Filed by:
G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbasite.com

December 27, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
225 Grist Mill Road, Simsbury CT 06070
Latitude: 41.866708
Longitude: -72.815772
Dish Wireless Site# BOBDL00126A

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 225 Grist Mill Road, Simsbury, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 110-foot level of the existing 150-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by B+T Group, dated October 19, 2021 Exhibit 10. Also included is a structural analysis prepared by TES, dated August 24, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 8. This facility was approved by the Connecticut Siting Council under Socket No. 203, November 7, 2001. Please see attached Exhibit 6.

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 Eric Wellman, First Selectman for the Town of Simsbury, Michael Glidden, Dir. Of Planning & Community Development, as well as, to the property owner Ensign-Bickford Realty Corp. Separate notice is not being sent to the Tower owner as it belongs to SBA.

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 tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 110-feet.

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

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. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 31.11% as evidenced by Exhibit 7.

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 indicates 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 8.

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 support tower in Simsbury. 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 2, 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 110-foot level of the existing 150-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 7, 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 guyed 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 Westbrook.

Sincerely,

Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

Attachments:

cc: Eric Wellman, First Selectman / with attachments
Town of Simsbury, 933 Hopmeadow St., Simsbury, CT 06070
Michael Glidden, Dir. Of Planning & Community Development / with attachments
Town of Simsbury, 933 Hopmeadow St., Simsbury, CT 06070
Ensign-Bickford Realty Corp. / with attachments
999 17th St., Suite 901, Denver, CO 80202 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	CSC Docket No. 203 11/7/01
Exhibit 7	EME Report	EBI Consulting 12/20/21
Exhibit 8	Structural Analysis	TES 8/24/21
Exhibit 9	Mount Analysis	B+T Group 8/26/21
Exhibit 10	Construction Drawings	B+T Group 10/19/21

EXHIBIT 1

Copy of check

EXHIBIT 2
Letter of Intent

December 27, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: **225 Grist Mill Road, Simsbury, CT**
Dish Wireless Site No: BOBDL00126A
Site No: CT10022-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **225 Grist Mill Road, Simsbury, Canton, CT**.

SBA Towers II, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 110' for antennas and associated equipment.

Thank you,

Rick Woods
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

508.251.0720 x3800 + T
508.366.2610 + F
508.614.0389 + C
rwoods@sbasite.com

EXHIBIT 3

Fedex Labels

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
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Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

FedEx

TRACK ANOTHER SHIPMENT

775603336907

ADD NICKNAME

ON TIME

Scheduled delivery:
Tuesday, 12/28/2021 before 11:30 am

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council

Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Monday, December 27, 2021

2:46 PM	FRAMINGHAM, MA	Picked up
1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
10:03 AM		Shipment information sent to FedEx

Expand History

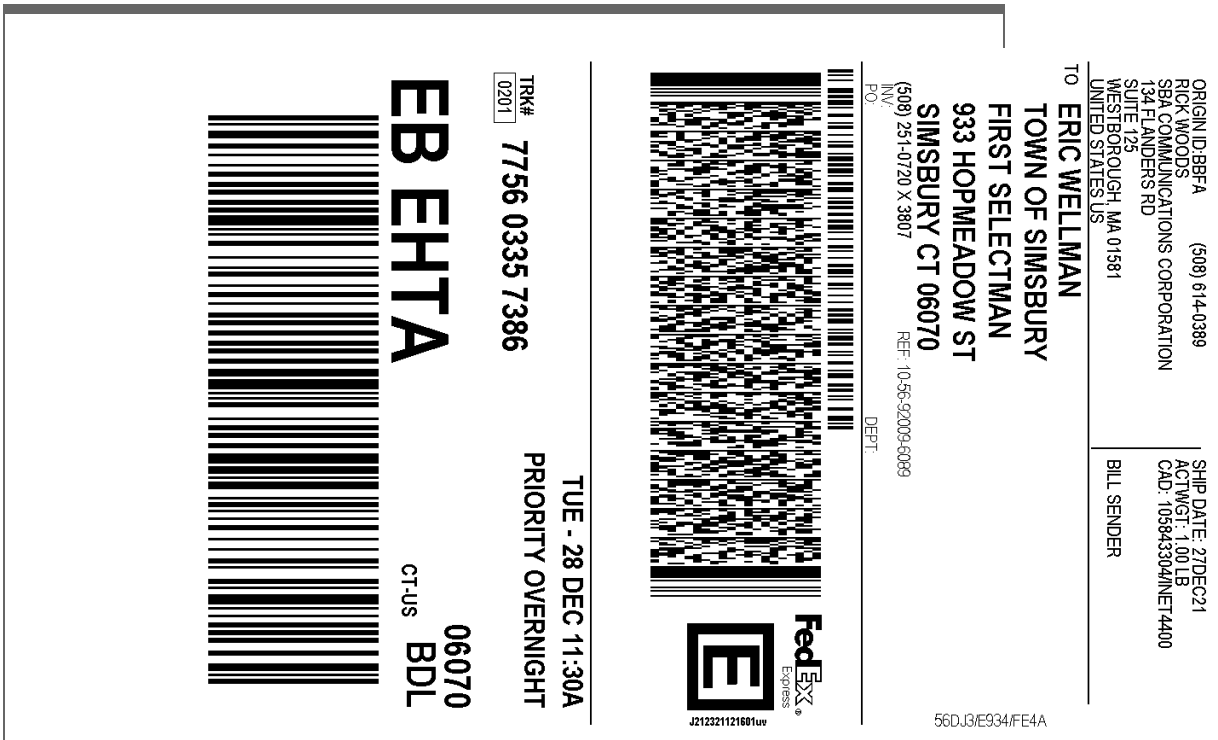
Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT

775603336907	FedEx Priority Overnight	2 lbs / 0.91 kgs
1	2 lbs / 0.91 kgs	Shipper
10-56-92009-6089	FedEx Box	Deliver Weekday
12/27/21	12/28/21 before 11:30 am	12/28/21 before 11:30 am

All (30) Inbound (8) Outbound (22) Watch list (0)

Shipping Tracking Printing Services Locations Support



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775603357386

ADD NICKNAME

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Scheduled delivery:
Tuesday, 12/28/2021 before 11:30 am

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FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Eric Wellman
Town of Simsbury
First Selectman
933 Hopmeadow St
SIMSBURY, CT US 06070
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Monday, December 27, 2021

2:47 PM	FRAMINGHAM, MA	Picked up
1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
10:05 AM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT

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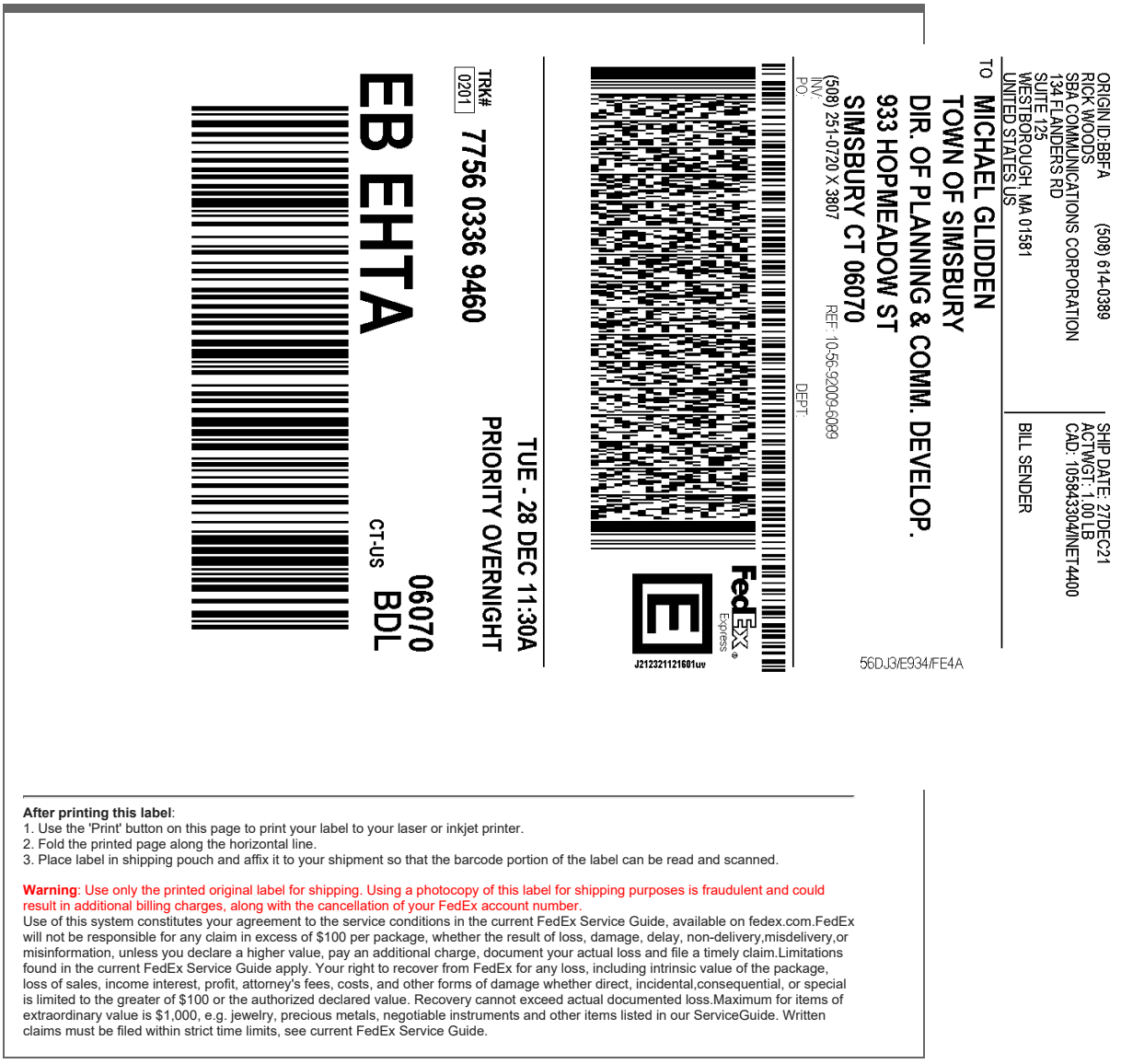
1	1 lbs / 0.45 kgs	Shipper
10-56-92009-6089	FedEx Pak	Deliver Weekday
12/27/21	12/28/21 before 11:30 am	12/28/21 before 11:30 am

All (30) Inbound (8) Outbound (22) Watch list (0)

Shipping Tracking Printing Services Locations Support



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TRACK ANOTHER SHIPMENT

775603369460

ADD NICKNAME

ON TIME

Scheduled delivery:
Tuesday, 12/28/2021 before 11:30 am

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Michael Glidden
Town of Simsbury

Dir. of Planning & Comm. Develop.
933 Hopmeadow St
SIMSBURY, CT US 06070
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Monday, December 27, 2021

1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
10:06 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	**SERVICE**	**WEIGHT**
775603369460	FedEx Priority Overnight	1 lbs / 0.45 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	1 lbs / 0.45 kgs	Shipper

Shipping Tracking Printing Services Locations Support

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FedEx

TRACK ANOTHER SHIPMENT

775603387140

ADD NICKNAME

ON TIME

Scheduled delivery:
Tuesday, 12/28/2021 before 11:30 am

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Ensign-Bickford Realty Corp
999 17th St
Suite 901
DENVER, CO US 80202
508-251-0720

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Monday, December 27, 2021

2:47 PM	FRAMINGHAM, MA	Picked up
1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
10:07 AM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER **SERVICE** **WEIGHT**

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1	1 lbs / 0.45 kgs	Shipper
10-56-92009-6089	FedEx Pak	Deliver Weekday
12/27/21	12/28/21 before 11:30 am	12/28/21 before 11:30 am

All (30) Inbound (8) Outbound (22) Watch list (0)

EXHIBIT 4

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 2017.

SIMSBURY
CONNECTICUT

Information on the Property Records for the Municipality of Simsbury was last updated on 11/10/2021.

Parcel Information

Location:	225 GRIST MILL ROAD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	30569027	Map Block Lot:	F11 103 005	Acres:	0.23
490 Acres:	0.00	Zone:	I-2	Volume / Page:	0294/0600
Developers Map / Lot:		Census:			

Value Information

	Appraised Value	Assessed Value
Land	490,188	343,130
Buildings	0	0
Detached Outbuildings	120,000	84,000

	Appraised Value	Assessed Value
Total	610,188	427,130

Owner's Information

Owner's Data
ENSIGN-BICKFORD REALTY CORPORATION P O BOX 711 SIMSBURY CT 06070

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Cell Tower	0000			1

Owner History - Sales

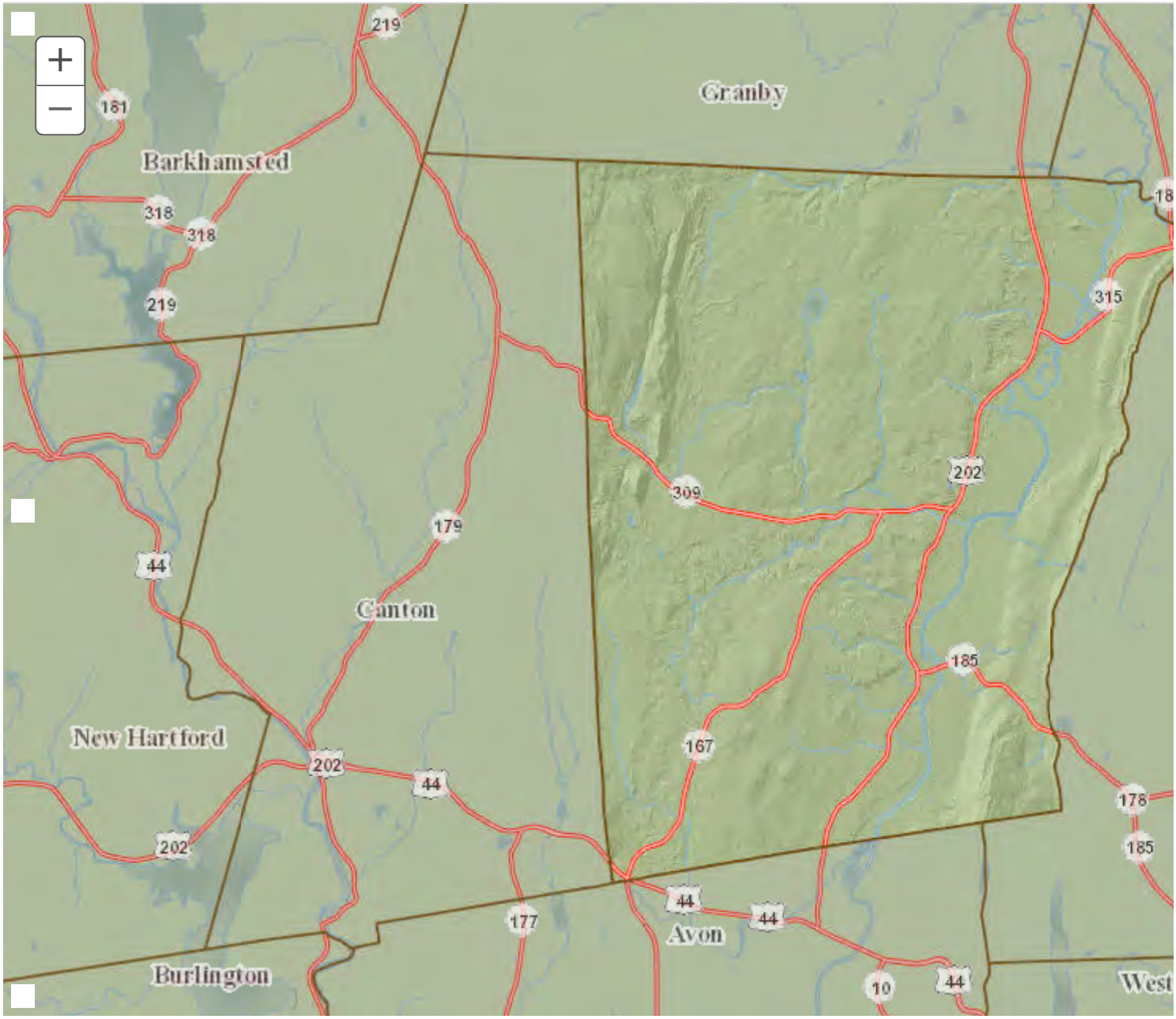
Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
ENSIGN-BICKFORD REALTY CORPORATION	0294	0600	11/25/1985		$0

EXHIBIT 5

Property Map

Town of Simsbury, CT - MapXpress Property Information Viewer

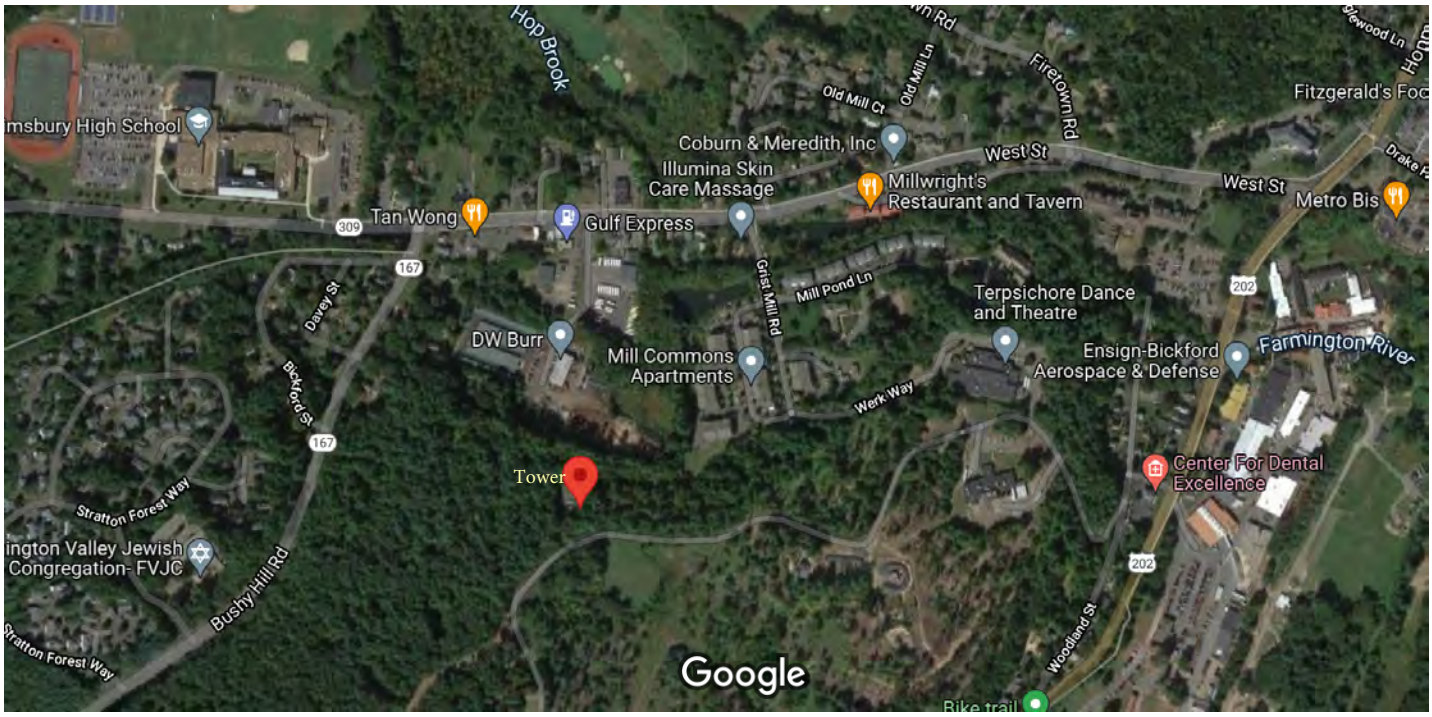
Full Town View Reset Base Maps / Air Photos p Map Layer



Full Extent Zoom In Zoom Out Prev Extent Next Extent Pan **Parcel Information** Simple M

MapXpress v1.2

Google Maps 41°52'00.2"N 72°48'56.8"W



Imagery ©2021 CNES / Airbus, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 500 ft

EXHIBIT 6

Zoning Approval

SITE NAME: Simsbury 2 SITE ID: CT10022-A

Transaction: Mariner Tower Jill

ZONING/PERMITTING COMPLETION FORM

Address: 225 Grist Mill Road

Landlord/Parcel ID:

Jurisdiction: Connecticut Siting Council Zoning District:

Zoning Approval Type: CSC Approval Case #:

Approval Date: 11/7/01 Approved Height: 190 Tower Build Date:

Conditions of Approval:	Yes	No	N/A
Removal Bond	☐	☒	☐
Site Plan Submittal	☐	☒☐	☐
Fall Zone	☐	☒	☐
Periodic Inspections	☐	☒	☐
Periodic Reporting	☐	☒	☐
Approval Renewal	☐	☒	☐
Additional Conditions	☐	☒	☐

Cell towers currently fall under complete jurisdiction of Connecticut Siting Council (CSC). Certificate of Environmental Compatibility and Public need issued under Docket 203 on 11/7/01. New owner must request CSC to transfer Certificate via letter referencing Docket number 203. Any modifications/collocations must go through CSC Review.

JURISDICTION POC/DEPT.

Planning/Zoning: Carriann Mulcahy (CSC)

Phone: 860-827-2940 Fax:

Bldg./Code Enforcement:

Phone: Fax:

Submitted by: Patricia Costa Date: 4/19/07
Zoning Compliance

TO BE COMPLETED BY CORPORATE

PE

	Yes	No	N/A	
Zoning Approval Attached (required)	☒	☐	☐	
Ordinance Attached (required)	☐	☒	☐	
Building Permit Attached (required) 108897	☒	☐	☐	Date Recd 6/14/02
Certificate of Occupancy or Compliance (CO) attached (required)	☒	☐	☐	12/31/02

Zoning Manager Approval: Diane E. Borchardt, AICP Date 4/19/2007

CSC Search:

GO

Advanced Search

» COUNCIL MEMBERSHIP

» DIRECTIONS

» AUDIO LINK

» PUBLIC PARTICIPATION

» APPLICATION GUIDES

» PROCEEDINGS PROCESS

» TELECOMMUNICATION DATABASE

» GENERATION FACILITY STATUS

» PENDING PROCEEDINGS

» ELECTRIC TRANSMISSION UPGRADE PROJECTS

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Daniel F. Caruso,
Chairman

S. Derek Phelps,
Executive Director

Phone: (860) 827-2935
Fax: (860) 827-2950

E-mail Address:
siting.council
@ct.gov

DOCKET NO. 203 - New England Site Management application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on Grist Mill Road, known as the Powder Forest, Simsbury, Connecticut.	} } }	Connectic Siting Council Novembe 7, 2001

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Sitin Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed site in Simsbury, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, an recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effec when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New England Site Management for the construction, maintenance and operation o cellular telecommunications facility at the proposed site located on Grist Mill Road, known as the Powder Forest, Simsbury, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodat the antennas of the Town of Simsbury, Cingular, Nextel, AT&T and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level unless sufficient carriers commit to placement o antennas on the tower and no space on the tower exists below 130 feet, whi if approved by the Council through a petition pursuant to Sections 16-50j-38 through 16-50j-40 of the Regulations of Connecticut State Agencies, shall authorize the construction or extension of the tower to a maximum height of 150 feet above ground level (AGL).

2. The Certificate Holder shall prepare a D&M Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: final site plan(s) for site development to include the location and specificatio for the tower foundation, placement of carrier antennas, tower height,

provisions for tower extension, equipment buildings, security fence, access road, and utility line; construction plans for site clearing, tree trimming, wate drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping and provisions to protect the existing vegetative buffer that wou extend around the facility compound; a tower finish that may include paintin and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communicatic Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or Federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space the proposed tower for fair consideration, or shall provide any requesting ent with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Orde shall be void, and the Certificate Holder shall dismantle the tower and remov all associated equipment or reapply for any continued or new use to the Cou before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be remov within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall b void if all construction authorized herein is not completed within three years the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Coura

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

The parties and intervenors to this proceeding are:

New England Site Management, LLC (NESM)	Wayne Kemp New England Site Management LLP

Town of Simsbury

933 HOPMEADOW STREET P.O. BOX 495 SIMSBURY, CONNECTICUT 06070

Office of Community Planning and Development

August 13, 2002

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New England Site Management, LLC;
Development and Management Plan

Dear Mr. Phelps:

I write on behalf of the Town of Simsbury in support of New England Site Management LLC's ("NESM") request for revisions to the Development and Management Plan ("D&M Plan") for an approved telecommunications tower and ancillary facilities in the Powder Forest Business Park.

I have reviewed NESM's plans to move a portion of the access road for the facility approximately 100 feet north of the original alignment. This configuration is necessary to accommodate future plans for a large parcel of the Powder Forest Business Park. I also reviewed a soil report prepared by Mr. Henry Moeller which indicated that there are no wetlands within 75 feet of the revised road alignment. Based on my review of these documents, the Town of Simsbury has no objection to NESM's request to revise the D&M Plan.

Thank you for considering these comments. If you have any questions or require additional information, please contact me.

Sincerely,

William S. Voelker, AICP
Director of Community Planning and Development

cc: Mr. Wayne Kemp
Mr. Ken Lindeland
Mr. Robert Stevens
Andrew W. Lord, Esq.
Mr. Thomas E. Vincent, First Selectman

Telephone (860) 658-3246
Facsimile (860) 658-3217
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ANDREW W. LORD
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ALORD@MURTHALAW.COM

August 6, 2002

HAND DELIVERED

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051

Re: Docket 203; New England Site Management, LLC

Dear Mr. Phelps:

I write on behalf of New England Site Management, LLC ("NESM") to provide you with an original and 25 copies of a request for a revision to the Development and Management Plan ("D&M Plan") for the telecommunication facility in the Powder Forest Business Park in Simsbury, Connecticut.

By way of background, the Connecticut Siting Council (the "Council") issued a Certificate of Environmental Compatibility and Public Need for a 130-foot tall telecommunications tower on November 7, 2001. On May 21, 2002, the Council approved a petition to allow NESM to build a 150-foot tall tower. On the same date, the Council also approved a D&M Plan for the facility. Since then, there has been a change at the property necessitating revisions to the access road. Pursuant to the Council's letter approving the D&M Plan dated May 23, 2002, NESM is now requesting that the Council approve a revision to the D&M Plan.

As you may recall, the telecommunication compound is located approximately 1,100 feet west-southwest of Grist Mill Road, which ends in a cul-de-sac. The Council approved an access road off of the south end of the cul-de-sac and running roughly westerly to the compound. After the Council approved the D&M Plan, Ensign-Bickford Realty Corp., the property owner, entered into negotiations to convey a large parcel of its land in the Powder Forest Business Park. The approved access road crosses part of the parcel to be conveyed. The new owner of the property intends to fence the perimeter of its land and for security

purposes and cannot allow gated access to the telecommunication facility. Therefore, it is necessary to move the access road so that it is outside of the fence line.

The new access road has been designed to connect to the western side of the cul-de-sac, as shown on the attached site plans. The road will then run roughly parallel to, and approximately 100 feet north of, the original road, for a distance of about 250 feet. The new road will then turn to the southwest for approximately 160 feet to join the path of the approved road for its remaining length.

You may recall that the original plan for the facility indicated the presence of inland wetlands approximately 100 feet west of the cul-de-sac and approximately 125 feet north of the original access road. Due to the shift in the location of the road to the north, Ensign-Bickford Realty Corporation engaged Mr. Henry Moeller, a certified soil scientist, to evaluate the potential impacts of the relocated access road on inland wetlands. (See attached letter from Ensign-Bickford Realty Corp., dated July 18, 2002). Mr. Moeller visited the site on June 10, 2002 and reviewed the site service road plans. Mr. Moeller's report, which is attached for your review, indicates that there are no inland wetlands or watercourses within 75 feet or more of the location of the new access road.

I have discussed these plans for the new road layout with Mr. William Voelker, the Director of Community Planning and Development for the Town of Simsbury. Mr. Voelker has reviewed the new plans and has no objection to the new configuration.

Thank you for considering this request. If you have any questions or require additional information, please contact me.

Sincerely,

Andrew W. Lord

Enclosures

cc: Mr. Wayne Kemp
Service List

No. 203183

225 GRIST MILL ROAD

CERTIFICATE OF OCCUPANCY

Simsbury Building Department
Simsbury, Connecticut 06070

DATE: 12/31/2002
FEE:$ 5.00
ZONE:

This is to certify that building at 225 GRIST MILL ROAD as described under Permit No. 108897 conforms substantially to the requirements of the State Building Code per 118.4 of the CBBC and the Zoning Regulations of the Town of Simsbury, and is hereby approved for occupancy as indicated below.

OCCUPANCY CLASSIFICATION:
MONOPOLE TOWER (150'); FDN FOR TOWER; 300 LF FENCE
Construction Type: ____ Code Edition: 1999 SBC
Sprinkler Required: Y / N Fire Alarm Required: Y / N
Special Conditions / Modifications: Y / N (See Attached if Yes)

Building Official

OWNER'S COPY

EXHIBIT 7

EME Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00126A

BOBDL00126A
225 Grist Mill Road
Simsbury, Connecticut 06070

December 20, 2021

EBI Project Number: 6221007647

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**31.11%**

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

December 20, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00126A - BOBDL00126A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **225 Grist Mill Road** in **Simsbury, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 225 Grist Mill Road in Simsbury, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antenna mounting height centerline of the proposed antennas is 110 feet above ground level (AGL).

8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	**2.19%**	Antenna B1 MPE %:	**2.19%**	Antenna C1 MPE %:	**2.19%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	2.19%
AT&T	3.79%
Verizon	6.01%
T-Mobile	14.72%
Nextel	0.52%
Sprint	3.88%
Site Total MPE % :	31.11%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.19%
Dish Wireless Sector B Total:	2.19%
Dish Wireless Sector C Total:	2.19%
Site Total MPE % :	31.11%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	110.0	2.97	600 MHz n71	400	0.74%
Dish Wireless 1900 MHz n70	4	542.70	110.0	7.22	1900 MHz n70	1000	0.72%
Dish Wireless 2190 MHz n66	4	542.70	110.0	7.22	2190 MHz n66	1000	0.72%
						Total:	**2.19%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

The anticipated maximum composite contributions from the Dish Wireless 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 Wireless Sector	Power Density Value (%)
Sector A:	2.19%
Sector B:	2.19%
Sector C:	2.19%
Dish Wireless Maximum MPE % (Sector A):	2.19%
Site Total:	31.11%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **31.11%** 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.

EXHIBIT 8

Structural Analysis

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

Structural Analysis Report

Existing 150 ft Rohn Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT10022-A

Customer Site Name: Simsbury 2, CT

Carrier Name: Dish Wireless (App#: 167825, V1)

Carrier Site ID / Name: BOBDL00126A / 0

Site Location: 225 Grist Mill Road

Simsbury, Connecticut

Hartford County

Latitude: 41.866708

Longitude: -72.815772

Analysis Result:

Max Structural Usage: 99.0% [Pass]

Max Foundation Usage: 79.0% [Pass]

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

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft Rohn 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	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020293, dated February 13, 2002
Foundation Drawing	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020294 1-3, dated February 13, 2002
Geotechnical Report	FDH Engineering, Inc., Project No. 15BGSH1600, dated March 19, 2015
Modification Drawings	N/A
Mount Analysis	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 120.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" 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:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.179, S_1 = 0.064

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	150.7	3	Kathrein 800 10121 - Panel	Low Profile Platform	(6) 1 5/8" (1) 3" Conduit (2) 1/2" DC (4) 3/8" Fiber	AT&T
2	150.0	1	Cci HPA-65R-BUU-H6 - Panel			
3		2	Cci TPA-65R-LCUUUU-H8 - Panel			
4		1	Quintel QS66512-2 - Panel			
5		2	Cci HPA-65R-BUU-H8 - Panel			
6		6	Cci DTMABP7819VG12A TMA			
7		6	CCI TPX-070821			
8		3	Ericsson RRUS 11			
9		3	Ericsson RRUS 32 B2			
10		3	Ericsson RRUS32			
11		3	Ericsson 4426 B66			
12		3	CSS DBC-750			
13		2	Raycap DC6-48-60-18-8F			
14		3	Commscope ABT-DRDM-ADBH			
15		1	LMU Antenna - Panel			
16	140.0	6	SBNHH-1D65B w/126 Mount Pipe	Modified Low Profile Platform w/ (1) handrail (HRK-14) and (3) Commscope BSAMNT-SBS-2-2	(6) 1 5/8" (2) 1 5/8" Hybrid (1) 1/2"	Verizon
17		3	Antel BXA-70080/4CF			
18		3	Samsung XXDWMM-12.5-65-8T-CBRS integrated with RRH- Panel			
19		3	Samsung B2/B66A RRHBR049			
20		3	Samsung B5/B13 RRHBR04C			
21		3	Samsung CBRS RRH-RT4401-48A			
22		1	Raycap RVZDC-6627-PF-48			
23		1	GPS Receiver			
24	131.0	3	RFS APXVAALL24-43-U-NA20 Panel	(1) PV-LPPGS-12M-HR2-AP3 with PV-KKRS-3-M	(12) 7/8" (3) 1 5/8" Hybrid	T-Mobile
25		3	Ericsson AIR6449 B41 Panel			
26		3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo) Panel			
27		3	Ericsson KRY 112 144-1 Double TMAs			
28		3	RFS ATMAA1412D-1A20 TMA			
29		3	Commscope SDX1926Q-43 Diplexers			
30		3	Ericsson Radio 4449 B71+B85 RRUs			
31		3	Ericsson 4415 B25 RRUs			
32		3	Kathrein 782 11056			
29	123.0	2	RFS - APXVSPP18-C-A20 - Panel	Platform w/ Handrail Kit [SitePro1 HRK14]	(4) 1-1/4" Fiber	Sprint Nextel
30		1	RFS - APXVSPP18-C-A20 (50 lb) - Panel			
31		3	RFS - APXVTM14-C-I20 - Panel			
32		4	RFS - ACU-A20-N - RET			
33		3	ALU - TD-RRH8x20-25 - RRU			
34		3	ALU - 1900 MHz RRH - RRU			
35		3	ALU - 800 MHz RRH - RRU			
36		3	ALU - 800 MHz Filter			

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
37	110.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/HRK Commscope MC-PK8-DSH	(1) 1.60" Hybrid	Dish Wireless
38		3	Fujitsu TA08025-B605 RRU			
39		3	Fujitsu TA08025-B604 RRU			
40		1	Raycap RDIDC-9181-PF-48-OVP			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**99.0%**	**86.2%**	**92.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4181.2	36.8	52.7

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 1.1733 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.

