



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

May 25, 2022

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

RE: Tower Share Application  
207 Garden Circle, Waterbury, CT 06704  
Latitude: 41.569708  
Longitude: -73.017130  
Site #: CT04877-A\_BOHVN00041A\_SBA\_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 207 Garden Circle, Waterbury, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 192-foot level of the existing 280-foot guyed lattice tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated March 9, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated December 20, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the City of Waterbury Zoning Board of Appeals on March 18, 1985. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Neil O'Leary and Robert Nerney, City Planner for the City of Waterbury, as well as the tower and property owner (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 existing tower is 280-feet and the Dish Wireless LLC antennas will be located at a center line height of 192-feet.
2. The proposed modifications will not result in an 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. The combined site operations will result in a total power density of 11.63% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 192-foot level of the existing 280-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

*Denise Sabo*

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



**NSS** **NORTHEAST**  
SITE SOLUTIONS  
*Turnkey Wireless Development*

Attachments

Cc: Mayor Neil M. O'Leary  
City Hall Building  
235 Grand Street, 2nd floor  
Waterbury, CT 06702

Robert Nerney, City Planner  
City of Waterbury  
185 South Main Street, 5th floor  
Waterbury, CT 06706

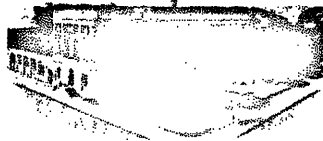
SBA - Property Owner & Tower Owner  
SBA Properties Inc.  
8051 Congress Ave  
Boca Raton, FL 33487

# Exhibit A

## **Original Facility Approval**

25176

VOL 1757 PAGE 173



OFFICE OF THE CITY CLERK  
**THE CITY OF WATERBURY**  
CONNECTICUT

March 20, 1985

TO WHOM IT MAY CONCERN:

THIS IS TO CERTIFY THAT at a meeting of the Zoning Board of Appeals held Monday, March 18, 1985, the Board voted unanimously to grant the petition of EMAC Communications, Inc., requesting a special exception under Section 5.13-12 of the Waterbury Ordinance to construct a radio communication tower and facility on the premises at Garden Circle, Garden Hill Circle and Farmdale Drive, an R.L. zone.

ATTEST:

*Ralph T. Phelan*  
Ralph T. Phelan  
Assistant City Clerk

RTP/cc

NOTE: Please have this recorded in the Town Clerk's Office as soon as possible.

RECEIVED FOR RECORD  
TOWN CLERK'S OFFICE

1985 MAR 22 P 3 22

*Lucia K. Hall*  
TOWN CLERK  
WATERBURY, CT.

679374

# Exhibit B

## Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.

# CITY OF WATERBURY

Information on the Property Records for the Municipality of Waterbury was last updated on 5/25/2022.



## Parcel Information

Location:	207 GARDEN CIR	Property Use:	Vacant Land	Primary Use:	Residential
Unique ID:	018408050050	Map Block Lot:	0184-0805-0050	Acres:	0.92
490 Acres:	0.00	Zone:	RL	Volume / Page:	4307/ 9
Developers Map / Lot:		Census:			

## Value Information

	Appraised Value	Assessed Value
Land	194,391	136,070
Buildings	0	0
Detached Outbuildings	0	0

	Appraised Value	Assessed Value
Total	194,391	136,070

### Owner's Information

Owner's Data
SBA PROPERTIES INC 8051 CONGRESS AVE ATTN: CT.4877 BOCA RATON, FL 33487-1307

### Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
SBA PROPERTIES INC	4307	0009	01/28/2002	Other	\$0
EMAC COMUNICATIONS INC	0000	0000	06/04/1985		\$22,500

### Building Permits

Permit Number	Permit Type	Date Opened	Reason
2021.2727	Electrical	09/23/2021	install new concrete pad 25kw generator (diesel with self contained fuel storage and automatic trans
2021.0472	Electrical	02/26/2021	change panel feed new cabinet with 100 amp 240v down grade old cabinet to 100 amp feed and run new
2021.0184	Electrical	02/08/2021	upgrade and replace equipment at existing telecommunications facility
2020.3232	Electrical	12/04/2020	install 1 new Omni/whip antenna at 155' on existing guyed tower - instal associated equipment as per
2018.2965	Comm Renovations	10/17/2018	REPLACE 3 CELL SITE ANTENNAS ON EXISTING TELECOM FACILITY
2018.1575	Electrical	06/12/2018	INSTALL AND WIRE GENERATOR
2013.2794	Electrical	09/19/2016	ADD 3 ANTENNAS TO EXISTING CELL SITE
2016.2793	Electrical	09/19/2016	MODIFICATION TO EXISTING CELL SITE ADD CABINET WITH 100A BREAKER



FARMDALE DR

d100

d100

d100

d100

**492**  
0.92 Ac  
#

d200

d400

**50**  
0.92 Ac  
#207

d400

**51**  
0.69 Ac  
#

d300

00

d100

**49**  
0.46 Ac  
#

**491**  
0.46 Ac  
#97

**805**

d100

d100

GARDEN CIR

d100

**5**  
0.23 Ac  
#178

100

100

d100

GARDEN HILL CIR

d25

d50

0 25 50 100 Feet



City of Waterbury  
Public Works Department

MBL: 0184-0805-0050  
ADDRESS: 207 GARDEN CIR

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.



# Exhibit C

## **Construction Drawings**



DISH Wireless L.L.C. SITE ID:

**BOHVN00041A**

DISH Wireless L.L.C. SITE ADDRESS:

**207 GARDEN CIRCLE  
WATERBURY, CT 06704**

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:
<ul style="list-style-type: none"> <li>• INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)</li> <li>• INSTALL (3) PROPOSED ANTENNA SECTOR FRAMES</li> <li>• INSTALL PROPOSED JUMPERS</li> <li>• INSTALL (6) PROPOSED RRUs (2 PER SECTOR)</li> <li>• INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)</li> <li>• INSTALL (1) PROPOSED HYBRID CABLE</li> </ul>
GROUND SCOPE OF WORK:
<ul style="list-style-type: none"> <li>• INSTALL (1) PROPOSED METAL PLATFORM</li> <li>• INSTALL (1) PROPOSED ICE BRIDGE</li> <li>• INSTALL (1) PROPOSED PPC CABINET</li> <li>• INSTALL (1) PROPOSED EQUIPMENT CABINET</li> <li>• INSTALL (1) PROPOSED POWER CONDUIT</li> <li>• INSTALL (1) PROPOSED TELCO CONDUIT</li> <li>• INSTALL (1) PROPOSED TELCO-FIBER BOX</li> <li>• INSTALL (1) PROPOSED GPS UNIT</li> <li>• INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)</li> <li>• INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)</li> <li>• INSTALL (1) PROPOSED METER SOCKET</li> </ul>

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: SBA PROPERTIES INC ADDRESS: 8051 CONGRESS AVE BOCARATON, FL 33487	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120 (303) 706-5008
TOWER TYPE: GUYED TOWER	TOWER OWNER: SBA COMMUNICATIIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
TOWER CO SITE ID: CT04877-A	SITE DESIGNER: B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
TOWER APP NUMBER: 168276	SITE ACQUISITION: APRIL PARROTT april.parrott@dish.com
COUNTY: NEW HAVEN	CONST. MANAGER: CHAD WILCOX chad.wilcox@dish.com
LATITUDE (NAD 83): 41° 34' 11.0" N 41.569722	RF ENGINEER: DIPESH PARIKH dipesh.parikh@dish.com
LONGITUDE (NAD 83): 73° 01' 03.0" W -73.017499	
ZONING JURISDICTION: COUNTY OF NEW HAVEN	
ZONING DISTRICT: UNZONED	
PARCEL NUMBER: 0184-0805-0050	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: II-B	
POWER COMPANY: EVERSOURCE CT ELECTRIC	
TELEPHONE COMPANY: CROWN CASTLE	



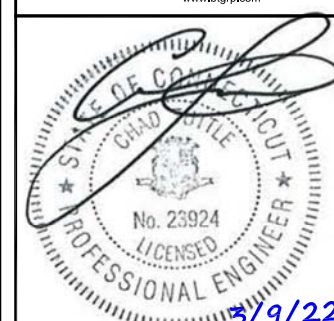
5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



8051 CONGRESS AVENUE  
BOCA RATON, FL 33487



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



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

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

DRAWN BY: CHECKED BY: APPROVED BY:

AN BLJ BLJ

RFDS REV #: 2

**CONSTRUCTION DOCUMENTS**

**SUBMITTALS**

REV	DATE	DESCRIPTION
A	01/10/22	ISSUED FOR REVIEW
0	3/9/22	ISSUED FOR CONSTRUCTION

149447.001.01

CT04877-A

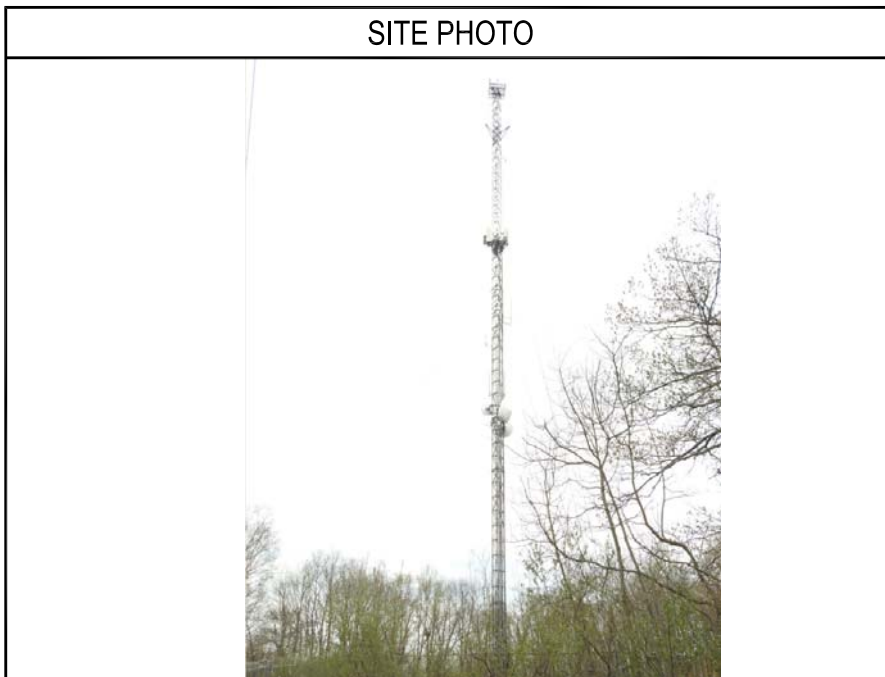
DISH Wireless L.L.C.  
PROJECT INFORMATION

BOHVN00041A  
207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
TITLE SHEET

SHEET NUMBER

**T-1**



**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**

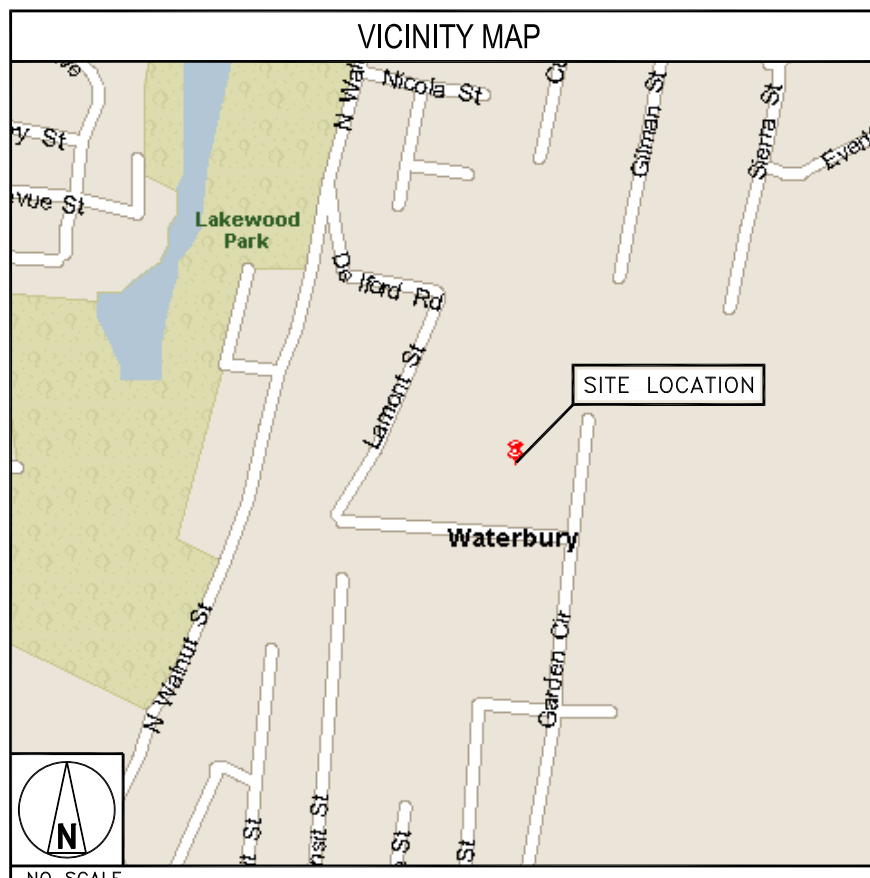
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

**DIRECTIONS**

**DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:**  
GET ON BRADLEY INTERNATIONAL AIRPORT CON IN EAST GRANBY FROM BRADLEY INTERNATIONAL AIRPORT, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT CONTINUE STRAIGHT KEEP RIGHT TO CONTINUE TOWARD BRADLEY INTERNATIONAL AIRPORT CON, TAKE I-91 S AND I-84 TO BRASS MILL DR IN WATERBURY. TAKE EXIT 22 FROM I-84, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD, TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY MERGE WITH I-84, TAKE EXIT 22 TOWARD DOWNTOWN, TAKE WALNUT ST AND LONG HILL RD TO GARDEN CIR CONTINUE ONTO BRASS MILL DR, CONTINUE ONTO WELTON ST, TURN RIGHT ONTO WALNUT ST, TURN LEFT ONTO LONG HILL RD TURN RIGHT TO STAY ON LONG HILL RD, TURN LEFT ONTO WARNER ST, TURN RIGHT ONTO GARDEN CIR ARRIVE AT BOHVN00041A.

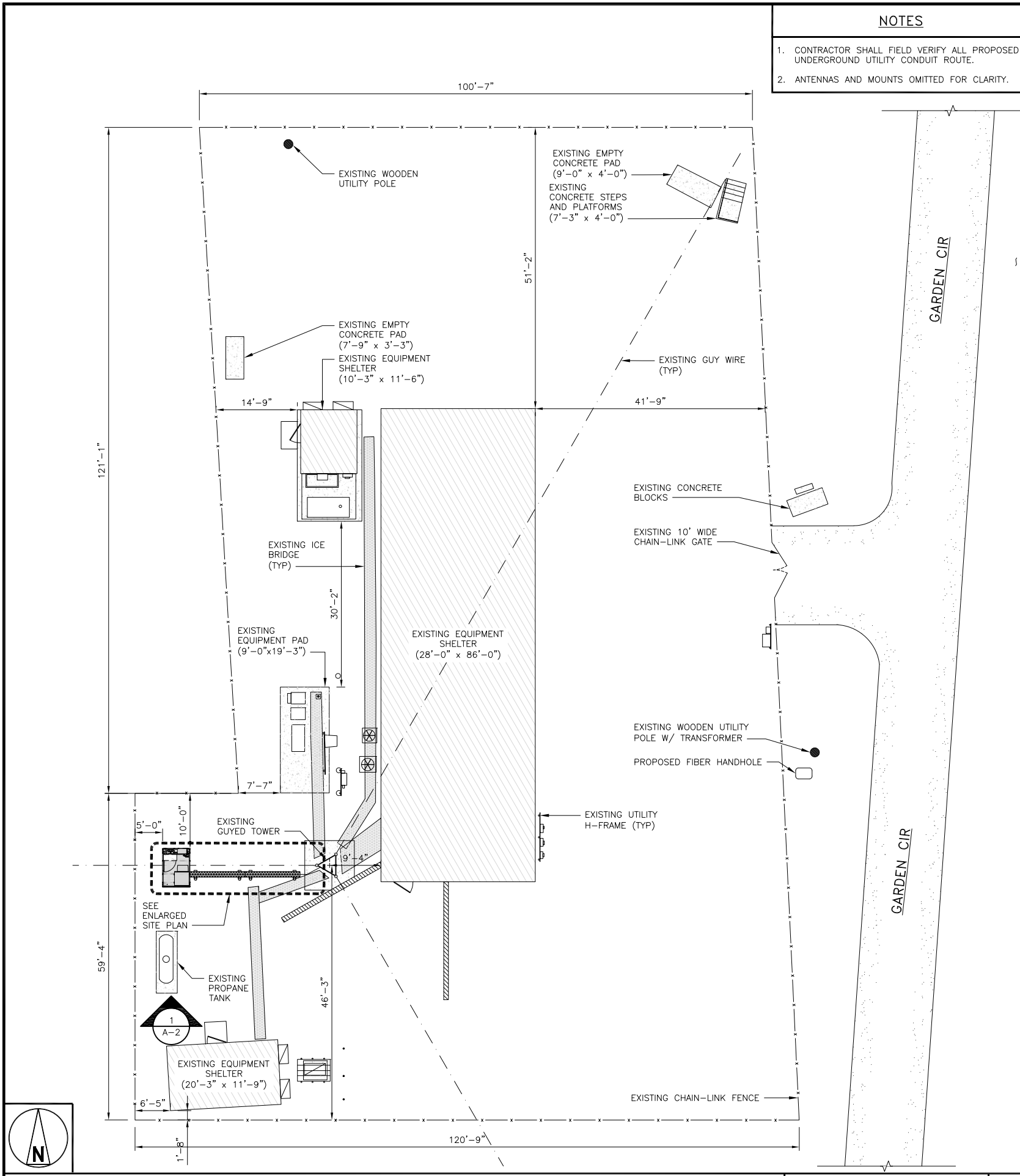


NOTES

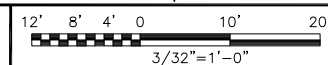
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

NOTES

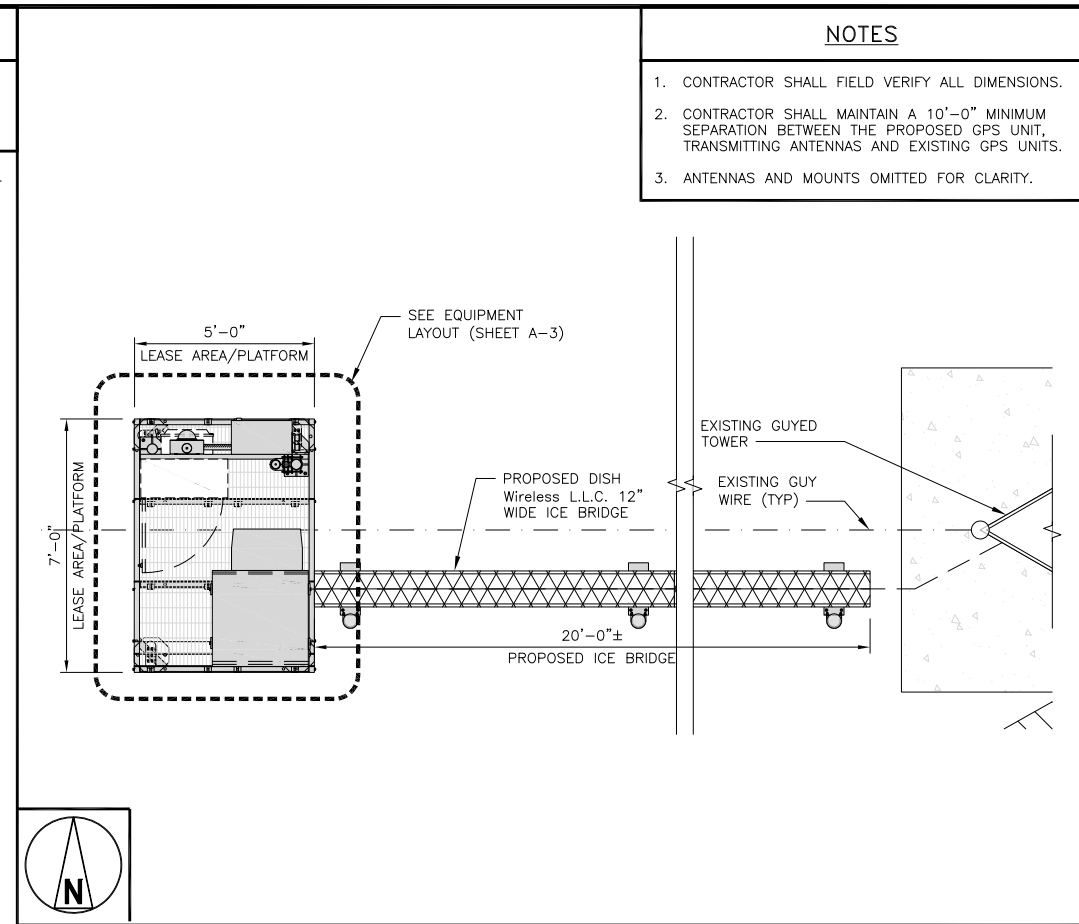
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



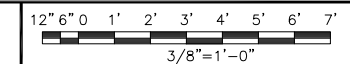
OVERALL SITE PLAN



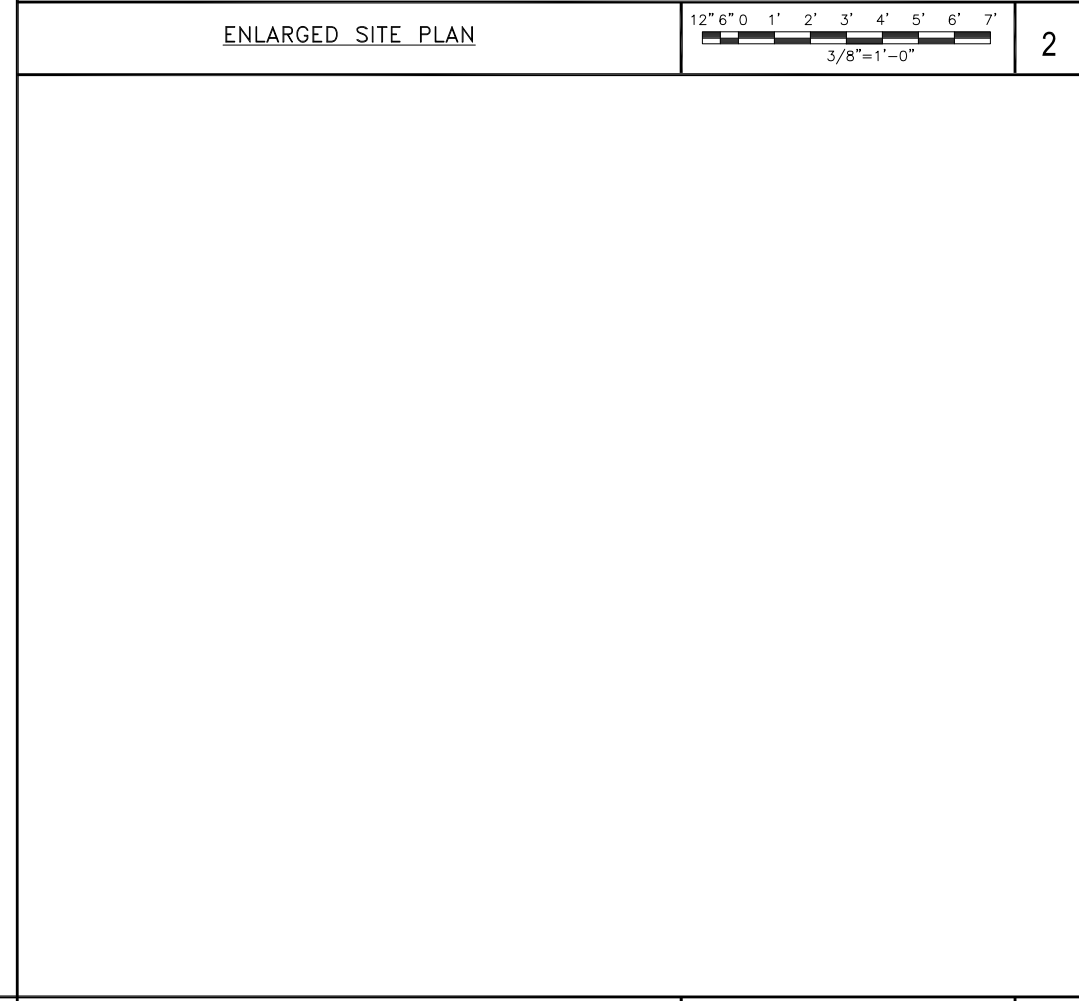
1



ENLARGED SITE PLAN



2



NOT USED

NO SCALE

3



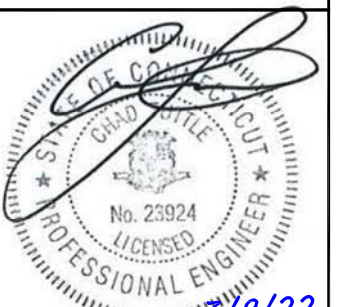
5701 SOUTH SANTA FE DRIVE  
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DRAWN BY:	CHECKED BY:	APPROVED BY:
AN	BLJ	BLJ

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	01/10/22	ISSUED FOR REVIEW
0	3/9/22	ISSUED FOR CONSTRUCTION

149447.001.01  
CT04877-A

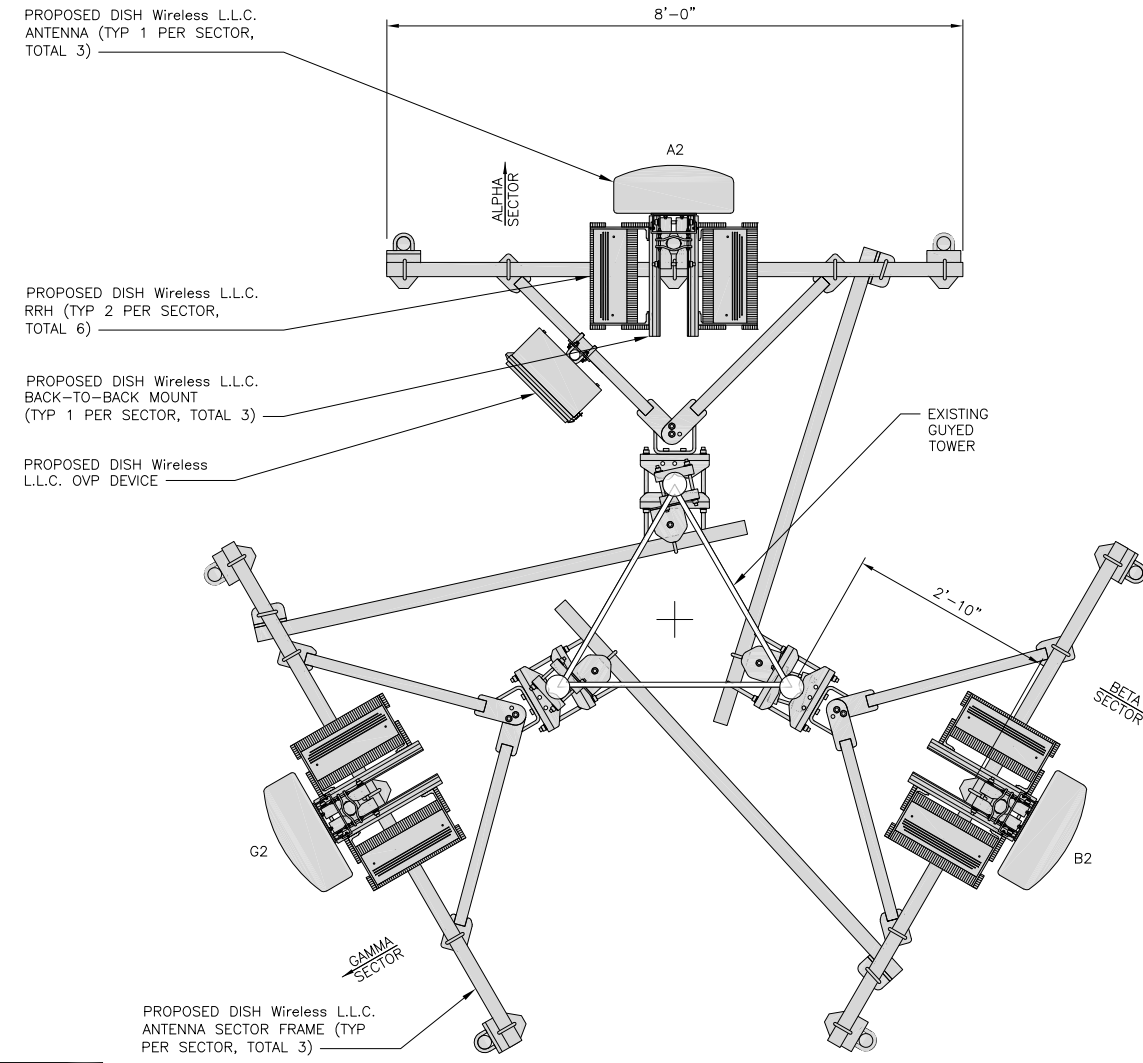
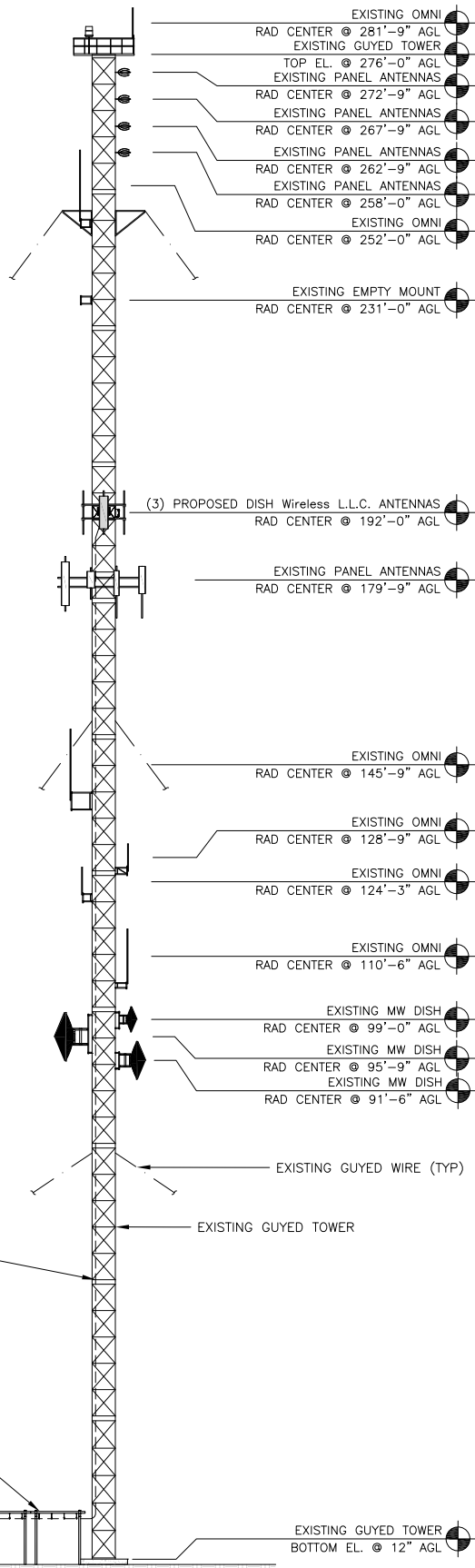
DISH Wireless L.L.C.  
PROJECT INFORMATION  
BOHVN00041A  
207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
OVERALL AND ENLARGED  
SITE PLAN

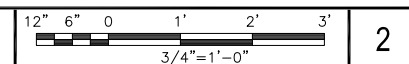
SHEET NUMBER  
**A-1**

**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.



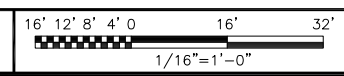
**ANTENNA LAYOUT**



SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		FEED LINE TYPE AND LENGTH	MANUFACTURER - MODEL NUMBER	TECH	
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (240' LONG)	FUJITSU - TA08025-B604	5G	A2	RAYCAP RDIDC-9181-PF-48
A2	PROPOSED	JMA - MX08FR0665-21	5G	0°	192'-0"		FUJITSU - TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA - MX08FR0665-21	5G	120°	192'-0"		FUJITSU - TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
G1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	C2	SHARED W/ALPHA
G2	PROPOSED	JMA - MX08FR0665-21	5G	240°	192'-0"		FUJITSU - TA08025-B605	5G	C2	
G3	--	--	--	--	--		--	--	--	

- 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.

