	Yes	2.86	0.000	1.25	0.30	0.00	0.184	1.251	18.000	0.00	0.00
47.57	1 5/8" Coax	Yes	2.57	0.000	5.94	1.27	0.00	0.186	1.258	18.288	0.00	19.24
47.57	1 5/8" Fiber	Yes	2.57	0.000	0.00	0.00	0.00	0.186	1.258	18.288	0.00	2.54
47.57	Reinforcing plate	Yes	2.57	0.000	1.25	0.27	0.00	0.186	1.258	18.288	0.00	0.00
50.00	1 5/8" Coax	Yes	2.43	0.000	5.94	1.20	0.00	0.185	1.256	18.551	0.00	18.20
50.00	1 5/8" Fiber	Yes	2.43	0.000	0.00	0.00	0.00	0.185	1.256	18.551	0.00	2.41
50.00	Reinforcing plate	Yes	2.43	0.000	1.25	0.25	0.00	0.185	1.256	18.551	0.00	0.00
54.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.189	1.266	19.030	0.00	34.97
54.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.189	1.266	19.030	0.00	4.62

Linear Appurtenance Segment Forces (Factored)

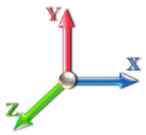
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
54.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.189	1.266	19.030	0.00	0.00
55.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.191	1.274	19.063	0.00	2.47
55.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.191	1.274	19.063	0.00	0.33
55.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.191	1.274	19.063	0.00	0.00
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.194	1.282	19.543	0.00	37.44
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.194	1.282	19.543	0.00	4.95
60.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.194	1.282	19.543	0.00	0.00
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.199	1.298	19.995	0.00	37.44
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.199	1.298	19.995	0.00	4.95
65.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.199	1.298	19.995	0.00	0.00
70.00	1 5/8" Coax	Yes	5.00	0.847	5.94	2.48	2.10	0.205	0.000	20.422	75.31	37.44
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.205	0.000	20.422	0.00	4.95
70.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.205	0.000	20.422	22.46	0.00
74.67	1 5/8" Coax	Yes	4.67	0.839	5.94	2.31	1.94	0.210	0.000	20.803	70.99	34.97
74.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.210	0.000	20.803	0.00	4.62
74.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.210	0.000	20.803	21.37	0.00
75.00	1 5/8" Coax	Yes	0.33	0.838	5.94	0.16	0.14	0.214	0.000	20.829	5.02	2.47
75.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.214	0.000	20.829	0.00	0.33
75.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.214	0.000	20.829	1.51	0.00
76.52	1 5/8" Coax	Yes	1.52	0.836	5.94	0.75	0.63	0.215	0.000	20.949	23.14	11.36
76.52	1 5/8" Fiber	Yes	1.52	0.000	0.00	0.00	0.00	0.215	0.000	20.949	0.00	1.50
76.52	Reinforcing plate	Yes	1.52	1.200	1.25	0.16	0.19	0.215	0.000	20.949	6.99	0.00
80.00	1 5/8" Coax	Yes	3.48	0.831	5.94	1.72	1.43	0.218	0.000	21.217	53.48	26.08
80.00	1 5/8" Fiber	Yes	3.48	0.000	0.00	0.00	0.00	0.218	0.000	21.217	0.00	3.45
80.00	Reinforcing plate	Yes	3.48	1.200	1.25	0.36	0.44	0.218	0.000	21.217	16.26	0.00
81.00	1 5/8" Coax	Yes	1.00	0.829	5.94	0.50	0.41	0.221	0.000	21.292	15.38	7.49
81.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.221	0.000	21.292	0.00	0.99
81.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.221	0.000	21.292	4.68	0.00
81.19	1 5/8" Coax	Yes	0.19	0.829	5.94	0.09	0.08	0.222	0.000	21.306	2.87	1.40
81.19	1 5/8" Fiber	Yes	0.19	0.000	0.00	0.00	0.00	0.222	0.000	21.306	0.00	0.18
81.19	Reinforcing plate	Yes	0.19	1.200	1.25	0.02	0.02	0.222	0.000	21.306	0.87	0.00
85.00	1 5/8" Coax	Yes	3.81	0.823	5.94	1.89	1.55	0.221	0.000	21.587	59.05	28.55
85.00	1 5/8" Fiber	Yes	3.81	0.000	0.00	0.00	0.00	0.221	0.000	21.587	0.00	3.78
85.00	Reinforcing plate	Yes	3.81	1.200	1.25	0.40	0.48	0.221	0.000	21.587	18.11	0.00
86.00	1 5/8" Coax	Yes	1.00	0.822	5.94	0.50	0.41	0.224	0.000	21.660	15.51	7.49
86.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.224	0.000	21.660	0.00	0.99
86.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.224	0.000	21.660	4.77	0.00
90.00	1 5/8" Coax	Yes	4.00	0.817	5.94	1.98	1.62	0.228	0.000	21.943	62.45	29.95
90.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.228	0.000	21.943	0.00	3.96
90.00	Reinforcing plate	Yes	4.00	1.200	1.25	0.42	0.50	0.228	0.000	21.943	19.31	0.00
94.67	1 5/8" Coax	Yes	4.67	0.811	5.94	2.31	1.87	0.234	0.000	22.262	73.44	34.97
94.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.234	0.000	22.262	0.00	4.62
94.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.234	0.000	22.262	22.87	0.00
95.00	1 5/8" Coax	Yes	0.33	0.810	5.94	0.16	0.13	0.238	0.000	22.284	5.19	2.47
95.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.238	0.000	22.284	0.00	0.33
95.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.238	0.000	22.284	1.62	0.00
100.00	1 5/8" Coax	Yes	5.00	0.804	5.94	2.48	1.99	0.242	0.000	22.613	79.25	37.44

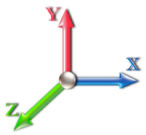
Linear Appurtenance Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.242	0.000	22.613	0.00	4.95
100.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.242	0.000	22.613	24.87	0.00
102.00	1 5/8" Coax	Yes	2.00	0.802	5.94	0.99	0.79	0.282	0.000	22.742	31.79	14.98
102.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.282	0.000	22.742	0.00	1.98
102.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.282	0.000	22.742	8.01	0.00
102.00	Reinforcing plate	Yes	2.00	1.200	1.25	0.21	0.25	0.282	0.000	22.742	10.01	0.00
102.67	1 5/8" Coax	Yes	0.67	0.801	5.94	0.33	0.27	0.285	0.000	22.784	10.66	5.02
102.67	1 5/8" Fiber	Yes	0.67	0.000	0.00	0.00	0.00	0.285	0.000	22.784	0.00	0.66
102.67	Reinforcing plate	Yes	0.67	1.200	1.00	0.06	0.07	0.285	0.000	22.784	2.69	0.00
102.67	Reinforcing plate	Yes	0.67	1.200	1.25	0.07	0.08	0.285	0.000	22.784	3.36	0.00
105.00	1 5/8" Coax	Yes	2.33	0.799	5.94	1.15	0.92	0.282	0.000	22.931	37.19	17.45
105.00	1 5/8" Fiber	Yes	2.33	0.000	0.00	0.00	0.00	0.282	0.000	22.931	0.00	2.31
105.00	Reinforcing plate	Yes	2.33	1.200	1.00	0.19	0.23	0.282	0.000	22.931	9.40	0.00
105.00	Reinforcing plate	Yes	2.03	1.200	1.25	0.21	0.25	0.282	0.000	22.931	10.24	0.00
110.00	1 5/8" Coax	Yes	5.00	0.794	5.94	2.48	1.96	0.250	0.000	23.238	80.33	37.44
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.250	0.000	23.238	0.00	4.95
110.00	Reinforcing plate	Yes	5.00	1.200	1.00	0.42	0.50	0.250	0.000	23.238	20.45	0.00
110.91	1 5/8" Coax	Yes	0.91	0.793	5.94	0.45	0.36	0.255	0.000	23.292	14.56	6.78
110.91	1 5/8" Fiber	Yes	0.91	0.000	0.00	0.00	0.00	0.255	0.000	23.292	0.00	0.90
110.91	Reinforcing plate	Yes	0.91	1.200	1.00	0.08	0.09	0.255	0.000	23.292	3.71	0.00
114.50	1 5/8" Coax	Yes	3.59	0.789	5.94	1.78	1.40	0.260	0.000	23.505	58.09	26.92
114.50	1 5/8" Fiber	Yes	3.59	0.000	0.00	0.00	0.00	0.260	0.000	23.505	0.00	3.56
114.50	Reinforcing plate	Yes	3.59	1.200	1.00	0.30	0.36	0.260	0.000	23.505	14.87	0.00
114.80	1 5/8" Coax	Yes	0.30	0.789	5.94	0.15	0.12	0.263	0.000	23.523	4.80	2.22
114.80	1 5/8" Fiber	Yes	0.30	0.000	0.00	0.00	0.00	0.263	0.000	23.523	0.00	0.29
114.80	Reinforcing plate	Yes	0.30	1.200	1.00	0.02	0.03	0.263	0.000	23.523	1.23	0.00
115.00	1 5/8" Coax	Yes	0.20	0.789	5.94	0.10	0.08	0.260	0.000	23.535	3.29	1.52
115.00	1 5/8" Fiber	Yes	0.20	0.000	0.00	0.00	0.00	0.260	0.000	23.535	0.00	0.20
115.00	Reinforcing plate	Yes	0.20	1.200	1.00	0.02	0.02	0.260	0.000	23.535	0.84	0.00
117.00	1 5/8" Coax	Yes	2.00	0.787	5.94	0.99	0.78	0.262	0.000	23.651	32.42	14.98
117.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.262	0.000	23.651	0.00	1.98
117.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.262	0.000	23.651	8.33	0.00
118.00	1 5/8" Coax	Yes	1.00	0.786	5.94	0.50	0.39	0.265	0.000	23.708	16.23	7.49
118.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.265	0.000	23.708	0.00	0.99
118.00	Reinforcing plate	Yes	1.00	1.200	1.00	0.08	0.10	0.265	0.000	23.708	4.17	0.00
120.00	1 5/8" Coax	Yes	2.00	0.784	5.94	0.99	0.78	0.268	0.000	23.823	32.53	14.98
120.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.268	0.000	23.823	0.00	1.98
120.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.268	0.000	23.823	8.39	0.00
125.00	1 5/8" Coax	Yes	5.00	0.779	5.94	2.48	1.93	0.236	0.000	24.102	81.81	37.44
125.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.236	0.000	24.102	0.00	4.95
130.00	1 5/8" Coax	Yes	5.00	0.775	5.94	2.48	1.92	0.245	0.000	24.374	82.27	37.44
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.245	0.000	24.374	0.00	4.95
135.00	1 5/8" Coax	Yes	5.00	0.771	5.94	2.48	1.91	0.256	0.000	24.638	82.72	37.44
135.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.256	0.000	24.638	0.00	4.95
137.00	1 5/8" Coax	Yes	2.00	0.769	5.94	0.99	0.76	0.263	0.000	24.742	33.16	14.98
137.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.263	0.000	24.742	0.00	1.98
140.00	1 5/8" Coax	Yes	3.00	0.767	5.94	1.49	1.14	0.269	0.000	24.895	49.89	22.46

Linear Appurtenance Segment Forces (Factored)

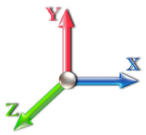
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.269	0.000	24.895	0.00	2.97
145.00	1 5/8" Coax	Yes	5.00	0.763	5.94	2.48	1.89	0.279	0.000	25.146	83.57	37.44
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.279	0.000	25.146	0.00	4.95
150.00	1 5/8" Coax	Yes	5.00	0.759	5.94	2.48	1.88	0.293	0.000	25.391	83.97	37.44
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.293	0.000	25.391	0.00	4.95
155.00	1 5/8" Coax	Yes	5.00	0.756	5.94	2.48	1.87	0.466	0.000	25.630	84.37	37.44
155.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.466	0.000	25.630	0.00	4.95
158.00	1 5/8" Coax	Yes	3.00	0.754	5.94	1.49	1.12	0.466	0.000	25.771	50.76	22.46
158.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.466	0.000	25.771	0.00	2.97
160.00	1 5/8" Coax	Yes	2.00	0.752	5.94	0.99	0.74	0.466	0.000	25.863	33.90	14.98
160.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.466	0.000	25.863	0.00	1.98
										Totals:	**1,800.8**	**1,356.5**

Calculated Forces

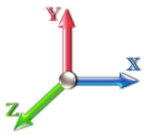
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.05	-29.93	0.00	-3202.5	0.00	3202.53	3849.02	1924.51	7372.73	3691.85	0.00	0.000	0.000	0.643
5.00	-27.92	-29.61	0.00	-3052.9	0.00	3052.91	3795.37	1897.68	7118.03	3564.30	0.11	-0.215	0.000	0.631
10.00	-26.81	-29.30	0.00	-2904.8	0.00	2904.85	3740.61	1870.30	6865.59	3437.90	0.46	-0.431	0.000	0.618
15.00	-25.76	-28.94	0.00	-2758.3	0.00	2758.38	3684.74	1842.37	6615.55	3312.69	1.02	-0.649	0.000	0.605
16.67	-25.40	-28.84	0.00	-2710.0	0.00	2710.04	3665.83	1832.91	6532.59	3271.15	1.26	-0.723	0.000	0.450
18.50	-25.02	-28.71	0.00	-2657.2	0.00	2657.27	3644.97	1822.48	6442.01	3225.79	1.55	-0.784	0.000	0.565
20.00	-24.66	-28.65	0.00	-2614.2	0.00	2614.20	3627.76	1813.88	6368.03	3188.75	1.81	-0.848	0.000	0.561
25.00	-23.62	-28.32	0.00	-2470.9	0.00	2470.97	3569.68	1784.84	6123.18	3066.14	2.81	-1.057	0.000	0.547
30.00	-22.59	-27.99	0.00	-2329.3	0.00	2329.36	3510.49	1755.24	5881.13	2944.94	4.03	-1.266	0.000	0.532
34.67	-21.70	-27.64	0.00	-2198.6	0.00	2198.64	3454.20	1727.10	5657.69	2833.05	5.36	-1.462	0.000	0.526
35.00	-21.58	-27.65	0.00	-2189.5	0.00	2189.52	3450.19	1725.09	5642.00	2825.20	5.47	-1.477	0.000	0.525
40.00	-20.63	-27.27	0.00	-2051.2	0.00	2051.27	3388.79	1694.39	5405.94	2706.99	7.13	-1.689	0.000	0.508
42.14	-20.20	-27.12	0.00	-1993.0	0.00	1993.01	3362.21	1681.10	5306.03	2656.96	7.90	-1.782	0.000	0.501
45.00	-19.32	-26.88	0.00	-1915.3	0.00	1915.37	3326.27	1663.14	5173.07	2590.38	9.01	-1.905	0.000	0.486
47.57	-18.53	-26.67	0.00	-1846.2	0.00	1846.28	2638.80	1319.40	4131.44	2068.79	10.07	-2.014	0.000	0.514
50.00	-18.10	-26.50	0.00	-1781.4	0.00	1781.46	2616.75	1308.38	4046.02	2026.02	11.12	-2.117	0.000	0.546
54.67	-17.37	-26.10	0.00	-1657.7	0.00	1657.71	2573.65	1286.82	3883.14	1944.46	13.29	-2.327	0.000	0.543
55.00	-17.27	-26.10	0.00	-1649.1	0.00	1649.10	2570.56	1285.28	3871.70	1938.73	13.45	-2.343	0.000	0.541
60.00	-16.46	-25.70	0.00	-1518.5	0.00	1518.58	2523.27	1261.63	3699.46	1852.48	16.03	-2.573	0.000	0.516
65.00	-15.66	-25.28	0.00	-1390.1	0.00	1390.10	2474.87	1237.43	3529.43	1767.34	18.85	-2.799	0.000	0.489
70.00	-14.91	-24.57	0.00	-1263.7	0.00	1263.70	2425.36	1212.68	3361.74	1683.37	21.90	-3.020	0.000	0.462
74.67	-14.27	-23.89	0.00	-1148.9	0.00	1148.96	2378.12	1189.06	3207.34	1606.06	24.95	-3.223	0.000	0.443
75.00	-14.21	-23.85	0.00	-1141.0	0.00	1141.08	2374.74	1187.37	3196.52	1600.63	25.17	-3.237	0.000	0.441
76.52	-13.97	-23.65	0.00	-1104.9	0.00	1104.91	2359.17	1179.58	3146.91	1575.79	26.21	-3.305	0.000	0.433
80.00	-13.22	-23.12	0.00	-1022.5	0.00	1022.54	2323.02	1161.51	3033.91	1519.21	28.68	-3.454	0.000	0.407
81.00	-13.01	-22.97	0.00	-999.42	0.00	999.42	2312.54	1156.27	3001.71	1503.09	29.41	-3.497	0.000	0.327
81.19	-12.94	-22.95	0.00	-995.14	0.00	995.14	1750.09	875.04	2314.24	1158.84	29.54	-3.503	0.000	0.356
85.00	-12.52	-22.40	0.00	-907.61	0.00	907.61	1723.72	861.86	2226.75	1115.03	32.39	-3.630	0.000	0.360
86.00	-12.37	-22.27	0.00	-885.21	0.00	885.21	1716.70	858.35	2203.94	1103.61	33.16	-3.666	0.000	0.443
90.00	-11.90	-21.71	0.00	-796.13	0.00	796.13	1688.18	844.09	2113.26	1058.20	36.30	-3.837	0.000	0.411
94.67	-11.40	-21.04	0.00	-694.74	0.00	694.74	1653.98	826.99	2008.61	1005.80	40.14	-4.025	0.000	0.390
95.00	-11.33	-21.01	0.00	-687.80	0.00	687.80	1651.53	825.76	2001.27	1002.12	40.42	-4.039	0.000	0.387
100.00	-8.88	-17.51	0.00	-582.74	0.00	582.74	1613.77	806.88	1890.91	946.86	44.76	-4.235	0.000	0.341
102.00	-8.68	-17.22	0.00	-547.71	0.00	547.71	1598.36	799.18	1847.26	925.00	46.55	-4.310	0.000	0.220
102.67	-8.61	-17.13	0.00	-536.17	0.00	536.17	1593.15	796.58	1832.70	917.71	47.15	-4.327	0.000	0.313
105.00	-8.36	-16.81	0.00	-496.25	0.00	496.25	1574.90	787.45	1782.33	892.49	49.28	-4.410	0.000	0.296
110.00	-7.89	-16.12	0.00	-412.21	0.00	412.21	1534.93	767.47	1675.65	839.07	53.98	-4.571	0.000	0.257
110.91	-7.79	-16.00	0.00	-397.62	0.00	397.62	1527.58	763.79	1656.56	829.51	54.85	-4.600	0.000	0.249
114.50	-7.00	-15.05	0.00	-340.10	0.00	340.10	1498.01	749.01	1581.38	791.86	58.35	-4.704	0.000	0.217
114.80	-6.96	-15.00	0.00	-335.64	0.00	335.64	1034.66	517.33	1111.16	556.41	58.65	-4.713	0.000	0.241
115.00	-6.93	-14.98	0.00	-332.59	0.00	332.59	1033.71	516.86	1108.46	555.05	58.85	-4.718	0.000	0.267
117.00	-5.41	-11.50	0.00	-302.63	0.00	302.63	1024.27	512.13	1081.93	541.77	60.83	-4.778	0.000	0.246
118.00	-5.35	-11.37	0.00	-291.13	0.00	291.13	1019.48	509.74	1068.72	535.15	61.84	-4.807	0.000	0.239
118.00	-5.35	-11.37	0.00	-291.13	0.00	291.13	1019.48	509.74	1068.72	535.15	61.84	-4.807	0.000	0.239
120.00	-5.20	-11.12	0.00	-268.38	0.00	268.38	1009.78	504.89	1042.37	521.96	63.86	-4.862	0.000	0.520
125.00	-4.87	-10.50	0.00	-212.79	0.00	212.79	984.73	492.37	977.10	489.28	69.10	-5.149	0.000	0.440
130.00	-4.56	-9.89	0.00	-160.30	0.00	160.30	958.58	479.29	912.78	457.07	74.63	-5.400	0.000	0.356
135.00	-4.28	-9.28	0.00	-110.86	0.00	110.86	931.33	465.66	849.55	425.40	80.39	-5.606	0.000	0.266

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

137.00	-1.98	-5.12	0.00	-92.30	0.00	92.30	920.11	460.06	824.58	412.91	82.75	-5.676	0.000	0.226
140.00	-1.86	-4.77	0.00	-76.94	0.00	76.94	902.96	451.48	787.53	394.35	86.34	-5.769	0.000	0.197
145.00	-1.68	-4.20	0.00	-53.09	0.00	53.09	873.49	436.75	726.86	363.97	92.45	-5.897	0.000	0.148
150.00	-1.51	-3.64	0.00	-32.09	0.00	32.09	842.91	421.46	667.67	334.33	98.67	-5.994	0.000	0.098
150.00	-1.51	-3.64	0.00	-32.09	0.00	32.09	656.05	328.03	328.13	215.42	98.67	-5.994	0.000	0.151
155.00	-1.28	-3.25	0.00	-13.87	0.00	13.87	656.05	328.03	328.13	215.42	104.97	-6.054	0.000	0.066
158.00	-1.12	-2.00	0.00	-4.13	0.00	4.13	656.05	328.03	328.13	215.42	108.78	-6.081	0.000	0.021
160.00	-0.08	-0.07	0.00	-0.13	0.00	0.13	656.05	328.03	328.13	215.42	111.32	-6.086	0.000	0.001
162.00	0.00	-0.06	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	113.87	-6.086	0.000	0.000

Wind Loading - Shaft

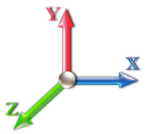
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

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 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.388 *	1.242	5.00	20.716	28.75	134.6	364.1	1485.3
10.00		1.00	0.70	4.256	4.68	0.00	1.400 *	1.331	5.00	20.381	28.53	133.5	383.0	1480.7
15.00		1.00	0.70	4.256	4.68	0.00	1.412 *	1.386	5.00	20.018	28.26	132.3	391.0	1465.2
16.67	RB2	1.00	0.70	4.256	4.68	0.00	1.420 *	1.401	1.67	6.599	9.37	43.9	131.1	484.6
18.50	RT1	1.00	0.70	4.256	4.68	0.00	1.425 *	1.416	1.83	7.183	10.23	47.9	144.0	528.5
20.00		1.00	0.70	4.256	4.68	0.00	1.429 *	1.427	1.50	5.850	8.36	39.1	118.2	431.0
25.00		1.00	0.70	4.256	4.68	0.00	1.438 *	1.459	5.00	19.261	27.69	129.6	394.6	1421.9
30.00		1.00	0.70	4.260	4.69	0.00	1.452 *	1.486	5.00	18.874	27.40	128.4	393.2	1397.0
34.67	RT2 RB3	1.00	0.73	4.439	4.88	0.00	1.466 *	1.507	4.67	17.276	25.32	123.6	364.9	1281.2
35.00		1.00	0.73	4.451	4.90	0.00	1.473 *	1.509	0.33	1.207	1.78	8.7	25.8	89.7
40.00		1.00	0.76	4.625	5.09	0.00	1.481 *	1.529	5.00	18.092	26.80	136.3	386.7	1343.5
42.14	Bot - Section 2	1.00	0.77	4.694	5.16	0.00	1.493 *	1.537	2.14	7.610	11.36	58.6	164.5	566.2
45.00		1.00	0.79	4.783	5.26	0.00	1.501 *	1.547	2.86	10.237	15.36	80.8	222.3	1204.9
47.57	Top - Section 1	1.00	0.80	4.859	5.35	0.00	1.510 *	1.556	2.57	9.077	13.71	73.3	198.2	1068.1
50.00		1.00	0.81	4.929	5.42	0.00	1.507 *	1.564	2.43	8.487	12.79	69.4	186.2	559.0
54.67	RT3 RB4	1.00	0.83	5.056	5.56	0.00	1.520 *	1.578	4.67	16.050	24.39	135.7	352.9	1056.4
55.00		1.00	0.83	5.065	5.57	0.00	1.529 *	1.579	0.33	1.121	1.71	9.5	24.9	74.0
60.00		1.00	0.85	5.193	5.71	0.00	1.538 *	1.592	5.00	16.773	25.80	147.4	371.3	1104.3
65.00		1.00	0.87	5.313	5.84	0.00	1.557 *	1.605	5.00	16.375	25.50	149.0	364.8	1078.2
70.00		1.00	0.89	5.426	5.97	0.00	1.200 *	1.617	5.00	15.976	19.17	114.4	357.9	1051.8
74.67	RT4 RB5	1.00	0.91	5.527	6.08	0.00	1.200 *	1.628	4.67	14.560	17.47	106.2	328.1	958.4
75.00		1.00	0.91	5.534	6.09	0.00	1.200 *	1.628	0.33	1.015	1.22	7.4	23.2	67.0
76.52	Bot - Section 3	1.00	0.92	5.566	6.12	0.00	1.200 *	1.632	1.52	4.645	5.57	34.1	105.7	306.4
80.00		1.00	0.93	5.637	6.20	0.00	1.200 *	1.639	3.48	10.677	12.81	79.5	242.7	1066.3
81.00	RB6	1.00	0.93	5.657	6.22	0.00	1.200 *	1.641	1.00	3.029	3.63	22.6	69.4	302.7
81.19	Top - Section 2	1.00	0.93	5.661	6.23	0.00	1.200 *	1.641	0.19	0.564	0.68	4.2	12.9	56.3
85.00		1.00	0.94	5.736	6.31	0.00	1.200 *	1.649	3.81	11.393	13.67	86.3	259.9	652.9
86.00	RT6	1.00	0.95	5.755	6.33	0.00	1.200 *	1.651	1.00	2.949	3.54	22.4	67.8	169.4
90.00		1.00	0.96	5.830	6.41	0.00	1.200 *	1.658	4.00	11.636	13.96	89.6	266.3	666.2
94.67	RT5 RB7	1.00	0.97	5.915	6.51	0.00	1.200 *	1.667	4.67	13.260	15.91	103.5	303.8	758.1
95.00		1.00	0.97	5.921	6.51	0.00	1.200 *	1.667	0.33	0.924	1.11	7.2	21.4	53.0
100.00	Appurtenance(s)	1.00	0.99	6.008	6.61	0.00	1.200 *	1.676	5.00	13.783	16.54	109.3	316.5	786.7
102.00	RB8	1.00	0.99	6.043	6.65	0.00	1.200 *	1.679	2.00	5.400	6.48	43.1	125.2	308.9
102.67	RT7	1.00	1.00	6.054	6.66	0.00	1.200 *	1.680	0.67	1.794	2.15	14.3	41.8	102.8
105.00		1.00	1.00	6.093	6.70	0.00	1.200 *	1.684	2.33	6.184	7.42	49.7	143.5	353.4
110.00		1.00	1.02	6.174	6.79	0.00	1.200 *	1.692	5.00	12.978	15.57	105.8	299.4	738.2
110.91	Bot - Section 4	1.00	1.02	6.189	6.81	0.00	1.200 *	1.693	0.91	2.306	2.77	18.8	53.9	131.7
114.50	Appurtenance(s)	1.00	1.03	6.245	6.87	0.00	1.200 *	1.699	3.59	9.143	10.97	75.4	212.4	748.0
114.80	Top - Section 3	1.00	1.03	6.250	6.88	0.00	1.200 *	1.699	0.30	0.745	0.89	6.1	17.5	61.1
115.00		1.00	1.03	6.253	6.88	0.00	1.200 *	1.699	0.20	0.510	0.61	4.2	12.0	24.9
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200 *	1.702	2.00	4.980	5.98	41.3	116.4	242.2
118.00	RT8	1.00	1.04	6.299	6.93	0.00	1.200 *	1.704	1.00	2.466	2.96	20.5	57.8	120.0
120.00		1.00	1.04	6.330	6.96	0.00	1.200 *	1.707	2.00	4.883	5.86	40.8	114.3	237.2
125.00		1.00	1.05	6.404	7.04	0.00	1.200 *	1.714	5.00	11.928	14.31	100.8	276.6	575.8
130.00		1.00	1.07	6.476	7.12	0.00	1.200 *	1.720	5.00	11.524	13.83	98.5	267.4	554.9
135.00		1.00	1.08	6.546	7.20	0.00	1.200 *	1.727	5.00	11.121	13.35	96.1	258.2	533.9