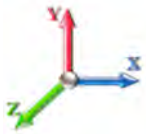
Usage Diagram - Max Ratio 99.02% at 0.0ft

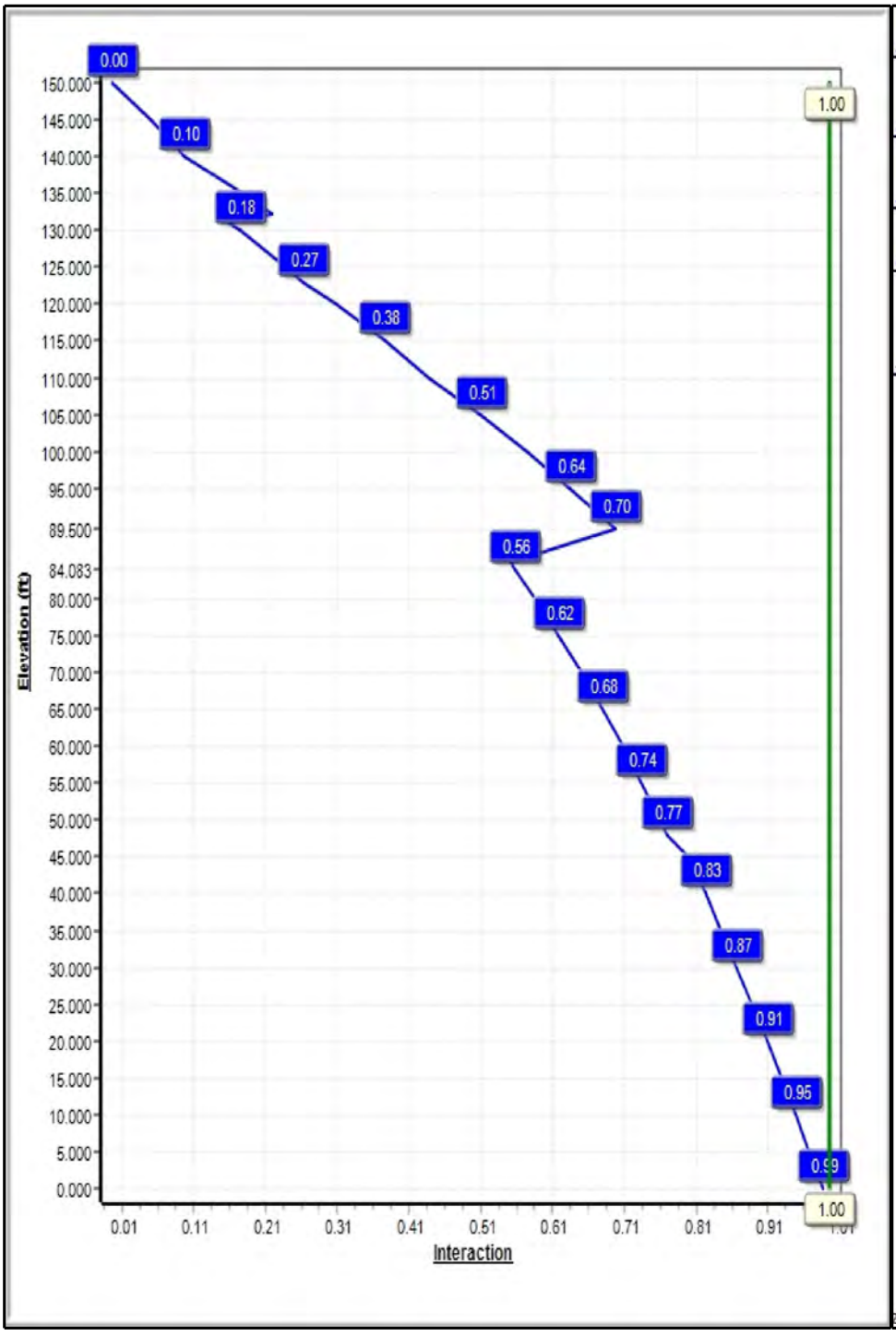
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT	**Exposure:**	C	
Height:	150.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

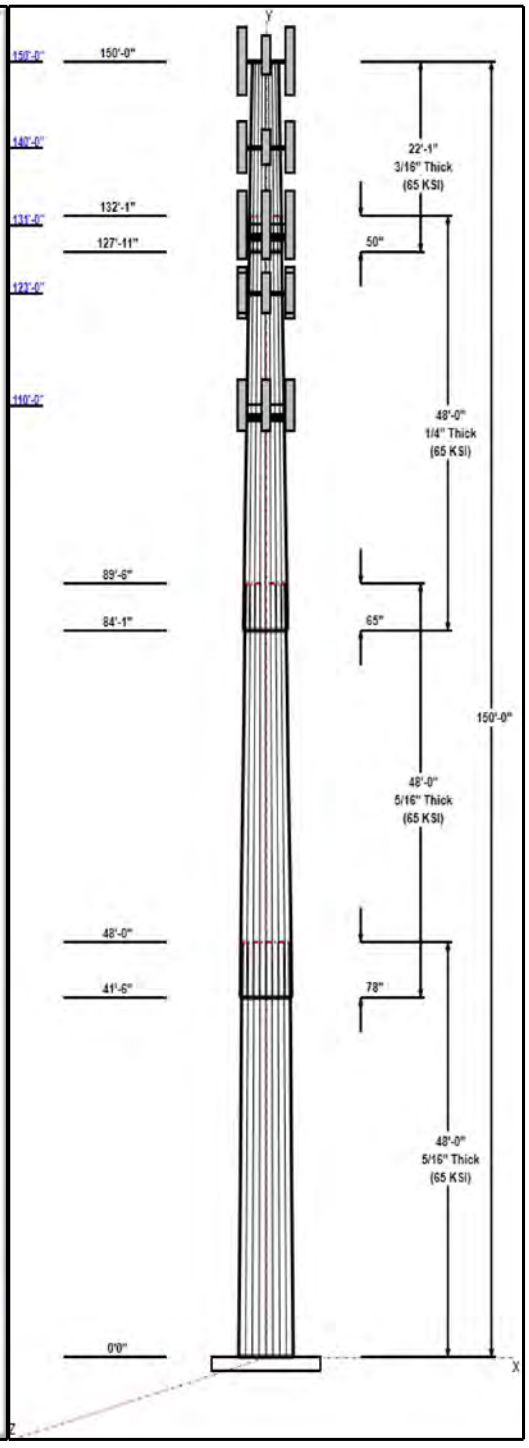
Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	23
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 93 mph Wind







Structure: CT10022-A-SBA

Type: Tapered
Site Name: Simsbury 2, CT
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23136

8/24/2021

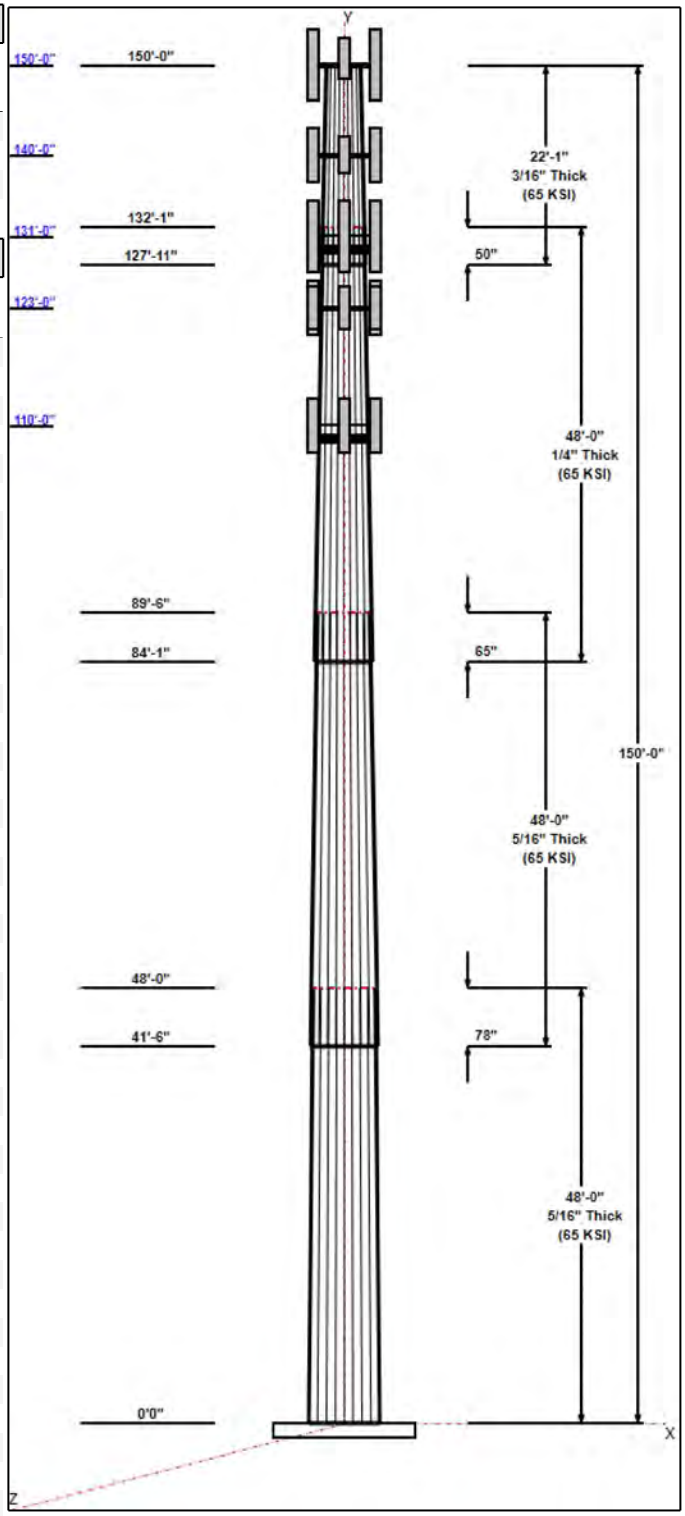
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	50.39	61.50	0.313		0.23136	65
2	48.00	41.42	52.52	0.313	Slip	0.23136	65
3	48.00	32.07	43.17	0.250	Slip	0.23136	65
4	22.08	28.30	33.41	0.188	Slip	0.23136	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.73	3	800 10121	AT&T
150.00	150.00	1	HPA-65R-BUU-H6	AT&T
150.00	150.00	2	TPA-65R-LCUUUU-H8	AT&T
150.00	150.00	1	QS66512-2	AT&T
150.00	150.00	2	HPA-65R-BUU-H8	AT&T
150.00	150.00	1	Low Profile	AT&T
150.00	150.00	6	DTMABP7819VG12A	AT&T
150.00	150.00	6	TPX-070821	AT&T
150.00	150.00	3	RRUS-11	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	4426 B66	AT&T
150.00	150.00	3	DBC-750	AT&T
150.00	150.00	2	DC6-48-60-18-8F	AT&T
150.00	150.00	3	ABT-DFDM-ADB	AT&T
150.00	150.00	1	LMU Antenna	AT&T
140.00	140.00	3	Antel	Verizon
140.00	140.00	6	Commscope	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
140.00	140.00	3	XXDWMM-12.5-65-8T-CB	Verizon
140.00	140.00	3	BSAMNT-SBS-2-2	Verizon
140.00	140.00	3	B2/B66A RRHBR049	Verizon
140.00	140.00	3	B5/B13 RRHBR04C	Verizon
140.00	140.00	1	RVZDC-6627-PF48	Verizon
140.00	140.00	3	CBRS RRH-RT4401	Verizon
140.00	140.00	1	HRK12 (Handrail Kit)	Verizon
131.00	131.00	3	APXVAALL24-43-U-NA20	T-Mobile
131.00	131.00	3	AIR6449 B41	T-Mobile
131.00	131.00	3	AIR32	T-Mobile
131.00	131.00	1	PV-LPPGS-12M-HR2-AP3	T-Mobile
131.00	131.00	3	KRY 112 144-1 Double	T-Mobile
131.00	131.00	3	ATMAA1412D-1A20 TMA	T-Mobile
131.00	131.00	3	SDX1926Q-43 Diplexer	T-Mobile
131.00	131.00	3	Radio 4449 B71+B85	T-Mobile
131.00	131.00	3	Ericsson 4415 B25	T-Mobile
131.00	131.00	3	Bias-T 782 11056	T-Mobile
123.00	123.00	3	APXVTM14-C-I20	Sprint Nextel
123.00	123.00	2	APXVSPP18-C-A20	Sprint Nextel
123.00	123.00	3	ALU - TD-RRH8x20-25 -	Sprint Nextel
123.00	123.00	3	ALU - 1900 MHz RRH -	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz RRH -	Sprint Nextel
123.00	123.00	4	RFS - ACU-A20-N - RET	Sprint Nextel
123.00	123.00	1	Platform w/ HRK Handrail	Sprint Nextel
123.00	123.00	1	APXVSPP18-C-A20 (50 lb)	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz Filter	Sprint Nextel



110.00	110.00	3	JMA Wireless	Dish Wireless
110.00	110.00	1	MC-PK8-DSH	Dish Wireless
110.00	110.00	3	Fujitsu TA08025-B605	Dish Wireless
110.00	110.00	3	Fujitsu TA08025-B604	Dish Wireless
110.00	110.00	1	Raycap	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1 5/8" Coax	AT&T
0.00	150.00	Inside	1/2" DC Power	AT&T
0.00	150.00	Inside	3" Conduit	AT&T
0.00	150.00	Inside	3/8" Fiber	AT&T
0.00	141.00	Inside	1 5/8" Coax	Verizon
0.00	141.00	Inside	1 5/8" Hybrid	Verizon
0.00	141.00	Inside	1/2" Coax	Verizon
0.00	131.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	131.00	Inside	7/8" Coax	T-Mobile
0.00	123.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	110.00	Outside	1.60" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
14	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	73.5	50.0	Round

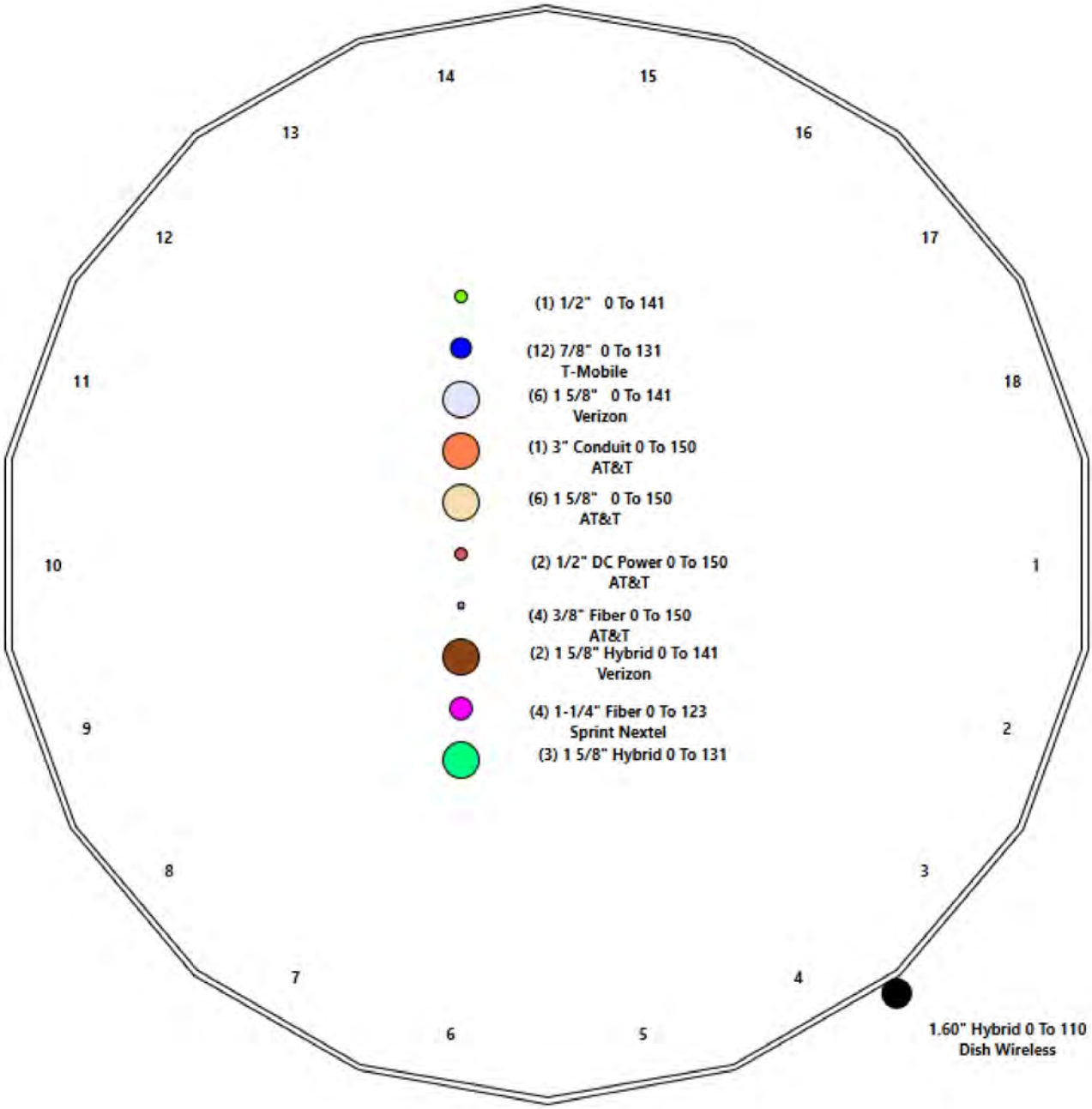
Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	4181.2	36.8	52.7
0.9D + 1.6W 93 mph Wind	4128.6	36.8	39.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1415.4	12.1	98.3
1.2D + 1.0E	365.7	2.8	52.8
0.9D + 1.0E	360.6	2.7	39.6
1.0D + 1.0W 60 mph Wind	1079.9	9.6	44.0

Structure: CT10022-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Simsbury 2, CT
Height: 150.00 (ft)

8/24/2021



Shaft Properties

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	9,013
2	18	48.000	0.3125	65	Slip	78.00	7,559
3	18	48.000	0.2500	65	Slip	65.00	4,843
4	18	22.083	0.1875	65	Slip	50.00	1,371
					Total Shaft Weight:		**22,786**

	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	61.50	0.00	60.69	28706.65	33.29	196.80	50.39	48.00	49.67	15741.4	27.02	161.2	0.231360
2	52.52	41.50	51.78	17835.36	28.23	168.08	41.42	89.50	40.77	8703.68	21.96	132.5	0.231360
3	43.17	84.08	34.06	7926.99	29.04	172.69	32.07	132.08	25.25	3228.71	21.21	128.2	0.231360
4	33.41	127.9	19.77	2755.84	30.00	178.16	28.30	150.00	16.73	1669.78	25.20	150.9	0.231360

Load Summary

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	150.00	800 10121	3	46.30	5.15	0.79	199.46	7.959	0.79	0.00	0.73
2	150.00	HPA-65R-BUU-H6	1	51.00	9.66	1.00	400.05	11.517	1.00	0.00	0.00
3	150.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.83	513.48	15.540	0.83	0.00	0.00
4	150.00	QS66512-2	1	111.00	8.13	1.00	431.90	9.900	1.00	0.00	0.00
5	150.00	HPA-65R-BUU-H8	2	68.00	12.98	0.79	477.60	15.177	0.79	0.00	0.00
6	150.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3245.22	45.549	1.00	0.00	0.00
7	150.00	DTMABP7819VG12A	6	19.20	1.14	0.50	53.23	2.166	0.50	0.00	0.00
8	150.00	TPX-070821	6	7.50	0.47	0.50	24.35	0.927	0.50	0.00	0.00
9	150.00	RRUS-11	3	50.00	2.79	0.50	147.03	3.725	0.50	0.00	0.00
10	150.00	RRUS-32	3	53.00	3.01	0.50	838.47	1.264	0.50	0.00	0.00
11	150.00	RRUS-32	3	777.00	0.66	0.50	838.47	1.264	0.50	0.00	0.00
12	150.00	4426 B66	3	48.40	1.64	0.50	533.59	9.028	0.50	0.00	0.00
13	150.00	DBC-750	3	4.80	0.51	0.50	17.69	1.216	0.50	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	31.80	0.92	0.67	114.23	1.504	0.67	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	1.10	0.05	0.50	4.07	0.307	0.50	0.00	0.00
16	150.00	LMU Antenna	1	8.50	1.67	1.00	8.51	1.672	1.00	0.00	0.00
17	140.00	Antel BXA-70080-4CF-EDIN-0	3	30.30	3.56	0.88	325.74	6.005	0.88	0.00	0.00
18	140.00	Commscope SBNHH-1D65B	6	72.70	8.08	0.78	355.83	9.800	0.78	0.00	0.00
19	140.00	Low Profile Platform	1	1500.00	22.00	1.00	3233.22	45.387	1.00	0.00	0.00
20	140.00	XXDWMM-12.5-65-8T-CBRS	3	23.10	1.18	0.50	107.36	2.213	0.50	0.00	0.00
21	140.00	BSAMNT-SBS-2-2	3	67.00	3.50	1.00	190.87	8.353	1.00	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	132.20	6.51	0.50	391.04	8.087	0.50	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	70.40	1.88	0.50	139.51	2.610	0.50	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	32.00	3.79	1.00	209.98	4.887	1.00	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	15.20	0.85	0.50	41.25	1.762	0.50	0.00	0.00
26	140.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	673.00	15.485	1.00	0.00	0.00
27	131.00	APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	707.75	22.769	0.70	0.00	0.00
28	131.00	AIR6449 B41	3	103.00	5.65	0.71	283.37	6.900	0.71	0.00	0.00
29	131.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	388.92	8.076	0.87	0.00	0.00
30	131.00	PV-LPPGS-12M-HR2-AP3	1	2155.00	34.10	1.00	5123.28	65.413	1.00	0.00	0.00
31	131.00	KRY 112 144-1 Double	3	11.00	0.41	0.50	25.18	1.035	0.50	0.00	0.00
32	131.00	ATMAA1412D-1A20 TMA	3	13.00	1.17	0.50	47.96	2.199	0.50	0.00	0.00
33	131.00	SDX1926Q-43 Diplexer	3	6.00	0.29	0.50	18.89	0.842	0.50	0.00	0.00
34	131.00	Radio 4449 B71+B85	3	73.20	1.97	0.50	149.15	2.719	0.50	0.00	0.00
35	131.00	Ericsson 4415 B25	3	46.00	1.64	0.50	100.07	2.318	0.50	0.00	0.00
36	131.00	Bias-T 782 11056	3	1.50	0.13	0.50	7.35	0.520	0.50	0.00	0.00
37	123.00	APXVTM14-C-I20	3	55.00	6.34	0.79	277.88	7.824	0.79	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	57.00	8.02	0.83	282.94	11.672	0.83	0.00	0.00
39	123.00	ALU - TD-RRH8x20-25 - RRU	3	70.00	4.05	0.50	223.81	5.138	0.50	0.00	0.00
40	123.00	ALU - 1900 MHz RRH - RRU	3	60.00	2.71	0.50	165.56	4.362	0.50	0.00	0.00
41	123.00	ALU - 800 MHz RRH - RRU	3	53.00	2.49	0.50	149.68	3.985	0.50	0.00	0.00
42	123.00	RFS - ACU-A20-N - RET	4	1.00	0.14	0.50	6.62	0.528	0.50	0.00	0.00
43	123.00	Platform w/ HRK Handrail Kit	1	1600.00	32.00	1.00	3424.98	65.580	1.00	0.00	0.00
44	123.00	APXVSPP18-C-A20 (50 lb)	1	50.00	8.02	1.00	248.19	11.672	1.00	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	8.80	0.78	0.67	31.86	1.626	0.67	0.00	0.00
46	110.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	440.48	14.383	0.74	0.00	0.00
47	110.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3908.72	98.645	1.00	0.00	0.00
48	110.00	Fujitsu TA08025-B605 RRU	3	75.00	1.96	0.50	142.61	2.685	0.50	0.00	0.00
49	110.00	Fujitsu TA08025-B604 RRU	3	63.90	1.96	0.50	129.34	2.685	0.50	0.00	0.00
50	110.00	Raycap RDIDC-9181-PF-48-OVP	1	21.90	2.01	1.00	90.73	2.745	1.00	0.00	0.00

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)
		Totals:	**132**	**16,915.22**			**47,594.47**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	150.00	(6) 1 5/8" Coax	0.00	Inside
0.00	150.00	(2) 1/2" DC Power	0.00	Inside
0.00	150.00	(1) 3" Conduit	0.00	Inside
0.00	150.00	(4) 3/8" Fiber	0.00	Inside
0.00	141.00	(6) 1 5/8" Coax	0.00	Inside
0.00	141.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	141.00	(1) 1/2" Coax	0.00	Inside
0.00	131.00	(3) 1 5/8" Hybrid	0.00	Inside
0.00	131.00	(12) 7/8" Coax	0.00	Inside
0.00	123.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	110.00	(1) 1.60" Hybrid	1.60	Outside

Shaft Section Properties

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3125	61.500	60.688	28706.7	33.29	196.80	62.2	919.4	0.0
5.00		0.3125	60.343	59.541	27109.1	32.64	193.10	63.0	884.8	1022.8
10.00		0.3125	59.186	58.393	25571.9	31.99	189.40	63.8	851.0	1003.3
15.00		0.3125	58.030	57.246	24093.9	31.33	185.69	64.5	817.8	983.7
20.00		0.3125	56.873	56.099	22674.1	30.68	181.99	65.3	785.2	964.2
25.00		0.3125	55.716	54.951	21311.1	30.03	178.29	66.1	753.4	944.7
30.00		0.3125	54.559	53.804	20003.9	29.37	174.59	66.9	722.2	925.2
35.00		0.3125	53.402	52.657	18751.2	28.72	170.89	67.6	691.6	905.7
40.00		0.3125	52.246	51.509	17552.0	28.07	167.19	68.4	661.7	886.1
41.50	Bot - Section 2	0.3125	51.899	51.165	17202.5	27.87	166.08	68.6	652.9	262.0
45.00		0.3125	51.089	50.362	16405.0	27.42	163.48	69.2	632.5	1216.5
48.00	Top - Section 1	0.3125	51.020	50.293	16338.2	27.38	163.26	0.0	0.0	1027.5
50.00		0.3125	50.557	49.834	15895.0	27.12	161.78	69.5	619.2	340.7
55.00		0.3125	49.400	48.687	14822.2	26.46	158.08	70.3	591.0	838.1
60.00		0.3125	48.243	47.540	13798.8	25.81	154.38	71.0	563.4	818.6
65.00		0.3125	47.087	46.392	12823.6	25.16	150.68	71.8	536.4	799.1
70.00		0.3125	45.930	45.245	11895.5	24.51	146.98	72.6	510.1	779.6
75.00		0.3125	44.773	44.098	11013.3	23.85	143.27	73.3	484.5	760.0
80.00		0.3125	43.616	42.950	10175.8	23.20	139.57	74.1	459.5	740.5
84.08	Bot - Section 3	0.3125	42.671	42.013	9524.3	22.67	136.55	74.7	439.6	590.3
85.00		0.3125	42.459	41.803	9381.9	22.55	135.87	74.9	435.2	236.7
89.50	Top - Section 2	0.2500	41.918	33.063	7252.7	28.15	167.67	0.0	0.0	1144.8
90.00		0.2500	41.803	32.971	7192.5	28.07	167.21	68.4	338.9	56.2
95.00		0.2500	40.646	32.053	6608.3	27.26	162.58	69.3	320.2	553.2
100.00		0.2500	39.489	31.135	6056.7	26.44	157.96	70.3	302.1	537.5
105.00		0.2500	38.332	30.217	5536.7	25.63	153.33	71.3	284.5	521.9
110.00		0.2500	37.175	29.299	5047.3	24.81	148.70	72.2	267.4	506.3
115.00		0.2500	36.019	28.381	4587.6	23.99	144.07	73.2	250.9	490.7
120.00		0.2500	34.862	27.463	4156.8	23.18	139.45	74.1	234.8	475.1
123.00		0.2500	34.168	26.913	3911.7	22.69	136.67	74.7	225.5	277.5
125.00		0.2500	33.705	26.546	3753.8	22.36	134.82	75.1	219.4	181.9
127.92	Bot - Section 4	0.2500	33.030	26.010	3531.2	21.89	132.12	75.7	210.6	260.8
130.00		0.2500	32.548	25.628	3377.7	21.55	130.19	76.1	204.4	322.2
131.00		0.2500	32.317	25.444	3305.6	21.38	129.27	76.3	201.5	152.9
132.08	Top - Section 3	0.1875	32.441	19.194	2522.8	29.10	173.02	0.0	0.0	164.5
135.00		0.1875	31.766	18.793	2367.8	28.46	169.42	67.9	146.8	188.5
140.00		0.1875	30.610	18.104	2117.0	27.37	163.25	69.2	136.2	313.9
145.00		0.1875	29.453	17.416	1884.5	26.29	157.08	70.5	126.0	302.2
150.00		0.1875	28.296	16.727	1669.8	25.20	150.91	71.8	116.2	290.5
										22785.8

Wind Loading - Shaft

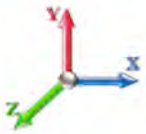
Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	1227.3
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	1203.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	1180.5
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	1157.1
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	1133.6
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	1110.2
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	1086.8
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	1063.4
41.50	Bot - Section 2	1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	314.4
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1459.8
48.00	Top - Section 1	1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	1233.0
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	408.9
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	1005.7
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	982.3
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	958.9
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	935.5
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	912.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	888.6
84.08	Bot - Section 3	1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	708.3
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	284.0
89.50	Top - Section 2	1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1373.8
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	67.4
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	663.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	645.0
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	626.3
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	607.6
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	588.8
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	570.1
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	333.1
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	218.3
127.92	Bot - Section 4	1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	313.0
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	386.6
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	183.5
132.08	Top - Section 3	1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	197.4
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	226.2
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	376.7
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	5.00	12.706	8.26	418.4	0.0	362.6
150.00	Appurtenance(s)	1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	348.5
								Totals:	**150.00**			**15,452.0**		**27,342.9**

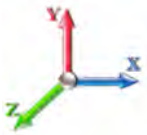
Discrete Appurtenance Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

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	150.00	TPX-070821	6	28.994	31.893	0.45	0.90	1.27	54.00	0.000	0.000	64.76	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.71	0.90	10.98	166.68	0.000	0.730	561.12	0.00	409.62
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	1.00	1.00	9.66	61.20	0.000	0.000	492.94	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.75	0.90	19.87	180.00	0.000	0.000	1013.96	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	1.00	1.00	8.13	133.20	0.000	0.000	414.87	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.71	0.90	18.46	163.20	0.000	0.000	941.87	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1800.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.45	0.90	3.08	138.24	0.000	0.000	157.07	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	1.00	1.00	1.67	10.20	0.000	0.000	85.22	0.00	0.00
10	150.00	RRUS-32	3	28.994	31.893	0.45	0.90	4.06	190.80	0.000	0.000	207.36	0.00	0.00
11	150.00	RRUS-32	3	28.994	31.893	0.45	0.90	0.89	2797.20	0.000	0.000	45.47	0.00	0.00
12	150.00	4426 B66	3	28.994	31.893	0.45	0.90	2.21	174.24	0.000	0.000	112.98	0.00	0.00
13	150.00	DBC-750	3	28.994	31.893	0.45	0.90	0.69	17.28	0.000	0.000	35.13	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	28.994	31.893	0.60	0.90	1.11	76.32	0.000	0.000	56.62	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.45	0.90	0.07	3.96	0.000	0.000	3.44	0.00	0.00
16	150.00	RRUS-11	3	28.994	31.893	0.45	0.90	3.77	180.00	0.000	0.000	192.20	0.00	0.00
17	140.00	Low Profile Platform	1	28.576	31.433	1.00	1.00	22.00	1800.00	0.000	0.000	1106.45	0.00	0.00
18	140.00	XXDWMM-12.5-65-8T-CB	3	28.576	31.433	0.38	0.75	1.33	83.16	0.000	0.000	66.76	0.00	0.00
19	140.00	BSAMNT-SBS-2-2	3	28.576	31.433	1.00	1.00	10.50	241.20	0.000	0.000	528.08	0.00	0.00
20	140.00	Commscope	6	28.576	31.433	0.58	0.75	28.36	523.44	0.000	0.000	1426.35	0.00	0.00
21	140.00	HRK12 (Handrail Kit)	1	28.576	31.433	1.00	1.00	6.75	314.06	0.000	0.000	339.48	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	28.576	31.433	0.38	0.75	7.32	475.92	0.000	0.000	368.33	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	28.576	31.433	0.38	0.75	2.11	253.44	0.000	0.000	106.37	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	28.576	31.433	1.00	1.00	3.79	38.40	0.000	0.000	190.61	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	28.576	31.433	0.38	0.75	0.96	54.72	0.000	0.000	48.09	0.00	0.00
26	140.00	Antel	3	28.576	31.433	0.66	0.75	7.05	109.08	0.000	0.000	354.51	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	28.179	30.997	0.38	0.75	0.46	39.60	0.000	0.000	22.88	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	28.179	30.997	0.52	0.75	31.88	442.08	0.000	0.000	1580.97	0.00	0.00
29	131.00	AIR6449 B41	3	28.179	30.997	0.53	0.75	9.03	370.80	0.000	0.000	447.63	0.00	0.00
30	131.00	AIR32	3	28.179	30.997	0.65	0.75	12.74	475.92	0.000	0.000	632.00	0.00	0.00
31	131.00	PV-LPPGS-12M-HR2-AP3	1	28.179	30.997	1.00	1.00	34.10	2586.00	0.000	0.000	1691.17	0.00	0.00
32	131.00	Bias-T 782 11056	3	28.179	30.997	0.38	0.75	0.15	5.40	0.000	0.000	7.25	0.00	0.00
33	131.00	ATMAA1412D-1A20 TMA	3	28.179	30.997	0.38	0.75	1.32	46.80	0.000	0.000	65.28	0.00	0.00
34	131.00	SDX1926Q-43 Diplexer	3	28.179	30.997	0.38	0.75	0.33	21.60	0.000	0.000	16.18	0.00	0.00
35	131.00	Radio 4449 B71+B85	3	28.179	30.997	0.38	0.75	2.22	263.52	0.000	0.000	109.91	0.00	0.00
36	131.00	Ericsson 4415 B25	3	28.179	30.997	0.38	0.75	1.84	165.60	0.000	0.000	91.50	0.00	0.00
37	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.38	0.75	4.56	252.00	0.000	0.000	222.99	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	136.80	0.000	0.000	488.67	0.00	0.00
39	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.38	0.75	3.05	216.00	0.000	0.000	149.21	0.00	0.00
40	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	198.00	0.000	0.000	551.53	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.75	0.75	6.01	60.00	0.000	0.000	294.38	0.00	0.00
42	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.38	0.75	2.80	190.80	0.000	0.000	137.10	0.00	0.00
43	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.38	0.75	0.21	4.80	0.000	0.000	10.28	0.00	0.00
44	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1920.00	0.000	0.000	1566.11	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.50	0.75	1.18	31.68	0.000	0.000	57.55	0.00	0.00
46	110.00	Raycap	1	27.161	29.877	0.75	0.75	1.51	26.28	0.000	0.000	72.06	0.00	0.00
47	110.00	Fujitsu TA08025-B604	3	27.161	29.877	0.38	0.75	2.21	230.04	0.000	0.000	105.41	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

48	110.00	Fujitsu TA08025-B605	3	27.161	29.877	0.38	0.75	2.21	270.00	0.000	0.000	105.41	0.00	0.00
49	110.00	MC-PK8-DSH	1	27.161	29.877	1.00	1.00	37.59	2072.40	0.000	0.000	1796.93	0.00	0.00
50	110.00	JMA Wireless	3	27.161	29.877	0.55	0.75	20.80	232.20	0.000	0.000	994.11	0.00	0.00
							Totals:		**20,298.26**			**21,259.19**		

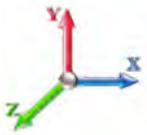
Total Applied Force Summary

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

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		527.21	1415.53	0.00	0.00
10.00		517.20	1392.11	0.00	0.00
15.00		507.19	1368.68	0.00	0.00
20.00		527.53	1345.26	0.00	0.00
25.00		541.77	1321.83	0.00	0.00
30.00		551.40	1298.41	0.00	0.00
35.00		557.63	1274.98	0.00	0.00
40.00		561.24	1251.56	0.00	0.00
41.50		167.27	370.90	0.00	0.00
45.00		397.36	1591.59	0.00	0.00
48.00		340.27	1345.95	0.00	0.00
50.00		226.23	484.13	0.00	0.00
55.00		567.83	1193.94	0.00	0.00
60.00		564.94	1170.51	0.00	0.00
65.00		560.93	1147.09	0.00	0.00
70.00		555.92	1123.66	0.00	0.00
75.00		550.03	1100.24	0.00	0.00
80.00		543.33	1076.81	0.00	0.00
84.08		437.73	862.02	0.00	0.00
85.00		98.31	318.53	0.00	0.00
89.50		480.79	1543.13	0.00	0.00
90.00		52.76	86.23	0.00	0.00
95.00		525.48	851.98	0.00	0.00
100.00		516.28	833.24	0.00	0.00
105.00		506.55	814.50	0.00	0.00
110.00	(11) attachments	3570.25	3626.68	0.00	0.00
115.00		485.65	771.02	0.00	0.00
120.00		474.53	752.28	0.00	0.00
123.00	(23) attachments	3756.54	3452.45	0.00	0.00
125.00		183.33	282.01	0.00	0.00
127.92		264.15	405.89	0.00	0.00
130.00		188.17	452.96	0.00	0.00
131.00	(28) attachments	4754.28	4632.72	0.00	0.00
132.08		96.41	219.47	0.00	0.00
135.00		257.04	285.74	0.00	0.00
140.00	(27) attachments	4966.41	4372.14	0.00	0.00
145.00		418.45	423.38	0.00	0.00
150.00	(43) attachments	5912.84	6545.53	0.00	409.62
	Totals:	**36,711.20**	**52,805.06**	**0.00**	**409.62**

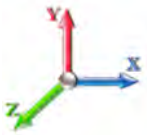
Linear Appurtenance Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

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	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.879	0.00	6.00
10.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.879	0.00	6.00
15.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	17.879	0.00	6.00
20.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	18.971	0.00	6.00
25.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	19.883	0.00	6.00
30.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	20.661	0.00	6.00
35.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	21.343	0.00	6.00
40.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	21.951	0.00	6.00
41.50	1.60" Hybrid	Yes	1.50	0.000	1.60	0.20	0.00	0.030	0.000	22.122	0.00	1.80
45.00	1.60" Hybrid	Yes	3.50	0.000	1.60	0.47	0.00	0.031	0.000	22.502	0.00	4.20
48.00	1.60" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.031	0.000	22.810	0.00	3.60
50.00	1.60" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.031	0.000	23.007	0.00	2.40
55.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	23.473	0.00	6.00
60.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	23.907	0.00	6.00
65.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	24.313	0.00	6.00
70.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.034	0.000	24.696	0.00	6.00
75.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	25.057	0.00	6.00
80.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	25.400	0.00	6.00
84.08	1.60" Hybrid	Yes	4.08	0.000	1.60	0.54	0.00	0.037	0.000	25.667	0.00	4.90
85.00	1.60" Hybrid	Yes	0.92	0.000	1.60	0.12	0.00	0.037	0.000	25.726	0.00	1.10
89.50	1.60" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.038	0.000	26.007	0.00	5.40
90.00	1.60" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.038	0.000	26.037	0.00	0.60
95.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	26.336	0.00	6.00
100.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	26.621	0.00	6.00
105.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.040	0.000	26.896	0.00	6.00
110.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	27.161	0.00	6.00
									Totals:		**0.0**	**132.0**

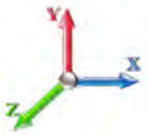
Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.74	-36.81	0.00	-4181.1	0.00	4181.15	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.990
5.00	-51.19	-36.46	0.00	-3997.1	0.00	3997.12	3376.67	1688.33	8351.12	4181.77	0.11	-0.203	0.000	0.971
10.00	-49.68	-36.11	0.00	-3814.8	0.00	3814.83	3351.94	1675.97	8129.40	4070.74	0.43	-0.408	0.000	0.952
15.00	-48.18	-35.77	0.00	-3634.2	0.00	3634.27	3325.63	1662.82	7906.28	3959.02	0.97	-0.615	0.000	0.933
20.00	-46.71	-35.40	0.00	-3455.4	0.00	3455.42	3297.74	1648.87	7681.99	3846.70	1.73	-0.824	0.000	0.913
25.00	-45.27	-35.00	0.00	-3278.4	0.00	3278.44	3268.26	1634.13	7456.75	3733.92	2.70	-1.035	0.000	0.892
30.00	-43.86	-34.59	0.00	-3103.4	0.00	3103.44	3237.20	1618.60	7230.79	3620.77	3.90	-1.248	0.000	0.871
35.00	-42.47	-34.16	0.00	-2930.5	0.00	2930.50	3204.54	1602.27	7004.35	3507.38	5.33	-1.463	0.000	0.849
40.00	-41.15	-33.67	0.00	-2759.7	0.00	2759.71	3170.31	1585.15	6777.64	3393.86	6.98	-1.679	0.000	0.827
41.50	-40.72	-33.57	0.00	-2709.2	0.00	2709.21	3159.73	1579.86	6709.61	3359.79	7.51	-1.745	0.000	0.820
45.00	-39.06	-33.22	0.00	-2591.7	0.00	2591.73	3134.49	1567.24	6550.90	3280.32	8.85	-1.899	0.000	0.803
48.00	-37.66	-32.90	0.00	-2492.0	0.00	2492.09	3132.30	1566.15	6537.37	3273.54	10.09	-2.031	0.000	0.774
50.00	-37.10	-32.76	0.00	-2426.2	0.00	2426.28	3117.49	1558.74	6446.72	3228.15	10.96	-2.120	0.000	0.764
55.00	-35.81	-32.27	0.00	-2262.5	0.00	2262.51	3079.35	1539.68	6220.34	3114.79	13.29	-2.330	0.000	0.738
60.00	-34.55	-31.79	0.00	-2101.1	0.00	2101.15	3039.63	1519.81	5994.49	3001.70	15.84	-2.539	0.000	0.712
65.00	-33.32	-31.29	0.00	-1942.2	0.00	1942.23	2998.32	1499.16	5769.39	2888.98	18.61	-2.747	0.000	0.684
70.00	-32.11	-30.80	0.00	-1785.7	0.00	1785.77	2955.43	1477.72	5545.28	2776.76	21.60	-2.954	0.000	0.654
75.00	-30.93	-30.30	0.00	-1631.7	0.00	1631.78	2910.95	1455.48	5322.38	2665.15	24.81	-3.158	0.000	0.623
80.00	-29.80	-29.79	0.00	-1480.2	0.00	1480.29	2864.89	1432.44	5100.92	2554.25	28.22	-3.359	0.000	0.590
84.08	-28.91	-29.35	0.00	-1358.6	0.00	1358.66	2826.09	1413.05	4921.28	2464.30	31.17	-3.522	0.000	0.562
85.00	-28.55	-29.29	0.00	-1331.7	0.00	1331.75	2817.24	1408.62	4881.12	2444.19	31.85	-3.558	0.000	0.555
89.50	-26.99	-28.75	0.00	-1199.9	0.00	1199.97	2031.94	1015.97	3485.43	1745.31	35.28	-3.731	0.000	0.702
90.00	-26.84	-28.75	0.00	-1185.5	0.00	1185.59	2029.15	1014.57	3470.92	1738.04	35.67	-3.751	0.000	0.696
95.00	-25.92	-28.27	0.00	-1041.8	0.00	1041.84	2000.34	1000.17	3325.82	1665.38	39.72	-3.971	0.000	0.639
100.00	-25.03	-27.78	0.00	-900.51	0.00	900.51	1969.95	984.97	3180.92	1592.82	43.99	-4.180	0.000	0.579
105.00	-24.17	-27.29	0.00	-761.60	0.00	761.60	1937.97	968.98	3036.44	1520.48	48.47	-4.375	0.000	0.514
110.00	-20.76	-23.51	0.00	-625.13	0.00	625.13	1904.40	952.20	2892.62	1448.46	53.15	-4.553	0.000	0.443
115.00	-19.97	-23.02	0.00	-507.57	0.00	507.57	1869.25	934.63	2749.69	1376.89	58.00	-4.713	0.000	0.380
120.00	-19.22	-22.52	0.00	-392.47	0.00	392.47	1832.52	916.26	2607.87	1305.87	63.01	-4.852	0.000	0.312
123.00	-16.08	-18.50	0.00	-324.92	0.00	324.92	1809.72	904.86	2523.40	1263.58	66.08	-4.926	0.000	0.266
125.00	-15.80	-18.31	0.00	-287.92	0.00	287.92	1794.20	897.10	2467.38	1235.52	68.15	-4.971	0.000	0.242
127.92	-15.41	-18.02	0.00	-234.53	0.00	234.53	1771.11	885.56	2386.14	1194.84	71.20	-5.028	0.000	0.205
130.00	-14.96	-17.80	0.00	-196.99	0.00	196.99	1754.29	877.15	2328.47	1165.96	73.40	-5.065	0.000	0.178
131.00	-10.77	-12.66	0.00	-179.20	0.00	179.20	1746.12	873.06	2300.89	1152.16	74.47	-5.080	0.000	0.162
132.08	-10.55	-12.55	0.00	-165.49	0.00	165.49	1160.48	580.24	1541.12	771.71	75.62	-5.096	0.000	0.224
135.00	-10.28	-12.27	0.00	-128.89	0.00	128.89	1148.82	574.41	1493.54	747.88	78.74	-5.134	0.000	0.182
140.00	-6.36	-6.94	0.00	-67.53	0.00	67.53	1127.58	563.79	1411.91	707.01	84.15	-5.193	0.000	0.101
145.00	-5.98	-6.49	0.00	-32.84	0.00	32.84	1104.76	552.38	1330.41	666.20	89.60	-5.227	0.000	0.055
150.00	0.00	-5.91	0.00	-0.41	0.00	0.41	1080.36	540.18	1249.27	625.56	95.08	-5.240	0.000	0.001