**PROPOSED SOUTH ELEVATION**



**1**

**ANTENNA SCHEDULE**

NO SCALE **3**



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



8051 CONGRESS AVENUE  
BOCA RATON, FL 33487



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DRAWN BY: AN CHECKED BY: BLJ APPROVED BY: BLJ

RFDS REV #: 2

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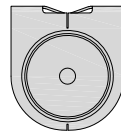
SHEET TITLE  
**ELEVATION, ANTENNA LAYOUT AND SCHEDULE**

SHEET NUMBER  
**A-2**

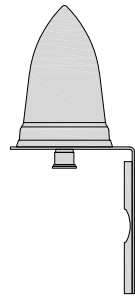




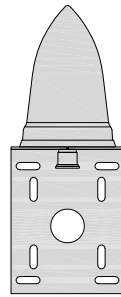
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



TOP



BACK

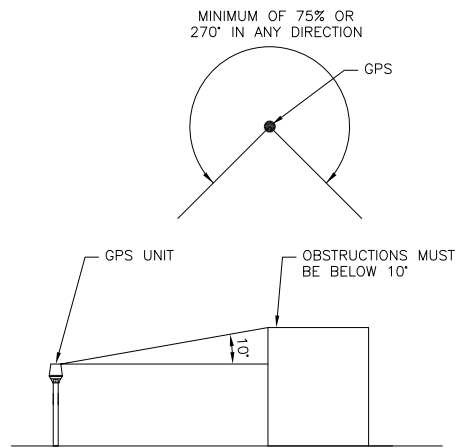


SIDE

GPS DETAIL

NO SCALE

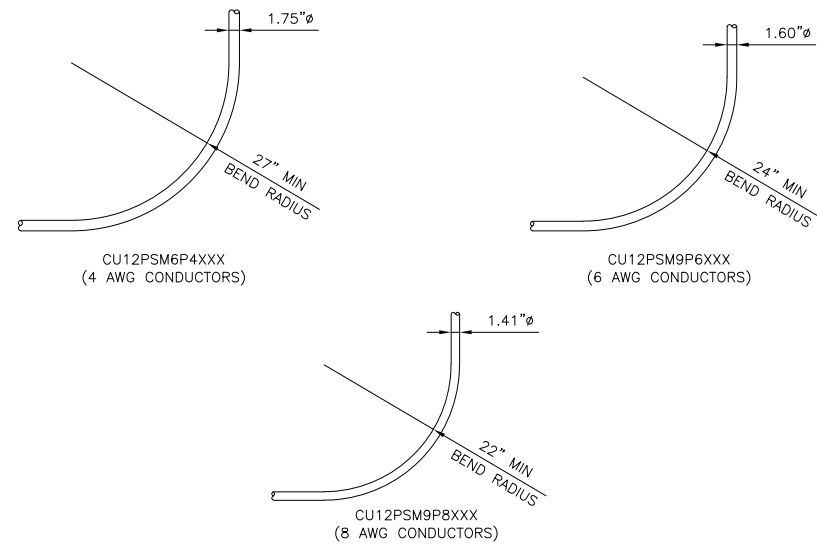
1



GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2



CABLES UNLIMITED HYBRID CABLE  
MINIMUM BEND RADIUSES

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



8051 CONGRESS AVENUE  
BOCA RATON, FL 33487



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



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

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RFDS REV #: 2

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REV	DATE	DESCRIPTION
A	01/10/22	ISSUED FOR REVIEW
0	3/9/22	ISSUED FOR CONSTRUCTION

149447.001.01  
CT04877-A

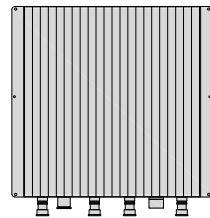
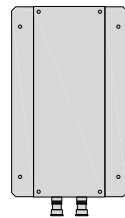
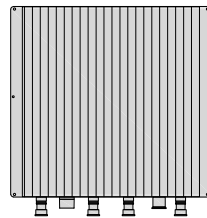
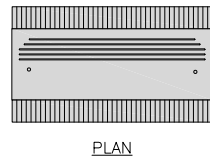
DISH Wireless L.L.C.  
PROJECT INFORMATION  
  
BOHVN00041A  
207 GARDEN CIRCLE  
WATERBURY, CT 06704

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

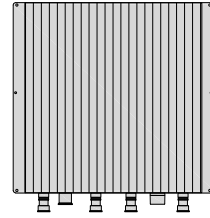
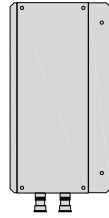
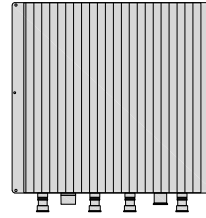
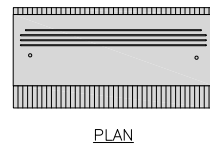


BACK

SIDE

FRONT

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



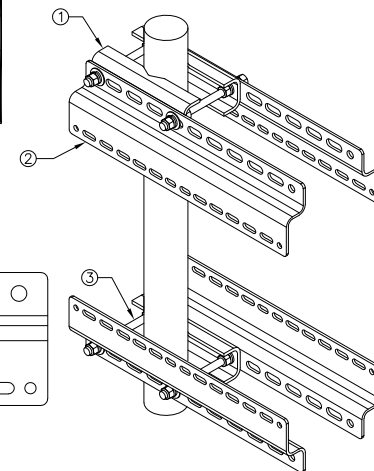
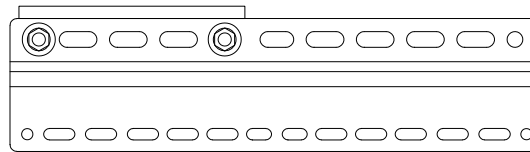
BACK

SIDE

FRONT

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

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



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

RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

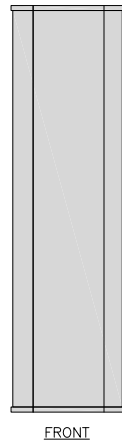
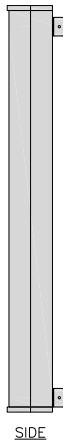
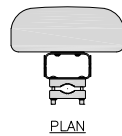
2

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



SIDE

FRONT

ANTENNA DETAIL

NO SCALE

4

NOT USED

NO SCALE

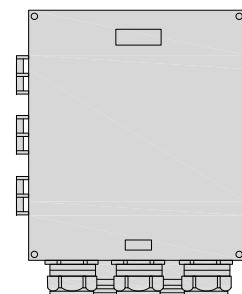
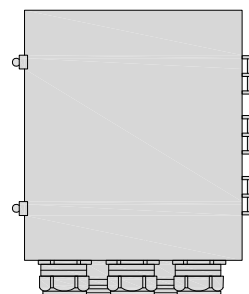
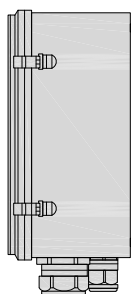
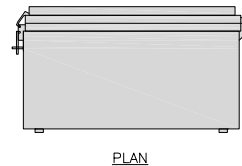
5

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



SIDE

BACK

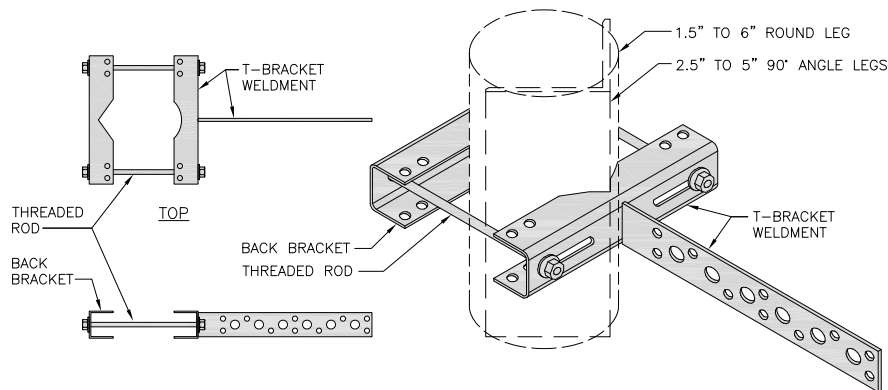
FRONT

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

SITEPRO1 T600 UNIVERSAL T-BRACKET	
DIMENSIONS (HxWxL)	2.25"x10.0"x15.25"
WEIGHT/ VOLUME	5.60 LBS



SIDE

ISOMETRIC

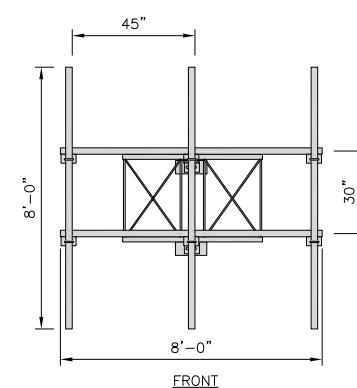
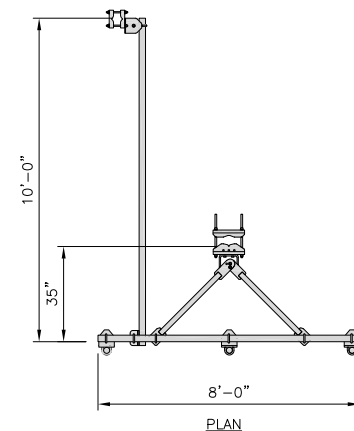
VERTICAL CABLE SUPPORT DETAIL

NO SCALE

8

COMMSCOPE V-FRAME MTC3975083	
FACE SIZE	8'-0"
WEIGHT	352.136 lbs

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



ANTENNA FRAME DETAIL

NO SCALE

9



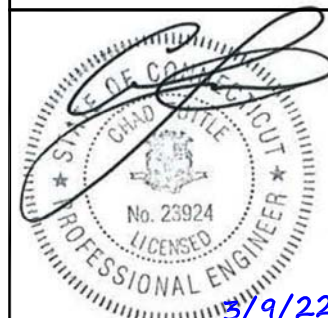
5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



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1717 S. BOULDER  
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207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
EQUIPMENT DETAILS

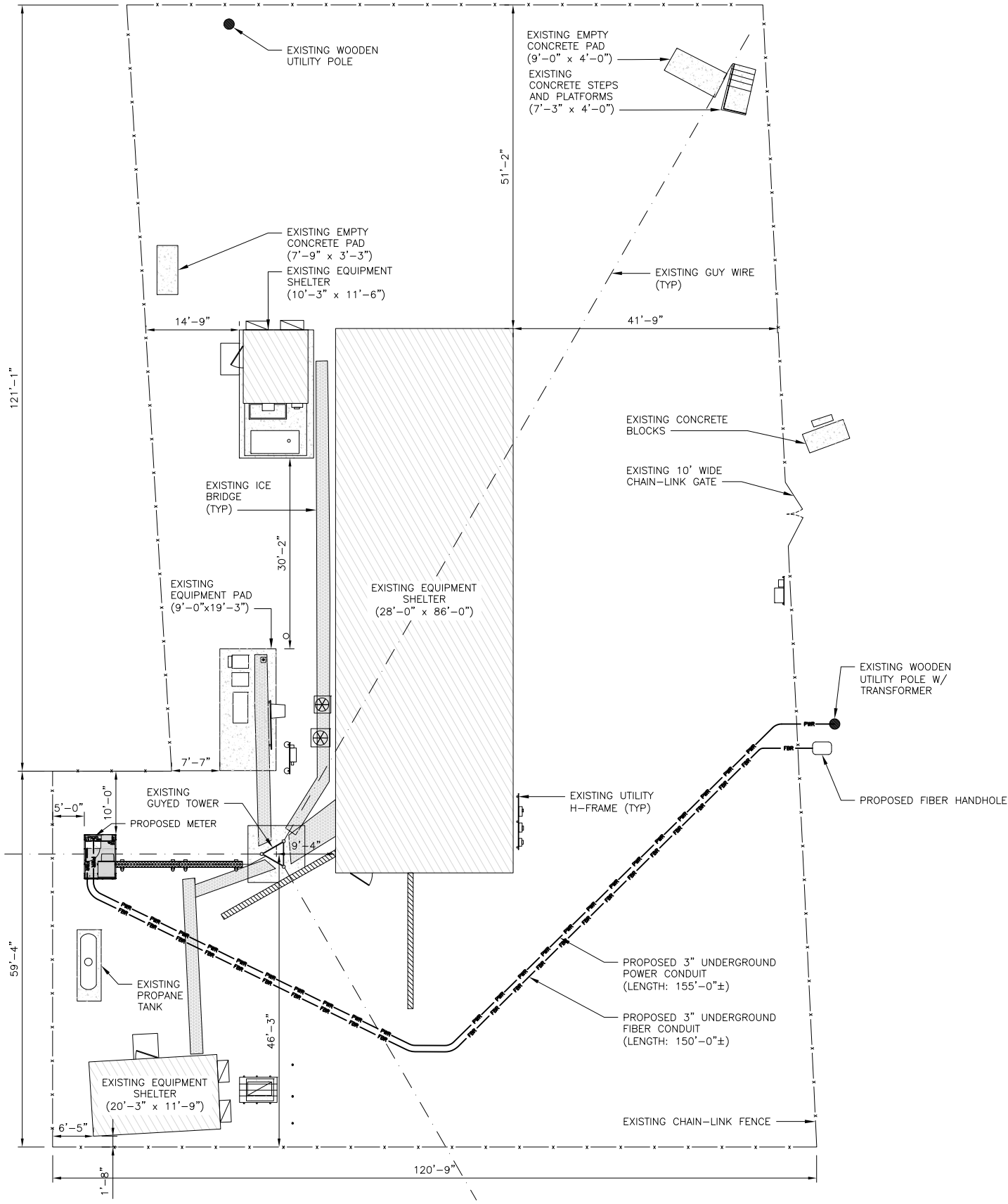
SHEET NUMBER  
**A-6**

**NOTES**

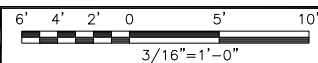
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD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

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

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



**UTILITY ROUTE PLAN**



**1**

**ELECTRICAL NOTES**

NO SCALE

**2**



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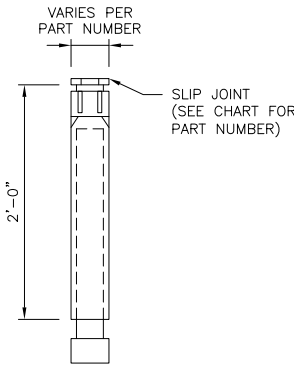
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PROJECT INFORMATION  
BOHVN00041A  
207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
ELECTRICAL/FIBER ROUTE  
PLAN AND NOTES

SHEET NUMBER  
**E-1**

**CARLON EXPANSION FITTINGS**

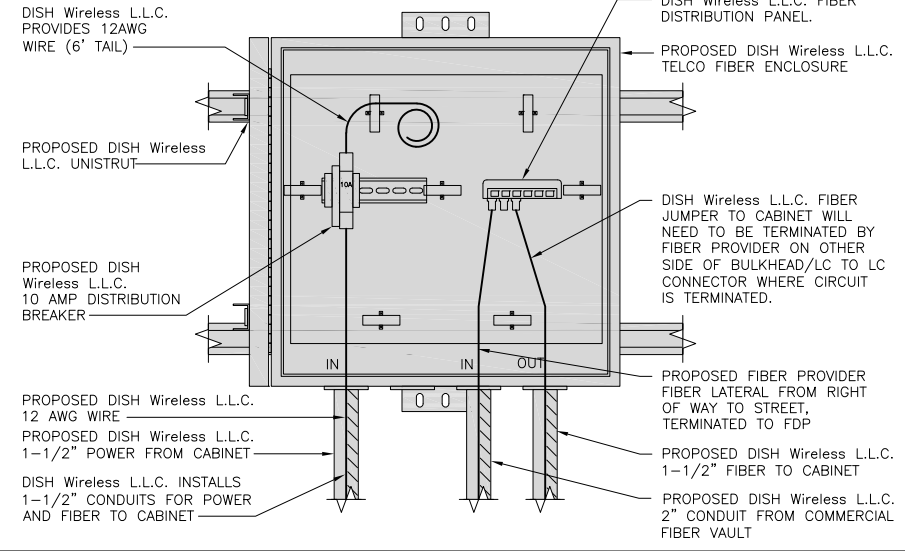
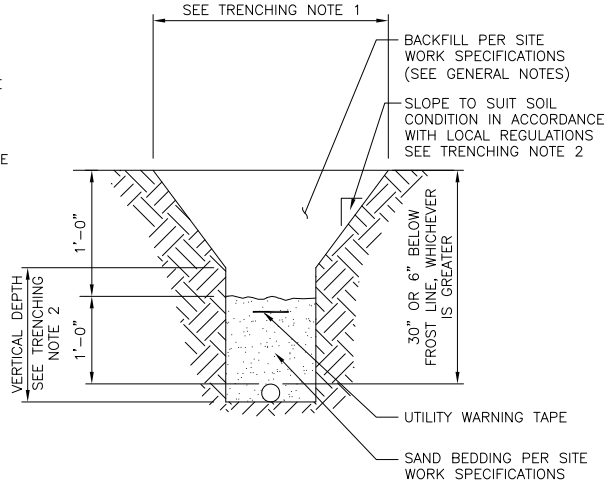
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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

**TRENCHING NOTES**

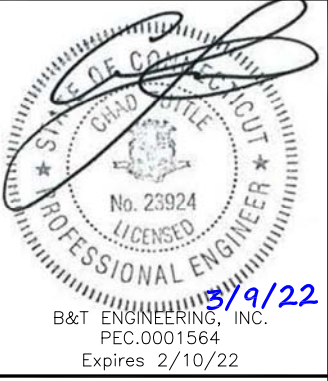
- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



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207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
ELECTRICAL  
DETAILS

SHEET NUMBER  
**E-2**

EXPANSION JOINT DETAIL

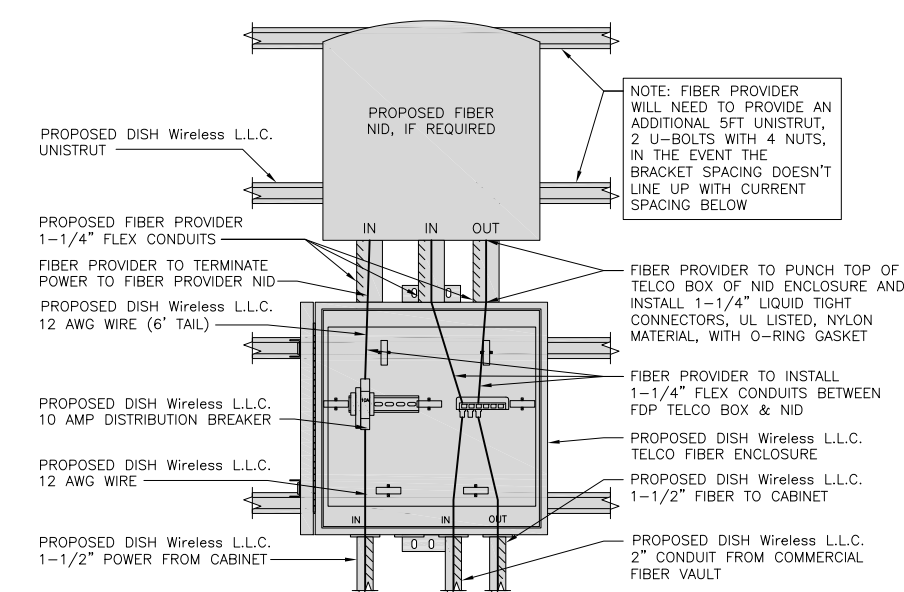
NO SCALE 1

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

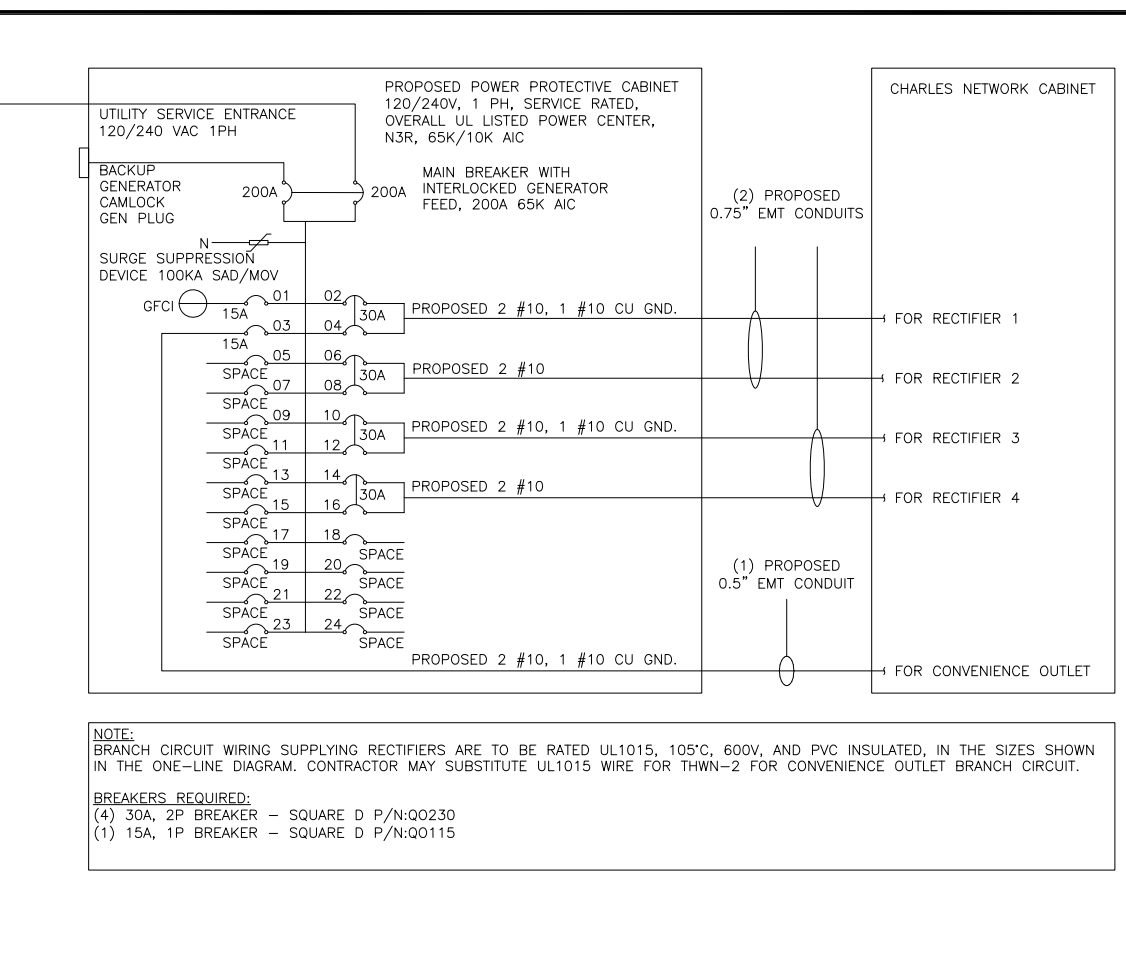
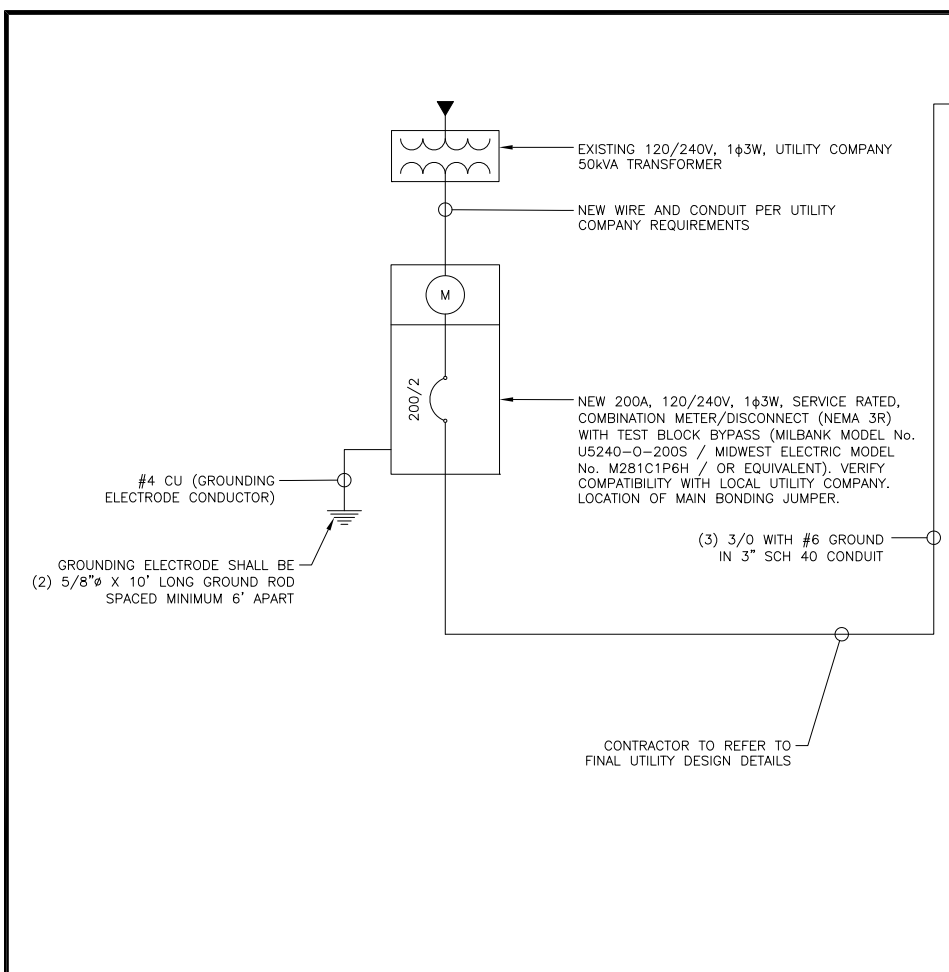
NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED CHARLES PANEL SCHEDULE										
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
PPC GFCI OUTLET	180	180	15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET			15A	3	B	4	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2
--SPACE--				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3
--SPACE--				7	B	8	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4
--SPACE--				9	A	10				--SPACE--
--SPACE--				11	B	12				--SPACE--
--SPACE--				13	A	14				--SPACE--
--SPACE--				15	B	16				--SPACE--
--SPACE--				17	A	18				--SPACE--
--SPACE--				19	B	20				--SPACE--
--SPACE--				21	A	22				--SPACE--
--SPACE--				23	B	24				--SPACE--
VOLTAGE AMPS			180	180				11520	11520	
200A MCB, 1 $\phi$ , 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

NOTES

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

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

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(g) 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.



