

# Truro Planning Board Agenda Remote Meeting Wednesday, August 10, 2022 – 5:00 www.truro-ma.gov

# AMENDED



# **Open Meeting**

This will be a remote public meeting. Citizens can view the meeting on Channel 18 in Truro and on the web on the "Truro TV Channel 18" button under "Helpful Links" on the homepage of the Town of Truro website (<u>www.truro-ma.gov</u>). Click on the green "Watch" button in the upper right corner of the page. Please note that there may be a slight delay (approx. 15-30 seconds) between the meeting and the television broadcast/live stream.

Citizens can join the meeting to listen and provide public comment by entering the meeting link; clicking on the Agenda's highlighted link; clicking on the meeting date in the Event Calendar; or by calling in toll free at <u>1-866-899-4679</u> and entering the access code <u>814-992-693#</u> when prompted. Citizens will be muted upon entering the meeting until the public comment portion of the hearing. If you are joining the meeting while watching the television broadcast/live stream, please lower or mute the volume on your computer or television during public comment so that you may be heard clearly. Citizens may also provide written comment via postal mail or by emailing Liz Sturdy, Planning Department Administrator, at <u>esturdy@truro-ma.gov</u>.

Meeting link: https://meet.goto.com/814992693

# Public Comment Period

The Commonwealth's Open Meeting Law limits any discussion by members of the Board of an issue raised to whether that issue should be placed on a future agenda. Speakers are limited to no more than 5 minutes.

- 1. Planner Report
- 2. Chair Report

# 3. <u>Temporary Sign Permit Applications</u>

<u>Pete Fasano – Vinegrass Music Festival at Truro Vineyards</u>, for one (1) sign 4' x 6', to be located at the junction of Route 6 and 6A. The sign will be installed on September 18th and removed October 2nd for an event on Sunday, October 2nd.

<u>Nicholas Ward – Wellfleet Harbor Actors Theater</u>, for two (2) signs,  $36" \times 24"$ , to be located at: (1) the junction of Route 6 and 6A, and (2) North side of Route 6 near Whitmanville Road. The signs will be installed on August 16th and removed October 16th.

# Public Hearing – Continued

**2022-002/SPR – Debra Hopkins, Pure Joy Farm, LLC (High Dune Craft Cooperative)** for property located at 23 Old Bridge Road (Atlas Map 50, Parcel 232, Registry of Deeds title reference: Book 377, Page 44). Applicant seeks a Residential Site Plan Review under §70 and §100 of the Truro Zoning Bylaw for a Recreational Marijuana Establishment (RME).

• Request to Withdraw Without Prejudice

2022-004/SPR – Outer Shore Nominee Trust, Rachel Kalin, Trustee for property located at 17 Coast Guard Road (Atlas Map 34, Parcel 3, Registry of Deeds title reference: Book 34387, Page 1). Applicant seeks Residential Site Plan Review under §70 of the Truro Zoning Bylaw for a lot in the Seashore District. Demolition of 5 of 6 pre-existing, non-conforming cottages (multiple dwellings on a lot) and associated structures; construction of a new one-story single-family dwelling with pool and landscaping; renovation of remaining cottage. [Material in 4/20/2022, 5/18/2022, 6/8/2022, 6/22/2022, and 7/13/2022 packets]

• Extension Agreement

2022-008/SPR – SBA Communications, on property located at 5 Town Dump Road (Atlas Map 55, Parcel 2-A). Applicant seeks a Site Plan Review under Section 40.5 of the Truro Zoning Bylaw to modify an existing tower, by swapping three (3) antennas with three (3) new antennas, and related lines and equipment. No changes are being made to the tower height. [Material in 7/27/2022 packet] {New material included in this packet}

# New Public Hearings

None

**Development of Warrant Articles** 

• Outreach

# **Application Completeness**

# **Minutes**

- ◆ June 8, 2022
- ◆ June 22, 2022
- ◆ July 20, 2022 Work Session

Next Meeting: Wednesday, August 24, 2022 at 5:00 pm

# <u>Adjourn</u>



**TOWN OF TRURO** 





Application for Temporary Sign Permit

Pursuant to Section 11 of the Truro Sign Code Fee: \$25.00 (for each 30-day period)

	ETE FASANO D	ate: 22
Applicant Contact Information: 12 0 6178774510 Phone	Mailing Address <u>i</u> etefasaro C Email	VIAegrass, org
Number of Signs Requested:	Temporary Sign Dime	nsions:
	(1)       Height       4         (2)       Height       1         (3)       Height       1         (4)       Height       1	Width Width Width Width
Location(s) of Proposed Temporary Sign(s):		
INTERSECTIO	~ OF 6/64	
Date When Sign(s) will be: Installed:	8 - 2022 Remove	d: 10.2.2022
Applicant Printed Name PETER FASANT		Date
	wner print and sign name below:	
if sign(s) to be placed on private property, please have $O_{1}$		
If sign(s) to be placed on private property, please have On Owner Signature (which also authorizes the use of the property) Owner Printed Name		Date
ty sign(s) to be placed on private property, please have On Owner Signature (which also authorizes the use of the property) Owner Printed Name Planning Board Action: Approved Conditions:	Approved w/Conditions	Date Date

Revised July 2021







TOWN OF TRURO	OF TRUBO	PLANNING DOARDRUE
Application for Te	emporary Sign P	UL 2 9 2022
Fee: \$25.00 (for	r each 30-day period	) TOWN CLERK
Applicant Name: WelFlect Martier An	ctors Theater	Date: _7/29/22
Applicant Contact Information: <u>Po</u> Boy <u>917-922-5217</u> Phone	Mailing Address Mich a) wh Email	4, MAA; U2667
Number of Signs Requested:	Temporary Sign	Dimensions:
	<ul> <li>(1) Height <u>36</u></li> <li>(2) Height <u>36</u></li> <li>(3) Height</li> <li>(4) Height</li> </ul>	$ \begin{array}{c} & \text{Width} \\ & \underline{24} \\ & \text{Width} \\ & \underline{24} \\ & \text{Width} \\ & \underline{24} \\ & \text{Width} \\ & \\ & \text{Width} \\ & \\ & \text{Width} \\ & \\ & \end{array} $
Location(s) of Proposed Temporary Sign(s): <u>k</u> Split, Worth Side of 6	Along Rt6 Min wh	Amazville Road
Date(s) of the Event in Which the Sign is Intend	ded: August 16	in - Uct 16, 2022
Date When Sign(s) will be: Installed:	Real Real Real	emoved: Oct 16 2022
Applicant Signature MRW Applicant Printed Name Wicheles Ward	4	7/29/22 Date
If sign(s) to be placed on private property, please have Own	er print and sign name b	elow:
Owner Signature       (which also authorizes the use of the property)       Owner Printed Name		Date
Planning Board Action: Approved A	Approved w/Conditi	ons Denied
Conditions:		
Board Signature: Chair, Planning	g Board	Date:







Hello Elizabeth,

I'm requesting that the Planning Board dismiss my application on 23 Old Bridge Road without prejudice. I need additional time to amend my application and have the engineered plans changed to reflect the new plans.