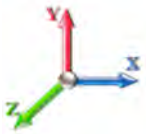
Wind Loading - Shaft

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	920.5
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	902.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	885.4
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	867.8
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	850.2
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	832.7
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	815.1
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	797.5
41.50	Bot - Section 2	1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	235.8
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1094.9
48.00	Top - Section 1	1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	924.8
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	306.6
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	754.3
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	736.7
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	719.2
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	701.6
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	684.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	666.5
84.08	Bot - Section 3	1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	531.2
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	213.0
89.50	Top - Section 2	1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1030.3
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	50.6
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	497.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	483.8
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	469.7
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	455.7
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	441.6
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	427.6
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	249.8
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	163.7
127.92	Bot - Section 4	1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	234.7
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	289.9
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	137.7
132.08	Top - Section 3	1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	148.0
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	169.7
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	282.5
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	5.00	12.706	8.26	418.4	0.0	272.0
150.00	Appurtenance(s)	1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	261.4
								Totals:	**150.00**			**15,452.0**		**20,507.2**

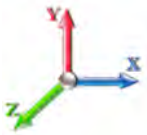
Discrete Appurtenance Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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	150.00	TPX-070821	6	28.994	31.893	0.45	0.90	1.27	40.50	0.000	0.000	64.76	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.71	0.90	10.98	125.01	0.000	0.730	561.12	0.00	409.62
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	1.00	1.00	9.66	45.90	0.000	0.000	492.94	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.75	0.90	19.87	135.00	0.000	0.000	1013.96	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	1.00	1.00	8.13	99.90	0.000	0.000	414.87	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.71	0.90	18.46	122.40	0.000	0.000	941.87	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1350.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.45	0.90	3.08	103.68	0.000	0.000	157.07	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	1.00	1.00	1.67	7.65	0.000	0.000	85.22	0.00	0.00
10	150.00	RRUS-32	3	28.994	31.893	0.45	0.90	4.06	143.10	0.000	0.000	207.36	0.00	0.00
11	150.00	RRUS-32	3	28.994	31.893	0.45	0.90	0.89	2097.90	0.000	0.000	45.47	0.00	0.00
12	150.00	4426 B66	3	28.994	31.893	0.45	0.90	2.21	130.68	0.000	0.000	112.98	0.00	0.00
13	150.00	DBC-750	3	28.994	31.893	0.45	0.90	0.69	12.96	0.000	0.000	35.13	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	28.994	31.893	0.60	0.90	1.11	57.24	0.000	0.000	56.62	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.45	0.90	0.07	2.97	0.000	0.000	3.44	0.00	0.00
16	150.00	RRUS-11	3	28.994	31.893	0.45	0.90	3.77	135.00	0.000	0.000	192.20	0.00	0.00
17	140.00	Low Profile Platform	1	28.576	31.433	1.00	1.00	22.00	1350.00	0.000	0.000	1106.45	0.00	0.00
18	140.00	XXDWMM-12.5-65-8T-CB	3	28.576	31.433	0.38	0.75	1.33	62.37	0.000	0.000	66.76	0.00	0.00
19	140.00	BSAMNT-SBS-2-2	3	28.576	31.433	1.00	1.00	10.50	180.90	0.000	0.000	528.08	0.00	0.00
20	140.00	Commscope	6	28.576	31.433	0.58	0.75	28.36	392.58	0.000	0.000	1426.35	0.00	0.00
21	140.00	HRK12 (Handrail Kit)	1	28.576	31.433	1.00	1.00	6.75	235.55	0.000	0.000	339.48	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	28.576	31.433	0.38	0.75	7.32	356.94	0.000	0.000	368.33	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	28.576	31.433	0.38	0.75	2.11	190.08	0.000	0.000	106.37	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	28.576	31.433	1.00	1.00	3.79	28.80	0.000	0.000	190.61	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	28.576	31.433	0.38	0.75	0.96	41.04	0.000	0.000	48.09	0.00	0.00
26	140.00	Antel	3	28.576	31.433	0.66	0.75	7.05	81.81	0.000	0.000	354.51	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	28.179	30.997	0.38	0.75	0.46	29.70	0.000	0.000	22.88	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	28.179	30.997	0.52	0.75	31.88	331.56	0.000	0.000	1580.97	0.00	0.00
29	131.00	AIR6449 B41	3	28.179	30.997	0.53	0.75	9.03	278.10	0.000	0.000	447.63	0.00	0.00
30	131.00	AIR32	3	28.179	30.997	0.65	0.75	12.74	356.94	0.000	0.000	632.00	0.00	0.00
31	131.00	PV-LPPGS-12M-HR2-AP3	1	28.179	30.997	1.00	1.00	34.10	1939.50	0.000	0.000	1691.17	0.00	0.00
32	131.00	Bias-T 782 11056	3	28.179	30.997	0.38	0.75	0.15	4.05	0.000	0.000	7.25	0.00	0.00
33	131.00	ATMAA1412D-1A20 TMA	3	28.179	30.997	0.38	0.75	1.32	35.10	0.000	0.000	65.28	0.00	0.00
34	131.00	SDX1926Q-43 Diplexer	3	28.179	30.997	0.38	0.75	0.33	16.20	0.000	0.000	16.18	0.00	0.00
35	131.00	Radio 4449 B71+B85	3	28.179	30.997	0.38	0.75	2.22	197.64	0.000	0.000	109.91	0.00	0.00
36	131.00	Ericsson 4415 B25	3	28.179	30.997	0.38	0.75	1.84	124.20	0.000	0.000	91.50	0.00	0.00
37	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.38	0.75	4.56	189.00	0.000	0.000	222.99	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	102.60	0.000	0.000	488.67	0.00	0.00
39	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.38	0.75	3.05	162.00	0.000	0.000	149.21	0.00	0.00
40	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	148.50	0.000	0.000	551.53	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.75	0.75	6.01	45.00	0.000	0.000	294.38	0.00	0.00
42	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.38	0.75	2.80	143.10	0.000	0.000	137.10	0.00	0.00
43	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.38	0.75	0.21	3.60	0.000	0.000	10.28	0.00	0.00
44	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1440.00	0.000	0.000	1566.11	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.50	0.75	1.18	23.76	0.000	0.000	57.55	0.00	0.00
46	110.00	Raycap	1	27.161	29.877	0.75	0.75	1.51	19.71	0.000	0.000	72.06	0.00	0.00
47	110.00	Fujitsu TA08025-B604	3	27.161	29.877	0.38	0.75	2.21	172.53	0.000	0.000	105.41	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

48	110.00	Fujitsu TA08025-B605	3	27.161	29.877	0.38	0.75	2.21	202.50	0.000	0.000	105.41	0.00	0.00
49	110.00	MC-PK8-DSH	1	27.161	29.877	1.00	1.00	37.59	1554.30	0.000	0.000	1796.93	0.00	0.00
50	110.00	JMA Wireless	3	27.161	29.877	0.55	0.75	20.80	174.15	0.000	0.000	994.11	0.00	0.00
							Totals:		**15,223.70**			**21,259.19**		

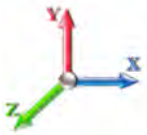
Total Applied Force Summary

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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		527.21	1061.65	0.00	0.00
10.00		517.20	1044.08	0.00	0.00
15.00		507.19	1026.51	0.00	0.00
20.00		527.53	1008.94	0.00	0.00
25.00		541.77	991.37	0.00	0.00
30.00		551.40	973.81	0.00	0.00
35.00		557.63	956.24	0.00	0.00
40.00		561.24	938.67	0.00	0.00
41.50		167.27	278.17	0.00	0.00
45.00		397.36	1193.69	0.00	0.00
48.00		340.27	1009.46	0.00	0.00
50.00		226.23	363.10	0.00	0.00
55.00		567.83	895.45	0.00	0.00
60.00		564.94	877.88	0.00	0.00
65.00		560.93	860.31	0.00	0.00
70.00		555.92	842.75	0.00	0.00
75.00		550.03	825.18	0.00	0.00
80.00		543.33	807.61	0.00	0.00
84.08		437.73	646.51	0.00	0.00
85.00		98.31	238.90	0.00	0.00
89.50		480.79	1157.35	0.00	0.00
90.00		52.76	64.67	0.00	0.00
95.00		525.48	638.98	0.00	0.00
100.00		516.28	624.93	0.00	0.00
105.00		506.55	610.87	0.00	0.00
110.00	(11) attachments	3570.25	2720.01	0.00	0.00
115.00		485.65	578.26	0.00	0.00
120.00		474.53	564.21	0.00	0.00
123.00	(23) attachments	3756.54	2589.34	0.00	0.00
125.00		183.33	211.51	0.00	0.00
127.92		264.15	304.42	0.00	0.00
130.00		188.17	339.72	0.00	0.00
131.00	(28) attachments	4754.28	3474.54	0.00	0.00
132.08		96.41	164.60	0.00	0.00
135.00		257.04	214.31	0.00	0.00
140.00	(27) attachments	4966.41	3279.11	0.00	0.00
145.00		418.45	317.54	0.00	0.00
150.00	(43) attachments	5912.84	4909.15	0.00	409.62
	Totals:	**36,711.20**	**39,603.79**	**0.00**	**409.62**

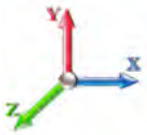
Linear Appurtenance Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.879	0.00	4.50
10.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	17.879	0.00	4.50
15.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	17.879	0.00	4.50
20.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	18.971	0.00	4.50
25.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	19.883	0.00	4.50
30.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	20.661	0.00	4.50
35.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	21.343	0.00	4.50
40.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	21.951	0.00	4.50
41.50	1.60" Hybrid	Yes	1.50	0.000	1.60	0.20	0.00	0.030	0.000	22.122	0.00	1.35
45.00	1.60" Hybrid	Yes	3.50	0.000	1.60	0.47	0.00	0.031	0.000	22.502	0.00	3.15
48.00	1.60" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.031	0.000	22.810	0.00	2.70
50.00	1.60" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.031	0.000	23.007	0.00	1.80
55.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	23.473	0.00	4.50
60.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	23.907	0.00	4.50
65.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	24.313	0.00	4.50
70.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.034	0.000	24.696	0.00	4.50
75.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	25.057	0.00	4.50
80.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	25.400	0.00	4.50
84.08	1.60" Hybrid	Yes	4.08	0.000	1.60	0.54	0.00	0.037	0.000	25.667	0.00	3.67
85.00	1.60" Hybrid	Yes	0.92	0.000	1.60	0.12	0.00	0.037	0.000	25.726	0.00	0.83
89.50	1.60" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.038	0.000	26.007	0.00	4.05
90.00	1.60" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.038	0.000	26.037	0.00	0.45
95.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	26.336	0.00	4.50
100.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	26.621	0.00	4.50
105.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.040	0.000	26.896	0.00	4.50
110.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	27.161	0.00	4.50
									Totals:		**0.0**	**99.0**

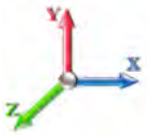
Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.54	-36.78	0.00	-4128.6	0.00	4128.64	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.974
5.00	-38.35	-36.39	0.00	-3944.7	0.00	3944.74	3376.67	1688.33	8351.12	4181.77	0.11	-0.200	0.000	0.955
10.00	-37.18	-36.00	0.00	-3762.8	0.00	3762.80	3351.94	1675.97	8129.40	4070.74	0.43	-0.402	0.000	0.936
15.00	-36.03	-35.61	0.00	-3582.8	0.00	3582.82	3325.63	1662.82	7906.28	3959.02	0.96	-0.607	0.000	0.916
20.00	-34.90	-35.20	0.00	-3404.7	0.00	3404.77	3297.74	1648.87	7681.99	3846.70	1.71	-0.813	0.000	0.896
25.00	-33.79	-34.76	0.00	-3228.7	0.00	3228.79	3268.26	1634.13	7456.75	3733.92	2.67	-1.021	0.000	0.876
30.00	-32.70	-34.31	0.00	-3054.9	0.00	3054.98	3237.20	1618.60	7230.79	3620.77	3.85	-1.231	0.000	0.854
35.00	-31.64	-33.85	0.00	-2883.4	0.00	2883.42	3204.54	1602.27	7004.35	3507.38	5.25	-1.442	0.000	0.832
40.00	-30.63	-33.34	0.00	-2714.1	0.00	2714.18	3170.31	1585.15	6777.64	3393.86	6.88	-1.654	0.000	0.810
41.50	-30.30	-33.22	0.00	-2664.1	0.00	2664.17	3159.73	1579.86	6709.61	3359.79	7.41	-1.720	0.000	0.803
45.00	-29.04	-32.86	0.00	-2547.9	0.00	2547.91	3134.49	1567.24	6550.90	3280.32	8.73	-1.870	0.000	0.786
48.00	-27.98	-32.53	0.00	-2449.3	0.00	2449.34	3132.30	1566.15	6537.37	3273.54	9.94	-2.000	0.000	0.758
50.00	-27.54	-32.37	0.00	-2384.2	0.00	2384.27	3117.49	1558.74	6446.72	3228.15	10.80	-2.088	0.000	0.748
55.00	-26.55	-31.86	0.00	-2222.4	0.00	2222.44	3079.35	1539.68	6220.34	3114.79	13.10	-2.294	0.000	0.723
60.00	-25.59	-31.35	0.00	-2063.1	0.00	2063.14	3039.63	1519.81	5994.49	3001.70	15.61	-2.499	0.000	0.696
65.00	-24.64	-30.84	0.00	-1906.3	0.00	1906.39	2998.32	1499.16	5769.39	2888.98	18.34	-2.704	0.000	0.669
70.00	-23.72	-30.33	0.00	-1752.1	0.00	1752.19	2955.43	1477.72	5545.28	2776.76	21.28	-2.907	0.000	0.639
75.00	-22.82	-29.81	0.00	-1600.5	0.00	1600.56	2910.95	1455.48	5322.38	2665.15	24.43	-3.107	0.000	0.609
80.00	-21.96	-29.29	0.00	-1451.4	0.00	1451.49	2864.89	1432.44	5100.92	2554.25	27.79	-3.305	0.000	0.576
84.08	-21.29	-28.85	0.00	-1331.8	0.00	1331.88	2826.09	1413.05	4921.28	2464.30	30.69	-3.463	0.000	0.548
85.00	-21.00	-28.78	0.00	-1305.4	0.00	1305.43	2817.24	1408.62	4881.12	2444.19	31.36	-3.500	0.000	0.542
89.50	-19.83	-28.26	0.00	-1175.9	0.00	1175.92	2031.94	1015.97	3485.43	1745.31	34.74	-3.669	0.000	0.684
90.00	-19.71	-28.25	0.00	-1161.7	0.00	1161.79	2029.15	1014.57	3470.92	1738.04	35.12	-3.688	0.000	0.679
95.00	-19.01	-27.75	0.00	-1020.5	0.00	1020.57	2000.34	1000.17	3325.82	1665.38	39.10	-3.904	0.000	0.623
100.00	-18.33	-27.25	0.00	-881.83	0.00	881.83	1969.95	984.97	3180.92	1592.82	43.30	-4.109	0.000	0.564
105.00	-17.67	-26.76	0.00	-745.56	0.00	745.56	1937.97	968.98	3036.44	1520.48	47.70	-4.300	0.000	0.500
110.00	-15.16	-23.04	0.00	-611.77	0.00	611.77	1904.40	952.20	2892.62	1448.46	52.30	-4.474	0.000	0.431
115.00	-14.57	-22.54	0.00	-496.59	0.00	496.59	1869.25	934.63	2749.69	1376.89	57.07	-4.630	0.000	0.369
120.00	-14.01	-22.05	0.00	-383.88	0.00	383.88	1832.52	916.26	2607.87	1305.87	61.99	-4.767	0.000	0.302
123.00	-11.72	-18.10	0.00	-317.74	0.00	317.74	1809.72	904.86	2523.40	1263.58	65.00	-4.839	0.000	0.258
125.00	-11.51	-17.91	0.00	-281.54	0.00	281.54	1794.20	897.10	2467.38	1235.52	67.04	-4.882	0.000	0.235
127.92	-11.22	-17.63	0.00	-229.30	0.00	229.30	1771.11	885.56	2386.14	1194.84	70.04	-4.939	0.000	0.199
130.00	-10.89	-17.42	0.00	-192.57	0.00	192.57	1754.29	877.15	2328.47	1165.96	72.20	-4.974	0.000	0.172
131.00	-7.84	-12.38	0.00	-175.16	0.00	175.16	1746.12	873.06	2300.89	1152.16	73.24	-4.990	0.000	0.157
132.08	-7.67	-12.27	0.00	-161.74	0.00	161.74	1160.48	580.24	1541.12	771.71	74.37	-5.005	0.000	0.217
135.00	-7.47	-12.01	0.00	-125.95	0.00	125.95	1148.82	574.41	1493.54	747.88	77.44	-5.042	0.000	0.175
140.00	-4.64	-6.77	0.00	-65.92	0.00	65.92	1127.58	563.79	1411.91	707.01	82.75	-5.100	0.000	0.097
145.00	-4.36	-6.33	0.00	-32.05	0.00	32.05	1104.76	552.38	1330.41	666.20	88.10	-5.133	0.000	0.052
150.00	0.00	-5.91	0.00	-0.41	0.00	0.41	1080.36	540.18	1249.27	625.56	93.48	-5.145	0.000	0.001

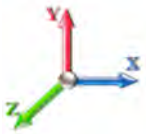
Wind Loading - Shaft

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	27.156	32.59	185.2	643.2	1870.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	26.765	32.12	182.6	677.8	1881.7
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	26.337	31.60	179.7	693.2	1873.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	25.893	31.07	187.4	700.3	1857.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	25.439	30.53	193.0	702.5	1836.2
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	24.979	29.98	196.9	701.5	1811.8
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	24.515	29.42	199.6	698.2	1785.0
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	5.00	24.049	28.86	201.4	693.2	1756.5
41.50	Bot - Section 2	1.00	1.05	6.394	7.03	0.00	1.200	2.046	1.50	7.121	8.55	60.1	207.4	521.9
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	3.50	16.639	19.97	142.9	486.4	1946.2
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	2.076	3.00	14.078	16.89	122.5	414.3	1647.3
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	2.00	9.290	11.15	81.6	274.9	683.8
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	22.900	27.48	205.1	678.9	1684.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	22.426	26.91	204.6	669.7	1652.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	21.950	26.34	203.6	659.8	1618.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	21.474	25.77	202.3	649.3	1584.8
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	20.997	25.20	200.7	638.3	1550.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	20.519	24.62	198.9	626.7	1515.4
84.08	Bot - Section 3	1.00	1.22	7.419	8.16	0.00	1.200	2.196	4.08	16.402	19.68	160.6	503.9	1212.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	0.92	3.676	4.41	36.1	114.0	398.0
89.50	Top - Section 2	1.00	1.24	7.517	8.27	0.00	1.200	2.210	4.50	17.817	21.38	176.8	549.6	1923.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	0.50	1.955	2.35	19.4	60.9	128.3
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	19.294	23.15	193.9	596.7	1260.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	18.814	22.58	191.1	583.8	1228.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	18.334	22.00	188.1	570.5	1196.8
110.00	Appurtenance(s)	1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	17.853	21.42	185.0	557.0	1164.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	17.372	20.85	181.7	543.1	1132.0
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	16.891	20.27	178.3	529.1	1099.2
123.00	Appurtenance(s)	1.00	1.32	8.038	8.84	0.00	1.200	2.281	3.00	9.902	11.88	105.1	312.3	645.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	2.00	6.505	7.81	69.3	205.9	424.2
127.92	Bot - Section 4	1.00	1.33	8.104	8.91	0.00	1.200	2.290	2.92	9.349	11.22	100.0	295.4	608.4
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	2.08	6.643	7.97	71.3	210.7	597.3
131.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	2.296	1.00	3.159	3.79	34.0	100.6	284.1
132.08	Top - Section 3	1.00	1.34	8.159	8.98	0.00	1.200	2.298	1.08	3.400	4.08	36.6	108.3	305.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	2.92	9.043	10.85	97.8	286.5	512.7
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	2.311	5.00	15.121	18.15	164.9	476.2	852.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	5.00	14.639	17.57	160.8	461.2	823.8
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	14.156	16.99	156.6	446.0	794.6
								Totals:	**150.00**			**5,655.5**		**45,670.5**

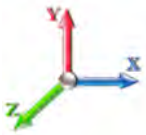
Discrete Appurtenance Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	150.00	TPX-070821	6	8.381	9.219	0.45	0.90	2.50	200.11	0.000	0.000	23.08	0.00	0.00
2	150.00	800 10121	3	8.389	9.228	0.71	0.90	16.98	527.46	0.000	0.730	156.66	0.00	114.36
3	150.00	HPA-65R-BUU-H6	1	8.381	9.219	1.00	1.00	11.52	410.25	0.000	0.000	106.17	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	8.381	9.219	0.75	0.90	23.22	1056.97	0.000	0.000	214.03	0.00	0.00
5	150.00	QS66512-2	1	8.381	9.219	1.00	1.00	9.90	454.10	0.000	0.000	91.27	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	8.381	9.219	0.71	0.90	21.58	982.40	0.000	0.000	198.95	0.00	0.00
7	150.00	Low Profile	1	8.381	9.219	1.00	1.00	45.55	3245.22	0.000	0.000	419.90	0.00	0.00
8	150.00	DTMABP7819VG12A	6	8.381	9.219	0.45	0.90	5.85	298.60	0.000	0.000	53.91	0.00	0.00
9	150.00	LMU Antenna	1	8.381	9.219	1.00	1.00	1.67	10.20	0.000	0.000	15.41	0.00	0.00
10	150.00	RRUS-32	3	8.381	9.219	0.45	0.90	5.44	400.26	0.000	0.000	50.15	0.00	0.00
11	150.00	RRUS-32	3	8.381	9.219	0.45	0.90	1.71	5002.12	0.000	0.000	15.74	0.00	0.00
12	150.00	4426 B66	3	8.381	9.219	0.45	0.90	12.19	1609.10	0.000	0.000	112.36	0.00	0.00
13	150.00	DBC-750	3	8.381	9.219	0.45	0.90	1.64	47.25	0.000	0.000	15.13	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	8.381	9.219	0.60	0.90	1.81	205.79	0.000	0.000	16.72	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	8.381	9.219	0.45	0.90	0.41	10.78	0.000	0.000	3.82	0.00	0.00
16	150.00	RRUS-11	3	8.381	9.219	0.45	0.90	5.03	420.10	0.000	0.000	46.36	0.00	0.00
17	140.00	Low Profile Platform	1	8.260	9.086	1.00	1.00	45.39	3233.22	0.000	0.000	412.38	0.00	0.00
18	140.00	XXDWMM-12.5-65-8T-CB	3	8.260	9.086	0.38	0.75	2.49	358.14	0.000	0.000	22.62	0.00	0.00
19	140.00	BSAMNT-SBS-2-2	3	8.260	9.086	1.00	1.00	25.06	-659.20	0.000	0.000	227.68	0.00	0.00
20	140.00	Commscope	6	8.260	9.086	0.58	0.75	34.40	2222.22	0.000	0.000	312.54	0.00	0.00
21	140.00	HRK12 (Handrail Kit)	1	8.260	9.086	1.00	1.00	15.49	987.06	0.000	0.000	140.70	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	8.260	9.086	0.38	0.75	9.10	1252.43	0.000	0.000	82.66	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	8.260	9.086	0.38	0.75	2.94	421.47	0.000	0.000	26.68	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	8.260	9.086	1.00	1.00	4.89	216.38	0.000	0.000	44.40	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	8.260	9.086	0.38	0.75	1.98	116.07	0.000	0.000	18.01	0.00	0.00
26	140.00	Antel	3	8.260	9.086	0.66	0.75	11.89	900.29	0.000	0.000	108.03	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	8.145	8.960	0.38	0.75	1.16	72.84	0.000	0.000	10.43	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	8.145	8.960	0.52	0.75	35.86	2196.94	0.000	0.000	321.30	0.00	0.00
29	131.00	AIR6449 B41	3	8.145	8.960	0.53	0.75	11.02	816.80	0.000	0.000	98.76	0.00	0.00
30	131.00	AIR32	3	8.145	8.960	0.65	0.75	15.81	1246.09	0.000	0.000	141.64	0.00	0.00
31	131.00	PV-LPPGS-12M-HR2-AP3	1	8.145	8.960	1.00	1.00	65.41	4859.28	0.000	0.000	586.07	0.00	0.00
32	131.00	Bias-T 782 11056	3	8.145	8.960	0.38	0.75	0.58	19.36	0.000	0.000	5.24	0.00	0.00
33	131.00	ATMAA1412D-1A20 TMA	3	8.145	8.960	0.38	0.75	2.47	128.89	0.000	0.000	22.17	0.00	0.00
34	131.00	SDX1926Q-43 Diplexer	3	8.145	8.960	0.38	0.75	0.95	51.86	0.000	0.000	8.49	0.00	0.00
35	131.00	Radio 4449 B71+B85	3	8.145	8.960	0.38	0.75	3.06	316.18	0.000	0.000	27.41	0.00	0.00
36	131.00	Ericsson 4415 B25	3	8.145	8.960	0.38	0.75	2.61	299.60	0.000	0.000	23.36	0.00	0.00
37	123.00	ALU - TD-RRH8x20-25 -	3	8.038	8.842	0.38	0.75	5.78	713.44	0.000	0.000	51.11	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	8.038	8.842	0.62	0.75	14.53	432.28	0.000	0.000	128.48	0.00	0.00
39	123.00	ALU - 1900 MHz RRH -	3	8.038	8.842	0.38	0.75	4.91	463.37	0.000	0.000	43.39	0.00	0.00
40	123.00	APXVTM14-C-I20	3	8.038	8.842	0.59	0.75	13.91	866.62	0.000	0.000	122.96	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	8.038	8.842	0.75	0.75	8.75	172.99	0.000	0.000	77.40	0.00	0.00
42	123.00	ALU - 800 MHz RRH -	3	8.038	8.842	0.38	0.75	4.48	417.53	0.000	0.000	39.64	0.00	0.00
43	123.00	RFS - ACU-A20-N - RET	4	8.038	8.842	0.38	0.75	0.79	22.06	0.000	0.000	7.00	0.00	0.00
44	123.00	Platform w/ HRK Handrail	1	8.038	8.842	1.00	1.00	65.58	3544.98	0.000	0.000	579.82	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	8.038	8.842	0.50	0.75	2.45	85.87	0.000	0.000	21.67	0.00	0.00
46	110.00	Raycap	1	7.851	8.636	0.75	0.75	2.06	82.41	0.000	0.000	17.78	0.00	0.00
47	110.00	Fujitsu TA08025-B604	3	7.851	8.636	0.38	0.75	3.02	390.07	0.000	0.000	26.09	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

48	110.00	Fujitsu TA08025-B605	3	7.851	8.636	0.38	0.75	3.02	435.03	0.000	0.000	26.09	0.00	0.00
49	110.00	MC-PK8-DSH	1	7.851	8.636	1.00	1.00	98.65	3881.12	0.000	0.000	851.90	0.00	0.00
50	110.00	JMA Wireless	3	7.851	8.636	0.55	0.75	23.95	1158.55	0.000	0.000	206.82	0.00	0.00
							Totals:		**46,602.96**			**6,380.35**		

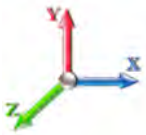
Total Applied Force Summary

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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		185.25	2086.82	0.00	0.00
10.00		182.59	2101.23	0.00	0.00
15.00		179.66	2095.37	0.00	0.00
20.00		187.41	2080.59	0.00	0.00
25.00		192.99	2060.66	0.00	0.00
30.00		196.92	2037.31	0.00	0.00
35.00		199.63	2011.53	0.00	0.00
40.00		201.42	1983.89	0.00	0.00
41.50		60.11	590.13	0.00	0.00
45.00		142.86	2105.90	0.00	0.00
48.00		122.52	1784.42	0.00	0.00
50.00		81.55	775.31	0.00	0.00
55.00		205.09	1914.10	0.00	0.00
60.00		204.56	1882.05	0.00	0.00
65.00		203.63	1849.27	0.00	0.00
70.00		202.34	1815.85	0.00	0.00
75.00		200.74	1781.87	0.00	0.00
80.00		198.86	1747.38	0.00	0.00
84.08		160.63	1402.00	0.00	0.00
85.00		36.09	440.62	0.00	0.00
89.50		176.80	2132.89	0.00	0.00
90.00		19.43	151.64	0.00	0.00
95.00		193.87	1493.81	0.00	0.00
100.00		191.10	1462.48	0.00	0.00
105.00		188.15	1430.84	0.00	0.00
110.00	(11) attachments	1313.69	7346.08	0.00	0.00
115.00		181.73	1314.16	0.00	0.00
120.00		178.28	1281.38	0.00	0.00
123.00	(23) attachments	1176.52	7473.86	0.00	0.00
125.00		69.25	487.94	0.00	0.00
127.92		100.01	701.29	0.00	0.00
130.00		71.31	663.69	0.00	0.00
131.00	(28) attachments	1278.82	10323.82	0.00	0.00
132.08		36.62	327.73	0.00	0.00
135.00		97.84	572.21	0.00	0.00
140.00	(27) attachments	1560.56	10003.05	0.00	0.00
145.00		160.79	884.61	0.00	0.00
150.00	(43) attachments	1696.26	15725.73	0.00	114.36
	Totals:	**12,035.87**	**98,323.50**	**0.00**	**114.36**

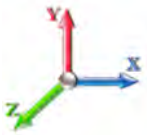
Linear Appurtenance Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	1.60" Hybrid	Yes	5.00	0.000	1.60	2.05	0.00	0.026	0.000	5.168	0.00	34.13
10.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.15	0.00	0.026	0.000	5.168	0.00	37.36
15.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.21	0.00	0.027	0.000	5.168	0.00	39.44
20.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.25	0.00	0.027	0.000	5.483	0.00	41.01
25.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.29	0.00	0.028	0.000	5.747	0.00	42.29
30.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.32	0.00	0.029	0.000	5.972	0.00	43.37
35.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.34	0.00	0.029	0.000	6.169	0.00	44.31
40.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.37	0.00	0.030	0.000	6.345	0.00	45.15
41.50	1.60" Hybrid	Yes	1.50	0.000	1.60	0.71	0.00	0.030	0.000	6.394	0.00	13.61
45.00	1.60" Hybrid	Yes	3.50	0.000	1.60	1.67	0.00	0.031	0.000	6.504	0.00	32.13
48.00	1.60" Hybrid	Yes	3.00	0.000	1.60	1.44	0.00	0.031	0.000	6.593	0.00	27.79
50.00	1.60" Hybrid	Yes	2.00	0.000	1.60	0.96	0.00	0.031	0.000	6.650	0.00	18.64
55.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.42	0.00	0.032	0.000	6.785	0.00	47.23
60.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.44	0.00	0.032	0.000	6.910	0.00	47.82
65.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.45	0.00	0.033	0.000	7.028	0.00	48.37
70.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.46	0.00	0.034	0.000	7.138	0.00	48.88
75.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.48	0.00	0.035	0.000	7.243	0.00	49.37
80.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.49	0.00	0.036	0.000	7.342	0.00	49.83
84.08	1.60" Hybrid	Yes	4.08	0.000	1.60	2.04	0.00	0.037	0.000	7.419	0.00	40.99
85.00	1.60" Hybrid	Yes	0.92	0.000	1.60	0.46	0.00	0.037	0.000	7.436	0.00	9.22
89.50	1.60" Hybrid	Yes	4.50	0.000	1.60	2.26	0.00	0.038	0.000	7.517	0.00	45.58
90.00	1.60" Hybrid	Yes	0.50	0.000	1.60	0.25	0.00	0.038	0.000	7.526	0.00	5.07
95.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.52	0.00	0.038	0.000	7.612	0.00	51.09
100.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.53	0.00	0.039	0.000	7.695	0.00	51.47
105.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.54	0.00	0.040	0.000	7.774	0.00	51.84
110.00	1.60" Hybrid	Yes	5.00	0.000	1.60	2.55	0.00	0.042	0.000	7.851	0.00	52.19
										Totals:	**0.0**	**1,018.2**