Wind Loading - Shaft

Structure: CT02694-B-SBA
Site Name: E-Prospect
Height: 162.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
11/15/2021

Tower Engineering Solutions

137.00 Appurtenance(s)	1.00	1.08	6.574	7.23	0.00	1.200 *	1.729	2.00	4.335	5.20	37.6	101.8	208.8
140.00	1.00	1.09	6.615	7.28	0.00	1.200 *	1.733	3.00	6.381	7.66	55.7	149.3	306.3
145.00	1.00	1.10	6.681	7.35	0.00	1.200 *	1.739	5.00	10.313	12.38	91.0	239.3	491.6
150.00 Top - Section 4	1.00	1.11	6.746	7.42	0.00	1.200 *	1.745	5.00	9.909	11.89	88.2	229.7	470.2
155.00	1.00	1.12	6.810	7.49	0.00	1.200 *	1.751	5.00	6.772	8.13	60.9	155.1	452.8
158.00 Appurtenance(s)	1.00	1.13	6.847	7.53	0.00	1.200 *	1.754	3.00	4.065	4.88	36.7	93.3	271.9
160.00 Appurtenance(s)	1.00	1.13	6.872	7.56	0.00	1.200 *	1.757	2.00	2.711	3.25	24.6	62.3	181.3
162.00	1.00	1.13	6.896	7.59	0.00	1.200	1.759	2.00	2.711	3.25	24.7	62.3	181.4
							Totals:	**162.00**			**3,703.5**		**32,312.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

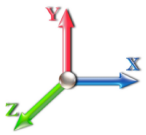
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 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	160.00	CommScope	3	6.872	7.559	0.56	0.75	26.19	1096.95	0.000	0.000	197.94	0.00	0.00
2	160.00	RFS	3	6.872	7.559	0.40	0.80	2.35	104.26	0.000	0.000	17.76	0.00	0.00
3	160.00	RFS	3	6.872	7.559	0.40	0.80	2.37	97.91	0.000	0.000	17.91	0.00	0.00
4	160.00	Ericsson S11 B2-RRU	3	6.872	7.559	0.40	0.80	4.21	334.74	0.000	0.000	31.80	0.00	0.00
5	160.00	Ericsson S11B12-RRU	3	6.872	7.559	0.40	0.80	4.21	345.46	0.000	0.000	31.80	0.00	0.00
6	160.00	Ericsson Air 21 B4A/B2P	3	6.872	7.559	0.69	0.80	14.85	836.02	0.000	0.000	112.26	0.00	0.00
7	158.00	Commscope	3	6.847	7.532	0.64	0.80	28.30	674.87	0.000	0.000	213.13	0.00	0.00
8	137.00	B2/B66A RRH-BR049	3	6.574	7.231	0.50	0.75	3.67	530.94	0.000	0.000	26.57	0.00	0.00
9	137.00	B5/B13 RRH-BR04C	3	6.574	7.231	0.50	0.75	3.67	458.80	0.000	0.000	26.57	0.00	0.00
10	137.00	DB-C1-12C-24AB-0Z	1	6.574	7.231	0.75	0.75	3.66	122.70	0.000	0.000	26.44	0.00	0.00
11	137.00	MT6407-77A	3	6.574	7.231	0.52	0.75	8.86	640.55	0.000	0.000	64.10	0.00	0.00
12	137.00	Low Profile Platform	1	6.574	7.231	1.00	1.00	39.50	1877.68	0.000	0.000	285.65	0.00	0.00
13	137.00	CBC78T-DS-43	3	6.574	7.231	0.38	0.75	0.73	98.84	0.000	0.000	5.29	0.00	0.00
14	137.00	MS-HRECP	1	6.574	7.231	1.00	1.00	24.11	1735.28	0.000	0.000	174.38	0.00	0.00
15	137.00	JAHH-65B-R3B	6	6.574	7.231	0.62	0.75	39.01	1823.94	0.000	0.000	282.09	0.00	0.00
16	117.00	Kathrein 860 10025 RET	6	6.284	6.913	0.40	0.80	1.32	34.13	0.000	0.000	9.12	0.00	0.00
17	117.00	Andrew SBNH-1D6565C	4	6.284	6.913	0.64	0.80	37.48	950.66	0.000	0.000	259.09	0.00	0.00
18	117.00	Low Profile Platform	1	6.284	6.913	1.00	1.00	39.23	1861.43	0.000	0.000	271.17	0.00	0.00
19	117.00	KMW AM-X-CD-16-6500T	2	6.284	6.913	0.65	0.80	10.49	278.67	0.000	0.000	72.54	0.00	0.00
20	117.00	CSS DBC-750	3	6.284	6.913	0.40	0.80	1.23	36.87	0.000	0.000	8.51	0.00	0.00
21	117.00	Kathrein 800-10121	3	6.284	6.913	0.63	0.80	13.66	396.19	0.000	0.000	94.43	0.00	0.00
22	117.00	CCI DTMABP7819VG12A	6	6.284	6.913	0.54	0.80	6.08	243.80	0.000	0.000	42.03	0.00	0.00
23	117.00	Powerwave LGP 13519	3	6.284	6.913	0.40	0.80	0.94	38.77	0.000	0.000	6.49	0.00	0.00
24	114.50	Ericsson RRUS 11	6	6.245	6.870	0.54	0.80	10.14	882.82	0.000	0.000	69.65	0.00	0.00
25	114.50	Raycap DC6-48-60-18-8F	3	6.245	6.870	0.54	0.80	3.06	180.77	0.000	0.000	21.01	0.00	0.00
26	100.00	Commscope	1	6.008	6.609	1.00	1.00	82.95	3320.17	0.000	0.000	548.22	0.00	0.00
27	100.00	Raycap	1	6.008	6.609	1.00	1.00	2.56	64.71	0.000	0.000	16.89	0.00	0.00
28	100.00	Fujitsu TA08025-B604	3	6.008	6.609	0.50	0.75	3.77	339.59	0.000	0.000	24.90	0.00	0.00
29	100.00	Fujitsu TA08025-B605	3	6.008	6.609	0.50	0.75	3.77	382.88	0.000	0.000	24.90	0.00	0.00
30	100.00	JMA Wireless	3	6.008	6.609	0.55	0.75	23.14	868.54	0.000	0.000	152.92	0.00	0.00
							Totals:		**20,658.95**			**3,135.57**		

Total Applied Force Summary

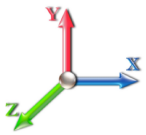
Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		134.61	1853.14	0.00	0.00
10.00		133.55	1858.91	0.00	0.00
15.00		132.31	1849.99	0.00	0.00
16.67		43.87	613.75	0.00	0.00
18.50		47.91	670.60	0.00	0.00
20.00		39.14	547.91	0.00	0.00
25.00		129.64	1815.48	0.00	0.00
30.00		128.37	1793.89	0.00	0.00
34.67		123.64	1654.45	0.00	0.00
35.00		8.71	116.13	0.00	0.00
40.00		136.33	1745.86	0.00	0.00
42.14		58.64	738.54	0.00	0.00
45.00		80.83	1436.60	0.00	0.00
47.57		73.26	1276.65	0.00	0.00
50.00		69.36	756.63	0.00	0.00
54.67		135.65	1437.86	0.00	0.00
55.00		9.54	100.94	0.00	0.00
60.00		147.37	1514.62	0.00	0.00
65.00		149.02	1490.17	0.00	0.00
70.00		155.20	1465.26	0.00	0.00
74.67		145.14	1345.89	0.00	0.00
75.00		10.17	94.43	0.00	0.00
76.52		46.86	432.37	0.00	0.00
80.00		109.14	1356.32	0.00	0.00
81.00		31.18	385.97	0.00	0.00
81.19		5.81	71.88	0.00	0.00
85.00		119.43	971.38	0.00	0.00
86.00		31.13	252.96	0.00	0.00
90.00		125.01	1001.30	0.00	0.00
94.67		145.64	1150.30	0.00	0.00
95.00		10.20	80.74	0.00	0.00
100.00	(11) attachments	923.05	6183.66	0.00	0.00
102.00		67.35	480.07	0.00	0.00
102.67		22.49	160.13	0.00	0.00
105.00		77.38	552.08	0.00	0.00
110.00		152.32	1150.54	0.00	0.00
110.91		27.28	206.32	0.00	0.00
114.50	(9) attachments	199.96	2108.62	0.00	0.00
114.80		8.95	85.58	0.00	0.00
115.00		6.13	41.68	0.00	0.00
117.00	(28) attachments	823.70	4248.20	0.00	0.00
118.00		30.03	186.39	0.00	0.00
120.00		59.97	370.08	0.00	0.00
125.00		133.82	890.93	0.00	0.00
130.00		131.93	870.78	0.00	0.00
135.00		129.92	850.48	0.00	0.00

Total Applied Force Summary

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

Tower Engineering Solutions

137.00	(21) attachments	942.30	7624.26	0.00	0.00
140.00		76.25	443.20	0.00	0.00
145.00		125.57	720.46	0.00	0.00
150.00		123.24	699.79	0.00	0.00
155.00		96.24	682.96	0.00	0.00
158.00	(3) attachments	271.22	1085.07	0.00	0.00
160.00	(18) attachments	448.35	3089.00	0.00	0.00
162.00		24.68	181.41	0.00	0.00
	Totals:	**7,618.79**	**64,792.60**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

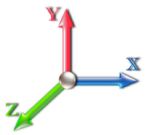
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 26



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.51	0.00	0.152	1.157	4.256	0.00	148.94
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.157	4.256	0.00	27.35
5.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.56	0.00	0.152	1.157	4.256	0.00	9.42
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.58	0.00	0.155	1.166	4.256	0.00	155.83
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.166	4.256	0.00	29.45
10.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.63	0.00	0.155	1.166	4.256	0.00	10.82
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.63	0.00	0.159	1.176	4.256	0.00	160.14
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.159	1.176	4.256	0.00	30.79
15.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.68	0.00	0.159	1.176	4.256	0.00	11.74
16.67	1 5/8" Coax	Yes	1.67	0.000	5.94	1.22	0.00	0.161	1.183	4.256	0.00	53.87
16.67	1 5/8" Fiber	Yes	1.67	0.000	0.00	0.00	0.00	0.161	1.183	4.256	0.00	10.41
16.67	Reinforcing plate	Yes	1.67	0.000	1.25	0.56	0.00	0.161	1.183	4.256	0.00	4.00
18.50	1 5/8" Coax	Yes	1.83	0.000	5.94	1.34	0.00	0.162	1.187	4.256	0.00	59.46
18.50	1 5/8" Fiber	Yes	1.83	0.000	0.00	0.00	0.00	0.162	1.187	4.256	0.00	11.54
18.50	Reinforcing plate	Yes	1.83	0.000	1.25	0.62	0.00	0.162	1.187	4.256	0.00	4.48
20.00	1 5/8" Coax	Yes	1.50	0.000	5.94	1.10	0.00	0.164	1.191	4.256	0.00	49.00
20.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.164	1.191	4.256	0.00	9.54
20.00	Reinforcing plate	Yes	1.50	0.000	1.25	0.51	0.00	0.164	1.191	4.256	0.00	3.73
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.69	0.00	0.166	1.198	4.256	0.00	165.88
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.166	1.198	4.256	0.00	32.62
25.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.74	0.00	0.166	1.198	4.256	0.00	13.00
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.71	0.00	0.170	1.210	4.260	0.00	168.02
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.170	1.210	4.260	0.00	33.31
30.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.76	0.00	0.170	1.210	4.260	0.00	13.48
34.67	1 5/8" Coax	Yes	4.67	0.000	5.94	3.48	0.00	0.174	1.221	4.439	0.00	158.54
34.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.174	1.221	4.439	0.00	31.64
34.67	Reinforcing plate	Yes	4.67	0.000	1.25	1.66	0.00	0.174	1.221	4.439	0.00	12.96
35.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.25	0.00	0.176	1.228	4.451	0.00	11.21
35.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.176	1.228	4.451	0.00	2.24
35.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.12	0.00	0.176	1.228	4.451	0.00	0.92
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.75	0.00	0.178	1.234	4.625	0.00	171.49
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.234	4.625	0.00	34.45
40.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.80	0.00	0.178	1.234	4.625	0.00	14.28
42.14	1 5/8" Coax	Yes	2.14	0.000	5.94	1.61	0.00	0.181	1.244	4.694	0.00	73.56
42.14	1 5/8" Fiber	Yes	2.14	0.000	0.00	0.00	0.00	0.181	1.244	4.694	0.00	14.81
42.14	Reinforcing plate	Yes	2.14	0.000	1.25	0.77	0.00	0.181	1.244	4.694	0.00	6.17
45.00	1 5/8" Coax	Yes	2.86	0.000	5.94	2.16	0.00	0.184	1.251	4.783	0.00	99.04
45.00	1 5/8" Fiber	Yes	2.86	0.000	0.00	0.00	0.00	0.184	1.251	4.783	0.00	20.00
45.00	Reinforcing plate	Yes	2.86	0.000	1.25	1.04	0.00	0.184	1.251	4.783	0.00	8.37
47.57	1 5/8" Coax	Yes	2.57	0.000	5.94	1.94	0.00	0.186	1.258	4.859	0.00	89.25
47.57	1 5/8" Fiber	Yes	2.57	0.000	0.00	0.00	0.00	0.186	1.258	4.859	0.00	18.07
47.57	Reinforcing plate	Yes	2.57	0.000	1.25	0.93	0.00	0.186	1.258	4.859	0.00	7.60
50.00	1 5/8" Coax	Yes	2.43	0.000	5.94	1.84	0.00	0.185	1.256	4.929	0.00	84.69
50.00	1 5/8" Fiber	Yes	2.43	0.000	0.00	0.00	0.00	0.185	1.256	4.929	0.00	17.19
50.00	Reinforcing plate	Yes	2.43	0.000	1.25	0.89	0.00	0.185	1.256	4.929	0.00	7.26
54.67	1 5/8" Coax	Yes	4.67	0.000	5.94	3.54	0.00	0.189	1.266	5.056	0.00	163.82
54.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.189	1.266	5.056	0.00	33.39

Linear Appurtenance Segment Forces (Factored)

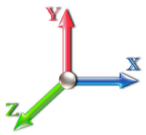
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
54.67	Reinforcing plate	Yes	4.67	0.000	1.25	1.71	0.00	0.189	1.266	5.056	0.00	14.20
55.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.25	0.00	0.191	1.274	5.065	0.00	11.58
55.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.191	1.274	5.065	0.00	2.36
55.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.12	0.00	0.191	1.274	5.065	0.00	1.00
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.80	0.00	0.194	1.282	5.193	0.00	176.59
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.194	1.282	5.193	0.00	36.14
60.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.85	0.00	0.194	1.282	5.193	0.00	15.49
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	3.81	0.00	0.199	1.298	5.313	0.00	177.63
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.199	1.298	5.313	0.00	36.49
65.00	Reinforcing plate	Yes	5.00	0.000	1.25	1.86	0.00	0.199	1.298	5.313	0.00	15.74
70.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.82	4.59	0.205	0.000	5.426	27.38	178.60
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.205	0.000	5.426	0.00	36.82
70.00	Reinforcing plate	Yes	5.00	1.200	1.25	1.87	2.24	0.205	0.000	5.426	13.38	15.98
74.67	1 5/8" Coax	Yes	4.67	1.200	5.94	3.58	4.29	0.210	0.000	5.527	26.11	167.61
74.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.210	0.000	5.527	0.00	34.66
74.67	Reinforcing plate	Yes	4.67	1.200	1.25	1.75	2.10	0.210	0.000	5.527	12.79	15.11
75.00	1 5/8" Coax	Yes	0.33	1.200	5.94	0.25	0.30	0.214	0.000	5.534	1.85	11.85
75.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.214	0.000	5.534	0.00	2.45
75.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.12	0.15	0.214	0.000	5.534	0.91	1.07
76.52	1 5/8" Coax	Yes	1.52	1.200	5.94	1.16	1.40	0.215	0.000	5.566	8.55	54.53
76.52	1 5/8" Fiber	Yes	1.52	0.000	0.00	0.00	0.00	0.215	0.000	5.566	0.00	11.29
76.52	Reinforcing plate	Yes	1.52	1.200	1.25	0.57	0.68	0.215	0.000	5.566	4.19	4.93
80.00	1 5/8" Coax	Yes	3.48	1.200	5.94	2.68	3.21	0.218	0.000	5.637	19.91	125.66
80.00	1 5/8" Fiber	Yes	3.48	0.000	0.00	0.00	0.00	0.218	0.000	5.637	0.00	26.07
80.00	Reinforcing plate	Yes	3.48	1.200	1.25	1.31	1.58	0.218	0.000	5.637	9.78	11.43
81.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.77	0.92	0.221	0.000	5.657	5.74	36.11
81.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.221	0.000	5.657	0.00	7.50
81.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.38	0.45	0.221	0.000	5.657	2.82	3.29
81.19	1 5/8" Coax	Yes	0.19	1.200	5.94	0.14	0.17	0.222	0.000	5.661	1.07	6.74
81.19	1 5/8" Fiber	Yes	0.19	0.000	0.00	0.00	0.00	0.222	0.000	5.661	0.00	1.40
81.19	Reinforcing plate	Yes	0.19	1.200	1.25	0.07	0.08	0.222	0.000	5.661	0.53	0.61
85.00	1 5/8" Coax	Yes	3.81	1.200	5.94	2.94	3.52	0.221	0.000	5.736	22.23	138.18
85.00	1 5/8" Fiber	Yes	3.81	0.000	0.00	0.00	0.00	0.221	0.000	5.736	0.00	28.75
85.00	Reinforcing plate	Yes	3.81	1.200	1.25	1.45	1.73	0.221	0.000	5.736	10.94	12.67
86.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.77	0.92	0.224	0.000	5.755	5.85	36.27
86.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.224	0.000	5.755	0.00	7.55
86.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.38	0.46	0.224	0.000	5.755	2.88	3.33
90.00	1 5/8" Coax	Yes	4.00	1.200	5.94	3.09	3.70	0.228	0.000	5.830	23.75	145.57
90.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.228	0.000	5.830	0.00	30.37
90.00	Reinforcing plate	Yes	4.00	1.200	1.25	1.52	1.83	0.228	0.000	5.830	11.71	13.44
94.67	1 5/8" Coax	Yes	4.67	1.200	5.94	3.61	4.33	0.234	0.000	5.915	28.18	170.59
94.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.234	0.000	5.915	0.00	35.68
94.67	Reinforcing plate	Yes	4.67	1.200	1.25	1.78	2.14	0.234	0.000	5.915	13.93	15.85
95.00	1 5/8" Coax	Yes	0.33	1.200	5.94	0.26	0.31	0.238	0.000	5.921	1.99	12.06
95.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.238	0.000	5.921	0.00	2.52
95.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.13	0.15	0.238	0.000	5.921	0.99	1.12
100.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.87	4.65	0.242	0.000	6.008	30.71	183.40

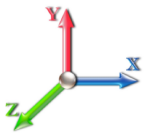
Linear Appurtenance Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.242	0.000	6.008	0.00	38.46
100.00	Reinforcing plate	Yes	5.00	1.200	1.25	1.92	2.30	0.242	0.000	6.008	15.21	17.16
102.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.55	1.86	0.282	0.000	6.043	12.36	73.47
102.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.282	0.000	6.043	0.00	15.42
102.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.73	0.87	0.282	0.000	6.043	5.79	6.89
102.00	Reinforcing plate	Yes	2.00	1.200	1.25	0.77	0.92	0.282	0.000	6.043	6.13	6.89
102.67	1 5/8" Coax	Yes	0.67	1.200	5.94	0.52	0.62	0.285	0.000	6.054	4.15	24.62
102.67	1 5/8" Fiber	Yes	0.67	0.000	0.00	0.00	0.00	0.285	0.000	6.054	0.00	5.17
102.67	Reinforcing plate	Yes	0.67	1.200	1.00	0.24	0.29	0.285	0.000	6.054	1.95	2.31
102.67	Reinforcing plate	Yes	0.67	1.200	1.25	0.26	0.31	0.285	0.000	6.054	2.06	2.31
105.00	1 5/8" Coax	Yes	2.33	1.200	5.94	1.81	2.17	0.282	0.000	6.093	14.54	85.78
105.00	1 5/8" Fiber	Yes	2.33	0.000	0.00	0.00	0.00	0.282	0.000	6.093	0.00	18.03
105.00	Reinforcing plate	Yes	2.33	1.200	1.00	0.85	1.02	0.282	0.000	6.093	6.82	8.07
105.00	Reinforcing plate	Yes	2.03	1.200	1.25	0.78	0.94	0.282	0.000	6.093	6.28	7.03
110.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.88	4.66	0.250	0.000	6.174	31.66	184.72
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.250	0.000	6.174	0.00	38.92
110.00	Reinforcing plate	Yes	5.00	1.200	1.00	1.83	2.19	0.250	0.000	6.174	14.89	17.49
110.91	1 5/8" Coax	Yes	0.91	1.200	5.94	0.70	0.84	0.255	0.000	6.189	5.75	33.45
110.91	1 5/8" Fiber	Yes	0.91	0.000	0.00	0.00	0.00	0.255	0.000	6.189	0.00	7.05
110.91	Reinforcing plate	Yes	0.91	1.200	1.00	0.33	0.40	0.255	0.000	6.189	2.70	3.17
114.50	1 5/8" Coax	Yes	3.59	1.200	5.94	2.80	3.36	0.260	0.000	6.245	23.06	133.21
114.50	1 5/8" Fiber	Yes	3.59	0.000	0.00	0.00	0.00	0.260	0.000	6.245	0.00	28.12
114.50	Reinforcing plate	Yes	3.59	1.200	1.00	1.32	1.58	0.260	0.000	6.245	10.86	12.67
114.80	1 5/8" Coax	Yes	0.30	1.200	5.94	0.23	0.28	0.263	0.000	6.250	1.90	11.00
114.80	1 5/8" Fiber	Yes	0.30	0.000	0.00	0.00	0.00	0.263	0.000	6.250	0.00	2.32
114.80	Reinforcing plate	Yes	0.30	1.200	1.00	0.11	0.13	0.263	0.000	6.250	0.90	1.05
115.00	1 5/8" Coax	Yes	0.20	1.200	5.94	0.16	0.19	0.260	0.000	6.253	1.31	7.54
115.00	1 5/8" Fiber	Yes	0.20	0.000	0.00	0.00	0.00	0.260	0.000	6.253	0.00	1.59
115.00	Reinforcing plate	Yes	0.20	1.200	1.00	0.07	0.09	0.260	0.000	6.253	0.62	0.72
117.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.56	1.87	0.262	0.000	6.284	12.92	74.23
117.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.262	0.000	6.284	0.00	15.69
117.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.73	0.88	0.262	0.000	6.284	6.09	7.08
118.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.78	0.93	0.265	0.000	6.299	6.48	37.14
118.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.265	0.000	6.299	0.00	7.85
118.00	Reinforcing plate	Yes	1.00	1.200	1.00	0.37	0.44	0.265	0.000	6.299	3.05	3.55
120.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.56	1.87	0.268	0.000	6.330	13.03	74.37
120.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.268	0.000	6.330	0.00	15.73
120.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.74	0.88	0.268	0.000	6.330	6.15	7.12
125.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.90	4.68	0.236	0.000	6.404	32.99	186.51
125.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.236	0.000	6.404	0.00	39.54
130.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.91	4.69	0.245	0.000	6.476	33.41	187.07
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.245	0.000	6.476	0.00	39.73
135.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.91	4.70	0.256	0.000	6.546	33.82	187.60
135.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.256	0.000	6.546	0.00	39.92
137.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.57	1.88	0.263	0.000	6.574	13.59	75.13
137.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.263	0.000	6.574	0.00	16.00
140.00	1 5/8" Coax	Yes	3.00	1.200	5.94	2.35	2.82	0.269	0.000	6.615	20.53	112.87

Linear Appurtenance Segment Forces (Factored)

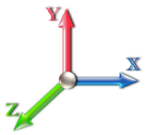
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.269	0.000	6.615	0.00	24.06
145.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.92	4.71	0.279	0.000	6.681	34.61	188.63
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.279	0.000	6.681	0.00	40.28
150.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.93	4.72	0.293	0.000	6.746	34.99	189.12
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.293	0.000	6.746	0.00	40.45
155.00	1 5/8" Coax	Yes	5.00	1.200	5.94	3.93	4.72	0.466	0.000	6.810	35.36	189.59
155.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.466	0.000	6.810	0.00	40.62
158.00	1 5/8" Coax	Yes	3.00	1.200	5.94	2.36	2.83	0.466	0.000	6.847	21.35	113.92
158.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.466	0.000	6.847	0.00	24.43
160.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.58	1.89	0.466	0.000	6.872	14.29	76.02
160.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.466	0.000	6.872	0.00	16.31
										Totals:	**779.8**	**7,241.2**

Calculated Forces

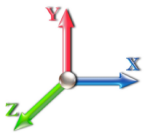
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