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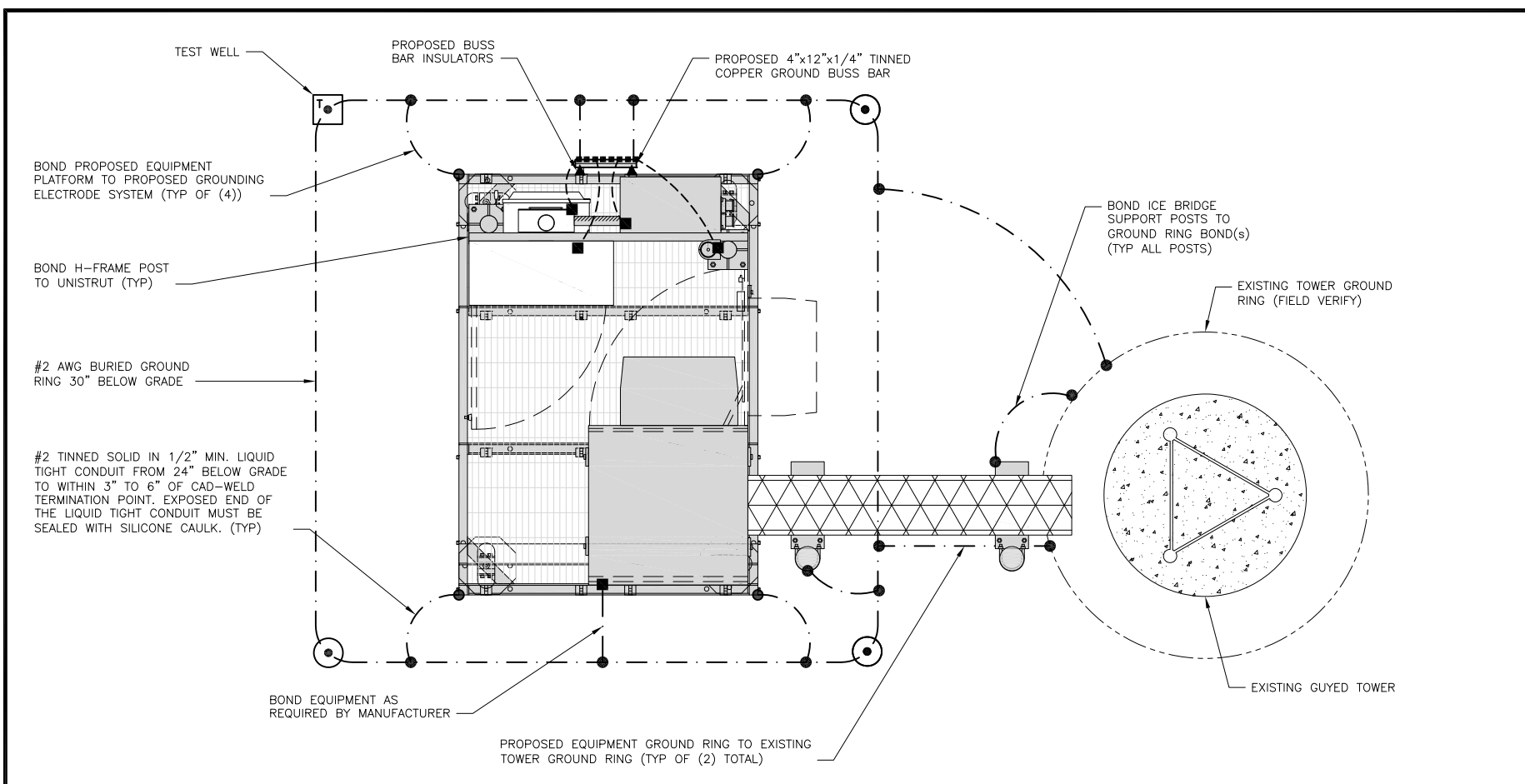
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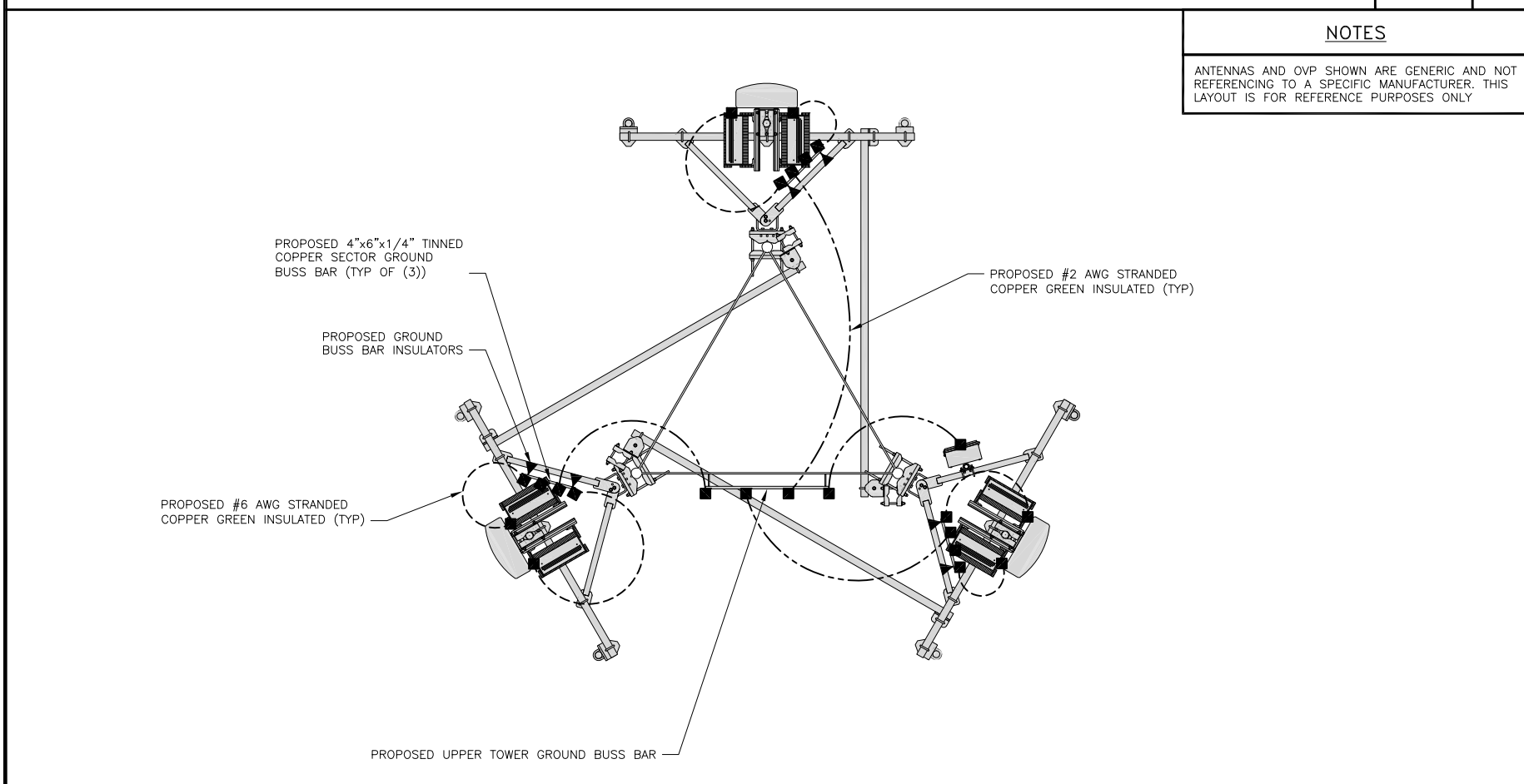
SHEET TITLE  
ELECTRICAL ONE-LINE, FAULT  
CALCS & PANEL SCHEDULE

SHEET NUMBER  
**E-3**



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO TOWER STEEL.

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

GROUNDING KEY NOTES

NO SCALE 3



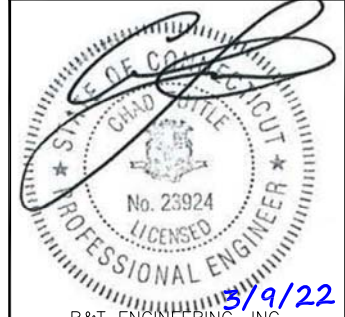
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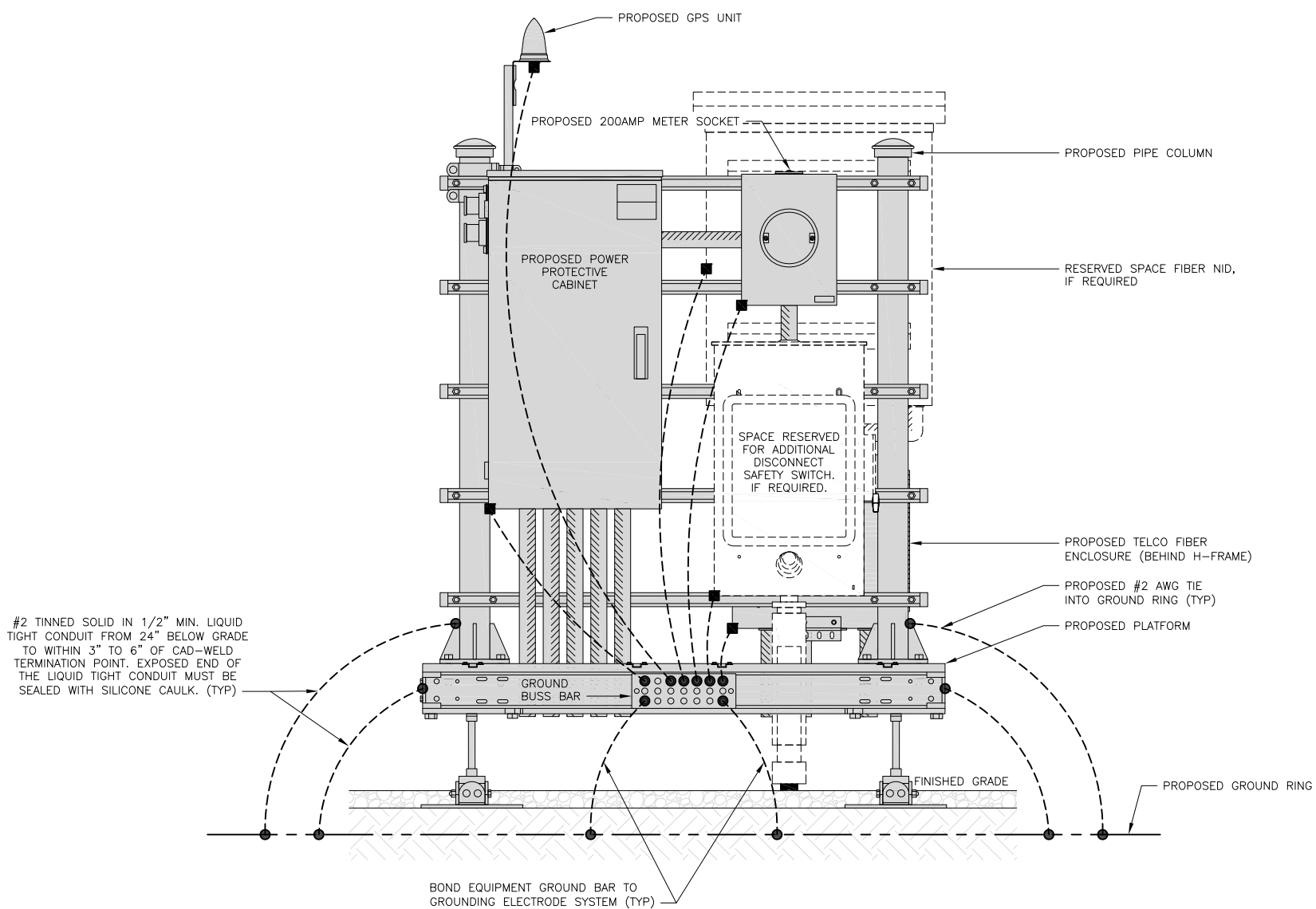
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DISH Wireless L.L.C.  
PROJECT INFORMATION  
BOHVN00041A  
207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
GROUNDING PLANS  
AND NOTES

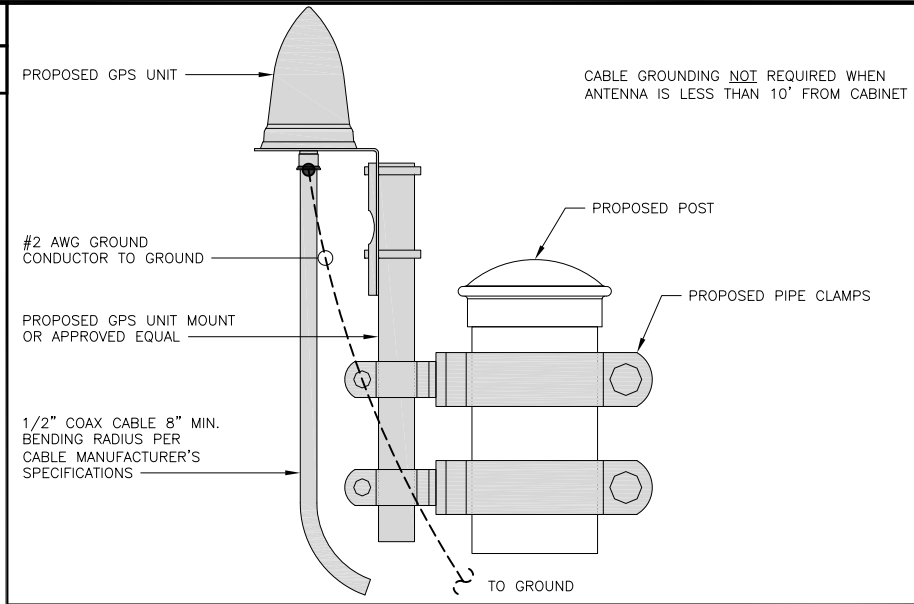
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**G-1**

**NOTES**  
EQUIPMENT CABINET OMITTED FOR CLARITY



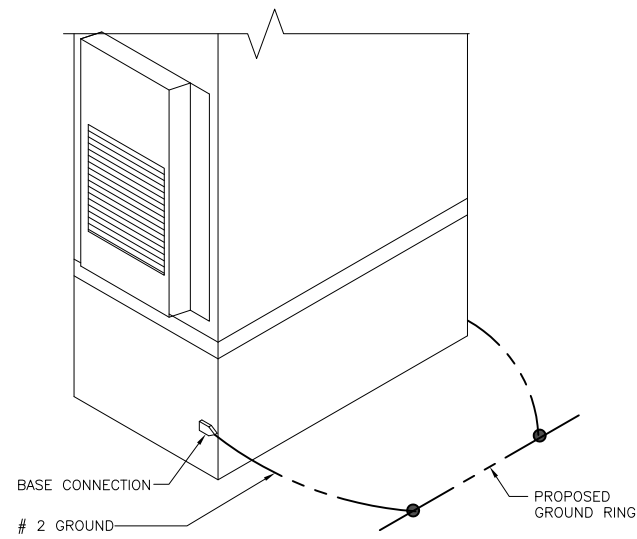
**H-FRAME GROUNDING DETAIL**

NO SCALE 1



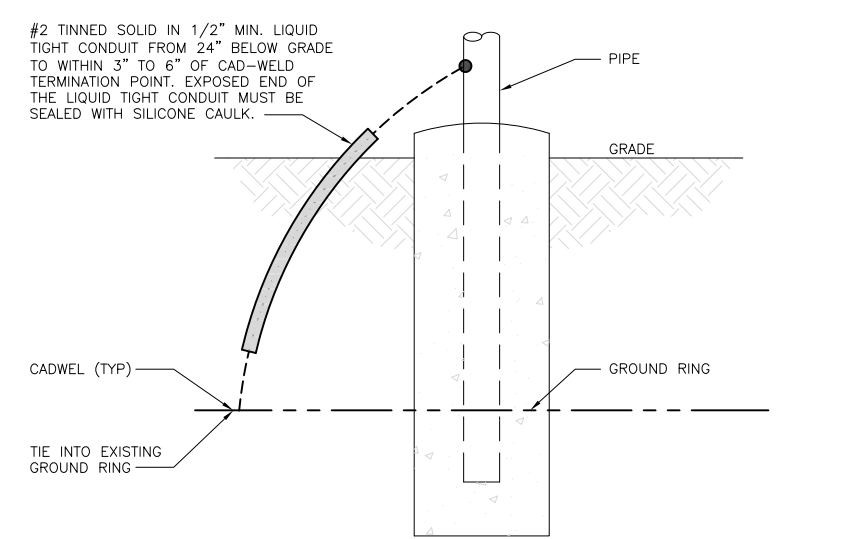
**TYPICAL GPS UNIT GROUNDING**

NO SCALE 2



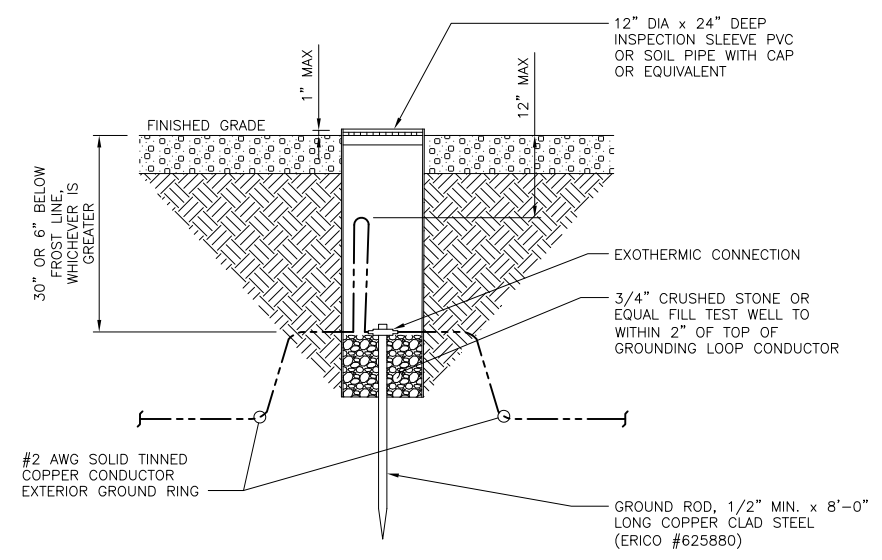
**OUTDOOR CABINET GROUNDING**

NO SCALE 3



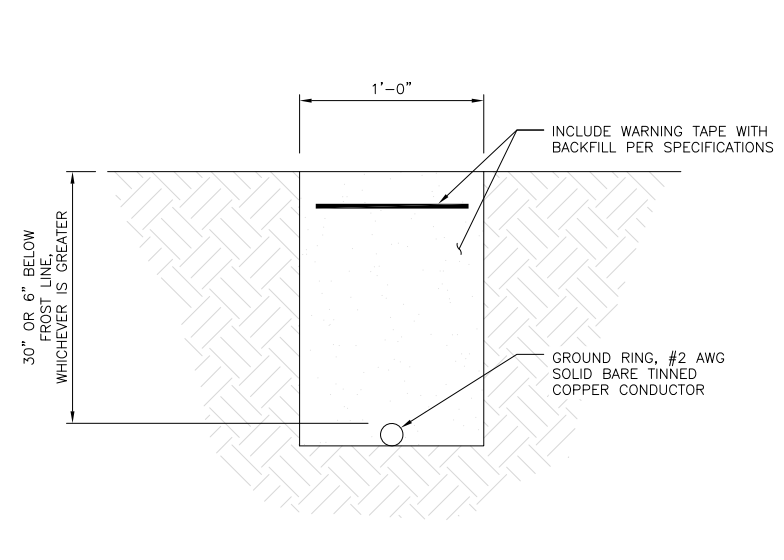
**TRANSITIONING GROUND DETAIL**

NO SCALE 4



**TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE**

NO SCALE 5



**TYPICAL GROUND RING TRENCH**

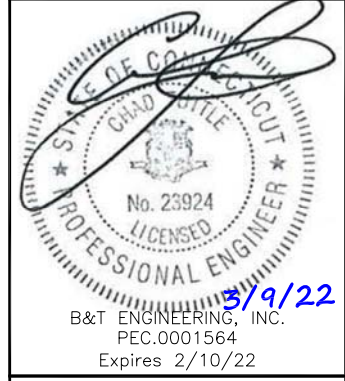
NO SCALE 6



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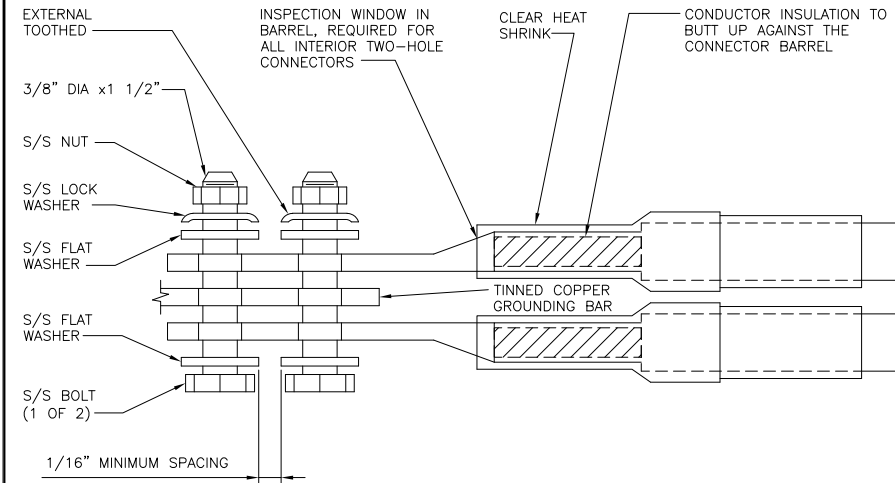
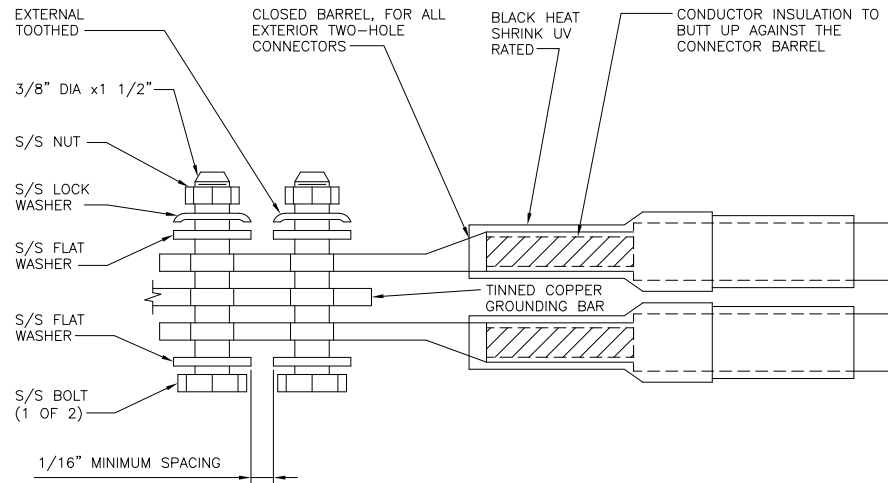
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SHEET TITLE  
**GROUNDING DETAILS**

SHEET NUMBER  
**G-2**

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



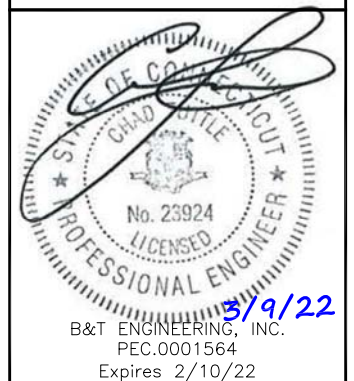
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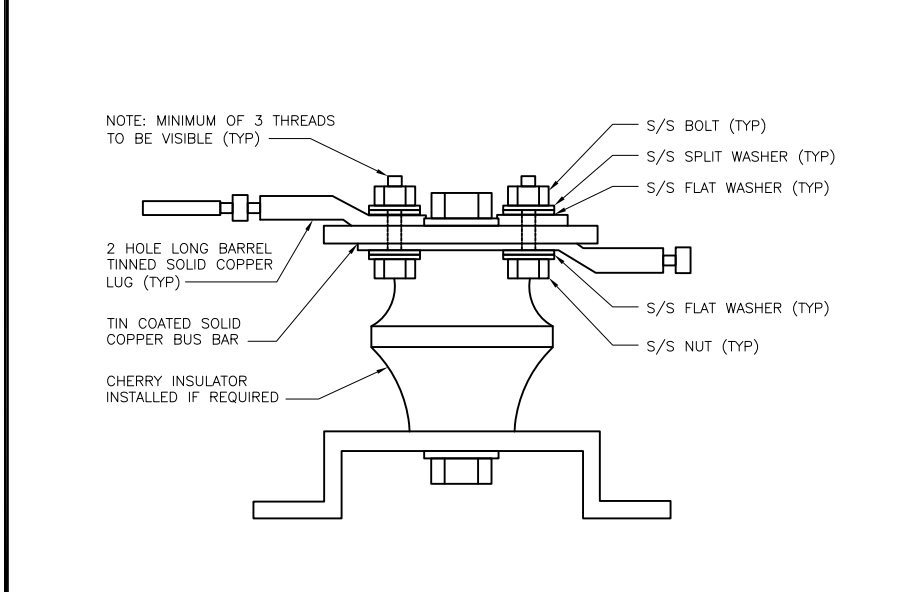
SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER  
**G-3**

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

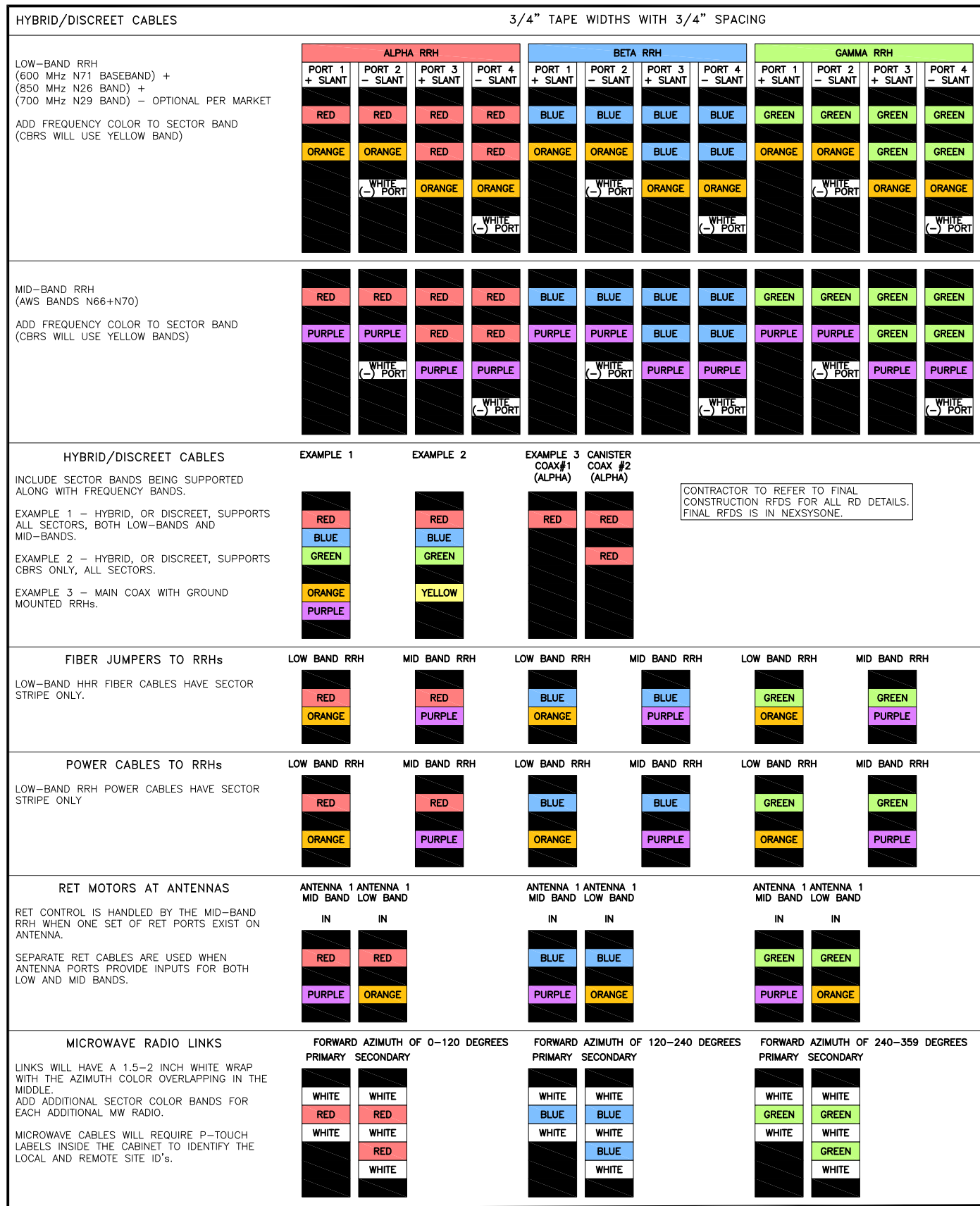
NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED NO SCALE 7

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NOT USED NO SCALE 9



RF CABLE COLOR CODES

NO SCALE

1

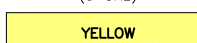
LOW BANDS (N71+N26) OPTIONAL - (N29)



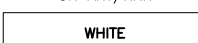
AWS (N66+N70+H-BLOCK)



CBRS TECH (3 GHz)



NEGATIVE SLANT PORT ON ANT/RRH



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

NOT USED

NO SCALE

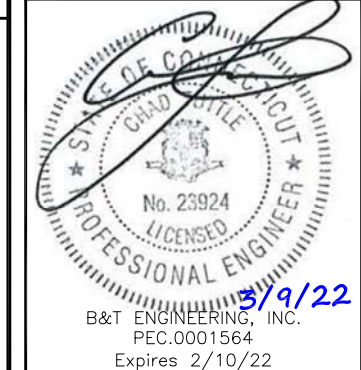
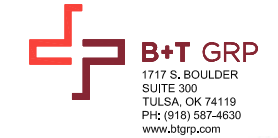
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PROJECT INFORMATION  
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207 GARDEN CIRCLE  
WATERBURY, CT 06704

SHEET TITLE  
RF  
CABLE COLOR CODE

SHEET NUMBER  
RF-1





SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:  
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
CARRIER:DISH Wireless L.L.C.  
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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SHEET NUMBER  
**GN-2**

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
  - #4 BARS AND SMALLER 40 ksi
  - #5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
  - CONCRETE EXPOSED TO EARTH OR WEATHER:
    - #6 BARS AND LARGER 2"
    - #5 BARS AND SMALLER 1-1/2"
  - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
    - SLAB AND WALLS 3/4"
    - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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WATERBURY, CT 06704

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**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.



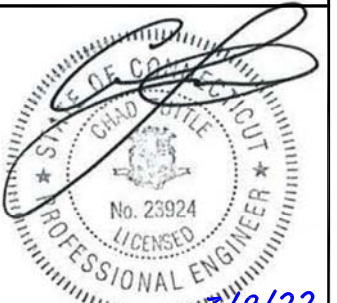
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SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
**GN-4**

# Exhibit D

## **Structural Analysis Report**



**Tower Engineering Solutions**

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

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## Structural Analysis Report

**Existing 280 ft Stainless Guyed Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT04877-A**

**Customer Site Name: Waterbury 2, CT**

**Carrier Name: Dish Wireless (App#: 168276, V1)**

**Carrier Site ID / Name: BOHVN00041A / 0**

**Site Location: 207 Garden Circle**

**Waterbury, Connecticut**

**New Haven County**

**Latitude: 41.569722**

**Longitude: -73.017499**

**Analysis Result:**

**Max Structural Usage: 95.2% [Pass]**

**Max Foundation Usage: 32.0% [Pass]**

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

**Report Prepared By : Linfeng Chen**





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**Report Prepared By : Linfeng Chen**

## Introduction

The purpose of this report is to summarize the analysis results on the 280 ft Stainless Guyed Tower 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

<b>Tower Drawings</b>	Stainless, Inc., Report #3329 dated May 2, 1987
<b>Foundation Drawing</b>	Stainless, Inc., Report #3329 dated March 16, 1987
<b>Geotechnical Report</b>	FDH Engineering, Inc., Project #12-09101EG1 dated October 23, 2012
<b>Modification Drawings</b>	Paul J. Ford and Co., Job # A00-T155 dated July 20, 2001 FDH Engineering, Project #11-02333E S1 dated March 30, 2011 FDH Engineering, Project #12-09101E S3 dated March 21, 2013
<b>Mount Analysis</b>	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 **TESTowers**, 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.

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_S = 0.189$ , $S_1 = 0.067$

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	285.0	-	-	(1) Empty 1.5' Standoff	-	-
2	284.0	-	-	(1) Empty 3.6' Pipe Mount	-	-
3	283.0	-	-	(1) Empty 5' Pipe Mount	-	-
4	280.0	-	-	8' Platform w/ Handrail	-	-
5	268.5	1	Dielectric DCRT4	Leg Mount	(1) 7/8"	Full Power Radio
6	257.0	2	Celwave TDE6082A	(1) 4.7' Standoff	(2) 7/8"	Campion Ambulance Service
12	182.0	3	Ericsson AIR 32 KRD901146-1_B66A_B2A (Octa)	(3) Sector Frame w/ modifications {(3) PST2375-10 (3)MS-STZ-2PST (3)MS-STZ-2875P}	(9) 1 5/8" (5) 1 5/8" Hybrid	T-Mobile
13		3	RFS APXVAARR24_43-U-NA20 (Octa)			
14		3	Ericsson AIR3246 B66 (Octa)			
15		3	Ericsson AIR6449 B41			
16		3	Ericsson KRY 112 144/2			
17		3	Ericsson KRY 112 489/2			
18		3	Ericsson Radio 4449 B71 + B85			
19	3	Ericsson Radio 4415 B25				
20	150	1	dbSpectra DS2C00-F-36-D	(1)Commscope DB5004 @129.5'	(2) 7/8"	Connecticut Light & Power
21	132.0	1	Telewave ANT150F2 Omni	(1)SitePro USF-4U@143'	(1) 7/8"	
22	122.0	1	Telewave ANT150F2	(1) Commscope DB5004 @119.5'	(1) 7/8"	
23	98.0	1	RFS SP4-107BC1C1R	Leg mount	(1) EW65	
24	97.5	1	Decibel DB586		(1) 7/8"	
25	96.0	1	RFS PAL8-65-A	Leg Mount	(1) EW65	
26	95.0	1	Bird 422 series	(1) Commscope DB5004@95'	(1) 1/2"	
27	92.5	1	Decibel DB586	(1) Commscope DB5004	(1) 7/8"	

## 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
7	192.0	3	JMA Wireless MX08FRO665-21 - Panel	(3) Commscope MTC3975083	(1) 1.6" Hybrid	Dish Wireless
8		3	Fujitsu TA08025-B604 RRU			
9		3	Fujitsu TA08025-B605 RRU			
10		1	Raycap RDIDC-9181-PF-48 - OVP			
11		3	JMA Wireless MX08FRO665-21 - Panel			

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:

Tower Component	Legs	Diagonals	Horizontals	Guy Wires
Max. Usage:	<b>70.9%</b>	<b>95.2%</b>	<b>61.4%</b>	<b>63.5%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## Foundations

Reactions (kips)	Base Reactions		Inner Anchors	
	Axial	Shear	Uplift	Shear
Analysis Reactions	193.9	2.5	55.2	46.9

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 0.0634 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.