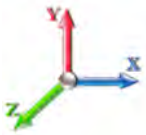
Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	-98.32	-12.10	0.00	-1415.3	0.00	1415.36	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.359
5.00	-96.21	-12.03	0.00	-1354.8	0.00	1354.89	3376.67	1688.33	8351.12	4181.77	0.04	-0.069	0.000	0.353
10.00	-94.10	-11.95	0.00	-1294.7	0.00	1294.76	3351.94	1675.97	8129.40	4070.74	0.15	-0.138	0.000	0.346
15.00	-91.99	-11.88	0.00	-1234.9	0.00	1234.99	3325.63	1662.82	7906.28	3959.02	0.33	-0.209	0.000	0.340
20.00	-89.90	-11.80	0.00	-1175.5	0.00	1175.59	3297.74	1648.87	7681.99	3846.70	0.59	-0.280	0.000	0.333
25.00	-87.82	-11.70	0.00	-1116.6	0.00	1116.60	3268.26	1634.13	7456.75	3733.92	0.92	-0.352	0.000	0.326
30.00	-85.77	-11.60	0.00	-1058.0	0.00	1058.08	3237.20	1618.60	7230.79	3620.77	1.32	-0.424	0.000	0.319
35.00	-83.75	-11.49	0.00	-1000.0	0.00	1000.07	3204.54	1602.27	7004.35	3507.38	1.81	-0.497	0.000	0.311
40.00	-81.75	-11.34	0.00	-942.60	0.00	942.60	3170.31	1585.15	6777.64	3393.86	2.37	-0.571	0.000	0.304
41.50	-81.16	-11.33	0.00	-925.59	0.00	925.59	3159.73	1579.86	6709.61	3359.79	2.55	-0.594	0.000	0.301
45.00	-79.04	-11.23	0.00	-885.94	0.00	885.94	3134.49	1567.24	6550.90	3280.32	3.01	-0.646	0.000	0.295
48.00	-77.25	-11.14	0.00	-852.25	0.00	852.25	3132.30	1566.15	6537.37	3273.54	3.43	-0.691	0.000	0.285
50.00	-76.47	-11.12	0.00	-829.97	0.00	829.97	3117.49	1558.74	6446.72	3228.15	3.72	-0.722	0.000	0.282
55.00	-74.54	-10.98	0.00	-774.39	0.00	774.39	3079.35	1539.68	6220.34	3114.79	4.52	-0.794	0.000	0.273
60.00	-72.65	-10.84	0.00	-719.49	0.00	719.49	3039.63	1519.81	5994.49	3001.70	5.39	-0.865	0.000	0.264
65.00	-70.79	-10.69	0.00	-665.30	0.00	665.30	2998.32	1499.16	5769.39	2888.98	6.33	-0.937	0.000	0.254
70.00	-68.97	-10.55	0.00	-611.84	0.00	611.84	2955.43	1477.72	5545.28	2776.76	7.35	-1.007	0.000	0.244
75.00	-67.18	-10.39	0.00	-559.11	0.00	559.11	2910.95	1455.48	5322.38	2665.15	8.45	-1.077	0.000	0.233
80.00	-65.42	-10.23	0.00	-507.15	0.00	507.15	2864.89	1432.44	5100.92	2554.25	9.61	-1.146	0.000	0.221
84.08	-64.02	-10.08	0.00	-465.37	0.00	465.37	2826.09	1413.05	4921.28	2464.30	10.62	-1.202	0.000	0.212
85.00	-63.57	-10.08	0.00	-456.13	0.00	456.13	2817.24	1408.62	4881.12	2444.19	10.85	-1.214	0.000	0.209
89.50	-61.44	-9.89	0.00	-410.80	0.00	410.80	2031.94	1015.97	3485.43	1745.31	12.02	-1.274	0.000	0.266
90.00	-61.28	-9.91	0.00	-405.85	0.00	405.85	2029.15	1014.57	3470.92	1738.04	12.16	-1.280	0.000	0.264
95.00	-59.78	-9.76	0.00	-356.31	0.00	356.31	2000.34	1000.17	3325.82	1665.38	13.54	-1.356	0.000	0.244
100.00	-58.31	-9.60	0.00	-307.53	0.00	307.53	1969.95	984.97	3180.92	1592.82	15.00	-1.427	0.000	0.223
105.00	-56.87	-9.44	0.00	-259.53	0.00	259.53	1937.97	968.98	3036.44	1520.48	16.53	-1.494	0.000	0.200
110.00	-49.56	-7.98	0.00	-212.33	0.00	212.33	1904.40	952.20	2892.62	1448.46	18.13	-1.554	0.000	0.173
115.00	-48.24	-7.81	0.00	-172.43	0.00	172.43	1869.25	934.63	2749.69	1376.89	19.79	-1.609	0.000	0.151
120.00	-46.96	-7.62	0.00	-133.41	0.00	133.41	1832.52	916.26	2607.87	1305.87	21.50	-1.656	0.000	0.128
123.00	-39.52	-6.24	0.00	-110.55	0.00	110.55	1809.72	904.86	2523.40	1263.58	22.55	-1.681	0.000	0.109
125.00	-39.04	-6.17	0.00	-98.07	0.00	98.07	1794.20	897.10	2467.38	1235.52	23.25	-1.696	0.000	0.101
127.92	-38.34	-6.06	0.00	-80.08	0.00	80.08	1771.11	885.56	2386.14	1194.84	24.30	-1.716	0.000	0.089
130.00	-37.67	-5.97	0.00	-67.46	0.00	67.46	1754.29	877.15	2328.47	1165.96	25.05	-1.728	0.000	0.079
131.00	-27.39	-4.38	0.00	-61.49	0.00	61.49	1746.12	873.06	2300.89	1152.16	25.41	-1.734	0.000	0.069
132.08	-27.07	-4.34	0.00	-56.74	0.00	56.74	1160.48	580.24	1541.12	771.71	25.80	-1.739	0.000	0.097
135.00	-26.50	-4.24	0.00	-44.08	0.00	44.08	1148.82	574.41	1493.54	747.88	26.87	-1.752	0.000	0.082
140.00	-16.54	-2.37	0.00	-22.90	0.00	22.90	1127.58	563.79	1411.91	707.01	28.72	-1.772	0.000	0.047
145.00	-15.67	-2.19	0.00	-11.04	0.00	11.04	1104.76	552.38	1330.41	666.20	30.58	-1.784	0.000	0.031
150.00	0.00	-1.70	0.00	-0.11	0.00	0.11	1080.36	540.18	1249.27	625.56	32.45	-1.788	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	19.72	
10.00		1003.2	0.01	0.05	0.03	27.74	
15.00		983.74	0.02	0.06	0.04	31.20	
20.00		964.22	0.03	0.07	0.04	32.58	
25.00		944.70	0.05	0.07	0.04	33.05	
30.00		925.18	0.08	0.07	0.04	33.21	
35.00		905.65	0.10	0.07	0.04	33.30	
40.00		886.13	0.13	0.07	0.03	33.34	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.92	
45.00		1216.5	0.17	0.07	0.03	46.55	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	39.43	
50.00		340.71	0.21	0.06	0.02	13.04	
55.00		838.12	0.25	0.05	0.02	31.04	
60.00		818.60	0.30	0.04	0.01	27.63	
65.00		799.08	0.35	0.03	0.01	22.02	
70.00		779.55	0.41	0.01	0.01	13.91	
75.00		760.03	0.47	-0.01	0.01	3.73	
80.00		740.51	0.54	-0.03	0.01	-7.14	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-12.36	
85.00		236.69	0.61	-0.06	0.02	-5.50	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-37.34	
90.00		56.17	0.68	-0.08	0.03	-1.88	
95.00		553.15	0.76	-0.10	0.04	-21.48	
100.00		537.54	0.84	-0.12	0.07	-20.96	
105.00		521.92	0.93	-0.12	0.10	-17.70	
110.00	Appurtenance(s)	2865.4	1.02	-0.11	0.14	-68.11	
115.00		490.69	1.11	-0.06	0.19	-4.24	
120.00		475.07	1.21	0.01	0.26	5.43	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	71.98	
125.00		181.91	1.31	0.14	0.35	6.63	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	13.92	
130.00		322.15	1.42	0.32	0.45	21.43	
131.00	Appurtenance(s)	3834.0	1.44	0.37	0.48	280.46	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.25	
135.00		188.51	1.53	0.58	0.58	19.18	
140.00	Appurtenance(s)	3558.4	1.65	0.93	0.73	506.08	
145.00		302.17	1.77	1.39	0.92	56.84	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1296.24	
	Totals:	**39,701.0**				**2,546.1**	**Total Wind:** **36,711.2**

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

Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.80	-2.75	0.00	-365.68	0.00	365.68	3399.80	1699.90	8571.22	4291.98		0.00	0.00	0.101
5.00	-51.39	-2.75	0.00	-351.92	0.00	351.92	3376.67	1688.33	8351.12	4181.77		0.01	-0.02	0.099
10.00	-50.00	-2.73	0.00	-338.19	0.00	338.19	3351.94	1675.97	8129.40	4070.74		0.04	-0.04	0.098
15.00	-48.63	-2.72	0.00	-324.52	0.00	324.52	3325.63	1662.82	7906.28	3959.02		0.09	-0.05	0.097
20.00	-47.28	-2.70	0.00	-310.93	0.00	310.93	3297.74	1648.87	7681.99	3846.70		0.15	-0.07	0.095
25.00	-45.96	-2.68	0.00	-297.44	0.00	297.44	3268.26	1634.13	7456.75	3733.92		0.24	-0.09	0.094
30.00	-44.66	-2.66	0.00	-284.04	0.00	284.04	3237.20	1618.60	7230.79	3620.77		0.35	-0.11	0.092
35.00	-43.38	-2.64	0.00	-270.74	0.00	270.74	3204.54	1602.27	7004.35	3507.38		0.47	-0.13	0.091
40.00	-42.13	-2.61	0.00	-257.55	0.00	257.55	3170.31	1585.15	6777.64	3393.86		0.62	-0.15	0.089
41.50	-41.76	-2.61	0.00	-253.63	0.00	253.63	3159.73	1579.86	6709.61	3359.79		0.67	-0.16	0.089
45.00	-40.17	-2.57	0.00	-244.50	0.00	244.50	3134.49	1567.24	6550.90	3280.32		0.79	-0.17	0.087
48.00	-38.82	-2.53	0.00	-236.80	0.00	236.80	3132.30	1566.15	6537.37	3273.54		0.90	-0.18	0.085
50.00	-38.34	-2.53	0.00	-231.74	0.00	231.74	3117.49	1558.74	6446.72	3228.15		0.98	-0.19	0.084
55.00	-37.14	-2.50	0.00	-219.12	0.00	219.12	3079.35	1539.68	6220.34	3114.79		1.20	-0.21	0.082
60.00	-35.97	-2.48	0.00	-206.60	0.00	206.60	3039.63	1519.81	5994.49	3001.70		1.43	-0.23	0.081
65.00	-34.82	-2.47	0.00	-194.18	0.00	194.18	2998.32	1499.16	5769.39	2888.98		1.69	-0.25	0.079
70.00	-33.70	-2.46	0.00	-181.84	0.00	181.84	2955.43	1477.72	5545.28	2776.76		1.96	-0.28	0.077
75.00	-32.60	-2.47	0.00	-169.52	0.00	169.52	2910.95	1455.48	5322.38	2665.15		2.26	-0.30	0.075
80.00	-31.52	-2.47	0.00	-157.20	0.00	157.20	2864.89	1432.44	5100.92	2554.25		2.58	-0.32	0.073
84.08	-30.66	-2.47	0.00	-147.11	0.00	147.11	2826.09	1413.05	4921.28	2464.30		2.86	-0.33	0.071
85.00	-30.34	-2.48	0.00	-144.85	0.00	144.85	2817.24	1408.62	4881.12	2444.19		2.93	-0.34	0.070
89.50	-28.79	-2.47	0.00	-133.71	0.00	133.71	2031.94	1015.97	3485.43	1745.31		3.26	-0.36	0.091
90.00	-28.71	-2.48	0.00	-132.47	0.00	132.47	2029.15	1014.57	3470.92	1738.04		3.29	-0.36	0.090
95.00	-27.85	-2.48	0.00	-120.08	0.00	120.08	2000.34	1000.17	3325.82	1665.38		3.68	-0.38	0.086
100.00	-27.02	-2.49	0.00	-107.66	0.00	107.66	1969.95	984.97	3180.92	1592.82		4.10	-0.41	0.081
105.00	-26.20	-2.49	0.00	-95.21	0.00	95.21	1937.97	968.98	3036.44	1520.48		4.54	-0.43	0.076
110.00	-22.58	-2.48	0.00	-82.74	0.00	82.74	1904.40	952.20	2892.62	1448.46		5.01	-0.46	0.069
115.00	-21.80	-2.48	0.00	-70.37	0.00	70.37	1869.25	934.63	2749.69	1376.89		5.50	-0.48	0.063
120.00	-21.05	-2.47	0.00	-57.98	0.00	57.98	1832.52	916.26	2607.87	1305.87		6.01	-0.50	0.056
123.00	-17.60	-2.37	0.00	-50.57	0.00	50.57	1809.72	904.86	2523.40	1263.58		6.32	-0.51	0.050
125.00	-17.32	-2.36	0.00	-45.83	0.00	45.83	1794.20	897.10	2467.38	1235.52		6.54	-0.52	0.047
127.92	-16.91	-2.35	0.00	-38.93	0.00	38.93	1771.11	885.56	2386.14	1194.84		6.86	-0.52	0.042
130.00	-16.46	-2.32	0.00	-34.04	0.00	34.04	1754.29	877.15	2328.47	1165.96		7.09	-0.53	0.039
131.00	-11.83	-2.00	0.00	-31.71	0.00	31.71	1746.12	873.06	2300.89	1152.16		7.20	-0.53	0.034
132.08	-11.61	-1.99	0.00	-29.54	0.00	29.54	1160.48	580.24	1541.12	771.71		7.32	-0.54	0.048
135.00	-11.32	-1.97	0.00	-23.75	0.00	23.75	1148.82	574.41	1493.54	747.88		7.65	-0.54	0.042
140.00	-6.96	-1.42	0.00	-13.91	0.00	13.91	1127.58	563.79	1411.91	707.01		8.23	-0.55	0.026
145.00	-6.53	-1.36	0.00	-6.80	0.00	6.80	1104.76	552.38	1330.41	666.20		8.81	-0.56	0.016
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56		9.40	-0.56	0.000

Seismic Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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 + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	19.72	
10.00		1003.2	0.01	0.05	0.03	27.74	
15.00		983.74	0.02	0.06	0.04	31.20	
20.00		964.22	0.03	0.07	0.04	32.58	
25.00		944.70	0.05	0.07	0.04	33.05	
30.00		925.18	0.08	0.07	0.04	33.21	
35.00		905.65	0.10	0.07	0.04	33.30	
40.00		886.13	0.13	0.07	0.03	33.34	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.92	
45.00		1216.5	0.17	0.07	0.03	46.55	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	39.43	
50.00		340.71	0.21	0.06	0.02	13.04	
55.00		838.12	0.25	0.05	0.02	31.04	
60.00		818.60	0.30	0.04	0.01	27.63	
65.00		799.08	0.35	0.03	0.01	22.02	
70.00		779.55	0.41	0.01	0.01	13.91	
75.00		760.03	0.47	-0.01	0.01	3.73	
80.00		740.51	0.54	-0.03	0.01	-7.14	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-12.36	
85.00		236.69	0.61	-0.06	0.02	-5.50	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-37.34	
90.00		56.17	0.68	-0.08	0.03	-1.88	
95.00		553.15	0.76	-0.10	0.04	-21.48	
100.00		537.54	0.84	-0.12	0.07	-20.96	
105.00		521.92	0.93	-0.12	0.10	-17.70	
110.00	Appurtenance(s)	2865.4	1.02	-0.11	0.14	-68.11	
115.00		490.69	1.11	-0.06	0.19	-4.24	
120.00		475.07	1.21	0.01	0.26	5.43	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	71.98	
125.00		181.91	1.31	0.14	0.35	6.63	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	13.92	
130.00		322.15	1.42	0.32	0.45	21.43	
131.00	Appurtenance(s)	3834.0	1.44	0.37	0.48	280.46	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.25	
135.00		188.51	1.53	0.58	0.58	19.18	
140.00	Appurtenance(s)	3558.4	1.65	0.93	0.73	506.08	
145.00		302.17	1.77	1.39	0.92	56.84	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1296.24	
	Totals:	**39,701.0**				**2,546.1**	**Total Wind:** **36,711.2**

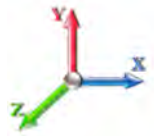
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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 + 1.0E



Gust Response Factor	1.10			**Sds**	0.19			**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03			**S1**	0.06
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.60	-2.75	0.00	-360.61	0.00	360.61	3399.80	1699.90	8571.22	4291.98		0.00	0.00	0.096
5.00	-38.54	-2.74	0.00	-346.87	0.00	346.87	3376.67	1688.33	8351.12	4181.77		0.01	-0.02	0.094
10.00	-37.50	-2.72	0.00	-333.16	0.00	333.16	3351.94	1675.97	8129.40	4070.74		0.04	-0.04	0.093
15.00	-36.47	-2.70	0.00	-319.54	0.00	319.54	3325.63	1662.82	7906.28	3959.02		0.08	-0.05	0.092
20.00	-35.46	-2.68	0.00	-306.03	0.00	306.03	3297.74	1648.87	7681.99	3846.70		0.15	-0.07	0.090
25.00	-34.47	-2.66	0.00	-292.62	0.00	292.62	3268.26	1634.13	7456.75	3733.92		0.24	-0.09	0.089
30.00	-33.49	-2.63	0.00	-279.33	0.00	279.33	3237.20	1618.60	7230.79	3620.77		0.34	-0.11	0.087
35.00	-32.53	-2.61	0.00	-266.15	0.00	266.15	3204.54	1602.27	7004.35	3507.38		0.47	-0.13	0.086
40.00	-31.60	-2.58	0.00	-253.10	0.00	253.10	3170.31	1585.15	6777.64	3393.86		0.61	-0.15	0.085
41.50	-31.32	-2.58	0.00	-249.23	0.00	249.23	3159.73	1579.86	6709.61	3359.79		0.66	-0.16	0.084
45.00	-30.12	-2.53	0.00	-240.21	0.00	240.21	3134.49	1567.24	6550.90	3280.32		0.78	-0.17	0.083
48.00	-29.11	-2.50	0.00	-232.61	0.00	232.61	3132.30	1566.15	6537.37	3273.54		0.89	-0.18	0.080
50.00	-28.75	-2.49	0.00	-227.62	0.00	227.62	3117.49	1558.74	6446.72	3228.15		0.97	-0.19	0.080
55.00	-27.85	-2.47	0.00	-215.17	0.00	215.17	3079.35	1539.68	6220.34	3114.79		1.18	-0.21	0.078
60.00	-26.97	-2.44	0.00	-202.84	0.00	202.84	3039.63	1519.81	5994.49	3001.70		1.41	-0.23	0.076
65.00	-26.11	-2.43	0.00	-190.63	0.00	190.63	2998.32	1499.16	5769.39	2888.98		1.66	-0.25	0.075
70.00	-25.27	-2.42	0.00	-178.49	0.00	178.49	2955.43	1477.72	5545.28	2776.76		1.93	-0.27	0.073
75.00	-24.44	-2.42	0.00	-166.40	0.00	166.40	2910.95	1455.48	5322.38	2665.15		2.23	-0.29	0.071
80.00	-23.64	-2.42	0.00	-154.30	0.00	154.30	2864.89	1432.44	5100.92	2554.25		2.54	-0.31	0.069
84.08	-22.99	-2.42	0.00	-144.40	0.00	144.40	2826.09	1413.05	4921.28	2464.30		2.82	-0.33	0.067
85.00	-22.75	-2.43	0.00	-142.18	0.00	142.18	2817.24	1408.62	4881.12	2444.19		2.88	-0.33	0.066
89.50	-21.59	-2.42	0.00	-131.26	0.00	131.26	2031.94	1015.97	3485.43	1745.31		3.20	-0.35	0.086
90.00	-21.53	-2.43	0.00	-130.05	0.00	130.05	2029.15	1014.57	3470.92	1738.04		3.24	-0.35	0.085
95.00	-20.89	-2.43	0.00	-117.91	0.00	117.91	2000.34	1000.17	3325.82	1665.38		3.62	-0.38	0.081
100.00	-20.26	-2.44	0.00	-105.74	0.00	105.74	1969.95	984.97	3180.92	1592.82		4.03	-0.40	0.077
105.00	-19.65	-2.44	0.00	-93.55	0.00	93.55	1937.97	968.98	3036.44	1520.48		4.47	-0.43	0.072
110.00	-16.93	-2.43	0.00	-81.35	0.00	81.35	1904.40	952.20	2892.62	1448.46		4.92	-0.45	0.065
115.00	-16.35	-2.43	0.00	-69.21	0.00	69.21	1869.25	934.63	2749.69	1376.89		5.41	-0.47	0.059
120.00	-15.78	-2.42	0.00	-57.07	0.00	57.07	1832.52	916.26	2607.87	1305.87		5.91	-0.49	0.052
123.00	-13.19	-2.33	0.00	-49.81	0.00	49.81	1809.72	904.86	2523.40	1263.58		6.22	-0.50	0.047
125.00	-12.98	-2.32	0.00	-45.15	0.00	45.15	1794.20	897.10	2467.38	1235.52		6.43	-0.51	0.044
127.92	-12.68	-2.31	0.00	-38.37	0.00	38.37	1771.11	885.56	2386.14	1194.84		6.74	-0.52	0.039
130.00	-12.34	-2.28	0.00	-33.56	0.00	33.56	1754.29	877.15	2328.47	1165.96		6.97	-0.52	0.036
131.00	-8.87	-1.97	0.00	-31.28	0.00	31.28	1746.12	873.06	2300.89	1152.16		7.08	-0.52	0.032
132.08	-8.70	-1.96	0.00	-29.14	0.00	29.14	1160.48	580.24	1541.12	771.71		7.20	-0.53	0.045
135.00	-8.49	-1.94	0.00	-23.43	0.00	23.43	1148.82	574.41	1493.54	747.88		7.52	-0.53	0.039
140.00	-5.21	-1.40	0.00	-13.73	0.00	13.73	1127.58	563.79	1411.91	707.01		8.09	-0.55	0.024
145.00	-4.90	-1.34	0.00	-6.72	0.00	6.72	1104.76	552.38	1330.41	666.20		8.66	-0.55	0.015
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56		9.24	-0.55	0.000

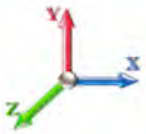
Wind Loading - Shaft

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	287.87	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	282.46	0.650	0.000	5.00	25.776	16.75	137.2	0.0	1022.8
10.00		1.00	0.85	7.442	8.19	277.04	0.650	0.000	5.00	25.286	16.44	134.5	0.0	1003.3
15.00		1.00	0.85	7.442	8.19	271.63	0.650	0.000	5.00	24.797	16.12	131.9	0.0	983.7
20.00		1.00	0.90	7.896	8.69	274.22	0.650	0.000	5.00	24.307	15.80	137.2	0.0	964.2
25.00		1.00	0.95	8.276	9.10	275.03	0.650	0.000	5.00	23.818	15.48	140.9	0.0	944.7
30.00		1.00	0.98	8.600	9.46	274.54	0.650	0.000	5.00	23.328	15.16	143.4	0.0	925.2
35.00		1.00	1.01	8.883	9.77	273.11	0.650	0.000	5.00	22.839	14.85	145.1	0.0	905.7
40.00		1.00	1.04	9.137	10.05	270.98	0.650	0.000	5.00	22.350	14.53	146.0	0.0	886.1
41.50	Bot - Section 2	1.00	1.05	9.208	10.13	270.22	0.650	0.000	1.50	6.609	4.30	43.5	0.0	262.0
45.00		1.00	1.07	9.366	10.30	268.28	0.650	0.000	3.50	15.436	10.03	103.4	0.0	1216.5
48.00	Top - Section 1	1.00	1.08	9.494	10.44	266.44	0.650	0.000	3.00	13.040	8.48	88.5	0.0	1027.5
50.00		1.00	1.09	9.576	10.53	268.45	0.650	0.000	2.00	8.595	5.59	58.9	0.0	340.7
55.00		1.00	1.12	9.770	10.75	264.95	0.650	0.000	5.00	21.146	13.74	147.7	0.0	838.1
60.00		1.00	1.14	9.951	10.95	261.13	0.650	0.000	5.00	20.656	13.43	147.0	0.0	818.6
65.00		1.00	1.16	10.120	11.13	257.02	0.650	0.000	5.00	20.167	13.11	145.9	0.0	799.1
70.00		1.00	1.17	10.279	11.31	252.67	0.650	0.000	5.00	19.677	12.79	144.6	0.0	779.6
75.00		1.00	1.19	10.430	11.47	248.10	0.650	0.000	5.00	19.188	12.47	143.1	0.0	760.0
80.00		1.00	1.21	10.572	11.63	243.34	0.650	0.000	5.00	18.698	12.15	141.3	0.0	740.5
84.08	Bot - Section 3	1.00	1.22	10.684	11.75	239.32	0.650	0.000	4.08	14.907	9.69	113.9	0.0	590.3
85.00		1.00	1.22	10.708	11.78	238.40	0.650	0.000	0.92	3.340	2.17	25.6	0.0	236.7
89.50	Top - Section 2	1.00	1.24	10.825	11.91	233.82	0.650	0.000	4.50	16.160	10.50	125.1	0.0	1144.8
90.00		1.00	1.24	10.838	11.92	236.13	0.650	0.000	0.50	1.771	1.15	13.7	0.0	56.2
95.00		1.00	1.25	10.962	12.06	230.91	0.650	0.000	5.00	17.442	11.34	136.7	0.0	553.2
100.00		1.00	1.27	11.081	12.19	225.55	0.650	0.000	5.00	16.952	11.02	134.3	0.0	537.5
105.00		1.00	1.28	11.195	12.31	220.07	0.650	0.000	5.00	16.463	10.70	131.8	0.0	521.9
110.00	Appurtenance(s)	1.00	1.29	11.305	12.44	214.48	0.650	0.000	5.00	15.973	10.38	129.1	0.0	506.3
115.00		1.00	1.30	11.412	12.55	208.78	0.650	0.000	5.00	15.484	10.06	126.3	0.0	490.7
120.00		1.00	1.32	11.514	12.67	202.98	0.650	0.000	5.00	14.995	9.75	123.4	0.0	475.1
123.00	Appurtenance(s)	1.00	1.32	11.574	12.73	199.46	0.650	0.000	3.00	8.762	5.70	72.5	0.0	277.5
125.00		1.00	1.33	11.614	12.78	197.09	0.650	0.000	2.00	5.743	3.73	47.7	0.0	181.9
127.92	Bot - Section 4	1.00	1.33	11.670	12.84	193.61	0.650	0.000	2.92	8.235	5.35	68.7	0.0	260.8
130.00		1.00	1.34	11.710	12.88	191.11	0.650	0.000	2.08	5.846	3.80	49.0	0.0	322.2
131.00	Appurtenance(s)	1.00	1.34	11.729	12.90	189.91	0.650	0.000	1.00	2.776	1.80	23.3	0.0	152.9
132.08	Top - Section 3	1.00	1.34	11.749	12.92	188.60	0.650	0.000	1.08	2.985	1.94	25.1	0.0	164.5
135.00		1.00	1.35	11.803	12.98	187.27	0.650	0.000	2.92	7.923	5.15	66.9	0.0	188.5
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	181.14	0.650	0.000	5.00	13.195	8.58	112.2	0.0	313.9
145.00		1.00	1.37	11.982	13.18	174.94	0.650	0.000	5.00	12.706	8.26	108.9	0.0	302.2
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	168.67	0.650	0.000	5.00	12.217	7.94	105.4	0.0	290.5
								Totals:	**150.00**			**4,019.8**		**22,785.8**

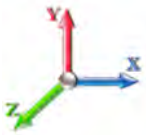
Discrete Appurtenance Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

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	150.00	TPX-070821	6	12.068	13.275	0.45	0.90	1.27	45.00	0.000	0.000	16.85	0.00	0.00
2	150.00	800 10121	3	12.080	13.289	0.71	0.90	10.98	138.90	0.000	0.730	145.97	0.00	106.56
3	150.00	HPA-65R-BUU-H6	1	12.068	13.275	1.00	1.00	9.66	51.00	0.000	0.000	128.24	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	12.068	13.275	0.75	0.90	19.87	150.00	0.000	0.000	263.78	0.00	0.00
5	150.00	QS66512-2	1	12.068	13.275	1.00	1.00	8.13	111.00	0.000	0.000	107.93	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	12.068	13.275	0.71	0.90	18.46	136.00	0.000	0.000	245.02	0.00	0.00
7	150.00	Low Profile	1	12.068	13.275	1.00	1.00	22.00	1500.00	0.000	0.000	292.05	0.00	0.00
8	150.00	DTMABP7819VG12A	6	12.068	13.275	0.45	0.90	3.08	115.20	0.000	0.000	40.86	0.00	0.00
9	150.00	LMU Antenna	1	12.068	13.275	1.00	1.00	1.67	8.50	0.000	0.000	22.17	0.00	0.00
10	150.00	RRUS-32	3	12.068	13.275	0.45	0.90	4.06	159.00	0.000	0.000	53.94	0.00	0.00
11	150.00	RRUS-32	3	12.068	13.275	0.45	0.90	0.89	2331.00	0.000	0.000	11.83	0.00	0.00
12	150.00	4426 B66	3	12.068	13.275	0.45	0.90	2.21	145.20	0.000	0.000	29.39	0.00	0.00
13	150.00	DBC-750	3	12.068	13.275	0.45	0.90	0.69	14.40	0.000	0.000	9.14	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	12.068	13.275	0.60	0.90	1.11	63.60	0.000	0.000	14.73	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	12.068	13.275	0.45	0.90	0.07	3.30	0.000	0.000	0.90	0.00	0.00
16	150.00	RRUS-11	3	12.068	13.275	0.45	0.90	3.77	150.00	0.000	0.000	50.00	0.00	0.00
17	140.00	Low Profile Platform	1	11.894	13.084	1.00	1.00	22.00	1500.00	0.000	0.000	287.84	0.00	0.00
18	140.00	XXDWMM-12.5-65-8T-CB	3	11.894	13.084	0.38	0.75	1.33	69.30	0.000	0.000	17.37	0.00	0.00
19	140.00	BSAMNT-SBS-2-2	3	11.894	13.084	1.00	1.00	10.50	201.00	0.000	0.000	137.38	0.00	0.00
20	140.00	Commscope	6	11.894	13.084	0.58	0.75	28.36	436.20	0.000	0.000	371.06	0.00	0.00
21	140.00	HRK12 (Handrail Kit)	1	11.894	13.084	1.00	1.00	6.75	261.72	0.000	0.000	88.31	0.00	0.00
22	140.00	B2/B66A RRHBR049	3	11.894	13.084	0.38	0.75	7.32	396.60	0.000	0.000	95.82	0.00	0.00
23	140.00	B5/B13 RRHBR04C	3	11.894	13.084	0.38	0.75	2.11	211.20	0.000	0.000	27.67	0.00	0.00
24	140.00	RVZDC-6627-PF48	1	11.894	13.084	1.00	1.00	3.79	32.00	0.000	0.000	49.59	0.00	0.00
25	140.00	CBRS RRH-RT4401	3	11.894	13.084	0.38	0.75	0.96	45.60	0.000	0.000	12.51	0.00	0.00
26	140.00	Antel	3	11.894	13.084	0.66	0.75	7.05	90.90	0.000	0.000	92.22	0.00	0.00
27	131.00	KRY 112 144-1 Double	3	11.729	12.902	0.38	0.75	0.46	33.00	0.000	0.000	5.95	0.00	0.00
28	131.00	APXVAALL24-43-U-NA20	3	11.729	12.902	0.52	0.75	31.88	368.40	0.000	0.000	411.28	0.00	0.00
29	131.00	AIR6449 B41	3	11.729	12.902	0.53	0.75	9.03	309.00	0.000	0.000	116.45	0.00	0.00
30	131.00	AIR32	3	11.729	12.902	0.65	0.75	12.74	396.60	0.000	0.000	164.41	0.00	0.00
31	131.00	PV-LPPGS-12M-HR2-AP3	1	11.729	12.902	1.00	1.00	34.10	2155.00	0.000	0.000	439.95	0.00	0.00
32	131.00	Bias-T 782 11056	3	11.729	12.902	0.38	0.75	0.15	4.50	0.000	0.000	1.89	0.00	0.00
33	131.00	ATMAA1412D-1A20 TMA	3	11.729	12.902	0.38	0.75	1.32	39.00	0.000	0.000	16.98	0.00	0.00
34	131.00	SDX1926Q-43 Diplexer	3	11.729	12.902	0.38	0.75	0.33	18.00	0.000	0.000	4.21	0.00	0.00
35	131.00	Radio 4449 B71+B85	3	11.729	12.902	0.38	0.75	2.22	219.60	0.000	0.000	28.59	0.00	0.00
36	131.00	Ericsson 4415 B25	3	11.729	12.902	0.38	0.75	1.84	138.00	0.000	0.000	23.80	0.00	0.00
37	123.00	ALU - TD-RRH8x20-25 -	3	11.574	12.732	0.38	0.75	4.56	210.00	0.000	0.000	58.01	0.00	0.00
38	123.00	APXVSPP18-C-A20	2	11.574	12.732	0.62	0.75	9.98	114.00	0.000	0.000	127.13	0.00	0.00
39	123.00	ALU - 1900 MHz RRH -	3	11.574	12.732	0.38	0.75	3.05	180.00	0.000	0.000	38.82	0.00	0.00
40	123.00	APXVTM14-C-I20	3	11.574	12.732	0.59	0.75	11.27	165.00	0.000	0.000	143.48	0.00	0.00
41	123.00	APXVSPP18-C-A20 (50	1	11.574	12.732	0.75	0.75	6.01	50.00	0.000	0.000	76.58	0.00	0.00
42	123.00	ALU - 800 MHz RRH -	3	11.574	12.732	0.38	0.75	2.80	159.00	0.000	0.000	35.66	0.00	0.00
43	123.00	RFS - ACU-A20-N - RET	4	11.574	12.732	0.38	0.75	0.21	4.00	0.000	0.000	2.67	0.00	0.00
44	123.00	Platform w/ HRK Handrail	1	11.574	12.732	1.00	1.00	32.00	1600.00	0.000	0.000	407.42	0.00	0.00
45	123.00	ALU - 800 MHz Filter	3	11.574	12.732	0.50	0.75	1.18	26.40	0.000	0.000	14.97	0.00	0.00
46	110.00	Raycap	1	11.305	12.436	0.75	0.75	1.51	21.90	0.000	0.000	18.75	0.00	0.00
47	110.00	Fujitsu TA08025-B604	3	11.305	12.436	0.38	0.75	2.21	191.70	0.000	0.000	27.42	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

48	110.00	Fujitsu TA08025-B605	3	11.305	12.436	0.38	0.75	2.21	225.00	0.000	0.000	27.42	0.00	0.00
49	110.00	MC-PK8-DSH	1	11.305	12.436	1.00	1.00	37.59	1727.00	0.000	0.000	467.46	0.00	0.00
50	110.00	JMA Wireless	3	11.305	12.436	0.55	0.75	20.80	193.50	0.000	0.000	258.61	0.00	0.00
							Totals:		**16,915.22**			**5,530.49**		

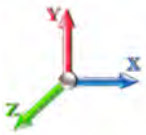
Total Applied Force Summary

Structure:	CT10022-A-SBA		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

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		137.15	1179.61	0.00	0.00
10.00		134.55	1160.09	0.00	0.00
15.00		131.94	1140.57	0.00	0.00
20.00		137.23	1121.05	0.00	0.00
25.00		140.94	1101.53	0.00	0.00
30.00		143.44	1082.01	0.00	0.00
35.00		145.07	1062.48	0.00	0.00
40.00		146.00	1042.96	0.00	0.00
41.50		43.51	309.08	0.00	0.00
45.00		103.37	1326.32	0.00	0.00
48.00		88.52	1121.62	0.00	0.00
50.00		58.85	403.44	0.00	0.00
55.00		147.72	994.95	0.00	0.00
60.00		146.97	975.43	0.00	0.00
65.00		145.92	955.91	0.00	0.00
70.00		144.62	936.38	0.00	0.00
75.00		143.09	916.86	0.00	0.00
80.00		141.34	897.34	0.00	0.00
84.08		113.87	718.35	0.00	0.00
85.00		25.58	265.44	0.00	0.00
89.50		125.08	1285.94	0.00	0.00
90.00		13.72	71.86	0.00	0.00
95.00		136.70	709.98	0.00	0.00
100.00		134.31	694.37	0.00	0.00
105.00		131.78	678.75	0.00	0.00
110.00	(11) attachments	928.79	3022.23	0.00	0.00
115.00		126.34	642.52	0.00	0.00
120.00		123.45	626.90	0.00	0.00
123.00	(23) attachments	977.25	2877.04	0.00	0.00
125.00		47.69	235.01	0.00	0.00
127.92		68.72	338.24	0.00	0.00
130.00		48.95	377.47	0.00	0.00
131.00	(28) attachments	1236.80	3860.60	0.00	0.00
132.08		25.08	182.89	0.00	0.00
135.00		66.87	238.12	0.00	0.00
140.00	(27) attachments	1291.99	3643.45	0.00	0.00
145.00		108.86	352.82	0.00	0.00
150.00	(43) attachments	1538.20	5454.61	0.00	106.56
	Totals:	**9,550.26**	**44,004.21**	**0.00**	**106.56**

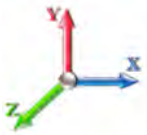
Linear Appurtenance Segment Forces (Factored)

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

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	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	7.442	0.00	5.00
10.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.026	0.000	7.442	0.00	5.00
15.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	7.442	0.00	5.00
20.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.027	0.000	7.896	0.00	5.00
25.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	8.276	0.00	5.00
30.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	8.600	0.00	5.00
35.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	8.883	0.00	5.00
40.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	9.137	0.00	5.00
41.50	1.60" Hybrid	Yes	1.50	0.000	1.60	0.20	0.00	0.030	0.000	9.208	0.00	1.50
45.00	1.60" Hybrid	Yes	3.50	0.000	1.60	0.47	0.00	0.031	0.000	9.366	0.00	3.50
48.00	1.60" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.031	0.000	9.494	0.00	3.00
50.00	1.60" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.031	0.000	9.576	0.00	2.00
55.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	9.770	0.00	5.00
60.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	9.951	0.00	5.00
65.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.033	0.000	10.120	0.00	5.00
70.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.034	0.000	10.279	0.00	5.00
75.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	10.430	0.00	5.00
80.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	10.572	0.00	5.00
84.08	1.60" Hybrid	Yes	4.08	0.000	1.60	0.54	0.00	0.037	0.000	10.684	0.00	4.08
85.00	1.60" Hybrid	Yes	0.92	0.000	1.60	0.12	0.00	0.037	0.000	10.708	0.00	0.92
89.50	1.60" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.038	0.000	10.825	0.00	4.50
90.00	1.60" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.038	0.000	10.838	0.00	0.50
95.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.038	0.000	10.962	0.00	5.00
100.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	11.081	0.00	5.00
105.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.040	0.000	11.195	0.00	5.00
110.00	1.60" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	11.305	0.00	5.00
									Totals:		**0.0**	**110.0**

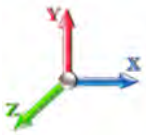
Calculated Forces

Structure:	CT10022-A-SBA	**Code:**	EIA/TIA-222-G	8/24/2021	
Site Name:	Simsbury 2, CT	**Exposure:**	C		
Height:	150.00 (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	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