Thank you, Debra Hopkins

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.





# **TOWN OF TRURO**

# **Planning Department**

24 Town Hall Road, P.O. Box 2030, Truro, MA 02666 Tel: (508) 349-7004, Ext. 127 Fax: (508) 349-5505

# EXTENSION AGREEMENT FOR CASE NO. 2022- 004/SPX

1, Brijanin Trhady-	, as authorized agent of
Rachel Kalin, Jonstor	, with respect to property
located at 17 Coast burnd Aud J-100	, agree to an extension of
time through August 79, 70 for action by the Planning Boa	rd on the above Application.

Signature of Applicant/Agent

8 27

Date

Filed with the Planning Department:

8/3/2022 Izabe

Name

Date

8/3/2022 Date

Name

Filed with the Town Clerk:



# ELIGIBLE FACILITIES REQUEST (EFR) APPLICATION FORM

### **Original Date of Submittal:** 6/21/2022

### Submitted by:

Name: John Morrison Title: Site Development Specialist on behalf of SBA Network Services and T-Mobile Contact Information: JoMorrison@sbasite.com 508-768-7960

Name of Jurisdiction: Town of Truro

Address of Jurisdiction: 24 Town Hall Road

Contact Name for Jurisdiction: Elizabeth Sturdy

Name of Local Government Permit Application: Planning Application for Special Permit

Local Government File #: Click here to enter text.

Street Address of Site: 5 Town Dump Rd

Tax Parcel # of Site: Click here to enter text.

Latitude/Longitude of Site: 41.98578; -70.04133

List Each Piece of Transmission Equipment that will be Collocated or Added:

(3) Ericsson Antenas, (3) Ericsson 4480 Radios, (1) HCS Fiber Cable

List Each Piece of Transmission Equipment that will be Removed: (3) Antennas, (3) Radios, (3) TMAs

List Cabinets that will be Collocated or Added at the Site: None

List Cabinets that will be Removed at the Site: None

Permit Application Amount: \$350

Municipal Consultant Review Fee Deposit: Click here to enter text.



### Eligible Facilities Request to Modify Transmission Equipment at an Existing Communications Tower

Location:5 Town Dump Rd, Truro MaT-Mobile Site No:4HY0520ASBA Communications:Agent for SBA Network Services LLC and T-Mobile

### T-Mobile is Filing an Eligible Facilities Request

SBA Properties, LLC, on behalf of T-Mobile and SBA Network Services, LLC as General Contractor, is submitting an Eligible Facilities Request to add (collocate) Transmission Equipment on an existing SBA Telecommunications Tower located at 5 Town Dump Rd.

The existing Tower is a structure that is 190' high and presently contains wireless facilities. The existing Tower meets the Federal Communications Commission ("FCC") definition of a Tower and T-Mobile is an FCC licensed wireless carrier.

The list of equipment identified in this Eligible Facilities Request application is Transmission Equipment as determined by the FCC, and as defined as follows: "any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband."

### Administrative Review and Approval

While local jurisdictions retain discretionary zoning review over the construction of new towers, collocations and/or equipment upgrades such as reflected in this application must now be approved administratively. The new law provides, in part, that:

"a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station." (Emphasis added.)

The FCC, in a Report and Order adopted on October 17, 2014, determined that any modification to an existing telecommunications Tower that meets the following six criteria does not substantially change the physical dimensions of the existing Tower and therefore is an Eligible Facilities Request which must be granted:

1. The modifications to the Transmission Equipment do not increase the height of the Tower by twenty feet or ten percent, whichever is greater;



- The modifications to the Transmission Equipment do not protrude from the edge of the Tower by twenty feet or more than the width of the Tower (whichever of these two dimensions is greater) at the level where the transmission equipment modifications are made;
- 3. The modifications to the Transmission Equipment do not involve the installation of more than the standard number of equipment cabinets for the technology involved, not to exceed four;
- 4. The modifications to the Transmission Equipment do not entail any excavation or deployment outside of the Tower site;
- 5. The modifications to the Transmission Equipment do not defeat any existing concealment elements of the Tower;
- 6. The modifications to the Transmission Equipment comply with prior conditions of approval of the Tower, unless the non-compliance is due to an increase in height, increase in width, addition of equipment cabinets, or new excavation that does not exceed the corresponding "substantial change" thresholds in numbers 1-4.

We are providing certification that each of the six review criteria identified by the FCC will be met, and that the proposed collocation fully conforms to Section 6409(a) as enacted by Congress and as interpreted by the FCC.

# **Expedited Permit Processing and Deemed Granted Designation**

Under federal law, an Eligible Facilities Request is deemed granted sixty (60) days after a complete application is filed with a local jurisdiction. Accordingly, this Eligible Facilities Request must be approved within 60 days, as required by federal law and FCC regulations. If sixty days pass after the submission of T-Mobile's application and the Truro Planning Board has not acted to grant or deny the request, it will be deemed granted.



# ELIGIBLE FACILITIES REQUEST (EFR) CERTIFICATION OF NON-SUBSTANTIAL CHANGES TO A WIRELESS TOWER NOT LOCATED WITHIN A PUBLIC RIGHT OF WAY

- 1) Address of the Wireless Tower: 5 Town Dump Road, Truro MA. 02666
- 2) The height (measured in feet above ground level) of the existing Tower as originally approved, including any modifications approved prior to February 22, 2012: 190
- 3) What is the height (measured in feet above ground level) at which the modifications to the Transmission Equipment will occur on the Tower? 175
- 4) What will be the height (measured in feet above ground level) of the existing Tower after the modifications to the Transmission Equipment are installed? 190'
- 5) Effect of modifications of Transmission Equipment on Tower height:
  - a. Will the modifications in Transmission Equipment (addition, removal or replacement of Transmission Equipment) result in increasing the height above ground level of the existing Tower?
    - 🗆 Yes 🛛 No
  - b. Will the modifications in Transmission Equipment result in increasing the height above ground level of the existing Tower by more than: (i) 10% of the height of the existing Tower, as originally approved, including any modifications approved prior to February 22, 2012; or (ii) twenty feet above the height of the existing Tower, as originally approved, including any modifications approved prior to February 22, 2012, whichever height increase is greater?
    □ Yes ⊠ No
- 6) Will the modifications in Transmission Equipment (measured at the height above ground level where the Transmission Equipment will be attached to the tower) result in any Transmission Equipment protruding horizontally from the edge of tower by more than twenty (20) feet or by more than the existing width of the tower at that height, whichever of these dimensions is greater?
   □ Yes ⊠ No
- 7) Will the proposed changes in Transmission Equipment involve excavation or placement of new equipment outside the existing Tower site or outside any access or utility easements currently related to the site?
   □ Yes □ No