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 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	-64.79	-7.65	0.00	-822.15	0.00	822.15	3849.02	1924.51	7372.73	3691.85	0.00	0.000	0.000	0.175
5.00	-62.93	-7.58	0.00	-783.90	0.00	783.90	3795.37	1897.68	7118.03	3564.30	0.03	-0.055	0.000	0.172
10.00	-61.06	-7.50	0.00	-746.02	0.00	746.02	3740.61	1870.30	6865.59	3437.90	0.12	-0.111	0.000	0.169
15.00	-59.21	-7.40	0.00	-708.53	0.00	708.53	3684.74	1842.37	6615.55	3312.69	0.26	-0.167	0.000	0.165
16.67	-58.59	-7.37	0.00	-696.18	0.00	696.18	3665.83	1832.91	6532.59	3271.15	0.32	-0.186	0.000	0.123
18.50	-57.92	-7.34	0.00	-682.69	0.00	682.69	3644.97	1822.48	6442.01	3225.79	0.40	-0.201	0.000	0.155
20.00	-57.37	-7.33	0.00	-671.68	0.00	671.68	3627.76	1813.88	6368.03	3188.75	0.46	-0.218	0.000	0.154
25.00	-55.55	-7.25	0.00	-635.02	0.00	635.02	3569.68	1784.84	6123.18	3066.14	0.72	-0.271	0.000	0.150
30.00	-53.75	-7.16	0.00	-598.78	0.00	598.78	3510.49	1755.24	5881.13	2944.94	1.03	-0.325	0.000	0.146
34.67	-52.09	-7.05	0.00	-565.36	0.00	565.36	3454.20	1727.10	5657.69	2833.05	1.38	-0.376	0.000	0.144
35.00	-51.97	-7.07	0.00	-563.03	0.00	563.03	3450.19	1725.09	5642.00	2825.20	1.40	-0.379	0.000	0.144
40.00	-50.22	-6.95	0.00	-527.70	0.00	527.70	3388.79	1694.39	5405.94	2706.99	1.83	-0.434	0.000	0.140
42.14	-49.48	-6.91	0.00	-512.85	0.00	512.85	3362.21	1681.10	5306.03	2656.96	2.03	-0.458	0.000	0.138
45.00	-48.04	-6.84	0.00	-493.06	0.00	493.06	3326.27	1663.14	5173.07	2590.38	2.31	-0.489	0.000	0.134
47.57	-46.76	-6.78	0.00	-475.48	0.00	475.48	2638.80	1319.40	4131.44	2068.79	2.59	-0.518	0.000	0.141
50.00	-46.00	-6.74	0.00	-459.00	0.00	459.00	2616.75	1308.38	4046.02	2026.02	2.86	-0.544	0.000	0.151
54.67	-44.56	-6.61	0.00	-427.53	0.00	427.53	2573.65	1286.82	3883.14	1944.46	3.42	-0.598	0.000	0.150
55.00	-44.45	-6.62	0.00	-425.35	0.00	425.35	2570.56	1285.28	3871.70	1938.73	3.46	-0.602	0.000	0.150
60.00	-42.94	-6.50	0.00	-392.23	0.00	392.23	2523.27	1261.63	3699.46	1852.48	4.12	-0.662	0.000	0.143
65.00	-41.44	-6.38	0.00	-359.71	0.00	359.71	2474.87	1237.43	3529.43	1767.34	4.84	-0.720	0.000	0.136
70.00	-39.97	-6.24	0.00	-327.82	0.00	327.82	2425.36	1212.68	3361.74	1683.37	5.63	-0.778	0.000	0.129
74.67	-38.62	-6.10	0.00	-298.66	0.00	298.66	2378.12	1189.06	3207.34	1606.06	6.42	-0.830	0.000	0.125
75.00	-38.53	-6.09	0.00	-296.65	0.00	296.65	2374.74	1187.37	3196.52	1600.63	6.47	-0.834	0.000	0.124
76.52	-38.09	-6.06	0.00	-287.41	0.00	287.41	2359.17	1179.58	3146.91	1575.79	6.74	-0.851	0.000	0.122
80.00	-36.74	-5.95	0.00	-266.31	0.00	266.31	2323.02	1161.51	3033.91	1519.21	7.38	-0.890	0.000	0.115
81.00	-36.35	-5.91	0.00	-260.36	0.00	260.36	2312.54	1156.27	3001.71	1503.09	7.57	-0.901	0.000	0.092
81.19	-36.28	-5.92	0.00	-259.26	0.00	259.26	1750.09	875.04	2314.24	1158.84	7.60	-0.903	0.000	0.100
85.00	-35.31	-5.79	0.00	-236.70	0.00	236.70	1723.72	861.86	2226.75	1115.03	8.34	-0.936	0.000	0.102
86.00	-35.05	-5.78	0.00	-230.90	0.00	230.90	1716.70	858.35	2203.94	1103.61	8.53	-0.945	0.000	0.126
90.00	-34.05	-5.66	0.00	-207.80	0.00	207.80	1688.18	844.09	2113.26	1058.20	9.34	-0.990	0.000	0.117
94.67	-32.90	-5.51	0.00	-181.36	0.00	181.36	1653.98	826.99	2008.61	1005.80	10.34	-1.039	0.000	0.112
95.00	-32.81	-5.52	0.00	-179.54	0.00	179.54	1651.53	825.76	2001.27	1002.12	10.41	-1.043	0.000	0.111
100.00	-26.65	-4.49	0.00	-151.97	0.00	151.97	1613.77	806.88	1890.91	946.86	11.53	-1.094	0.000	0.098
102.00	-26.17	-4.42	0.00	-142.98	0.00	142.98	1598.36	799.18	1847.26	925.00	11.99	-1.114	0.000	0.063
102.67	-26.01	-4.40	0.00	-140.02	0.00	140.02	1593.15	796.58	1832.70	917.71	12.15	-1.118	0.000	0.090
105.00	-25.45	-4.33	0.00	-129.76	0.00	129.76	1574.90	787.45	1782.33	892.49	12.70	-1.140	0.000	0.085
110.00	-24.30	-4.16	0.00	-108.12	0.00	108.12	1534.93	767.47	1675.65	839.07	13.92	-1.182	0.000	0.075
110.91	-24.10	-4.14	0.00	-104.35	0.00	104.35	1527.58	763.79	1656.56	829.51	14.14	-1.189	0.000	0.073
114.50	-21.99	-3.90	0.00	-89.47	0.00	89.47	1498.01	749.01	1581.38	791.86	15.05	-1.217	0.000	0.064
114.80	-21.91	-3.89	0.00	-88.32	0.00	88.32	1034.66	517.33	1111.16	556.41	15.12	-1.219	0.000	0.071
115.00	-21.86	-3.89	0.00	-87.53	0.00	87.53	1033.71	516.86	1108.46	555.05	15.18	-1.221	0.000	0.079
117.00	-17.63	-2.98	0.00	-79.75	0.00	79.75	1024.27	512.13	1081.93	541.77	15.69	-1.236	0.000	0.072
118.00	-17.45	-2.94	0.00	-76.78	0.00	76.78	1019.48	509.74	1068.72	535.15	15.95	-1.244	0.000	0.070
118.00	-17.45	-2.94	0.00	-76.78	0.00	76.78	1019.48	509.74	1068.72	535.15	15.95	-1.244	0.000	0.070
120.00	-17.08	-2.89	0.00	-70.89	0.00	70.89	1009.78	504.89	1042.37	521.96	16.47	-1.258	0.000	0.153
125.00	-16.19	-2.76	0.00	-56.43	0.00	56.43	984.73	492.37	977.10	489.28	17.83	-1.335	0.000	0.132
130.00	-15.32	-2.62	0.00	-42.65	0.00	42.65	958.58	479.29	912.78	457.07	19.27	-1.401	0.000	0.109
135.00	-14.47	-2.48	0.00	-29.55	0.00	29.55	931.33	465.66	849.55	425.40	20.77	-1.456	0.000	0.085

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

Tower Engineering Solutions

137.00	-6.87	-1.34	0.00	-24.59	0.00	24.59	920.11	460.06	824.58	412.91	21.38	-1.475	0.000	0.067
140.00	-6.43	-1.26	0.00	-20.56	0.00	20.56	902.96	451.48	787.53	394.35	22.32	-1.499	0.000	0.059
145.00	-5.71	-1.12	0.00	-14.26	0.00	14.26	873.49	436.75	726.86	363.97	23.90	-1.534	0.000	0.046
150.00	-5.01	-0.98	0.00	-8.67	0.00	8.67	842.91	421.46	667.67	334.33	25.53	-1.560	0.000	0.032
150.00	-5.01	-0.98	0.00	-8.67	0.00	8.67	656.05	328.03	328.13	215.42	25.53	-1.560	0.000	0.048
155.00	-4.33	-0.86	0.00	-3.78	0.00	3.78	656.05	328.03	328.13	215.42	27.17	-1.576	0.000	0.024
158.00	-3.26	-0.56	0.00	-1.19	0.00	1.19	656.05	328.03	328.13	215.42	28.16	-1.584	0.000	0.010
160.00	-0.18	-0.03	0.00	-0.06	0.00	0.06	656.05	328.03	328.13	215.42	28.83	-1.585	0.000	0.001
162.00	0.00	-0.02	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	29.49	-1.585	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		934.37	0.00	0.03	0.02	19.81	
10.00		914.80	0.01	0.05	0.03	27.59	
15.00		895.22	0.02	0.06	0.04	30.96	
16.67	RB2	294.64	0.02	0.06	0.04	10.46	
18.50	RT1	320.36	0.02	0.07	0.04	11.64	
20.00		260.64	0.03	0.07	0.04	9.61	
25.00		856.07	0.05	0.07	0.04	32.69	
30.00		836.50	0.06	0.07	0.04	32.73	
34.67	RT2 RB3	763.61	0.09	0.07	0.04	30.51	
35.00		53.31	0.09	0.07	0.04	2.13	
40.00		797.35	0.12	0.07	0.04	32.65	
42.14	Bot - Section 2	334.76	0.13	0.07	0.03	13.84	
45.00		818.83	0.15	0.07	0.03	34.27	
47.57	Top - Section 1	724.92	0.16	0.07	0.03	30.62	
50.00		310.67	0.18	0.07	0.03	13.20	
54.67	RT3 RB4	586.23	0.22	0.06	0.02	24.89	
55.00		40.89	0.22	0.06	0.02	1.73	
60.00		610.81	0.26	0.05	0.02	25.06	
65.00		594.49	0.30	0.04	0.01	22.25	
70.00		578.18	0.35	0.03	0.01	17.73	
74.67	RT4 RB5	525.29	0.40	0.02	0.01	10.95	
75.00		36.58	0.41	0.02	0.01	0.73	
76.52	Bot - Section 3	167.21	0.42	0.01	0.01	2.68	
80.00		686.32	0.46	0.00	0.01	3.92	
81.00	RB6	194.40	0.47	-0.01	0.01	0.49	
81.19	Top - Section 2	36.16	0.47	-0.01	0.01	0.07	
85.00		327.52	0.52	-0.02	0.01	-3.45	
86.00	RT6	84.63	0.53	-0.03	0.01	-1.17	
90.00		333.31	0.58	-0.05	0.01	-8.63	
94.67	RT5 RB7	378.57	0.65	-0.07	0.02	-14.05	
95.00		26.32	0.65	-0.07	0.02	-0.99	
100.00	Appurtenance(s)	2750.9	0.72	-0.09	0.03	-123.37	
102.00	RB8	153.08	0.75	-0.10	0.04	-7.08	
102.67	RT7	50.82	0.76	-0.10	0.04	-2.37	
105.00		174.89	0.79	-0.11	0.05	-8.20	
110.00		365.74	0.87	-0.12	0.08	-16.14	
110.91	Bot - Section 4	64.80	0.89	-0.12	0.08	-2.79	
114.50	Appurtenance(s)	810.49	0.94	-0.12	0.11	-30.57	
114.80	Top - Section 3	36.30	0.95	-0.12	0.11	-1.35	
115.00		10.75	0.95	-0.12	0.11	-0.40	
117.00	Appurtenance(s)	1920.2	0.99	-0.11	0.12	-62.63	
118.00	RT8	51.83	1.00	-0.11	0.13	-1.57	
120.00		102.49	1.04	-0.10	0.15	-2.57	
125.00		249.37	1.13	-0.05	0.20	-2.26	
130.00		239.58	1.22	0.02	0.27	2.69	

Seismic Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

135.00		229.80	1.31	0.14	0.35	8.24		
137.00	Appurtenance(s)	2948.4	1.35	0.20	0.38	138.34		
140.00		130.83	1.41	0.31	0.44	8.49		
145.00		210.22	1.51	0.54	0.56	20.69		
150.00	Top - Section 4	200.43	1.62	0.84	0.70	27.38		
155.00		248.04	1.73	1.24	0.86	44.53		
158.00	Appurtenance(s)	298.23	1.80	1.53	0.97	61.91		
160.00	Appurtenance(s)	1349.9	1.84	1.74	1.05	306.81		
162.00		99.22	1.89	1.98	1.14	24.58		
	Totals:	**27,019.4**				**797.3**	**Total Wind:**	**29,870.2**

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

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 24

Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**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	-38.81	-1.09	0.00	-120.56	0.00	120.56	3849.02	1924.51	7372.73	3691.85		0.00	0.00	0.031
5.00	-37.45	-1.07	0.00	-115.11	0.00	115.11	3795.37	1897.68	7118.03	3564.30		0.00	-0.01	0.030
10.00	-36.12	-1.05	0.00	-109.74	0.00	109.74	3740.61	1870.30	6865.59	3437.90		0.02	-0.02	0.030
15.00	-34.80	-1.02	0.00	-104.49	0.00	104.49	3684.74	1842.37	6615.55	3312.69		0.04	-0.02	0.029
16.67	-34.37	-1.01	0.00	-102.78	0.00	102.78	3665.83	1832.91	6532.59	3271.15		0.05	-0.03	0.022
18.50	-33.90	-1.00	0.00	-100.92	0.00	100.92	3644.97	1822.48	6442.01	3225.79		0.06	-0.03	0.028
20.00	-33.51	-1.00	0.00	-99.41	0.00	99.41	3627.76	1813.88	6368.03	3188.75		0.07	-0.03	0.028
25.00	-32.25	-0.97	0.00	-94.43	0.00	94.43	3569.68	1784.84	6123.18	3066.14		0.11	-0.04	0.027
30.00	-31.00	-0.94	0.00	-89.59	0.00	89.59	3510.49	1755.24	5881.13	2944.94		0.15	-0.05	0.026
34.67	-29.87	-0.91	0.00	-85.21	0.00	85.21	3454.20	1727.10	5657.69	2833.05		0.20	-0.06	0.026
35.00	-29.79	-0.91	0.00	-84.91	0.00	84.91	3450.19	1725.09	5642.00	2825.20		0.21	-0.06	0.026
40.00	-28.59	-0.88	0.00	-80.36	0.00	80.36	3388.79	1694.39	5405.94	2706.99		0.27	-0.06	0.025
42.14	-28.09	-0.87	0.00	-78.48	0.00	78.48	3362.21	1681.10	5306.03	2656.96		0.30	-0.07	0.025
45.00	-26.97	-0.83	0.00	-76.00	0.00	76.00	3326.27	1663.14	5173.07	2590.38		0.34	-0.07	0.025
47.57	-25.97	-0.80	0.00	-73.86	0.00	73.86	2638.80	1319.40	4131.44	2068.79		0.38	-0.08	0.026
50.00	-25.49	-0.79	0.00	-71.91	0.00	71.91	2616.75	1308.38	4046.02	2026.02		0.42	-0.08	0.028
54.67	-24.56	-0.77	0.00	-68.22	0.00	68.22	2573.65	1286.82	3883.14	1944.46		0.51	-0.09	0.028
55.00	-24.49	-0.77	0.00	-67.96	0.00	67.96	2570.56	1285.28	3871.70	1938.73		0.51	-0.09	0.028
60.00	-23.52	-0.74	0.00	-64.12	0.00	64.12	2523.27	1261.63	3699.46	1852.48		0.61	-0.10	0.028
65.00	-22.57	-0.72	0.00	-60.40	0.00	60.40	2474.87	1237.43	3529.43	1767.34		0.72	-0.11	0.027
70.00	-21.64	-0.71	0.00	-56.78	0.00	56.78	2425.36	1212.68	3361.74	1683.37		0.84	-0.12	0.026
74.67	-20.78	-0.70	0.00	-53.47	0.00	53.47	2378.12	1189.06	3207.34	1606.06		0.97	-0.13	0.026
75.00	-20.73	-0.70	0.00	-53.24	0.00	53.24	2374.74	1187.37	3196.52	1600.63		0.97	-0.13	0.026
76.52	-20.45	-0.70	0.00	-52.18	0.00	52.18	2359.17	1179.58	3146.91	1575.79		1.02	-0.13	0.026
80.00	-19.46	-0.69	0.00	-49.75	0.00	49.75	2323.02	1161.51	3033.91	1519.21		1.12	-0.14	0.025
81.00	-19.18	-0.69	0.00	-49.06	0.00	49.06	2312.54	1156.27	3001.71	1503.09		1.15	-0.14	0.020
81.19	-19.13	-0.69	0.00	-48.93	0.00	48.93	1750.09	875.04	2314.24	1158.84		1.15	-0.14	0.022
85.00	-18.55	-0.69	0.00	-46.30	0.00	46.30	1723.72	861.86	2226.75	1115.03		1.27	-0.15	0.023
86.00	-18.40	-0.69	0.00	-45.61	0.00	45.61	1716.70	858.35	2203.94	1103.61		1.30	-0.15	0.029
90.00	-17.81	-0.69	0.00	-42.83	0.00	42.83	1688.18	844.09	2113.26	1058.20		1.43	-0.16	0.028
94.67	-17.14	-0.69	0.00	-39.59	0.00	39.59	1653.98	826.99	2008.61	1005.80		1.59	-0.17	0.028
95.00	-17.09	-0.70	0.00	-39.36	0.00	39.36	1651.53	825.76	2001.27	1002.12		1.60	-0.17	0.028
100.00	-13.55	-0.69	0.00	-35.89	0.00	35.89	1613.77	806.88	1890.91	946.86		1.79	-0.18	0.026
102.00	-13.27	-0.69	0.00	-34.51	0.00	34.51	1598.36	799.18	1847.26	925.00		1.86	-0.19	0.017
102.67	-13.18	-0.69	0.00	-34.05	0.00	34.05	1593.15	796.58	1832.70	917.71		1.89	-0.19	0.024
105.00	-12.87	-0.69	0.00	-32.45	0.00	32.45	1574.90	787.45	1782.33	892.49		1.98	-0.19	0.024
110.00	-12.20	-0.69	0.00	-29.01	0.00	29.01	1534.93	767.47	1675.65	839.07		2.19	-0.20	0.022
110.91	-12.08	-0.69	0.00	-28.39	0.00	28.39	1527.58	763.79	1656.56	829.51		2.23	-0.21	0.022
114.50	-10.94	-0.68	0.00	-25.92	0.00	25.92	1498.01	749.01	1581.38	791.86		2.39	-0.21	0.020
114.80	-10.89	-0.68	0.00	-25.72	0.00	25.72	1034.66	517.33	1111.16	556.41		2.40	-0.21	0.022
115.00	-10.87	-0.68	0.00	-25.58	0.00	25.58	1033.71	516.86	1108.46	555.05		2.41	-0.22	0.025
117.00	-8.47	-0.68	0.00	-24.21	0.00	24.21	1024.27	512.13	1081.93	541.77		2.50	-0.22	0.023
118.00	-8.38	-0.68	0.00	-23.53	0.00	23.53	1019.48	509.74	1068.72	535.15		2.55	-0.22	0.023
118.00	-8.38	-0.68	0.00	-23.53	0.00	23.53	1019.48	509.74	1068.72	535.15		2.55	-0.22	0.023
120.00	-8.20	-0.68	0.00	-22.18	0.00	22.18	1009.78	504.89	1042.37	521.96		2.64	-0.23	0.051
125.00	-7.75	-0.68	0.00	-18.79	0.00	18.79	984.73	492.37	977.10	489.28		2.89	-0.25	0.046
130.00	-7.32	-0.68	0.00	-15.40	0.00	15.40	958.58	479.29	912.78	457.07		3.17	-0.27	0.041

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

Tower Engineering Solutions

135.00	-6.90	-0.67	0.00	-12.01	0.00	12.01	931.33	465.66	849.55	425.40	3.47	-0.29	0.036
137.00	-3.30	-0.51	0.00	-10.68	0.00	10.68	920.11	460.06	824.58	412.91	3.59	-0.30	0.029
140.00	-3.11	-0.50	0.00	-9.14	0.00	9.14	902.96	451.48	787.53	394.35	3.79	-0.31	0.027
145.00	-2.80	-0.48	0.00	-6.63	0.00	6.63	873.49	436.75	726.86	363.97	4.12	-0.33	0.021
150.00	-2.50	-0.45	0.00	-4.22	0.00	4.22	842.91	421.46	667.67	334.33	4.48	-0.34	0.016
150.00	-2.50	-0.45	0.00	-4.22	0.00	4.22	656.05	328.03	328.13	215.42	4.48	-0.34	0.023
155.00	-2.15	-0.41	0.00	-1.95	0.00	1.95	656.05	328.03	328.13	215.42	4.84	-0.35	0.012
158.00	-1.76	-0.34	0.00	-0.73	0.00	0.73	656.05	328.03	328.13	215.42	5.06	-0.35	0.006
160.00	-0.12	-0.03	0.00	-0.05	0.00	0.05	656.05	328.03	328.13	215.42	5.21	-0.35	0.000
162.00	0.00	-0.02	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	5.36	-0.35	0.000

Seismic Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		934.37	0.00	0.03	0.02	19.81	
10.00		914.80	0.01	0.05	0.03	27.59	
15.00		895.22	0.02	0.06	0.04	30.96	
16.67	RB2	294.64	0.02	0.06	0.04	10.46	
18.50	RT1	320.36	0.02	0.07	0.04	11.64	
20.00		260.64	0.03	0.07	0.04	9.61	
25.00		856.07	0.05	0.07	0.04	32.69	
30.00		836.50	0.06	0.07	0.04	32.73	
34.67	RT2 RB3	763.61	0.09	0.07	0.04	30.51	
35.00		53.31	0.09	0.07	0.04	2.13	
40.00		797.35	0.12	0.07	0.04	32.65	
42.14	Bot - Section 2	334.76	0.13	0.07	0.03	13.84	
45.00		818.83	0.15	0.07	0.03	34.27	
47.57	Top - Section 1	724.92	0.16	0.07	0.03	30.62	
50.00		310.67	0.18	0.07	0.03	13.20	
54.67	RT3 RB4	586.23	0.22	0.06	0.02	24.89	
55.00		40.89	0.22	0.06	0.02	1.73	
60.00		610.81	0.26	0.05	0.02	25.06	
65.00		594.49	0.30	0.04	0.01	22.25	
70.00		578.18	0.35	0.03	0.01	17.73	
74.67	RT4 RB5	525.29	0.40	0.02	0.01	10.95	
75.00		36.58	0.41	0.02	0.01	0.73	
76.52	Bot - Section 3	167.21	0.42	0.01	0.01	2.68	
80.00		686.32	0.46	0.00	0.01	3.92	
81.00	RB6	194.40	0.47	-0.01	0.01	0.49	
81.19	Top - Section 2	36.16	0.47	-0.01	0.01	0.07	
85.00		327.52	0.52	-0.02	0.01	-3.45	
86.00	RT6	84.63	0.53	-0.03	0.01	-1.17	
90.00		333.31	0.58	-0.05	0.01	-8.63	
94.67	RT5 RB7	378.57	0.65	-0.07	0.02	-14.05	
95.00		26.32	0.65	-0.07	0.02	-0.99	
100.00	Appurtenance(s)	2750.9	0.72	-0.09	0.03	-123.37	
102.00	RB8	153.08	0.75	-0.10	0.04	-7.08	
102.67	RT7	50.82	0.76	-0.10	0.04	-2.37	
105.00		174.89	0.79	-0.11	0.05	-8.20	
110.00		365.74	0.87	-0.12	0.08	-16.14	
110.91	Bot - Section 4	64.80	0.89	-0.12	0.08	-2.79	
114.50	Appurtenance(s)	810.49	0.94	-0.12	0.11	-30.57	
114.80	Top - Section 3	36.30	0.95	-0.12	0.11	-1.35	
115.00		10.75	0.95	-0.12	0.11	-0.40	
117.00	Appurtenance(s)	1920.2	0.99	-0.11	0.12	-62.63	
118.00	RT8	51.83	1.00	-0.11	0.13	-1.57	
120.00		102.49	1.04	-0.10	0.15	-2.57	
125.00		249.37	1.13	-0.05	0.20	-2.26	
130.00		239.58	1.22	0.02	0.27	2.69	

Seismic Segment Forces (Factored)

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

135.00		229.80	1.31	0.14	0.35	8.24		
137.00	Appurtenance(s)	2948.4	1.35	0.20	0.38	138.34		
140.00		130.83	1.41	0.31	0.44	8.49		
145.00		210.22	1.51	0.54	0.56	20.69		
150.00	Top - Section 4	200.43	1.62	0.84	0.70	27.38		
155.00		248.04	1.73	1.24	0.86	44.53		
158.00	Appurtenance(s)	298.23	1.80	1.53	0.97	61.91		
160.00	Appurtenance(s)	1349.9	1.84	1.74	1.05	306.81		
162.00		99.22	1.89	1.98	1.14	24.58		
	Totals:	**27,019.4**				**797.3**	**Total Wind:**	**29,870.2**