## Structure: CT04877-A-SBA

**Site Name:** Waterbury 2, CT  
**Type:** Guyed  
**Height:** 280.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** Triangle  
**Basic WS:** 97.00  
**Basic Ice WS:** 50.00  
**Operational WS:** 60.00

**Code:** EIA/TIA-222-G  
**Basic WS:** 97.00  
**Basic Ice WS:** 50.00  
**Operational WS:** 60.00

12/20/2021  
 Page: 1

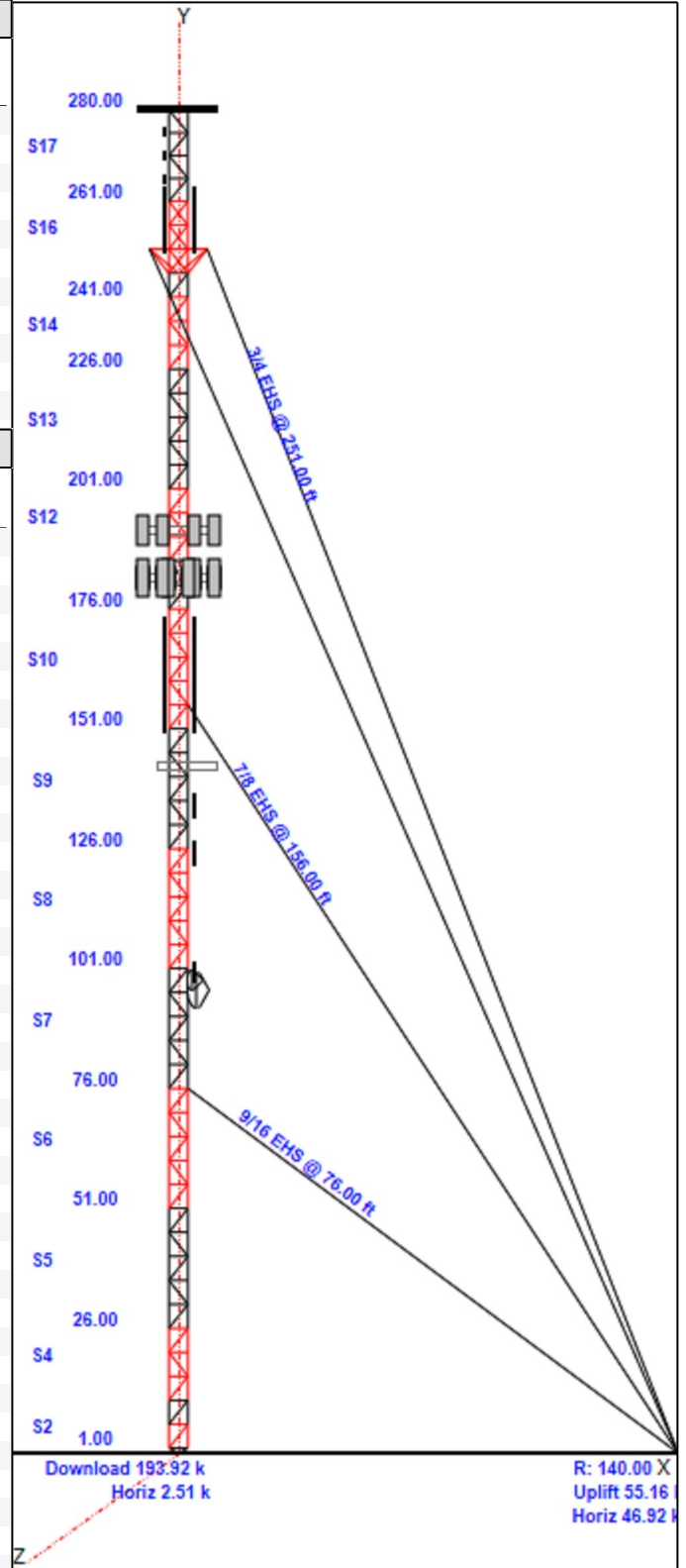


### Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1	WBM W18 x 46		WBM W18 x 46
2	SOL 2 1/2" SOLID	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
3	SOL 2 1/2" SOLID	SAE 2X2X0.375	PSP ROHN 1 1/2X11GA
4-5	SOL 2 1/2" SOLID	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
6-7	SOL 2 1/2" SOLID	DAE 2X2X0.1875	PSP ROHN 1 1/2X11GA
8	SOL 2 1/2" SOLID	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
9-10	SOL 2 1/2" SOLID	DAE 2X2X0.1875	PSP ROHN 1 1/2X11GA
11	SOL 2 1/4" SOLID	SAE 2.5X2.5X0.1875	PSP ROHN 1 1/2X11GA
12-13	SOL 2 1/4" SOLID	PSP ROHN 1 1/2X11GA	PSP ROHN 1 1/2X11GA
14	SOL 2 1/4" SOLID	SAE 2.5X2.5X0.1875	PSP ROHN 1 1/2X11GA
15-17	SOL 2 1/4" SOLID	DAE 2X2X0.1875	PSP ROHN 1 1/2X11GA

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
280.00	283.00	1	5'x2.4" Pipe Mount
280.00	280.00	1	Beacon
280.00	280.00	1	Lightning Rod
280.00	280.00	1	Platform w/ Hand Rails
280.00	284.00	1	3.6'x2.4" Pipe Mount
280.00	285.00	1	1.5' Standoff
275.00	275.00	1	DCRT-4
270.00	270.00	1	DCRT-4
265.00	265.00	1	DCRT-4
260.00	260.00	1	DCRT-4
250.00	257.00	2	Celwave TDE6082A
250.00	253.00	1	4.7' Standoff
192.00	192.00	3	JMA Wireless MX08FRO665-21
192.00	192.00	3	Fujitsu TA08025-B604 RRU
192.00	192.00	3	Fujitsu TA08025-B605 RRU
192.00	192.00	1	Raycap RDIDC-9181-PF-48
192.00	192.00	1	(3) Commscope MTC3975083
192.00	192.00	3	JMA Wireless MX08FRO665-21
182.00	182.00	3	Light Sector Frame-Flat
182.00	182.00	3	AIR6449 B41
182.00	182.00	3	RRUS 4415 B25
182.00	182.00	1	(3) Stabilizer Kit (12' FW)
182.00	182.00	3	KRD 9011461-B66A-B2A (Octa)
182.00	182.00	3	APXVAARR24_43-U-NA20 (Octa)
182.00	182.00	3	AIR 3246 B66 (Octa)
182.00	182.00	3	KRY 112 144/2
182.00	182.00	3	KRY 112 489/2
182.00	182.00	3	Radio 4449 B71 + B12
150.00	162.15	1	DS2C00-F-36-D
143.00	143.00	1	USF-4U
132.00	134.50	1	ANT150F2
129.50	129.50	1	DB5004 Side Arm
125.00	126.00	1	2' Standoff (Commscope S-200)
122.00	124.50	1	ANT150F2
119.50	119.50	1	DB5004 Side Arm
98.00	98.00	1	SP4-107BC1C1R w/ Radome
97.50	100.00	1	DB586-Y
96.00	96.00	1	PAL8-65A w/ Radome



**Structure: CT04877-A-SBA**

<b>Site Name:</b> Waterbury 2, CT	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Type:</b> Guyed	<b>Base Shape:</b> Triangle	<b>Basic WS:</b> 97.00
<b>Height:</b> 280.00 (ft)	<b>Base Width:</b> 0.00	<b>Basic Ice WS:</b> 50.00
<b>Base Elev:</b> 0.00 (ft)	<b>Top Width:</b> 4.00	<b>Operational WS:</b> 60.00



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95.00	95.00	1	Bird 422 Series
95.00	95.00	1	DB5004 Side Arm
92.50	95.00	1	DB586-Y
90.00	90.00	1	4' Pipe Mount

**Linear Appurtenances**

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	280.00	1	Climbing Ladder
0.00	280.00	1	Safety Cable
0.00	280.00	1	W/G Ladder
0.00	280.00	1	W/G Ladder
0.00	268.50	1	7/8" Coax
0.00	250.00	2	7/8" Coax
0.00	192.00	1	1.6" Hybrid
0.00	182.00	9	1 5/8" Coax
0.00	182.00	5	1 5/8" Hybrid
0.00	140.30	2	7/8" Coax
0.00	125.00	1	7/8" Coax
0.00	101.60	1	7/8" Coax
0.00	101.00	1	W/G Ladder
0.00	98.00	1	EW65
0.00	97.50	1	7/8" Coax
0.00	96.00	1	EW65
0.00	95.00	1	1/2" Coax
0.00	92.50	1	7/8" Coax

**Max Guy Wire**

63.53% @ 76 ft - 9/16 EHS

**Structure: CT04877-A-SBA**

**Site Name:** Waterbury 2, CT

**Code:** EIA/TIA-222-G

12/20/2021

**Type:** Guyed

**Base Shape:** Triangle

**Basic WS:** 97.00

**Height:** 280.00 (ft)

**Base Width:** 0.00

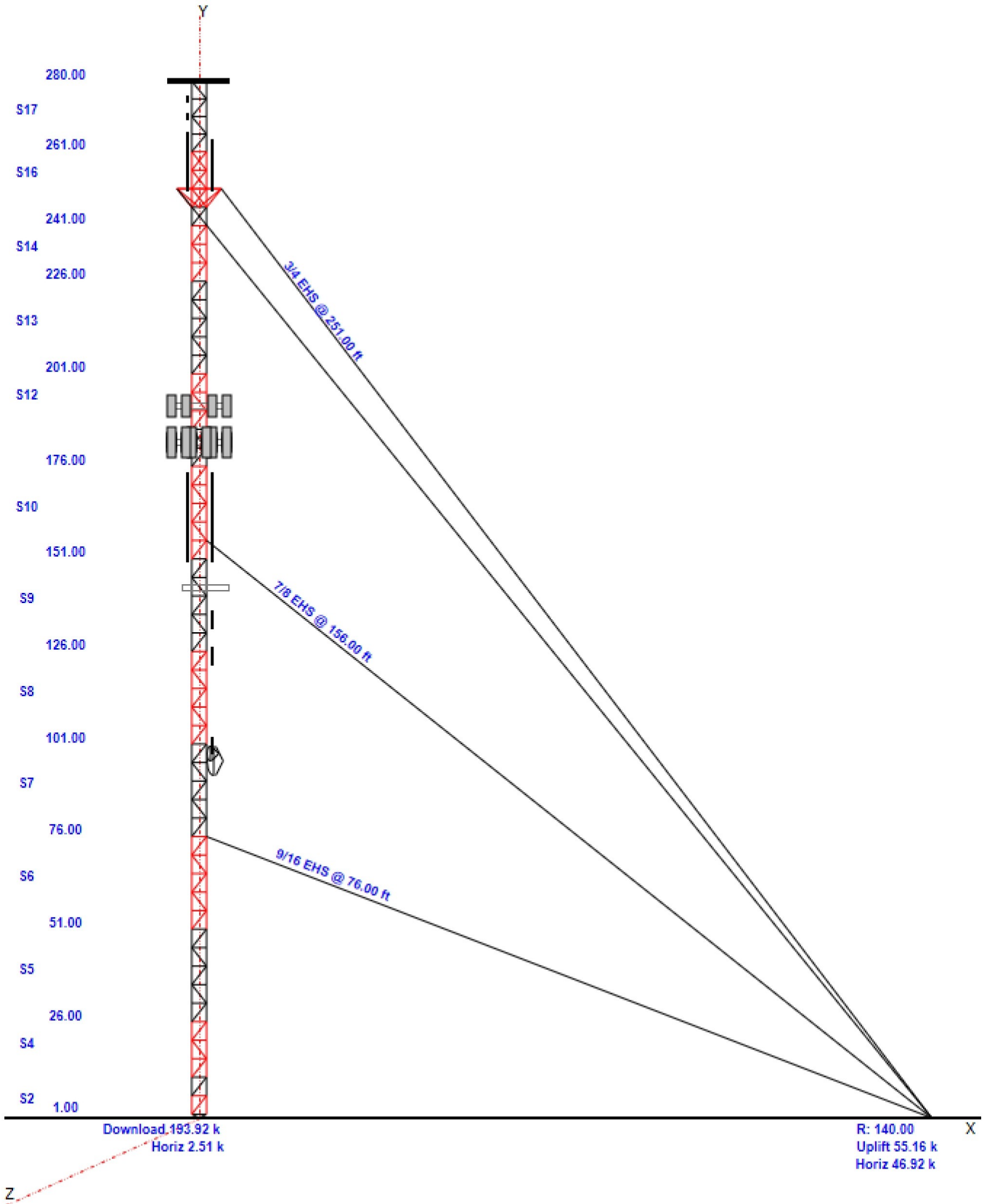
**Basic Ice WS:** 50.00

**Base Elev:** 0.00 (ft)

**Top Width:** 4.00

**Operational WS:** 60.00

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# Anchor Drops with Guy Radius - Structure: CT04877-A-SBA

**Site Name:** Waterbury 2, CT

**Code:** EIA/TIA-222-G

12/20/2021

**Type:** Guyed

**Base Shape:** Triangle

**Basic WS:** 97.00

**Height:** 280.00 (ft)

**Base Width:** 0.00

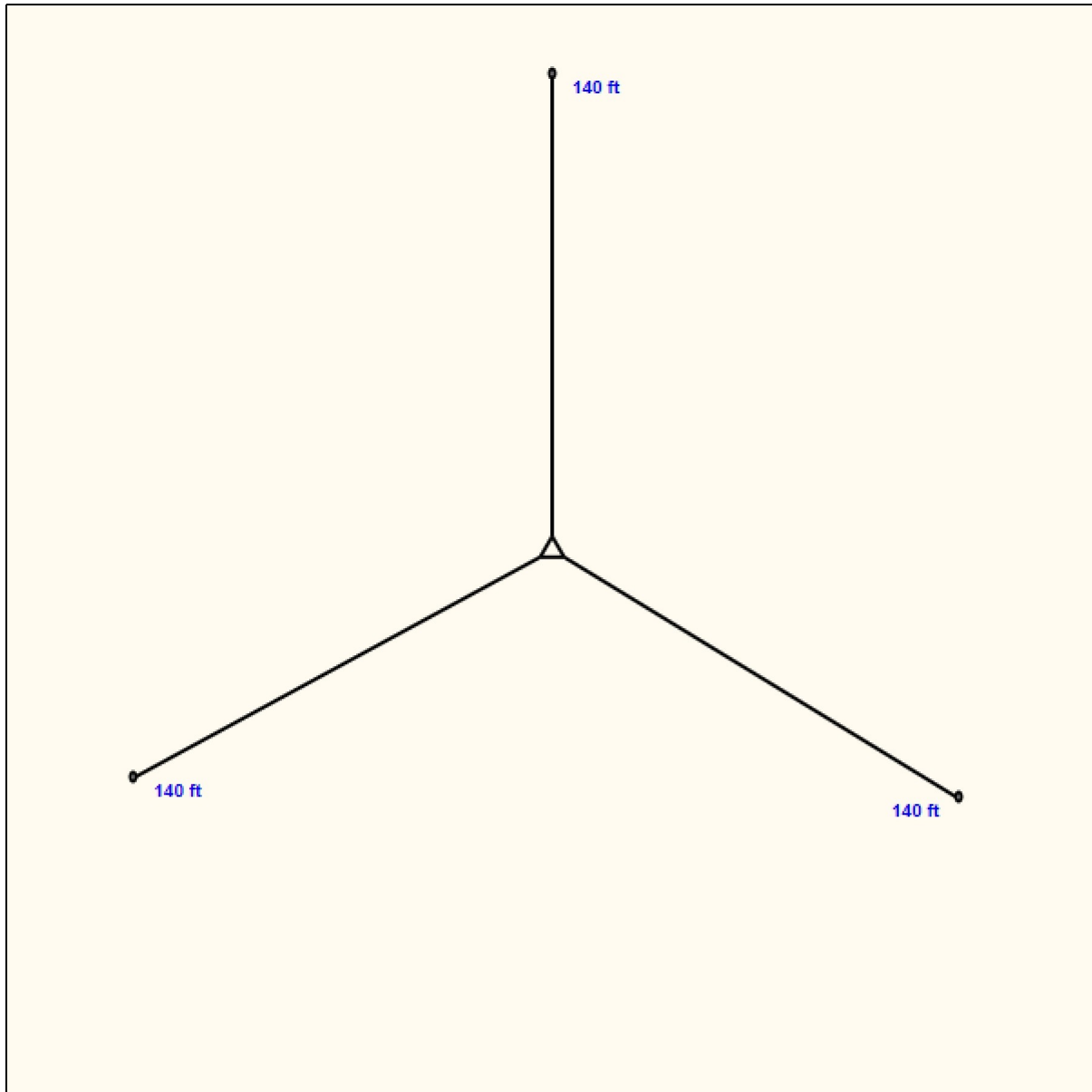
**Basic Ice WS:** 50.00

**Base Elev:** 0.00 (ft)

**Top Width:** 4.00

**Operational WS:** 60.00

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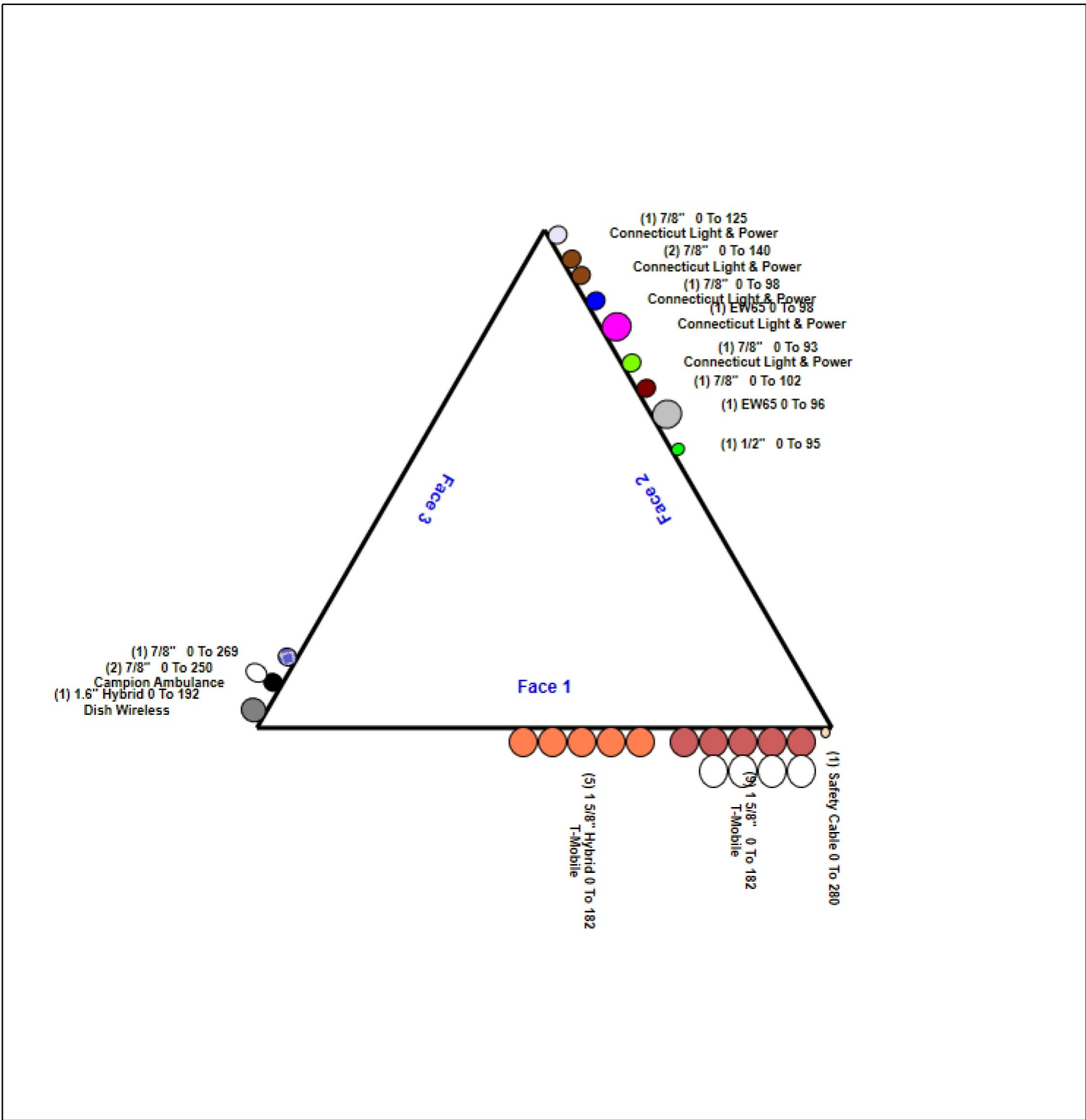
# Structure: CT04877-A-SBA - Coax Line Placement

Type: Guyed  
Site Name: Waterbury 2, CT  
Height: 280.00 (ft)

12/20/2021



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## Loading Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
280.00	5'x2.4" Pipe Mount	1	60.00	1.210	104.43	2.106	43.200	2.400	2.400	1.00	1.00	3.000
280.00	Beacon	1	36.00	2.720	177.28	3.727	28.000	17.500	17.500	1.00	1.00	0.000
280.00	Lightning Rod	1	5.00	0.500	27.21	2.351	72.000	1.000	1.000	1.00	1.00	0.000
280.00	Platform w/ Hand Rails	1	1210.0	34.800	2553.98	54.127	0.000	0.000	0.000	1.00	1.00	0.000
280.00	3.6'x2.4" Pipe Mount	1	60.00	0.650	104.43	1.131	43.200	2.400	2.400	1.00	1.00	4.000
280.00	1.5' Standoff	1	60.00	2.960	104.43	5.152	18.000	2.400	2.400	1.00	1.00	5.000
275.00	DCRT-4	1	44.00	4.100	338.41	8.341	27.500	27.500	13.300	1.00	1.00	0.000
270.00	DCRT-4	1	44.00	4.100	338.41	8.341	27.500	27.500	13.300	1.00	1.00	0.000
265.00	DCRT-4	1	44.00	4.100	338.41	8.341	27.500	27.500	13.300	1.00	1.00	0.000
260.00	DCRT-4	1	44.00	4.100	336.50	8.314	27.500	27.500	13.300	1.00	1.00	0.000
250.00	Celwave TDE6082A	2	40.00	4.200	151.59	9.471	168.000	3.000	3.000	1.00	1.00	7.000
250.00	4.7' Standoff	1	70.00	2.970	121.50	5.155	48.000	2.400	2.400	1.00	1.00	3.000
192.00	JMA Wireless MX08FRO665-21	3	64.50	12.490	362.87	13.993	72.000	20.000	8.000	0.80	0.74	0.000
192.00	Fujitsu TA08025-B604 RRU	3	63.90	1.960	115.84	2.535	15.800	15.000	7.900	0.80	0.67	0.000
192.00	Fujitsu TA08025-B605 RRU	3	75.00	1.960	128.65	2.535	15.800	15.000	9.100	0.80	0.67	0.000
192.00	Raycap RDIDC-9181-PF-48	1	21.90	2.010	76.52	2.593	16.600	14.600	8.500	1.00	1.00	0.000
192.00	(3) Commscope MTC3975083	1	1242.0	28.050	2487.14	64.205	0.000	0.000	0.000	0.75	1.00	0.000
192.00	JMA Wireless MX08FRO665-21	3	64.50	12.490	362.87	13.993	72.000	20.000	8.000	0.80	0.74	0.000
182.00	Light Sector Frame-Flat	3	500.00	17.500	1211.32	31.691	0.000	0.000	0.000	0.75	0.75	0.000
182.00	AIR6449 B41	3	103.00	5.650	242.72	6.619	33.100	20.500	8.300	0.80	0.71	0.000
182.00	RRUS 4415 B25	3	46.00	1.640	87.88	2.165	15.000	13.200	5.400	0.80	0.67	0.000
182.00	(3) Stabilizer Kit (12' FW)	1	180.00	6.100	410.47	12.609	0.000	0.000	0.000	1.00	1.00	0.000
182.00	KRD 9011461-B66A-B2A (Octa)	3	132.20	6.510	319.56	7.654	56.600	12.900	8.700	0.80	0.87	0.000
182.00	APXVAARR24_43-U-NA20 (Octa)	3	128.00	20.240	554.89	22.177	95.900	24.000	7.800	0.80	0.70	0.000
182.00	AIR 3246 B66 (Octa)	3	180.00	7.940	385.37	9.143	58.100	15.700	9.400	0.80	0.83	0.000
182.00	KRY 112 144/2	3	11.00	0.410	21.99	0.894	6.900	6.100	2.700	0.80	0.50	0.000
182.00	KRY 112 489/2	3	11.30	0.690	29.02	1.319	10.500	6.800	3.500	0.80	0.50	0.000
182.00	Radio 4449 B71 + B12	3	70.00	1.650	139.88	2.199	15.000	13.200	9.300	0.80	0.67	0.000
150.00	DS2C00-F-36-D	1	71.00	7.290	252.29	15.822	291.600	3.000	0.000	1.00	1.00	12.15
143.00	USF-4U	1	80.00	2.500	157.56	5.616	0.000	0.000	0.000	1.00	1.00	0.000
132.00	ANT150F2	1	12.00	1.290	47.61	2.340	60.000	2.800	2.800	1.00	1.00	2.500
129.50	DB5004 Side Arm	1	60.00	1.320	101.55	2.234	48.000	3.000	3.000	1.00	1.00	0.000
125.00	2' Standoff (Commscope S-200)	1	110.00	2.960	184.68	4.970	18.000	2.400	2.400	1.00	1.00	1.000
122.00	ANT150F2	1	12.00	1.290	46.91	2.319	60.000	2.800	2.800	1.00	1.00	2.500
119.50	DB5004 Side Arm	1	60.00	1.320	100.73	2.216	48.000	3.000	3.000	1.00	1.00	0.000
98.00	SP4-107BC1C1R w/ Radome	1	83.00	11.630	407.83	13.186	49.700	49.700	9.800	1.00	1.00	0.000
97.50	DB586-Y	1	8.30	1.010	13.80	1.679	59.000	0.000	1.500	1.00	1.00	2.500
96.00	PAL8-65A w/ Radome	1	380.00	43.390	1569.25	46.407	96.000	96.000	0.000	1.00	1.00	0.000
95.00	Bird 422 Series	1	50.00	3.450	125.92	6.093	18.000	6.000	6.000	1.00	1.00	0.000
95.00	DB5004 Side Arm	1	60.00	1.320	99.73	2.194	48.000	3.000	3.000	1.00	1.00	0.000
92.50	DB586-Y	1	8.30	1.010	13.80	1.679	59.000	0.000	1.500	1.00	1.00	2.500
90.00	4' Pipe Mount	1	60.00	1.320	99.73	2.194	48.000	3.000	3.000	1.00	1.00	0.000
<b>Totals:</b>		<b>69</b>	<b>8,603.70</b>		<b>22,932.32</b>					<b>Number of Appurtenances :</b>		<b>42</b>

## Loading Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 7

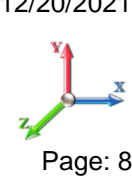


### Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	280.00	Climbing Ladder	1	3.00	6.90	100.00	1	Individual NR		N	1.00	1.00	
0.00	280.00	Safety Cable	1	0.38	0.27	100.00	1	Individual NR		N	1.00	1.00	
0.00	280.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
0.00	280.00	W/G Ladder	1	2.00	6.00	100.00	3	Individual NR		N	1.00	1.00	
0.00	268.50	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	250.00	7/8" Coax	2	1.11	0.52	50.00	3	Block		N	1.00	1.00	
0.00	192.00	1.6" Hybrid	1	1.60	1.82	100.00	3	Individual NR		N	1.00	1.00	
0.00	182.00	1 5/8" Coax	9	1.98	1.04	50.00	1	Block		N	0.50	1.00	
0.00	182.00	1 5/8" Hybrid	5	2.00	1.10	100.00	1	Individual NR		N	1.00	1.00	
0.00	140.30	7/8" Coax	2	1.11	0.52	100.00	2	Individual NR		N	1.00	1.00	
0.00	125.00	7/8" Coax	1	1.11	0.52	100.00	2	Individual NR		N	1.00	1.00	
0.00	101.60	7/8" Coax	1	1.11	0.52	100.00	2	Individual NR		N	1.00	1.00	
0.00	101.00	W/G Ladder	1	3.00	6.00	100.00	2	Individual NR		N	1.00	1.00	
0.00	98.00	EW65	1	2.00	0.50	100.00	2	Individual NR		N	1.00	1.00	
0.00	97.50	7/8" Coax	1	1.11	0.52	100.00	2	Individual NR		N	1.00	1.00	
0.00	96.00	EW65	1	2.00	0.50	100.00	2	Individual NR		N	1.00	1.00	
0.00	95.00	1/2" Coax	1	0.65	0.16	100.00	2	Individual NR		N	1.00	1.00	
0.00	92.50	7/8" Coax	1	1.11	0.52	100.00	2	Individual NR		N	1.00	1.00	