- 8) Will the proposed modification in Transmission Equipment involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four?
   □ Yes ⊠ No
- 9) Will the proposed modification in Transmission Equipment defeat the existing concealment elements of the Tower?
   □ Yes ⊠ No
- 10) Prior Conditions of Approval
  - a. Will the proposed modification in Transmission Equipment comply with conditions of approval imposed on the Tower prior to February 22, 2012?
     ☑ Yes □ No
  - b. If the answer to 10(a) is "No," is the non-compliance due solely to any of the conditions addressed in questions 5-9 above?
    □ Yes □ No

If the answer to either question 5(a) or 5(b) is "No," and the answers to questions 6-9 are "No," and the answer to either 10(a) or 10(b) is "Yes," then the proposed modifications do not substantially change the physical dimensions of the existing Tower. Click here to enter text.

This certification is dated this Twenty-First day of June, 2022 (amended 7/28/2022)

Signature

John Morrison / Site Development Specialist on behalf of SBA Network Services LLC and T-Mobile

Name & Title

# 

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

# **Structural Analysis Report**

Existing 190 ft Cellxion Self Supporting Tower Customer Name: SBA Communications Corp Customer Site Number: MA12227-A Customer Site Name: Truro Carrier Name: T-Mobile (App#: 188222-1) Carrier Site ID / Name: 4HY0520A / HY520/Bay Comm.-Truro Site Location: 5 Town Dump Road Truro, Massachusetts Barnstable County Latitude: 41.985783 Longitude: -70.041333



08/02/2022

<u>Analysis Result:</u> Max Structural Usage: 83.1% [Pass] Max Foundation Usage: 54.0% [Pass] Additional Usage Caused by New Mount: +2%

Report Prepared By: Tawfeeq Alajaj

# 

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Report Prepared By: Tawfeeq Alajaj

# **Introduction**

The purpose of this report is to summarize the analysis results on the 190 ft Cellxion Self Supporting 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**

Tower Drawings	Cellxion Drawing # TBAY01793, dated 01/13/2004
Foundation Drawing	Cellxion Drawing # TBAY01793, dated 01/13/2004
Geotechnical Report	Paul B. Aldinger & Associates Project # 03135, dated 11/19/2003
Modification Drawings	N/A
Mount Analysis	Verizon MA by Maser Consulting 21777817A. Dated 11/23/2021.
	T-Mobile MA by TES# 126141. Dated 03/17/2022.

# 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.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V <sub>ult</sub> = 139.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V <sub>asd</sub> = 108.0 mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / Massachusetts State Building Code, Ninth Edition
Exposure Category:	В
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_{\rm S} = 0.164, S_1 = 0.057$

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		3	KMW - AM-X-CD-16-65-00T-RET - Panel			
2		3	Cci - DMP5R-BU4DA - Panel			
3		3	Css - DUO1417-8686-0 - Panel		(12) 1 5/8"	
4		3	Kathrein - 800-10121 - Panel	(3) Sector Frames (Site	*(4) 3/4" DC	
5	187.3	6	Powerwave - LGP17201 - TMA	Pro USF12-XX-U) + (3)	*(2) 7/16" Fiber	AT&T
6		3	Ericsson - RRUS 12 B4 - RRU	Pipe Mounts	*(Inside (2) 3"	
7		3	Ericsson - RRUS 4478 B14 - RRU		Conduits)	
8		3	Ericsson - RRUS 4449 B5/B12 - RRU			
9		2	Raycap - DC6-48-60-18-8F - OVP			
-		3	Ericsson S11B12 RRU			
-	175.0	3	Ericsson - AIR21 B2A B4P - Panel		(6) 1 5/8"	
-	1/5.0	3	Ericsson - AIR21 B4A B2P - Panel	(3) T-Frames	(1) 1-1/4" LMU	T-Mobile
-		3 Andrew LNX-65 antenna- Panel			(3) 7/8" Fiber	
-	173.0	3	Ericsson - KRY 112 144 - TMA			
13		3	Swedcom - SWCP 2X7014 - Panel	(3) Modified		
14		6	CommScope - NHH-65B-R2B - Panel	Sector Frames with (3)		
15		3	Samsung - MT6407-77A - Panel	BSAMNT-SBS-1-2, (3)	(1) 1 5/8" Hybrid (1) W/G Ladder	
16	165.0	3	B2/B66A RRH-BR049 (RFV01U-D1A)	VZWSMART-P40-		Verizon
17		3	B5/B13 RRH-BR04C (RFV01U-D2A)	238X150, (12)		
18		1	Raycap RVZDC-6627-PF-48 - OVP	VZWSMART-MSK1, (3) VZWSMART-SFK1 and (3) VZWSMART-SFK3		
18		3	JMA Wireless MX08FRO665-21 Panel	(2) Commencero		
19		3	Fujitsu TA08025-B605 RRU	(3) Commscope	(1) 1 7 <sup>-11</sup> Uubrid	Dish
20	155.0	3	Fujitsu TA08025-B604 RRU	framos	(I) I.75 Hybrid	Wireless
21		1	Raycap RDIDC-9181-PF-48 OVP	names		
22		3	RFS - APXVTM14-C-I20 - Panel			
23		3	RFS - APXVSPP18 - Panel			
24	24         3         ALU - 2500 MHz - RRU           25         138.0         3         ALU - 1900 MHz - RRU		ALU - 2500 MHz - RRU		(2) 1 1 / 4"	Corint
25			(3) T-Frame	(3) 1 1/4 (1) 5 /9" Eibor	Sprint	
26		3	ALU - 800 MHz - RRU			INEXLEI
27		3	ALU - 800MHz Filter			
28		4	RFS - ACU-A20-N - RET			