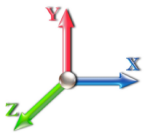
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**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	-29.11	-1.09	0.00	-119.21	0.00	119.21	3849.02	1924.51	7372.73	3691.85		0.00	0.00	0.029
5.00	-28.09	-1.07	0.00	-113.77	0.00	113.77	3795.37	1897.68	7118.03	3564.30		0.00	-0.01	0.028
10.00	-27.09	-1.05	0.00	-108.41	0.00	108.41	3740.61	1870.30	6865.59	3437.90		0.02	-0.02	0.028
15.00	-26.10	-1.02	0.00	-103.17	0.00	103.17	3684.74	1842.37	6615.55	3312.69		0.04	-0.02	0.027
16.67	-25.78	-1.01	0.00	-101.46	0.00	101.46	3665.83	1832.91	6532.59	3271.15		0.05	-0.03	0.020
18.50	-25.42	-1.00	0.00	-99.62	0.00	99.62	3644.97	1822.48	6442.01	3225.79		0.06	-0.03	0.026
20.00	-25.13	-0.99	0.00	-98.12	0.00	98.12	3627.76	1813.88	6368.03	3188.75		0.07	-0.03	0.026
25.00	-24.19	-0.96	0.00	-93.16	0.00	93.16	3569.68	1784.84	6123.18	3066.14		0.10	-0.04	0.025
30.00	-23.25	-0.93	0.00	-88.35	0.00	88.35	3510.49	1755.24	5881.13	2944.94		0.15	-0.05	0.025
34.67	-22.40	-0.90	0.00	-84.00	0.00	84.00	3454.20	1727.10	5657.69	2833.05		0.20	-0.05	0.024
35.00	-22.34	-0.90	0.00	-83.70	0.00	83.70	3450.19	1725.09	5642.00	2825.20		0.20	-0.06	0.024
40.00	-21.44	-0.87	0.00	-79.20	0.00	79.20	3388.79	1694.39	5405.94	2706.99		0.27	-0.06	0.024
42.14	-21.06	-0.86	0.00	-77.34	0.00	77.34	3362.21	1681.10	5306.03	2656.96		0.30	-0.07	0.024
45.00	-20.22	-0.82	0.00	-74.89	0.00	74.89	3326.27	1663.14	5173.07	2590.38		0.34	-0.07	0.023
47.57	-19.48	-0.79	0.00	-72.77	0.00	72.77	2638.80	1319.40	4131.44	2068.79		0.38	-0.08	0.024
50.00	-19.11	-0.78	0.00	-70.84	0.00	70.84	2616.75	1308.38	4046.02	2026.02		0.42	-0.08	0.026
54.67	-18.42	-0.76	0.00	-67.19	0.00	67.19	2573.65	1286.82	3883.14	1944.46		0.50	-0.09	0.026
55.00	-18.37	-0.76	0.00	-66.94	0.00	66.94	2570.56	1285.28	3871.70	1938.73		0.51	-0.09	0.026
60.00	-17.64	-0.73	0.00	-63.16	0.00	63.16	2523.27	1261.63	3699.46	1852.48		0.61	-0.10	0.026
65.00	-16.93	-0.71	0.00	-59.49	0.00	59.49	2474.87	1237.43	3529.43	1767.34		0.71	-0.11	0.025
70.00	-16.23	-0.70	0.00	-55.92	0.00	55.92	2425.36	1212.68	3361.74	1683.37		0.83	-0.12	0.024
74.67	-15.59	-0.69	0.00	-52.67	0.00	52.67	2378.12	1189.06	3207.34	1606.06		0.95	-0.13	0.024
75.00	-15.54	-0.69	0.00	-52.44	0.00	52.44	2374.74	1187.37	3196.52	1600.63		0.96	-0.13	0.024
76.52	-15.34	-0.68	0.00	-51.40	0.00	51.40	2359.17	1179.58	3146.91	1575.79		1.00	-0.13	0.024
80.00	-14.60	-0.68	0.00	-49.02	0.00	49.02	2323.02	1161.51	3033.91	1519.21		1.10	-0.14	0.023
81.00	-14.39	-0.68	0.00	-48.35	0.00	48.35	2312.54	1156.27	3001.71	1503.09		1.13	-0.14	0.019
81.19	-14.35	-0.68	0.00	-48.22	0.00	48.22	1750.09	875.04	2314.24	1158.84		1.14	-0.14	0.020
85.00	-13.91	-0.68	0.00	-45.63	0.00	45.63	1723.72	861.86	2226.75	1115.03		1.25	-0.15	0.022
86.00	-13.80	-0.68	0.00	-44.95	0.00	44.95	1716.70	858.35	2203.94	1103.61		1.28	-0.15	0.027
90.00	-13.36	-0.68	0.00	-42.23	0.00	42.23	1688.18	844.09	2113.26	1058.20		1.41	-0.16	0.026
94.67	-12.85	-0.68	0.00	-39.05	0.00	39.05	1653.98	826.99	2008.61	1005.80		1.57	-0.17	0.026
95.00	-12.82	-0.68	0.00	-38.83	0.00	38.83	1651.53	825.76	2001.27	1002.12		1.58	-0.17	0.026
100.00	-10.16	-0.68	0.00	-35.42	0.00	35.42	1613.77	806.88	1890.91	946.86		1.76	-0.18	0.024
102.00	-9.96	-0.68	0.00	-34.07	0.00	34.07	1598.36	799.18	1847.26	925.00		1.84	-0.18	0.016
102.67	-9.89	-0.68	0.00	-33.61	0.00	33.61	1593.15	796.58	1832.70	917.71		1.86	-0.19	0.023
105.00	-9.65	-0.68	0.00	-32.04	0.00	32.04	1574.90	787.45	1782.33	892.49		1.96	-0.19	0.022
110.00	-9.15	-0.68	0.00	-28.66	0.00	28.66	1534.93	767.47	1675.65	839.07		2.16	-0.20	0.021
110.91	-9.06	-0.68	0.00	-28.05	0.00	28.05	1527.58	763.79	1656.56	829.51		2.20	-0.20	0.021
114.50	-8.21	-0.67	0.00	-25.62	0.00	25.62	1498.01	749.01	1581.38	791.86		2.36	-0.21	0.019
114.80	-8.16	-0.67	0.00	-25.42	0.00	25.42	1034.66	517.33	1111.16	556.41		2.37	-0.21	0.021
115.00	-8.15	-0.67	0.00	-25.28	0.00	25.28	1033.71	516.86	1108.46	555.05		2.38	-0.21	0.024
117.00	-6.35	-0.67	0.00	-23.93	0.00	23.93	1024.27	512.13	1081.93	541.77		2.47	-0.22	0.022
118.00	-6.28	-0.67	0.00	-23.27	0.00	23.27	1019.48	509.74	1068.72	535.15		2.51	-0.22	0.022
118.00	-6.28	-0.67	0.00	-23.27	0.00	23.27	1019.48	509.74	1068.72	535.15		2.51	-0.22	0.022
120.00	-6.15	-0.67	0.00	-21.93	0.00	21.93	1009.78	504.89	1042.37	521.96		2.61	-0.22	0.048
125.00	-5.81	-0.67	0.00	-18.59	0.00	18.59	984.73	492.37	977.10	489.28		2.85	-0.25	0.044
130.00	-5.49	-0.67	0.00	-15.24	0.00	15.24	958.58	479.29	912.78	457.07		3.13	-0.27	0.039

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 50

Tower Engineering Solutions

135.00	-5.17	-0.66	0.00	-11.90	0.00	11.90	931.33	465.66	849.55	425.40	3.42	-0.29	0.034
137.00	-2.48	-0.51	0.00	-10.58	0.00	10.58	920.11	460.06	824.58	412.91	3.54	-0.30	0.028
140.00	-2.33	-0.50	0.00	-9.06	0.00	9.06	902.96	451.48	787.53	394.35	3.74	-0.31	0.026
145.00	-2.10	-0.48	0.00	-6.57	0.00	6.57	873.49	436.75	726.86	363.97	4.07	-0.32	0.020
150.00	-1.88	-0.45	0.00	-4.18	0.00	4.18	842.91	421.46	667.67	334.33	4.42	-0.34	0.015
150.00	-1.88	-0.45	0.00	-4.18	0.00	4.18	656.05	328.03	328.13	215.42	4.42	-0.34	0.022
155.00	-1.61	-0.40	0.00	-1.94	0.00	1.94	656.05	328.03	328.13	215.42	4.77	-0.35	0.011
158.00	-1.32	-0.34	0.00	-0.73	0.00	0.73	656.05	328.03	328.13	215.42	4.99	-0.35	0.005
160.00	-0.09	-0.03	0.00	-0.05	0.00	0.05	656.05	328.03	328.13	215.42	5.14	-0.35	0.000
162.00	0.00	-0.02	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	5.29	-0.35	0.000

Wind Loading - Shaft

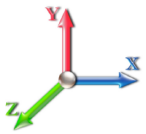
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 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	RB1	1.00	0.70	6.129	6.74	199.65	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	195.54	0.752 *	0.000	5.00	19.681	14.80	99.8	0.0	934.4
10.00		1.00	0.70	6.129	6.74	191.44	0.758 *	0.000	5.00	19.272	14.61	98.5	0.0	914.8
15.00		1.00	0.70	6.129	6.74	187.33	0.765 *	0.000	5.00	18.863	14.42	97.2	0.0	895.2
16.67	RB2	1.00	0.70	6.129	6.74	185.96	0.769 *	0.000	1.67	6.209	4.78	32.2	0.0	294.6
18.50	RT1	1.00	0.70	6.129	6.74	184.46	0.772 *	0.000	1.83	6.752	5.21	35.1	0.0	320.4
20.00		1.00	0.70	6.129	6.74	183.22	0.774 *	0.000	1.50	5.493	4.25	28.7	0.0	260.6
25.00		1.00	0.70	6.129	6.74	179.12	0.779 *	0.000	5.00	18.045	14.05	94.7	0.0	856.1
30.00		1.00	0.70	6.134	6.75	175.08	0.786 *	0.000	5.00	17.636	13.87	93.6	0.0	836.5
34.67	RT2 RB3	1.00	0.73	6.393	7.03	174.82	0.794 *	0.000	4.67	16.103	12.78	89.9	0.0	763.6
35.00		1.00	0.73	6.410	7.05	174.78	0.798 *	0.000	0.33	1.124	0.90	6.3	0.0	53.3
40.00		1.00	0.76	6.659	7.33	173.87	0.802 *	0.000	5.00	16.818	13.49	98.8	0.0	797.3
42.14	Bot - Section 2	1.00	0.77	6.759	7.43	173.32	0.808 *	0.000	2.14	7.062	5.71	42.5	0.0	334.8
45.00		1.00	0.79	6.887	7.58	172.47	0.813 *	0.000	2.86	9.498	7.72	58.5	0.0	818.8
47.57	Top - Section 1	1.00	0.80	6.997	7.70	171.59	0.818 *	0.000	2.57	8.411	6.88	52.9	0.0	724.9
50.00		1.00	0.81	7.098	7.81	173.52	0.817 *	0.000	2.43	7.853	6.41	50.1	0.0	310.7
54.67	RT3 RB4	1.00	0.83	7.281	8.01	171.57	0.823 *	0.000	4.67	14.822	12.20	97.7	0.0	586.2
55.00		1.00	0.83	7.294	8.02	171.42	0.828 *	0.000	0.33	1.034	0.86	6.9	0.0	40.9
60.00		1.00	0.85	7.477	8.22	169.03	0.833 *	0.000	5.00	15.446	12.87	105.9	0.0	610.8
65.00		1.00	0.87	7.650	8.42	166.38	0.843 *	0.000	5.00	15.037	12.68	106.7	0.0	594.5
70.00		1.00	0.89	7.814	8.60	163.52	1.200 *	0.000	5.00	14.628	17.55	150.9	0.0	578.2
74.67	RT4 RB5	1.00	0.91	7.959	8.76	160.66	1.200 *	0.000	4.67	13.294	15.95	139.7	0.0	525.3
75.00		1.00	0.91	7.969	8.77	160.46	1.200 *	0.000	0.33	0.926	1.11	9.7	0.0	36.6
76.52	Bot - Section 3	1.00	0.92	8.015	8.82	159.49	1.200 *	0.000	1.52	4.232	5.08	44.8	0.0	167.2
80.00		1.00	0.93	8.118	8.93	157.22	1.200 *	0.000	3.48	9.725	11.67	104.2	0.0	686.3
81.00	RB6	1.00	0.93	8.147	8.96	156.55	1.200 *	0.000	1.00	2.755	3.31	29.6	0.0	194.4
81.19	Top - Section 2	1.00	0.93	8.152	8.97	156.42	1.200 *	0.000	0.19	0.513	0.62	5.5	0.0	36.2
85.00		1.00	0.94	8.260	9.09	156.28	1.200 *	0.000	3.81	10.345	12.41	112.8	0.0	327.5
86.00	RT6	1.00	0.95	8.287	9.12	155.59	1.200 *	0.000	1.00	2.674	3.21	29.2	0.0	84.6
90.00		1.00	0.96	8.396	9.24	152.76	1.200 *	0.000	4.00	10.531	12.64	116.7	0.0	333.3
94.67	RT5 RB7	1.00	0.97	8.518	9.37	149.34	1.200 *	0.000	4.67	11.963	14.36	134.5	0.0	378.6
95.00		1.00	0.97	8.526	9.38	149.10	1.200 *	0.000	0.33	0.832	1.00	9.4	0.0	26.3
100.00	Appurtenance(s)	1.00	0.99	8.652	9.52	145.32	1.200 *	0.000	5.00	12.386	14.86	141.5	0.0	391.8
102.00	RB8	1.00	0.99	8.701	9.57	143.77	1.200 *	0.000	2.00	4.840	5.81	55.6	0.0	153.1
102.67	RT7	1.00	1.00	8.718	9.59	143.25	1.200 *	0.000	0.67	1.607	1.93	18.5	0.0	50.8
105.00		1.00	1.00	8.774	9.65	141.42	1.200 *	0.000	2.33	5.530	6.64	64.0	0.0	174.9
110.00		1.00	1.02	8.891	9.78	137.42	1.200 *	0.000	5.00	11.568	13.88	135.8	0.0	365.7
110.91	Bot - Section 4	1.00	1.02	8.912	9.80	136.68	1.200 *	0.000	0.91	2.050	2.46	24.1	0.0	64.8
114.50	Appurtenance(s)	1.00	1.03	8.993	9.89	133.73	1.200 *	0.000	3.59	8.126	9.75	96.5	0.0	446.3
114.80	Top - Section 3	1.00	1.03	9.000	9.90	133.48	1.200 *	0.000	0.30	0.661	0.79	7.9	0.0	36.3
115.00		1.00	1.03	9.005	9.91	135.25	1.200 *	0.000	0.20	0.452	0.54	5.4	0.0	10.7
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	133.58	1.200 *	0.000	2.00	4.413	5.30	52.7	0.0	104.8
118.00	RT8	1.00	1.04	9.071	9.98	132.75	1.200 *	0.000	1.00	2.182	2.62	26.1	0.0	51.8
120.00		1.00	1.04	9.115	10.03	131.06	1.200 *	0.000	2.00	4.314	5.18	51.9	0.0	102.5
125.00		1.00	1.05	9.222	10.14	126.79	1.200 *	0.000	5.00	10.500	12.60	127.8	0.0	249.4
130.00		1.00	1.07	9.326	10.26	122.44	1.200 *	0.000	5.00	10.091	12.11	124.2	0.0	239.6
135.00		1.00	1.08	9.427	10.37	118.01	1.200 *	0.000	5.00	9.682	11.62	120.5	0.0	229.8

Wind Loading - Shaft

Structure: CT02694-B-SBA
Site Name: E-Prospect
Height: 162.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1
Topography: 1
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

11/15/2021

Tower Engineering Solutions

137.00 Appurtenance(s)	1.00	1.08	9.466	10.41	116.22	1.200 *	0.000	2.00	3.758	4.51	47.0	0.0	89.2
140.00	1.00	1.09	9.525	10.48	113.50	1.200 *	0.000	3.00	5.515	6.62	69.3	0.0	130.8
145.00	1.00	1.10	9.621	10.58	108.93	1.200 *	0.000	5.00	8.864	10.64	112.6	0.0	210.2
150.00 Top - Section 4	1.00	1.11	9.715	10.69	104.29	1.200 *	0.000	5.00	8.455	10.15	108.4	0.0	200.4
155.00	1.00	1.12	9.806	10.79	67.47	1.200 *	0.000	5.00	5.313	6.38	68.8	0.0	248.0
158.00 Appurtenance(s)	1.00	1.13	9.860	10.85	67.65	1.200 *	0.000	3.00	3.188	3.82	41.5	0.0	148.8
160.00 Appurtenance(s)	1.00	1.13	9.896	10.89	67.77	1.200 *	0.000	2.00	2.125	2.55	27.8	0.0	99.2
162.00	1.00	1.13	9.931	10.92	67.90	0.600	0.000	2.00	2.125	1.27	13.9	0.0	99.2
							Totals:	**162.00**			**3,724.6**		**18,221.3**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

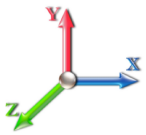
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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	160.00	CommScope	3	9.896	10.885	0.56	0.75	14.34	600.00	0.000	0.000	156.13	0.00	0.00
2	160.00	RFS	3	9.896	10.885	0.40	0.80	1.40	39.00	0.000	0.000	15.28	0.00	0.00
3	160.00	RFS	3	9.896	10.885	0.40	0.80	1.40	37.50	0.000	0.000	15.28	0.00	0.00
4	160.00	Ericsson S11 B2-RRU	3	9.896	10.885	0.40	0.80	3.40	150.00	0.000	0.000	36.97	0.00	0.00
5	160.00	Ericsson S11B12-RRU	3	9.896	10.885	0.40	0.80	3.40	153.00	0.000	0.000	36.97	0.00	0.00
6	160.00	Ericsson Air 21 B4A/B2P	3	9.896	10.885	0.69	0.80	12.57	271.20	0.000	0.000	136.82	0.00	0.00
7	158.00	Commscope	3	9.860	10.846	0.64	0.80	22.02	149.40	0.000	0.000	238.86	0.00	0.00
8	137.00	B2/B66A RRH-BR049	3	9.466	10.413	0.50	0.75	2.82	253.20	0.000	0.000	29.35	0.00	0.00
9	137.00	B5/B13 RRH-BR04C	3	9.466	10.413	0.50	0.75	2.82	210.90	0.000	0.000	29.35	0.00	0.00
10	137.00	DB-C1-12C-24AB-0Z	1	9.466	10.413	0.75	0.75	3.04	32.00	0.000	0.000	31.71	0.00	0.00
11	137.00	MT6407-77A	3	9.466	10.413	0.52	0.75	7.39	238.20	0.000	0.000	76.92	0.00	0.00
12	137.00	Low Profile Platform	1	9.466	10.413	1.00	1.00	22.00	1200.00	0.000	0.000	229.09	0.00	0.00
13	137.00	CBC78T-DS-43	3	9.466	10.413	0.38	0.75	0.42	31.20	0.000	0.000	4.33	0.00	0.00
14	137.00	MS-HRECP	1	9.466	10.413	1.00	1.00	12.25	514.00	0.000	0.000	127.56	0.00	0.00
15	137.00	JAHH-65B-R3B	6	9.466	10.413	0.62	0.75	34.03	379.80	0.000	0.000	354.31	0.00	0.00
16	117.00	Kathrein 860 10025 RET	6	9.049	9.954	0.40	0.80	0.43	7.20	0.000	0.000	4.30	0.00	0.00
17	117.00	Andrew SBNH-1D6565C	4	9.049	9.954	0.64	0.80	29.36	264.40	0.000	0.000	292.28	0.00	0.00
18	117.00	Low Profile Platform	1	9.049	9.954	1.00	1.00	22.00	1200.00	0.000	0.000	218.99	0.00	0.00
19	117.00	KMW AM-X-CD-16-6500T	2	9.049	9.954	0.65	0.80	7.84	66.00	0.000	0.000	78.05	0.00	0.00
20	117.00	CSS DBC-750	3	9.049	9.954	0.40	0.80	0.61	14.40	0.000	0.000	6.09	0.00	0.00
21	117.00	Kathrein 800-10121	3	9.049	9.954	0.63	0.80	9.76	132.30	0.000	0.000	97.20	0.00	0.00
22	117.00	CCI DTMABP7819VG12A	6	9.049	9.954	0.54	0.80	3.67	115.20	0.000	0.000	36.49	0.00	0.00
23	117.00	Powerwave LGP 13519	3	9.049	9.954	0.40	0.80	0.41	15.90	0.000	0.000	4.06	0.00	0.00
24	114.50	Ericsson RRUS 11	6	8.993	9.893	0.54	0.80	8.10	304.20	0.000	0.000	80.17	0.00	0.00
25	114.50	Raycap DC6-48-60-18-8F	3	8.993	9.893	0.54	0.80	2.03	60.00	0.000	0.000	20.04	0.00	0.00
26	100.00	Commscope	1	8.652	9.517	1.00	1.00	37.59	1727.00	0.000	0.000	357.76	0.00	0.00
27	100.00	Raycap	1	8.652	9.517	1.00	1.00	2.01	21.90	0.000	0.000	19.13	0.00	0.00
28	100.00	Fujitsu TA08025-B604	3	8.652	9.517	0.50	0.75	2.95	191.70	0.000	0.000	28.12	0.00	0.00
29	100.00	Fujitsu TA08025-B605	3	8.652	9.517	0.50	0.75	2.95	225.00	0.000	0.000	28.12	0.00	0.00
30	100.00	JMA Wireless	3	8.652	9.517	0.55	0.75	20.80	193.50	0.000	0.000	197.92	0.00	0.00
							Totals:		**8,798.10**			**2,987.68**		

Total Applied Force Summary

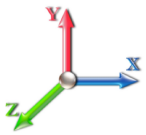
Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 54

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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		99.75	1133.22	0.00	0.00
10.00		98.50	1113.65	0.00	0.00
15.00		97.24	1094.07	0.00	0.00
16.67		32.20	361.06	0.00	0.00
18.50		35.12	393.14	0.00	0.00
20.00		28.66	320.29	0.00	0.00
25.00		94.73	1054.92	0.00	0.00
30.00		93.56	1035.35	0.00	0.00
34.67		89.89	949.33	0.00	0.00
35.00		6.33	66.44	0.00	0.00
40.00		98.85	996.20	0.00	0.00
42.14		42.45	419.74	0.00	0.00
45.00		58.50	932.70	0.00	0.00
47.57		52.95	827.13	0.00	0.00
50.00		50.06	407.31	0.00	0.00
54.67		97.71	771.96	0.00	0.00
55.00		6.87	54.01	0.00	0.00
60.00		105.85	809.66	0.00	0.00
65.00		106.74	793.34	0.00	0.00
70.00		181.78	777.03	0.00	0.00
74.67		169.07	711.01	0.00	0.00
75.00		11.82	49.70	0.00	0.00
76.52		54.39	227.53	0.00	0.00
80.00		126.58	824.85	0.00	0.00
81.00		36.07	234.17	0.00	0.00
81.19		6.72	43.58	0.00	0.00
85.00		137.70	479.18	0.00	0.00
86.00		35.80	124.40	0.00	0.00
90.00		143.26	492.39	0.00	0.00
94.67		165.97	564.29	0.00	0.00
95.00		11.59	39.44	0.00	0.00
100.00	(11) attachments	806.73	2949.79	0.00	0.00
102.00		71.27	228.98	0.00	0.00
102.67		23.75	76.24	0.00	0.00
105.00		82.10	263.32	0.00	0.00
110.00		169.70	555.49	0.00	0.00
110.91		30.27	99.15	0.00	0.00
114.50	(9) attachments	221.36	946.92	0.00	0.00
114.80		9.89	47.56	0.00	0.00
115.00		6.77	18.46	0.00	0.00
117.00	(28) attachments	803.98	1996.14	0.00	0.00
118.00		33.05	76.09	0.00	0.00
120.00		65.83	151.01	0.00	0.00
125.00		157.94	370.67	0.00	0.00
130.00		154.68	360.88	0.00	0.00
135.00		151.27	351.10	0.00	0.00

Total Applied Force Summary

Structure:	CT02694-B-SBA		**Code:**	EIA/TIA-222-G	11/15/2021
Site Name:	E-Prospect		**Exposure:**	B	
Height:	162.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 55

Tower Engineering Solutions

137.00	(21) attachments	941.97	2997.00	0.00	0.00
140.00		88.01	159.09	0.00	0.00
145.00		144.00	257.32	0.00	0.00
150.00		140.16	247.53	0.00	0.00
155.00		100.80	295.14	0.00	0.00
158.00	(3) attachments	299.67	326.49	0.00	0.00
160.00	(18) attachments	438.15	1368.76	0.00	0.00
162.00		13.93	99.22	0.00	0.00
	Totals:	**7,332.02**	**32,343.43**	**0.00**	**0.00**

Linear Appurtenance Segment Forces (Factored)

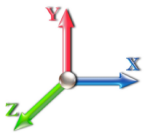
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.152	1.157	6.129	0.00	41.60
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.157	6.129	0.00	5.50
5.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.152	1.157	6.129	0.00	0.00
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.155	1.166	6.129	0.00	41.60
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.166	6.129	0.00	5.50
10.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.155	1.166	6.129	0.00	0.00
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.159	1.176	6.129	0.00	41.60
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.159	1.176	6.129	0.00	5.50
15.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.159	1.176	6.129	0.00	0.00
16.67	1 5/8" Coax	Yes	1.67	0.000	5.94	0.83	0.00	0.161	1.183	6.129	0.00	13.89
16.67	1 5/8" Fiber	Yes	1.67	0.000	0.00	0.00	0.00	0.161	1.183	6.129	0.00	1.84
16.67	Reinforcing plate	Yes	1.67	0.000	1.25	0.17	0.00	0.161	1.183	6.129	0.00	0.00
18.50	1 5/8" Coax	Yes	1.83	0.000	5.94	0.91	0.00	0.162	1.187	6.129	0.00	15.23
18.50	1 5/8" Fiber	Yes	1.83	0.000	0.00	0.00	0.00	0.162	1.187	6.129	0.00	2.01
18.50	Reinforcing plate	Yes	1.83	0.000	1.25	0.19	0.00	0.162	1.187	6.129	0.00	0.00
20.00	1 5/8" Coax	Yes	1.50	0.000	5.94	0.74	0.00	0.164	1.191	6.129	0.00	12.48
20.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.164	1.191	6.129	0.00	1.65
20.00	Reinforcing plate	Yes	1.50	0.000	1.25	0.16	0.00	0.164	1.191	6.129	0.00	0.00
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.166	1.198	6.129	0.00	41.60
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.166	1.198	6.129	0.00	5.50
25.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.166	1.198	6.129	0.00	0.00
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.170	1.210	6.134	0.00	41.60
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.170	1.210	6.134	0.00	5.50
30.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.170	1.210	6.134	0.00	0.00
34.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.174	1.221	6.393	0.00	38.85
34.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.174	1.221	6.393	0.00	5.14
34.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.174	1.221	6.393	0.00	0.00
35.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.176	1.228	6.410	0.00	2.75
35.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.176	1.228	6.410	0.00	0.36
35.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.176	1.228	6.410	0.00	0.00
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.178	1.234	6.659	0.00	41.60
40.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.234	6.659	0.00	5.50
40.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.178	1.234	6.659	0.00	0.00
42.14	1 5/8" Coax	Yes	2.14	0.000	5.94	1.06	0.00	0.181	1.244	6.759	0.00	17.78
42.14	1 5/8" Fiber	Yes	2.14	0.000	0.00	0.00	0.00	0.181	1.244	6.759	0.00	2.35
42.14	Reinforcing plate	Yes	2.14	0.000	1.25	0.22	0.00	0.181	1.244	6.759	0.00	0.00
45.00	1 5/8" Coax	Yes	2.86	0.000	5.94	1.42	0.00	0.184	1.251	6.887	0.00	23.82
45.00	1 5/8" Fiber	Yes	2.86	0.000	0.00	0.00	0.00	0.184	1.251	6.887	0.00	3.15
45.00	Reinforcing plate	Yes	2.86	0.000	1.25	0.30	0.00	0.184	1.251	6.887	0.00	0.00
47.57	1 5/8" Coax	Yes	2.57	0.000	5.94	1.27	0.00	0.186	1.258	6.997	0.00	21.38
47.57	1 5/8" Fiber	Yes	2.57	0.000	0.00	0.00	0.00	0.186	1.258	6.997	0.00	2.83
47.57	Reinforcing plate	Yes	2.57	0.000	1.25	0.27	0.00	0.186	1.258	6.997	0.00	0.00
50.00	1 5/8" Coax	Yes	2.43	0.000	5.94	1.20	0.00	0.185	1.256	7.098	0.00	20.22
50.00	1 5/8" Fiber	Yes	2.43	0.000	0.00	0.00	0.00	0.185	1.256	7.098	0.00	2.67
50.00	Reinforcing plate	Yes	2.43	0.000	1.25	0.25	0.00	0.185	1.256	7.098	0.00	0.00
54.67	1 5/8" Coax	Yes	4.67	0.000	5.94	2.31	0.00	0.189	1.266	7.281	0.00	38.85
54.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.189	1.266	7.281	0.00	5.14