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



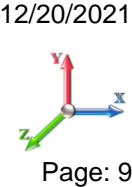
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<b>Load Case:</b> 1.2D + 1.6W Normal Wind	1.2D + 1.6W 97 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	14.33	12.800	0.00	0.00	1.00	2.10	1.00	1.00	0.00	12.80	3.95	0.00	1,136.4	0.0	523.92	0.00	102.33
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	1.00	1.00	0.00	1.92	19.75	0.00	653.1	0.0	102.86	323.50	426.36
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	1.00	1.00	0.00	2.50	19.75	0.00	720.6	0.0	131.68	323.50	455.18
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	1.00	1.00	0.00	5.77	59.26	0.00	1,959.3	0.0	308.29	970.50	1,278.79
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	98.76	0.00	3,265.5	0.0	552.24	1738.47	2,290.71
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	98.76	0.00	3,668.7	0.0	839.46	2005.65	2,845.11
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	95.99	0.00	3,610.5	0.0	897.62	2152.23	3,049.85
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	75.85	0.00	3,003.7	0.0	752.11	1811.41	2,563.52
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	71.59	0.00	3,333.4	0.0	1020.16	1824.90	2,845.05
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	68.95	0.00	3,360.3	0.0	1099.90	1853.18	2,953.09
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	1.00	1.00	0.00	5.30	20.28	0.00	1,057.2	0.0	463.63	568.50	1,032.13
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	1.00	1.00	0.00	5.41	12.79	0.00	1,315.8	0.0	498.23	394.13	892.36
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	1.00	1.00	0.00	9.01	19.99	0.00	2,171.1	0.0	854.04	642.80	1,496.84
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	1.00	1.00	0.00	7.95	11.99	0.00	1,392.6	0.0	748.20	395.67	1,143.87
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	1.00	1.00	0.00	2.39	4.00	0.00	505.9	0.0	231.10	133.48	364.58
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	1.00	1.00	0.00	10.32	10.98	0.00	1,841.5	0.0	948.17	372.20	1,320.37
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	1.00	1.00	0.00	9.21	12.37	0.00	1,905.6	0.0	916.07	436.85	1,352.93
														<b>34,901.3</b>	<b>0.0</b>	<b>26,413.08</b>		

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 1.2D + 1.6W 60° Wind	1.2D + 1.6W 97 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Area (sqft)	Linear Area (sqft)						
1	0.5	14.33	12.800	0.00	1.00	2.10	0.80	1.00	0.00	10.24	3.95	0.00	1,136.4	0.0	419.13	0.00	419.13	
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	0.80	1.00	0.00	1.92	19.75	0.00	653.1	0.0	102.86	323.50	426.36
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	0.80	1.00	0.00	2.30	19.75	0.00	720.6	0.0	120.83	323.50	444.33
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	0.80	1.00	0.00	5.77	59.26	0.00	1,959.3	0.0	308.29	970.50	1,278.79
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	98.76	0.00	3,265.5	0.0	552.24	1738.47	2,290.71
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	98.76	0.00	3,668.7	0.0	763.65	2005.65	2,769.30
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	95.99	0.00	3,610.5	0.0	823.62	2152.23	2,975.85
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	75.85	0.00	3,003.7	0.0	752.11	1811.41	2,563.52
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	71.59	0.00	3,333.4	0.0	936.06	1824.90	2,760.95
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	68.95	0.00	3,360.3	0.0	1000.57	1853.18	2,853.76
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	0.80	1.00	0.00	4.78	20.28	0.00	1,057.2	0.0	418.34	568.50	986.84
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	0.80	1.00	0.00	5.41	12.79	0.00	1,315.8	0.0	498.23	394.13	892.36
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	0.80	1.00	0.00	9.01	19.99	0.00	2,171.1	0.0	854.04	642.80	1,496.84
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	0.80	1.00	0.00	7.17	11.99	0.00	1,392.6	0.0	675.07	395.67	1,070.74
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	0.80	1.00	0.00	2.18	4.00	0.00	505.9	0.0	211.04	133.48	344.52
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	0.80	1.00	0.00	9.08	10.98	0.00	1,841.5	0.0	833.99	372.20	1,206.19
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	0.80	1.00	0.00	8.41	12.37	0.00	1,905.6	0.0	836.19	436.85	1,273.04
													<b>34,901.3</b>	<b>0.0</b>			<b>26,053.24</b>	

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



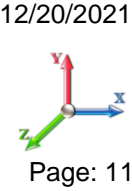
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<b>Load Case:</b> 1.2D + 1.6W 90° Wind	1.2D + 1.6W 97 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	0.5	14.33	12.800	0.00	1.00	2.10	0.85	1.00	0.00	10.88	3.95	0.00	1,136.4	0.0	445.33	0.00	445.33	
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	0.85	1.00	0.00	1.92	19.75	0.00	653.1	0.0	102.86	323.50	426.36
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	0.85	1.00	0.00	2.35	19.75	0.00	720.6	0.0	123.54	323.50	447.04
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	0.85	1.00	0.00	5.77	59.26	0.00	1,959.3	0.0	308.29	970.50	1,278.79
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	98.76	0.00	3,265.5	0.0	552.24	1738.47	2,290.71
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	98.76	0.00	3,668.7	0.0	782.60	2005.65	2,788.25
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	95.99	0.00	3,610.5	0.0	842.12	2152.23	2,994.35
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	75.85	0.00	3,003.7	0.0	752.11	1811.41	2,563.52
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	71.59	0.00	3,333.4	0.0	957.08	1824.90	2,781.98
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	68.95	0.00	3,360.3	0.0	1025.40	1853.18	2,878.59
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	0.85	1.00	0.00	4.91	20.28	0.00	1,057.2	0.0	429.66	568.50	998.16
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	0.85	1.00	0.00	5.41	12.79	0.00	1,315.8	0.0	498.23	394.13	892.36
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	0.85	1.00	0.00	9.01	19.99	0.00	2,171.1	0.0	854.04	642.80	1,496.84
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	0.85	1.00	0.00	7.37	11.99	0.00	1,392.6	0.0	693.35	395.67	1,089.03
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	0.85	1.00	0.00	2.23	4.00	0.00	505.9	0.0	216.06	133.48	349.54
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	0.85	1.00	0.00	9.39	10.98	0.00	1,841.5	0.0	862.54	372.20	1,234.74
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	0.85	1.00	0.00	8.61	12.37	0.00	1,905.6	0.0	856.16	436.85	1,293.01
													<b>34,901.3</b>	<b>0.0</b>			<b>26,248.60</b>	

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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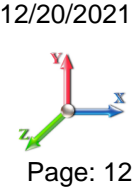
<b>Load Case:</b> 0.9D + 1.6W Normal Wind	0.9D + 1.6W 97 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	14.33	12.800	0.00	0.00	1.00	2.10	1.00	1.00	0.00	12.80	3.95	0.00	852.3	0.0	523.92	0.00	523.92
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	1.00	1.00	0.00	1.92	19.75	0.00	489.8	0.0	102.86	323.50	426.36
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	1.00	1.00	0.00	2.50	19.75	0.00	540.5	0.0	131.68	323.50	455.18
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	1.00	1.00	0.00	5.77	59.26	0.00	1,469.5	0.0	308.29	970.50	1,278.79
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	98.76	0.00	2,449.1	0.0	552.24	1738.47	2,290.71
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	98.76	0.00	2,751.6	0.0	839.46	2005.65	2,845.11
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	95.99	0.00	2,707.9	0.0	897.62	2152.23	3,049.85
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	75.85	0.00	2,252.7	0.0	752.11	1811.41	2,563.52
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	71.59	0.00	2,500.0	0.0	1020.16	1824.90	2,845.05
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	68.95	0.00	2,520.3	0.0	1099.90	1853.18	2,953.09
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	1.00	1.00	0.00	5.30	20.28	0.00	792.9	0.0	463.63	568.50	1,032.13
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	1.00	1.00	0.00	5.41	12.79	0.00	986.8	0.0	498.23	394.13	892.36
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	1.00	1.00	0.00	9.01	19.99	0.00	1,628.4	0.0	854.04	642.80	1,496.84
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	1.00	1.00	0.00	7.95	11.99	0.00	1,044.4	0.0	748.20	395.67	1,143.87
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	1.00	1.00	0.00	2.39	4.00	0.00	379.4	0.0	231.10	133.48	364.58
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	1.00	1.00	0.00	10.32	10.98	0.00	1,381.1	0.0	948.17	372.20	1,320.37
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	1.00	1.00	0.00	9.21	12.37	0.00	1,429.2	0.0	916.07	436.85	1,352.93
															<b>26,176.0</b>	<b>0.0</b>	<b>26,834.66</b>	



## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.6W 60° Wind	0.9D + 1.6W 97 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	14.33	12.800	0.00	0.00	1.00	2.10	0.80	1.00	0.00	10.24	3.95	0.00	852.3	0.0	419.13	0.00	419.13
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	0.80	1.00	0.00	1.92	19.75	0.00	489.8	0.0	102.86	323.50	426.36
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	0.80	1.00	0.00	2.30	19.75	0.00	540.5	0.0	120.83	323.50	444.33
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	0.80	1.00	0.00	5.77	59.26	0.00	1,469.5	0.0	308.29	970.50	1,278.79
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	98.76	0.00	2,449.1	0.0	552.24	1738.47	2,290.71
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	98.76	0.00	2,751.6	0.0	763.65	2005.65	2,769.30
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	95.99	0.00	2,707.9	0.0	823.62	2152.23	2,975.85
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	75.85	0.00	2,252.7	0.0	752.11	1811.41	2,563.52
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	71.59	0.00	2,500.0	0.0	936.06	1824.90	2,760.95
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	68.95	0.00	2,520.3	0.0	1000.57	1853.18	2,853.76
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	0.80	1.00	0.00	4.78	20.28	0.00	792.9	0.0	418.34	568.50	986.84
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	0.80	1.00	0.00	5.41	12.79	0.00	986.8	0.0	498.23	394.13	892.36
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	0.80	1.00	0.00	9.01	19.99	0.00	1,628.4	0.0	854.04	642.80	1,496.84
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	0.80	1.00	0.00	7.17	11.99	0.00	1,044.4	0.0	675.07	395.67	1,070.74
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	0.80	1.00	0.00	2.18	4.00	0.00	379.4	0.0	211.04	133.48	344.52
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	0.80	1.00	0.00	9.08	10.98	0.00	1,381.1	0.0	833.99	372.20	1,206.19
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	0.80	1.00	0.00	8.41	12.37	0.00	1,429.2	0.0	836.19	436.85	1,273.04
														<b>26,176.0</b>	<b>0.0</b>	<b>26,053.24</b>		

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



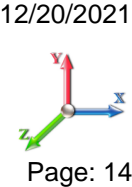
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<b>Load Case:</b> 0.9D + 1.6W 90° Wind	0.9D + 1.6W 97 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
												Linear Area (sqft)	Linear Area (sqft)						
1	0.5	14.33	12.800	0.00	0.00	1.00	2.10	0.85	1.00	0.00	10.88	3.95	0.00	852.3	0.0	445.33	0.00	445.33	
2	3.5	14.33	0.000	3.31	0.00	0.16	2.74	0.85	1.00	0.00	1.92	19.75	0.00	489.8	0.0	102.86	323.50	426.36	
3	8.5	14.33	1.032	2.56	0.00	0.17	2.70	0.85	1.00	0.00	2.35	19.75	0.00	540.5	0.0	123.54	323.50	447.04	
4	18.5	14.33	0.000	9.99	0.00	0.16	2.74	0.85	1.00	0.00	5.77	59.26	0.00	1,469.5	0.0	308.29	970.50	1,278.79	
5	38.5	15.40	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	98.76	0.00	2,449.1	0.0	552.24	1738.47	2,290.71	
6	63.5	17.77	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	98.76	0.00	2,751.6	0.0	782.60	2005.65	2,788.25	
7	88.5	19.54	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	95.99	0.00	2,707.9	0.0	842.12	2152.23	2,994.35	
8	113.5	20.98	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	75.85	0.00	2,252.7	0.0	752.11	1811.41	2,563.52	
9	138.5	22.21	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	71.59	0.00	2,500.0	0.0	957.08	1824.90	2,781.98	
10	163.5	23.28	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	68.95	0.00	2,520.3	0.0	1025.40	1853.18	2,878.59	
11	181.0	23.97	2.588	4.70	0.00	0.17	2.68	0.85	1.00	0.00	4.91	20.28	0.00	792.9	0.0	429.66	568.50	998.16	
12	193.5	24.43	0.000	9.39	0.00	0.15	2.77	0.85	1.00	0.00	5.41	12.79	0.00	986.8	0.0	498.23	394.13	892.36	
13	213.5	25.13	0.000	15.64	0.00	0.15	2.77	0.85	1.00	0.00	9.01	19.99	0.00	1,628.4	0.0	854.04	642.80	1,496.84	
14	233.5	25.78	3.885	7.05	0.00	0.17	2.68	0.85	1.00	0.00	7.37	11.99	0.00	1,044.4	0.0	693.35	395.67	1,089.03	
15	243.5	26.09	1.036	2.35	0.00	0.16	2.73	0.85	1.00	0.00	2.23	4.00	0.00	379.4	0.0	216.06	133.48	349.54	
16	253.5	26.39	6.216	7.05	0.00	0.21	2.56	0.85	1.00	0.00	9.39	10.98	0.00	1,381.1	0.0	862.54	372.20	1,234.74	
17	270.5	26.89	4.015	9.03	0.00	0.16	2.72	0.85	1.00	0.00	8.61	12.37	0.00	1,429.2	0.0	856.16	436.85	1,293.01	
															<b>26,176.0</b>	<b>0.0</b>	<b>26,248.60</b>		

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



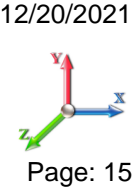
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<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi Normal Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	3.81	12.800	1.49	1.49	1.00	2.10	1.00	1.00	0.99	14.29	4.77	2.96	1,877.3	740.9	97.10	0.00	97.10
2	3.5	3.81	0.000	7.39	4.08	0.34	2.21	1.00	1.00	1.20	4.56	24.75	17.98	1,389.3	736.2	32.53	120.47	153.00
3	8.5	3.81	1.032	7.01	4.45	0.36	2.14	1.00	1.00	1.31	5.40	25.21	19.65	1,572.5	851.8	37.45	123.00	160.45
4	18.5	3.81	0.000	24.44	14.44	0.37	2.13	1.00	1.00	1.42	15.31	76.95	63.70	4,756.4	2797.1	105.73	384.21	489.94
5	38.5	4.09	0.000	42.56	25.90	0.38	2.10	1.00	1.00	1.52	26.91	130.50	114.2	8,448.8	5183.2	196.75	707.33	904.08
6	63.5	4.72	5.829	39.54	27.23	0.41	2.05	1.00	1.00	1.60	31.15	132.12	120.1	9,828.0	6159.3	256.68	817.18	1,073.86
7	88.5	5.19	5.162	40.93	28.15	0.41	2.04	1.00	1.00	1.66	31.49	130.48	116.9	9,850.2	6239.7	283.80	876.83	1,160.63
8	113.5	5.57	0.000	45.52	28.86	0.41	2.05	1.00	1.00	1.70	29.23	104.14	84.75	7,890.9	4887.3	284.40	724.09	1,008.49
9	138.5	5.90	5.162	42.22	29.44	0.42	2.02	1.00	1.00	1.73	32.51	100.45	73.18	8,657.1	5323.7	329.89	693.47	1,023.36
10	163.5	6.19	5.829	42.24	29.93	0.43	2.01	1.00	1.00	1.76	33.29	98.29	66.01	8,708.3	5348.0	352.33	687.13	1,039.46
11	181.0	6.37	2.588	16.80	12.09	0.43	2.00	1.00	1.00	1.78	13.55	30.95	20.75	2,780.4	1723.2	146.98	224.13	371.10
12	193.5	6.49	0.000	27.65	18.26	0.41	2.04	1.00	1.00	1.79	17.81	26.22	15.22	3,151.2	1835.4	200.80	203.64	404.44
13	213.5	6.68	0.000	46.38	30.74	0.41	2.04	1.00	1.00	1.81	29.93	42.59	22.60	5,200.5	3029.4	346.25	332.63	678.88
14	233.5	6.85	3.885	25.66	18.61	0.44	1.99	1.00	1.00	1.82	20.71	25.68	13.68	3,366.0	1973.4	240.27	197.14	437.41
15	243.5	6.93	1.036	8.58	6.23	0.43	2.01	1.00	1.00	1.83	6.62	8.58	4.58	1,245.2	739.3	78.43	67.94	146.38
16	253.5	7.01	6.216	31.71	24.65	0.56	1.83	1.00	1.00	1.84	29.12	21.40	13.79	4,757.7	2916.2	317.95	140.98	458.93
17	270.5	7.14	4.015	33.36	24.32	0.44	1.99	1.00	1.00	1.85	25.87	24.10	14.04	4,524.5	2618.9	313.28	205.65	518.93
														<b>88,004.3</b>	<b>53103.1</b>			<b>10,126.44</b>

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II

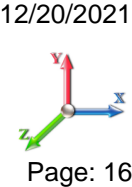


<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi 60° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	0.5	3.81	12.800	1.49	1.49	1.00	2.10	0.80	1.00	0.99	11.73	4.77	2.96	1,877.3	740.9	79.70	0.00	79.70
2	3.5	3.81	0.000	7.39	4.08	0.34	2.21	0.80	1.00	1.20	4.56	24.75	17.98	1,389.3	736.2	32.53	120.47	153.00
3	8.5	3.81	1.032	7.01	4.45	0.36	2.14	0.80	1.00	1.31	5.20	25.21	19.65	1,572.5	851.8	36.02	123.00	159.01
4	18.5	3.81	0.000	24.44	14.44	0.37	2.13	0.80	1.00	1.42	15.31	76.95	63.70	4,756.4	2797.1	105.73	384.21	489.94
5	38.5	4.09	0.000	42.56	25.90	0.38	2.10	0.80	1.00	1.52	26.91	130.50	114.2	8,448.8	5183.2	196.75	707.33	904.08
6	63.5	4.72	5.829	39.54	27.23	0.41	2.05	0.80	1.00	1.60	29.98	132.12	120.1	9,828.0	6159.3	247.07	817.18	1,064.25
7	88.5	5.19	5.162	40.93	28.15	0.41	2.04	0.80	1.00	1.66	30.46	130.48	116.9	9,850.2	6239.7	274.50	876.83	1,151.33
8	113.5	5.57	0.000	45.52	28.86	0.41	2.05	0.80	1.00	1.70	29.23	104.14	84.75	7,890.9	4887.3	284.40	724.09	1,008.49
9	138.5	5.90	5.162	42.22	29.44	0.42	2.02	0.80	1.00	1.73	31.48	100.45	73.18	8,657.1	5323.7	319.41	693.47	1,012.89
10	163.5	6.19	5.829	42.24	29.93	0.43	2.01	0.80	1.00	1.76	32.12	98.29	66.01	8,708.3	5348.0	339.99	687.13	1,027.12
11	181.0	6.37	2.588	16.80	12.09	0.43	2.00	0.80	1.00	1.78	13.03	30.95	20.75	2,780.4	1723.2	141.36	224.13	365.49
12	193.5	6.49	0.000	27.65	18.26	0.41	2.04	0.80	1.00	1.79	17.81	26.22	15.22	3,151.2	1835.4	200.80	203.64	404.44
13	213.5	6.68	0.000	46.38	30.74	0.41	2.04	0.80	1.00	1.81	29.93	42.59	22.60	5,200.5	3029.4	346.25	332.63	678.88
14	233.5	6.85	3.885	25.66	18.61	0.44	1.99	0.80	1.00	1.82	19.93	25.68	13.68	3,366.0	1973.4	231.26	197.14	428.39
15	243.5	6.93	1.036	8.58	6.23	0.43	2.01	0.80	1.00	1.83	6.41	8.58	4.58	1,245.2	739.3	75.98	67.94	143.92
16	253.5	7.01	6.216	31.71	24.65	0.56	1.83	0.80	1.00	1.84	27.87	21.40	13.79	4,757.7	2916.2	304.37	140.98	445.35
17	270.5	7.14	4.015	33.36	24.32	0.44	1.99	0.80	1.00	1.85	25.06	24.10	14.04	4,524.5	2618.9	303.55	205.65	509.21
													<b>88,004.3</b>	<b>53103.1</b>				<b>10,025.50</b>

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



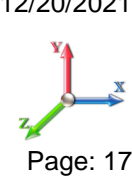
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<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi 90° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total	Total	Ice	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)					
1	0.5	3.81	12.800	1.49	1.49	1.00	2.10	0.85	1.00	0.99	12.37	4.77	2.96	1,877.3	740.9	84.05	0.00	84.05
2	3.5	3.81	0.000	7.39	4.08	0.34	2.21	0.85	1.00	1.20	4.56	24.75	17.98	1,389.3	736.2	32.53	120.47	153.00
3	8.5	3.81	1.032	7.01	4.45	0.36	2.14	0.85	1.00	1.31	5.25	25.21	19.65	1,572.5	851.8	36.37	123.00	159.37
4	18.5	3.81	0.000	24.44	14.44	0.37	2.13	0.85	1.00	1.42	15.31	76.95	63.70	4,756.4	2797.1	105.73	384.21	489.94
5	38.5	4.09	0.000	42.56	25.90	0.38	2.10	0.85	1.00	1.52	26.91	130.50	114.2	8,448.8	5183.2	196.75	707.33	904.08
6	63.5	4.72	5.829	39.54	27.23	0.41	2.05	0.85	1.00	1.60	30.27	132.12	120.1	9,828.0	6159.3	249.47	817.18	1,066.65
7	88.5	5.19	5.162	40.93	28.15	0.41	2.04	0.85	1.00	1.66	30.72	130.48	116.9	9,850.2	6239.7	276.83	876.83	1,153.65
8	113.5	5.57	0.000	45.52	28.86	0.41	2.05	0.85	1.00	1.70	29.23	104.14	84.75	7,890.9	4887.3	284.40	724.09	1,008.49
9	138.5	5.90	5.162	42.22	29.44	0.42	2.02	0.85	1.00	1.73	31.74	100.45	73.18	8,657.1	5323.7	322.03	693.47	1,015.51
10	163.5	6.19	5.829	42.24	29.93	0.43	2.01	0.85	1.00	1.76	32.41	98.29	66.01	8,708.3	5348.0	343.07	687.13	1,030.21
11	181.0	6.37	2.588	16.80	12.09	0.43	2.00	0.85	1.00	1.78	13.16	30.95	20.75	2,780.4	1723.2	142.77	224.13	366.89
12	193.5	6.49	0.000	27.65	18.26	0.41	2.04	0.85	1.00	1.79	17.81	26.22	15.22	3,151.2	1835.4	200.80	203.64	404.44
13	213.5	6.68	0.000	46.38	30.74	0.41	2.04	0.85	1.00	1.81	29.93	42.59	22.60	5,200.5	3029.4	346.25	332.63	678.88
14	233.5	6.85	3.885	25.66	18.61	0.44	1.99	0.85	1.00	1.82	20.13	25.68	13.68	3,366.0	1973.4	233.51	197.14	430.65
15	243.5	6.93	1.036	8.58	6.23	0.43	2.01	0.85	1.00	1.83	6.46	8.58	4.58	1,245.2	739.3	76.59	67.94	144.54
16	253.5	7.01	6.216	31.71	24.65	0.56	1.83	0.85	1.00	1.84	28.18	21.40	13.79	4,757.7	2916.2	307.77	140.98	448.75
17	270.5	7.14	4.015	33.36	24.32	0.44	1.99	0.85	1.00	1.85	25.26	24.10	14.04	4,524.5	2618.9	305.99	205.65	511.64
														<b>88,004.3</b>	<b>53103.1</b>			<b>10,050.73</b>

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.0D + 1.0W Normal Wind	1.0D + 1.0W 60 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	5.48	12.800	0.00	0.00	1.00	2.10	1.00	1.00	0.00	12.80	3.95	0.00	947.0	0.0	125.29	0.00	125.29
2	3.5	5.48	0.000	3.31	0.00	0.16	2.74	1.00	1.00	0.00	1.92	19.75	0.00	544.3	0.0	24.60	77.36	101.96
3	8.5	5.48	1.032	2.56	0.00	0.17	2.70	1.00	1.00	0.00	2.50	19.75	0.00	600.5	0.0	31.49	77.36	108.85
4	18.5	5.48	0.000	9.99	0.00	0.16	2.74	1.00	1.00	0.00	5.77	59.26	0.00	1,632.8	0.0	73.72	232.08	305.80
5	38.5	5.89	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	98.76	0.00	2,721.3	0.0	132.06	415.72	547.78
6	63.5	6.80	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	98.76	0.00	3,057.3	0.0	200.74	479.62	680.36
7	88.5	7.48	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	95.99	0.00	3,008.8	0.0	214.65	514.67	729.32
8	113.5	8.03	0.000	16.66	0.00	0.16	2.74	1.00	1.00	0.00	9.62	75.85	0.00	2,503.0	0.0	179.85	433.17	613.02
9	138.5	8.50	5.162	12.79	0.00	0.17	2.70	1.00	1.00	0.00	12.52	71.59	0.00	2,777.8	0.0	243.95	436.39	680.34
10	163.5	8.91	5.829	12.31	0.00	0.17	2.69	1.00	1.00	0.00	12.91	68.95	0.00	2,800.3	0.0	263.02	443.16	706.18
11	181.0	9.17	2.588	4.70	0.00	0.17	2.68	1.00	1.00	0.00	5.30	20.28	0.00	881.0	0.0	110.87	135.95	246.82
12	193.5	9.35	0.000	9.39	0.00	0.15	2.77	1.00	1.00	0.00	5.41	12.79	0.00	1,096.5	0.0	119.14	94.25	213.39
13	213.5	9.61	0.000	15.64	0.00	0.15	2.77	1.00	1.00	0.00	9.01	19.99	0.00	1,809.3	0.0	204.23	153.71	357.94
14	233.5	9.86	3.885	7.05	0.00	0.17	2.68	1.00	1.00	0.00	7.95	11.99	0.00	1,160.5	0.0	178.92	94.62	273.54
15	243.5	9.98	1.036	2.35	0.00	0.16	2.73	1.00	1.00	0.00	2.39	4.00	0.00	421.6	0.0	55.26	31.92	87.18
16	253.5	10.10	6.216	7.05	0.00	0.21	2.56	1.00	1.00	0.00	10.32	10.98	0.00	1,534.6	0.0	226.74	89.01	315.74
17	270.5	10.29	4.015	9.03	0.00	0.16	2.72	1.00	1.00	0.00	9.21	12.37	0.00	1,588.0	0.0	219.06	104.47	323.53
														<b>29,084.4</b>	<b>0.0</b>			<b>6,417.05</b>

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



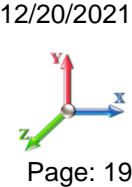
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<b>Load Case:</b> 1.0D + 1.0W 60° Wind	1.0D + 1.0W 60 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	5.48	12.800	0.00	0.00	1.00	2.10	0.80	1.00	0.00	10.24	3.95	0.00	947.0	0.0	100.23	0.00	100.23
2	3.5	5.48	0.000	3.31	0.00	0.16	2.74	0.80	1.00	0.00	1.92	19.75	0.00	544.3	0.0	24.60	77.36	101.96
3	8.5	5.48	1.032	2.56	0.00	0.17	2.70	0.80	1.00	0.00	2.30	19.75	0.00	600.5	0.0	28.89	77.36	106.25
4	18.5	5.48	0.000	9.99	0.00	0.16	2.74	0.80	1.00	0.00	5.77	59.26	0.00	1,632.8	0.0	73.72	232.08	305.80
5	38.5	5.89	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	98.76	0.00	2,721.3	0.0	132.06	415.72	547.78
6	63.5	6.80	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	98.76	0.00	3,057.3	0.0	182.61	479.62	662.23
7	88.5	7.48	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	95.99	0.00	3,008.8	0.0	196.96	514.67	711.62
8	113.5	8.03	0.000	16.66	0.00	0.16	2.74	0.80	1.00	0.00	9.62	75.85	0.00	2,503.0	0.0	179.85	433.17	613.02
9	138.5	8.50	5.162	12.79	0.00	0.17	2.70	0.80	1.00	0.00	11.49	71.59	0.00	2,777.8	0.0	223.84	436.39	660.23
10	163.5	8.91	5.829	12.31	0.00	0.17	2.69	0.80	1.00	0.00	11.74	68.95	0.00	2,800.3	0.0	239.27	443.16	682.43
11	181.0	9.17	2.588	4.70	0.00	0.17	2.68	0.80	1.00	0.00	4.78	20.28	0.00	881.0	0.0	100.04	135.95	235.99
12	193.5	9.35	0.000	9.39	0.00	0.15	2.77	0.80	1.00	0.00	5.41	12.79	0.00	1,096.5	0.0	119.14	94.25	213.39
13	213.5	9.61	0.000	15.64	0.00	0.15	2.77	0.80	1.00	0.00	9.01	19.99	0.00	1,809.3	0.0	204.23	153.71	357.94
14	233.5	9.86	3.885	7.05	0.00	0.17	2.68	0.80	1.00	0.00	7.17	11.99	0.00	1,160.5	0.0	161.43	94.62	256.05
15	243.5	9.98	1.036	2.35	0.00	0.16	2.73	0.80	1.00	0.00	2.18	4.00	0.00	421.6	0.0	50.47	31.92	82.39
16	253.5	10.10	6.216	7.05	0.00	0.21	2.56	0.80	1.00	0.00	9.08	10.98	0.00	1,534.6	0.0	199.43	89.01	288.44
17	270.5	10.29	4.015	9.03	0.00	0.16	2.72	0.80	1.00	0.00	8.41	12.37	0.00	1,588.0	0.0	199.96	104.47	304.43
														<b>29,084.4</b>	<b>0.0</b>	<b>6,230.18</b>		

## Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.0D + 1.0W 90° Wind	1.0D + 1.0W 60 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

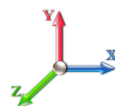
Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	0.5	5.48	12.800	0.00	0.00	1.00	2.10	0.85	1.00	0.00	10.88	3.95	0.00	947.0	0.0	106.49	0.00	106.49
2	3.5	5.48	0.000	3.31	0.00	0.16	2.74	0.85	1.00	0.00	1.92	19.75	0.00	544.3	0.0	24.60	77.36	101.96
3	8.5	5.48	1.032	2.56	0.00	0.17	2.70	0.85	1.00	0.00	2.35	19.75	0.00	600.5	0.0	29.54	77.36	106.90
4	18.5	5.48	0.000	9.99	0.00	0.16	2.74	0.85	1.00	0.00	5.77	59.26	0.00	1,632.8	0.0	73.72	232.08	305.80
5	38.5	5.89	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	98.76	0.00	2,721.3	0.0	132.06	415.72	547.78
6	63.5	6.80	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	98.76	0.00	3,057.3	0.0	187.15	479.62	666.76
7	88.5	7.48	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	95.99	0.00	3,008.8	0.0	201.38	514.67	716.05
8	113.5	8.03	0.000	16.66	0.00	0.16	2.74	0.85	1.00	0.00	9.62	75.85	0.00	2,503.0	0.0	179.85	433.17	613.02
9	138.5	8.50	5.162	12.79	0.00	0.17	2.70	0.85	1.00	0.00	11.75	71.59	0.00	2,777.8	0.0	228.87	436.39	665.26
10	163.5	8.91	5.829	12.31	0.00	0.17	2.69	0.85	1.00	0.00	12.03	68.95	0.00	2,800.3	0.0	245.21	443.16	688.36
11	181.0	9.17	2.588	4.70	0.00	0.17	2.68	0.85	1.00	0.00	4.91	20.28	0.00	881.0	0.0	102.75	135.95	238.69
12	193.5	9.35	0.000	9.39	0.00	0.15	2.77	0.85	1.00	0.00	5.41	12.79	0.00	1,096.5	0.0	119.14	94.25	213.39
13	213.5	9.61	0.000	15.64	0.00	0.15	2.77	0.85	1.00	0.00	9.01	19.99	0.00	1,809.3	0.0	204.23	153.71	357.94
14	233.5	9.86	3.885	7.05	0.00	0.17	2.68	0.85	1.00	0.00	7.37	11.99	0.00	1,160.5	0.0	165.80	94.62	260.42
15	243.5	9.98	1.036	2.35	0.00	0.16	2.73	0.85	1.00	0.00	2.23	4.00	0.00	421.6	0.0	51.67	31.92	83.59
16	253.5	10.10	6.216	7.05	0.00	0.21	2.56	0.85	1.00	0.00	9.39	10.98	0.00	1,534.6	0.0	206.26	89.01	295.27
17	270.5	10.29	4.015	9.03	0.00	0.16	2.72	0.85	1.00	0.00	8.61	12.37	0.00	1,588.0	0.0	204.74	104.47	309.20
														<b>29,084.4</b>	<b>0.0</b>	<b>6,276.90</b>		