# 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
10		3	Ericsson - AIR 21 B2A/B4P - Panel			
11		3	Ericsson - AIR 21 B4A/B2P - Panel		$(4) \pm 5/8^{\circ}$	
12	175.0	3	Ericsson - 840590966 - Panel	(3) VFAIZ-ND	(1) 1-1/4 Fiber	T-Mobile
13		3	Ericsson KRY 112 144/1		(1) 1.9 FIDE (3) 7/8" Hybrid	
14		3	Ericsson 4480 B71 + B85			

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	
Max. Usage:	53.3%	83.1%	2.3%	
Pass/Fail	Pass	Pass	Pass	

# **Foundations**

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	407.4	339.3	39.3

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

# **Operational Condition (Rigidity):**

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.0785 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: MA12227-A-SBA

Site Name:	Truro			Code: TIA-222-G		3/23/2022	<b>(((H)))</b>
Туре:	Self Support	Base Shape:	Triangle	Basic WS:	108.00		
Height:	190.00 (ft)	Base Width:	22.50	Basic Ice WS:	40.00		
Base Elev:	0.00 (ft)	Top Width:	5.41	<b>Operational WS:</b>	60.00	Page: 1	Tower Engineering Solutions

		S	Section Properties			
Sect	l ea Me	mhers	Diagonal Members	Horizontal Members		
1-2	SOL 5 1/4" SOL		SAF 4X4X0 25			
3	SOL 5" SOLID		SAE 4X4X0.25			
4	SOL 5" SOLID		SAF 3 5X3 5X0 25			
5	SOL 4 3/4" SOL	ID	SAF 3 5X3 5X0 25		180.	.00
6	SOL 4 1/4" SOL	_ID	SAE 3X3X0.1875			
7	SOL 4" SOLID		SAE 2.5X2.5X0.25		S9	
8	SOL 3 3/4" SOL	_ID	SAE 2.5X2.5X0.1875			
9	SOL 3 1/2" SOL	.ID	SAE 2.5X2.5X0.1875		160	00
10	SOL 3" SOLID		SAE 2X2X0.1875	SAE 2X2X0.1875		
		Dis	crete Appurtenance	es estatution estatu estatution estatution esta	S8	
Attac	b Eorce	2.0				
Elev (	ft) Elev (ft)	Qty	Description		140	00
190.	190.00	1	Liahtnina Rod		140.	
190.	00 190.00	1	Beacon			
187.	30 187.30	1	(3) USF12-496-U		\$7	
187.	30 187.30	3	AM-X-CD-16-65-00T-RET			
187.	30 187.30	3	HPA65R-KE4A		120	.00
187.	30 187.30	3	DUO1417-8686-0			
187.	30 187.30	3	800 10121			
187.	30 187.30	6	LGP17201		S6	
187.	30 187.30	3	RRUS 12			
187.	30 187.30	3	RRUS 4478 B14		100	.00
187.	30 187.30	3	4449 B5/B12			
187.	30 187.30	2	DC6-48-60-18-8F		05	
175.	00 175.00	3	AIR 21 B2A/B4P		55	
175.	00 175.00	3	AIR 21 B4A/B2P			
175.	00 175.00	3	840590966		80.	.00
175.	00 175.00	3	Ericsson KRY 112 144/1			
175.	00 175.00	3	Ericsson 4480 B71 + B85		S4	
175.	00 175.00	3	VFA12-HD			
165.	00 165.00	3	SWCP 2X7014			
165.	00 165.00	6	NHH-65B-R2B		60.	.00
165.	00 165.00	3	MT6407-77A			
165.	00 165.00	3	B2/B66A RRH-BR049 (RF	V01U-D1A)	\$3	
165.	00 165.00	3	B5/B13 RRH-BR04C (RFV	′01U-D2A)		
165.	00 165.00	1	Raycap RVZDC-6627-PF-4	48	10	~~
165.	00 165.00	1	(3) V-Brace Kits		40.	.00
165.	00 165.00	1	(3) Stabilizer Kit			
155.	00 155.00	3	MX08FRO665-21		S2	
155.	00 155.00	1	(3) MTC3975083			
155.	00 155.00	3	TA08025-B605		20	
155.	00 155.00	3	TA08025-B604		20.	.00
155.	00 155.00	1	RDIDC-9181-PF-48			
138.	00 138.00	3	T-Arm (Flat)		S1	
138.	00 138.00	3	APXVTM14-C-I20			
138.	00 138.00	3	APXVSPP18-C			
138.	00 138.00	3	1900MHz RRH			
138.	00 138.00	3	1900MHz RRH			
138.	138.00	3	800 MHz RRH			
138.	00 138.00	3	ALU 800MHz External Not	ch Filt	7	
138.	00 138.00	4	ACU-A20-N			
		Lir	near Appurtenances	5		

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Structure: MA12227-A-SBA								
Site Name:	Truro			Code: TIA-222-G	i 100.00	3/23/2022	<b>(((井)))</b>	
Туре:	Self Support	Base Shape:	Triangle	Basic WS:	108.00			
Height:	190.00 (ft)	Base Width:	22.50	Basic Ice WS:	40.00			
Base Elev:	0.00 (ft)	Top Width:	5.41	Operational WS:	60.00	Page: 2	Tower Engineering Solutions	

Elev	Elev				
From (ft)	To (ft)	Qty	Descriptior	ו	
0.00	187.00	12	1 5/8" Coax		
0.00	187.00	2	3" Conduit		
0.00	187.00	4	3/4" DC		
0.00	187.00	2	7/16" Fiber		
0.00	187.00	1	Climbing Lac	lder	
0.00	187.00	1	Safety Cable	;	
0.00	187.00	1	W/G Ladder		
0.00	175.00	4	1 5/8" Coax		
0.00	175.00	1	1-1/4" Fiber		
0.00	175.00	1	1.9" Fiber		
0.00	175.00	3	7/8" Hybrid		
0.00	175.00	1	W/G Ladder		
0.00	165.00	1	1 5/8" Hybrid	l	
0.00	165.00	1	W/G Ladder		
0.00	155.00	1	1.75" Hybrid		
0.00	138.00	3	1 1/4" Coax		
0.00	138.00	1	5/8" Fiber		
0.00	138.00	1	W/G Ladder		
		l	Base Rea	ctions	
L	eg		Over	turning	
Max Uplift:	-339.30	(kips	Moment:	7401.92	(ft-kips)
Max Down:	407.36	(kips	Total Down:	82.48	(kips)
Max Shear:	39.25	(kips	Total Shear:	66.75	(kips)