Linear Appurtenance Segment Forces (Factored)

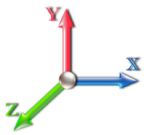
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 57	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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)
54.67	Reinforcing plate	Yes	4.67	0.000	1.25	0.49	0.00	0.189	1.266	7.281	0.00	0.00
55.00	1 5/8" Coax	Yes	0.33	0.000	5.94	0.16	0.00	0.191	1.274	7.294	0.00	2.75
55.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.191	1.274	7.294	0.00	0.36
55.00	Reinforcing plate	Yes	0.33	0.000	1.25	0.03	0.00	0.191	1.274	7.294	0.00	0.00
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.194	1.282	7.477	0.00	41.60
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.194	1.282	7.477	0.00	5.50
60.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.194	1.282	7.477	0.00	0.00
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.199	1.298	7.650	0.00	41.60
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.199	1.298	7.650	0.00	5.50
65.00	Reinforcing plate	Yes	5.00	0.000	1.25	0.52	0.00	0.199	1.298	7.650	0.00	0.00
70.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.205	0.000	7.814	25.53	41.60
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.205	0.000	7.814	0.00	5.50
70.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.205	0.000	7.814	5.37	0.00
74.67	1 5/8" Coax	Yes	4.67	1.200	5.94	2.31	2.77	0.210	0.000	7.959	24.29	38.85
74.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.210	0.000	7.959	0.00	5.14
74.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.210	0.000	7.959	5.11	0.00
75.00	1 5/8" Coax	Yes	0.33	1.200	5.94	0.16	0.20	0.214	0.000	7.969	1.72	2.75
75.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.214	0.000	7.969	0.00	0.36
75.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.214	0.000	7.969	0.36	0.00
76.52	1 5/8" Coax	Yes	1.52	1.200	5.94	0.75	0.90	0.215	0.000	8.015	7.94	12.62
76.52	1 5/8" Fiber	Yes	1.52	0.000	0.00	0.00	0.00	0.215	0.000	8.015	0.00	1.67
76.52	Reinforcing plate	Yes	1.52	1.200	1.25	0.16	0.19	0.215	0.000	8.015	1.67	0.00
80.00	1 5/8" Coax	Yes	3.48	1.200	5.94	1.72	2.07	0.218	0.000	8.118	18.48	28.98
80.00	1 5/8" Fiber	Yes	3.48	0.000	0.00	0.00	0.00	0.218	0.000	8.118	0.00	3.83
80.00	Reinforcing plate	Yes	3.48	1.200	1.25	0.36	0.44	0.218	0.000	8.118	3.89	0.00
81.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.50	0.59	0.221	0.000	8.147	5.32	8.32
81.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.221	0.000	8.147	0.00	1.10
81.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.221	0.000	8.147	1.12	0.00
81.19	1 5/8" Coax	Yes	0.19	1.200	5.94	0.09	0.11	0.222	0.000	8.152	0.99	1.55
81.19	1 5/8" Fiber	Yes	0.19	0.000	0.00	0.00	0.00	0.222	0.000	8.152	0.00	0.21
81.19	Reinforcing plate	Yes	0.19	1.200	1.25	0.02	0.02	0.222	0.000	8.152	0.21	0.00
85.00	1 5/8" Coax	Yes	3.81	1.200	5.94	1.89	2.27	0.221	0.000	8.260	20.58	31.73
85.00	1 5/8" Fiber	Yes	3.81	0.000	0.00	0.00	0.00	0.221	0.000	8.260	0.00	4.19
85.00	Reinforcing plate	Yes	3.81	1.200	1.25	0.40	0.48	0.221	0.000	8.260	4.33	0.00
86.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.50	0.59	0.224	0.000	8.287	5.41	8.32
86.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.224	0.000	8.287	0.00	1.10
86.00	Reinforcing plate	Yes	1.00	1.200	1.25	0.10	0.13	0.224	0.000	8.287	1.14	0.00
90.00	1 5/8" Coax	Yes	4.00	1.200	5.94	1.98	2.38	0.228	0.000	8.396	21.94	33.28
90.00	1 5/8" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.228	0.000	8.396	0.00	4.40
90.00	Reinforcing plate	Yes	4.00	1.200	1.25	0.42	0.50	0.228	0.000	8.396	4.62	0.00
94.67	1 5/8" Coax	Yes	4.67	1.200	5.94	2.31	2.77	0.234	0.000	8.518	25.99	38.85
94.67	1 5/8" Fiber	Yes	4.67	0.000	0.00	0.00	0.00	0.234	0.000	8.518	0.00	5.14
94.67	Reinforcing plate	Yes	4.67	1.200	1.25	0.49	0.58	0.234	0.000	8.518	5.47	0.00
95.00	1 5/8" Coax	Yes	0.33	1.200	5.94	0.16	0.20	0.238	0.000	8.526	1.84	2.75
95.00	1 5/8" Fiber	Yes	0.33	0.000	0.00	0.00	0.00	0.238	0.000	8.526	0.00	0.36
95.00	Reinforcing plate	Yes	0.33	1.200	1.25	0.03	0.04	0.238	0.000	8.526	0.39	0.00
100.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.242	0.000	8.652	28.27	41.60

Linear Appurtenance Segment Forces (Factored)

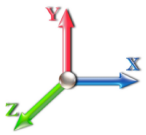
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 58	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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)
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.242	0.000	8.652	0.00	5.50
100.00	Reinforcing plate	Yes	5.00	1.200	1.25	0.52	0.63	0.242	0.000	8.652	5.95	0.00
102.00	1 5/8" Coax	Yes	2.00	1.200	5.94	0.99	1.19	0.282	0.000	8.701	11.37	16.64
102.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.282	0.000	8.701	0.00	2.20
102.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.282	0.000	8.701	1.91	0.00
102.00	Reinforcing plate	Yes	2.00	1.200	1.25	0.21	0.25	0.282	0.000	8.701	2.39	0.00
102.67	1 5/8" Coax	Yes	0.67	1.200	5.94	0.33	0.40	0.285	0.000	8.718	3.82	5.57
102.67	1 5/8" Fiber	Yes	0.67	0.000	0.00	0.00	0.00	0.285	0.000	8.718	0.00	0.74
102.67	Reinforcing plate	Yes	0.67	1.200	1.00	0.06	0.07	0.285	0.000	8.718	0.64	0.00
102.67	Reinforcing plate	Yes	0.67	1.200	1.25	0.07	0.08	0.285	0.000	8.718	0.80	0.00
105.00	1 5/8" Coax	Yes	2.33	1.200	5.94	1.15	1.38	0.282	0.000	8.774	13.36	19.39
105.00	1 5/8" Fiber	Yes	2.33	0.000	0.00	0.00	0.00	0.282	0.000	8.774	0.00	2.56
105.00	Reinforcing plate	Yes	2.33	1.200	1.00	0.19	0.23	0.282	0.000	8.774	2.25	0.00
105.00	Reinforcing plate	Yes	2.03	1.200	1.25	0.21	0.25	0.282	0.000	8.774	2.45	0.00
110.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.250	0.000	8.891	29.05	41.60
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.250	0.000	8.891	0.00	5.50
110.00	Reinforcing plate	Yes	5.00	1.200	1.00	0.42	0.50	0.250	0.000	8.891	4.89	0.00
110.91	1 5/8" Coax	Yes	0.91	1.200	5.94	0.45	0.54	0.255	0.000	8.912	5.27	7.53
110.91	1 5/8" Fiber	Yes	0.91	0.000	0.00	0.00	0.00	0.255	0.000	8.912	0.00	1.00
110.91	Reinforcing plate	Yes	0.91	1.200	1.00	0.08	0.09	0.255	0.000	8.912	0.89	0.00
114.50	1 5/8" Coax	Yes	3.59	1.200	5.94	1.78	2.14	0.260	0.000	8.993	21.13	29.91
114.50	1 5/8" Fiber	Yes	3.59	0.000	0.00	0.00	0.00	0.260	0.000	8.993	0.00	3.95
114.50	Reinforcing plate	Yes	3.59	1.200	1.00	0.30	0.36	0.260	0.000	8.993	3.56	0.00
114.80	1 5/8" Coax	Yes	0.30	1.200	5.94	0.15	0.18	0.263	0.000	9.000	1.74	2.47
114.80	1 5/8" Fiber	Yes	0.30	0.000	0.00	0.00	0.00	0.263	0.000	9.000	0.00	0.33
114.80	Reinforcing plate	Yes	0.30	1.200	1.00	0.02	0.03	0.263	0.000	9.000	0.29	0.00
115.00	1 5/8" Coax	Yes	0.20	1.200	5.94	0.10	0.12	0.260	0.000	9.005	1.20	1.69
115.00	1 5/8" Fiber	Yes	0.20	0.000	0.00	0.00	0.00	0.260	0.000	9.005	0.00	0.22
115.00	Reinforcing plate	Yes	0.20	1.200	1.00	0.02	0.02	0.260	0.000	9.005	0.20	0.00
117.00	1 5/8" Coax	Yes	2.00	1.200	5.94	0.99	1.19	0.262	0.000	9.049	11.83	16.64
117.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.262	0.000	9.049	0.00	2.20
117.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.262	0.000	9.049	1.99	0.00
118.00	1 5/8" Coax	Yes	1.00	1.200	5.94	0.50	0.59	0.265	0.000	9.071	5.93	8.32
118.00	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.265	0.000	9.071	0.00	1.10
118.00	Reinforcing plate	Yes	1.00	1.200	1.00	0.08	0.10	0.265	0.000	9.071	1.00	0.00
120.00	1 5/8" Coax	Yes	2.00	1.200	5.94	0.99	1.19	0.268	0.000	9.115	11.91	16.64
120.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.268	0.000	9.115	0.00	2.20
120.00	Reinforcing plate	Yes	2.00	1.200	1.00	0.17	0.20	0.268	0.000	9.115	2.01	0.00
125.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.236	0.000	9.222	30.13	41.60
125.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.236	0.000	9.222	0.00	5.50
130.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.245	0.000	9.326	30.47	41.60
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.245	0.000	9.326	0.00	5.50
135.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.256	0.000	9.427	30.80	41.60
135.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.256	0.000	9.427	0.00	5.50
137.00	1 5/8" Coax	Yes	2.00	1.200	5.94	0.99	1.19	0.263	0.000	9.466	12.37	16.64
137.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.263	0.000	9.466	0.00	2.20
140.00	1 5/8" Coax	Yes	3.00	1.200	5.94	1.49	1.78	0.269	0.000	9.525	18.67	24.96

Linear Appurtenance Segment Forces (Factored)

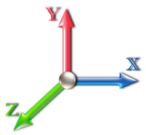
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 59	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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)
140.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.269	0.000	9.525	0.00	3.30
145.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.279	0.000	9.621	31.43	41.60
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.279	0.000	9.621	0.00	5.50
150.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.293	0.000	9.715	31.74	41.60
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.293	0.000	9.715	0.00	5.50
155.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.48	2.97	0.466	0.000	9.806	32.04	41.60
155.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.466	0.000	9.806	0.00	5.50
158.00	1 5/8" Coax	Yes	3.00	1.200	5.94	1.49	1.78	0.466	0.000	9.860	19.33	24.96
158.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.466	0.000	9.860	0.00	3.30
160.00	1 5/8" Coax	Yes	2.00	1.200	5.94	0.99	1.19	0.466	0.000	9.896	12.93	16.64
160.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.466	0.000	9.896	0.00	2.20
										Totals:	**619.7**	**1,507.2**

Calculated Forces

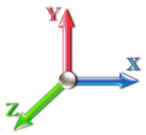
Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 60	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

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	-32.34	-7.35	0.00	-792.36	0.00	792.36	3849.02	1924.51	7372.73	3691.85	0.00	0.000	0.000	0.164
5.00	-31.20	-7.27	0.00	-755.63	0.00	755.63	3795.37	1897.68	7118.03	3564.30	0.03	-0.053	0.000	0.161
10.00	-30.08	-7.20	0.00	-719.26	0.00	719.26	3740.61	1870.30	6865.59	3437.90	0.11	-0.107	0.000	0.157
15.00	-28.98	-7.12	0.00	-683.25	0.00	683.25	3684.74	1842.37	6615.55	3312.69	0.25	-0.161	0.000	0.154
16.67	-28.62	-7.10	0.00	-671.36	0.00	671.36	3665.83	1832.91	6532.59	3271.15	0.31	-0.179	0.000	0.115
18.50	-28.22	-7.07	0.00	-658.37	0.00	658.37	3644.97	1822.48	6442.01	3225.79	0.38	-0.194	0.000	0.144
20.00	-27.90	-7.05	0.00	-647.77	0.00	647.77	3627.76	1813.88	6368.03	3188.75	0.45	-0.210	0.000	0.143
25.00	-26.84	-6.98	0.00	-612.50	0.00	612.50	3569.68	1784.84	6123.18	3066.14	0.70	-0.262	0.000	0.140
30.00	-25.80	-6.90	0.00	-577.60	0.00	577.60	3510.49	1755.24	5881.13	2944.94	1.00	-0.314	0.000	0.136
34.67	-24.85	-6.82	0.00	-545.37	0.00	545.37	3454.20	1727.10	5657.69	2833.05	1.33	-0.362	0.000	0.134
35.00	-24.78	-6.82	0.00	-543.12	0.00	543.12	3450.19	1725.09	5642.00	2825.20	1.35	-0.366	0.000	0.134
40.00	-23.78	-6.73	0.00	-509.00	0.00	509.00	3388.79	1694.39	5405.94	2706.99	1.76	-0.419	0.000	0.130
42.14	-23.35	-6.70	0.00	-494.61	0.00	494.61	3362.21	1681.10	5306.03	2656.96	1.96	-0.441	0.000	0.128
45.00	-22.42	-6.65	0.00	-475.42	0.00	475.42	3326.27	1663.14	5173.07	2590.38	2.23	-0.472	0.000	0.124
47.57	-21.59	-6.60	0.00	-458.35	0.00	458.35	2638.80	1319.40	4131.44	2068.79	2.49	-0.499	0.000	0.131
50.00	-21.18	-6.56	0.00	-442.32	0.00	442.32	2616.75	1308.38	4046.02	2026.02	2.75	-0.525	0.000	0.140
54.67	-20.40	-6.46	0.00	-411.71	0.00	411.71	2573.65	1286.82	3883.14	1944.46	3.29	-0.577	0.000	0.139
55.00	-20.35	-6.46	0.00	-409.57	0.00	409.57	2570.56	1285.28	3871.70	1938.73	3.33	-0.581	0.000	0.138
60.00	-19.53	-6.37	0.00	-377.25	0.00	377.25	2523.27	1261.63	3699.46	1852.48	3.97	-0.638	0.000	0.132
65.00	-18.73	-6.27	0.00	-345.41	0.00	345.41	2474.87	1237.43	3529.43	1767.34	4.67	-0.694	0.000	0.125
70.00	-17.95	-6.10	0.00	-314.05	0.00	314.05	2425.36	1212.68	3361.74	1683.37	5.43	-0.749	0.000	0.118
74.67	-17.24	-5.93	0.00	-285.58	0.00	285.58	2378.12	1189.06	3207.34	1606.06	6.19	-0.799	0.000	0.114
75.00	-17.19	-5.92	0.00	-283.63	0.00	283.63	2374.74	1187.37	3196.52	1600.63	6.24	-0.803	0.000	0.113
76.52	-16.96	-5.87	0.00	-274.66	0.00	274.66	2359.17	1179.58	3146.91	1575.79	6.50	-0.820	0.000	0.111
80.00	-16.14	-5.73	0.00	-254.22	0.00	254.22	2323.02	1161.51	3033.91	1519.21	7.11	-0.857	0.000	0.105
81.00	-15.90	-5.70	0.00	-248.49	0.00	248.49	2312.54	1156.27	3001.71	1503.09	7.29	-0.868	0.000	0.084
81.19	-15.86	-5.69	0.00	-247.42	0.00	247.42	1750.09	875.04	2314.24	1158.84	7.33	-0.869	0.000	0.091
85.00	-15.38	-5.55	0.00	-225.71	0.00	225.71	1723.72	861.86	2226.75	1115.03	8.03	-0.901	0.000	0.093
86.00	-15.25	-5.52	0.00	-220.16	0.00	220.16	1716.70	858.35	2203.94	1103.61	8.22	-0.910	0.000	0.114
90.00	-14.76	-5.38	0.00	-198.06	0.00	198.06	1688.18	844.09	2113.26	1058.20	9.00	-0.952	0.000	0.106
94.67	-14.19	-5.21	0.00	-172.92	0.00	172.92	1653.98	826.99	2008.61	1005.80	9.96	-0.999	0.000	0.101
95.00	-14.15	-5.21	0.00	-171.20	0.00	171.20	1651.53	825.76	2001.27	1002.12	10.03	-1.002	0.000	0.100
100.00	-11.21	-4.36	0.00	-145.16	0.00	145.16	1613.77	806.88	1890.91	946.86	11.10	-1.051	0.000	0.088
102.00	-10.99	-4.28	0.00	-136.45	0.00	136.45	1598.36	799.18	1847.26	925.00	11.55	-1.070	0.000	0.057
102.67	-10.91	-4.26	0.00	-133.58	0.00	133.58	1593.15	796.58	1832.70	917.71	11.70	-1.074	0.000	0.081
105.00	-10.64	-4.18	0.00	-123.65	0.00	123.65	1574.90	787.45	1782.33	892.49	12.23	-1.095	0.000	0.077
110.00	-10.09	-4.00	0.00	-102.76	0.00	102.76	1534.93	767.47	1675.65	839.07	13.40	-1.135	0.000	0.067
110.91	-9.99	-3.97	0.00	-99.14	0.00	99.14	1527.58	763.79	1656.56	829.51	13.61	-1.142	0.000	0.065
114.50	-9.05	-3.73	0.00	-84.86	0.00	84.86	1498.01	749.01	1581.38	791.86	14.48	-1.168	0.000	0.057
114.80	-9.00	-3.72	0.00	-83.75	0.00	83.75	1034.66	517.33	1111.16	556.41	14.56	-1.170	0.000	0.063
115.00	-8.98	-3.72	0.00	-82.99	0.00	82.99	1033.71	516.86	1108.46	555.05	14.61	-1.172	0.000	0.070
117.00	-7.00	-2.87	0.00	-75.55	0.00	75.55	1024.27	512.13	1081.93	541.77	15.10	-1.187	0.000	0.064
118.00	-6.93	-2.84	0.00	-72.68	0.00	72.68	1019.48	509.74	1068.72	535.15	15.35	-1.194	0.000	0.062
118.00	-6.93	-2.84	0.00	-72.68	0.00	72.68	1019.48	509.74	1068.72	535.15	15.35	-1.194	0.000	0.062
120.00	-6.77	-2.78	0.00	-67.00	0.00	67.00	1009.78	504.89	1042.37	521.96	15.85	-1.208	0.000	0.135
125.00	-6.40	-2.62	0.00	-53.11	0.00	53.11	984.73	492.37	977.10	489.28	17.16	-1.279	0.000	0.115
130.00	-6.04	-2.46	0.00	-40.01	0.00	40.01	958.58	479.29	912.78	457.07	18.53	-1.342	0.000	0.094
135.00	-5.70	-2.31	0.00	-27.70	0.00	27.70	931.33	465.66	849.55	425.40	19.97	-1.393	0.000	0.071

Calculated Forces

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 61

Tower Engineering Solutions

137.00	-2.72	-1.29	0.00	-23.09	0.00	23.09	920.11	460.06	824.58	412.91	20.55	-1.411	0.000	0.059
140.00	-2.56	-1.20	0.00	-19.21	0.00	19.21	902.96	451.48	787.53	394.35	21.45	-1.434	0.000	0.052
145.00	-2.31	-1.05	0.00	-13.20	0.00	13.20	873.49	436.75	726.86	363.97	22.97	-1.466	0.000	0.039
150.00	-2.07	-0.91	0.00	-7.94	0.00	7.94	842.91	421.46	667.67	334.33	24.52	-1.490	0.000	0.026
150.00	-2.07	-0.91	0.00	-7.94	0.00	7.94	656.05	328.03	328.13	215.42	24.52	-1.490	0.000	0.040
155.00	-1.77	-0.80	0.00	-3.41	0.00	3.41	656.05	328.03	328.13	215.42	26.08	-1.505	0.000	0.019
158.00	-1.46	-0.49	0.00	-1.01	0.00	1.01	656.05	328.03	328.13	215.42	27.03	-1.512	0.000	0.007
160.00	-0.10	-0.02	0.00	-0.03	0.00	0.03	656.05	328.03	328.13	215.42	27.67	-1.513	0.000	0.000
162.00	0.00	-0.01	0.00	0.00	0.00	0.00	656.05	328.03	328.13	215.42	28.30	-1.513	0.000	0.000

Final Analysis Summary

Structure:	CT02694-B-SBA	**Code:**	EIA/TIA-222-G	11/15/2021	
Site Name:	E-Prospect	**Exposure:**	B		
Height:	162.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 62	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	29.9	0.00	38.75	0.00	0.00	3234.82
0.9D + 1.6W 97 mph Wind	29.9	0.00	29.05	0.00	0.00	3202.53
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.6	0.00	64.79	0.00	0.00	822.15
1.2D + 1.0E	1.1	0.00	38.81	0.00	0.00	120.56
0.9D + 1.0E	1.1	0.00	29.11	0.00	0.00	119.21
1.0D + 1.0W 60 mph Wind	7.3	0.00	32.34	0.00	0.00	792.36

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-38.75	-29.94	0.00	-3234.8	0.00	-3234.8	3849.02	1924.5	7372.73	3691.85	0.00	0.651
0.9D + 1.6W 97 mph Wind	-29.05	-29.93	0.00	-3202.5	0.00	-3202.5	3849.02	1924.5	7372.73	3691.85	0.00	0.643
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-64.79	-7.65	0.00	-822.15	0.00	-822.15	3849.02	1924.5	7372.73	3691.85	0.00	0.175
1.2D + 1.0E	-8.20	-0.68	0.00	-22.18	0.00	-22.18	1009.78	504.89	1042.37	521.96	120.00	0.051
0.9D + 1.0E	-6.15	-0.67	0.00	-21.93	0.00	-21.93	1009.78	504.89	1042.37	521.96	120.00	0.048
1.0D + 1.0W 60 mph Wind	-32.34	-7.35	0.00	-792.36	0.00	-792.36	3849.02	1924.5	7372.73	3691.85	0.00	0.164

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	18.5	(3) PLT-6.5x1.25(1.25 Hole)	-292.7	-5.27	37.1	347.4	37.1	10	12	250.2	37.1	7	12	347.37	448.0	389.06	0.893
16.7	34.7	(3) PLT-6"X1-1/4"(1.25" Hole	300.0	5.40	37.1	245.1	37.1	7	11	288.0	37.1			306.29	413.6	351.56	0.871
34.7	54.7	(3) PLT-5.75x1.25(1.25 Hole)	355.7	6.40	37.1	280.0	37.1			272.3	37.1			281.23	396.3	332.81	0.845
54.7	74.7	(3) PLT-5.25"x1 1/4"(1.25"ho	369.7	6.65	37.1	257.4	37.1			213.9	37.1			257.44	361.9	295.31	0.872
74.7	94.7	(3) PLT-5"x1-1/4"(1.25"Hole)	425.2	7.65	37.1	207.7	37.1			168.8	37.1			207.74	344.6	276.56	0.751
81.0	86.0	(3) PLT-C6x13 (1.25" hole)	-212.6	-5.10	25.3	101.6	25.3	5	8	101.6	25.3	5	8	103.22	165.9	160.09	0.645
94.7	102.7	(3) PLT-4.5"x 1-1/4"(1.25"ho	425.2	7.65	37.1	159.5	37.1			90.3	37.1	3	8	159.47	310.2	239.06	0.667
102.0	118.0	(3) LNP-LP6X100-G-20TT	410.2	9.85	25.3	97.0	25.3	4	8	99.0	25.3	4	8	138.05	297.8	288.75	0.478

Pier Foundation Design For Monopole

			Date: 11/15/2021
Customer Name:	**Dish Wireless**	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	162
Site Number:	CT02694-B-SBA	**Engineer Name:**	H. You
Engr. Number:	119246	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Acceptable overstress (5.0%

Base Reactions (Factored):

Axial Load (Kips):	38.8	Shear Force (Kips):	29.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3234.8

Foundation Geometries:

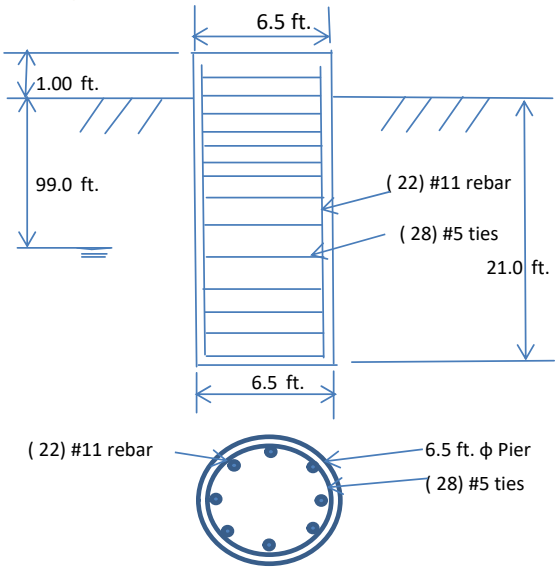
Diameter of Pier (ft.):	6.5	Depth of Base B. G. S. :	21.0	ft.
Pier Height A. G. (ft.):	1.00			

Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	22	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)
Skin Frictions are to be obtained from:		Soil Report		



Monopole Pier Foundation

Clay

5000

Depth of Layers (ft) Top	Depth of Layers (ft) Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types
0.0	3.0	110	20	0	0	0	
3.0	35.0	135	38	0	800	40000	
35.0	40.0	135	38	0	800	40000	

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75	
Total Dry Soil Volume from Conical Failure (cu. Ft.):	5799	Dry Soil Weight from Conical Failure:	772	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	0	Buoyant Soil Weight from Conical Failure (Ki	0	Kips
Total Dry Concrete Volume (cu. Ft.):	730	Total Dry Concrete Weight:	109.5	Kips
Total Buoyant Concrete Volume (cu. Ft.):	0.0	Total Buoyant Concrete Weight:	0.00	Kips
Total Effective Concrete Weight (Kips):	109.5	Total Effective Soil Weight:	772.0	Kips
Total Effective Vertical Load on Base (Kips):	55.5			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	5797.1	>	Design Factored Moment (kips-ft):	3692	0.64	OK!
Factor of Safety of Passive Soil Resistance against Moment:	1.57	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	

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	5345.3	>	Design Factored Moment (Mu, K-Ft):	3364.4	0.63	OK!
Calculated Shear Capacity (Kips):	962.3	>	Design Factored Shear (Kips):	379.4	0.39	OK!
Calculated Tension Capacity (Tn, Kips):	1853.3	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	8387	>	Design Factored Axial Load (Pu Kips):	38.8	0.00	OK!
Moment & Axial Strength Combination:	0.63	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.	
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI				

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
btwo@btgrp.com

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOHVN00114B
	Site Name:	N/A
SBA Network Services Designation:	**Site Number:**	CT02694-B
	Site Name:	E-Prospect
	Application Number:	169192, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149540.003.01
Site Data:	**229 Cheshire Road, Prospect, CT, 06712, New Haven County** **Latitude *41.50788*°, Longitude *-72.951*°** **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 46.7%)**

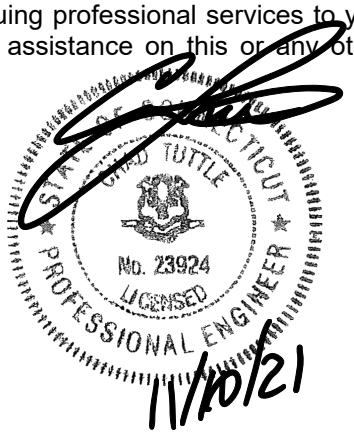
This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code (2018 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

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

We 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: Harrison Holmlund

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



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount (Part# MC-PK8-DSH) at 100 ft., attached to monopole at 229 Cheshire Road, Prospect, CT, 06712, 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 118 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure category B, Topographic Category 1 and Risk Category II were used in the 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 30mph. 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	100	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 Proposed Mount Pipe.
2) Proposed Equipment to be installed directly behind the Antenna
3) Proposed Equipment to be installed on Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading	Date: 08/11/2021	SBA Network Services, LLC.
RFDS		Date: 07/23/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

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

Manufacturer's drawings were used to create the model.