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	-44.00	-9.57	0.00	-1079.9	0.00	1079.91	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.265
5.00	-42.81	-9.47	0.00	-1032.0	0.00	1032.06	3376.67	1688.33	8351.12	4181.77	0.03	-0.052	0.000	0.260
10.00	-41.64	-9.37	0.00	-984.70	0.00	984.70	3351.94	1675.97	8129.40	4070.74	0.11	-0.105	0.000	0.254
15.00	-40.49	-9.28	0.00	-937.83	0.00	937.83	3325.63	1662.82	7906.28	3959.02	0.25	-0.159	0.000	0.249
20.00	-39.36	-9.17	0.00	-891.44	0.00	891.44	3297.74	1648.87	7681.99	3846.70	0.45	-0.213	0.000	0.244
25.00	-38.26	-9.07	0.00	-845.57	0.00	845.57	3268.26	1634.13	7456.75	3733.92	0.70	-0.267	0.000	0.238
30.00	-37.17	-8.95	0.00	-800.24	0.00	800.24	3237.20	1618.60	7230.79	3620.77	1.01	-0.322	0.000	0.233
35.00	-36.10	-8.84	0.00	-755.48	0.00	755.48	3204.54	1602.27	7004.35	3507.38	1.38	-0.377	0.000	0.227
40.00	-35.05	-8.70	0.00	-711.31	0.00	711.31	3170.31	1585.15	6777.64	3393.86	1.80	-0.433	0.000	0.221
41.50	-34.73	-8.68	0.00	-698.25	0.00	698.25	3159.73	1579.86	6709.61	3359.79	1.94	-0.450	0.000	0.219
45.00	-33.40	-8.58	0.00	-667.89	0.00	667.89	3134.49	1567.24	6550.90	3280.32	2.28	-0.490	0.000	0.214
48.00	-32.28	-8.50	0.00	-642.14	0.00	642.14	3132.30	1566.15	6537.37	3273.54	2.60	-0.524	0.000	0.206
50.00	-31.87	-8.46	0.00	-625.14	0.00	625.14	3117.49	1558.74	6446.72	3228.15	2.83	-0.547	0.000	0.204
55.00	-30.87	-8.33	0.00	-582.84	0.00	582.84	3079.35	1539.68	6220.34	3114.79	3.43	-0.601	0.000	0.197
60.00	-29.89	-8.20	0.00	-541.19	0.00	541.19	3039.63	1519.81	5994.49	3001.70	4.09	-0.655	0.000	0.190
65.00	-28.93	-8.07	0.00	-500.19	0.00	500.19	2998.32	1499.16	5769.39	2888.98	4.80	-0.708	0.000	0.183
70.00	-27.98	-7.94	0.00	-459.83	0.00	459.83	2955.43	1477.72	5545.28	2776.76	5.57	-0.762	0.000	0.175
75.00	-27.06	-7.81	0.00	-420.13	0.00	420.13	2910.95	1455.48	5322.38	2665.15	6.40	-0.814	0.000	0.167
80.00	-26.16	-7.68	0.00	-381.09	0.00	381.09	2864.89	1432.44	5100.92	2554.25	7.28	-0.866	0.000	0.158
84.08	-25.44	-7.56	0.00	-349.74	0.00	349.74	2826.09	1413.05	4921.28	2464.30	8.04	-0.908	0.000	0.151
85.00	-25.17	-7.54	0.00	-342.81	0.00	342.81	2817.24	1408.62	4881.12	2444.19	8.22	-0.917	0.000	0.149
89.50	-23.89	-7.41	0.00	-308.86	0.00	308.86	2031.94	1015.97	3485.43	1745.31	9.10	-0.962	0.000	0.189
90.00	-23.81	-7.41	0.00	-305.16	0.00	305.16	2029.15	1014.57	3470.92	1738.04	9.20	-0.967	0.000	0.187
95.00	-23.10	-7.28	0.00	-268.13	0.00	268.13	2000.34	1000.17	3325.82	1665.38	10.25	-1.023	0.000	0.173
100.00	-22.40	-7.15	0.00	-231.73	0.00	231.73	1969.95	984.97	3180.92	1592.82	11.35	-1.077	0.000	0.157
105.00	-21.72	-7.03	0.00	-195.96	0.00	195.96	1937.97	968.98	3036.44	1520.48	12.50	-1.127	0.000	0.140
110.00	-18.71	-6.05	0.00	-160.83	0.00	160.83	1904.40	952.20	2892.62	1448.46	13.71	-1.173	0.000	0.121
115.00	-18.06	-5.92	0.00	-130.57	0.00	130.57	1869.25	934.63	2749.69	1376.89	14.96	-1.214	0.000	0.105
120.00	-17.44	-5.80	0.00	-100.96	0.00	100.96	1832.52	916.26	2607.87	1305.87	16.25	-1.250	0.000	0.087
123.00	-14.58	-4.76	0.00	-83.57	0.00	83.57	1809.72	904.86	2523.40	1263.58	17.05	-1.269	0.000	0.074
125.00	-14.35	-4.71	0.00	-74.05	0.00	74.05	1794.20	897.10	2467.38	1235.52	17.58	-1.281	0.000	0.068
127.92	-14.01	-4.64	0.00	-60.32	0.00	60.32	1771.11	885.56	2386.14	1194.84	18.37	-1.295	0.000	0.058
130.00	-13.63	-4.58	0.00	-50.66	0.00	50.66	1754.29	877.15	2328.47	1165.96	18.94	-1.305	0.000	0.051
131.00	-9.80	-3.26	0.00	-46.08	0.00	46.08	1746.12	873.06	2300.89	1152.16	19.21	-1.309	0.000	0.046
132.08	-9.62	-3.23	0.00	-42.55	0.00	42.55	1160.48	580.24	1541.12	771.71	19.51	-1.313	0.000	0.063
135.00	-9.38	-3.16	0.00	-33.14	0.00	33.14	1148.82	574.41	1493.54	747.88	20.31	-1.323	0.000	0.053
140.00	-5.77	-1.78	0.00	-17.35	0.00	17.35	1127.58	563.79	1411.91	707.01	21.71	-1.338	0.000	0.030
145.00	-5.42	-1.67	0.00	-8.44	0.00	8.44	1104.76	552.38	1330.41	666.20	23.11	-1.347	0.000	0.018
150.00	0.00	-1.54	0.00	-0.11	0.00	0.11	1080.36	540.18	1249.27	625.56	24.53	-1.350	0.000	0.000

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	36.8	0.00	52.74	0.00	0.00	4181.15
0.9D + 1.6W 93 mph Wind	36.8	0.00	39.54	0.00	0.00	4128.64
1.2D + 1.0Di + 1.0Wi 50 mph Wind	12.1	0.00	98.32	0.00	0.00	1415.36
1.2D + 1.0E	2.8	0.00	52.80	0.00	0.00	365.68
0.9D + 1.0E	2.7	0.00	39.60	0.00	0.00	360.61
1.0D + 1.0W 60 mph Wind	9.6	0.00	44.00	0.00	0.00	1079.91

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-52.74	-36.81	0.00	-4181.1	0.00	-4181.1	3399.80	1699.9	8571.22	4291.98	0.00	0.990
0.9D + 1.6W 93 mph Wind	-39.54	-36.78	0.00	-4128.6	0.00	-4128.6	3399.80	1699.9	8571.22	4291.98	0.00	0.974
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-98.32	-12.10	0.00	-1415.3	0.00	-1415.3	3399.80	1699.9	8571.22	4291.98	0.00	0.359
1.2D + 1.0E	-52.80	-2.75	0.00	-365.68	0.00	-365.68	3399.80	1699.9	8571.22	4291.98	0.00	0.101
0.9D + 1.0E	-39.60	-2.75	0.00	-360.61	0.00	-360.61	3399.80	1699.9	8571.22	4291.98	0.00	0.096
1.0D + 1.0W 60 mph Wind	-44.00	-9.57	0.00	-1079.9	0.00	-1079.9	3399.80	1699.9	8571.22	4291.98	0.00	0.265

Base Plate Summary

Structure:	CT10022-A-SB		**Code:**	EIA/TIA-222-G	8/24/2021
Site Name:	Simsbury 2, CT		**Exposure:**	C	
Height:	150.00 (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

Reactions	
Original Design	
Moment (kip-ft):	3324.00
Axial (kip):	65.60
Shear (kip):	26.40
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	4181.15
Axial (kip):	52.74
Shear (kip):	36.81

Base Plate	
Yield (ksi):	50.00
Width (in):	73.50
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	16.10
Moment (kip-in):	671.21
Allow Stress (ksi):	67.50
Applied Stress (ksi):	62.77
Stress Ratio:	0.93

Anchor Bolts	
Bolt Circle:	67.63
Number Bolts:	14.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	218.99
Allowable (kip):	260.00
Ratio:	0.86
Tension	
Force (kip):	204.95
Allowable (kip):	260.00
Ratio:	0.81

Monopole Mat Foundation Design

			Date: 8/24/2021
Customer Name:	Dish Wireless	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	150
Site Number:	CT10022-A-SBA	**Engineer Name:**	T. Alajaj
Engr. Number:	114610	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

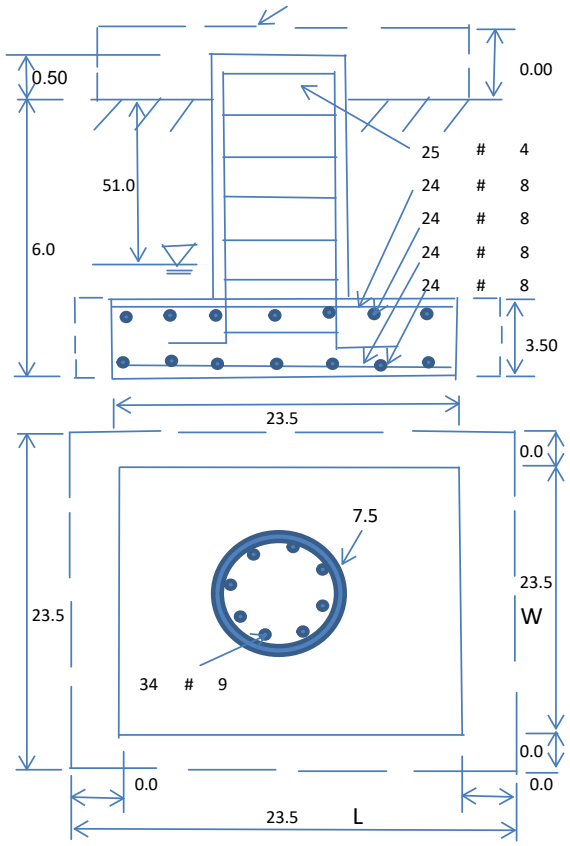
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	52.7	Shear Force (Kips):	36.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4181.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.50
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5
Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	34	Tie Spacing (in):	3.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	60.0	Pcf		
Water Table B.G.S. (ft):	51.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	14000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

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

Total Dry Soil Volume (cu. Ft.):	1270.18	Total Dry Soil Weight (Kips):	158.77
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	158.77	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2065.41	Total Dry Concrete Weight (Kips):	309.81
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	309.81	Total Vertical Load on Base (Kips):	521.28

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	4003	<	Allowable Factored Soil Bearing (psf): 10500	0.38	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5574.5	>	Design Factored Momont (kips-ft): 4420	0.79	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.26	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6126.5	>	Design Factored Moment (Mu, Kips-F	4291.6	0.70	OK!
Calculated Shear Capacity (Kips):	1098.7	>	Design Factored Shear (Kips):	36.8	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	1836.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	8390.6	>	Design Factored Axial Load (Pu Kips):	52.7	0.01	OK!
Moment & Axial Strength Combination:	0.70	OK!	Check Tie Spacing (Design/Required):		0.25	OK!
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	892.0	>	One-Way Factored Shear (L-D. Kips):	243.8	0.27	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	892.0	>	One-Way Factored Shear (W-D., Kips)	243.8	0.27	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	733.2	>	One-Way Factored Shear (C-C, Kips):	239.4	0.33	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0017		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3217.3	>	Moment at Bottom (L-Dir. K-Ft):	1270.8	0.39	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3217.3	>	Moment at Bottom (W-Dir. K-Ft):	1270.8	0.39	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4522.2	>	Moment at Bottom (C-C Dir. K-Ft):	1797.2	0.40	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0017		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3217.3	>	Moment at the top (L-Dir K-Ft):	599.3	0.19	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3217.3	>	Moment at the top (W-Dir K-Ft):	599.3	0.19	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4522.2	>	Moment at the top (C-C Dir. K-Ft):	565.9	0.13	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1672.5	k-ft.	Max. factored shear stress v_{u_CD}:		3.4	Psi
Max. factored shear stress v_{u_AB}:	8.6	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	8.6	Psi	Check Usage of Punching Shear Capacity:		0.05	OK!

EXHIBIT 9

Antenna Mount Analysis

August 26, 2021

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

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

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOBDL00126A
	Site Name:	N/A
***SBA Network Services Designation*:**	**Site Number:**	CT10022-A
	Site Name:	Simsbury 2, CT
	Application Number:	167825, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149455.003.01
Site Data:	**225 Grist Mill Road, Simsbury, CT, 06070, Hartford County**	
	Latitude *41.86670*°, Longitude *-72.81577*°	
	Monopole	
	8' 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:

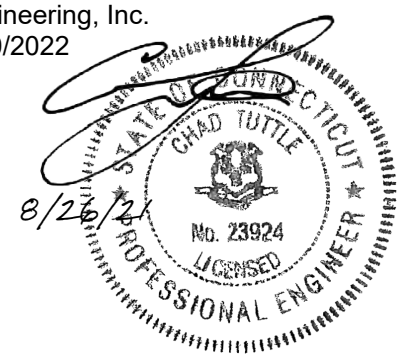
Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 69.7%)**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

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: Anne Delice

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



Chad E. Tuttle, P.E.

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1) INTRODUCTION

The mount consists of Commscope platform mount (Part #MC-PK8-DSH) at 110 ft., attached to monopole at 225 Grist Mill Road, Simsbury, CT, 06070, Hartford 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-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 93 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	110	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 the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
Collo App	Proposed Loading	Date: 08/02/2021	SBA Network Services, LLC.
RFDS		Date: 07/22/2021	

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.

Manufacturers drawing were used to create the model.

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Face Horizontals	110	9.1	Pass
-	Support Rails	110	17.7	Pass
-	Support Tubes	110	69.7	Pass
-	Support Channels	110	53.4	Pass
-	Support Angles	110	47.3	Pass
-	Mount Pipes	110	18.7	Pass
-	Connection Plates	110	29.4	Pass
-	Connection Angles	110	29.2	Pass
-	Connection Bolts	110	37.4	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-G standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)

PROJECT	**149455.003.01 - Simsbury 2,**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08/26/21**	PAGE	OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	177	ft	[ASCE7 Hazard Tool]
Tower Height		:	150.00	ft	
Mount Elevation		:	110.00	ft	
Antenna Elevation		:	110.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	93	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.		:	C		[ASCE7 Hazard Tool]
	S_S	:	0.18		
	S_1	:	0.06		
	S_{DS}	:	0.19		
	S_{D1}	:	0.10		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.29		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.13	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.096		[Sec. 2.7.7.1]
Amplification	A_s	:	1.933333		[Sec. 16.7]

	q_z	:	26.99	psf

B+T GRP
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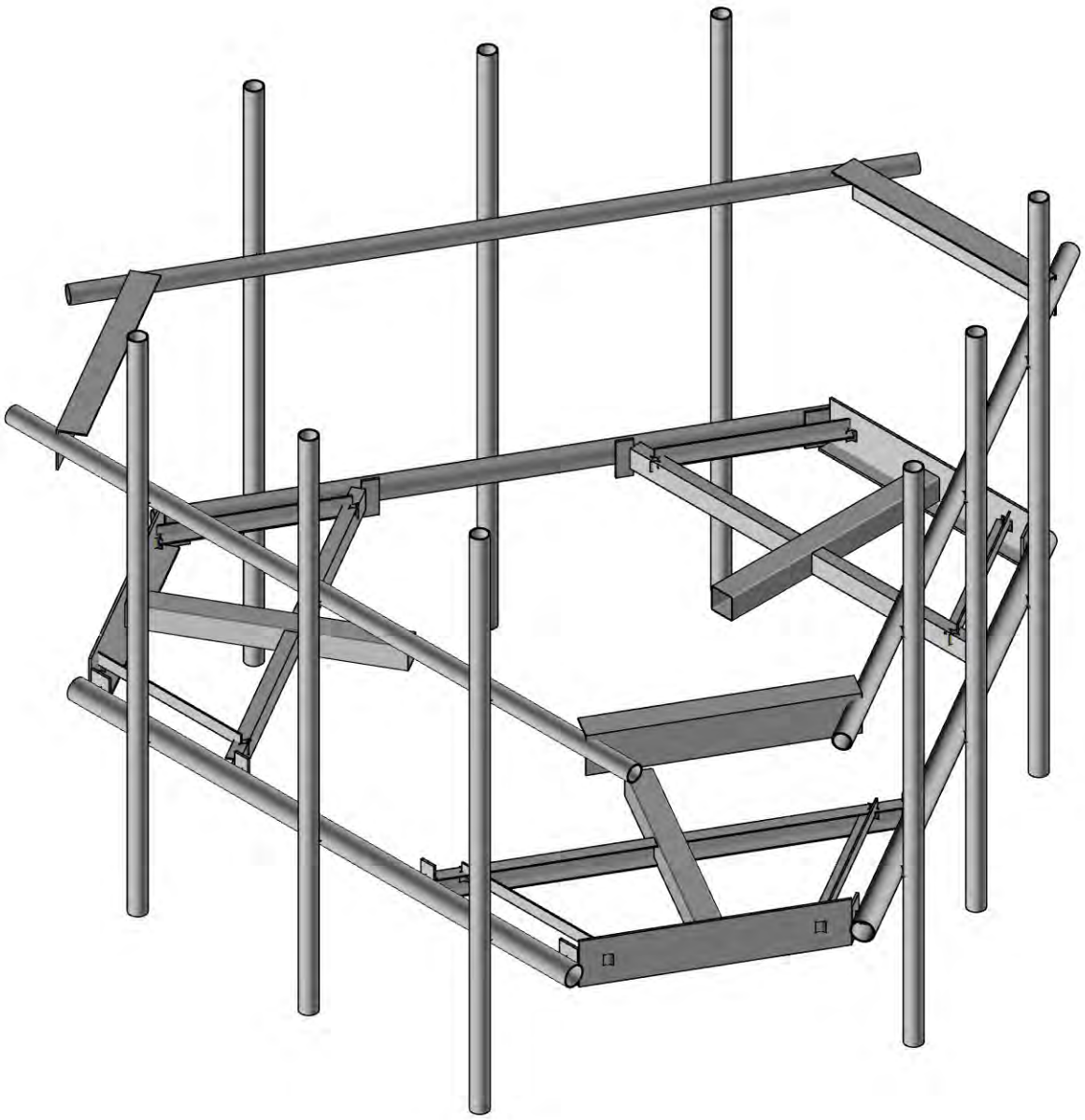
Tulsa, OK 74159
(918) 587-4630

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	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
JMA	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.05	0.03	0.01	0.01
JMA	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
JMA	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.05	0.03	0.01	0.01
JMA	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
JMA	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.04	0.02
Fujitsu	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01
Fujitsu	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.05	0.03	0.01	0.01
Raycap	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.94	2.20	1.36	0.05	0.03	0.01	0.01



Envelope Only Solution

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KR		Aug 26, 2021
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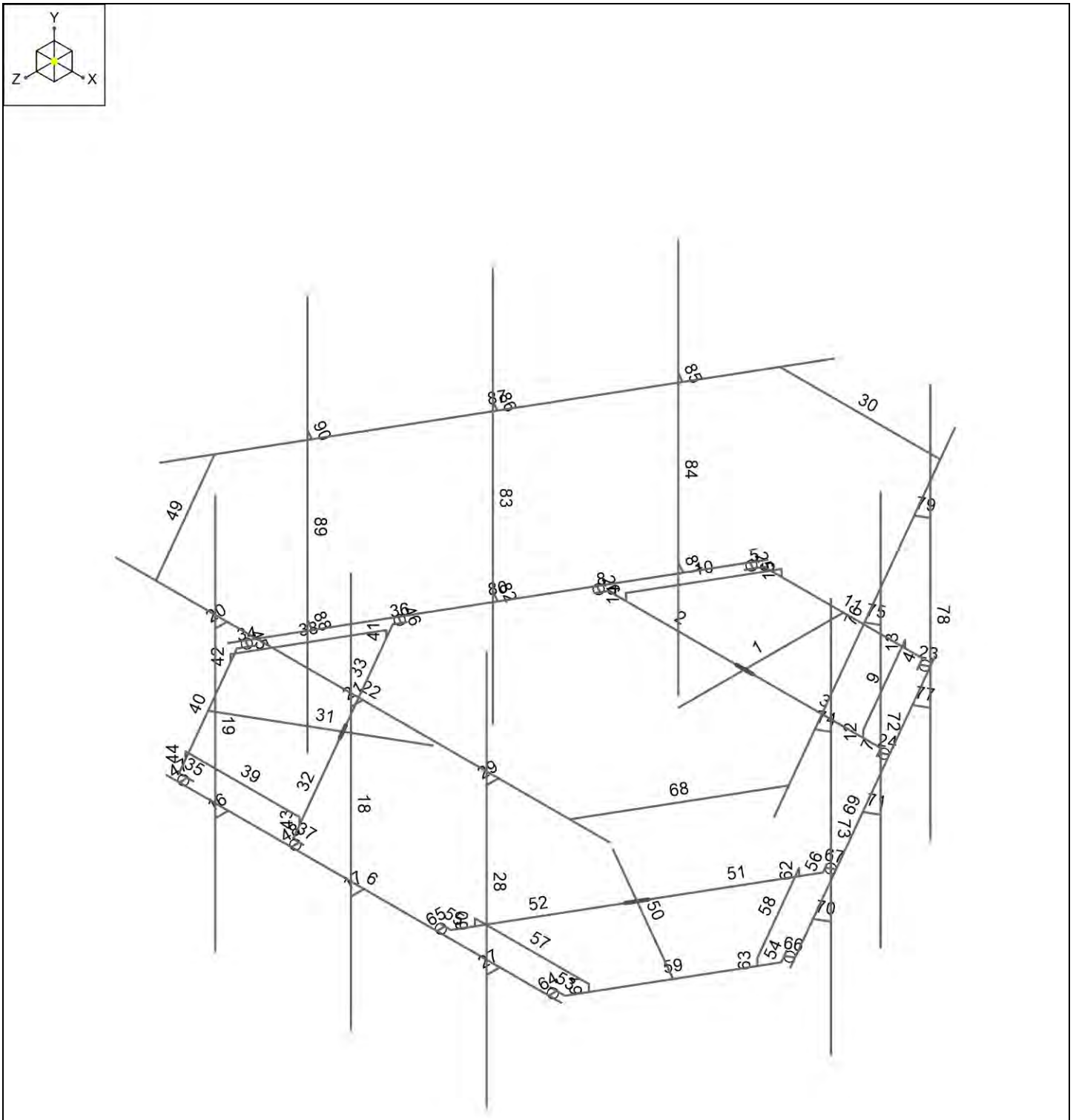

Envelope Only Solution

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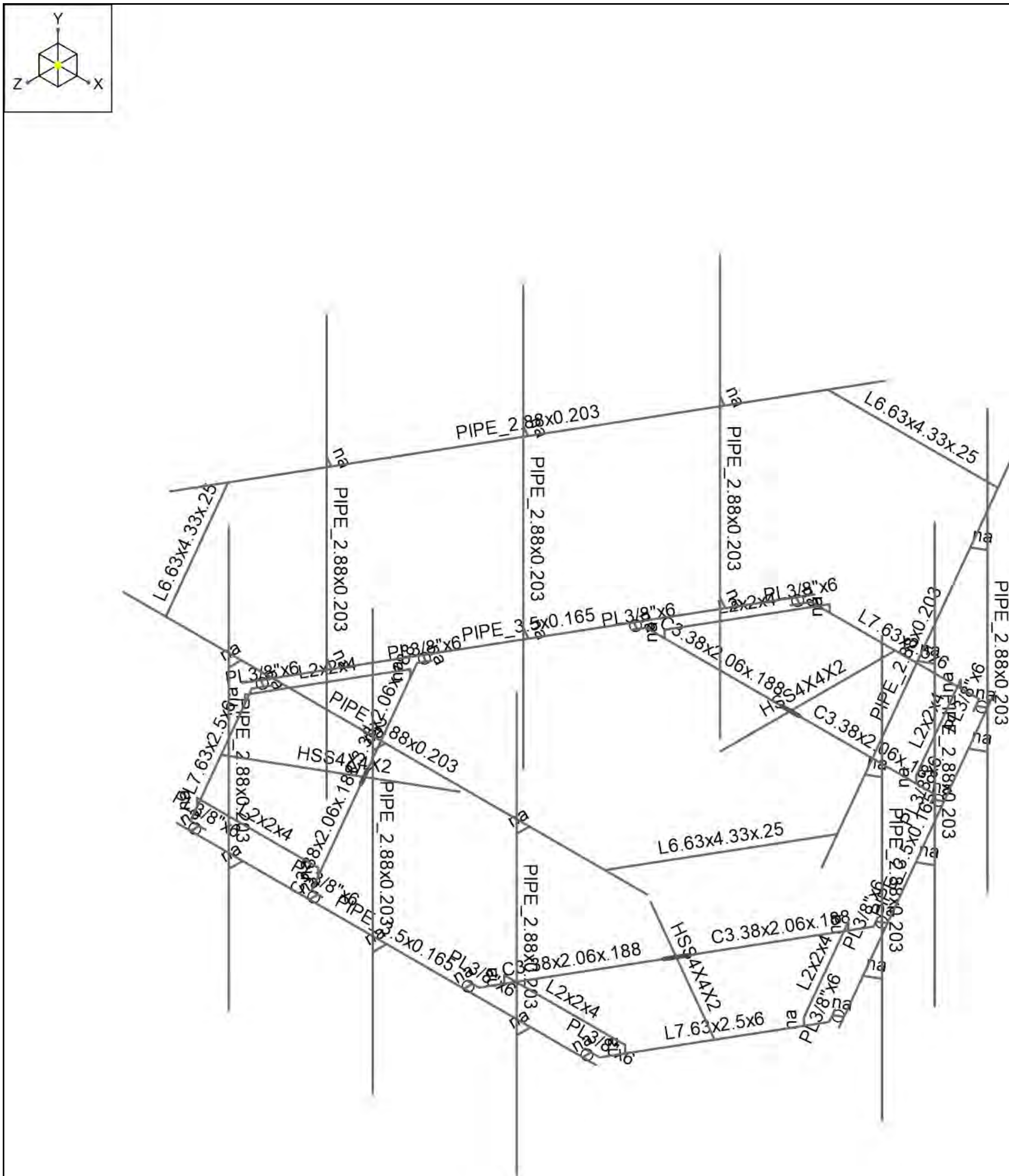

Envelope Only Solution

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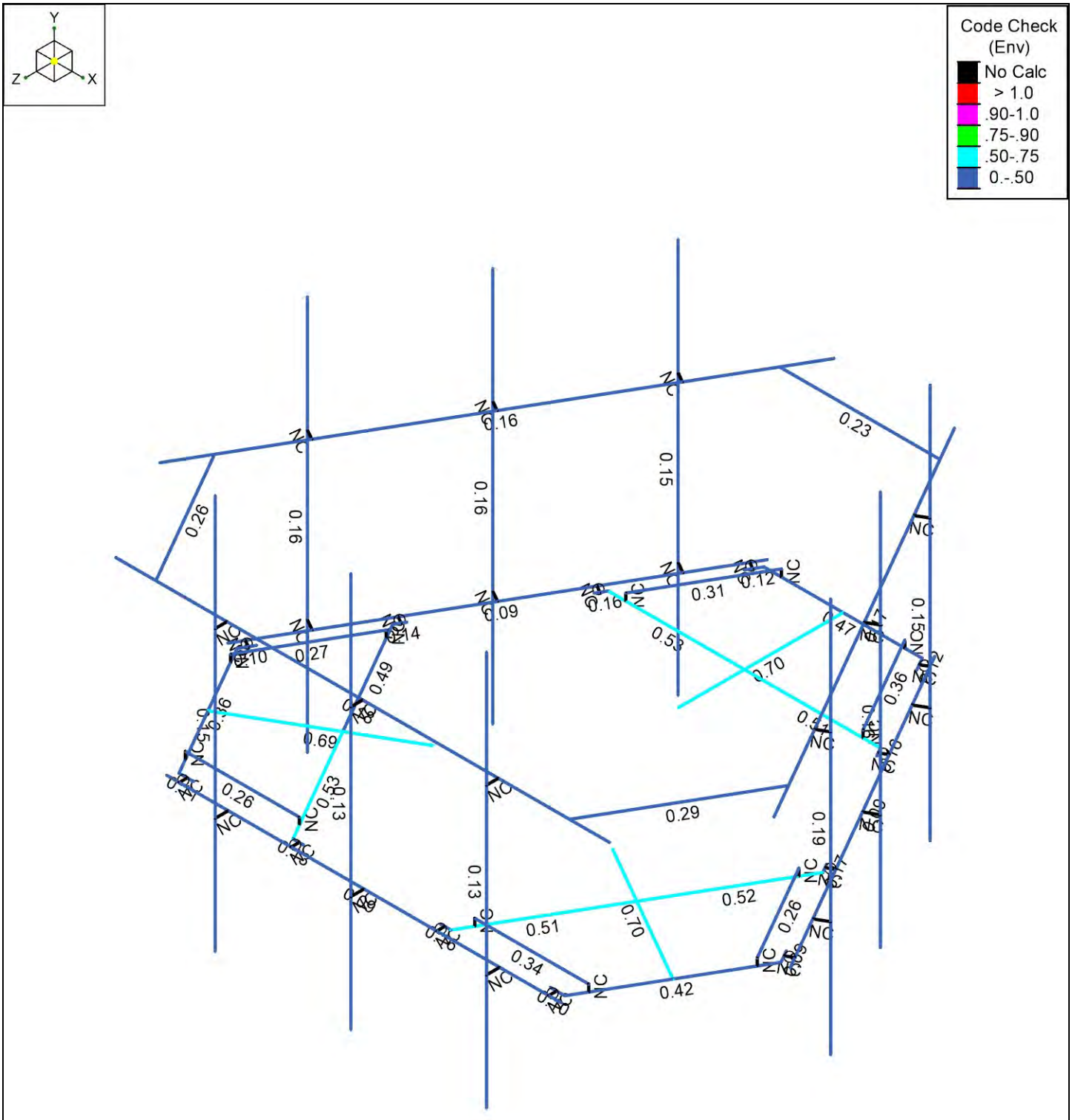

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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KR		Aug 26, 2021
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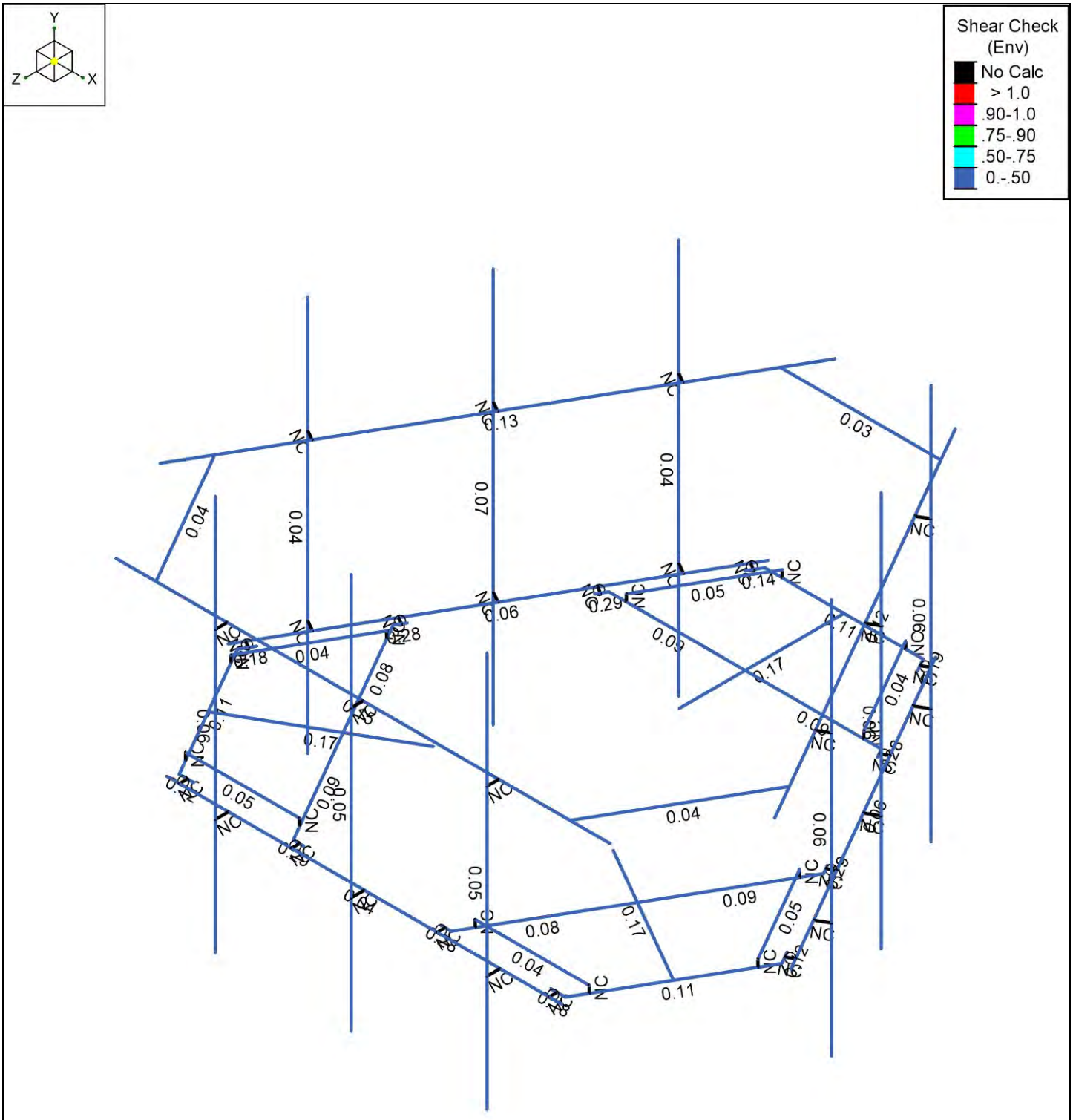


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT10022-A - Simsbury 2, CT	SK-5
KR		Aug 26, 2021
149455.003.01		149455_003_01_Simsbury 2, CT_…

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-2.1073	
2	2	0	0	-5.440633	
3	3	0	0	-3.440633	
4	4	2.758333	0	-3.440633	
5	5	-2.758333	0	-3.440633	
6	6	-1.603633	0	-5.440633	
7	7	1.603633	0	-5.440633	
8	8	1.749466	0	-5.188042	
9	9	-1.749466	0	-5.188042	
10	10	1.686966	0	-5.296295	
11	11	1.826811	0	-5.377035	
12	12	-1.686966	0	-5.296295	
13	13	-1.826811	0	-5.377035	
14	14	-3.999998	0	4.270582	
15	15	3.999998	0	4.270582	
16	16	2.8625	0	-3.260211	
17	17	2.820833	0	-3.332381	
18	18	2.960677	0	-3.41312	
19	19	-2.8625	0	-3.260211	
20	20	-2.820833	0	-3.332381	
21	21	-2.960677	0	-3.41312	
22	22	-1.25	0.140833	-5.440633	
23	23	-2.404701	0.140833	-3.440633	
24	24	2.404701	0.140833	-3.440633	
25	25	1.25	0.140833	-5.440633	
26	26	-1.25	0	-5.440633	
27	27	-2.404701	0	-3.440633	
28	28	2.404701	0	-3.440633	
29	29	1.25	0	-5.440633	
30	30	-2.749998	0	4.270582	
31	31	0.000002	0	4.270582	
32	32	-2.749998	0	4.536207	
33	33	0.000002	0	4.536207	
34	34	-2.749998	-2.333667	4.536207	
35	35	0.000002	-2.333667	4.536207	
36	36	-2.749998	5.666635	4.536207	
37	37	0.000002	5.666635	4.536207	
38	38	-2.749998	3.333337	4.536207	
39	39	0.000002	3.333337	4.536207	
40	40	-2.749998	3.333337	4.296623	
41	41	0.000002	3.333337	4.296623	
42	42	-5	3.333337	4.296623	
43	43	5	3.333337	4.296623	
44	44	2.749998	0	4.270582	
45	45	2.749998	0	4.536207	
46	46	2.749998	-2.333667	4.536207	
47	47	2.749998	5.666635	4.536207	
48	48	2.749998	3.333337	4.536207	
49	49	2.749998	3.333337	4.296623	
50	50	0	0	0	
51	51	1.625024	3.333337	-5.778622	
52	52	-1.625024	3.333337	-5.778622	
53	53	-1.824975	0	1.05365	
54	54	-4.711726	0	2.720316	
55	55	-2.979675	0	1.720316	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.358842	0	-0.66847	
57	57	-1.600509	0	4.109103	
58	58	-3.90991	0	4.109103	
59	59	-5.513543	0	1.33153	
60	60	-5.367709	0	1.078939	
61	61	-3.618243	0	4.109103	
62	62	-5.430209	0	1.187192	
63	63	-5.570054	0	1.106453	
64	64	-3.743243	0	4.109103	
65	65	-3.743243	0	4.270582	
66	66	-4.254675	0	-0.848892	
67	67	-4.296343	0	-0.776723	
68	68	-4.436187	0	-0.857462	
69	69	-1.392175	0	4.109103	
70	70	-1.47551	0	4.109103	
71	71	-1.47551	0	4.270582	
72	72	-4.086726	0.140833	3.802848	
73	73	-1.777325	0.140833	3.802848	
74	74	-4.182026	0.140833	-0.362215	
75	75	-5.336726	0.140833	1.637785	
76	76	-4.086726	0	3.802848	
77	77	-1.777325	0	3.802848	
78	78	-4.182026	0	-0.362215	
79	79	-5.336726	0	1.637785	
80	80	-5.816946	3.333337	1.481999	
81	81	-4.191922	3.333337	4.296623	
82	82	1.824975	0	1.05365	
83	83	4.711726	0	2.720316	
84	84	2.979675	0	1.720316	
85	85	1.600509	0	4.109103	
86	86	4.358842	0	-0.66847	
87	87	5.513543	0	1.33153	
88	88	3.90991	0	4.109103	
89	89	3.618243	0	4.109103	
90	90	5.367709	0	1.078939	
91	91	3.743243	0	4.109103	
92	92	3.743243	0	4.270582	
93	93	5.430209	0	1.187192	
94	94	5.570054	0	1.106453	
95	95	1.392175	0	4.109103	
96	96	1.47551	0	4.109103	
97	97	1.47551	0	4.270582	
98	98	4.254675	0	-0.848892	
99	99	4.296343	0	-0.776723	
100	100	4.436187	0	-0.857462	
101	101	5.336726	0.140833	1.637785	
102	102	4.182026	0.140833	-0.362215	
103	103	1.777325	0.140833	3.802848	
104	104	4.086726	0.140833	3.802848	
105	105	5.336726	0	1.637785	
106	106	4.182026	0	-0.362215	
107	107	1.777325	0	3.802848	
108	108	4.086726	0	3.802848	
109	109	4.191922	3.333337	4.296623	
110	110	5.816946	3.333337	1.481999	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.698431	0	1.328809	
112	112	1.698433	0	-5.599391	
113	113	5.073431	0	0.246277	
114	114	3.698431	0	-2.135293	
115	115	5.303469	0	0.113465	
116	116	3.928469	0	-2.268105	
117	117	5.303469	-2.333667	0.113465	
118	118	3.928469	-2.333667	-2.268105	
119	119	5.303469	5.666635	0.113465	
120	120	3.928469	5.666635	-2.268105	
121	121	5.303469	3.333337	0.113465	
122	122	3.928469	3.333337	-2.268105	
123	123	5.095984	3.333337	0.233256	
124	124	3.720984	3.333337	-2.148313	
125	125	6.220985	3.333337	2.181815	
126	126	1.220985	3.333337	-6.478439	
127	127	2.323433	0	-4.516859	
128	128	2.553471	0	-4.649672	
129	129	2.553471	-2.333667	-4.649672	
130	130	2.553471	5.666635	-4.649672	
131	131	2.553471	3.333337	-4.649672	
132	132	2.345986	3.333337	-4.52988	
133	133	-1.698433	0	-5.599391	
134	134	-5.698431	0	1.328809	
135	135	-2.323433	0	-4.516859	
136	136	-3.698433	0	-2.135289	
137	137	-2.553471	0	-4.649672	
138	138	-3.928471	0	-2.268102	
139	139	-2.553471	-2.333667	-4.649672	
140	140	-3.928471	-2.333667	-2.268102	
141	141	-2.553471	5.666635	-4.649672	
142	142	-3.928471	5.666635	-2.268102	
143	143	-2.553471	3.333337	-4.649672	
144	144	-3.928471	3.333337	-2.268102	
145	145	-2.345986	3.333337	-4.52988	
146	146	-3.720986	3.333337	-2.14831	
147	147	-1.220985	3.333337	-6.478439	
148	148	-6.220985	3.333337	2.181815	
149	149	-5.073431	0	0.246277	
150	150	-5.303469	0	0.113465	
151	151	-5.303469	-2.333667	0.113465	
152	152	-5.303469	5.666635	0.113465	
153	153	-5.303469	3.333337	0.113465	
154	154	-5.095984	3.333337	0.233256	

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. [1e⁵°F⁻¹]	Density [k/ft³]	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 [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
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	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.707	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	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical

Member Primary Data (Continued)

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

Member Advanced Data

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

Member Advanced Data (Continued)

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

Member Advanced Data (Continued)