	Structure: MA12227-A-SBA														
Site Name:	Truro			Code: TIA-222-G	6	3/23/2022	(((H)))								
Туре:	Self Support	Base Shape:	Triangle	Basic WS:	108.00										
Height:	190.00 (ft)	Base Width:	22.50	Basic Ice WS:	40.00		IES								
Base Elev:	0.00 (ft)	Top Width:	5.41	Operational WS:	60.00	Page: 3	Tower Engineering Solutions								





			Load	ding Summa	ry									
Structure:	MA12227-A-SBA			Code:	TIA-222-G	3/23/2022								
Site Name:	Truro			Exposure:	В		((·#•))							
Height:	190.00 (ft)			Crest Height:	0.00									
Base Elev:	0.000 (ft)			Site Class:	D - Stiff Soil									
Gh:	0.85	Topography:	1	Struct Class:	II	Page: 5	Tower Engineering Solutions							
Discrete A	Discrete Appurtenances Properties													
			No Ice	e lce										

Attach												Vert
Elev			Weight	CaAa	Weight	CaAa	Len	Width	Depth		Orientation	Ecc
(ft)	Description	Qty	(lb)	(sf)	(lb)	(sf)	(in)	(in)	(in)	Ka	Factor	(ft)
190.00	Lightning Rod	1	5.00	0.500	26.39	2.282	72.000	1.000	1.000	1.00	1.00	0.000
190.00	Beacon	1	36.00	2.720	172.02	3.689	28.000	17.500	17.500	1.00	1.00	0.000
187.30	(3) USF12-496-U	1	1598.0	34.800	3876.37	72.012	0.000	0.000	0.000	0.75	1.00	0.000
187.30	AM-X-CD-16-65-00T-RET	3	48.50	8.020	214.22	10.873	72.000	11.800	5.900	0.80	0.79	0.000
187.30	HPA65R-KE4A	3	20.30	8.280	228.20	9.531	48.000	20.700	7.700	0.80	0.71	0.000
187.30	DUO1417-8686-0	3	20.30	5.830	182.13	6.881	48.400	14.000	9.000	0.80	0.84	0.000
187.30	800 10121	3	46.30	5.150	163.60	7.301	54.500	10.300	5.900	0.80	0.82	0.000
187.30	LGP17201	6	31.00	1.950	70.03	2.968	13.900	14.400	3.700	0.80	0.50	0.000
187.30	RRUS 12	3	60.00	2.700	128.44	3.374	18.200	17.800	8.000	0.80	0.67	0.000
187.30	RRUS 4478 B14	3	59.40	1.650	101.75	2.179	15.000	13.200	7.300	0.80	0.67	0.000
187.30	4449 B5/B12	3	71.00	1.970	125.51	2.529	17.900	13.200	9.400	0.80	0.67	0.000
187.30	DC6-48-60-18-8F	2	31.80	0.920	94.93	1.367	24.000	11.000	11.000	0.80	1.00	0.000
175.00	AIR 21 B2A/B4P	3	91.50	6.090	262.93	7.202	56.000	12.100	7.900	0.80	0.86	0.000
175.00	AIR 21 B4A/B2P	3	90.30	6.090	261.73	7.202	56.000	12.100	7.900	0.80	0.86	0.000
175.00	840590966	3	101.40	19.880	509.28	21.791	95.900	23.500	7.100	0.80	0.69	0.000
175.00	Ericsson KRY 112 144/1	3	11.00	0.410	21.92	0.891	6.900	6.100	2.700	0.80	0.70	0.000
175.00	Ericsson 4480 B71 + B85	3	93.00	2.850	165.84	3.533	21.800	15.700	7.500	0.80	0.67	0.000
175.00	VFA12-HD	3	774.00	18.900	1539.97	42.948	0.000	0.000	0.000	0.75	1.00	0.000
165.00	SWCP 2X7014	3	30.00	9.940	313.11	11.362	76.700	14.000	11.300	0.80	0.93	0.000
165.00	NHH-65B-R2B	6	43.70	8.080	248.34	9.389	72.000	11.900	7.100	0.80	0.83	0.000
165.00	MT6407-77A	3	79.40	4.690	200.77	5.650	35.100	16.100	5.500	0.80	0.70	0.000
165.00	B2/B66A RRH-BR049	3	84.40	1.880	136.30	2.438	15.000	15.000	10.000	0.80	0.67	0.000
165.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	70.30	1.880	119.55	2.438	15.000	15.000	8.100	0.80	0.67	0.000
165.00	Raycap RVZDC-6627-PF-48	1	32.00	4.060	147.36	4.892	29.500	16.500	12.600	0.80	1.00	0.000
165.00	(3) V-Brace Kits	1	650.00	15.500	1477.05	31.935	0.000	0.000	0.000	0.75	1.00	0.000
165.00	(3) Stabilizer Kit	1	180.00	6.100	409.03	12.568	0.000	0.000	0.000	0.75	1.00	0.000
155.00	MX08FRO665-21	3	64.50	12.490	355.37	13.955	72.000	20.000	8.000	0.80	0.74	0.000
155.00	(3) MTC3975083	1	1056.4	29.450	2088.86	66.456	0.000	0.000	0.000	0.75	1.00	0.000
155.00	TA08025-B605	3	75.00	1.960	127.30	2.521	15.800	15.000	9.100	0.80	0.67	0.000
155.00	TA08025-B604	3	63.90	1.960	114.53	2.521	15.800	15.000	7.900	0.80	0.67	0.000
155.00	RDIDC-9181-PF-48	1	21.85	2.010	74.98	2.578	16.570	14.570	8.460	1.00	1.00	0.000
138.00	T-Arm (Flat)	3	400.00	10.000	675.27	18.602	0.000	0.000	0.000	0.75	0.75	0.000
138.00	APXVTM14-C-I20	3	56.20	6.340	212.18	7.435	56.300	12.600	6.300	0.80	0.78	0.000
138.00	APXVSPP18-C	3	57.00	8.020	227.40	10.774	72.000	11.800	7.000	0.80	0.83	0.000
138.00	1900MHz RRH	3	44.00	3.800	151.61	5.170	23.000	13.000	17.000	0.80	0.67	0.000
138.00	1900MHz RRH	3	44.00	3.800	151.61	5.170	23.000	13.000	17.000	0.80	0.67	0.000
138.00	800 MHz BBH	3	53.00	2 4 9 0	125.91	3 618	19 700	13 000	10 800	0.80	0.67	0.000
138.00	AI U 800MHz External Notch Filt	3	8 80	0 780	26 19	1 418	10 000	8 000	3 000	0.80	0.50	0.000
138.00	ACU-A20-N	4	1 00	0 140	5 24	0 432	4 000	2 000	3 500	0.80	0.50	0.000
100.00	Totolo	407	11 047 50	0.140	20.020.04	0.702	4.000	2.000	Number	of Ann	urtenenece :	20
	i otais:	107	11,947.36		30,920.91				Tedunoer	or Abb	unternances :	29