## Force/Stress Compression Summary

**Structure:** CT04877-A-SBA  
**Site Name:** Waterbury 2, CT  
**Height:** 280.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

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

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### LEG MEMBERS

Sect	Top Elev	Member	Force (kips)		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls	
							X	Y	Z					
1	1	WBM - W18 x 46	-150.49	1.2D + 1.0Di + 1.0Wi	60° Wind	2.52	100	100	100	23.41	50.00	583.64	25.8	Member Y
2	6	SOL - 2 1/2" SOLID	-65.58	1.2D + 1.0Di + 1.0Wi	90° Wind	5.00	100	100	100	96.00	36.00	97.90	67.0	Member X
3	11	SOL - 2 1/2" SOLID	-67.11	1.2D + 1.0Di + 1.0Wi	60° Wind	5.00	100	100	100	96.00	36.00	97.90	68.5	Member X
4	26	SOL - 2 1/2" SOLID	-69.23	1.2D + 1.0Di + 1.0Wi	60° Wind	5.00	100	100	100	96.00	36.00	97.90	70.7	Member X
5	51	SOL - 2 1/2" SOLID	-69.46	1.2D + 1.0Di + 1.0Wi	60° Wind	5.00	100	100	100	96.00	36.00	97.90	70.9	Member X
6	76	SOL - 2 1/2" SOLID	-65.95	1.2D + 1.0Di + 1.0Wi	60° Wind	5.00	100	100	100	96.00	36.00	97.90	67.4	Member X
7	101	SOL - 2 1/2" SOLID	-55.80	1.2D + 1.0Di + 1.0Wi	90° Wind	5.00	100	100	100	96.00	36.00	97.90	57.0	Member X
8	126	SOL - 2 1/2" SOLID	-55.45	1.2D + 1.0Di + 1.0Wi	90° Wind	5.00	100	100	100	96.00	36.00	97.90	56.6	Member X
9	151	SOL - 2 1/2" SOLID	-50.53	1.2D + 1.0Di + 1.0Wi	Normal	5.00	100	100	100	96.00	36.00	97.90	51.6	Member X
10	176	SOL - 2 1/2" SOLID	-52.92	1.2D + 1.6W	Normal Wind	5.00	100	100	100	96.00	36.00	97.90	54.1	Member X
11	186	SOL - 2 1/4" SOLID	-43.00	1.2D + 1.6W	60° Wind	5.00	100	100	100	106.67	36.00	70.77	60.8	Member X
12	201	SOL - 2 1/4" SOLID	-47.76	1.2D + 1.6W	60° Wind	5.00	100	100	100	106.67	36.00	70.77	67.5	Member X
13	226	SOL - 2 1/4" SOLID	-44.37	1.2D + 1.6W	60° Wind	5.00	100	100	100	106.67	36.00	70.77	62.7	Member X
14	241	SOL - 2 1/4" SOLID	-31.39	1.2D + 1.6W	60° Wind	5.00	100	100	100	106.67	36.00	70.77	44.4	Member X
15	246	SOL - 2 1/4" SOLID	-23.38	1.2D + 1.0Di + 1.0Wi	60° Wind	5.00	100	100	100	106.67	36.00	70.77	33.0	Member X
16	261	SOL - 2 1/4" SOLID	-27.00	1.2D + 1.6W	Normal Wind	5.00	100	100	100	106.67	36.00	70.77	38.2	Member X
17	280	SOL - 2 1/4" SOLID	-13.81	1.2D + 1.6W	Normal Wind	4.75	100	100	100	101.33	36.00	75.03	18.4	Member X

### HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Shear Bear		Use %	Controls	
							X	Y	Z				Cap (kips)	Cap (kips)			
1	1									0.00	0	0					
2	6	PSP - ROHN 1 1/2X11G	-1.94	1.2D + 1.6W	90° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	19	Member X
3	11	PSP - ROHN 1 1/2X11G	-1.72	1.2D + 1.6W	90° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	17	Member X
4	26	PSP - ROHN 1 1/2X11G	-0.72	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	7	Member X
5	51	PSP - ROHN 1 1/2X11G	-0.80	1.2D + 1.6W	60° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	8	Member X
6	76	PSP - ROHN 1 1/2X11G	-0.14	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	1	Member X
7	101	PSP - ROHN 1 1/2X11G	-0.17	0.9D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	2	Member X
8	126	PSP - ROHN 1 1/2X11G	-0.49	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	5	Member X
9	151	PSP - ROHN 1 1/2X11G	-2.05	0.9D + 1.6W	60° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	20	Member X
10	176	PSP - ROHN 1 1/2X11G	-4.53	1.2D + 1.6W	90° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	45	Member X
11	186	PSP - ROHN 1 1/2X11G	-1.63	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	16	Member X
12	201	PSP - ROHN 1 1/2X11G	-1.02	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	10	Member X
13	226	PSP - ROHN 1 1/2X11G	-0.91	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	9	Member X
14	241	PSP - ROHN 1 1/2X11G	-1.59	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	16	Member X
15	246	PSP - ROHN 1 1/2X11G	-3.03	0.9D + 1.6W	90° Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	30	Member X
16	261	PSP - ROHN 1 1/2X11G	-3.23	0.9D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	32	Member X
17	280	PSP - ROHN 1 1/2X11G	-0.82	1.2D + 1.6W	Normal Wind	4.00	100	100	100	98.16	36.00	10.15	1	1	12.43	8	Member X

### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Shear Bear		Use %	Controls		
							X	Y	Z				Cap (kips)	Cap (kips)				
1	1					0.00					0.00	0	0					
2	6	PSP - ROHN 1 1/2X11G-3.10		1.2D + 1.6W	Normal Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43	65	Member X	
3	11	SAE - 2X2X0.375	-2.63	1.2D + 1.6W	Normal Wind	6.40	100	100	100	197.53	36.00	7.87	1	1	12.43	22.1	33	Member Z
4	26	PSP - ROHN 1 1/2X11G-2.39		1.2D + 1.6W	Normal Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43		50	Member X
5	51	PSP - ROHN 1 1/2X11G-1.32		1.2D + 1.6W	60° Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43		28	Member X
6	76	DAE - 2X2X0.1875	-4.31	1.2D + 1.6W	90° Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	21	Member Y
7	101	DAE - 2X2X0.1875	-5.24	1.2D + 1.6W	90° Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	26	Member Y

## Force/Stress Compression Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap		Bear Cap (kips)	Use %	Controls
						X	Y	Z						(kips)	(kips)			
8	126	PSP - ROHN 1 1/2X11G-3.24		1.2D + 1.6W 60° Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43		68	Member X	
9	151	DAE - 2X2X0.1875	-6.62	1.2D + 1.6W 90° Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	33	Member Y	
10	176	DAE - 2X2X0.1875	-9.79	1.2D + 1.6W 60° Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	48	Member Y	
11	186	SAE - 2.5X2.5X0.1875	-8.05	1.2D + 1.6W 60° Wind	6.40	100	100	100	155.23	36.00	8.46	1	1	12.43	9.79	95	Member Z	
12	201	PSP - ROHN 1 1/2X11G-3.69		1.2D + 1.6W 60° Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43		77	Member X	
13	226	PSP - ROHN 1 1/2X11G-3.65		1.2D + 1.6W Normal Wind	6.40	100	100	100	157.13	36.00	4.76	1	1	12.43		77	Member X	
14	241	SAE - 2.5X2.5X0.1875	-4.65	1.2D + 1.6W Normal Wind	6.40	100	100	100	155.23	36.00	8.46	1	1	12.43	9.79	55	Member Z	
15	246	DAE - 2X2X0.1875	-5.03	1.2D + 1.6W Normal Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	25	Member Y	
16	261	DAE - 2X2X0.1875	-4.43	1.2D + 1.6W 60° Wind	6.40	100	100	50	125.27	36.00	20.28	2	1	24.86	50.2	22	Member Y	
17	280	DAE - 2X2X0.1875	-3.34	1.2D + 1.6W 60° Wind	6.21	100	100	50	121.49	36.00	21.30	2	1	24.86	50.2	16	Member Y	

## Force/Stress Tension Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>12/20/2021</b>
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	1				0	0.00		
2	6				0	0.00		
3	11				0	0.00		
4	26				0	0.00		
5	51				0	0.00		
6	76				0	0.00		
7	101				0	0.00		
8	126				0	0.00		
9	151				0	0.00		
10	176	SOL - 2 1/2" SOLID	13.43	0.9D + 1.6W 60° Wind	36	159.04	8.4	Member
11	186	SOL - 2 1/4" SOLID	6.72	0.9D + 1.6W Normal Wind	36	128.83	5.2	Member
12	201	SOL - 2 1/4" SOLID	12.88	0.9D + 1.6W Normal Wind	36	128.83	10.0	Member
13	226	SOL - 2 1/4" SOLID	11.30	0.9D + 1.6W Normal Wind	36	128.83	8.8	Member
14	241				0	0.00		
15	246				0	0.00		
16	261	SOL - 2 1/4" SOLID	21.12	0.9D + 1.6W 60° Wind	36	128.83	16.4	Member
17	280	SOL - 2 1/4" SOLID	11.30	0.9D + 1.6W 60° Wind	36	128.83	8.8	Member

### HORIZONTAL MEMBERS

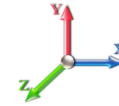
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	1	WBM - W18 x 46	78.56	1.2D + 1.0Di + 1.0Wi 6C	36	437.40	0	0				18.0	Member
2	6	PSP - ROHN 1 1/2X11GA	1.80	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			14.5	Bolt Shear
3	11	PSP - ROHN 1 1/2X11GA	1.50	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			12.1	Bolt Shear
4	26	PSP - ROHN 1 1/2X11GA	0.74	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			5.9	Bolt Shear
5	51	PSP - ROHN 1 1/2X11GA	1.01	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			8.2	Bolt Shear
6	76	PSP - ROHN 1 1/2X11GA	0.38	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			3.0	Bolt Shear
7	101	PSP - ROHN 1 1/2X11GA	2.17	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			17.5	Bolt Shear
8	126	PSP - ROHN 1 1/2X11GA	2.34	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			18.8	Bolt Shear
9	151	PSP - ROHN 1 1/2X11GA	4.31	1.2D + 1.6W 90° Wind	36	16.85	1	1	12.43			34.7	Bolt Shear
10	176	PSP - ROHN 1 1/2X11GA	5.27	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			42.4	Bolt Shear
11	186	PSP - ROHN 1 1/2X11GA	1.67	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			13.4	Bolt Shear
12	201	PSP - ROHN 1 1/2X11GA	1.38	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			11.1	Bolt Shear
13	226	PSP - ROHN 1 1/2X11GA	2.34	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			18.8	Bolt Shear
14	241	PSP - ROHN 1 1/2X11GA	2.97	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			23.9	Bolt Shear
15	246	PSP - ROHN 1 1/2X11GA			36	0.00	0	0					
16	261	PSP - ROHN 1 1/2X11GA	7.64	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			61.4	Bolt Shear
17	280	PSP - ROHN 1 1/2X11GA	0.69	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			5.6	Bolt Shear

### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	1	-	0.00		50	0.00	0	0					
2	6	PSP - ROHN 1 1/2X11GA	3.23	1.2D + 1.6W 90° Wind	36	16.85	1	1	12.43			26.0	Bolt Shear
3	11	SAE - 2X2X0.375	3.17	1.2D + 1.6W 90° Wind	36	44.06	1	1	12.43	22.19	15.75	25.5	Bolt Shear
4	26	PSP - ROHN 1 1/2X11GA	2.29	1.2D + 1.6W 90° Wind	36	16.85	1	1	12.43			18.4	Bolt Shear
5	51	PSP - ROHN 1 1/2X11GA	1.13	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			9.1	Bolt Shear
6	76	DAE - 2X2X0.1875	3.56	1.2D + 1.6W 60° Wind	36	46.33	2	1	24.86	50.24	27.14	14.3	Bolt Shear
7	101	DAE - 2X2X0.1875	5.50	1.2D + 1.6W 90° Wind	36	46.33	2	1	24.86	50.24	27.14	22.1	Bolt Shear
8	126	PSP - ROHN 1 1/2X11GA	2.48	1.2D + 1.6W 60° Wind	36	16.85	1	1	12.43			19.9	Bolt Shear

## Force/Stress Tension Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



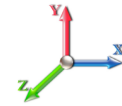
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### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
9	151	DAE - 2X2X0.1875	5.54	1.2D + 1.6W Normal Wi	36	46.33	2	1	24.86	50.24	27.14	22.3	Bolt Shear
10	176	DAE - 2X2X0.1875	9.92	1.2D + 1.6W 60° Wind	36	46.33	2	1	24.86	50.24	27.14	39.9	Bolt Shear
11	186	SAE - 2.5X2.5X0.1875	6.92	1.2D + 1.6W 90° Wind	36	29.22	1	1	12.43	9.79	9.53	72.6	Blck Shear
12	201	PSP - ROHN 1 1/2X11GA	1.67	0.9D + 1.6W 90° Wind	36	16.85	1	1	12.43			13.5	Bolt Shear
13	226	PSP - ROHN 1 1/2X11GA	3.25	1.2D + 1.6W Normal Wi	36	16.85	1	1	12.43			26.2	Bolt Shear
14	241	SAE - 2.5X2.5X0.1875	4.21	1.2D + 1.6W Normal Wi	36	29.22	1	1	12.43	9.79	9.53	44.2	Blck Shear
15	246	DAE - 2X2X0.1875	2.72	1.2D + 1.6W Normal Wi	36	46.33	2	1	24.86	50.24	27.14	10.9	Bolt Shear
16	261	DAE - 2X2X0.1875	4.52	0.9D + 1.6W 90° Wind	36	46.33	2	1	24.86	50.24	27.14	18.2	Bolt Shear
17	280	DAE - 2X2X0.1875	3.01	0.9D + 1.6W Normal Wi	36	46.33	2	1	24.86	50.24	27.14	12.1	Bolt Shear

## Seismic Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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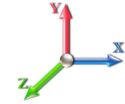
**Load Case:** 1.2D + 1.0E

<b>Dead Load Factor</b>	1.20	<b>Sds</b>	0.201	<b>Ss</b>	0.1890	<b>Fa</b>	1.6000	<b>Ke</b>	1.0000
<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.107	<b>S1</b>	0.0670	<b>Fv</b>	2.4000	<b>Kg</b>	0.0064
<b>Seismic Importance Factor</b>	1.00	<b>SA</b>	0.000	<b>R</b>	2.5000	<b>Vs</b>	3.3907	<b>f1</b>	2.1745

Sect #	Elev (ft)	Wz (lb)	Lateral			Fsz (lb)
			a	b	c	
1	0.50	946.99	0.00	0.00	0.00	0.30
2	3.50	544.25	0.00	0.00	0.00	1.21
3	8.50	600.53	0.00	0.00	0.00	3.24
4	18.50	1632.7	0.00	0.00	0.00	19.20
5	38.50	2721.2	0.00	0.00	0.00	66.59
6	63.50	3057.2	0.00	0.00	0.00	123.39
7	88.50	3658.3	0.00	0.00	0.00	205.77
8	113.50	2685.0	0.00	0.00	0.00	193.69
9	138.50	3000.8	0.00	0.00	0.00	264.15
10	163.50	2800.2	0.00	0.00	0.00	290.99
11	181.00	4605.5	0.00	0.00	0.00	529.81
12	193.50	3164.0	0.00	0.00	0.00	389.12
13	213.50	1809.2	0.00	0.00	0.00	245.51
14	233.50	1160.4	0.00	0.00	0.00	172.22
15	243.50	421.60	0.00	0.00	0.00	65.25
16	253.50	1728.5	0.00	0.00	0.00	278.50
17	270.50	3151.0	0.00	0.00	0.00	541.72

## Seismic Section Forces

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.0E

<b>Dead Load Factor</b>	0.90	<b>Sds</b> 0.201	<b>Ss</b> 0.1890	<b>Fa</b> 1.6000	<b>Ke</b> 1.0000
<b>Seismic Load Factor</b>	1.00	<b>Sd1</b> 0.107	<b>S1</b> 0.0670	<b>Fv</b> 2.4000	<b>Kg</b> 0.0064
<b>Seismic Importance Factor</b>	1.00	<b>SA</b> 0.000	<b>R</b> 2.5000	<b>Vs</b> 3.3907	<b>f1</b> 2.1745

Sect #	Elev (ft)	Wz (lb)	Lateral			Fsz (lb)
			a	b	c	
1	0.50	946.99	0.00	0.00	0.00	0.30
2	3.50	544.25	0.00	0.00	0.00	1.21
3	8.50	600.53	0.00	0.00	0.00	3.24
4	18.50	1632.7	0.00	0.00	0.00	19.20
5	38.50	2721.2	0.00	0.00	0.00	66.59
6	63.50	3057.2	0.00	0.00	0.00	123.39
7	88.50	3658.3	0.00	0.00	0.00	205.77
8	113.50	2685.0	0.00	0.00	0.00	193.69
9	138.50	3000.8	0.00	0.00	0.00	264.15
10	163.50	2800.2	0.00	0.00	0.00	290.99
11	181.00	4605.5	0.00	0.00	0.00	529.81
12	193.50	3164.0	0.00	0.00	0.00	389.12
13	213.50	1809.2	0.00	0.00	0.00	245.51
14	233.50	1160.4	0.00	0.00	0.00	172.22
15	243.50	421.60	0.00	0.00	0.00	65.25
16	253.50	1728.5	0.00	0.00	0.00	278.50
17	270.50	3151.0	0.00	0.00	0.00	541.72

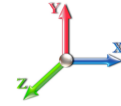
## Support Forces Summary

**Structure:** CT04877-A-SBA  
**Site Name:** Waterbury 2, CT  
**Height:** 280.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	0.01	147.29	-1.89	
	A1	0.00	-3.61	1.57	
	A1b	34.22	-47.65	-21.20	
	A1a	-34.23	-47.67	-21.18	
1.2D + 1.6W 60° Wind	1	-2.12	124.71	-1.24	
	A1	-0.98	-11.18	7.56	
	A1b	6.05	-11.22	-4.63	
	A1a	-39.58	-54.24	-22.84	
1.2D + 1.6W 90° Wind	1	-2.29	138.77	-0.13	
	A1	-1.32	-30.22	24.75	
	A1b	2.14	-5.18	-1.80	
	A1a	-40.99	-55.16	-22.83	
0.9D + 1.6W Normal Wind	1	0.01	136.00	-2.30	
	A1	0.00	-3.64	1.59	
	A1b	34.16	-47.61	-21.16	
	A1a	-34.17	-47.62	-21.14	
0.9D + 1.6W 60° Wind	1	-2.17	113.69	-1.26	
	A1	-0.98	-11.27	7.62	
	A1b	6.11	-11.31	-4.66	
	A1a	-39.59	-54.28	-22.84	
0.9D + 1.6W 90° Wind	1	-2.37	127.52	-0.11	
	A1	-1.32	-30.20	24.71	
	A1b	2.16	-5.23	-1.82	
	A1a	-40.93	-55.12	-22.80	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.02	193.13	-0.95	
	A1	0.00	-11.40	10.33	
	A1b	21.61	-28.25	-13.49	
	A1a	-21.63	-28.28	-13.50	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.72	193.92	-0.44	
	A1	-0.86	-17.39	15.28	
	A1b	12.78	-17.40	-8.37	
	A1a	-26.37	-34.20	-15.22	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.87	193.60	0.01	
	A1	-1.05	-22.82	20.37	
	A1b	9.86	-13.16	-6.20	
	A1a	-25.47	-32.55	-14.18	
1.2D + 1.0E	1	0.00	102.70	0.03	
	A1	0.00	-15.11	12.96	
	A1b	14.18	-19.69	-8.19	
	A1a	-14.18	-19.69	-8.19	
0.9D + 1.0E	1	0.00	92.16	0.03	
	A1	0.00	-15.34	13.13	
	A1b	14.32	-19.92	-8.28	
	A1a	-14.32	-19.92	-8.28	

1.0D + 1.0W Normal Wind	1	0.01	86.97	-0.69
	A1	0.00	-8.42	6.46
	A1b	13.41	-18.89	-8.02
	A1a	-13.42	-18.90	-8.02
-----				
1.0D + 1.0W 60° Wind	1	-0.56	87.20	-0.33
	A1	-0.24	-12.08	9.56
	A1b	8.15	-12.08	-4.98
	A1a	-16.12	-22.36	-9.30
-----				
1.0D + 1.0W 90° Wind	1	-0.66	87.08	0.00
	A1	-0.29	-15.45	12.56
	A1b	6.28	-9.49	-3.77
	A1a	-15.49	-21.42	-8.80
-----				

<b>Max Reactions (kips)</b>	<b>Base</b>	<b>Anchor 1</b>
<b>Vertical</b>	193.92	55.16
<b>Horizontal</b>	2.51	46.92



## Cable Forces Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kips)	Applied Tension (kips)	Use %
1.2D + 1.6W Normal Wind	76.00	9/16 EHS	A1	17	21.00	0.16	1
			A1b	17a	21.00	11.47	55
			A1a	17b	21.00	11.45	55
	156.00	7/8 EHS	A1	33	47.82	0.50	1
			A1b	33a	47.82	25.22	53
			A1a	33b	47.82	25.21	53
	251.00	3/4 EHS	A1	T3	34.98	2.08	6
			A1a	T3b	34.98	14.38	41
			A1b	T3a	34.98	13.08	37
			A1b	T3	34.98	14.74	42
			A1a	T3a	34.98	13.47	39
			A1	T3b	34.98	2.11	6
	1.2D + 1.6W 60° Wind	76.00	9/16 EHS	A1	17	21.00	1.41
A1b				17a	21.00	1.39	7
A1a				17b	21.00	12.54	60
156.00		7/8 EHS	A1	33	47.82	3.46	7
			A1b	33a	47.82	3.43	7
			A1a	33b	47.82	28.43	59
251.00		3/4 EHS	A1	T3	34.98	5.06	14
			A1a	T3b	34.98	15.95	46
			A1b	T3a	34.98	4.69	13
			A1b	T3	34.98	5.17	15
			A1a	T3a	34.98	16.24	46
			A1	T3b	34.98	4.72	14
1.2D + 1.6W 90° Wind		76.00	9/16 EHS	A1	17	21.00	6.92
	A1b			17a	21.00	0.34	2
	A1a			17b	21.00	13.34	64
	156.00	7/8 EHS	A1	33	47.82	14.93	31
			A1b	33a	47.82	1.12	2
			A1a	33b	47.82	29.57	62
	251.00	3/4 EHS	A1	T3	34.98	10.06	29
			A1a	T3b	34.98	15.42	44
			A1b	T3a	34.98	2.62	7
			A1b	T3	34.98	2.77	8
			A1a	T3a	34.98	16.39	47
			A1	T3b	34.98	8.87	25
	0.9D + 1.6W Normal Wind	76.00	9/16 EHS	A1	17	21.00	0.16
A1b				17a	21.00	11.41	54
A1a				17b	21.00	11.40	54
156.00		7/8 EHS	A1	33	47.82	0.50	1
			A1b	33a	47.82	25.18	53
			A1a	33b	47.82	25.16	53
251.00		3/4 EHS	A1	T3	34.98	2.10	6
			A1a	T3b	34.98	14.39	41
			A1b	T3a	34.98	13.09	37
			A1b	T3	34.98	14.75	42
			A1a	T3a	34.98	13.48	39
			A1	T3b	34.98	2.12	6
0.9D + 1.6W 60° Wind		76.00	9/16 EHS	A1	17	21.00	1.42
	A1b			17a	21.00	1.39	7
	A1a			17b	21.00	12.52	60
	156.00	7/8 EHS	A1	33	47.82	3.49	7
			A1b	33a	47.82	3.47	7

0.9D + 1.6W 60° Wind	156.00	7/8 EHS	A1a	33b	47.82	28.43	59
	251.00	3/4 EHS	A1	T3	34.98	5.10	15
			A1a	T3b	34.98	15.98	46
			A1b	T3a	34.98	4.72	13
			A1b	T3	34.98	5.21	15
			A1a	T3a	34.98	16.27	47
0.9D + 1.6W 90° Wind	76.00	9/16 EHS	A1	T3b	34.98	4.76	14
			A1	17	21.00	6.89	33
			A1b	17a	21.00	0.34	2
	156.00	7/8 EHS	A1a	17b	21.00	13.29	63
			A1	33	47.82	14.89	31
			A1b	33a	47.82	1.12	2
	251.00	3/4 EHS	A1a	33b	47.82	29.52	62
			A1	T3	34.98	10.07	29
			A1a	T3b	34.98	15.44	44
			A1b	T3a	34.98	2.64	8
			A1b	T3	34.98	2.79	8
			A1a	T3a	34.98	16.40	47
1.2D + 1.0Di + 1.0Wi Normal Wind	76.00	9/16 EHS	A1	T3b	34.98	8.89	25
			A1	17	21.00	3.60	17
			A1b	17a	21.00	7.85	37
	156.00	7/8 EHS	A1a	17b	21.00	7.83	37
			A1	33	47.82	5.67	12
			A1b	33a	47.82	14.00	29
	251.00	3/4 EHS	A1a	33b	47.82	14.06	29
			A1	T3	34.98	5.50	16
			A1a	T3b	34.98	10.98	31
			A1b	T3a	34.98	10.47	30
			A1b	T3	34.98	11.07	32
			A1a	T3a	34.98	10.56	30
1.2D + 1.0Di + 1.0Wi 60° Wind	76.00	9/16 EHS	A1	T3b	34.98	5.60	16
			A1	17	21.00	4.81	23
			A1b	17a	21.00	4.79	23
	156.00	7/8 EHS	A1a	17b	21.00	8.88	42
			A1	33	47.82	8.14	17
			A1b	33a	47.82	8.06	17
	251.00	3/4 EHS	A1a	33b	47.82	16.99	36
			A1	T3	34.98	7.88	23
			A1a	T3b	34.98	12.64	36
			A1b	T3a	34.98	7.46	21
			A1b	T3	34.98	7.96	23
			A1a	T3a	34.98	12.73	36
1.2D + 1.0Di + 1.0Wi 90° Wind	76.00	9/16 EHS	A1	T3b	34.98	7.45	21
			A1	17	21.00	6.34	30
			A1b	17a	21.00	3.85	18
	156.00	7/8 EHS	A1a	17b	21.00	8.67	41
			A1	33	47.82	11.04	23
			A1b	33a	47.82	6.19	13
	251.00	3/4 EHS	A1a	33b	47.82	16.24	34
			A1	T3	34.98	9.52	27
			A1a	T3b	34.98	11.96	34
			A1b	T3a	34.98	6.14	18
			A1b	T3	34.98	6.42	18
			A1a	T3a	34.98	12.26	35
1.2D + 1.0E	76.00	9/16 EHS	A1	T3b	34.98	8.93	26
			A1	17	21.00	4.30	20
			A1b	17a	21.00	4.83	23
	156.00	7/8 EHS	A1a	17b	21.00	4.83	23
			A1	33	47.82	7.33	15
			A1b	33a	47.82	9.62	20
	251.00	3/4 EHS	A1a	33b	47.82	9.62	20
			A1	T3	34.98	4.79	14
			A1a	T3b	34.98	6.32	18
			A1b	T3a	34.98	6.25	18
			A1b	T3	34.98	6.34	18
			A1a	T3a	34.98	6.27	18

1.2D + 1.0E	251.00	3/4 EHS	A1	T3b	34.98	4.82	14
0.9D + 1.0E	76.00	9/16 EHS	A1	17	21.00	4.33	21
			A1b	17a	21.00	4.85	23
			A1a	17b	21.00	4.85	23
	156.00	7/8 EHS	A1	33	47.82	7.43	16
			A1b	33a	47.82	9.73	20
			A1a	33b	47.82	9.73	20
	251.00	3/4 EHS	A1	T3	34.98	4.88	14
			A1a	T3b	34.98	6.40	18
			A1b	T3a	34.98	6.32	18
			A1b	T3	34.98	6.42	18
			A1a	T3a	34.98	6.35	18
			A1	T3b	34.98	4.89	14
1.0D + 1.0W Normal Wind	76.00	9/16 EHS	A1	17	21.00	1.60	8
			A1b	17a	21.00	4.32	21
			A1a	17b	21.00	4.31	21
	156.00	7/8 EHS	A1	33	47.82	3.37	7
			A1b	33a	47.82	9.18	19
			A1a	33b	47.82	9.21	19
	251.00	3/4 EHS	A1	T3	34.98	3.32	10
			A1a	T3b	34.98	6.29	18
			A1b	T3a	34.98	6.02	17
			A1b	T3	34.98	6.37	18
			A1a	T3a	34.98	6.11	17
			A1	T3b	34.98	3.42	10
1.0D + 1.0W 60° Wind	76.00	9/16 EHS	A1	17	21.00	2.48	12
			A1b	17a	21.00	2.48	12
			A1a	17b	21.00	5.15	25
	156.00	7/8 EHS	A1	33	47.82	5.29	11
			A1b	33a	47.82	5.26	11
			A1a	33b	47.82	11.13	23
	251.00	3/4 EHS	A1	T3	34.98	4.53	13
			A1a	T3b	34.98	7.10	20
			A1b	T3a	34.98	4.27	12
			A1b	T3	34.98	4.59	13
			A1a	T3a	34.98	7.17	21
			A1	T3b	34.98	4.31	12
1.0D + 1.0W 90° Wind	76.00	9/16 EHS	A1	17	21.00	3.39	16
			A1b	17a	21.00	1.83	9
			A1a	17b	21.00	4.93	23
	156.00	7/8 EHS	A1	33	47.82	7.22	15
			A1b	33a	47.82	3.87	8
			A1a	33b	47.82	10.62	22
	251.00	3/4 EHS	A1	T3	34.98	5.45	16
			A1a	T3b	34.98	6.79	19
			A1b	T3a	34.98	3.63	10
			A1b	T3	34.98	3.80	11
			A1a	T3a	34.98	6.95	20
			A1	T3b	34.98	5.15	15

## Analysis Summary

<b>Structure:</b> CT04877-A-SBA	<b>Code:</b> EIA/TIA-222-G	12/20/2021
<b>Site Name:</b> Waterbury 2, CT	<b>Exposure:</b> B	
<b>Height:</b> 280.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
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### Max Reactions

Base:	193.92 (Vertical)	2.51 (Horizontal)
Anchor 1:	55.16 (Vertical)	46.92 (Horizontal)