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

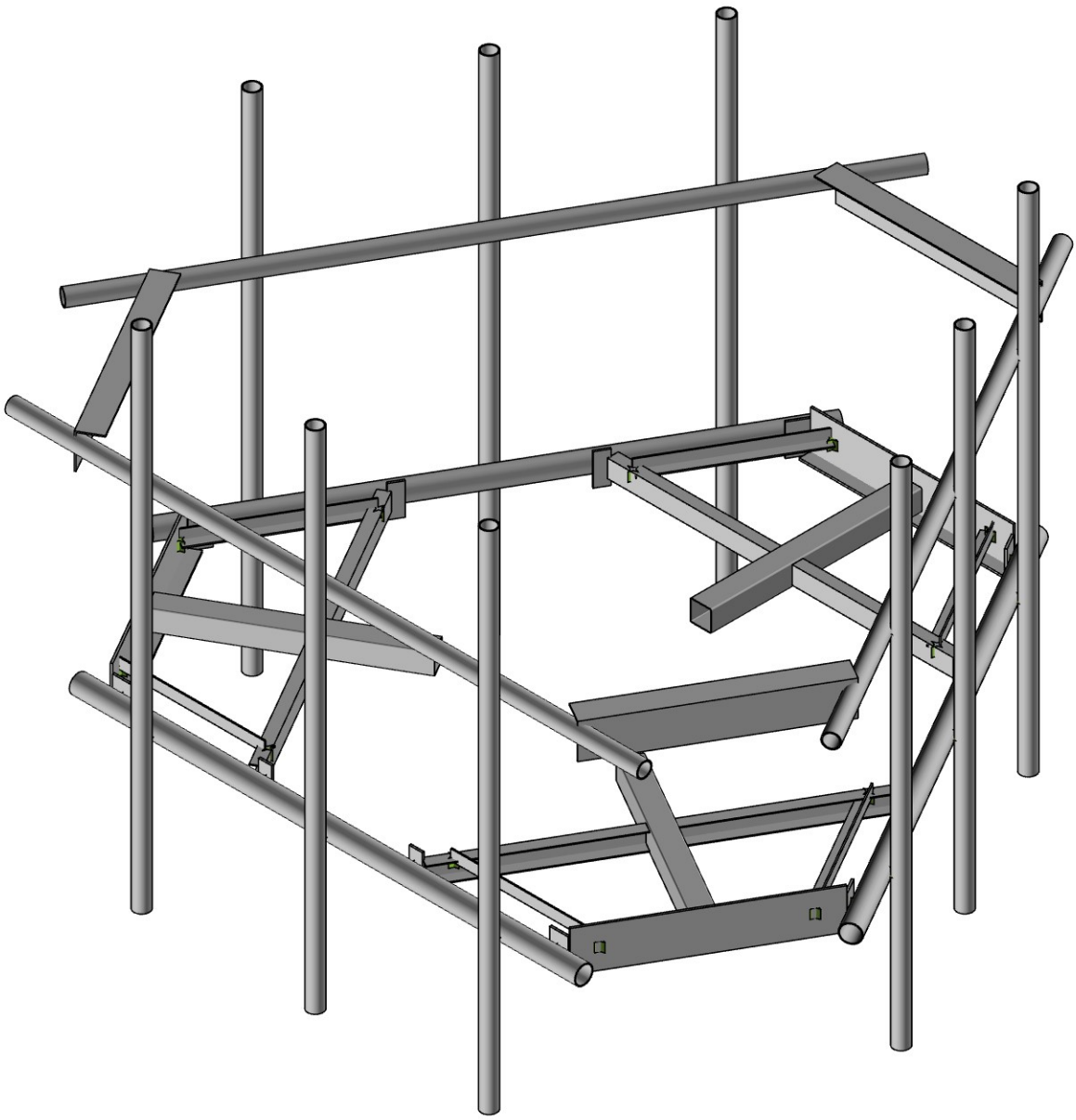
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	100	6.9	Pass
-	Support Rails	100	11.8	Pass
-	Support Tubes	100	46.7	Pass
-	Support Channels	100	32.2	Pass
-	Support Angles	100	27.6	Pass
-	Mount Pipes	100	13.4	Pass
-	Connection Plates	100	19.7	Pass
-	Connection Angles	100	20.0	Pass
-	Connection Bolts	100	24.8	Pass

5) RECOMMENDATIONS

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

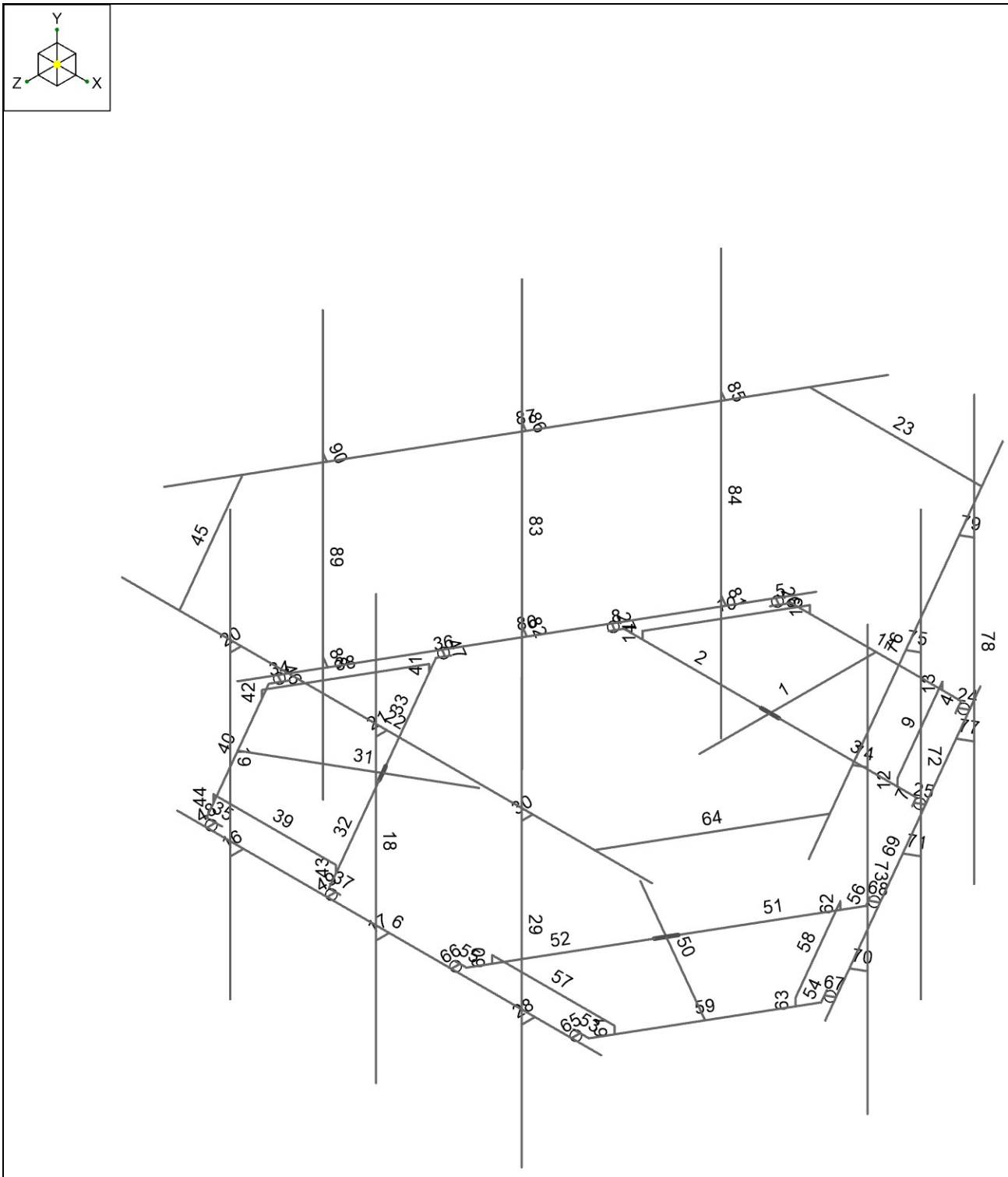
APPENDIX A

(RISA-3D Output)



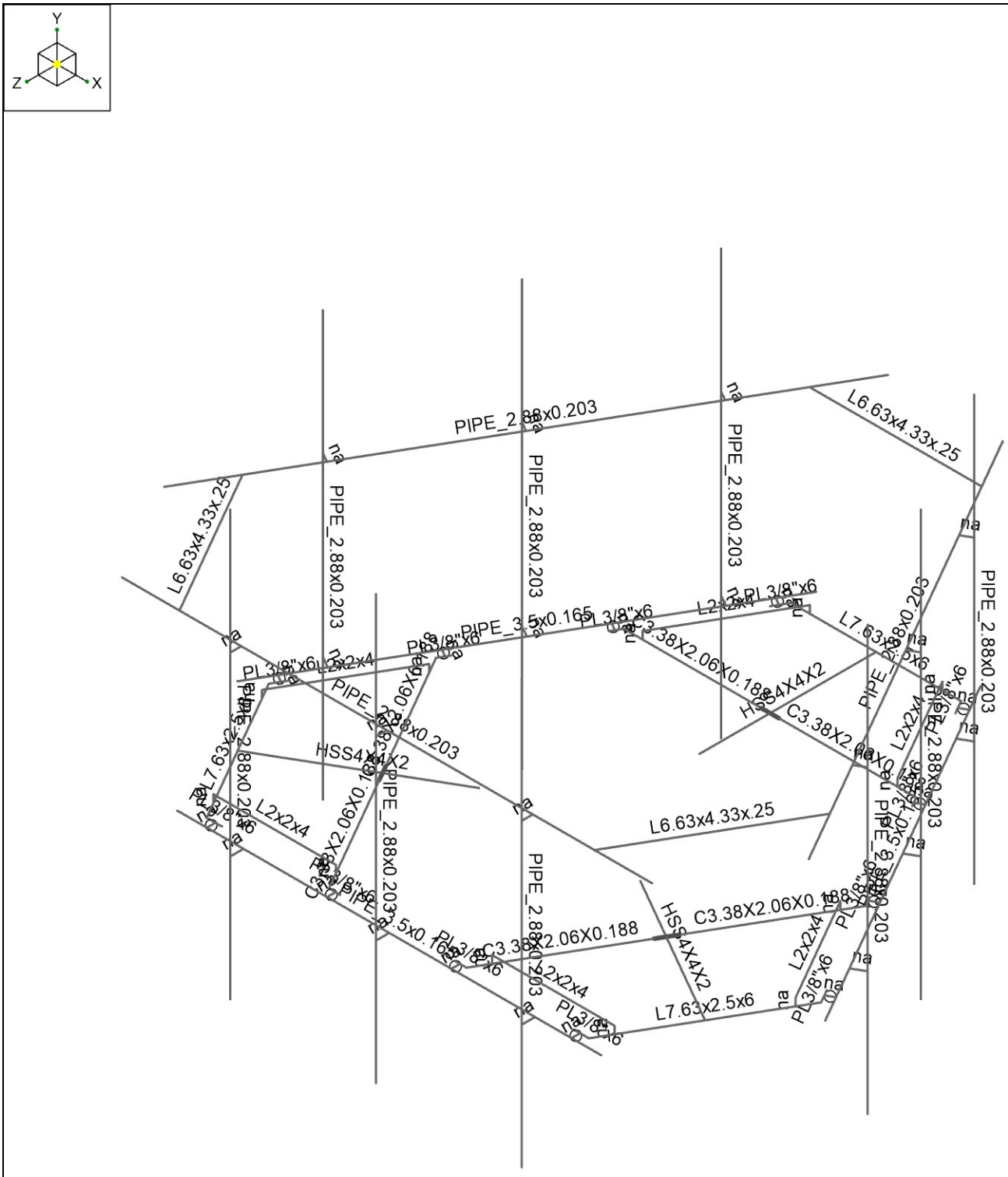
Envelope Only Solution

B+T Group	CT02694-B - E-Prospect	SK-1
AS		Nov 10, 2021
149540.003.01		149540_003_01_E-Prospect_CT.…



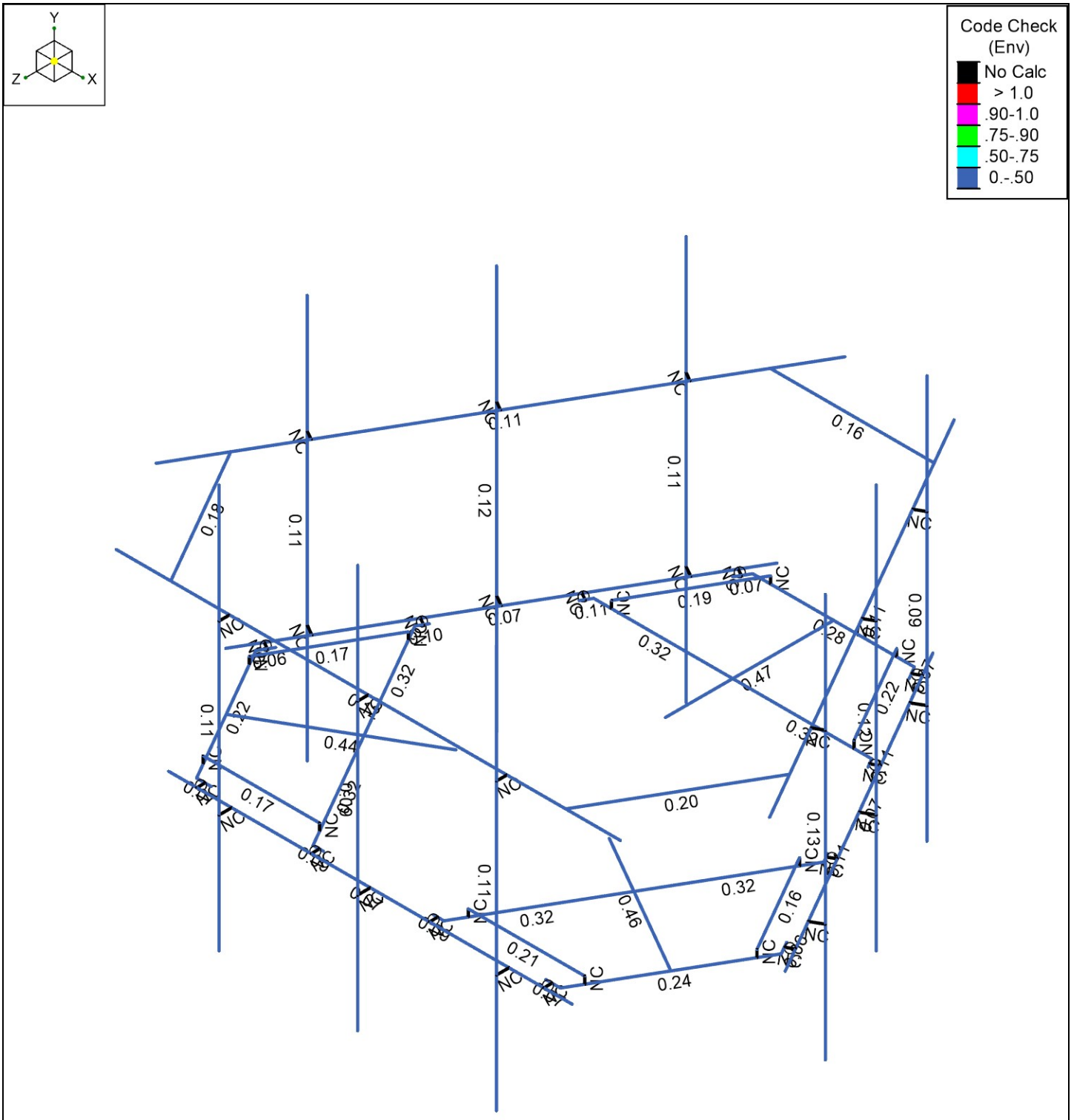
Envelope Only Solution

B+T Group	CT02694-B - E-Prospect	SK-2
AS		Nov 10, 2021
149540.003.01		149540_003_01_E-Prospect_CT....



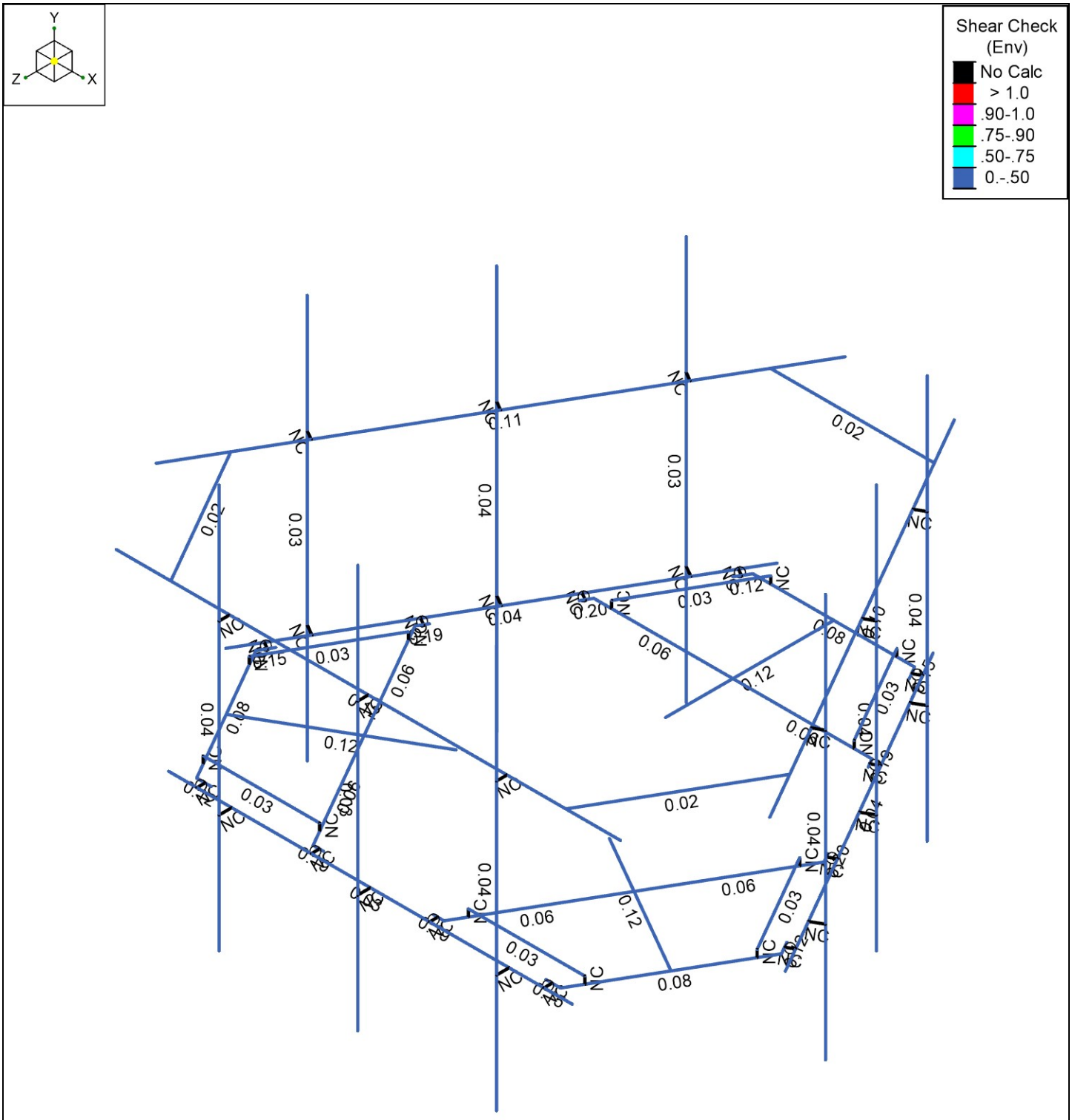
Envelope Only Solution

B+T Group	CT02694-B - E-Prospect	SK-3
AS		Nov 10, 2021
149540.003.01		149540_003_01_E-Prospect_CT....



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT02694-B - E-Prospect	SK-4
AS		Nov 10, 2021
149540.003.01		149540_003_01_E-Prospect_CT....



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT02694-B - E-Prospect	SK-5
AS		Nov 10, 2021
149540.003.01		149540_003_01_E-Prospect_CT....

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.757505	
2	2	0	0	-5.090838	
3	3	0	0	-3.090838	
4	4	2.758333	0	-3.090838	
5	5	-2.758333	0	-3.090838	
6	6	-1.603633	0	-5.090838	
7	7	1.603633	0	-5.090838	
8	8	1.749466	0	-4.838248	
9	9	-1.749466	0	-4.838248	
10	10	1.686966	0	-4.946501	
11	11	1.826792	0	-5.027229	
12	12	-1.686966	0	-4.946501	
13	13	-1.826792	0	-5.027229	
14	14	-3.999998	0	4.095663	
15	15	3.999998	0	4.095663	
16	16	2.8625	0	-2.910416	
17	17	2.820833	0	-2.982586	
18	18	2.960659	0	-3.063314	
19	19	-2.8625	0	-2.910416	
20	20	-2.820833	0	-2.982586	
21	21	-2.960659	0	-3.063314	
22	22	-1.25	0.140833	-5.090838	
23	23	-2.404701	0.140833	-3.090838	
24	24	2.404701	0.140833	-3.090838	
25	25	1.25	0.140833	-5.090838	
26	26	-1.25	0	-5.090838	
27	27	-2.404701	0	-3.090838	
28	28	2.404701	0	-3.090838	
29	29	1.25	0	-5.090838	
30	30	-2.749998	0	4.095663	
31	31	0.000002	0	4.095663	
32	32	-2.749998	0	4.345663	
33	33	0.000002	0	4.345663	
34	34	-2.749998	5.666663	4.345663	
35	35	0.000002	5.666663	4.345663	
36	36	-2.749998	-2.333337	4.345663	
37	37	0.000002	-2.333337	4.345663	
38	38	-2.749998	3.33333	4.345663	
39	39	0.000002	3.33333	4.345663	
40	40	-2.749998	3.33333	4.137329	
41	41	0.000002	3.33333	4.137329	
42	42	-5	3.33333	4.137329	
43	43	5	3.33333	4.137329	
44	44	1.625	3.33333	-5.460077	
45	45	-1.625	3.33333	-5.460077	
46	46	2.749998	0	4.095663	
47	47	2.749998	0	4.345663	
48	48	2.749998	5.666663	4.345663	
49	49	2.749998	-2.333337	4.345663	
50	50	2.749998	3.33333	4.345663	
51	51	2.749998	3.33333	4.137329	
52	52	0	0	0	
53	53	-1.522044	0	0.878752	
54	54	-4.408795	0	2.545419	
55	55	-2.676744	0	1.545419	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.055911	0	-0.843368	
57	57	-1.297578	0	3.934206	
58	58	-3.606979	0	3.934206	
59	59	-5.210612	0	1.156632	
60	60	-5.064778	0	0.904042	
61	61	-3.315312	0	3.934206	
62	62	-5.127278	0	1.012295	
63	63	-5.267104	0	0.931566	
64	64	-3.440312	0	3.934206	
65	65	-3.440312	0	4.095663	
66	66	-3.951744	0	-1.02379	
67	67	-3.993412	0	-0.95162	
68	68	-4.133237	0	-1.032348	
69	69	-1.089244	0	3.934206	
70	70	-1.172579	0	3.934206	
71	71	-1.172579	0	4.095663	
72	72	-3.783795	0.140833	3.627951	
73	73	-1.474394	0.140833	3.627951	
74	74	-3.879095	0.140833	-0.537113	
75	75	-5.033795	0.140833	1.462887	
76	76	-3.783795	0	3.627951	
77	77	-1.474394	0	3.627951	
78	78	-3.879095	0	-0.537113	
79	79	-5.033795	0	1.462887	
80	80	-5.541065	3.33333	1.322747	
81	81	-3.916065	3.33333	4.137329	
82	82	1.522044	0	0.878752	
83	83	4.408795	0	2.545419	
84	84	2.676744	0	1.545419	
85	85	1.297578	0	3.934206	
86	86	4.055911	0	-0.843368	
87	87	5.210612	0	1.156632	
88	88	3.606979	0	3.934206	
89	89	3.315312	0	3.934206	
90	90	5.064778	0	0.904042	
91	91	3.440312	0	3.934206	
92	92	3.440312	0	4.095663	
93	93	5.127278	0	1.012295	
94	94	5.267104	0	0.931566	
95	95	1.089244	0	3.934206	
96	96	1.172579	0	3.934206	
97	97	1.172579	0	4.095663	
98	98	3.951744	0	-1.02379	
99	99	3.993412	0	-0.95162	
100	100	4.133237	0	-1.032348	
101	101	5.033795	0.140833	1.462887	
102	102	3.879095	0.140833	-0.537113	
103	103	1.474394	0.140833	3.627951	
104	104	3.783795	0.140833	3.627951	
105	105	5.033795	0	1.462887	
106	106	3.879095	0	-0.537113	
107	107	1.474394	0	3.627951	
108	108	3.783795	0	3.627951	
109	109	3.916065	3.33333	4.137329	
110	110	5.541065	3.33333	1.322747	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.546947	0	1.416269	
112	112	1.546949	0	-5.511931	
113	113	4.921947	0	0.333737	
114	114	3.546947	0	-2.047833	
115	115	5.138453	0	0.208737	
116	116	3.763453	0	-2.172833	
117	117	5.138453	5.666663	0.208737	
118	118	3.763453	5.666663	-2.172833	
119	119	5.138453	-2.333337	0.208737	
120	120	3.763453	-2.333337	-2.172833	
121	121	5.138453	3.33333	0.208737	
122	122	3.763453	3.33333	-2.172833	
123	123	4.958031	3.33333	0.312903	
124	124	3.583031	3.33333	-2.068666	
125	125	6.083032	3.33333	2.261462	
126	126	1.083032	3.33333	-6.398792	
127	127	2.171949	0	-4.4294	
128	128	2.388455	0	-4.5544	
129	129	2.388455	5.666663	-4.5544	
130	130	2.388455	-2.333337	-4.5544	
131	131	2.388455	3.33333	-4.5544	
132	132	2.208033	3.33333	-4.450233	
133	133	-1.546949	0	-5.511931	
134	134	-5.546947	0	1.416269	
135	135	-2.171949	0	-4.4294	
136	136	-3.546949	0	-2.04783	
137	137	-2.388455	0	-4.5544	
138	138	-3.763455	0	-2.17283	
139	139	-2.388455	5.666663	-4.5544	
140	140	-3.763455	5.666663	-2.17283	
141	141	-2.388455	-2.333337	-4.5544	
142	142	-3.763455	-2.333337	-2.17283	
143	143	-2.388455	3.33333	-4.5544	
144	144	-3.763455	3.33333	-2.17283	
145	145	-2.208033	3.33333	-4.450233	
146	146	-3.583033	3.33333	-2.068663	
147	147	-1.083032	3.33333	-6.398792	
148	148	-6.083032	3.33333	2.261462	
149	149	-4.921947	0	0.333737	
150	150	-5.138453	0	0.208737	
151	151	-5.138453	5.666663	0.208737	
152	152	-5.138453	-2.333337	0.208737	
153	153	-5.138453	3.33333	0.208737	
154	154	-4.958031	3.33333	0.312903	