			Loa	ding Summa	ry		
Structure:	MA12227-A-SBA	4		Code:	TIA-222-G	3/23/2022	44.000.55
Site Name:	Truro			Exposure:	В		((H)))
Height:	190.00 (ft)			Crest Height:	0.00		EC
Base Elev:	0.000 (ft)			Site Class:	D - Stiff Soil		
Gh:	0.85	Topography:	1	Struct Class:	II	Page: 6	Tower Engineering Solutions

# Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (Ib/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	187.00	1 5/8" Coax	12	1.98	1.04	100.00	3	Individual IR		Ν	0.50	1.00	
0.00	187.00	3" Conduit	2	3.02	1.78	100.00	3	Individual IR		Ν	0.50	1.00	
0.00	187.00	3/4" DC	4	0.75	0.40	100.00	3	Individual NR		Ν	0.50	1.00	0
0.00	187.00	7/16" Fiber	2	0.44	0.16	100.00	3	Individual NR		Ν	0.50	1.00	0
0.00	187.00	Climbing Ladder	1	3.00	6.90	100.00	1	Individual NR		Ν	0.50	1.00	
0.00	187.00	Safety Cable	1	0.38	0.27	100.00	1	Individual NR		Ν	0.50	1.00	
0.00	187.00	W/G Ladder	1	0.25	6.00	100.00	3	Individual NR		Ν	0.50	1.00	
0.00	175.00	1 5/8" Coax	4	1.98	1.04	50.00	1	Block		Ν	0.50	0.78	
0.00	175.00	1-1/4" Fiber	1	1.25	0.95	100.00	1	Individual NR		Ν	0.50	1.00	
0.00	175.00	1.9" Fiber	1	1.90	0.95	100.00	1	Individual NR		Ν	0.50	1.00	
0.00	175.00	7/8" Hybrid	3	0.88	0.65	100.00	1	Individual IR		Ν	0.50	0.70	
0.00	175.00	W/G Ladder	1	1.50	6.00	100.00	1	Individual NR		Ν	0.50	1.00	
0.00	165.00	1 5/8" Hybrid	1	1.98	1.04	100.00	2	Individual IR		Ν	0.50	0.76	
0.00	165.00	W/G Ladder	1	2.50	6.00	100.00	2	Individual NR		Ν	0.50	1.00	
0.00	155.00	1.75" Hybrid	1	1.75	1.99	100.00	2	Individual NR		Ν	1.00	1.00	
0.00	138.00	1 1/4" Coax	3	1.55	0.66	100.00	2	Individual IR		Ν	0.50	0.65	
0.00	138.00	5/8" Fiber	1	0.63	0.15	100.00	2	Individual NR		Ν	0.50	1.00	
0.00	138.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		Ν	0.50	1.00	

							ę	Sect	tion l	Force	s						
Stru	cture:	MA12227	7-A-SBA	4				C	Code:		TIA-	-222-G		3/2	3/2022	4	
Site	Name	: Truro						E	xpos	ure:	В				VA	<b>(((井))</b>	
Hoid	the	100 00 /f	+)					-	rost	Hoight	. <u> </u>	)			1	-	
neiť		1) 00.061	U)							lees	. 0.00	or:tt o - )			×		
Bas	e Elev:	0.000 (π)						3		lass:	D - 3	Sun So	DII	Z		Towar Engi	nearing Solutions
Gh:		0.85		Торо	grapł	ıy:	1	5	Struct	Class	:			F	Page: 7	Tower Eligi	neering solutions
Loa	d Case	: 1.2D + 1	.6W No	ormal W	'ind							1.2D ·	+ 1.6W <sup>·</sup>	108 mph	Wind a	t Normal	To Face
		Wind Load Fa	actor:	1.60										Wind I	mportan	ce Factor:	1.00
		Dead Load Fa	actor:	1.20											•		
	Ice	Dead Load Fa	actor:	0.00										Ice li	mportan	ce Factor:	1.00
		Total	Total	Ice					_			Ice					
Sect	Wind	Flat	Round	Round	Sal				ICe Thick	Eff	Linear	· Linear	Total Woight	Woight	Struct	Linear	Total
Seq	(ft)	(psf) (sqft)	(sqft)	(sqft)	Ratio	Cf	Df	Dr	(in)	(sqft)	(sqft)	(sqft)	(lb)	Ice (lb)	(lb)	(lb)	(lb)
1	10.0	17.77 44.239	17.52	0.00	0.14	2.81	1.00	1.00	0.00	53.54	104.28	0.00	10,021.	0.0	3632.60	1879.02	5,511.62
2	30.0	17.78 40.806	17.52	0.00	0.14	2.79	1.00	1.00	0.00	50.12	104.28	0.00	9,777.1	0.0	3385.31	1880.61	5,265.92
3	50.0	20.58 37.445	16.69	0.00	0.15	2.78	1.00	1.00	0.00	46.25	104.28	0.00	9,040.8	0.0	3601.03	2176.13	5,777.15
4	70.0	22.65 29.822	16.69	0.00	0.14	2.81	1.00	1.00	0.00	38.44	104.28	0.00	8,499.4	0.0	3326.19	2395.71	5,721.91
5	90.0	24.34 26.961	15.85	0.00	0.14	2.79	1.00	1.00	0.00	35.21	104.28	0.00	7,822.6	0.0	3253.28	2574.06	5,827.34
6	110.0	25.77 26.314	14.19	0.00	0.16	2.75	1.00	1.00	0.00	33.95	104.28	0.00	6,419.3	0.0	3270.69	2725.96	5,996.64
7	130.0	27.03 19.196	13.35	0.00	0.15	2.79	1.00	1.00	0.00	26.45	103.06	0.00	5,958.2	0.0	2708.50	2821.22	5,529.72
8	150.0	28.16 16.544	12.52	0.00	0.16	2.75	1.00	1.00	0.00	23.45	91.41	0.00	4,903.1	0.0	2469.73	2562.55	5,032.28
9	170.0	29.19 14.015	11.68	0.00	0.17	2.69	1.00	1.00	0.00	20.58	78.73	0.00	4,171.5	0.0	2201.24	2223.22	4,424.47
10	185.0	29.90 7.266	5.01	0.00	0.20	2.59	1.00	1.00	0.00	10.14	21.76	0.00	1,526.8	0.0	1069.39	609.01	1,678.40
													68,140.8	0.0	0		50,765.45
Loa	d Case	: 1.2D + 1	.6W 60	° Wind								1.2D	+ 1.6W	108 mph	Wind a	at 60° Fr	om Face
		Wind Load Fa	actor:	1.60										Wind I	mportan	ce Factor:	1.00
		Dead Load Fa	actor:	1.20													
	Ice	Dead Load Fa	actor:	0.00										Ice li	mportan	ce Factor:	1.00
		Total	Total	Ice					1			Ice	Tatal		C4		Tatal
Sact	Wind	Flat	Area	Area	Sal				ICe Thick		Linear		I Otal Weight	Woight	Struct	Enrear	Total
Sect	(ft)	(psf) (sqft)	(sqft)	(sqft)	Ratio	Cf	Df	Dr	(in)	(sqft)	(sqft)	(sqft)	(lb)	ice (lb)	(lb)	(lb)	(lb)
1	10.0	17 77 44 230	17 52	0.00	0 14	2 81	0.80	1 00	0.00	44 69	104.28	0.00	10 021	0.0	3032.26	1879.02	4 911 20
2	30.0	17.78 40.806	17.52	0.00	0.14	2.79	0.80	1.00	0.00	41.95	104.28	0.00	9.777.1	0.0	2834.02	1880.61	4,714.63
3	50.0	20.58 37.445	16.69	0.00	0.15	2.78	0.80	1.00	0.00	38.76	104.28	0.00	9,040.8	0.0	3017.87	2176.13	5,194.00
4	70.0	22.65 29.822	16.69	0.00	0.14	2.81	0.80	1.00	0.00	32.47	104.28	0.00	8,499.4	0.0	2810.09	2395.71	5,205.80
5	90.0	24.34 26.961	15.85	0.00	0.14	2.79	0.80	1.00	0.00	29.82	104.28	0.00	7,822.6	0.0	2755.10	2574.06	5,329.16
6	110.0	25.77 26.314	14.19	0.00	0.16	2.75	0.80	1.00	0.00	28.69	104.28	0.00	6,419.3	0.0	2763.68	2725.96	5,489.64
7	130.0	27.03 19.196	13.35	0.00	0.15	2.79	0.80	1.00	0.00	22.61	103.06	0.00	5,958.2	0.0	2315.29	2821.22	5,136.51
8	150.0	28.16 16.544	12.52	0.00	0.16	2.75	0.80	1.00	0.00	20.14	91.41	0.00	4,903.1	0.0	2121.28	2562.55	4,683.84