### Max Usages

Max Leg: 70.9% (1.2D + 1.0Di + 1.0Wi 60° Wind - Sect 5)  
 Max Diag: 95.2% (1.2D + 1.6W 60° Wind - Sect 11)  
 Max Horiz: 61.4% (1.2D + 1.6W 60° Wind - Sect 16)  
 Max Cable: 63.5% (1.2D + 1.6W 90° Wind) - Elev: 76 ft

### Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0E - Normal To Face	91.00	0.0133	0.2313	0.0218
	96.00	0.0231	0.2208	0.0236
	121.00	0.0313	0.1685	0.0249
	126.00	0.0274	0.1581	0.0596
	131.00	0.0345	0.1477	0.0268
	141.00	0.0354	0.1270	0.0281
	151.00	0.0497	0.1071	0.0597
	181.00	0.0681	0.0745	0.0493
	191.00	0.0750	0.0624	0.0339
	251.00	0.0846	-0.0087	0.0108
	261.00	0.0852	-0.0084	0.0154
	265.75	0.0864	-0.0084	0.0156
	270.50	0.0878	-0.0085	0.0163
	275.25	0.0891	-0.0085	0.0162
280.00	0.0921	-0.0088	0.0168	
0.9D + 1.6W 97 mph Wind at 60° From Face	91.00	0.4699	-0.2448	0.2519
	96.00	0.4892	-0.5903	0.2457
	121.00	0.5681	-0.5461	0.1843
	126.00	0.5818	-0.3020	0.1744
	131.00	0.5961	-0.5286	0.1707
	141.00	0.6207	-0.3903	0.1402
	151.00	0.6470	-0.4941	0.1753
	181.00	0.7850	-0.4059	0.2867
	191.00	0.8245	-0.3612	0.2244
	251.00	0.8564	-0.1011	0.1193
	261.00	0.8559	-0.0954	0.0545
	265.75	0.8611	-0.0949	0.0697
	270.50	0.8669	-0.0945	0.0703
	275.25	0.8730	-0.0940	0.0852
280.00	0.8847	-0.0981	0.0904	

0.9D + 1.6W 97 mph Wind at 90° From Face	91.00	0.6763	0.3107	0.3560
	96.00	0.7063	0.4141	0.3535
	121.00	0.8318	0.2082	0.2597
	126.00	0.8511	0.1669	0.2297
	131.00	0.8707	0.1261	0.2349
	141.00	0.9066	0.0443	0.1942
	151.00	0.9416	-0.0780	0.1218
	181.00	1.0894	-0.0591	0.2927
	191.00	1.1284	-0.0474	0.2063
	251.00	1.1359	0.0234	0.1503
	261.00	1.1352	0.0239	0.0291
	265.75	1.1374	0.0241	0.0452
	270.50	1.1401	0.0243	0.0381
	275.25	1.1429	0.0245	0.0660
280.00	1.1458	0.0246	0.0488	
-----				
0.9D + 1.6W 97 mph Wind at Normal To Face	91.00	0.8059	-0.2197	0.4215
	96.00	0.8381	-0.5717	0.3893
	121.00	0.9787	-0.5443	0.2782
	126.00	1.0025	-0.2959	0.3055
	131.00	1.0275	-0.5336	0.2579
	141.00	1.0692	-0.3911	0.2440
	151.00	1.1088	-0.5124	0.3649
	181.00	1.2764	-0.4327	0.3321
	191.00	1.3194	-0.3922	0.2372
	251.00	1.3469	-0.1593	0.1122
	261.00	1.3478	-0.1577	0.0620
	265.75	1.3528	-0.1576	0.0621
	270.50	1.3585	-0.1576	0.0780
	275.25	1.3646	-0.1575	0.0538
280.00	1.3764	-0.1590	0.1622	
-----				
1.0D + 1.0W 60 mph Wind at 60° From Face	91.00	0.0905	0.0763	0.0501
	96.00	0.0934	0.0970	0.0539
	121.00	0.1088	-0.0353	0.0379
	126.00	0.1109	0.0156	0.0515
	131.00	0.1142	-0.0440	0.0331
	141.00	0.1176	-0.0240	0.0197
	151.00	0.1212	-0.0606	0.0508
	181.00	0.1465	-0.0560	0.0528
	191.00	0.1523	-0.0511	0.0333
	251.00	0.1401	-0.0250	0.0421
	261.00	0.1366	-0.0242	0.0093
	265.75	0.1362	-0.0242	0.0024
	270.50	0.1361	-0.0242	0.0048
	275.25	0.1360	-0.0242	0.0015
280.00	0.1374	-0.0251	0.0243	
-----				
1.0D + 1.0W 60 mph Wind at 90° From Face	91.00	0.0891	0.2136	0.0487
	96.00	0.1013	0.2316	0.0547
	121.00	0.1156	0.1501	0.0355
	126.00	0.1100	0.1340	0.0465
	131.00	0.1160	0.1179	0.0307
	141.00	0.1157	0.0860	0.0167
	151.00	0.1231	0.0543	0.0369
	181.00	0.1420	0.0291	0.0481
	191.00	0.1480	0.0245	0.0250
	251.00	0.1272	0.0031	0.0601
	261.00	0.1236	0.0030	0.0227
	265.75	0.1226	0.0029	0.0153
	270.50	0.1217	0.0029	0.0175
	275.25	0.1208	0.0029	0.0133
280.00	0.1201	0.0029	0.0343	

1.0D + 1.0W 60 mph Wind at Normal To Face	91.00	0.0966	0.0510	0.0505
	96.00	0.0989	0.0720	0.0445
	121.00	0.1126	-0.0582	0.0258
	126.00	0.1153	-0.0071	0.0496
	131.00	0.1184	-0.0667	0.0215
	141.00	0.1208	-0.0456	0.0165
	151.00	0.1229	-0.0838	0.0633
	181.00	0.1433	-0.0716	0.0439
	191.00	0.1466	-0.0634	0.0191
	251.00	0.1165	-0.0379	0.0226
	261.00	0.1108	-0.0368	0.0193
	265.75	0.1091	-0.0366	0.0198
	270.50	0.1077	-0.0364	0.0156
	275.25	0.1063	-0.0362	0.0215
280.00	0.1063	-0.0366	0.0055	
-----				
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	91.00	0.1799	0.3068	0.0865
	96.00	0.2040	0.3097	0.0971
	121.00	0.2276	0.1943	0.0598
	126.00	0.2159	0.1713	0.0990
	131.00	0.2273	0.1482	0.0520
	141.00	0.2264	0.1022	0.0271
	151.00	0.2382	0.0560	0.0922
	181.00	0.2686	0.0198	0.0795
	191.00	0.2787	0.0115	0.0520
	251.00	0.2660	-0.0381	0.0745
	261.00	0.2594	-0.0365	0.0267
	265.75	0.2581	-0.0365	0.0162
	270.50	0.2573	-0.0365	0.0193
	275.25	0.2564	-0.0365	0.0131
280.00	0.2580	-0.0382	0.0440	
-----				
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	91.00	0.2048	0.4826	0.0878
	96.00	0.2376	0.4833	0.1005
	121.00	0.2582	0.3571	0.0505
	126.00	0.2375	0.3319	0.0882
	131.00	0.2542	0.3067	0.0388
	141.00	0.2414	0.2563	0.0210
	151.00	0.2565	0.2059	0.1083
	181.00	0.2636	0.1543	0.0624
	191.00	0.2662	0.1389	0.0526
	251.00	0.1984	0.0487	0.1710
	261.00	0.1899	0.0490	0.1256
	265.75	0.1872	0.0492	0.1150
	270.50	0.1853	0.0493	0.1183
	275.25	0.1838	0.0494	0.1136
280.00	0.1829	0.0495	0.1379	
-----				
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	91.00	0.2295	0.2656	0.0885
	96.00	0.2410	0.2688	0.0762
	121.00	0.2599	0.1555	0.0268
	126.00	0.2562	0.1329	0.0757
	131.00	0.2600	0.1103	0.0223
	141.00	0.2564	0.0651	0.0169
	151.00	0.2562	0.0200	0.0651
	181.00	0.2470	-0.0198	0.0463
	191.00	0.2378	-0.0267	0.0649
	251.00	0.0882	-0.0677	0.1537
	261.00	0.0578	-0.0663	0.1485
	265.75	0.0454	-0.0663	0.1498
	270.50	0.0333	-0.0663	0.1439
	275.25	0.0214	-0.0664	0.1511
280.00	0.0121	-0.0678	0.1230	

1.2D + 1.0E - Normal To Face	91.00	0.0130	0.2477	0.0220
	96.00	0.0234	0.2362	0.0241
	121.00	0.0316	0.1789	0.0254
	126.00	0.0271	0.1675	0.0629
	131.00	0.0346	0.1562	0.0273
	141.00	0.0353	0.1335	0.0284
	151.00	0.0501	0.1116	0.0627
	181.00	0.0684	0.0772	0.0499
	191.00	0.0753	0.0646	0.0343
	251.00	0.0850	-0.0092	0.0108
	261.00	0.0856	-0.0089	0.0155
	265.75	0.0869	-0.0089	0.0157
	270.50	0.0882	-0.0089	0.0164
	275.25	0.0895	-0.0090	0.0163
280.00	0.0926	-0.0093	0.0171	
-----				
1.2D + 1.6W 97 mph Wind at 60° From Face	91.00	0.4717	-0.2288	0.2534
	96.00	0.4909	-0.5754	0.2481
	121.00	0.5705	-0.5362	0.1864
	126.00	0.5844	-0.2930	0.1786
	131.00	0.5989	-0.5207	0.1726
	141.00	0.6238	-0.3843	0.1414
	151.00	0.6502	-0.4902	0.1791
	181.00	0.7891	-0.4039	0.2882
	191.00	0.8288	-0.3597	0.2252
	251.00	0.8613	-0.1023	0.1197
	261.00	0.8607	-0.0967	0.0549
	265.75	0.8659	-0.0962	0.0701
	270.50	0.8718	-0.0957	0.0709
	275.25	0.8779	-0.0952	0.0853
280.00	0.8898	-0.0994	0.0916	
-----				
1.2D + 1.6W 97 mph Wind at 90° From Face	91.00	0.6828	0.3276	0.3596
	96.00	0.7130	0.4299	0.3581
	121.00	0.8406	0.2189	0.2634
	126.00	0.8595	0.1766	0.2333
	131.00	0.8793	0.1348	0.2383
	141.00	0.9157	0.0509	0.1965
	151.00	0.9510	-0.0736	0.1268
	181.00	1.1000	-0.0567	0.2950
	191.00	1.1392	-0.0456	0.2077
	251.00	1.1476	0.0227	0.1498
	261.00	1.1470	0.0231	0.0291
	265.75	1.1492	0.0232	0.0456
	270.50	1.1519	0.0234	0.0385
	275.25	1.1547	0.0235	0.0663
280.00	1.1577	0.0236	0.0487	
-----				
1.2D + 1.6W 97 mph Wind at Normal To Face	91.00	0.8126	-0.2039	0.4251
	96.00	0.8449	-0.5569	0.3926
	121.00	0.9869	-0.5346	0.2809
	126.00	1.0111	-0.2872	0.3114
	131.00	1.0365	-0.5260	0.2605
	141.00	1.0786	-0.3854	0.2465
	151.00	1.1185	-0.5087	0.3700
	181.00	1.2877	-0.4309	0.3349
	191.00	1.3311	-0.3909	0.2391
	251.00	1.3603	-0.1606	0.1137
	261.00	1.3614	-0.1589	0.0636
	265.75	1.3665	-0.1589	0.0637
	270.50	1.3724	-0.1588	0.0797
	275.25	1.3786	-0.1588	0.0555
280.00	1.3906	-0.1603	0.1642	



Tower Engineering Solutions

# Guyed Tower Base Design

Date  
12/20/2021

<b>Customer Name:</b>	SBA Communications Corp	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	280
<b>Site Nmber:</b>	CT04877-A-SBA	<b>Engineer Name:</b>	H. You
<b>Engr. Number:</b>	120663	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations

**Structure Type:**

Guyed Tower

**Analysis or Design?**

Analysis

**Base Reactions (Factored):**

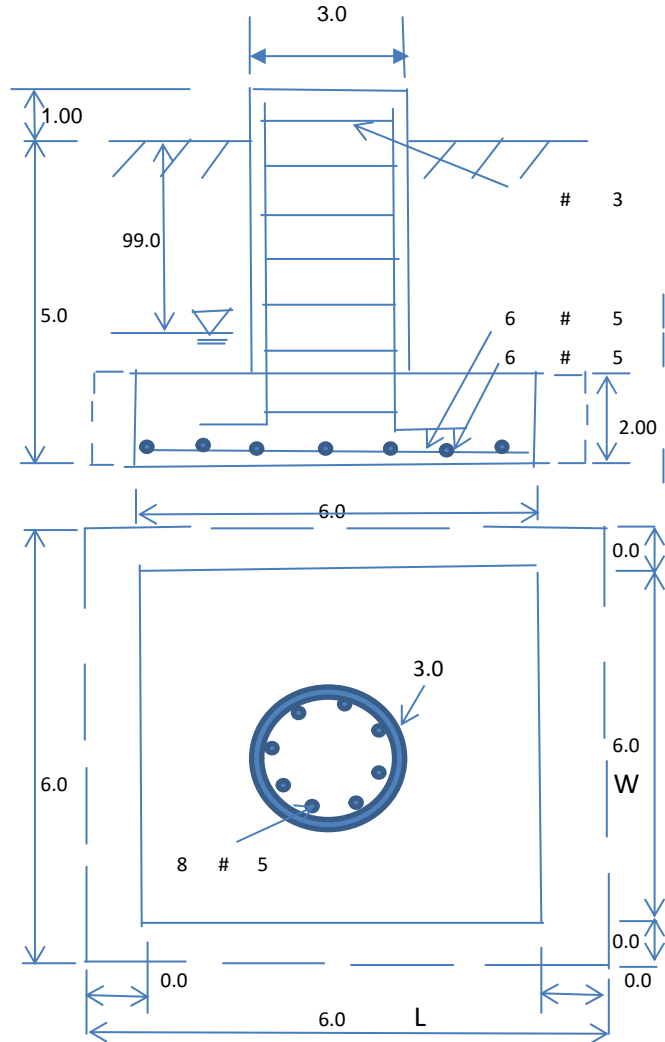
Axial Load (Kips):	193.9	Shear Force (Kips):	2.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	
Allowable overstress %:	5.0%		

**Foundation Geometries:**

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	3.0	Depth of Base BG (ft.):	5.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	6	Width of Pad (ft.):	6
Final Length of pad (ft)	6.0	Final width of pad (ft):	6.0

**Material Properties and Reabr Info:**

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	5	Tie / Stirrup Size #:	3	
Qty. of Vertical Rebars:	8	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	5	
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):	6	Qty. of Rebar in Pad (W):	6	



**Soil Design Parameters:**

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	62.6	pcf	
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad: 25
					Angle from Bottm of Pad: 25

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.6
Total Dry Soil Volume (cu. Ft.):	86.79	Total Dry Soil Weight (Kips):	10.85
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	10.85	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	100.27	Total Dry Concrete Weight (Kips):	15.04
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	15.04	Total Vertical Load on Base (Kips):	219.81

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	5722.8	<	Allowable Factored Soil Bearing (psf):	18000	0.32	OK!
Calculated Foundation Allowable Axail Capacity (Kips):	648.0	>	Design Factored Axial Load (Kips):	198	0.31	OK!

Load/  
Capacity  
Ratio



**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Load/  
Capacity  
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.31	Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn,Kips-Ft):	163.2	> Design Factored Moment (Mu, Kips-Ft)	10.0	0.06	OK!
Calculated Shear Capacity (Kips):	128.2	> Design Factored Shear (Kips):	2.5	0.02	OK!
Calculated Tension Capacity (Tn, Kips):	133.9	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	1795.2	> Design Factored Axial Load (Pu Kips):	193.9	0.11	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.17	OK!			
Pier Reinforcement Ratio:	0.002				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips);	141.3	> One-Way Factored Shear (L-Dir Kips):	0.0	0.00	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	141.3	> One-Way Factored Shear (W-Dir Kips)	0.0	0.00	OK!
Two-Way Design Shear Capacity (Kips):	699.0	> Two-Way Factored Shear (Kips):	98.9	0.14	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0012	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0012	OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	171.2	> Moment at Bottom ( L-Direct. K-Ft):	37.0	0.22	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	171.2	> Moment at Bottom ( W-Dir. Kips-Ft):	37.0	0.22	OK!

# Exhibit E

## **Mount Analysis**

January 17, 2022

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:** BOHVN00041A  
**Site Name:** SBA - Garden Circle

**SBA Network Services Designation:** **Site Number:** CT04877-A  
**Site Name:** Waterbury 2 CT  
**Application Number:** 168276, v2

**Engineering Firm Designation:** **Project Number:** 149447.003.01

**Site Data:** 207 Garden Circle, Waterbury, CT, 06704, New Haven County.  
Latitude 41.56972°, Longitude -73.01749°  
Guyed Tower  
8' Sector 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 47.4%)**

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

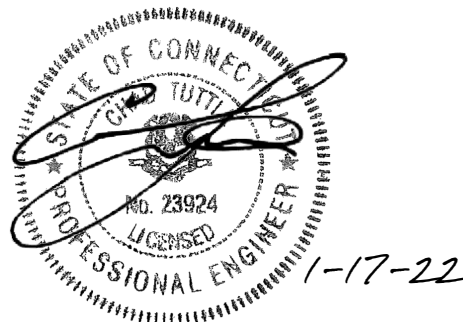
All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

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

Mount structural analysis prepared by: Andrew Fisher

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

Chad E. Tuttle, P.E.



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RISA-3D Output

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Additional Calculations

## 1) INTRODUCTION

The appurtenance mount consists of Commscope Sector mount (Part #MTC3975083) at 192 ft., attached to guyed at 207 Garden Circle, Waterbury, CT, 06704, New Haven County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 117 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category B, Topographic Category 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 30° 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	192	2	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		--	1	Raycap RDIDC-9181-PF-48	3

Note:

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

**Table 2 - Documents Provided**

Documents	Remarks	Reference	Source
Collo App	Proposed Loading	Date: 01/14/2022	SBA Network Services, LLC
RFDS		Date: 11/09/2021	

## 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 Horizontals	192	9.6	Pass
-	Support Arms	192	26.9	Pass
-	Diagonals	192	26.5	Pass
-	Connection Plates	192	21.9	Pass
-	Verticals	192	47.4	Pass
-	Tieback	192	4.2	Pass
-	Mount Pipes	192	11.5	Pass
-	Connection Bolts	192	7.8	Pass

#### 5) RECOMMENDATIONS

The Commscope sector mount, Part # MTC3975083 has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

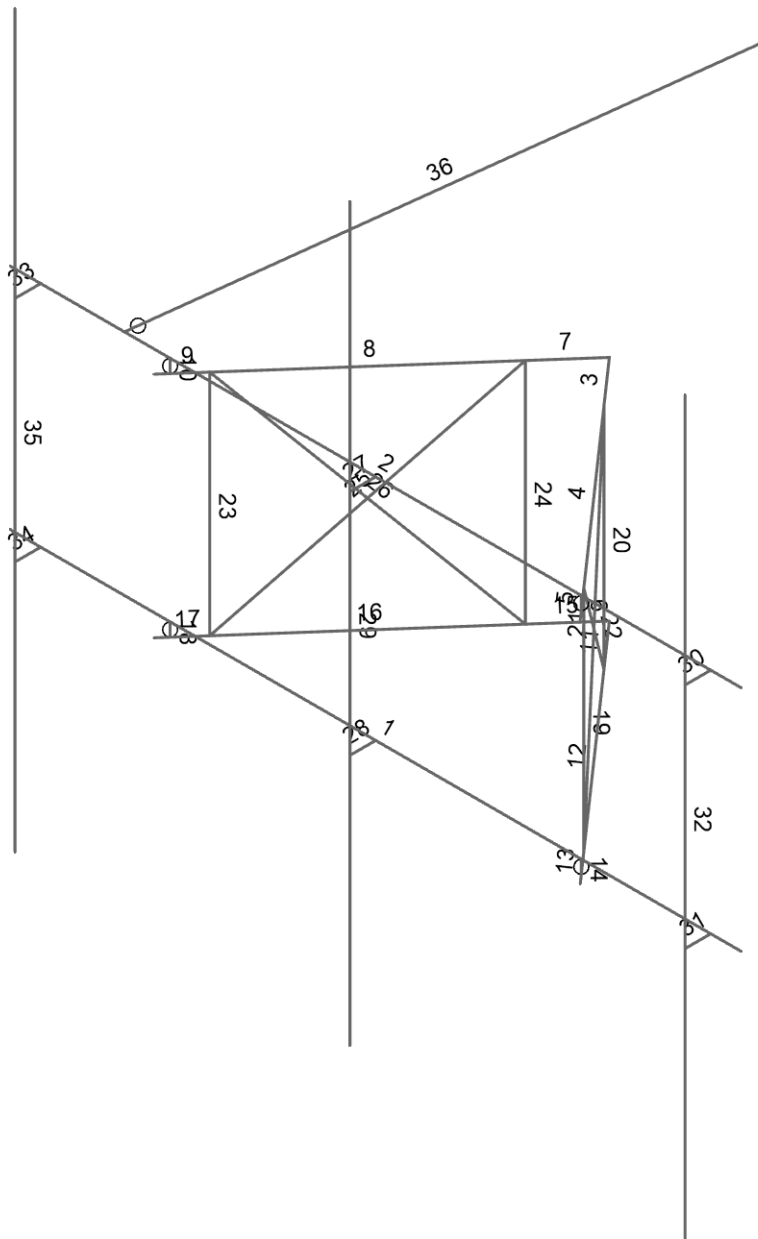
# APPENDIX A

(RISA-3D Output)



Envelope Only Solution		
B+T Group	CT04877-A - Waterbury 2 CT	SUP-1
SUP		Jan 15, 2022
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Envelope Only Solution

B+T Group

SUP

149447.003.01

CT04877-A - Waterbury 2 CT

SUP-2

Jan 15, 2022

149447\_003\_01\_Waterbury 2 CT\_...









Company : B+T Group  
 Designer : SUP  
 Job Number : 149447.003.01  
 Model Name : CT04877-A - Waterbury 2 CT

1/15/2022  
 5:34:23 PM  
 Checked By : \_\_\_\_\_

**Node Coordinates**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-4	-2.354167	2.796875	
2	2	4	-2.354167	2.796875	
3	3	-4	0.145833	2.796875	
4	4	4	0.145833	2.796875	
5	5	0.467947	0	0.771833	
6	6	0.385368	0	0.677994	
7	7	2.091999	0	2.61733	
8	8	2.00942	0	2.523491	
9	9	2.332579	0	2.890714	
10	10	2.25	0.145833	2.796875	
11	11	2.25	0	2.796875	
12	12	0	0	0.24008	
13	13	-0.467947	0	0.771833	
14	14	-0.385368	0	0.677994	
15	15	-2.091999	0	2.61733	
16	16	-2.00942	0	2.523491	
17	17	-2.332579	0	2.890714	
18	18	-2.25	0.145833	2.796875	
19	19	-2.25	0	2.796875	
20	20	0.467947	-2.5	0.771833	
21	21	0.385368	-2.5	0.677994	
22	22	2.091999	-2.5	2.61733	
23	23	2.00942	-2.5	2.523491	
24	24	2.332579	-2.5	2.890714	
25	25	2.25	-2.354167	2.796875	
26	26	2.25	-2.5	2.796875	
27	27	0	-2.5	0.24008	
28	28	-0.467947	-2.5	0.771833	
29	29	-0.385368	-2.5	0.677994	
30	30	-2.091999	-2.5	2.61733	
31	31	-2.00942	-2.5	2.523491	
32	32	-2.332579	-2.5	2.890714	
33	33	-2.25	-2.354167	2.796875	
34	34	-2.25	-2.5	2.796875	
35	35	0.430236	0	0.72898	
36	36	2.047131	-2.5	2.566344	
37	37	2.047131	0	2.566344	
38	38	0.430236	-2.5	0.72898	
39	39	-0.430236	0	0.72898	
40	40	-2.047131	-2.5	2.566344	
41	41	-2.047131	0	2.566344	
42	42	-0.430236	-2.5	0.72898	
43	43	0	0.145833	2.796875	
44	44	0	0.145833	3.078125	
45	45	0	-2.354167	2.796875	
46	46	0	-2.354167	3.078125	
47	47	0	2.895833	3.078125	
48	48	0	-5.104167	3.078125	
49	49	3.666667	0.145833	2.796875	
50	50	3.666667	0.145833	3.078125	
51	51	3.666667	-2.354167	2.796875	
52	52	3.666667	-2.354167	3.078125	
53	53	3.666667	2.895833	3.078125	
54	54	3.666667	-5.104167	3.078125	
55	55	-3.666667	0.145833	2.796875	

**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-3.666667	0.145833	3.078125	
57	57	-3.666667	-2.354167	2.796875	
58	58	-3.666667	-2.354167	3.078125	
59	59	-3.666667	2.895833	3.078125	
60	60	-3.666667	-5.104167	3.078125	
61	61	0	0	0	
62	62	-2.75	0.145833	2.796875	
63	63	-2	0.145833	-3.464102	
64	65	2.	0	-3.464102	
65	66	-2.	0	-3.464102	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	12	Reaction	Reaction	Reaction
2	27	Reaction	Reaction	Reaction
3	63	Reaction	Reaction	Reaction

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e°F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	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	A529 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
9	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
10	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
11	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	MF-H1	PIPE 2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
2	MF-SA1	1.9" ODx0.12"	Beam	Pipe	A500 Gr.B RND	Typical	0.671	0.267	0.267	0.534
3	MF-D1	1/2" SR	VBrace	BAR	A529 Gr.50	Typical	0.196	0.003	0.003	0.006
4	MF-CP1	PL5/8x3.5	Beam	RECT	A572 Gr.50	Typical	2.205	0.073	2.251	0.259
5	MF-V1	0.63" SR	Column	BAR	A529 Gr.50	Typical	0.312	0.008	0.008	0.015
6	MF-CP2	PL5/8x4.25	Beam	RECT	A572 Gr.50	Typical	2.656	0.086	3.998	0.314
7	Tieback	Pipe2.38X0.12	Beam	Pipe	A500 Gr.C	Typical	0.852	0.545	0.545	1.091
8	MF-P1	Pipe2.88x.12	Column	Pipe	A500 Gr.C	Typical	1.04	0.993	0.993	1.985

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		MF-H1	Beam	Pipe	A500 Gr.C	Typical
2	2	3	4		MF-H1	Beam	Pipe	A500 Gr.C	Typical
3	3	12	5	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
4	4	6	7		MF-SA1	Beam	Pipe	A500 Gr.B RND	Typical
5	5	8	9	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
6	6	10	11	90	RIGID	None	None	RIGID	Typical



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 Designer : SUP  
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**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
7	7	12	13	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
8	8	14	15		MF- SA1	Beam	Pipe	A500 Gr.B RND	Typical
9	9	16	17	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
10	10	18	19	90	RIGID	None	None	RIGID	Typical
11	11	27	20	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
12	12	21	22		MF- SA1	Beam	Pipe	A500 Gr.B RND	Typical
13	13	23	24	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
14	14	25	26	90	RIGID	None	None	RIGID	Typical
15	15	27	28	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
16	16	29	30		MF- SA1	Beam	Pipe	A500 Gr.B RND	Typical
17	17	31	32	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
18	18	33	34	90	RIGID	None	None	RIGID	Typical
19	19	37	36		MF-V1	Column	BAR	A529 Gr.50	Typical
20	20	35	38		MF-V1	Column	BAR	A529 Gr.50	Typical
21	21	35	36		MF-D1	VBrace	BAR	A529 Gr.50	Typical
22	22	37	38		MF-D1	VBrace	BAR	A529 Gr.50	Typical
23	23	41	40		MF-V1	Column	BAR	A529 Gr.50	Typical
24	24	39	42		MF-V1	Column	BAR	A529 Gr.50	Typical
25	25	39	40		MF-D1	VBrace	BAR	A529 Gr.50	Typical
26	26	41	42		MF-D1	VBrace	BAR	A529 Gr.50	Typical
27	27	43	44	90	RIGID	None	None	RIGID	Typical
28	28	45	46	90	RIGID	None	None	RIGID	Typical
29	29	47	48		MF-P1	Column	Pipe	A500 Gr.C	Typical
30	30	49	50	90	RIGID	None	None	RIGID	Typical
31	31	51	52	90	RIGID	None	None	RIGID	Typical
32	32	53	54		MF-P1	Column	Pipe	A500 Gr.C	Typical
33	33	55	56	90	RIGID	None	None	RIGID	Typical
34	34	57	58	90	RIGID	None	None	RIGID	Typical
35	35	59	60		MF-P1	Column	Pipe	A500 Gr.C	Typical
36	36	62	63		Tieback	Beam	Pipe	A500 Gr.C	Typical

**Member Advanced Data**

	Label	I Release	T/C Only	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes	N/A	None
2	2			Yes	Default	None
3	3			Yes	N/A	None
4	4			Yes	N/A	None
5	5			Yes	N/A	None
6	6	OOOOXO		Yes	** NA **	None
7	7			Yes	N/A	None
8	8			Yes	N/A	None
9	9			Yes	N/A	None
10	10	OOOOXO		Yes	** NA **	None
11	11			Yes	N/A	None
12	12			Yes	N/A	None
13	13			Yes	N/A	None
14	14	OOOOXO		Yes	** NA **	None
15	15			Yes	N/A	None
16	16			Yes	N/A	None
17	17			Yes	N/A	None
18	18	OOOOXO		Yes	** NA **	None
19	19			Yes	** NA **	None
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22		Euler Buckling	Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	T/C Only	Physical	Deflection Ratio Options	Seismic DR
23	23			Yes	** NA **	None
24	24			Yes	** NA **	None
25	25			Yes	** NA **	None
26	26		Euler Buckling	Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes	** NA **	None
30	30			Yes	** NA **	None
31	31			Yes	** NA **	None
32	32			Yes	** NA **	None
33	33			Yes	** NA **	None
34	34			Yes	** NA **	None
35	35			Yes	** NA **	None
36	36	BenPIN		Yes	Default	None

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	MF-H1	8	Lbyy	Lateral
2	2	MF-H1	8	Lbyy	Lateral
3	3	MF-CP1	0.708	Lbyy	Lateral
4	4	MF- SA1	2.583	Lbyy	Lateral
5	5	MF-CP2	0.489	Lbyy	Lateral
6	7	MF-CP1	0.708	Lbyy	Lateral
7	8	MF- SA1	2.583	Lbyy	Lateral
8	9	MF-CP2	0.489	Lbyy	Lateral
9	11	MF-CP1	0.708	Lbyy	Lateral
10	12	MF- SA1	2.583	Lbyy	Lateral
11	13	MF-CP2	0.489	Lbyy	Lateral
12	15	MF-CP1	0.708	Lbyy	Lateral
13	16	MF- SA1	2.583	Lbyy	Lateral
14	17	MF-CP2	0.489	Lbyy	Lateral
15	19	MF-V1	2.5	Lbyy	Lateral
16	20	MF-V1	2.5	Lbyy	Lateral
17	21	MF-D1	3.499	Lbyy	Lateral
18	22	MF-D1	3.499	Lbyy	Lateral
19	23	MF-V1	2.5	Lbyy	Lateral
20	24	MF-V1	2.5	Lbyy	Lateral
21	25	MF-D1	3.499	Lbyy	Lateral
22	26	MF-D1	3.499	Lbyy	Lateral
23	29	MF-P1	8	Lbyy	Lateral
24	32	MF-P1	8	Lbyy	Lateral
25	35	MF-P1	8	Lbyy	Lateral
26	36	Tieback	6.306	Lbyy	Lateral