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

Hot Rolled Steel Design Parameters

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

Hot Rolled Steel Design Parameters (Continued)

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

Member Point Loads (BLC 1 : Dead)

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.17	%15
2	28	Z	-0.17	%85
3	28	Z	-0.053	%20
4	28	Z	-0.053	%50
5	28	Z	0	0
6	89	Z	-0.17	%15
7	89	Z	-0.17	%85
8	89	Z	-0.053	%20
9	89	Z	-0.053	%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	-0.17	%15
12	78	Z	-0.17	%85
13	78	Z	-0.053	%20
14	78	Z	-0.053	%50
15	78	Z	0	0
16	31	Z	-0.055	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.068	%15
2	28	X	-0.068	%85
3	28	X	-0.032	%20
4	28	X	-0.028	%50
5	28	X	0	0
6	89	X	-0.068	%15
7	89	X	-0.068	%85
8	89	X	-0.032	%20
9	89	X	-0.028	%50
10	89	X	0	0
11	78	X	-0.068	%15
12	78	X	-0.068	%85
13	78	X	-0.032	%20
14	78	X	-0.028	%50
15	78	X	0	0
16	31	X	-0.031	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.063	%15
2	28	Z	-0.063	%85
3	28	Z	-0.026	%20
4	28	Z	-0.026	%50
5	28	Z	0	0
6	89	Z	-0.063	%15
7	89	Z	-0.063	%85
8	89	Z	-0.026	%20
9	89	Z	-0.026	%50
10	89	Z	0	0
11	78	Z	-0.063	%15
12	78	Z	-0.063	%85
13	78	Z	-0.026	%20
14	78	Z	-0.026	%50
15	78	Z	0	0
16	31	Z	-0.026	%20

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

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.032	%15
2	28	X	-0.032	%85
3	28	X	-0.018	%20
4	28	X	-0.016	%50
5	28	X	0	0
6	89	X	-0.032	%15
7	89	X	-0.032	%85
8	89	X	-0.018	%20
9	89	X	-0.016	%50
10	89	X	0	0
11	78	X	-0.032	%15
12	78	X	-0.032	%85
13	78	X	-0.018	%20
14	78	X	-0.016	%50
15	78	X	0	0
16	31	X	-0.018	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.018	%15
2	28	Z	-0.018	%85
3	28	Z	-0.006	%20
4	28	Z	-0.006	%50
5	28	Z	0	0
6	89	Z	-0.018	%15
7	89	Z	-0.018	%85
8	89	Z	-0.006	%20
9	89	Z	-0.006	%50
10	89	Z	0	0
11	78	Z	-0.018	%15
12	78	Z	-0.018	%85
13	78	Z	-0.006	%20
14	78	Z	-0.006	%50
15	78	Z	0	0
16	31	Z	-0.006	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.007	%15
2	28	X	-0.007	%85
3	28	X	-0.003	%20
4	28	X	-0.003	%50
5	28	X	0	0
6	89	X	-0.007	%15
7	89	X	-0.007	%85
8	89	X	-0.003	%20
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.007	%15
12	78	X	-0.007	%85
13	78	X	-0.003	%20
14	78	X	-0.003	%50
15	78	X	0	0
16	31	X	-0.003	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.197	%15
2	28	Y	-0.197	%85
3	28	Y	-0.071	%20
4	28	Y	-0.069	%50
5	28	Y	0	0
6	89	Y	-0.197	%15
7	89	Y	-0.197	%85
8	89	Y	-0.071	%20
9	89	Y	-0.069	%50
10	89	Y	0	0
11	78	Y	-0.197	%15
12	78	Y	-0.197	%85
13	78	Y	-0.071	%20
14	78	Y	-0.069	%50
15	78	Y	0	0
16	31	Y	-0.072	%20
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

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

Member Point Loads (BLC 14 : Maint LL 2)

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

Member Point Loads (BLC 15 : Maint LL 3)

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

Member Point Loads (BLC 16 : Maint LL 4)

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

Member Point Loads (BLC 17 : Maint LL 5)

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

Member Point Loads (BLC 18 : Maint LL 6)

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

Member Point Loads (BLC 19 : Maint LL 7)

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

Member Point Loads (BLC 20 : Maint LL 8)

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

Member Point Loads (BLC 21 : Maint LL 9)

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

Member Point Loads (BLC 22 : Maint LL 10)

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

Member Point Loads (BLC 23 : Maint LL 11)

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

Member Point Loads (BLC 24 : Maint LL 12)

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

Member Point Loads (BLC 25 : Maint LL 13)

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

Member Point Loads (BLC 26 : Maint LL 14)

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

Member Point Loads (BLC 27 : Maint LL 15)

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.013	-0.013	0	%100
2	2	Z	-0.011	-0.011	0	%100
3	3	Z	-0.011	-0.011	0	%100
4	4	Z	-0.016	-0.016	0	%100
5	5	Z	-0.016	-0.016	0	%100
6	6	Z	-0.01	-0.01	0	%100
7	7	Z	-0.016	-0.016	0	%100
8	8	Z	-0.016	-0.016	0	%100
9	9	Z	-0.007	-0.007	0	%100
10	10	Z	-0.007	-0.007	0	%100
11	11	Z	-0.022	-0.022	0	%100
12	18	Z	-0.008	-0.008	0	%100
13	19	Z	-0.008	-0.008	0	%100
14	22	Z	-0.008	-0.008	0	%100
15	28	Z	-0.008	-0.008	0	%100
16	30	Z	-0.02	-0.02	0	%100
17	31	Z	-0.013	-0.013	0	%100
18	32	Z	-0.011	-0.011	0	%100
19	33	Z	-0.011	-0.011	0	%100
20	34	Z	-0.016	-0.016	0	%100
21	35	Z	-0.016	-0.016	0	%100
22	36	Z	-0.016	-0.016	0	%100
23	37	Z	-0.016	-0.016	0	%100
24	38	Z	-0.007	-0.007	0	%100
25	39	Z	-0.007	-0.007	0	%100
26	40	Z	-0.022	-0.022	0	%100
27	49	Z	-0.02	-0.02	0	%100
28	50	Z	-0.013	-0.013	0	%100
29	51	Z	-0.011	-0.011	0	%100
30	52	Z	-0.011	-0.011	0	%100
31	53	Z	-0.016	-0.016	0	%100
32	54	Z	-0.016	-0.016	0	%100
33	55	Z	-0.016	-0.016	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, %)]
34	56	Z	-0.016	-0.016	0	%100
35	57	Z	-0.007	-0.007	0	%100
36	58	Z	-0.007	-0.007	0	%100
37	59	Z	-0.022	-0.022	0	%100
38	68	Z	-0.02	-0.02	0	%100
39	69	Z	-0.01	-0.01	0	%100
40	72	Z	-0.008	-0.008	0	%100
41	73	Z	-0.008	-0.008	0	%100
42	76	Z	-0.008	-0.008	0	%100
43	78	Z	-0.008	-0.008	0	%100
44	80	Z	-0.01	-0.01	0	%100
45	83	Z	-0.008	-0.008	0	%100
46	84	Z	-0.008	-0.008	0	%100
47	87	Z	-0.008	-0.008	0	%100
48	89	Z	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.013	-0.013	0	%100
2	2	X	-0.011	-0.011	0	%100
3	3	X	-0.011	-0.011	0	%100
4	4	X	-0.016	-0.016	0	%100
5	5	X	-0.016	-0.016	0	%100
6	6	X	-0.01	-0.01	0	%100
7	7	X	-0.016	-0.016	0	%100
8	8	X	-0.016	-0.016	0	%100
9	9	X	-0.007	-0.007	0	%100
10	10	X	-0.007	-0.007	0	%100
11	11	X	-0.022	-0.022	0	%100
12	18	X	-0.008	-0.008	0	%100
13	19	X	-0.008	-0.008	0	%100
14	22	X	-0.008	-0.008	0	%100
15	28	X	-0.008	-0.008	0	%100
16	30	X	-0.02	-0.02	0	%100
17	31	X	-0.013	-0.013	0	%100
18	32	X	-0.011	-0.011	0	%100
19	33	X	-0.011	-0.011	0	%100
20	34	X	-0.016	-0.016	0	%100
21	35	X	-0.016	-0.016	0	%100
22	36	X	-0.016	-0.016	0	%100
23	37	X	-0.016	-0.016	0	%100
24	38	X	-0.007	-0.007	0	%100
25	39	X	-0.007	-0.007	0	%100
26	40	X	-0.022	-0.022	0	%100
27	49	X	-0.02	-0.02	0	%100
28	50	X	-0.013	-0.013	0	%100
29	51	X	-0.011	-0.011	0	%100
30	52	X	-0.011	-0.011	0	%100
31	53	X	-0.016	-0.016	0	%100
32	54	X	-0.016	-0.016	0	%100
33	55	X	-0.016	-0.016	0	%100
34	56	X	-0.016	-0.016	0	%100
35	57	X	-0.007	-0.007	0	%100
36	58	X	-0.007	-0.007	0	%100
37	59	X	-0.022	-0.022	0	%100

Member Distributed Loads (BLC 3 : 90 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, %)]
38	68	X	-0.02	-0.02	0	%100
39	69	X	-0.01	-0.01	0	%100
40	72	X	-0.008	-0.008	0	%100
41	73	X	-0.008	-0.008	0	%100
42	76	X	-0.008	-0.008	0	%100
43	78	X	-0.008	-0.008	0	%100
44	80	X	-0.01	-0.01	0	%100
45	83	X	-0.008	-0.008	0	%100
46	84	X	-0.008	-0.008	0	%100
47	87	X	-0.008	-0.008	0	%100
48	89	X	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.009	-0.009	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	3	Z	-0.009	-0.009	0	%100
4	4	Z	-0.019	-0.019	0	%100
5	5	Z	-0.019	-0.019	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.023	-0.023	0	%100
8	8	Z	-0.023	-0.023	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.012	-0.012	0	%100
12	18	Z	-0.003	-0.003	0	%100
13	19	Z	-0.003	-0.003	0	%100
14	22	Z	-0.003	-0.003	0	%100
15	28	Z	-0.003	-0.003	0	%100
16	30	Z	-0.011	-0.011	0	%100
17	31	Z	-0.009	-0.009	0	%100
18	32	Z	-0.009	-0.009	0	%100
19	33	Z	-0.009	-0.009	0	%100
20	34	Z	-0.019	-0.019	0	%100
21	35	Z	-0.019	-0.019	0	%100
22	36	Z	-0.023	-0.023	0	%100
23	37	Z	-0.023	-0.023	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.012	-0.012	0	%100
27	49	Z	-0.011	-0.011	0	%100
28	50	Z	-0.009	-0.009	0	%100
29	51	Z	-0.009	-0.009	0	%100
30	52	Z	-0.009	-0.009	0	%100
31	53	Z	-0.019	-0.019	0	%100
32	54	Z	-0.019	-0.019	0	%100
33	55	Z	-0.023	-0.023	0	%100
34	56	Z	-0.023	-0.023	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.012	-0.012	0	%100
38	68	Z	-0.011	-0.011	0	%100
39	69	Z	-0.003	-0.003	0	%100
40	72	Z	-0.003	-0.003	0	%100
41	73	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 4 : 0 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, %)]
42	76	Z	-0.003	-0.003	0	%100
43	78	Z	-0.003	-0.003	0	%100
44	80	Z	-0.003	-0.003	0	%100
45	83	Z	-0.003	-0.003	0	%100
46	84	Z	-0.003	-0.003	0	%100
47	87	Z	-0.003	-0.003	0	%100
48	89	Z	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.009	-0.009	0	%100
2	2	X	-0.009	-0.009	0	%100
3	3	X	-0.009	-0.009	0	%100
4	4	X	-0.019	-0.019	0	%100
5	5	X	-0.019	-0.019	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.023	-0.023	0	%100
8	8	X	-0.023	-0.023	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.012	-0.012	0	%100
12	18	X	-0.003	-0.003	0	%100
13	19	X	-0.003	-0.003	0	%100
14	22	X	-0.003	-0.003	0	%100
15	28	X	-0.003	-0.003	0	%100
16	30	X	-0.011	-0.011	0	%100
17	31	X	-0.009	-0.009	0	%100
18	32	X	-0.009	-0.009	0	%100
19	33	X	-0.009	-0.009	0	%100
20	34	X	-0.019	-0.019	0	%100
21	35	X	-0.019	-0.019	0	%100
22	36	X	-0.023	-0.023	0	%100
23	37	X	-0.023	-0.023	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.012	-0.012	0	%100
27	49	X	-0.011	-0.011	0	%100
28	50	X	-0.009	-0.009	0	%100
29	51	X	-0.009	-0.009	0	%100
30	52	X	-0.009	-0.009	0	%100
31	53	X	-0.019	-0.019	0	%100
32	54	X	-0.019	-0.019	0	%100
33	55	X	-0.023	-0.023	0	%100
34	56	X	-0.023	-0.023	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.012	-0.012	0	%100
38	68	X	-0.011	-0.011	0	%100
39	69	X	-0.003	-0.003	0	%100
40	72	X	-0.003	-0.003	0	%100
41	73	X	-0.003	-0.003	0	%100
42	76	X	-0.003	-0.003	0	%100
43	78	X	-0.003	-0.003	0	%100
44	80	X	-0.003	-0.003	0	%100
45	83	X	-0.003	-0.003	0	%100

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, %)]
46	84	X	-0.003	-0.003	0	%100
47	87	X	-0.003	-0.003	0	%100
48	89	X	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0005	-0.0005	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0008	-0.0008	0	%100
10	10	Z	-0.0008	-0.0008	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0004	-0.0004	0	%100
13	19	Z	-0.0004	-0.0004	0	%100
14	22	Z	-0.0004	-0.0004	0	%100
15	28	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0008	-0.0008	0	%100
25	39	Z	-0.0008	-0.0008	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0008	-0.0008	0	%100
36	58	Z	-0.0008	-0.0008	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0005	-0.0005	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	76	Z	-0.0004	-0.0004	0	%100
43	78	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0005	-0.0005	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	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	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0005	-0.0005	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0008	-0.0008	0	%100
10	10	X	-0.0008	-0.0008	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	22	X	-0.0004	-0.0004	0	%100
15	28	X	-0.0004	-0.0004	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0008	-0.0008	0	%100
25	39	X	-0.0008	-0.0008	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0008	-0.0008	0	%100
36	58	X	-0.0008	-0.0008	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0005	-0.0005	0	%100
40	72	X	-0.0004	-0.0004	0	%100
41	73	X	-0.0004	-0.0004	0	%100
42	76	X	-0.0004	-0.0004	0	%100
43	78	X	-0.0004	-0.0004	0	%100
44	80	X	-0.0005	-0.0005	0	%100
45	83	X	-0.0004	-0.0004	0	%100
46	84	X	-0.0004	-0.0004	0	%100
47	87	X	-0.0004	-0.0004	0	%100
48	89	X	-0.0004	-0.0004	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	-0.022	-0.022	0	%100
2	2	Y	-0.017	-0.017	0	%100
3	3	Y	-0.017	-0.017	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, %)]
4	4	Y	-0.023	-0.023	0	%100
5	5	Y	-0.023	-0.023	0	%100
6	6	Y	-0.016	-0.016	0	%100
7	7	Y	-0.023	-0.023	0	%100
8	8	Y	-0.023	-0.023	0	%100
9	9	Y	-0.014	-0.014	0	%100
10	10	Y	-0.014	-0.014	0	%100
11	11	Y	-0.028	-0.028	0	%100
12	18	Y	-0.014	-0.014	0	%100
13	19	Y	-0.014	-0.014	0	%100
14	22	Y	-0.014	-0.014	0	%100
15	28	Y	-0.014	-0.014	0	%100
16	30	Y	-0.028	-0.028	0	%100
17	31	Y	-0.022	-0.022	0	%100
18	32	Y	-0.017	-0.017	0	%100
19	33	Y	-0.017	-0.017	0	%100
20	34	Y	-0.023	-0.023	0	%100
21	35	Y	-0.023	-0.023	0	%100
22	36	Y	-0.023	-0.023	0	%100
23	37	Y	-0.023	-0.023	0	%100
24	38	Y	-0.014	-0.014	0	%100
25	39	Y	-0.014	-0.014	0	%100
26	40	Y	-0.028	-0.028	0	%100
27	49	Y	-0.028	-0.028	0	%100
28	50	Y	-0.022	-0.022	0	%100
29	51	Y	-0.017	-0.017	0	%100
30	52	Y	-0.017	-0.017	0	%100
31	53	Y	-0.023	-0.023	0	%100
32	54	Y	-0.023	-0.023	0	%100
33	55	Y	-0.023	-0.023	0	%100
34	56	Y	-0.023	-0.023	0	%100
35	57	Y	-0.014	-0.014	0	%100
36	58	Y	-0.014	-0.014	0	%100
37	59	Y	-0.028	-0.028	0	%100
38	68	Y	-0.028	-0.028	0	%100
39	69	Y	-0.016	-0.016	0	%100
40	72	Y	-0.014	-0.014	0	%100
41	73	Y	-0.014	-0.014	0	%100
42	76	Y	-0.014	-0.014	0	%100
43	78	Y	-0.014	-0.014	0	%100
44	80	Y	-0.016	-0.016	0	%100
45	83	Y	-0.014	-0.014	0	%100
46	84	Y	-0.014	-0.014	0	%100
47	87	Y	-0.014	-0.014	0	%100
48	89	Y	-0.014	-0.014	0	%100

Member Distributed Loads (BLC 28 : 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	58	Y	-0.018	-0.016	0.231	2.309
2	9	Y	-0.026	-0.02	0	1.039
3	9	Y	-0.02	-0.014	1.039	2.078
4	10	Y	-0.01	-0.02	0.231	2.309
5	38	Y	-0.017	-0.017	0	2.078
6	39	Y	0.0006164	-0.016	0	1.155
7	39	Y	-0.016	-0.035	1.155	2.309

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads) (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	57	Y	-0.035	-0.016	0	1.155
9	57	Y	-0.016	0.0006163	1.155	2.309

Member Distributed Loads (BLC 29 : 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	38	Y	-0.018	-0.018	0	2.078
2	39	Y	0.0006641	-0.017	0	1.155
3	39	Y	-0.017	-0.037	1.155	2.309
4	57	Y	-0.038	-0.017	0	1.155
5	57	Y	-0.017	0.000678	1.155	2.309
6	58	Y	-0.02	-0.017	0.231	2.309
7	9	Y	-0.028	-0.022	0	1.039
8	9	Y	-0.022	-0.016	1.039	2.078
9	10	Y	-0.011	-0.022	0.231	2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	72	75	74	73	Y	Two Way	-0.01
2	103	102	101	104	Y	Two Way	-0.01
3	23	24	25	22	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	72	75	74	73	Y	Two Way	-0.011
2	103	102	101	104	Y	Two Way	-0.011
3	23	24	25	22	Y	Two Way	-0.011

Node Loads and Enforced Displacements (BLC 9 : 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 10 : 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 11 : Live Load c)

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

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	Live Load a	LL		3			
10	Live Load b	LL		3			
11	Live Load c	LL		3			
12	Live Load d	LL					
13	Maint LL 1	LL			1		
14	Maint LL 2	LL			1		
15	Maint LL 3	LL			1		
16	Maint LL 4	LL			1		
17	Maint LL 5	LL			1		
18	Maint LL 6	LL			1		
19	Maint LL 7	LL			1		
20	Maint LL 8	LL			1		
21	Maint LL 9	LL			1		
22	Maint LL 10	LL			1		
23	Maint LL 11	LL			1		
24	Maint LL 12	LL			1		
25	Maint LL 13	LL			1		
26	Maint LL 14	LL			1		
27	Maint LL 15	LL			1		
28	BLC 1 Transient Area Loads	None				9	
29	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	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
83	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
84	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
85	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
86	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
87	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
88	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
89	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
90	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
91	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
92	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
93	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
94	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
95	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
96	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
97	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					13	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					19	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					20	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					21	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					22	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					23	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					24	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					25	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					26	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					27	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	1.271	17	2.726	38	1.732	2	5.477	26	1.291	11	0.389	107
2		min	-1.27	11	-0.494	8	-1.844	20	-1.584	8	-1.289	5	-0.203	103
3	53	max	1.419	5	2.771	42	1.656	14	0.581	13	1.607	15	0.831	12
4		min	-1.514	23	-0.246	12	-1.599	8	-2.453	31	-1.603	9	-4.785	42
5	82	max	1.334	17	2.683	46	1.875	14	0.608	3	1.632	19	4.464	46
6		min	-1.24	11	-0.266	4	-1.821	8	-2.929	45	-1.629	13	-0.878	4
7	Totals:	max	4.011	17	7.412	39	5.249	14						
8		min	-4.011	11	1.797	9	-5.249	8						

Envelope AISC 13TH (360-05): 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	0.697	0	37	0.174	0	y	49	70.173	73.278	8.24	8.24	2.161	H1-1b
2	2	C3.38x2.06x.188	0.534	2.592	27	0.085	0.351	y	41	38.433	43.394	1.694	4.483	1.625	H1-1b
3	3	C3.38x2.06x.188	0.513	0	37	0.086	2.241	z	20	38.433	43.394	1.694	4.483	1.627	H1-1b
4	4	PL3/8"x6	0.118	0	14	0.19	0	y	26	68.856	72.9	0.57	9.113	2.283	H1-1b

Envelope AISC 13TH (360-05): 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
5	5	PL3/8"x6	0.119	0	15	0.143	0	y	14	68.856	72.9	0.57	9.113	1.89	H1-1b
6	6	PIPE_3.5x0.165	0.09	6.75	31	0.045	4		16	45.872	71.57	6.336	6.336	2.462	H1-1b
7	7	PL3/8"x6	0.16	0.208	14	0.28	0.208	y	38	70.733	72.9	0.57	9.113	2.365	H1-1b
8	8	PL3/8"x6	0.165	0	25	0.294	0	y	39	70.733	72.9	0.57	9.113	2.782	H1-1b
9	9	L2x2x4	0.356	0	20	0.037	2.309	z	32	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.309	2.309	20	0.05	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.473	1.604	8	0.109	0.334	y	38	73.845	118.523	1.798	13.665	1.23	H2-1
12	18	PIPE_2.88x0.203	0.126	5.584	17	0.05	5.584		18	35.517	70.68	5.029	5.029	3	H1-1b
13	19	PIPE_2.88x0.203	0.154	2.333	21	0.057	5.584		20	35.517	70.68	5.029	5.029	3	H1-1b
14	22	PIPE_2.88x0.203	0.177	7.812	14	0.152	9.167		14	24.131	70.68	5.029	5.029	2.415	H1-1b
15	28	PIPE_2.88x0.203	0.128	2.333	19	0.052	5.584		20	35.517	70.68	5.029	5.029	3	H1-1b
16	30	L6.63x4.33x.25	0.235	3.25	6	0.031	3.25	z	24	49.975	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.69	0	31	0.172	0	y	41	70.173	73.278	8.24	8.24	2.186	H1-1b
18	32	C3.38x2.06x.188	0.531	2.592	31	0.086	0.351	y	45	38.433	43.394	1.694	4.483	1.625	H1-1b
19	33	C3.38x2.06x.188	0.492	0	29	0.08	2.241	y	48	38.433	43.394	1.694	4.483	1.629	H1-1b
20	34	PL3/8"x6	0.098	0	18	0.182	0	y	30	68.856	72.9	0.57	9.113	2.254	H1-1b
21	35	PL3/8"x6	0.114	0	19	0.12	0	y	54	68.856	72.9	0.57	9.113	1.826	H1-1b
22	36	PL3/8"x6	0.141	0.208	25	0.275	0.208	y	42	70.733	72.9	0.57	9.113	1.758	H1-1b
23	37	PL3/8"x6	0.132	0	17	0.294	0	y	43	70.733	72.9	0.57	9.113	2.869	H1-1b
24	38	L2x2x4	0.267	0	24	0.036	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.255	2.309	24	0.051	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.36	1.604	12	0.106	0.334	y	42	73.845	118.523	1.798	13.664	1.23	H2-1
27	49	L6.63x4.33x.25	0.264	0	2	0.035	3.25	y	21	49.975	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.696	0	33	0.172	0	y	45	70.173	73.278	8.24	8.24	2.165	H1-1b
29	51	C3.38x2.06x.188	0.522	2.592	47	0.086	0.351	y	38	38.433	43.394	1.694	4.483	1.632	H1-1b
30	52	C3.38x2.06x.188	0.511	0	33	0.081	2.241	y	39	38.433	43.394	1.694	4.483	1.625	H1-1b
31	53	PL3/8"x6	0.104	0.164	15	0.179	0	y	34	68.856	72.9	0.57	9.113	2.602	H1-1b
32	54	PL3/8"x6	0.093	0	23	0.124	0	y	21	68.856	72.9	0.57	9.113	1.816	H1-1b
33	55	PL3/8"x6	0.163	0.085	15	0.282	0.208	y	45	70.733	72.9	0.57	9.113	1.36	H1-1b
34	56	PL3/8"x6	0.167	0	21	0.289	0	y	47	70.733	72.9	0.57	9.113	2.798	H1-1b
35	57	L2x2x4	0.337	0	15	0.036	2.309	z	39	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.259	2.309	16	0.051	0	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.417	1.604	3	0.107	0.334	y	46	73.845	118.523	1.798	14.006	1.306	H2-1
38	68	L6.63x4.33x.25	0.292	3.25	2	0.04	3.25	z	20	49.975	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE_3.5x0.165	0.091	1.25	14	0.059	4		20	45.872	71.57	6.336	6.336	1.751	H1-1b
40	72	PIPE_2.88x0.203	0.16	5.584	21	0.058	5.584		21	35.517	70.68	5.029	5.029	3	H1-1b
41	73	PIPE_2.88x0.203	0.187	2.333	14	0.055	5.584		25	35.517	70.68	5.029	5.029	3	H1-1b
42	76	PIPE_2.88x0.203	0.168	2.188	25	0.123	2.188		25	24.131	70.68	5.029	5.029	2.251	H1-1b
43	78	PIPE_2.88x0.203	0.145	5.584	21	0.055	5.584		14	35.517	70.68	5.029	5.029	3	H1-1b
44	80	PIPE_3.5x0.165	0.088	6.75	26	0.056	2.583		25	45.872	71.57	6.336	6.336	2.171	H1-1b
45	83	PIPE_2.88x0.203	0.159	5.584	25	0.066	5.584		14	35.517	70.68	5.029	5.029	3	H1-1b
46	84	PIPE_2.88x0.203	0.149	2.333	18	0.042	5.584		17	35.517	70.68	5.029	5.029	3	H1-1b
47	87	PIPE_2.88x0.203	0.161	7.813	21	0.133	9.167		21	24.131	70.68	5.029	5.029	2.499	H1-1b
48	89	PIPE_2.88x0.203	0.164	5.584	14	0.044	5.584		18	35.517	70.68	5.029	5.029	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	**154220.003.01 - Robleswoods (N. Valp AD**				
SUBJECT	**Platform Mount Analysis Beta**				
DATE	**08/26/21**	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	:	1.732	k
Vertical Shear	:	2.726	k
Horizontal Shear	:	1.271	k
Torsion	:	0.389	k.ft
Moment from Horizontal Forces	:	1.291	k.ft
Moment from Vertical Forces	:	5.477	k.ft

Bolt Parameters

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

Summary of Forces

Shear Resultant Force	:	3.01	k
Force from Horz. Moment	:	2.34	k
Force from Vert. Moment	:	9.92	k
Shear Load / Bolt	:	0.75	k
Tension Load / Bolt	:	0.43	k
Resultant from Moments / Bolt	:	5.10	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**26.68%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**10.72%**		**OKAY**
Unity Check, Combined	:	**37.40%**		**OKAY**
Available Bearing Strength, ΦR_n	:	52.00	k/bolt	
Unity Check, Bolt Bearing	:	**1.45%**		**OKAY**

PROJECT	**154220.003.01 - Robleswoods (N. Valp AD**				
SUBJECT	**Platform Mount Analysis**				
DATE	**08/26/21**	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	:	8.00	in	
Plate Width	:	8.00	in	
Plate Thickness	:	0.75	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	6.00	in^2	
Gross Shear Area, A_{gv}	:	1.125	in^2	
Net Area for tension, A_{nv}	:	5.48	in^2	
Net Area for shear, A_{nt}	:	4.50	in^2	

Plate Check

Available Tensile Yield	:	194.40	k	[Eq. J4-1]
Available Tensile Rupture	:	238.57	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**2.84%**		**OKAY**
Available Shear Yield	:	24.30	k	[Eq. J4-3]
Available Shear Rupture	:	156.60	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**12.38%**		**OKAY**
Available Block Shear, ΦRn	:	116.10	k	[Eq. J4-5]
Unity Check, Block Shear	:	**2.59%**		**OKAY**

EXHIBIT 10

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00126A

DISH Wireless L.L.C. SITE ADDRESS:

225 GRIST MILL ROAD
SIMSBURY, CT 06070

SBA APPROVED

By Stephen Roth at 6:06:47 AM, 10/26/2021

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

SITE INFORMATION

PROPERTY OWNER:	ENSIGN-BICKFORD REALTY CORPORATION
ADDRESS:	P.O. BOX 711 SIMSBURY, CT 06070
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT10022-A
TOWER APP NUMBER:	167825
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 52' 0.15"N 41.86670767 N
LONGITUDE (NAD 83):	72° 48' 56.78" W 72.81577222 W
ZONING JURISDICTION:	TOWN OF SIMSBURY
ZONING DISTRICT:	I-2
PARCEL NUMBER:	F11 103 005
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T

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:	JEAN COTTRELL JEAN.COTTRELL@DISH.COM
CONST. MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

CONNECTICUT CODE OF COMPLIANCE

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

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

SITE PHOTO

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT. SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT. SLIGHT LEFT. CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON. TAKE THE CT-20 W EXIT TOWARD E GRANBY/GRANBY. CONTINUE ONTO CT-20 W. USE THE LEFT 2 LANES TO TURN LEFT ONTO INTERNATIONAL DR. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO SEYMOUR RD. CONTINUE ONTO STATE HWY 540. TURN LEFT ONTO CT-189 S. TURN RIGHT ONTO ELM ST. ELM ST TURNS SLIGHTLY LEFT AND BECOMES CT-315 W/TARIFFVILLE RD. TURN LEFT ONTO HOPMEADOW ST. TURN RIGHT ONTO WEST ST. TURN LEFT ONTO GRIST MILLS RD. TURN RIGHT ONTO MILLERS WAY AND THEN IMMEDIATELY LEFT ONTO ACCESS RD. DESTINATION WILL BE ON THE LEFT. ARRIVE AT BOBDL00126A.

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS-1	SITE SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PAD AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

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

VICINITY MAP

NO SCALE

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

10/19/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
RK	RMC	RMC

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/26/21	ISSUED FOR REVIEW
0	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

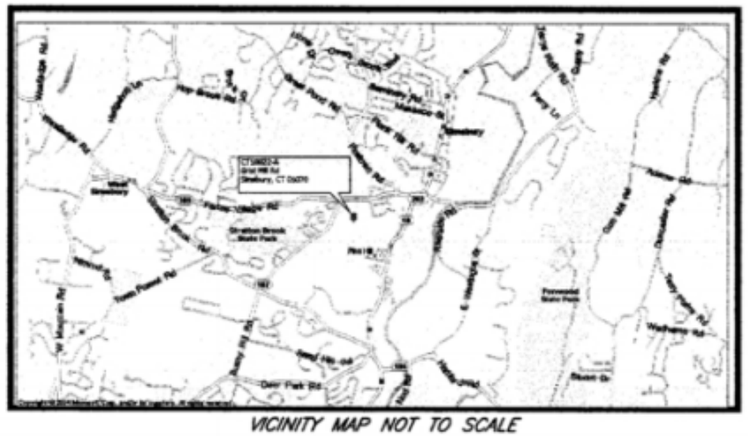
TITLE SHEET

SHEET NUMBER

T-1

CT10022-A

IMPROVEMENT LOCATION SURVEY AND EASEMENT MAP
225 GRIST MILL ROAD
SIMSBURY, CT
PREPARED FOR
SBA TOWERS II LLC



VICINITY MAP NOT TO SCALE

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTION 20-300B-1 THROUGH 20-300B-20 AND THE STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THIS SURVEY CONFORMS TO A CLASS A-2 HORIZONTAL ACCURACY

SURVEY TYPE: IMPROVEMENT LOCATION SURVEY AND EASEMENT MAP

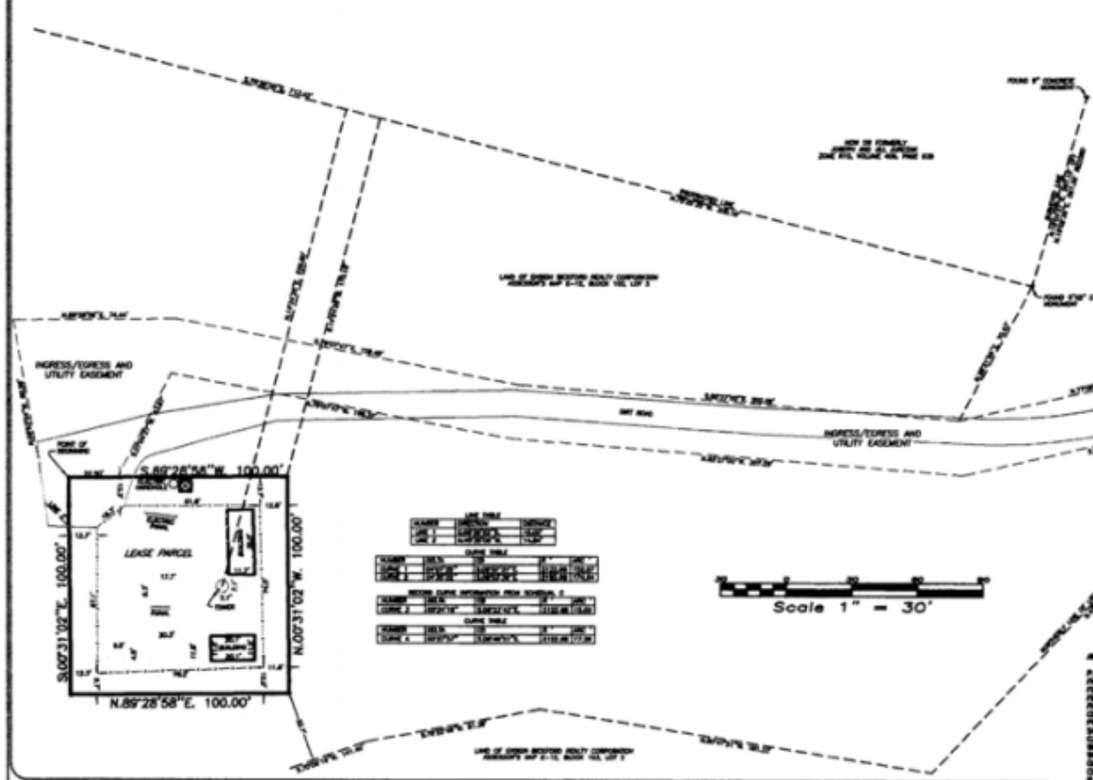
BOUNDARY DETERMINATION CATEGORY: RESURVEY

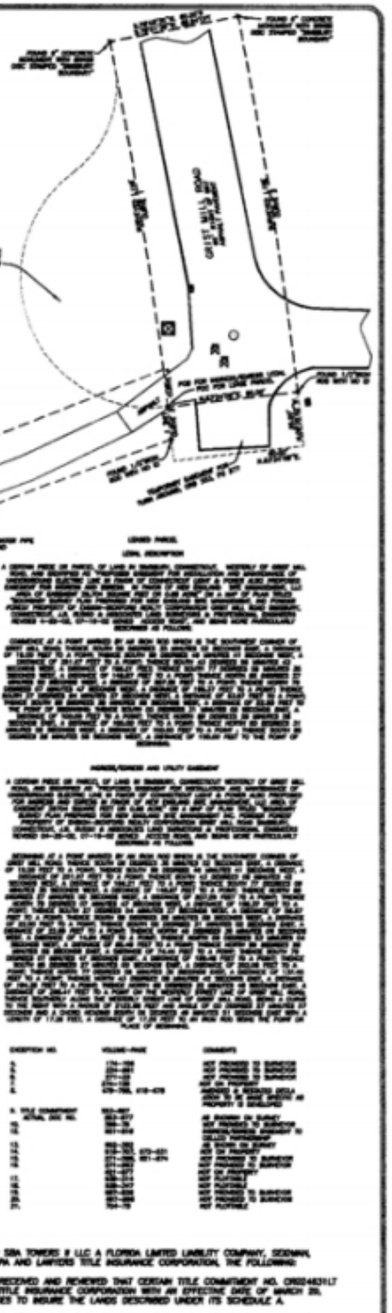
THE BOUNDARY LINES INDICATED HEREON REFLECT THE INFORMATION CONTAINED IN THE BELOW NAMED MAP REFERENCES. THE GEOMETRY FOR THIS SURVEY HAS BEEN RUN IN FROM THE PERMANENT REFERENCE MONUMENTS FOUND IN MAP REFERENCE 1 AND THE BEARINGS INDICATED HEREON ARE BASED ON SAID MAP REFERENCE.

PROPERTY OWNER: ENSIGN-BICKFORD REALTY CORPORATION

LEASE PARCEL, ACCESS EASEMENT AND UTILITY EASEMENT ARE A PORTION OF MAP E-12, BLOCK 103, LOT 5.

MAP REFERENCES:
1. GRIST MILL ROAD POWDER FOREST WEST STREET & GRIST MILL ROAD 09-2000 BY HODGE ASSOCIATES.
2. MAP SHOWING EASEMENT AREAS TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS PROPERTY OF ENSIGN BICKFORD REALTY CORPORATION, GRIST MILL ROAD, SIMSBURY, CONNECTICUT, SCALE: 1"=40', DATE 08-06-03, FILE E-2226.
3. MAP OF POWDER FOREST BUSINESS PARK TO BE DEVELOPED BY ENSIGN BICKFORD REALTY CORP, WEST STREET AND SLIGHT HILL ROAD, SIMSBURY, CONNECTICUT, OCTOBER 1963 REVISED NOVEMBER 5TH 1997 BY HODGE SURVEYING ASSOCIATES.
4. PARTIAL BOUNDARY AND TOPOGRAPHIC SURVEY, LAND OF ENSIGN BICKFORD REALTY CORPORATION GRIST MILL ROAD, SIMSBURY, CONNECTICUT, PREPARED FOR NEW ENGLAND SITE MANAGEMENT, DATE FEBRUARY 2001 BY LINO CORPORATION A.E.S.
5. BOUNDARY SURVEY PLAN PREPARED FOR NEW ENGLAND SITE MANAGEMENT INC. POWDER FOREST PROPERTY OF ENSIGN BICKFORD REALTY CORPORATION GRIST MILL ROAD, SIMSBURY, CONNECTICUT 1"=40', 04-11-02 REVISED 07-16-02 CLASS A-2 BY J.R. RUSSO & ASSOCIATES, JOSEPH R. RUSSO LS.