0.0 1901.49 2223.22 4,124.71

0.0 916.18 609.01 1,525.19

46,314.76

0.0

68,140.8

9 170.0 29.1914.015 11.68 0.00 0.17 2.69 0.80 1.00 0.00 17.78 78.73 0.00 4,171.5

10 185.0 29.90 7.266 5.01 0.00 0.20 2.59 0.80 1.00 0.00 8.69 21.76 0.00 1,526.8

							ę	Sec	tion	Force	s						
Stru Site Heig Bas	icture: Name ght: e Elev	MA12227 : Truro 190.00 (f : 0.000 (ft)	7-A-SBA t)	<u></u> Α				( E ( S	Code: Expos Crest Site C	ure: Height Iass:	TIA- B t: 0.00 D - \$	222-G ) Stiff Sc	il	3/2	3/2022	(((HI))) I I	ES
Gh:		0.85		Торо	grapl	ıy:	1	ę	Struct	Class	: 11			F	Page: 8	Tower Engir	neering Solutions
Loa	d Case	e: 1.2D + 1 Wind Load Fa Dead Load Fa Dead Load Fa	.6W 90 actor: actor: actor:	° Wind 1.60 1.20 0.00								1.2D	+ 1.6W	108 mph Wind I Ice I	n Wind a mportanc mportanc	at 90° Fro ce Factor: ce Factor:	om Face 1.00 1.00
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	lce Round Area (sqft)	Sol Ratio	Cf	Df	Dr	lce Thick (in)	Eff Area (sqft)	Linear Area (sqft)	lce Linear Area (sqft)	Total Weight (Ib)	Weight Ice (Ib)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.77 44.239	17.52	0.00	0.14	2.81	0.85	1.00	0.00	46.90	104.28	0.00	10,021.	0.0	3182.35	1879.02	5,061.37
2	30.0	17.78 40.806	17.52	0.00	0.14	2.79	0.85	1.00	0.00	43.99	104.28	0.00	9,777.1	0.0	2971.84	1880.61	4,852.45
3	50.0	20.58 37.445	16.69	0.00	0.15	2.78	0.85	1.00	0.00	40.63	104.28	0.00	9,040.8	0.0	3163.66	2176.13	5,339.79
4	70.0	22.65 29.822	16.69	0.00	0.14	2.81	0.85	1.00	0.00	33.97	104.28	0.00	8,499.4	0.0	2939.12	2395.71	5,334.83
5	90.0	24.34 20.901	10.00	0.00	0.14	2.79	0.00	1.00		30.00	104.20	0.00	6 / 10 3	0.0	2079.04	2374.00	5,455.70
7	130.0	27.03.10.106	13 35	0.00	0.10	2.75	0.85	1.00		23 57	104.20	0.00	5 958 2	0.0	2090.43	2821 22	5 234 81
8	150.0	28 16 16 544	12.50	0.00	0.15	2.75	0.00	1.00		20.07	Q1 41	0.00	1 QO3 1	0.0	2208.40	2562 55	4 770 95
9	170.0	29 19 14 015	11 68	0.00	0.10	2.75	0.85	1.00	0.00	18 48	78 73	0.00	4 171 5	0.0	1976 43	2223 22	4 199 65
10	185.0	29.90 7.266	5.01	0.00	0.20	2.59	0.85	1.00	0.00	9.05	21.76	0.00	1.526.8	0.0	954.48	609.01	1.563.49
													68,140.8	0.	0		47,427.44
Loa	d Case	e: 0.9D + 1	.6W No	ormal W	'ind							0.9D -	+ 1.6W <sup>·</sup>	108 mph	Wind a	t Normal	To Face
		Wind Load Fa	actor:	1.60										Wind I	mportan	ce Factor:	1.00
Dead Load Factor: 0.90																	
Ice Dead Load Factor: 0.00														Ice I	mportan	ce Factor:	1.00
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	lce Round Area (sqft)	Sol Ratio	Cf	Df	Dr	lce Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (Ib)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.77 44.239	17.52	0.00	0.14	2.81	1.00	1.00	0.00	53.54	104.28	0.00	7,516.4	0.0	3632.60	1879.02	5,511.62