**Member Point Loads (BLC 1 : Dead)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.032	%15
2	29	Y	-0.032	%85
3	29	Y	-0.075	%50
4	29	Y	-0.064	%20
5	29	Y	0	0
6	8	Y	-0.022	%50
7	8	Y	0	0



**Member Point Loads (BLC 1 : Dead) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	8	Y	0	0
9	8	Y	0	0
10	8	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.154	%15
2	29	Z	-0.154	%85
3	29	Z	-0.068	%50
4	29	Z	-0.068	%20
5	29	Z	0	0
6	8	Z	-0.07	%50
7	8	Z	0	0
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.062	%15
2	29	X	-0.062	%85
3	29	X	-0.041	%50
4	29	X	-0.036	%20
5	29	X	0	0
6	8	X	-0.039	%50
7	8	X	0	0
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.032	%15
2	29	Z	-0.032	%85
3	29	Z	-0.012	%50
4	29	Z	-0.012	%20
5	29	Z	0	0
6	8	Z	-0.013	%50
7	8	Z	0	0
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.015	%15
2	29	X	-0.015	%85
3	29	X	-0.008	%50
4	29	X	-0.007	%20
5	29	X	0	0



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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
6	8	X	-0.007	%50
7	8	X	0	0
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.01	%15
2	29	Z	-0.01	%85
3	29	Z	-0.005	%50
4	29	Z	-0.005	%20
5	29	Z	0	0
6	8	Z	-0.005	%50
7	8	Z	0	0
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.004	%15
2	29	X	-0.004	%85
3	29	X	-0.003	%50
4	29	X	-0.002	%20
5	29	X	0	0
6	8	X	-0.003	%50
7	8	X	0	0
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0

**Member Point Loads (BLC 8 : Ice)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.118	%15
2	29	Y	-0.118	%85
3	29	Y	-0.036	%50
4	29	Y	-0.035	%20
5	29	Y	0	0
6	8	Y	-0.036	%50
7	8	Y	0	0
8	8	Y	0	0
9	8	Y	0	0
10	8	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.012	%15
2	29	Z	-0.012	%85
3	29	Z	-0.013	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
4	29	Z	-0.011	%20
5	29	Z	0	0
6	8	Z	-0.004	%50
7	8	Z	0	0
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0

**Member Point Loads (BLC 10 : 90 Seismic)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.012	%15
2	29	X	-0.012	%85
3	29	X	-0.013	%50
4	29	X	-0.011	%20
5	29	X	0	0
6	8	X	-0.004	%50
7	8	X	0	0
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0

**Member Point Loads (BLC 15 : Maint LL 1)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	16	Y	-0.25	%50

**Member Point Loads (BLC 16 : Maint LL 2)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Y	-0.25	%50

**Member Point Loads (BLC 17 : Maint LL 3)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	12	Y	-0.25	%50

**Member Point Loads (BLC 18 : Maint LL 4)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Y	-0.25	%50

**Member Point Loads (BLC 19 : Maint LL 5)**

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

**Member Point Loads (BLC 20 : Maint LL 6)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95



Company : B+T Group  
 Designer : SUP  
 Job Number : 149447.003.01  
 Model Name : CT04877-A - Waterbury 2 CT

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**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	-0.01	-0.01	0	%100
2	2	Z	-0.01	-0.01	0	%100
3	3	Z	-0.003	-0.003	0	%100
4	4	Z	-0.006	-0.006	0	%100
5	5	Z	-0.003	-0.003	0	%100
6	7	Z	-0.003	-0.003	0	%100
7	8	Z	-0.006	-0.006	0	%100
8	9	Z	-0.003	-0.003	0	%100
9	11	Z	-0.003	-0.003	0	%100
10	12	Z	-0.006	-0.006	0	%100
11	13	Z	-0.003	-0.003	0	%100
12	15	Z	-0.003	-0.003	0	%100
13	16	Z	-0.006	-0.006	0	%100
14	17	Z	-0.003	-0.003	0	%100
15	19	Z	-0.002	-0.002	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	21	Z	-0.002	-0.002	0	%100
18	22	Z	-0.002	-0.002	0	%100
19	23	Z	-0.002	-0.002	0	%100
20	24	Z	-0.002	-0.002	0	%100
21	25	Z	-0.002	-0.002	0	%100
22	26	Z	-0.002	-0.002	0	%100
23	29	Z	-0.01	-0.01	0	%100
24	32	Z	-0.01	-0.01	0	%100
25	35	Z	-0.01	-0.01	0	%100
26	36	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	-0.01	-0.01	0	%100
2	2	X	-0.01	-0.01	0	%100
3	3	X	-0.003	-0.003	0	%100
4	4	X	-0.006	-0.006	0	%100
5	5	X	-0.003	-0.003	0	%100
6	7	X	-0.003	-0.003	0	%100
7	8	X	-0.006	-0.006	0	%100
8	9	X	-0.003	-0.003	0	%100
9	11	X	-0.003	-0.003	0	%100
10	12	X	-0.006	-0.006	0	%100
11	13	X	-0.003	-0.003	0	%100
12	15	X	-0.003	-0.003	0	%100
13	16	X	-0.006	-0.006	0	%100
14	17	X	-0.003	-0.003	0	%100
15	19	X	-0.002	-0.002	0	%100
16	20	X	-0.002	-0.002	0	%100
17	21	X	-0.002	-0.002	0	%100
18	22	X	-0.002	-0.002	0	%100
19	23	X	-0.002	-0.002	0	%100
20	24	X	-0.002	-0.002	0	%100
21	25	X	-0.002	-0.002	0	%100
22	26	X	-0.002	-0.002	0	%100
23	29	X	-0.01	-0.01	0	%100
24	32	X	-0.01	-0.01	0	%100
25	35	X	-0.01	-0.01	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, %)]
26	36	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	-0.002	-0.002	0	%100
2	2	Z	-0.002	-0.002	0	%100
3	3	Z	-0.003	-0.003	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.003	-0.003	0	%100
6	7	Z	-0.003	-0.003	0	%100
7	8	Z	-0.002	-0.002	0	%100
8	9	Z	-0.003	-0.003	0	%100
9	11	Z	-0.003	-0.003	0	%100
10	12	Z	-0.002	-0.002	0	%100
11	13	Z	-0.003	-0.003	0	%100
12	15	Z	-0.003	-0.003	0	%100
13	16	Z	-0.002	-0.002	0	%100
14	17	Z	-0.003	-0.003	0	%100
15	19	Z	-0.002	-0.002	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	21	Z	-0.002	-0.002	0	%100
18	22	Z	-0.002	-0.002	0	%100
19	23	Z	-0.002	-0.002	0	%100
20	24	Z	-0.002	-0.002	0	%100
21	25	Z	-0.002	-0.002	0	%100
22	26	Z	-0.002	-0.002	0	%100
23	29	Z	-0.002	-0.002	0	%100
24	32	Z	-0.002	-0.002	0	%100
25	35	Z	-0.002	-0.002	0	%100
26	36	Z	-0.002	-0.002	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	-0.002	-0.002	0	%100
2	2	X	-0.002	-0.002	0	%100
3	3	X	-0.003	-0.003	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.003	-0.003	0	%100
6	7	X	-0.003	-0.003	0	%100
7	8	X	-0.002	-0.002	0	%100
8	9	X	-0.003	-0.003	0	%100
9	11	X	-0.003	-0.003	0	%100
10	12	X	-0.002	-0.002	0	%100
11	13	X	-0.003	-0.003	0	%100
12	15	X	-0.003	-0.003	0	%100
13	16	X	-0.002	-0.002	0	%100
14	17	X	-0.003	-0.003	0	%100
15	19	X	-0.002	-0.002	0	%100
16	20	X	-0.002	-0.002	0	%100
17	21	X	-0.002	-0.002	0	%100
18	22	X	-0.002	-0.002	0	%100
19	23	X	-0.002	-0.002	0	%100
20	24	X	-0.002	-0.002	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, %)]
21	25	X	-0.002	-0.002	0	%100
22	26	X	-0.002	-0.002	0	%100
23	29	X	-0.002	-0.002	0	%100
24	32	X	-0.002	-0.002	0	%100
25	35	X	-0.002	-0.002	0	%100
26	36	X	-0.002	-0.002	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	-0.0003	-0.0003	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-0.0002	-0.0002	0	%100
4	4	Z	-0.0002	-0.0002	0	%100
5	5	Z	-0.0002	-0.0002	0	%100
6	7	Z	-0.0002	-0.0002	0	%100
7	8	Z	-0.0002	-0.0002	0	%100
8	9	Z	-0.0002	-0.0002	0	%100
9	11	Z	-0.0002	-0.0002	0	%100
10	12	Z	-0.0002	-0.0002	0	%100
11	13	Z	-0.0002	-0.0002	0	%100
12	15	Z	-0.0002	-0.0002	0	%100
13	16	Z	-0.0002	-0.0002	0	%100
14	17	Z	-0.0002	-0.0002	0	%100
15	19	Z	-1e-04	-1e-04	0	%100
16	20	Z	-1e-04	-1e-04	0	%100
17	21	Z	-1e-04	-1e-04	0	%100
18	22	Z	-1e-04	-1e-04	0	%100
19	23	Z	-1e-04	-1e-04	0	%100
20	24	Z	-1e-04	-1e-04	0	%100
21	25	Z	-1e-04	-1e-04	0	%100
22	26	Z	-1e-04	-1e-04	0	%100
23	29	Z	-0.0003	-0.0003	0	%100
24	32	Z	-0.0003	-0.0003	0	%100
25	35	Z	-0.0003	-0.0003	0	%100
26	36	Z	-0.0003	-0.0003	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0003	-0.0003	0	%100
2	2	X	-0.0003	-0.0003	0	%100
3	3	X	-0.0002	-0.0002	0	%100
4	4	X	-0.0002	-0.0002	0	%100
5	5	X	-0.0002	-0.0002	0	%100
6	7	X	-0.0002	-0.0002	0	%100
7	8	X	-0.0002	-0.0002	0	%100
8	9	X	-0.0002	-0.0002	0	%100
9	11	X	-0.0002	-0.0002	0	%100
10	12	X	-0.0002	-0.0002	0	%100
11	13	X	-0.0002	-0.0002	0	%100
12	15	X	-0.0002	-0.0002	0	%100
13	16	X	-0.0002	-0.0002	0	%100
14	17	X	-0.0002	-0.0002	0	%100
15	19	X	-1e-04	-1e-04	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	20	X	-1e-04	-1e-04	0	%100
17	21	X	-1e-04	-1e-04	0	%100
18	22	X	-1e-04	-1e-04	0	%100
19	23	X	-1e-04	-1e-04	0	%100
20	24	X	-1e-04	-1e-04	0	%100
21	25	X	-1e-04	-1e-04	0	%100
22	26	X	-1e-04	-1e-04	0	%100
23	29	X	-0.0003	-0.0003	0	%100
24	32	X	-0.0003	-0.0003	0	%100
25	35	X	-0.0003	-0.0003	0	%100
26	36	X	-0.0003	-0.0003	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.006	-0.006	0	%100
2	2	Y	-0.006	-0.006	0	%100
3	3	Y	-0.012	-0.012	0	%100
4	4	Y	-0.005	-0.005	0	%100
5	5	Y	-0.014	-0.014	0	%100
6	7	Y	-0.012	-0.012	0	%100
7	8	Y	-0.005	-0.005	0	%100
8	9	Y	-0.014	-0.014	0	%100
9	11	Y	-0.012	-0.012	0	%100
10	12	Y	-0.005	-0.005	0	%100
11	13	Y	-0.014	-0.014	0	%100
12	15	Y	-0.012	-0.012	0	%100
13	16	Y	-0.005	-0.005	0	%100
14	17	Y	-0.014	-0.014	0	%100
15	19	Y	-0.003	-0.003	0	%100
16	20	Y	-0.003	-0.003	0	%100
17	21	Y	-0.002	-0.002	0	%100
18	22	Y	-0.002	-0.002	0	%100
19	23	Y	-0.003	-0.003	0	%100
20	24	Y	-0.003	-0.003	0	%100
21	25	Y	-0.002	-0.002	0	%100
22	26	Y	-0.002	-0.002	0	%100
23	29	Y	-0.006	-0.006	0	%100
24	32	Y	-0.006	-0.006	0	%100
25	35	Y	-0.006	-0.006	0	%100
26	36	Y	-0.005	-0.005	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.0004	-0.0004	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	7	Z	-0.001	-0.001	0	%100
7	8	Z	-0.0004	-0.0004	0	%100
8	9	Z	-0.002	-0.002	0	%100
9	11	Z	-0.001	-0.001	0	%100
10	12	Z	-0.0004	-0.0004	0	%100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
11	13	Z	-0.002	-0.002	0 %100
12	15	Z	-0.001	-0.001	0 %100
13	16	Z	-0.0004	-0.0004	0 %100
14	17	Z	-0.002	-0.002	0 %100
15	19	Z	-0.0003	-0.0003	0 %100
16	20	Z	-0.0003	-0.0003	0 %100
17	21	Z	-0.0003	-0.0003	0 %100
18	22	Z	-0.0003	-0.0003	0 %100
19	23	Z	-0.0003	-0.0003	0 %100
20	24	Z	-0.0003	-0.0003	0 %100
21	25	Z	-0.0003	-0.0003	0 %100
22	26	Z	-0.0003	-0.0003	0 %100
23	29	Z	-0.0006	-0.0006	0 %100
24	32	Z	-0.0006	-0.0006	0 %100
25	35	Z	-0.0006	-0.0006	0 %100
26	36	Z	-0.0005	-0.0005	0 %100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0 %100
2	2	X	-0.001	-0.001	0 %100
3	3	X	-0.001	-0.001	0 %100
4	4	X	-0.0004	-0.0004	0 %100
5	5	X	-0.002	-0.002	0 %100
6	7	X	-0.001	-0.001	0 %100
7	8	X	-0.0004	-0.0004	0 %100
8	9	X	-0.002	-0.002	0 %100
9	11	X	-0.001	-0.001	0 %100
10	12	X	-0.0004	-0.0004	0 %100
11	13	X	-0.002	-0.002	0 %100
12	15	X	-0.001	-0.001	0 %100
13	16	X	-0.0004	-0.0004	0 %100
14	17	X	-0.002	-0.002	0 %100
15	19	X	-0.0003	-0.0003	0 %100
16	20	X	-0.0003	-0.0003	0 %100
17	21	X	-0.0003	-0.0003	0 %100
18	22	X	-0.0003	-0.0003	0 %100
19	23	X	-0.0003	-0.0003	0 %100
20	24	X	-0.0003	-0.0003	0 %100
21	25	X	-0.0003	-0.0003	0 %100
22	26	X	-0.0003	-0.0003	0 %100
23	29	X	-0.0006	-0.0006	0 %100
24	32	X	-0.0006	-0.0006	0 %100
25	35	X	-0.0006	-0.0006	0 %100
26	36	X	-0.0005	-0.0005	0 %100

**Member Area Loads**

No Data to Print...

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

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	57	L	Y -0.5



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

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1 45	L	Y	-0.5

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

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1 51	L	Y	-0.5

**Basic Load Cases**

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	Dead	DL	-1		10	
2	0 Wind - No Ice	WLZ			10	26
3	90 Wind - No Ice	WLX			10	26
4	0 Wind - Ice	WLZ			10	26
5	90 Wind - Ice	WLX			10	26
6	0 Wind - Service	WLZ			10	26
7	90 Wind - Service	WLX			10	26
8	Ice	OL1			10	26
9	0 Seismic	ELZ			10	26
10	90 Seismic	ELX			10	26
11	Live Load a	LL		1		
12	Live Load b	LL		1		
13	Live Load c	LL		1		
14	Live Load d	LL				
15	Maint LL 1	LL			1	
16	Maint LL 2	LL			1	
17	Maint LL 3	LL			1	
18	Maint LL 4	LL			1	
19	Maint LL 5	LL			1	
20	Maint LL 6	LL			1	
21	Maint LL 7	LL				
22	Maint LL 8	LL				
23	Maint LL 9	LL				
24	Maint LL 10	LL				
25	Maint LL 11	LL				
26	Maint LL 12	LL				
27	Maint LL 13	LL				
28	Maint LL 14	LL				
29	Maint LL 15	LL				

**Load Combinations**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5

**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	12	max	1.151	41	0.714	17	0.452	12	0	91	0	91
2		min	-1.101	71	0.259	10	-1.626	6	0	1	0	1
3	27	max	1.085	65	0.668	23	1.423	14	0	91	0	91
4		min	-1.135	47	0.248	4	0.219	8	0	1	0	1
5	63	max	0.069	11	0.027	23	0.793	5	0	91	0	91
6		min	-0.069	5	0.011	5	-0.794	11	0	1	0	1
7	Totals:	max	0.807	5	1.393	23	1.082	2				
8		min	-0.807	11	0.607	5	-1.082	8				

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

Member	Shape	Code Check	Loc [ft]	LC	Shear	Check	Loc [ft]	LC	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PIPE_2.88x0.203	0.096	4	54	0.059	1.75	47	35.519	70.68	5.029	5.029	1.551	H1-1b		
2	2	PIPE_2.88x0.203	0.082	4	60	0.059	1.75	5	35.519	70.68	5.029	5.029	1.644	H1-1b		
3	3	PL5/8x3.5	0.213	0.583	67	0.087	0.583	y	49	84.578	99.225	1.302	7.235	1.148	H1-1b	
4	4	1.9" ODx0.12"	0.235	0.135	65	0.054	2.449	16	21.867	25.364	1.2	1.2	2.064	H1-1b		
5	5	PL5/8x4.25	0.072	0.127	66	0.04	0.127	y	38	110.629	119.531	1.556	10.583	1.369	H1-1b	
6	7	PL5/8x3.5	0.216	0.583	45	0.084	0.583	y	65	84.578	99.225	1.302	7.235	1.188	H1-1b	
7	8	1.9" ODx0.12"	0.239	0.135	41	0.059	2.449	17	21.867	25.364	1.2	1.2	1.995	H1-1b		
8	9	PL5/8x4.25	0.089	0.362	12	0.041	0.362	y	5	110.629	119.531	1.556	10.583	1.363	H1-1b	
9	11	PL5/8x3.5	0.206	0.583	64	0.09	0.583	y	45	84.578	99.225	1.302	7.235	1.069	H1-1b	
10	12	1.9" ODx0.12"	0.259	0.135	64	0.056	2.449	44	21.867	25.364	1.2	1.2	2.063	H1-1b		
11	13	PL5/8x4.25	0.059	0.127	67	0.044	0.127	y	44	110.629	119.531	1.556	10.583	1.525	H1-1b	
12	15	PL5/8x3.5	0.213	0.583	48	0.086	0.583	y	67	84.578	99.225	1.302	7.235	1.047	H1-1b	
13	16	1.9" ODx0.12"	0.269	0.135	47	0.054	2.449	68	21.867	25.364	1.2	1.2	2.062	H1-1b		
14	17	PL5/8x4.25	0.06	0.127	43	0.041	0.127	y	68	110.629	119.531	1.556	10.583	1.501	H1-1b	



Company : B+T Group  
 Designer : SUP  
 Job Number : 149447.003.01  
 Model Name : CT04877-A - Waterbury 2 CT

1/15/2022  
 5:34:23 PM  
 Checked By : \_\_\_\_\_

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

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
15	19	0.63" SR	0.339	2.5	62	0.006	2.5	48	1.941	14.028	0.147	0.147	2.263	H1-1a		
16	20	0.63" SR	0.456	2.5	66	0.011	2.5	48	1.941	14.028	0.147	0.147	2.261	H1-1a		
17	21	1/2" SR	0.259	0	67	0.01	0	44	0.393	8.836	0.074	0.074	1.782	H1-1a		
18	22	1/2" SR	0	3.499	91	0.008	3.499	49	0.393	8.836	0.074	0.074	1	H1-1a		
19	23	0.63" SR	0.352	2.5	49	0.008	0	11	1.941	14.028	0.147	0.147	2.296	H1-1a		
20	24	0.63" SR	0.474	2.5	47	0.011	2.5	65	1.941	14.028	0.147	0.147	2.26	H1-1a		
21	25	1/2" SR	0.265	0	44	0.01	0	69	0.393	8.836	0.074	0.074	1.822	H1-1a		
22	26	1/2" SR	0	3.499	91	0.01	3.499	4	0.393	8.836	0.074	0.074	1.242	H1-1a		
23	29	Pipe2.88x.12	0.115	2.75	8	0.036	2.75	46	22.492	43.076	3.156	3.156	3	H1-1b		
24	32	Pipe2.88x.12	0.111	5.25	71	0.033	2.75	70	22.492	43.076	3.156	3.156	3	H1-1b		
25	35	Pipe2.88x.12	0.113	5.25	41	0.034	5.25	47	22.492	43.076	3.156	3.156	3	H1-1b		
26	36	Pipe2.38X0.12	0.042	0	5	0.003	6.306	11	19.317	35.273	2.115	2.115	1.136	H1-1b*		

## **APPENDIX B**

**(Additional Calculations)**

PROJECT	<b>149447.003.01 - Waterbury 2 CT, CT</b>			<b>KSC</b>
SUBJECT	<b>Sector Mount Analysis</b>			
DATE	<b>01/17/22</b>	PAGE	1	OF 1



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

**B+T GRP**

[REF: AISC 360-05]

**Reactions at Bolted Connection**

Tension	:	1.423	k
Vertical Shear	:	0.668	k
Horizontal Shear	:	1.085	k
Torsion	:	0	k.ft
Moment from Horizontal Forces	:	0	k.ft
Moment from Vertical Forces	:	0	k.ft

**Bolt Parameters**

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

**Summary of Forces**

Shear Resultant Force	:	1.27	k
Force from Horz. Moment	:	0.00	k
Force from Vert. Moment	:	0.00	k
Shear Load / Bolt	:	0.32	k
Tension Load / Bolt	:	0.36	k
Resultant from Moments / Bolt	:	0.00	k

**Bolt Checks**

Nominal Tensile Stress, $F_{nt}$	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, $\Phi R_{nt}$	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	<b>1.72%</b>		<b>OKAY</b>
Nominal Shear Stress, $F_{nv}$	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, $\Phi R_{nv}$	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	<b>6.10%</b>		<b>OKAY</b>
Unity Check, Combined	:	<b>7.82%</b>		<b>OKAY</b>
Available Bearing Strength, $\Phi R_n$	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	<b>0.92%</b>		<b>OKAY</b>

# Exhibit F

## **Power Density/RF Emissions Report**



# Radio Frequency Emissions Analysis Report



**Site ID: BOHVN00041A**

SBA - Garden Circle  
207 Garden Circle  
Waterbury, CT 06704

**May 20, 2022**

**Fox Hill Telecom Project Number: 221169**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>11.63 %</b>



May 20, 2022

Dish Wireless  
5701 South Santa Fe Drive  
Littleton, CO 80120

### Emissions Analysis for Site: **BOHVN00041A – SBA - Garden Circle**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **207 Garden Circle, Waterbury, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **207 Garden Circle, Waterbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

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

*Table 1: Channel Data Table*

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	192
B	1	JMA MX08FRO665-21	192
C	1	JMA MX08FRO665-21	192

*Table 2: Antenna Data*

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



## RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	2.35
Sector A Composite MPE%							<b>2.35</b>
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	2.35
Sector B Composite MPE%							<b>2.35</b>
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	2.35
Sector C Composite MPE%							<b>2.35</b>

*Table 3: Dish Emissions Levels*



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

<b>Site Composite MPE%</b>	
<b>Carrier</b>	<b>MPE%</b>
Dish – Max Per Sector Value	<b>2.35 %</b>
Sky Tel 1	0.04 %
Sky Tel 2	0.04 %
Sky Tel 3	0.04 %
Bell South	0.02 %
Arch 1	0.07 %
Arch 2	0.06 %
Mobile com 1	0.08 %
Mobile Com 2	0.08 %
Fedex	0.02 %
#7	0.01 %
CL&P (antennas moved from 181 Garden Circle)	0.42 %
T-Mobile	6.81 %
MediaFLO	0.52 %
CL&P	0.43 %
CL&P (150 MHz)	0.16 %
CL&P (150 MHz)	0.11 %
CL&P (150 MHz)	0.04 %
CL&P (50 MHz)	0.33 %
CL&P (5 GHz)	0.00 %
CL&P (5 GHz)	0.00 %
<b>Site Total MPE %:</b>	<b>11.63 %</b>

*Table 4: All Carrier MPE Contributions*



Dish Sector A Total:	2.35 %
Dish Sector B Total:	2.35 %
Dish Sector C Total:	2.35 %
Site Total:	11.63 %

Table 5: Site MPE Summary

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

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	192	3.57	n71 (600 MHz)	400	0.89%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	192	6.85	n70 (AWS-4 / 1995-2020)	1000	0.69%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	192	7.69	n66 (AWS-4 / 2180-2200)	1000	0.77%
						<b>Total:</b>	<b>2.35%</b>

Table 6: Dish Maximum Sector MPE Power Values



## Summary

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

The anticipated maximum composite contributions from the Dish facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Sector	Power Density Value (%)
Sector A:	2.35 %
Sector B:	2.35 %
Sector C:	2.35 %
Dish Maximum Total (per sector):	2.35 %
Site Total:	11.63 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **11.63 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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



# Exhibit G

## **Letter of Authorization**

SBA Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

Melanie A. Bachman

Executive Director

Connecticut Siting Council

10 Franklin Square

New Britain, CT 06051

Re: Tower Share Application

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

Kri Pelletier

Site Development Manager

SBA COMMUNICATIONS CORPORATION

134 Flanders Road, Suite 125

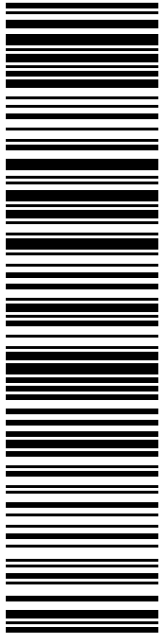
Westboro, MA 01581

SBA

By: \_\_\_\_\_ Date: \_\_\_\_\_

# Exhibit H

## Recipient Mailings



**USPS TRACKING #**

**9405 5036 9930 0258 4010 61**

Electronic Rate Approved #038555749

**SHIP TO:**

SBA COMMUNICATIONS- ZONING DEPT.  
8051 CONGRESS AVE  
BOCA RATON FL 33487-1307

**P**

05/25/2022

**PRIORITY MAIL 2-DAY™**

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

Expected Delivery Date: 05/31/22  
Ref#: SBDS-00041  
**0006**

**C036**

**UNITED STATES POSTAL SERVICE®**

**Click-N-Ship®**

usps.com 9405 5036 9930 0258 4010 61 0089 5000 0063 3487  
**US POSTAGE**  
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4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
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### Click-N-Ship® Label Record

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**9405 5036 9930 0258 4010 61**

Trans. #: 564317860	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/25/2022	Total: <b>\$8.95</b>
Ship Date: 05/25/2022	
Expected Delivery Date: 05/31/2022	


**From:** DEBORAH CHASE Ref#: SBDS-00041  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

**To:** SBA COMMUNICATIONS- ZONING DEPT.  
8051 CONGRESS AVE  
BOCA RATON FL 33487-1307

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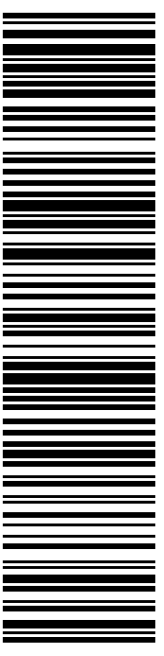
05/25/2022 Mailed from 01566

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/28/22  
 Ref#: SBDS-00041  
**0006**

SHIP TO: NEIL M O'LEARY  
 MAYOR-CITY OF WATERBURY  
 235 GRAND ST  
 WATERBURY CT 06702-1915

**USPS TRACKING #**



**9405 5036 9930 0258 4010 78**

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### Click-N-Ship® Label Record

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Print Date: 05/25/2022	Total: <b>\$8.95</b>
Ship Date: 05/25/2022	
Expected Delivery Date: 05/28/2022	

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

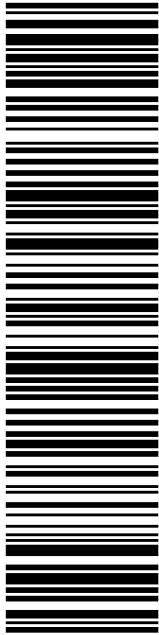
Ref#: SBDS-00041

**To:** NEIL M O'LEARY  
 MAYOR-CITY OF WATERBURY  
 235 GRAND ST  
 WATERBURY CT 06702-1915

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Electronic Rate Approved #038555749

**SHIP TO:** ROBERT NERNEY  
TOWN PLANNER- CITY OF WATERBURY  
235 GRAND ST  
WATERBURY CT 06702-1915

**P**

USPS.com 9405 5036 9930 0258 4010 92 0089 5000 0010 6702  
**US POSTAGE**  
 Flat Rate Env  
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DEBORAH CHASE  
NORTHEAST SITE SOLUTIONS  
420 MAIN ST  
STE 1  
STURBRIDGE MA 01566-1359

Expected Delivery Date: 05/28/22  
 Ref#: SBDS-00041  
**0006**

**C035**



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## Click-N-Ship® Label Record

<b>USPS TRACKING # :</b>	
<b>9405 5036 9930 0258 4010 92</b>	
Trans. #: 564317860	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/25/2022	Total: <b>\$8.95</b>
Ship Date: 05/25/2022	
Expected Delivery Date: 05/28/2022	
<hr/>	
<b>From:</b> DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	Ref#: SBDS-00041
<hr/>	
<b>To:</b> ROBERT NERNEY TOWN PLANNER- CITY OF WATERBURY 235 GRAND ST WATERBURY CT 06702-1915	
<p>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</p>	



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Product	Qty	Unit Price	Price
Prepaid Mail Waterbury, CT 06702 Weight: 0 lb 9.80 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4010 92	1		\$0.00
Prepaid Mail Waterbury, CT 06702 Weight: 0 lb 9.80 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4010 78	1		\$0.00
Prepaid Mail Boca Raton, FL 33487 Weight: 0 lb 2.40 oz Acceptance Date: Tue 05/31/2022 Tracking #: 9405 5036 9930 0258 4010 61	1		\$0.00

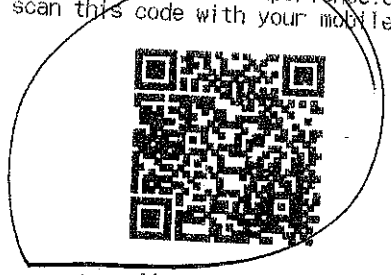
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