Node Boundary Conditions

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

Node Boundary Conditions (Continued)

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

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	MF-H1	PIPE_3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE_2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.707	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	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

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

Member Primary Data

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

Member Primary Data (Continued)

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

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	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	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes	N/A	None
23	23				Yes	Default	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27	OOOOOX			Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	** NA **	None
31	31				Yes	Default	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				Yes	Default	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49	OOOOOX			Yes	** NA **	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				Yes	Default	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68	OOOOOX			Yes	** NA **	None

Member Advanced Data (Continued)

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

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	23	MF-H3	3.25	Lbyy	Lateral
16	29	MF-P1	8	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	45	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	64	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.032	%5
2	29	Y	-0.032	%80
3	29	Y	-0.075	%15
4	29	Y	-0.064	%50
5	29	Y	0	0
6	89	Y	-0.032	%5
7	89	Y	-0.032	%80
8	89	Y	-0.075	%15
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%5
12	78	Y	-0.032	%80
13	78	Y	-0.075	%15
14	78	Y	-0.064	%50
15	78	Y	0	0
16	1	Y	-0.022	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.132	%5
2	29	Z	-0.132	%80
3	29	Z	-0.058	%15
4	29	Z	-0.058	%50
5	29	Z	0	0
6	89	Z	-0.132	%5
7	89	Z	-0.132	%80
8	89	Z	-0.058	%15
9	89	Z	-0.058	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	89	Z	0	0
11	78	Z	-0.132	%5
12	78	Z	-0.132	%80
13	78	Z	-0.058	%15
14	78	Z	-0.058	%50
15	78	Z	0	0
16	1	Z	-0.033	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.053	%5
2	29	X	-0.053	%80
3	29	X	-0.035	%15
4	29	X	-0.031	%50
5	29	X	0	0
6	89	X	-0.053	%5
7	89	X	-0.053	%80
8	89	X	-0.035	%15
9	89	X	-0.031	%50
10	89	X	0	0
11	78	X	-0.053	%5
12	78	X	-0.053	%80
13	78	X	-0.035	%15
14	78	X	-0.031	%50
15	78	X	0	0
16	1	X	-0.06	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.027	%5
2	29	Z	-0.027	%80
3	29	Z	-0.01	%15
4	29	Z	-0.01	%50
5	29	Z	0	0
6	89	Z	-0.027	%5
7	89	Z	-0.027	%80
8	89	Z	-0.01	%15
9	89	Z	-0.01	%50
10	89	Z	0	0
11	78	Z	-0.027	%5
12	78	Z	-0.027	%80
13	78	Z	-0.01	%15
14	78	Z	-0.01	%50
15	78	Z	0	0
16	1	Z	-0.006	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.012	%5
2	29	X	-0.012	%80
3	29	X	-0.006	%15
4	29	X	-0.006	%50
5	29	X	0	0
6	89	X	-0.012	%5
7	89	X	-0.012	%80
8	89	X	-0.006	%15
9	89	X	-0.006	%50
10	89	X	0	0
11	78	X	-0.012	%5
12	78	X	-0.012	%80
13	78	X	-0.006	%15
14	78	X	-0.006	%50
15	78	X	0	0
16	1	X	-0.011	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.009	%5
2	29	Z	-0.009	%80
3	29	Z	-0.004	%15
4	29	Z	-0.004	%50
5	29	Z	0	0
6	89	Z	-0.009	%5
7	89	Z	-0.009	%80
8	89	Z	-0.004	%15
9	89	Z	-0.004	%50
10	89	Z	0	0
11	78	Z	-0.009	%5
12	78	Z	-0.009	%80
13	78	Z	-0.004	%15
14	78	Z	-0.004	%50
15	78	Z	0	0
16	1	Z	-0.002	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.003	%5
2	29	X	-0.003	%80
3	29	X	-0.002	%15
4	29	X	-0.002	%50
5	29	X	0	0
6	89	X	-0.003	%5
7	89	X	-0.003	%80
8	89	X	-0.002	%15
9	89	X	-0.002	%50
10	89	X	0	0
11	78	X	-0.003	%5
12	78	X	-0.003	%80
13	78	X	-0.002	%15
14	78	X	-0.002	%50
15	78	X	0	0
16	1	X	-0.004	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.118	%5
2	29	Y	-0.118	%80
3	29	Y	-0.033	%15
4	29	Y	-0.032	%50
5	29	Y	0	0
6	89	Y	-0.118	%5
7	89	Y	-0.118	%80
8	89	Y	-0.033	%15
9	89	Y	-0.032	%50
10	89	Y	0	0
11	78	Y	-0.118	%5
12	78	Y	-0.118	%80
13	78	Y	-0.033	%15
14	78	Y	-0.032	%50
15	78	Y	0	0
16	1	Y	-0.034	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.01	%5
2	29	Z	-0.01	%80
3	29	Z	-0.012	%15
4	29	Z	-0.01	%50
5	29	Z	0	0
6	89	Z	-0.01	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	Z	-0.01	%80
8	89	Z	-0.012	%15
9	89	Z	-0.01	%50
10	89	Z	0	0
11	78	Z	-0.01	%5
12	78	Z	-0.01	%80
13	78	Z	-0.012	%15
14	78	Z	-0.01	%50
15	78	Z	0	0
16	1	Z	-0.003	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.01	%5
2	29	X	-0.01	%80
3	29	X	-0.012	%15
4	29	X	-0.01	%50
5	29	X	0	0
6	89	X	-0.01	%5
7	89	X	-0.01	%80
8	89	X	-0.012	%15
9	89	X	-0.01	%50
10	89	X	0	0
11	78	X	-0.01	%5
12	78	X	-0.01	%80
13	78	X	-0.012	%15
14	78	X	-0.01	%50
15	78	X	0	0
16	1	X	-0.003	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	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	76	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

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

Member Point Loads (BLC 19 : Maint LL 5)

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

Member Point Loads (BLC 20 : Maint LL 6)

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

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	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	76	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

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

Member Point Loads (BLC 25 : Maint LL 11)

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

Member Point Loads (BLC 26 : Maint LL 12)

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

Member Point Loads (BLC 27 : Maint LL 13)

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

Member Point Loads (BLC 28 : Maint LL 14)

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

Member Point Loads (BLC 29 : Maint LL 15)

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.015	-0.015	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	4	Z	-0.018	-0.018	0	%100
5	5	Z	-0.018	-0.018	0	%100
6	6	Z	-0.01	-0.01	0	%100
7	7	Z	-0.018	-0.018	0	%100
8	8	Z	-0.018	-0.018	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.024	-0.024	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	22	Z	-0.009	-0.009	0	%100
15	23	Z	-0.022	-0.022	0	%100
16	29	Z	-0.009	-0.009	0	%100
17	31	Z	-0.015	-0.015	0	%100
18	32	Z	-0.012	-0.012	0	%100
19	33	Z	-0.012	-0.012	0	%100
20	34	Z	-0.018	-0.018	0	%100
21	35	Z	-0.018	-0.018	0	%100
22	36	Z	-0.018	-0.018	0	%100
23	37	Z	-0.018	-0.018	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.024	-0.024	0	%100
27	45	Z	-0.022	-0.022	0	%100
28	50	Z	-0.015	-0.015	0	%100
29	51	Z	-0.012	-0.012	0	%100
30	52	Z	-0.012	-0.012	0	%100
31	53	Z	-0.018	-0.018	0	%100
32	54	Z	-0.018	-0.018	0	%100
33	55	Z	-0.018	-0.018	0	%100
34	56	Z	-0.018	-0.018	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.024	-0.024	0	%100
38	64	Z	-0.022	-0.022	0	%100
39	69	Z	-0.01	-0.01	0	%100
40	72	Z	-0.009	-0.009	0	%100
41	73	Z	-0.009	-0.009	0	%100
42	76	Z	-0.009	-0.009	0	%100
43	78	Z	-0.009	-0.009	0	%100
44	80	Z	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.009	-0.009	0	%100
46	84	Z	-0.009	-0.009	0	%100
47	87	Z	-0.009	-0.009	0	%100
48	89	Z	-0.009	-0.009	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	-0.015	-0.015	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	4	X	-0.018	-0.018	0	%100
5	5	X	-0.018	-0.018	0	%100
6	6	X	-0.01	-0.01	0	%100
7	7	X	-0.018	-0.018	0	%100
8	8	X	-0.018	-0.018	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.024	-0.024	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	22	X	-0.009	-0.009	0	%100
15	23	X	-0.022	-0.022	0	%100
16	29	X	-0.009	-0.009	0	%100
17	31	X	-0.015	-0.015	0	%100
18	32	X	-0.012	-0.012	0	%100
19	33	X	-0.012	-0.012	0	%100
20	34	X	-0.018	-0.018	0	%100
21	35	X	-0.018	-0.018	0	%100
22	36	X	-0.018	-0.018	0	%100
23	37	X	-0.018	-0.018	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.024	-0.024	0	%100
27	45	X	-0.022	-0.022	0	%100
28	50	X	-0.015	-0.015	0	%100
29	51	X	-0.012	-0.012	0	%100
30	52	X	-0.012	-0.012	0	%100
31	53	X	-0.018	-0.018	0	%100
32	54	X	-0.018	-0.018	0	%100
33	55	X	-0.018	-0.018	0	%100
34	56	X	-0.018	-0.018	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.024	-0.024	0	%100
38	64	X	-0.022	-0.022	0	%100
39	69	X	-0.01	-0.01	0	%100
40	72	X	-0.009	-0.009	0	%100
41	73	X	-0.009	-0.009	0	%100
42	76	X	-0.009	-0.009	0	%100
43	78	X	-0.009	-0.009	0	%100
44	80	X	-0.01	-0.01	0	%100
45	83	X	-0.009	-0.009	0	%100
46	84	X	-0.009	-0.009	0	%100
47	87	X	-0.009	-0.009	0	%100
48	89	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.004	-0.004	0	%100
4	4	Z	-0.007	-0.007	0	%100
5	5	Z	-0.007	-0.007	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.008	-0.008	0	%100
8	8	Z	-0.008	-0.008	0	%100
9	9	Z	-0.003	-0.003	0	%100
10	10	Z	-0.003	-0.003	0	%100
11	11	Z	-0.006	-0.006	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	23	Z	-0.006	-0.006	0	%100
16	29	Z	-0.001	-0.001	0	%100
17	31	Z	-0.004	-0.004	0	%100
18	32	Z	-0.004	-0.004	0	%100
19	33	Z	-0.004	-0.004	0	%100
20	34	Z	-0.007	-0.007	0	%100
21	35	Z	-0.007	-0.007	0	%100
22	36	Z	-0.008	-0.008	0	%100
23	37	Z	-0.008	-0.008	0	%100
24	38	Z	-0.003	-0.003	0	%100
25	39	Z	-0.003	-0.003	0	%100
26	40	Z	-0.006	-0.006	0	%100
27	45	Z	-0.006	-0.006	0	%100
28	50	Z	-0.004	-0.004	0	%100
29	51	Z	-0.004	-0.004	0	%100
30	52	Z	-0.004	-0.004	0	%100
31	53	Z	-0.007	-0.007	0	%100
32	54	Z	-0.007	-0.007	0	%100
33	55	Z	-0.008	-0.008	0	%100
34	56	Z	-0.008	-0.008	0	%100
35	57	Z	-0.003	-0.003	0	%100
36	58	Z	-0.003	-0.003	0	%100
37	59	Z	-0.006	-0.006	0	%100
38	64	Z	-0.006	-0.006	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

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

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	X	-0.007	-0.007	0	%100
5	5	X	-0.007	-0.007	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.008	-0.008	0	%100
8	8	X	-0.008	-0.008	0	%100
9	9	X	-0.003	-0.003	0	%100
10	10	X	-0.003	-0.003	0	%100
11	11	X	-0.006	-0.006	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	23	X	-0.006	-0.006	0	%100
16	29	X	-0.001	-0.001	0	%100
17	31	X	-0.004	-0.004	0	%100
18	32	X	-0.004	-0.004	0	%100
19	33	X	-0.004	-0.004	0	%100
20	34	X	-0.007	-0.007	0	%100
21	35	X	-0.007	-0.007	0	%100
22	36	X	-0.008	-0.008	0	%100
23	37	X	-0.008	-0.008	0	%100
24	38	X	-0.003	-0.003	0	%100
25	39	X	-0.003	-0.003	0	%100
26	40	X	-0.006	-0.006	0	%100
27	45	X	-0.006	-0.006	0	%100
28	50	X	-0.004	-0.004	0	%100
29	51	X	-0.004	-0.004	0	%100
30	52	X	-0.004	-0.004	0	%100
31	53	X	-0.007	-0.007	0	%100
32	54	X	-0.007	-0.007	0	%100
33	55	X	-0.008	-0.008	0	%100
34	56	X	-0.008	-0.008	0	%100
35	57	X	-0.003	-0.003	0	%100
36	58	X	-0.003	-0.003	0	%100
37	59	X	-0.006	-0.006	0	%100
38	64	X	-0.006	-0.006	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

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

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.0005	-0.0005	0	%100
10	10	Z	-0.0005	-0.0005	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0003	-0.0003	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	22	Z	-0.0003	-0.0003	0	%100
15	23	Z	-0.001	-0.001	0	%100
16	29	Z	-0.0003	-0.0003	0	%100
17	31	Z	-0.0009	-0.0009	0	%100
18	32	Z	-0.0008	-0.0008	0	%100
19	33	Z	-0.0008	-0.0008	0	%100
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0005	-0.0005	0	%100
25	39	Z	-0.0005	-0.0005	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	45	Z	-0.001	-0.001	0	%100
28	50	Z	-0.0009	-0.0009	0	%100
29	51	Z	-0.0008	-0.0008	0	%100
30	52	Z	-0.0008	-0.0008	0	%100
31	53	Z	-0.001	-0.001	0	%100
32	54	Z	-0.001	-0.001	0	%100
33	55	Z	-0.001	-0.001	0	%100
34	56	Z	-0.001	-0.001	0	%100
35	57	Z	-0.0005	-0.0005	0	%100
36	58	Z	-0.0005	-0.0005	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	64	Z	-0.001	-0.001	0	%100
39	69	Z	-0.0003	-0.0003	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	76	Z	-0.0003	-0.0003	0	%100
43	78	Z	-0.0003	-0.0003	0	%100
44	80	Z	-0.0003	-0.0003	0	%100
45	83	Z	-0.0003	-0.0003	0	%100
46	84	Z	-0.0003	-0.0003	0	%100
47	87	Z	-0.0003	-0.0003	0	%100
48	89	Z	-0.0003	-0.0003	0	%100

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

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	18	X	-0.0003	-0.0003	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	22	X	-0.0003	-0.0003	0	%100
15	23	X	-0.001	-0.001	0	%100
16	29	X	-0.0003	-0.0003	0	%100
17	31	X	-0.0009	-0.0009	0	%100
18	32	X	-0.0008	-0.0008	0	%100
19	33	X	-0.0008	-0.0008	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.0005	-0.0005	0	%100
25	39	X	-0.0005	-0.0005	0	%100
26	40	X	-0.002	-0.002	0	%100
27	45	X	-0.001	-0.001	0	%100
28	50	X	-0.0009	-0.0009	0	%100
29	51	X	-0.0008	-0.0008	0	%100
30	52	X	-0.0008	-0.0008	0	%100
31	53	X	-0.001	-0.001	0	%100
32	54	X	-0.001	-0.001	0	%100
33	55	X	-0.001	-0.001	0	%100
34	56	X	-0.001	-0.001	0	%100
35	57	X	-0.0005	-0.0005	0	%100
36	58	X	-0.0005	-0.0005	0	%100
37	59	X	-0.002	-0.002	0	%100
38	64	X	-0.001	-0.001	0	%100
39	69	X	-0.0003	-0.0003	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	76	X	-0.0003	-0.0003	0	%100
43	78	X	-0.0003	-0.0003	0	%100
44	80	X	-0.0003	-0.0003	0	%100
45	83	X	-0.0003	-0.0003	0	%100
46	84	X	-0.0003	-0.0003	0	%100
47	87	X	-0.0003	-0.0003	0	%100
48	89	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.009	-0.009	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.006	-0.006	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.005	-0.005	0	%100
10	10	Y	-0.005	-0.005	0	%100
11	11	Y	-0.012	-0.012	0	%100
12	18	Y	-0.005	-0.005	0	%100
13	19	Y	-0.005	-0.005	0	%100
14	22	Y	-0.005	-0.005	0	%100
15	23	Y	-0.012	-0.012	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	29	Y	-0.005	-0.005	0	%100
17	31	Y	-0.009	-0.009	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.005	-0.005	0	%100
25	39	Y	-0.005	-0.005	0	%100
26	40	Y	-0.012	-0.012	0	%100
27	45	Y	-0.012	-0.012	0	%100
28	50	Y	-0.009	-0.009	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.005	-0.005	0	%100
36	58	Y	-0.005	-0.005	0	%100
37	59	Y	-0.012	-0.012	0	%100
38	64	Y	-0.012	-0.012	0	%100
39	69	Y	-0.006	-0.006	0	%100
40	72	Y	-0.005	-0.005	0	%100
41	73	Y	-0.005	-0.005	0	%100
42	76	Y	-0.005	-0.005	0	%100
43	78	Y	-0.005	-0.005	0	%100
44	80	Y	-0.006	-0.006	0	%100
45	83	Y	-0.005	-0.005	0	%100
46	84	Y	-0.005	-0.005	0	%100
47	87	Y	-0.005	-0.005	0	%100
48	89	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.0007	-0.0007	0	%100
3	3	Z	-0.0007	-0.0007	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0009	-0.0009	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	-0.0009	-0.0009	0	%100
13	19	Z	-0.0009	-0.0009	0	%100
14	22	Z	-0.0009	-0.0009	0	%100
15	23	Z	-0.001	-0.001	0	%100
16	29	Z	-0.0009	-0.0009	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0007	-0.0007	0	%100
19	33	Z	-0.0007	-0.0007	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	45	Z	-0.001	-0.001	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.0007	-0.0007	0	%100
30	52	Z	-0.0007	-0.0007	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	64	Z	-0.001	-0.001	0	%100
39	69	Z	-0.0009	-0.0009	0	%100
40	72	Z	-0.0009	-0.0009	0	%100
41	73	Z	-0.0009	-0.0009	0	%100
42	76	Z	-0.0009	-0.0009	0	%100
43	78	Z	-0.0009	-0.0009	0	%100
44	80	Z	-0.0009	-0.0009	0	%100
45	83	Z	-0.0009	-0.0009	0	%100
46	84	Z	-0.0009	-0.0009	0	%100
47	87	Z	-0.0009	-0.0009	0	%100
48	89	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.0007	-0.0007	0	%100
3	3	X	-0.0007	-0.0007	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0009	-0.0009	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	-0.0009	-0.0009	0	%100
13	19	X	-0.0009	-0.0009	0	%100
14	22	X	-0.0009	-0.0009	0	%100
15	23	X	-0.001	-0.001	0	%100
16	29	X	-0.0009	-0.0009	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0007	-0.0007	0	%100
19	33	X	-0.0007	-0.0007	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	45	X	-0.001	-0.001	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.0007	-0.0007	0	%100
30	52	X	-0.0007	-0.0007	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	64	X	-0.001	-0.001	0	%100
39	69	X	-0.0009	-0.0009	0	%100
40	72	X	-0.0009	-0.0009	0	%100
41	73	X	-0.0009	-0.0009	0	%100
42	76	X	-0.0009	-0.0009	0	%100
43	78	X	-0.0009	-0.0009	0	%100
44	80	X	-0.0009	-0.0009	0	%100
45	83	X	-0.0009	-0.0009	0	%100
46	84	X	-0.0009	-0.0009	0	%100
47	87	X	-0.0009	-0.0009	0	%100
48	89	X	-0.0009	-0.0009	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	-0.01	-0.02	0.231	2.309
2	38	Y	-0.035	-0.016	0	1.155
3	38	Y	-0.016	0.0006164	1.155	2.309
4	39	Y	-0.018	-0.016	0.231	2.309
5	57	Y	-0.018	-0.016	0	2.078
6	58	Y	0.0006163	-0.016	0	1.155
7	58	Y	-0.016	-0.035	1.155	2.309
8	9	Y	-0.026	-0.02	0	1.039
9	9	Y	-0.02	-0.014	1.039	2.078

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	-0.014	-0.011	0	1.039
2	9	Y	-0.011	-0.008	1.039	2.078
3	10	Y	-0.005	-0.011	0.231	2.309
4	38	Y	-0.017	-0.008	0	1.155
5	38	Y	-0.008	0.0003082	1.155	2.309
6	39	Y	-0.009	-0.008	0.231	2.309
7	57	Y	-0.009	-0.008	0	2.078
8	58	Y	0.0003082	-0.008	0	1.155
9	58	Y	-0.008	-0.017	1.155	2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	22	23	24	25	Y	Two Way	-0.01
2	72	73	74	75	Y	Two Way	-0.01
3	101	102	103	104	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	22	23	24	25	Y	Two Way	-0.005
2	72	73	74	75	Y	Two Way	-0.005
3	101	102	103	104	Y	Two Way	-0.005

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

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

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

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

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	46	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

Basic Load Cases

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

Basic Load Cases (Continued)

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

Load Combinations

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

Load Combinations (Continued)

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

Load Combinations (Continued)

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

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	0.931	5	1.734	14	1.013	2	3.552	2	0.912	11	0.34	95
2		min	-0.933	11	0.043	8	-1.137	8	-0.426	8	-0.917	5	-0.184	91
3	53	max	0.823	5	1.64	18	1.05	2	0.137	13	1.034	3	-0.019	12
4		min	-0.929	11	0.178	12	-0.985	8	-1.72	43	-1.036	9	-2.93	18
5	82	max	0.877	5	1.647	22	1.167	2	0.087	3	1.06	7	2.823	46
6		min	-0.769	11	0.18	4	-1.108	8	-1.848	69	-1.064	13	-0.027	4
7	Totals:	max	2.632	5	4.646	50	3.23	2						
8		min	-2.632	11	2.396	8	-3.23	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	0.467	0	13	0.119	0	y	73	70.173	73.278	8.24	8.24	2.016	H1-1b
2	2	C3.38X2.06X0.188	0.322	2.592	15	0.06	0.351	y	63	35.676	43.394	1.694	4.483	1.629	H1-1b
3	3	C3.38X2.06X0.188	0.319	0	51	0.063	2.241	y	44	35.676	43.394	1.703	4.483	1.621	H1-1b
4	4	PL3/8"x6	0.067	0	2	0.15	0	y	62	68.997	72.9	0.57	9.113	2.418	H1-1b
5	5	PL3/8"x6	0.071	0	3	0.124	0	y	38	68.997	72.9	0.57	9.113	1.888	H1-1b
6	6	PIPE_3.5x0.165	0.066	6.75	7	0.031	2.833		5	45.872	71.57	6.336	6.336	1.994	H1-1b
7	7	PL3/8"x6	0.107	0.208	8	0.19	0.208	y	50	70.882	72.9	0.57	9.113	1.659	H1-1b
8	8	PL3/8"x6	0.114	0	13	0.197	0	y	51	70.882	72.9	0.57	9.113	3	H1-1b
9	9	L2x2x4	0.216	0	8	0.03	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.188	2.309	8	0.034	0	y	63	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.276	1.604	8	0.078	0	z	62	75.414	118.523	1.798	13.838	1.262	H2-1
12	18	PIPE_2.88x0.203	0.094	5.667	5	0.033	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
13	19	PIPE_2.88x0.203	0.114	2.333	9	0.037	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
14	22	PIPE_2.88x0.203	0.117	7.812	13	0.118	8.854		2	24.131	70.68	5.029	5.029	2.443	H1-1b
15	23	L6.63x4.33x.25	0.161	3.25	6	0.019	3.25	z	12	51.794	86.751	2.311	6.976	1.5	H2-1
16	29	PIPE_2.88x0.203	0.106	2.333	7	0.035	2.333		8	35.519	70.68	5.029	5.029	3	H1-1b
17	31	HSS4X4X2	0.44	0	7	0.116	0	y	64	70.173	73.278	8.24	8.24	2.028	H1-1b
18	32	C3.38X2.06X0.188	0.321	2.592	54	0.059	0.351	y	68	35.676	43.394	1.703	4.483	1.619	H1-1b
19	33	C3.38X2.06X0.188	0.318	0	56	0.063	2.241	y	48	35.676	43.394	1.703	4.483	1.619	H1-1b
20	34	PL3/8"x6	0.058	0	6	0.148	0	y	66	68.997	72.9	0.57	9.113	2.377	H1-1b
21	35	PL3/8"x6	0.07	0	7	0.123	0	y	42	68.997	72.9	0.57	9.113	1.829	H1-1b
22	36	PL3/8"x6	0.097	0.208	13	0.19	0.208	y	53	70.882	72.9	0.57	9.113	2.142	H1-1b
23	37	PL3/8"x6	0.094	0	5	0.195	0	y	55	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2x2x4	0.174	0	11	0.03	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.167	2.309	13	0.035	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.219	1.604	12	0.078	0	z	67	75.414	118.523	1.798	13.967	1.291	H2-1
27	45	L6.63x4.33x.25	0.177	0	3	0.021	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.456	0	9	0.117	0	y	68	70.173	73.278	8.24	8.24	2.017	H1-1b
29	51	C3.38X2.06X0.188	0.321	2.592	57	0.06	0.351	y	72	35.676	43.394	1.703	4.483	1.618	H1-1b
30	52	C3.38X2.06X0.188	0.318	0	60	0.063	2.241	y	39	35.676	43.394	1.703	4.483	1.621	H1-1b
31	53	PL3/8"x6	0.066	0.164	3	0.15	0	y	70	68.997	72.9	0.57	9.113	1.687	H1-1b
32	54	PL3/8"x6	0.058	0	11	0.122	0	y	45	68.997	72.9	0.57	9.113	1.813	H1-1b
33	55	PL3/8"x6	0.086	0.085	2	0.19	0.208	y	57	70.882	72.9	0.57	9.113	1.868	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
34	56	PL3/8"x6	0.115	0	9	0.196	0	y	59	70.882	72.9	0.57	9.113	3	H1-1b
35	57	L2x2x4	0.208	0	3	0.03	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.162	2.309	4	0.034	0	y	72	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.245	1.604	3	0.077	0	z	70	75.414	118.523	1.798	14.238	1.356	H2-1
38	64	L6.63x4.33x.25	0.2	3.25	2	0.024	3.25	z	8	51.794	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE_3.5x0.165	0.069	1.25	2	0.04	4		9	45.872	71.57	6.336	6.336	1.792	H1-1b
40	72	PIPE_2.88x0.203	0.117	5.667	9	0.038	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE_2.88x0.203	0.134	2.333	2	0.037	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
42	76	PIPE_2.88x0.203	0.115	2.188	13	0.095	2.188		13	24.131	70.68	5.029	5.029	2.291	H1-1b
43	78	PIPE_2.88x0.203	0.095	5.667	9	0.037	2.333		13	35.519	70.68	5.029	5.029	3	H1-1b
44	80	PIPE_3.5x0.165	0.065	6.75	2	0.04	2.833		13	45.872	71.57	6.336	6.336	1.607	H1-1b
45	83	PIPE_2.88x0.203	0.116	5.667	13	0.043	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
46	84	PIPE_2.88x0.203	0.109	2.333	6	0.028	5.667		5	35.519	70.68	5.029	5.029	3	H1-1b
47	87	PIPE_2.88x0.203	0.11	7.813	9	0.108	8.854		9	24.131	70.68	5.029	5.029	2.519	H1-1b
48	89	PIPE_2.88x0.203	0.11	5.667	2	0.027	5.667		4	35.519	70.68	5.029	5.029	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	**149540.003.01 - E-Prospect,**		**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	:	496	ft	[ASCE7 Hazard Tool]
Tower Height		:	162.00	ft	
Mount Elevation		:	100.00	ft	
Antenna Elevation		:	100.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	118	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	:	0.99		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.98		[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}	:	1.12	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.106		[Sec. 2.7.7.1]
Amplification	A_s	:	1.469136		[Sec. 16.7]

	q_z	:	32.87	psf

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-Ice} (ft^2)	EPA_{T-Ice} (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.06	0.04	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.06	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.06	0.04	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.06	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.13	0.05	0.03	0.01
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.06	0.04	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.06	0.03	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	2.03	1.20	0.94	1.68	1.36	2.19	0.03	0.06	0.01	0.01