SCHEDULE 'C'
LEGAL DESCRIPTION
PARENT TRACT

A CERTAIN PIECE OR PARCEL OF LAND WITH THE BUILDINGS AND IMPROVEMENTS THEREON, LOCATED IN THE TOWN OF SIMSBURY, COUNTY OF HARTFORD AND STATE OF CONNECTICUT, KNOWN AS ASSESSOR'S MAP E12 103 0087 AND CONSISTING OF 45.0 ACRES, MORE OR LESS AS SHOWN ON MAPS OR PLANS ENTITLED "MASTER MAP SOUTH PORTION POWDER FOREST BUSINESS PARK OWNED & DEVELOPED BY ENSIGN-BICKFORD REALTY CORPORATION SIMSBURY, CONNECTICUT SCALE 1"=200' DATED MAY, 1963, LAST REVISED JANUARY 7, 2004 SHEET 1 OF 2 HODGE SURVEYING ASSOCIATES, P.C." AND "MASTER MAP NORTH PORTION POWDER FOREST BUSINESS PARK OWNED & DEVELOPED BY ENSIGN-BICKFORD REALTY CORPORATION SIMSBURY, CONNECTICUT SCALE 1"=200' DATED, MAY, 1963, LAST REVISED JANUARY 7, 2004 SHEET 2 OF 2 HODGE SURVEYING ASSOCIATES, P.C." WHICH MAPS OR PLANS ARE OR FILE IN THE OFFICE OF THE SIMSBURY TOWN CLERK AS MAP NOS. 3701 AND 3702 TO WHICH REFERENCE MAY BE HAD FOR A MORE PARTICULAR DESCRIPTION.

LEASEHOLD INTEREST:

A CERTAIN PIECE OR PARCEL OF LAND IN SIMSBURY, CT WESTERLY OF GRIST MILL ROAD AND SHOWN AS A 100' X 100' SQUARE ON A MAP ENTITLED "MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS PROPERTY OF ENSIGN BICKFORD REALTY CORPORATION GRIST MILL ROAD SIMSBURY, CONNECTICUT, SCALE 1" = 40' DATE 8-6-03 FILE NO. E-2226 J.R. RUSSO & ASSOCIATES LAND SURVEYORS & PROFESSIONAL ENGINEERS" WHICH MAP IS ON FILE IN THE SIMSBURY TOWN CLERK'S OFFICE AS MAP NO. 3004A FOR WHICH REFERENCE MAY BE HAD FOR A MORE PARTICULAR DESCRIPTION. TOGETHER WITH EASEMENTS FOR PURPOSES OF UTILITY ACCESS AND VEHICULAR AND PEDESTRIAN INGRESS AND EGRESS AS SHOWN ON SAID MAP.

GENERAL NOTES

1. FIELD SURVEY DATE: 04-09-07
2. VERTICAL DATUM: NAVD 88
3. HORIZONTAL DATUM: NAD 83
4. TOWER COORDINATES
   LATITUDE 41 DEGREES 52 MINUTES 05.15 SECONDS
   LONGITUDE 72 DEGREES 48 MINUTES 38.79 SECONDS
   ELEVATION 277 FEET
   HEIGHT OF TOWER 170'
   HEIGHT OF SPIRE ON TOWER 198'
5. PROPERTY OWNER: ENSIGN-BICKFORD REALTY CORPORATION.
6. SITE NAME: SIMSBURY
7. SITE NUMBER: CT10022-A
8. SITE ADDRESS: 225 GRIST MILL ROAD
9. JURISDICTION: SIMSBURY
10. THE MAJOR IMPROVEMENTS ON THIS PROPERTY ARE NOT LOCATED WITHIN THE 100 YEAR FLOOD HAZARD AREA AS SHOWN ON THE FIRM MAP FOR THE TOWN OF AVON/A FLOOD ZONE 'C' COMMUNITY PANEL NO. 090036 0005 C DATED 04-15-86

ZONE I-11

ADDRESS 225 GRIST MILL ROAD

PARENT TRACT DEED VOL. 394, PG. 800

ASSESSORS ID MAP # F11, BLOCK 103, LOT #005

FLOOD ZONE C "FIRM" MAP #090035 0005 C, DATED 04-15-1986.

AREA OF LEASE PARCEL 10000 SQUARE FEET

AREA OF ACCESS EASEMENT/CLAMP EASEMENT, 30630 SQUARE FEET

I HEREBY CERTIFY TO SBA TOWERS II LLC A FLORIDA LIMITED LIABILITY COMPANY, SEDGWICK, PROVITT & CIBELLI, PA AND LAWYERS TITLE INSURANCE CORPORATION, THE FOLLOWING:

THIS SURVEYOR HAS RECEIVED AND REVIEWED THAT CERTAIN TITLE COMMITMENT NO. CR0246317 ISSUED BY LAWYERS TITLE INSURANCE CORPORATION WITH AN EFFECTIVE DATE OF MARCH 20, 2007, WHICH PROPOSES TO INSURE THE LANDS DESCRIBED UNDER ITS SCHEDULE A.

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

THIS SURVEYOR FURTHER KNOWS OF HIS OWN KNOWLEDGE THAT THE EASEMENTS OF RECORD AND IDENTIFIED UNDER SCHEDULE B-II OF SAID TITLE COMMITMENT ENCUMBER THE LANDS DESCRIBED ON THIS SURVEY, BUT SAID EASEMENTS WILL NOT INTERFERE WITH THE LOCATION OF THE PROPOSED INSURED LANDS, INCLUDING THE LEASED AREA AND ANY AND ALL ACCESS, UTILITY AND GUY WIRE EASEMENT PARCELS.

PAUL J. STOWELL REGISTERED LAND SURVEYOR 70216 DATE: 04-09-07

NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OF THE STATE LICENSED REGISTERED LAND SURVEYOR.

CONTINUING — CONCRETE BLOCK WALL — MONITORING WELL
WOOD FENCE — OVERHEAD WIRES — CABLE JUNCTION BOX
METAL FENCE — CONCRETE FENCE — POWER/LIGHT POLE
GUY ANCHOR — WATER METER
1.00' WIDTH ELEVATION — CLAP PAD

I HEREBY CERTIFY THAT THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A CONNECTICUT LICENSED SURVEYOR

Paul J. Stowell 06-09-07

PAUL J. STOWELL PROFESSIONAL LAND SURVEYOR — CONNECTICUT LICENSE NO. 70216

NOTES

1. BASIS OF BEARINGS AS INDICATED ON SURVEY.
2. ALL LAND BOUNDARIES SHOWN ARE NOT INTENDED TO BE RESOLVED.
3. THE LANDS SHOWN HEREON DO NOT CONSTITUTE BY THEMSELVES OR THE SPACE FOR EASEMENTS, RIGHT-OF-WAYS, ENCROACHMENTS OR OTHER RESTRICTIONS OF RECORD.
4. ENCROACHMENTS OF ADJOINER PORTIONS OF FOOTINGS, FOUNDATIONS, WALLS OR OTHER NON-VISIBLE APPURTENANCES WERE NOT LOCATED.
5. ELEVATIONS ARE SHOWN ON THE VERTICAL DATUM INDICATED HEREON (IF USED) UNLESS OTHERWISE SHOWN.
6. LINES TIES ARE TO THE CENTER-LINE OF ROADS, WALLS ARE TO THE FACE OF WALL.
7. IF ANY MONUMENTS SHOWN HEREON ARE NOT FOUND AND WERE CONSIDERED TO HAVE SUFFICIENT EVIDENCE TO ACCURATELY ESTABLISH THE BOUNDARY LINES SHOWN HEREON, THE LOCATION OF SAID MONUMENTS SHALL BE CONSIDERED TO BE THE LOCATION OF THE ORIGINAL MONUMENTS.
8. THE BEARINGS AND DIRECTIONS SHOWN HEREON ARE IN AGREEMENT WITH HEREON VALUES UNLESS OTHERWISE NOTED.
9. PARTY WALLS ARE CONSIDERED ON PROPERTY LINE AND ARE 0.1' WIDE UNLESS OTHERWISE NOTED.
10. CERTAIN CORNERS FOUND OR SHOWN PROPERTY CORNERS.
11. OBSTRUCTED CORNERS ARE WITNESSED BY APPROPRIATE.

ABBREVIATIONS

P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
MH	MANHOLE
SMH	SEWER MANHOLE
DMH	DRAIN MANHOLE
SCO	SEWER CLEAN OUT
WV	WATER VALVE
WMH	WATER MANHOLE
GV	GAS VALVE
GM	GAS METER
UP	UTILITY POLE
LP	LIGHT POLE
TP	TELEPHONE POLE
PP	POWER POLE
FH	FIRE HYDRANT
CB	CATCH BASIN
DI	DRAIN INLET
FC	FENCE CORNER
FL	FENCE LINE
GW	GUY WIRE
TBM	TEMPORARY BENCHMARK
BM	BENCHMARK
CONC	CONCRETE
BIT	BITUMINOUS
MON	MONUMENT
PK	PK NAIL
CM	CORRUGATED METAL
RCP	REINFORCED CONCRETE PIPE
CPP	CORRUGATED PLASTIC PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
VCP	VITRIFIED CLAY PIPE
PVC	POLYVINYL CHLORIDE PIPE
DIP	DUCTILE IRON PIPE
CMP	CORRUGATED METAL PIPE
RCCP	REINFORCED CONCRETE CULVERT PIPE
CI	CAST IRON
DIA	DIAMETER
ELEV	ELEVATION
INV	INVERT
TOP	TOP OF PIPE
BOT	BOTTOM OF PIPE
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
TOB	TOP OF BANK
TOE	TOE OF SLOPE
EOP	EDGE OF PAVEMENT
EOG	EDGE OF GRAVEL
EOW	EDGE OF WATER
EOB	EDGE OF BANK
CL	CENTER LINE
R	RADIUS
L	LENGTH
CH	CHORD
CHB	CHORD BEARING
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PI	POINT OF INTERSECTION
PCC	POINT OF COMPOUND CURVATURE
PRC	POINT OF REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY
VPI	VERTICAL POINT OF INTERSECTION
VPC	VERTICAL POINT OF CURVATURE
VPT	VERTICAL POINT OF TANGENCY
VC	VERTICAL CURVE
VCE	VERTICAL CURVE ELEVATION
VCL	VERTICAL CURVE LENGTH
ASPH	ASPHALT
BLDG	BUILDING
ELEC	ELECTRIC
TEL	TELEPHONE
CATV	CABLE TELEVISION
FND	FOUND
SET	SET
ID	IDENTIFICATION
RLS	REGISTERED LAND SURVEYOR
LS	LAND SURVEYOR
PLS	PROFESSIONAL LAND SURVEYOR
REC	RECORD
MEAS	MEASURED
CALC	CALCULATED
DEED	DEED
MAP	MAP
ORD	ORDINANCE
REG	REGULATION
ZONE	ZONE
VOL	VOLUME
PG	PAGE
DOC	DOCUMENT
ASSESS	ASSESSOR
ACRES	ACRES
SQ FT	SQUARE FEET
SQ IN	SQUARE INCHES
SQ YD	SQUARE YARDS
CU FT	CUBIC FEET
CU YD	CUBIC YARDS
CU IN	CUBIC INCHES
GAL	GALLONS
LBS	POUNDS
TONS	TONS
FT	FEET
IN	INCHES
YD	YARDS
MI	MILES
DEG	DEGREES
MIN	MINUTES
SEC	SECONDS
%	PERCENT
@	AT
#	NUMBER
&	AND
±	PLUS OR MINUS
∆	DELTA
∠	ANGLE
⊥	PERPENDICULAR
∥	PARALLEL
∩	INTERSECTION
∪	UNION
∈	ELEMENT OF
∉	NOT AN ELEMENT OF
⊂	SUBSET OF
⊃	SUPERSET OF
∅	EMPTY SET
∞	INFINITY
≈	APPROXIMATELY EQUAL TO
≠	NOT EQUAL TO
≤	LESS THAN OR EQUAL TO
≥	GREATER THAN OR EQUAL TO
∫	INTEGRAL
∑	SUMMATION
√	SQUARE ROOT
∛	CUBE ROOT
∜	FOURTH ROOT
∂	PARTIAL DERIVATIVE
∇	GRADIENT
∆	LAPLACIAN
∮	CONTOUR INTEGRAL
∯	SURFACE INTEGRAL
∰	VOLUME INTEGRAL
∱	CLOCKWISE INTEGRAL
∲	CLOCKWISE CONTOUR INTEGRAL
∳	ANTICLOCKWISE CONTOUR INTEGRAL
∴	THEREFORE
∵	BECAUSE
∶	RATIO
∷	PROPORTION
∸	DOT MINUS
∹	EXCESS
∺	GEOMETRIC PROPORTION
∻	HOMOTHETIC
∼	TILDE
∽	REVERSED TILDE
∾	INVERTED LAZY S
∿	SINE WAVE
≀	WREATH PRODUCT
≁	NOT TILDE
≂	MINUS TILDE
≃	ASYMPTOTICALLY EQUAL TO
≄	NOT ASYMPTOTICALLY EQUAL TO
≅	APPROXIMATELY EQUAL TO
≆	NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO
≇	NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO
≈	ALMOST EQUAL TO
≉	NOT ALMOST EQUAL TO
≊	ALMOST EQUAL OR EQUAL TO
≋	TRIPLE TILDE
≌	ALL EQUAL TO
≍	EQUIVALENT TO
≎	GEOMETRICALLY EQUIVALENT TO
≏	DIFFERENCE BETWEEN
≐	APPROACHES THE LIMIT
≑	GEOMETRICALLY EQUAL TO
≒	APPROXIMATELY EQUAL TO OR THE IMAGE OF
≓	IMAGE OF OR APPROXIMATELY EQUAL TO
≔	COLON EQUALS
≕	EQUALS COLON
≖	RING IN EQUAL TO
≗	RING EQUAL TO
≘	CORRESPONDS TO
≙	ESTIMATES
≚	EQUIANGULAR TO
≛	STAR EQUALS
≜	DELTA EQUAL TO
≝	EQUAL TO BY DEFINITION
≞	MEASURED BY
≟	QUESTIONED EQUAL TO
≠	NOT EQUAL TO
≡	IDENTICAL TO
≢	NOT IDENTICAL TO
≣	STRICTLY EQUIVALENT TO
≤	LESS THAN OR EQUAL TO
≥	GREATER THAN OR EQUAL TO
≦	LESS THAN OVER EQUAL TO
≧	GREATER THAN OVER EQUAL TO
≨	LESS THAN BUT NOT EQUAL TO
≩	GREATER THAN BUT NOT EQUAL TO
≪	MUCH LESS THAN
≫	MUCH GREATER THAN
≬	BETWEEN
≭	NOT EQUIVALENT TO
≮	NOT LESS THAN
≯	NOT GREATER THAN
≰	NEITHER LESS THAN NOR EQUAL TO
≱	NEITHER GREATER THAN NOR EQUAL TO
≲	LESS THAN OR EQUIVALENT TO
≳	GREATER THAN OR EQUIVALENT TO
≴	NEITHER LESS THAN NOR EQUIVALENT TO
≵	NEITHER GREATER THAN NOR EQUIVALENT TO
≶	LESS THAN OR GREATER THAN
≷	GREATER THAN OR LESS THAN
≸	NEITHER LESS THAN NOR GREATER THAN
≹	NEITHER GREATER THAN NOR LESS THAN
≺	PRECEDES
≻	SUCCEEDS
≼	PRECEDES OR EQUAL TO
≽	SUCCEEDS OR EQUAL TO
≾	PRECEDES OR EQUIVALENT TO
≿	SUCCEEDS OR EQUIVALENT TO
⊀	DOES NOT PRECEDE
⊁	DOES NOT SUCCEED
⊂	SUBSET OF
⊃	SUPERSET OF
⊄	NOT A SUBSET OF
⊅	NOT A SUPERSET OF
⊆	SUBSET OF OR EQUAL TO
⊇	SUPERSET OF OR EQUAL TO
⊈	NEITHER A SUBSET OF NOR EQUAL TO
⊉	NEITHER A SUPERSET OF NOR EQUAL TO
⊊	SUBSET OF WITH NOT EQUAL TO
⊋	SUPERSET OF WITH NOT EQUAL TO
⊌	MULTISET
⊍	MULTISET MULTIPLICATION
⊎	MULTISET UNION
⊏	SQUARE IMAGE OF
⊐	SQUARE ORIGINAL OF
⊑	SQUARE IMAGE OF OR EQUAL TO
⊒	SQUARE ORIGINAL OF OR EQUAL TO
⊓	SQUARE CAP
⊔	SQUARE CUP
⊕	CIRCLED PLUS
⊖	CIRCLED MINUS
⊗	CIRCLED TIMES
⊘	CIRCLED DIVISION SLASH
⊙	CIRCLED DOT OPERATOR
⊚	CIRCLED RING OPERATOR
⊛	CIRCLED ASTERISK OPERATOR
⊜	CIRCLED EQUALS
⊝	CIRCLED DASH
⊞	SQUARED PLUS
⊟	SQUARED MINUS
⊠	SQUARED TIMES
⊡	SQUARED DOT OPERATOR
⊢	RIGHT TACK
⊣	LEFT TACK
⊤	DOWN TACK
⊥	UP TACK
⊦	ASSERTION
⊧	MODELS
⊨	TRUE
⊩	FORCES
⊪	TRIPLE VERTICAL BAR RIGHT TURNSTILE
⊫	DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE
⊬	DOES NOT PROVE
⊭	NOT TRUE
⊮	DOES NOT FORCE
⊯	NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE
⊰	PRECEDES UNDER RELATION
⊱	SUCCEEDS UNDER RELATION
⊲	NORMAL SUBGROUP OF
⊳	CONTAINS AS NORMAL SUBGROUP
⊴	NORMAL SUBGROUP OF OR EQUAL TO
⊵	CONTAINS AS NORMAL SUBGROUP OR EQUAL TO
⊶	ORIGINAL OF
⊷	IMAGE OF
⊸	MULTIMAP
⊹	HERMITIAN CONJUGATE MATRIX
⊺	INTERCALATE
⊻	XOR
⊼	NAND
⊽	NOR
⊾	RIGHT ANGLE WITH ARC
⊿	RIGHT TRIANGLE
⋀	N-ARY LOGICAL AND
⋁	N-ARY LOGICAL OR
⋂	N-ARY INTERSECTION
⋃	N-ARY UNION
⋄	DIAMOND OPERATOR
⋅	DOT OPERATOR
⋆	STAR OPERATOR
⋇	DIVISION TIMES
⋈	BOWTIE
⋉	LEFT NORMAL FACTOR SEMIDIRECT PRODUCT
⋊	RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT
⋋	LEFT SEMIDIRECT PRODUCT
⋌	RIGHT SEMIDIRECT PRODUCT
⋍	REVERSED TILDE EQUALS
⋎	CURLY LOGICAL OR
⋏	CURLY LOGICAL AND
⋐	DOUBLE SUBSET
⋑	DOUBLE SUPERSET
⋒	DOUBLE INTERSECTION
⋓	DOUBLE UNION
⋔	PITCHFORK
⋕	EQUAL AND PARALLEL TO
⋖	LESS-THAN WITH DOT
⋗	GREATER-THAN WITH DOT
⋘	VERY MUCH LESS-THAN
⋙	VERY MUCH GREATER-THAN
⋚	LESS-THAN EQUAL TO OR GREATER-THAN
⋛	GREATER-THAN EQUAL TO OR LESS-THAN
⋜	EQUAL TO OR LESS-THAN
⋝	EQUAL TO OR GREATER-THAN
⋞	EQUAL TO OR PRECEDES
⋟	EQUAL TO OR SUCCEEDS
⋠	DOES NOT PRECEDE OR EQUAL
⋡	DOES NOT SUCCEED OR EQUAL
⋢	NOT SQUARE IMAGE OF OR EQUAL TO
⋣	NOT SQUARE ORIGINAL OF OR EQUAL TO
⋤	SQUARE IMAGE OF OR NOT EQUAL TO
⋥	SQUARE ORIGINAL OF OR NOT EQUAL TO
⋦	LESS-THAN BUT NOT EQUIVALENT TO
⋧	GREATER-THAN BUT NOT EQUIVALENT TO
⋨	PRECEDES BUT NOT EQUIVALENT TO
⋩	SUCCEEDS BUT NOT EQUIVALENT TO
⋪	NOT NORMAL SUBGROUP OF
⋫	DOES NOT CONTAIN AS NORMAL SUBGROUP
⋬	NOT NORMAL SUBGROUP OF OR EQUAL TO
⋭	DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL
⋮	VERTICAL ELLIPSIS
⋯	MIDLINE HORIZONTAL ELLIPSIS
⋰	UP RIGHT DIAGONAL ELLIPSIS
⋱	DOWN RIGHT DIAGONAL ELLIPSIS
⋲	ELEMENT OF WITH LONG HORIZONTAL STROKE
⋳	ELEMENT OF WITH VERTICAL BAR AT END OF HORIZONTAL STROKE
⋴	SMALL ELEMENT OF WITH VERTICAL BAR AT END OF HORIZONTAL STROKE
⋵	ELEMENT OF WITH DOT ABOVE
⋶	ELEMENT OF WITH OVERBAR
⋷	SMALL ELEMENT OF WITH OVERBAR
⋸	ELEMENT OF WITH UNDERBAR
⋹	ELEMENT OF WITH TWO HORIZONTAL STROKES
⋺	CONTAINS WITH LONG HORIZONTAL STROKE
⋻	CONTAINS WITH VERTICAL BAR AT END OF HORIZONTAL STROKE
⋼	SMALL CONTAINS WITH VERTICAL BAR AT END OF HORIZONTAL STROKE
⋽	CONTAINS WITH OVERBAR
⋾	SMALL CONTAINS WITH OVERBAR
⋿	Z NOTATION BAG MEMBERSHIP

PAUL J. STOWELL
LAND SURVEYOR

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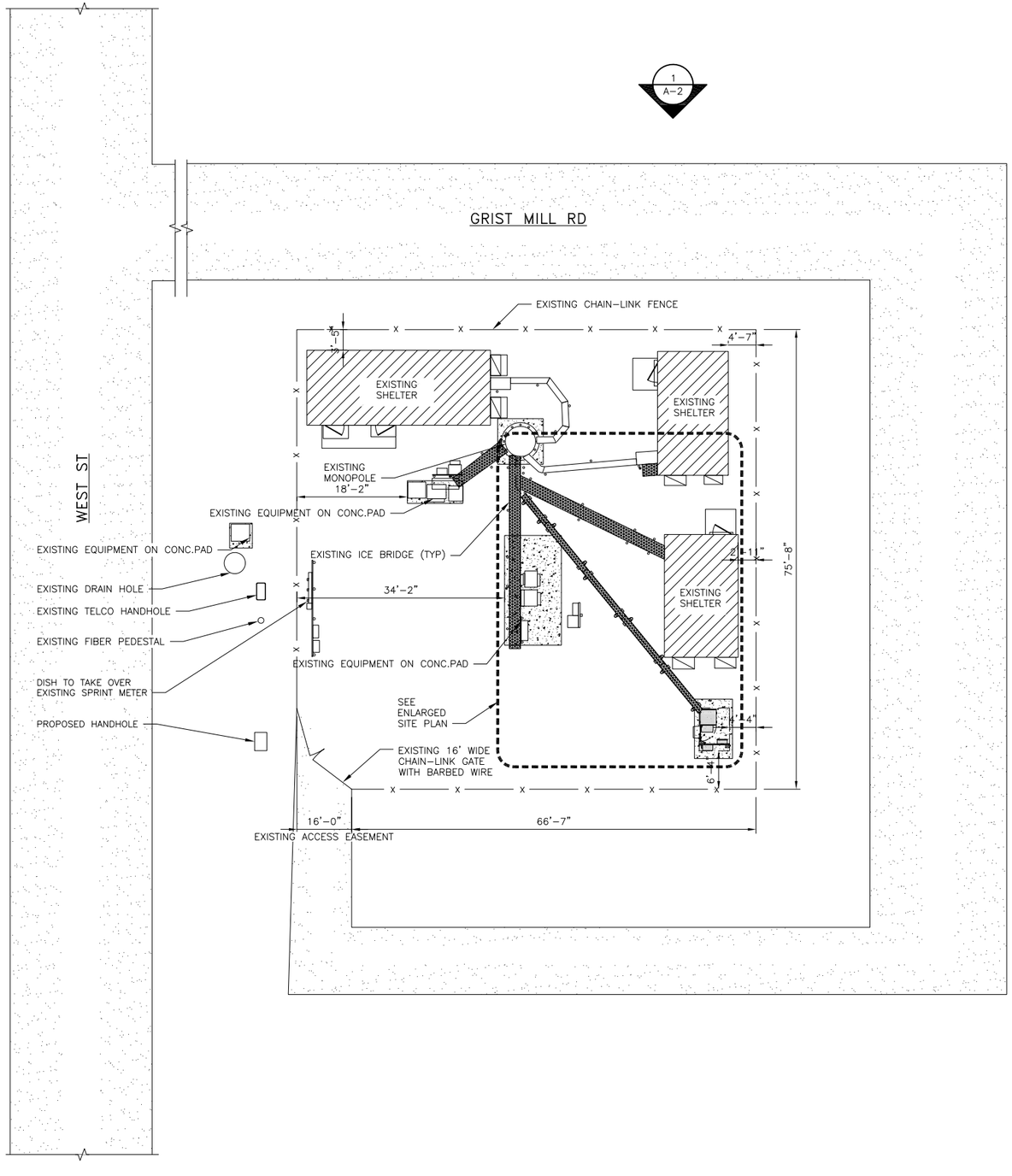
MILFORD CT. 06460
PHONE (203) 882-9995
FAX (877) 977-9506

*Final CT10022-A; Simsbury

NOTES

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



N

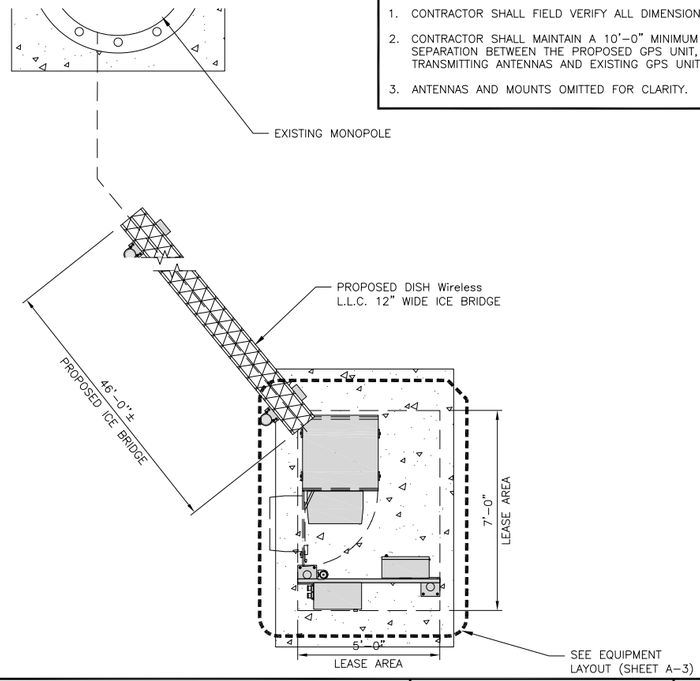
OVERALL SITE PLAN

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

3

dish wireless.
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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
RK	RMC	RMC

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/26/21	ISSUED FOR REVIEW
0	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

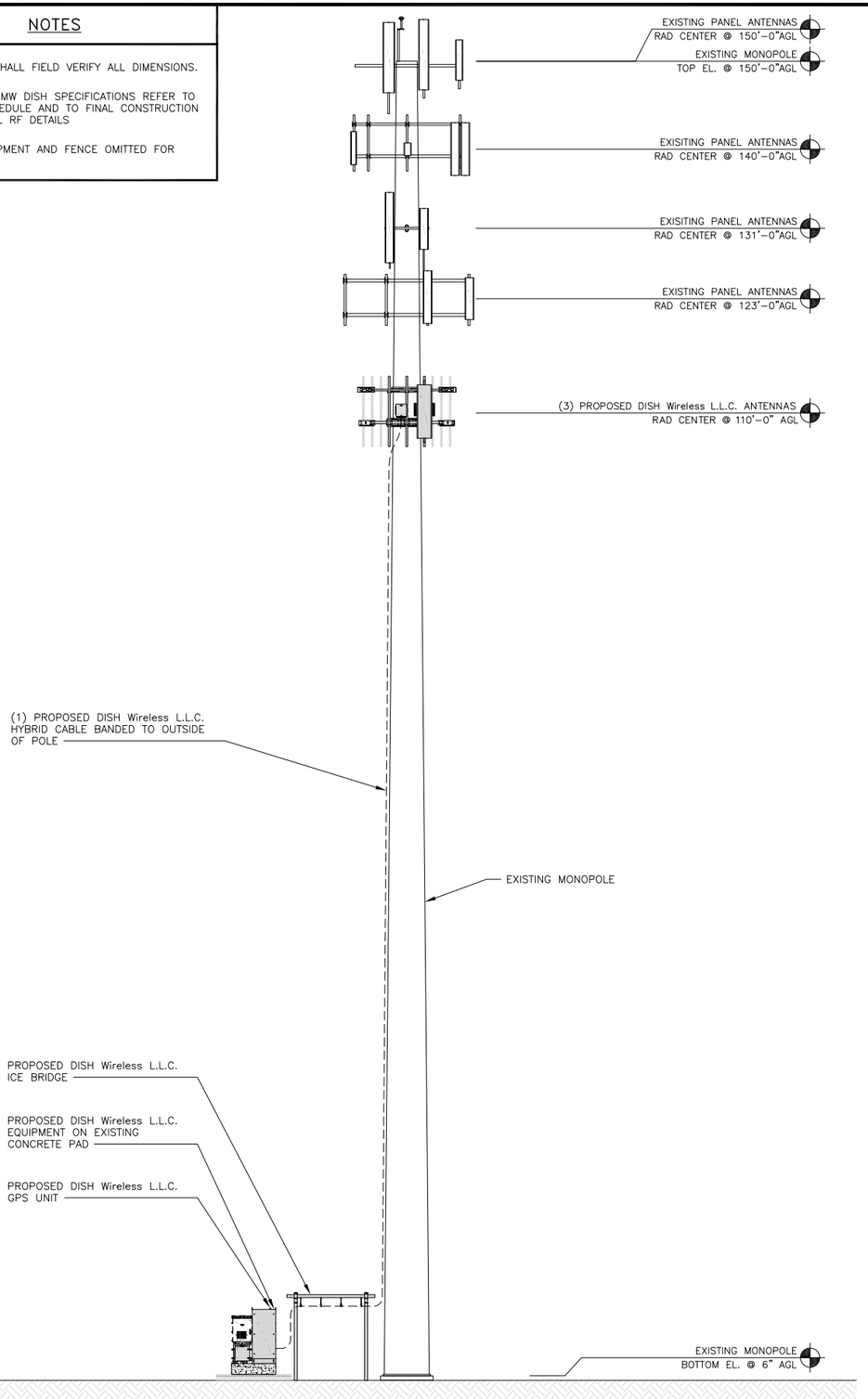
OVERALL AND ENLARGED SITE PLAN

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

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

1

N

ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72" x 20"	0°	110'-0"	(1) HIGH-CAPACITY HYBRID CABLE (179' LONG)
BETA	B1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72" x 20"	120°	110'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72" x 20"	240°	110'-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	C1	FUJITSU – TA08025-B604	5G
	C1	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

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DISH Wireless L.L.C.
PROJECT INFORMATION

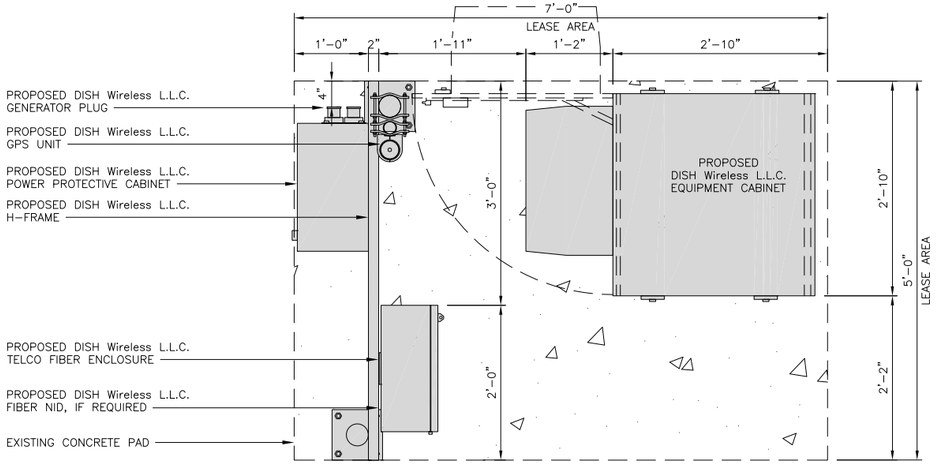
BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

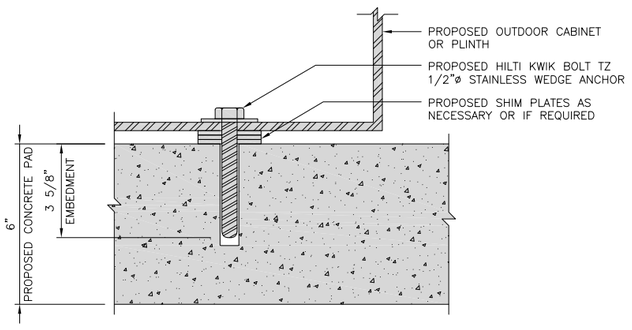
A-2



CONCRETE PAD EQUIPMENT PLAN

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

1

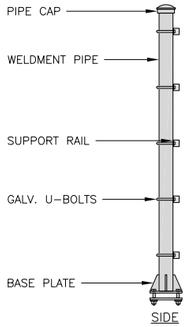


TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

NO SCALE

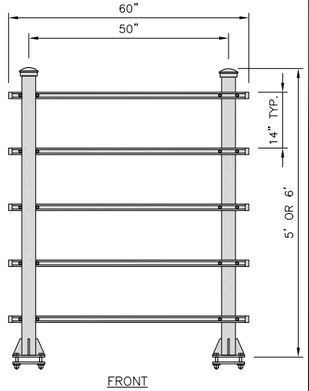
2

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



SIDE

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



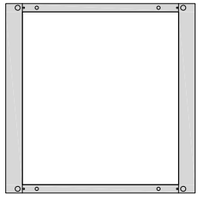
FRONT

H-FRAME DETAIL

NO SCALE

3

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



PLAN

FRONT/BACK

SIDE

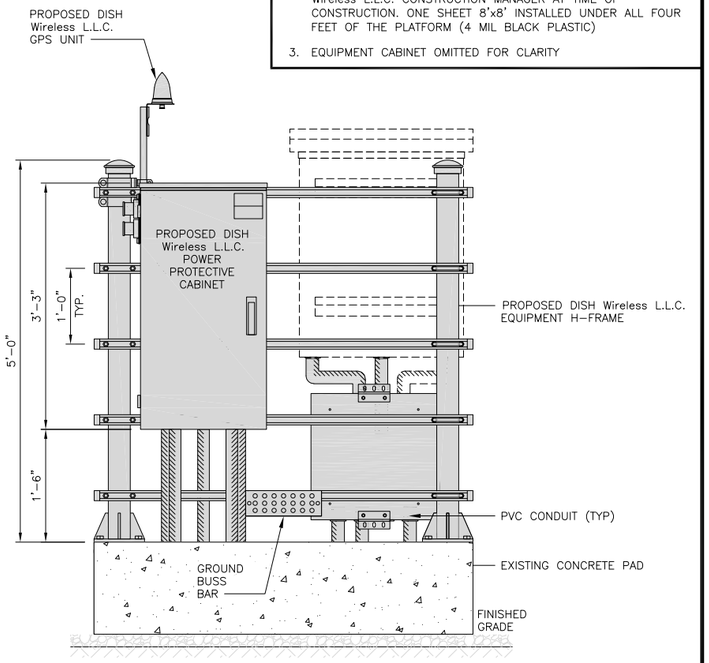
PLINTH DETAIL

NO SCALE

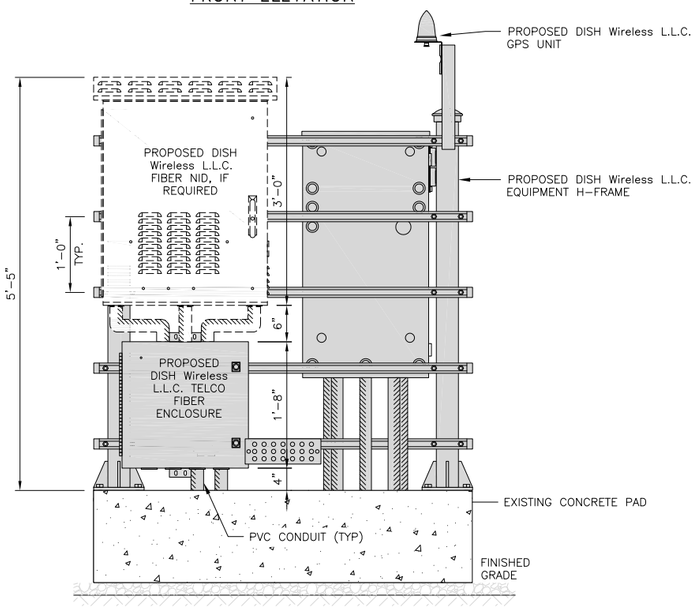
4

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"

5

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

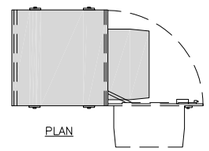
SHEET TITLE

EQUIPMENT PAD AND H-FRAME DETAILS

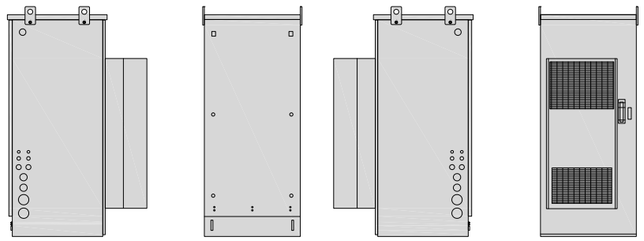
SHEET NUMBER

A-3

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



PLAN

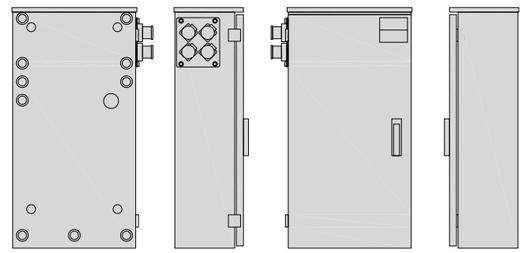


SIDE BACK SIDE FRONT

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

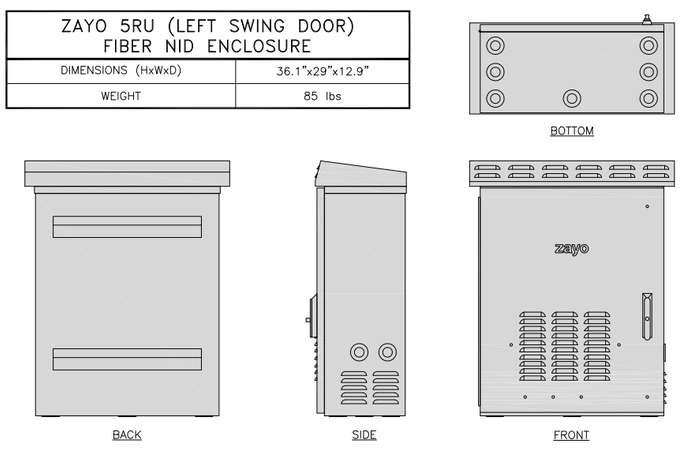


BACK SIDE FRONT SIDE

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

NOT USED | NO SCALE | 3

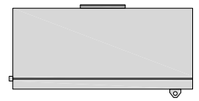
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs



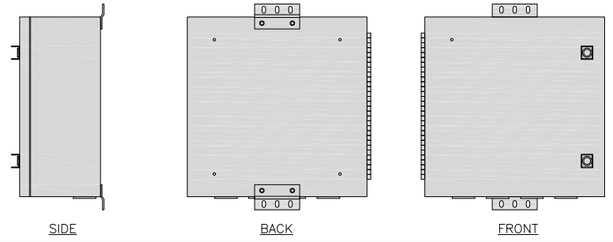
BOTTOM BACK SIDE FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

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



FRONT



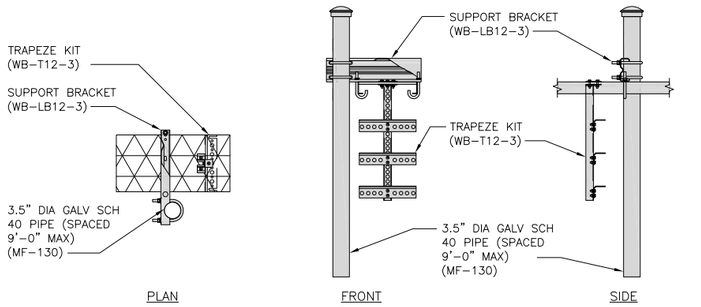
SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

NOT USED | NO SCALE | 4

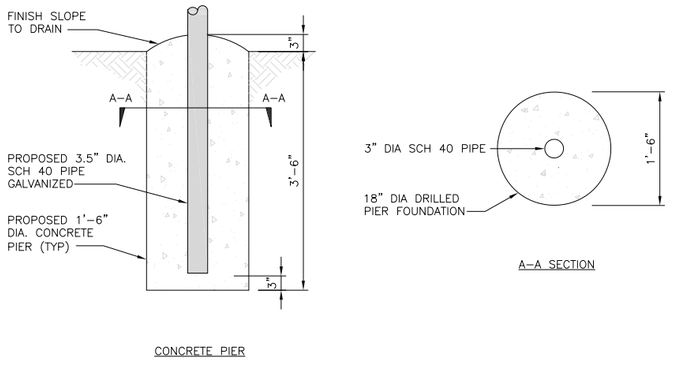
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



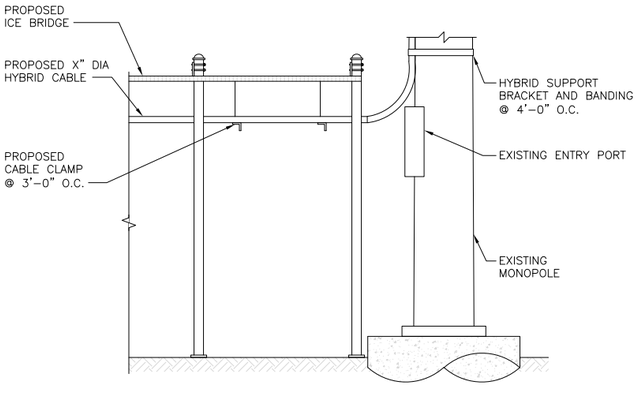
PLAN FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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10/19/21

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PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
RK	RMC	RMC

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/26/21	ISSUED FOR REVIEW
0	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

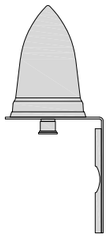
EQUIPMENT DETAILS

SHEET NUMBER

A-4

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

TOP



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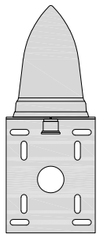
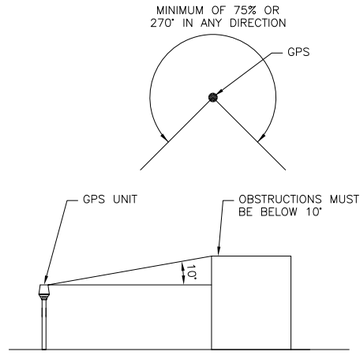
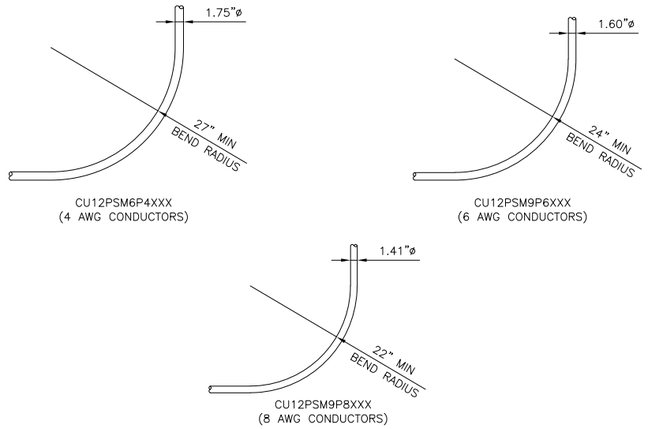


SIDE

GPS DETAIL | NO SCALE | 1

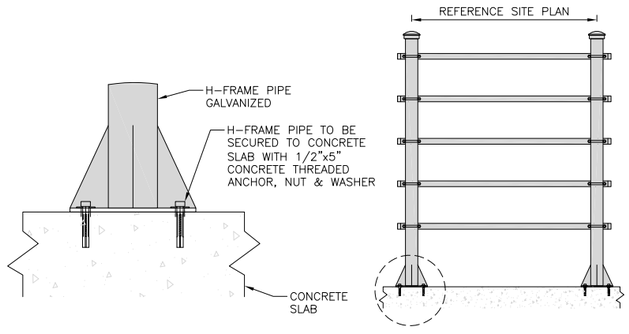


GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

H-FRAME	
UNISTRUT/SUPPORT RAIL	6



H-FRAME CONCRETE SLAB INSTALLATION DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

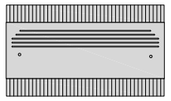
SHEET TITLE

EQUIPMENT DETAILS

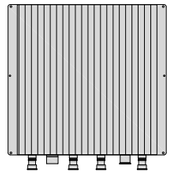
SHEET NUMBER

A-5

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



PLAN



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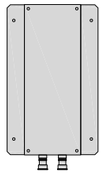
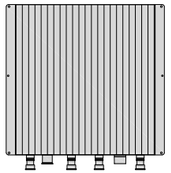


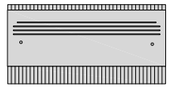
SIDE



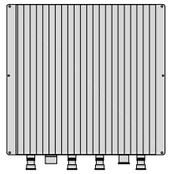
FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN



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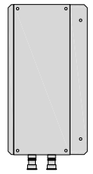
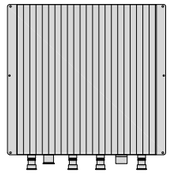


SIDE

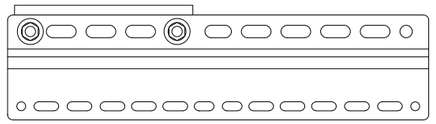


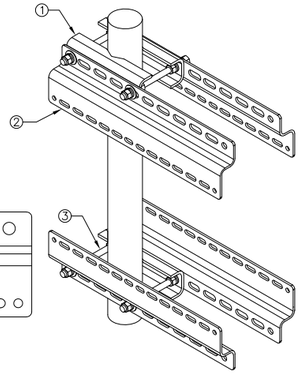
FRONT

RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

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





NOTE:
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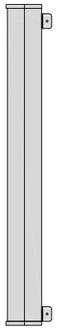
APPROVED EQUIVALENT

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



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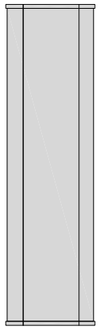


FRONT

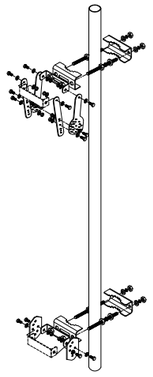
ANTENNA DETAIL | NO SCALE | 4

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

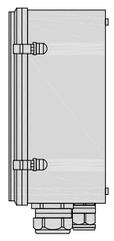


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

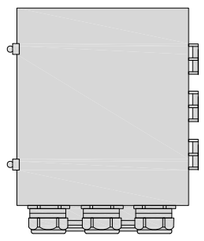
ANTENNA BRACKET DETAIL | NO SCALE | 6

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

PLAN



SIDE



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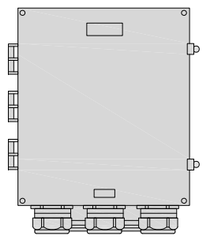
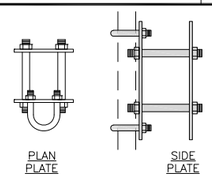


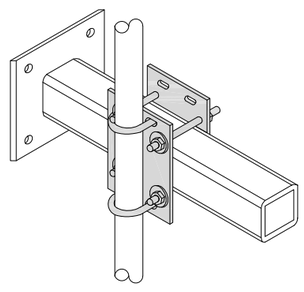
FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

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

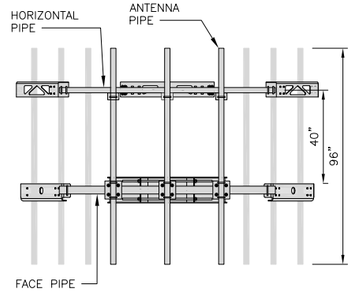


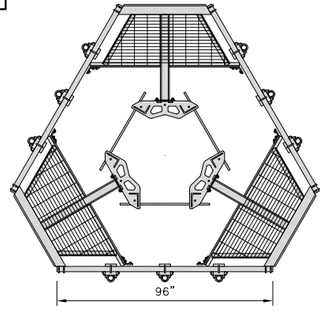


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

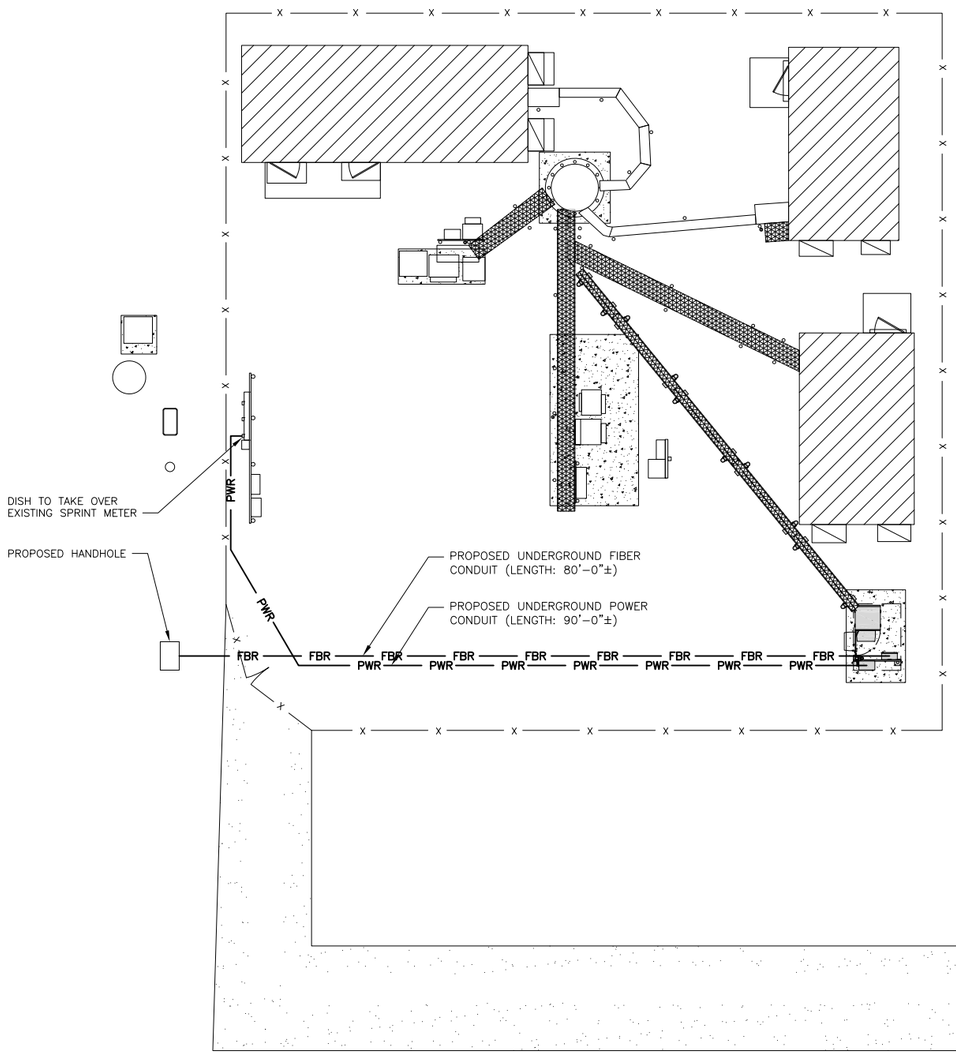
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

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.

ELECTRICAL NOTES

NO SCALE

2

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RK	RMC	RMC

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/26/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

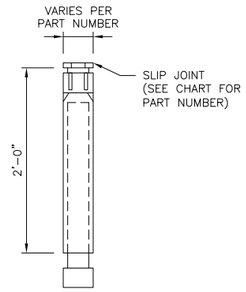
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

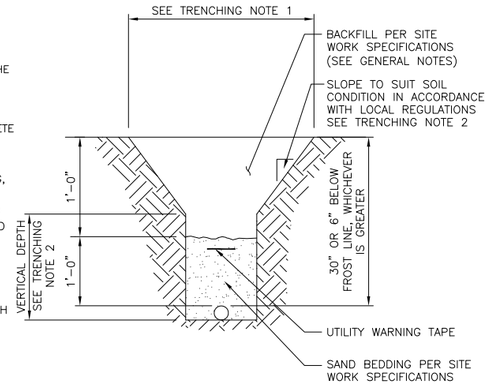


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

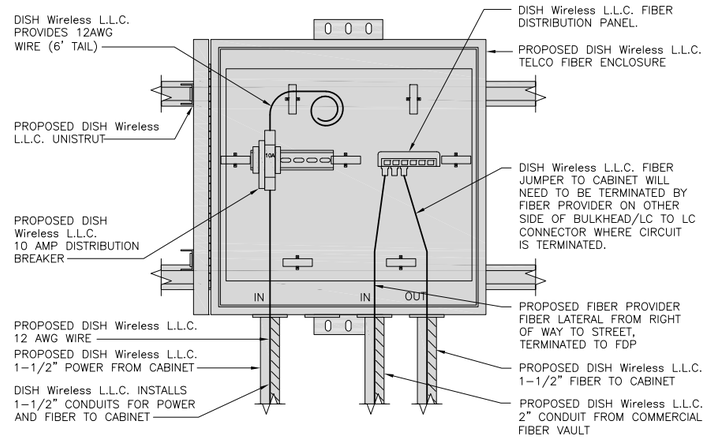
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

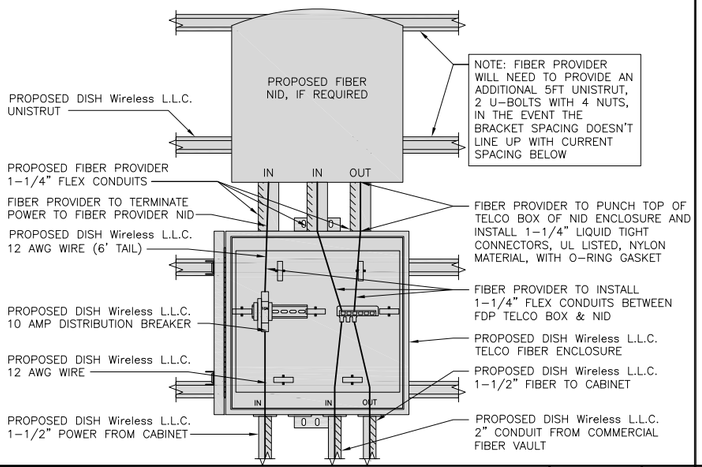
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

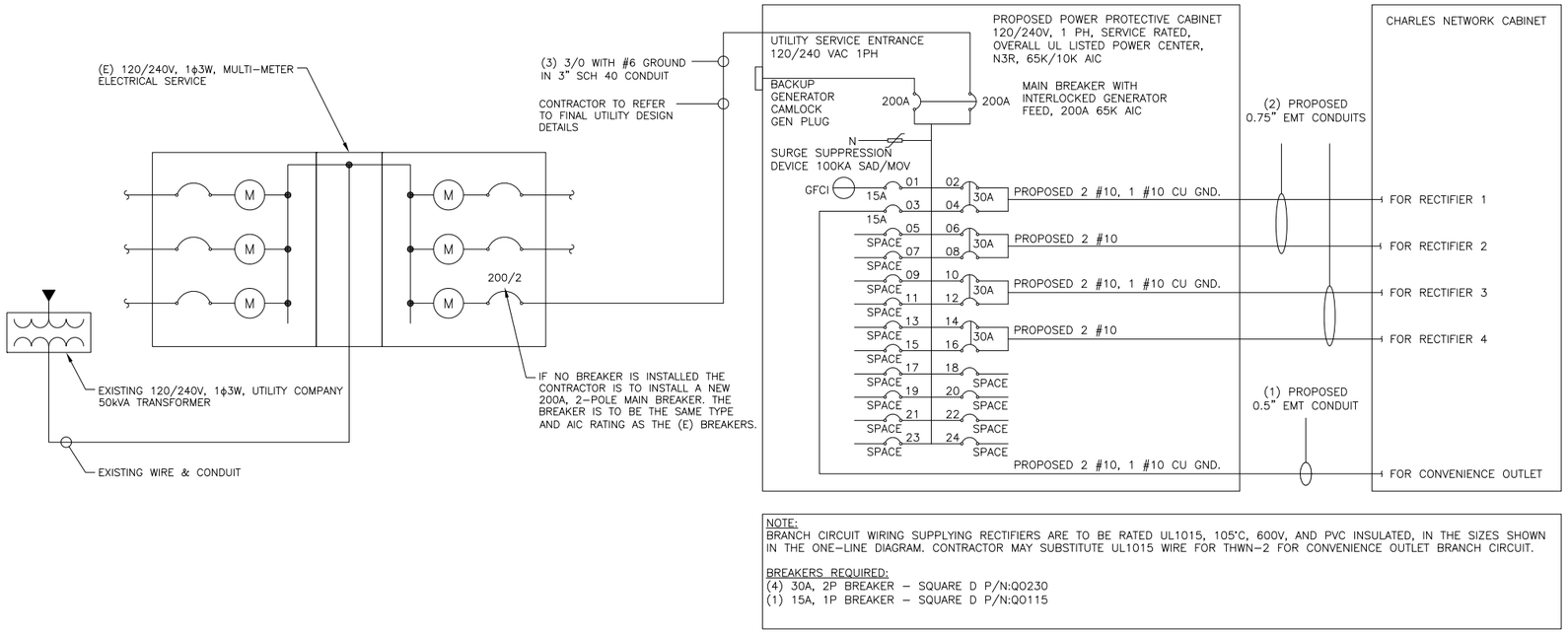
BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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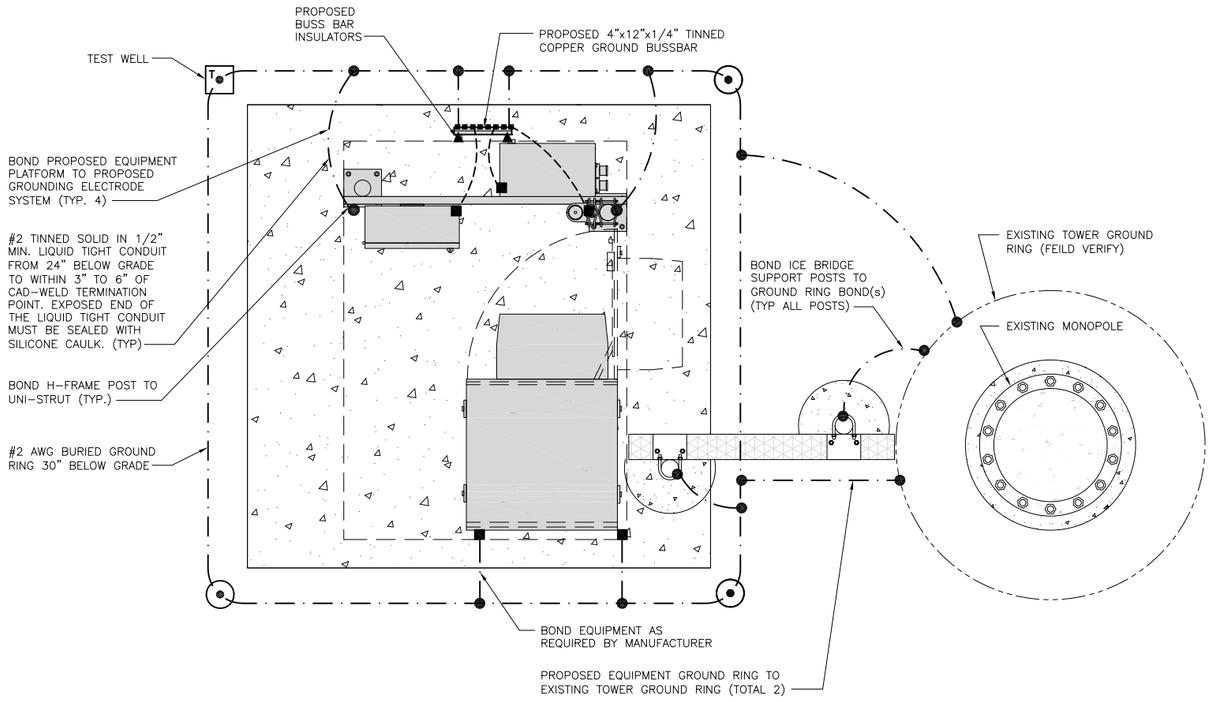
BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER

E-3

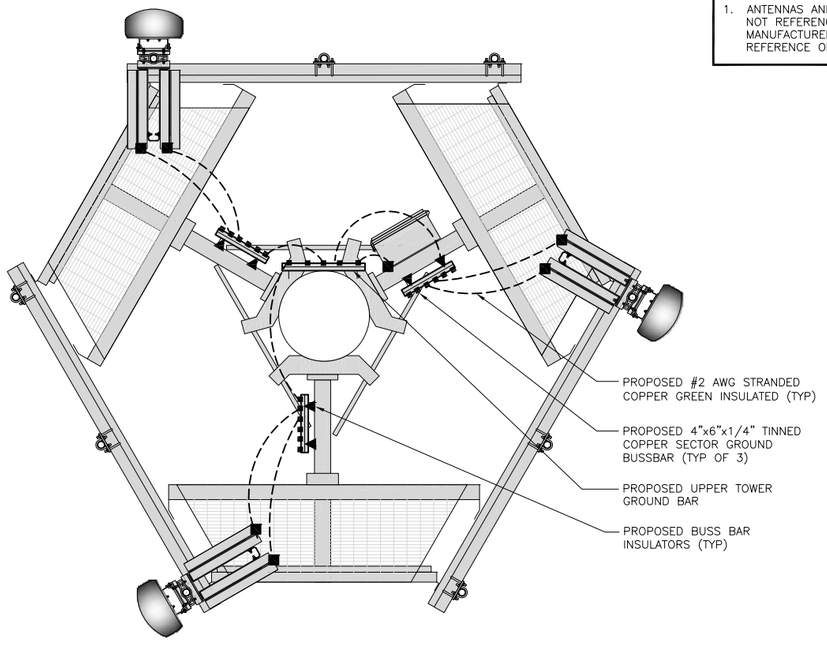


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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SIMSBURY, CT 06070

SHEET TITLE

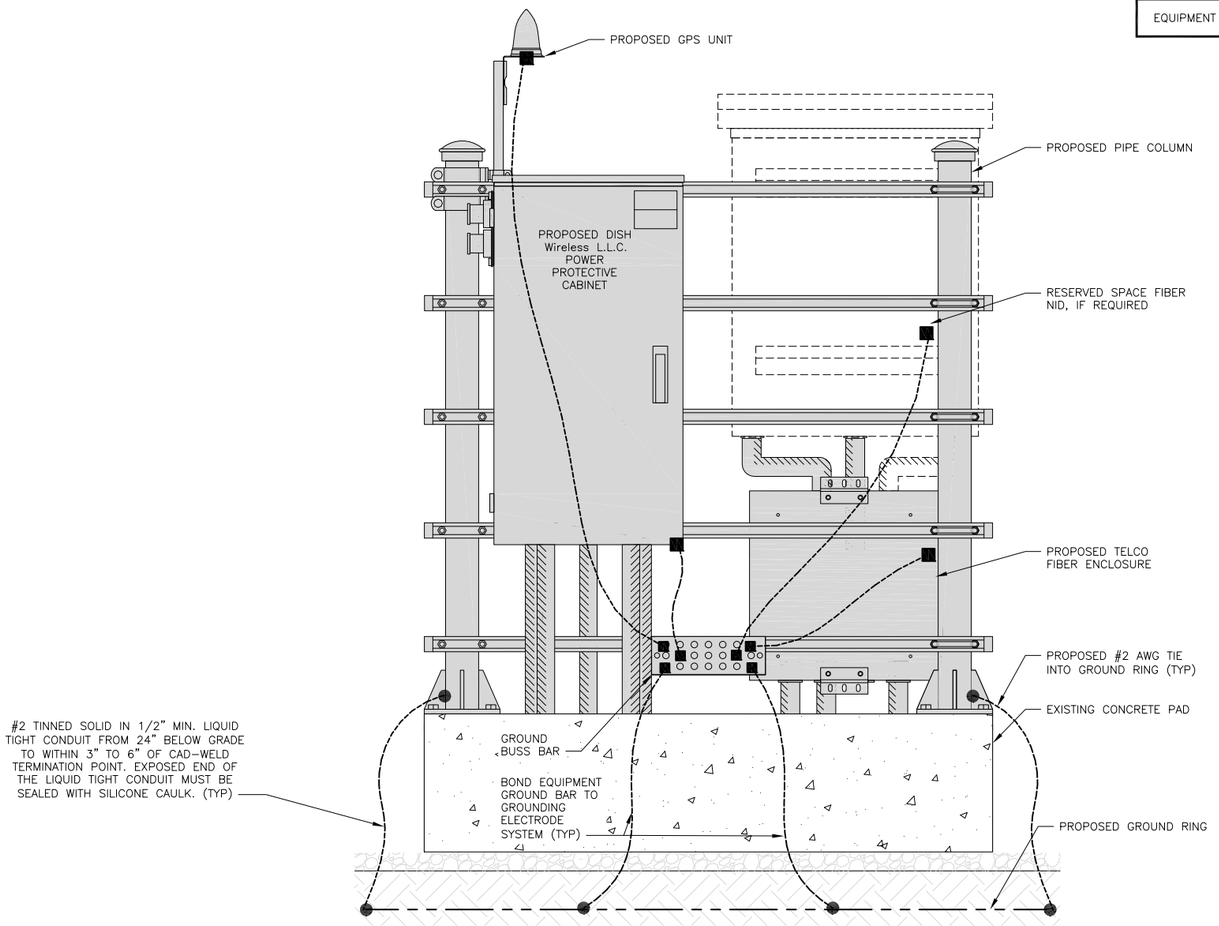
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

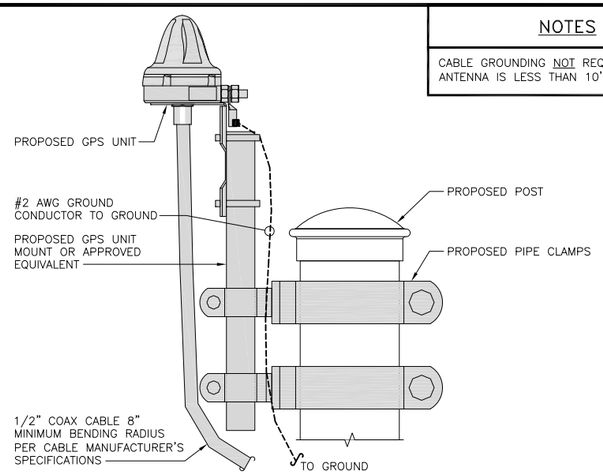
EQUIPMENT CABINET OMITTED FOR CLARITY



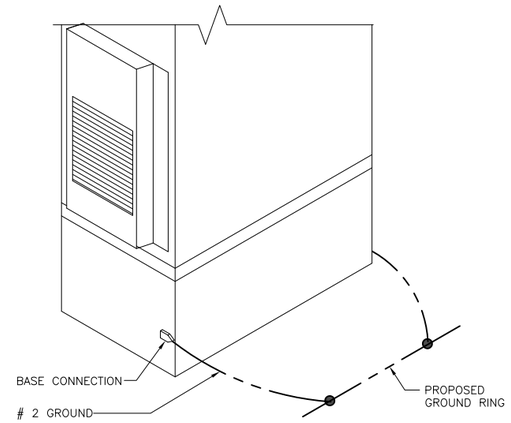
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

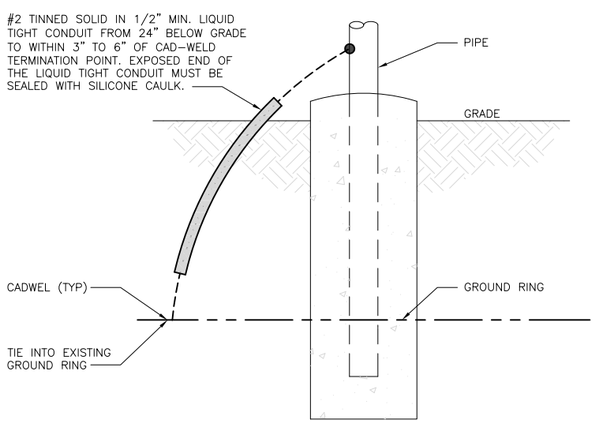
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



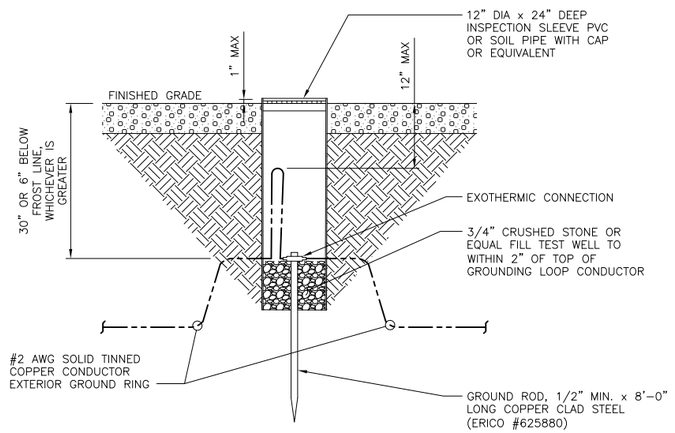
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



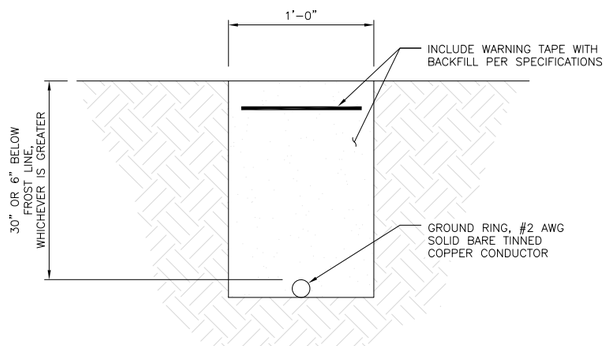
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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SIMSBURY, CT 06070

SHEET TITLE

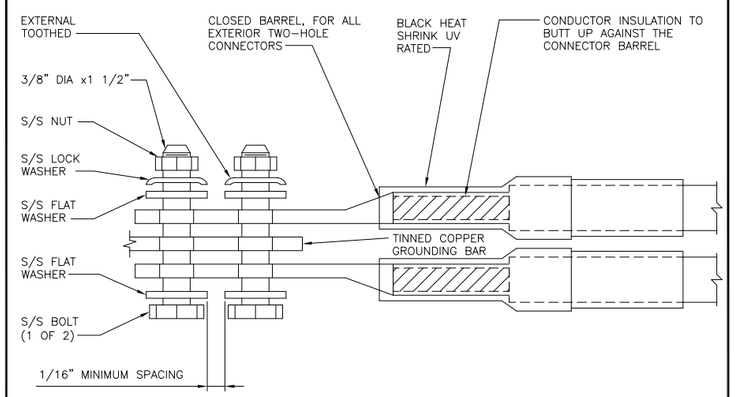
GROUNDING DETAILS

SHEET NUMBER

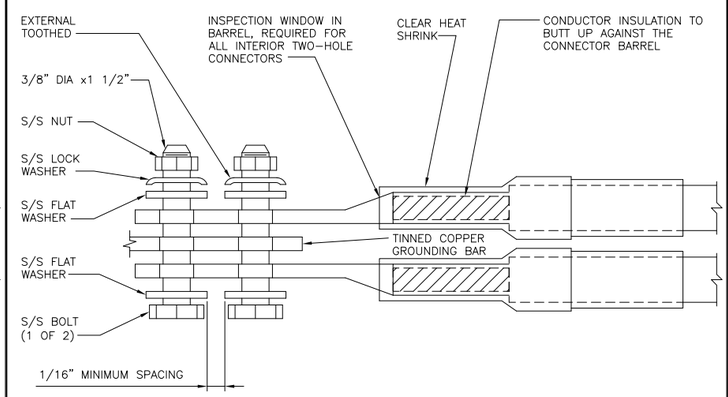
G-2

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

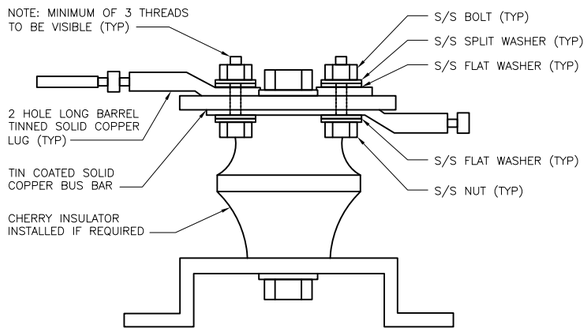
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
RK	RMC	RMC

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/26/21	ISSUED FOR REVIEW
0	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

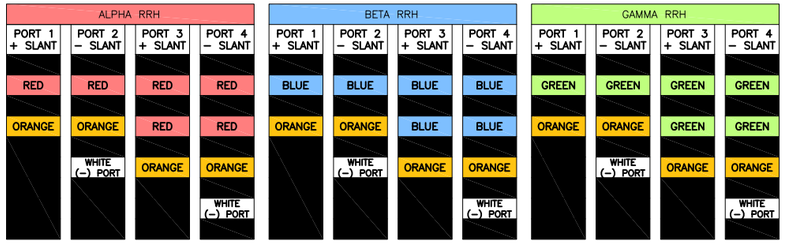
G-3

RF JUMPER COLOR CODING

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

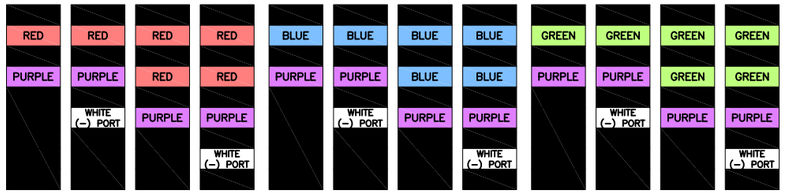
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

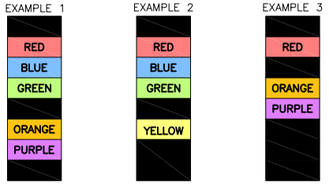


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

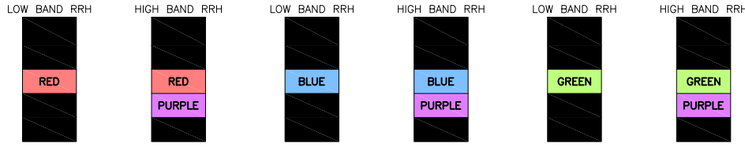
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS



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

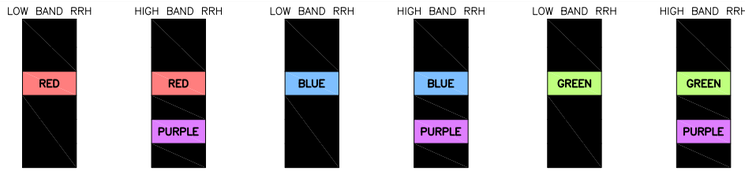
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

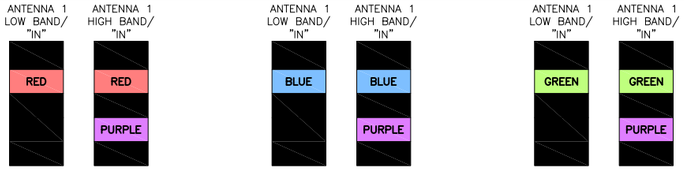


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



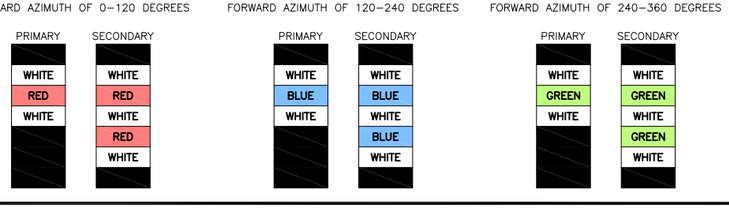
RET MOTORS AT ANTENNAS



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.

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SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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STATE OF COLORADO
No. 27824
REGISTERED
PROFESSIONAL ENGINEER
10/19/21

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

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.

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RK	RMC	RMC

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CONSTRUCTION DOCUMENTS

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A	8/26/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

149455.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

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.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00126A
225 GRIST MILL ROAD
SIMSBURY, CT 06070

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.

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GN-4