PROJECT	**149540.003.01 - E-Prospect, 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	:	1.105	k
Vertical Shear	:	1.67	k
Horizontal Shear	:	0.874	k
Torsion	:	0.191	k.ft
Moment from Horizontal Forces	:	0.879	k.ft
Moment from Vertical Forces	:	0.443	k.ft

Bolt Parameters

Bolt Grade	:	A307	
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	:	1.88	k
Force from Horz. Moment	:	1.59	k
Force from Vert. Moment	:	0.80	k
Shear Load / Bolt	:	0.47	k
Tension Load / Bolt	:	0.28	k
Resultant from Moments / Bolt	:	0.89	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**11.27%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	24.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	5.53	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**13.53%**		**OKAY**
Unity Check, Combined	:	**24.80%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**1.36%**		**OKAY**

PROJECT	**149540.003.01 - E-Prospect, 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

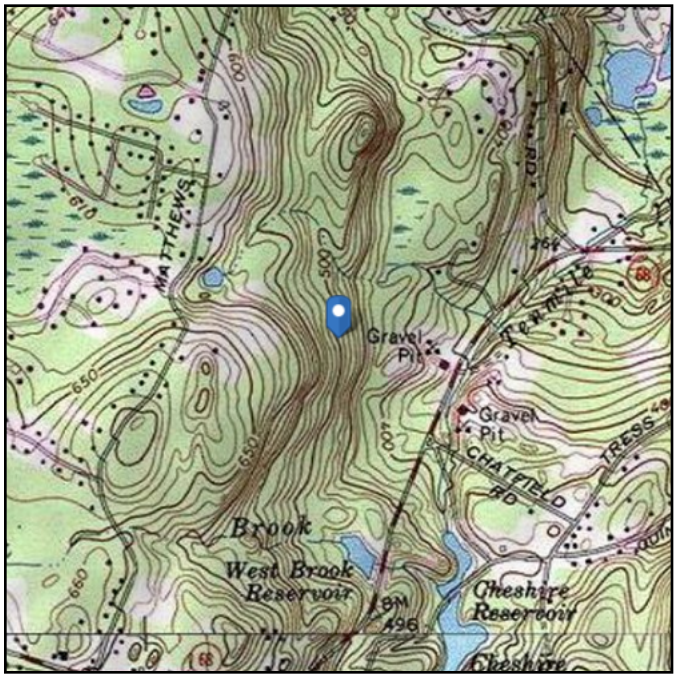
Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**0.80%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**11.64%**		**OKAY**
Available Block Shear, ΦRn	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	**2.44%**		**OKAY**

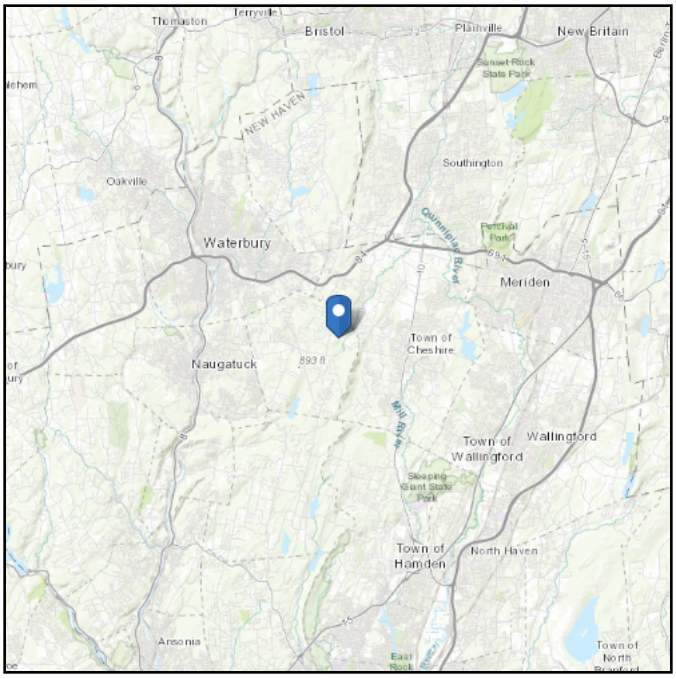
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 496.14 ft (NAVD 88)
Latitude: 41.50788
Longitude: -72.951





Wind

Results:

Wind Speed:	118 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: Tue Nov 09 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.

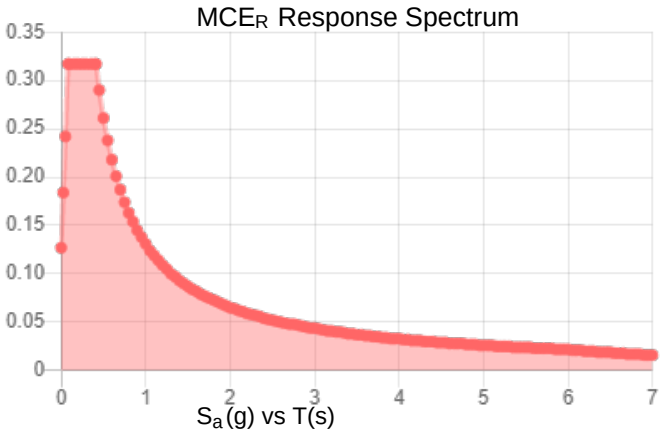
Seismic

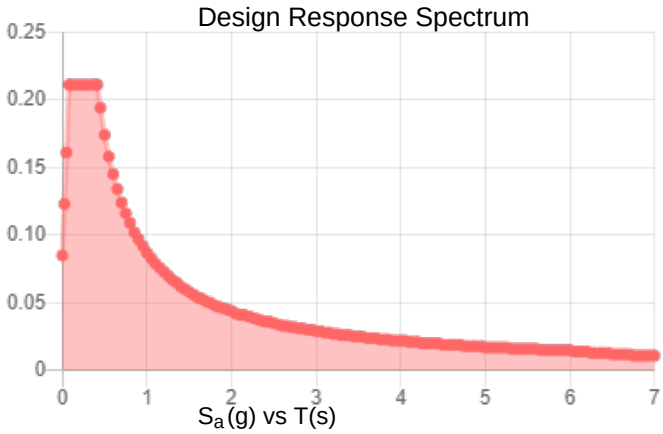
Site Soil Class: D - Default (see Section 11.4.3)

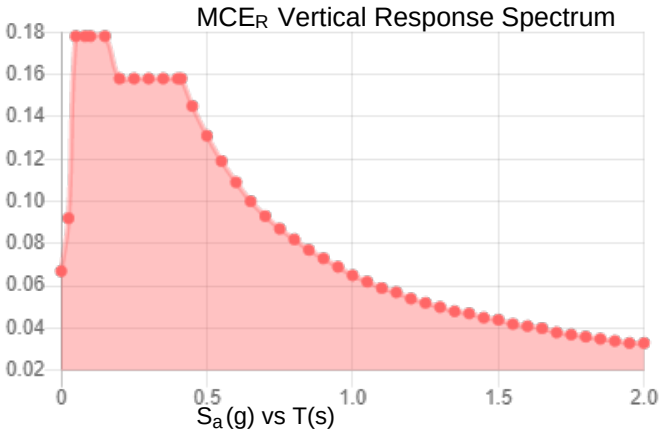
Results:

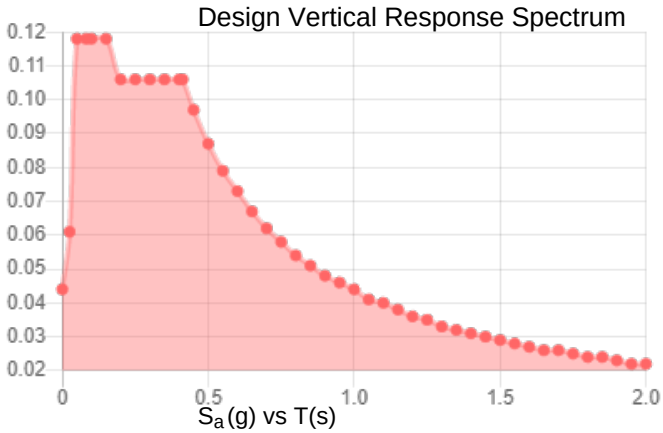
S_S :	0.198	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.11
F_v :	2.4	PGA_M :	0.173
S_{MS} :	0.317	F_{PGA} :	1.581
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.211	C_v :	0.7

Seismic Design Category B









Data Accessed: Tue Nov 09 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:	Tue Nov 09 2021

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

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

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOHVN00114B

SBA - Cheshire Road
229 Cheshire Road
Prospect, CT 06712

May 3, 2022

Fox Hill Telecom Project Number: 220970

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**15.45 %**

Fox Hill Telecom

May 3, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00114B – SBA - Cheshire Road**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **229 Cheshire Road, Prospect, 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 **229 Cheshire Road, Prospect, 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	100
B	1	JMA MX08FRO665-21	100
C	1	JMA MX08FRO665-21	100

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	9.18
						Sector A Composite MPE%	**9.18**
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	9.18
						Sector B Composite MPE%	**9.18**
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	9.18
						Sector C Composite MPE%	**9.18**

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	**9.18 %**
Sprint	0.02 %
MetroPCS	0.46 %
Verizon Wireless	1.52 %
AT&T	3.96 %
T-Mobile	0.31 %
Site Total MPE %:	**15.45 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	9.18 %
Dish Sector B Total:	9.18 %
Dish Sector C Total:	9.18 %
Site Total:	15.45 %

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	100	13.98	n71 (600 MHz)	400	3.49%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	100	26.83	n70 (AWS-4 / 1995-2020)	1000	2.68%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	100	30.10	n66 (AWS-4 / 2180-2200)	1000	3.01%
						Total:	**9.18%**

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:	9.18 %
Sector B:	9.18 %
Sector C:	9.18 %
Dish Maximum Total (per sector):	9.18 %
Site Total:	15.45 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.45 %** 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

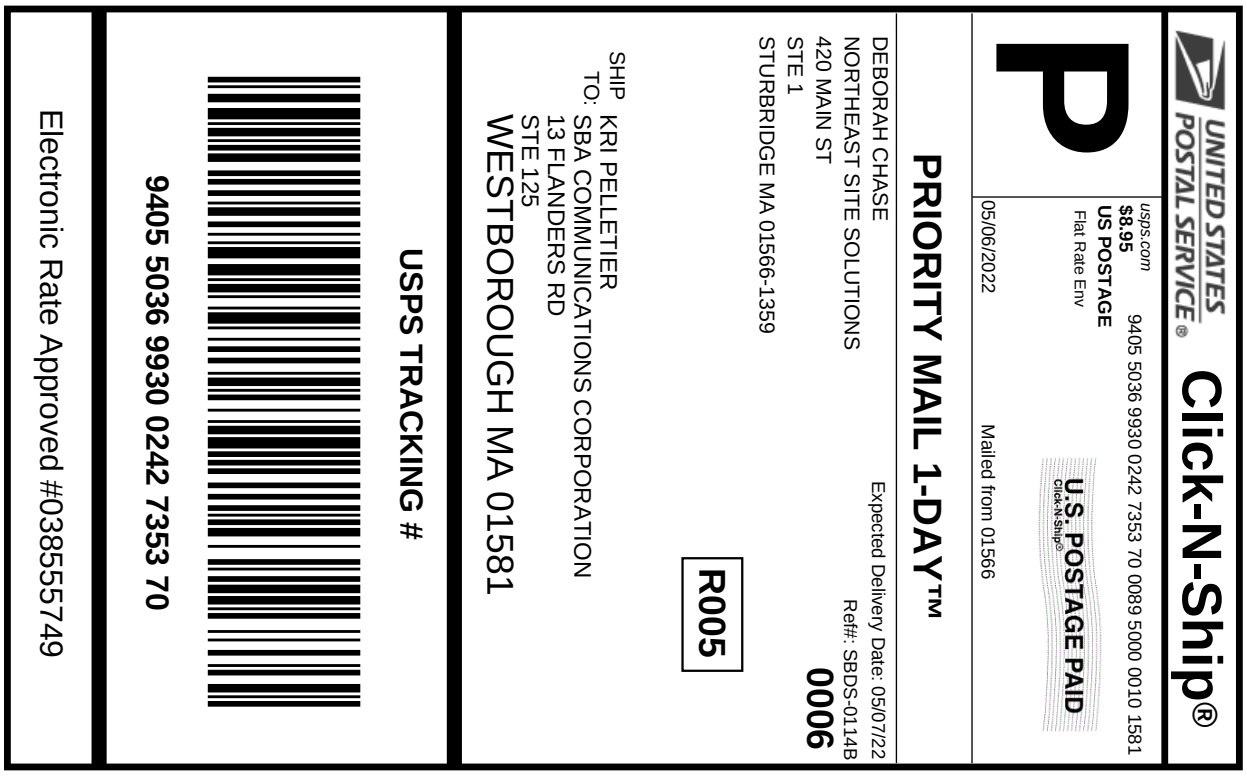
SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

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

SBA
By: _____ Date: _____

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0242 7353 70

Trans. #:	562974250
Print Date:	05/06/2022
Ship Date:	05/06/2022
Expected Delivery Date:	05/07/2022

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

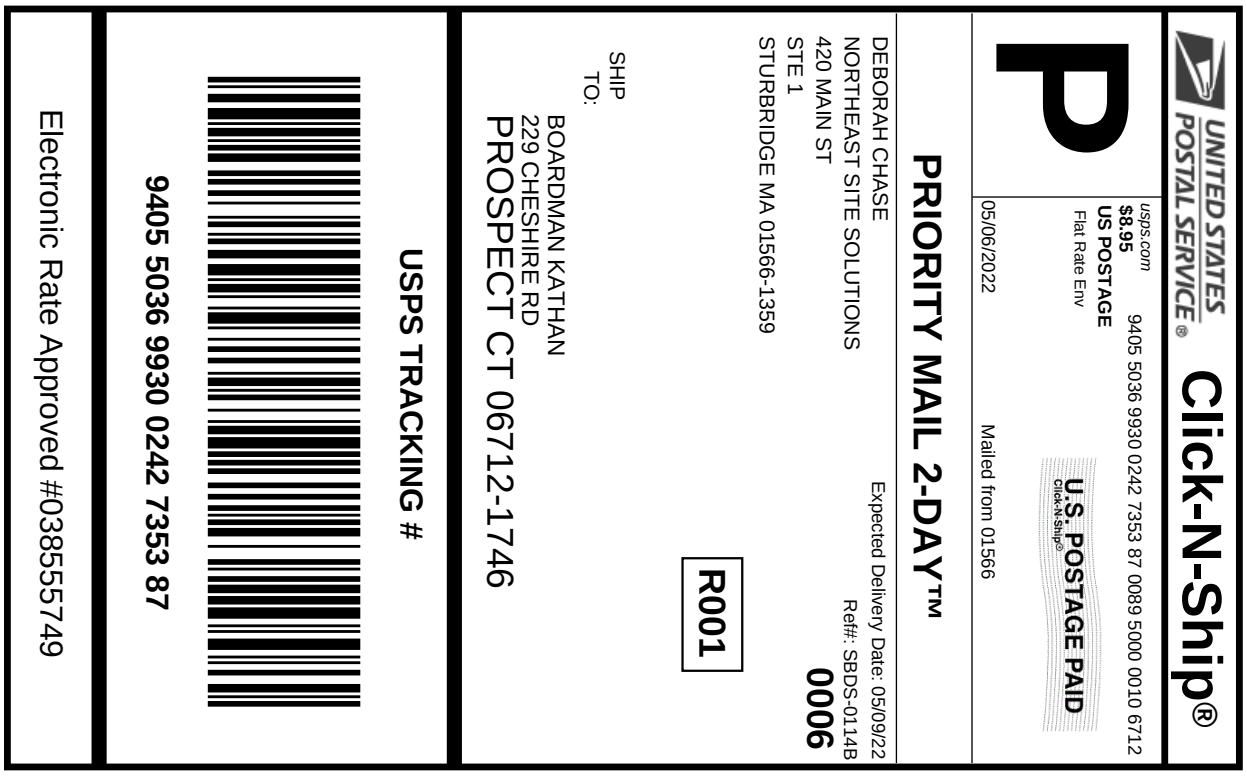
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-0114B

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

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0242 7353 87

Trans. #:	562974250
Print Date:	05/06/2022
Ship Date:	05/06/2022
Expected Delivery Date:	05/09/2022

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

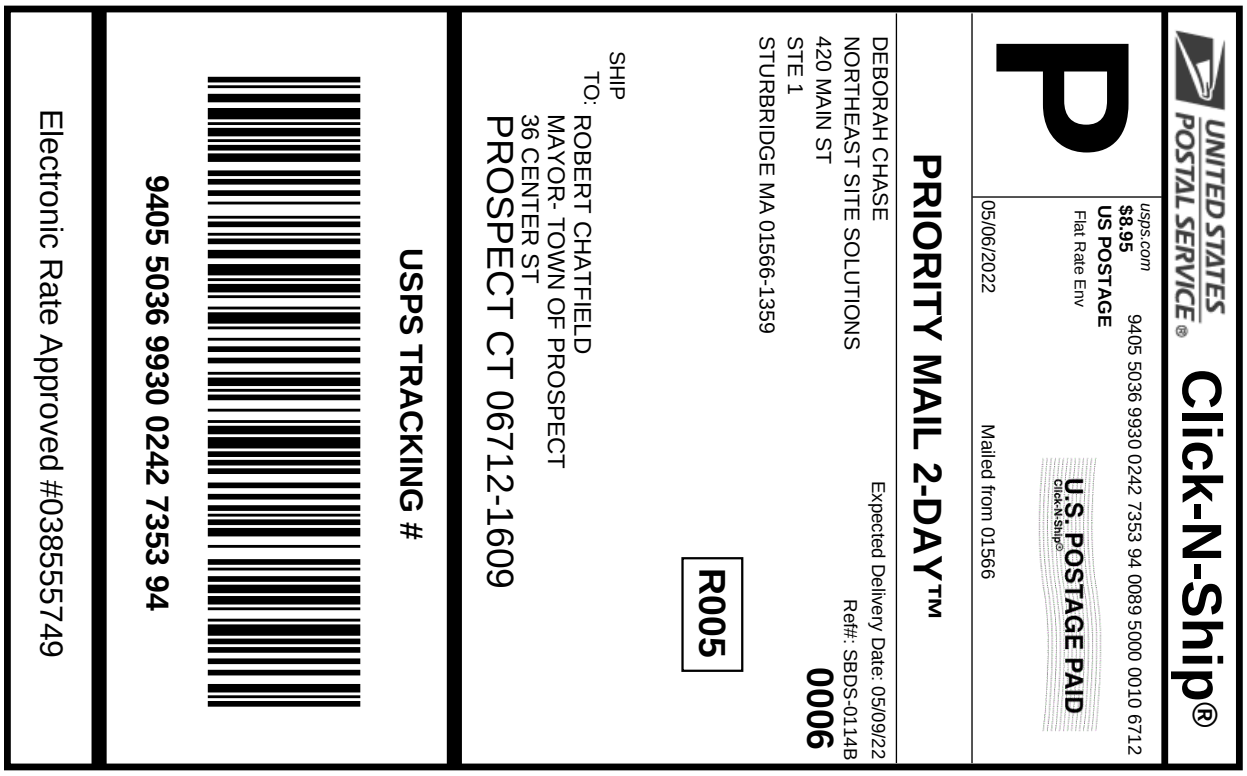
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-0114B

To: BOARDMAN KATHAN
229 CHESHIRE RD
PROSPECT CT 06712-1746

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0242 7353 94

Trans. #:	562974250
Print Date:	05/06/2022
Ship Date:	05/06/2022
Expected Delivery Date:	05/09/2022

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

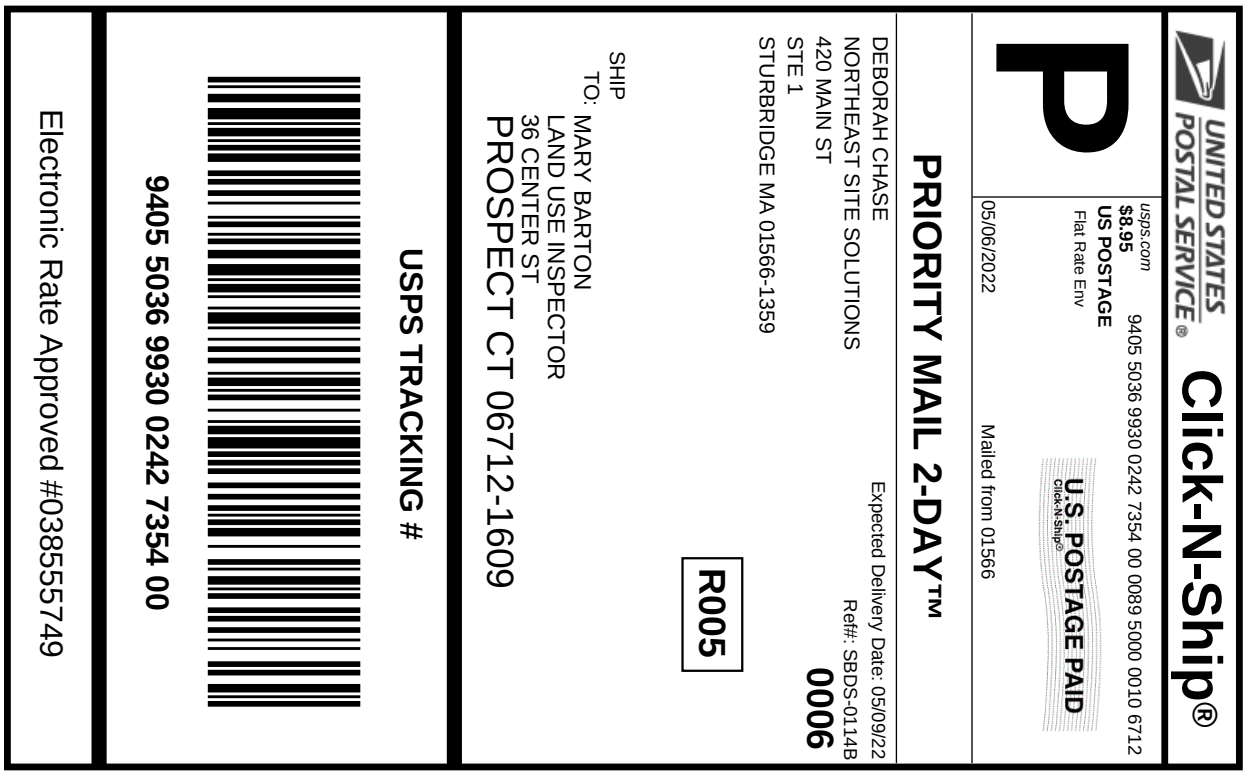
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-0114B

To: ROBERT CHATFIELD
MAYOR- TOWN OF PROSPECT
36 CENTER ST
PROSPECT CT 06712-1609

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0242 7354 00

Trans. #:	562974250
Print Date:	05/06/2022
Ship Date:	05/06/2022
Expected Delivery Date:	05/09/2022

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-0114B

To: MARY BARTON
LAND USE INSPECTOR
36 CENTER ST
PROSPECT CT 06712-1609

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

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

BOHVN 000.14B

UNITED STATES POSTAL SERVICE.

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

05/09/2022 09:59 AM

Product	Qty	Unit Price	Price
Prepaid Mail Prospect, CT 06712 Weight: 0 lb 8.00 oz Acceptance Date: Mon 05/09/2022 Tracking #: 9405 5036 9930 0242 7353 87	1		$0.00
Prepaid Mail Prospect, CT 06712 Weight: 0 lb 8.00 oz Acceptance Date: Mon 05/09/2022 Tracking #: 9405 5036 9930 0242 7353 94	1		$0.00
Prepaid Mail Prospect, CT 06712 Weight: 0 lb 8.10 oz Acceptance Date: Mon 05/09/2022 Tracking #: 9405 5036 9930 0242 7354 00	1		$0.00
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Mon 05/09/2022 Tracking #: 9405 5036 9930 0242 7353 70	1		$0.00
Grand Total:			$0.00

****
Every household in the U.S. is now
eligible to receive a second set
of 4 free test kits.
Go to www.covidtests.gov