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4 5

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50.0

70.0

90.0

20.58 37.445

22.65 29.822

24.34 26.961

110.0 25.77 26.314

130.0 27.03 19.196

150.0 28.16 16.544

170.0 29.19 14.015

10 185.0 29.90 7.266

16.69

16.69

15.85

14.19

13.35

12.52

5.01

11.68

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.15 2.78 1.00 1.00 0.00

0.14 2.79 1.00 1.00 0.00

0.16 2.75 1.00 1.00 0.00

0.15 2.79 1.00 1.00 0.00

0.16 2.75 1.00 1.00 0.00

0.17 2.69 1.00 1.00 0.00

0.20 2.59 1.00 1.00 0.00 10.14

1.00 1.00 0.00

0.14 2.81

46.25 104.28

38.44 104.28

35.21 104.28

33.95 104.28

26.45 103.06

91.41

78.73

23.45

20.58

0.00

0.00

0.00

0.00

0.00

0.00

0.00

21.76 0.00 1,145.1

6,780.6

6,374.5

5,867.0

4,814.4

4,468.7

3,677.3

3,128.6

51,105.6

0.0 3601.03 2176.13

0.0 3326.19 2395.71

0.0 3253.28 2574.06

0.0 3270.69 2725.96

0.0 2708.50 2821.22

0.0 2469.73 2562.55

0.0 2201.24 2223.22

0.0 1069.39 609.01

0.0

5,777.15

5,721.91

5,827.34

5,996.64

5,529.72

5,032.28

4,424.47

1,678.40

50,765.45

							Ę	Sect	tion l	Force	S						
Stri	icturo:	MA 12227		\					, odo.			222 C		3/2	3/2022		
Site	Nome		-A-00/	<b>`</b>					vnee.		п	222-0		5/2	5/2022	((H))	
5110	Name								xpos	ure:	D				Y		
Heię	ght:	190.00 (f	t)					C	Crest	Height	: 0.00	)					$\mathbf{F}\mathbf{C}$
Bas	e Elev:	0.000 (ft)						S	Site C	lass:	D - S	Stiff Sc	bil	z			
Gh:		0.85		Торо	grapł	ıy:	1	S	Struct	Class	: 11			F	Page: 9	Tower Engi	neering Solutions
Loa	d Case	: 0.9D + 1	.6W 60	° Wind								0.9D	+ 1.6W	108 mph	wind a	at 60° Fr	om Face
		Wind Load Fa	actor:	1.60										Wind I	mnortan	- Factor	1 00
		Dead Load Fa	actor:	0.90										wind i	mportant	Je i actor.	1.00
	Ice	Dead Load Fa	actor:	0.00										Ice I	mportand	e Factor:	1.00
<u>.</u>		Total	Total	Ice								lce					
	Wind	Flat	Round	Round					lce	Eff	Linear	Linear	Total		Struct	Linear	Total
Sect Seq	Height (ft)	qz Area (psf) (sqft)	Area (sqft)	Area (sqft)	Sol Ratio	Cf	Df	Dr	Thick (in)	Area (sqft)	Area (sqft)	Area (sqft)	Weight (lb)	Weight Ice (lb)	Force (lb)	Force (lb)	Force (lb)
1	10.0	17.77 44.239	17.52	0.00	0.14	2.81	0.80	1.00	0.00	44.69	104.28	0.00	7,516.4	0.0	3032.26	1879.02	4,911.29
2	30.0	17.78 40.806	17.52	0.00	0.14	2.79	0.80	1.00	0.00	41.95	104.28	0.00	7,332.9	0.0	2834.02	1880.61	4,714.63
3	50.0	20.58 37.445	16.69	0.00	0.15	2.78	0.80	1.00	0.00	38.76	104.28	0.00	6,780.6	0.0	3017.87	2176.13	5,194.00
4	70.0	22.65 29.822	16.69	0.00	0.14	2.81	0.80	1.00	0.00	32.47	104.28	0.00	6,374.5	0.0	2810.09	2395.71	5,205.80
5	90.0	24.34 26.961	15.85	0.00	0.14	2.79	0.80	1.00	0.00	29.82	104.28	0.00	5,867.0	0.0	2755.10	2574.06	5,329.16
6	110.0	25.77 26.314	14.19	0.00	0.16	2.75	0.80	1.00	0.00	28.69	104.28	0.00	4,814.4	0.0	2763.68	2725.96	5,489.64
7	130.0	27.03 19.196	13.35	0.00	0.15	2.79	0.80	1.00	0.00	22.61	103.06	0.00	4,468.7	0.0	2315.29	2821.22	5,136.51
8	150.0	28.16 16.544	12.52	0.00	0.16	2.75	0.80	1.00	0.00	20.14	91.41	0.00	3,677.3	0.0	2121.28	2562.55	4,683.84
9	170.0	29.19 14.015	11.68	0.00	0.17	2.69	0.80	1.00	0.00	17.78	78.73	0.00	3,128.6	0.0	1901.49	2223.22	4,124.71
10	185.0	29.90 7.266	5.01	0.00	0.20	2.59	0.80	1.00	0.00	8.69	21.76	0.00	1,145.1	0.0	_ 916.18	609.01	1,525.19
													51,105.6	0.	0		46,314.76
Loa	d Case	: 0.9D + 1	.6W 90	° Wind								0.9D	+ 1.6W	108 mph	n Wind a	at 90° Fr	om Face
		Wind Load Fa	actor:	1.60										Wind I	mportand	e Factor:	1.00
		Dead Load Fa	actor:	0.90											•		
	Ice	Dead Load Fa	actor:	0.00										Ice I	mportano	ce Factor:	1.00
		Total	Total	lce								Ice					
- ·	Wind	Flat	Round	Round					lce	Eff	Linear	Linear	Total		Struct	Linear	Total
Sect	Height	qz Area	Area	Area	Sol Patio	Cf	Df	Dr	Thick	Area	Area	Area	Weight	Weight	Force	Force	Force
Seq	(11)	(psi) (sqir)	(sqii)	(sqit)	Ralio	CI		DI	(111)	(sqit)	(sqit)	(sqii)	(u)	ice (ib)	(u)	(ui)	(u)
1	10.0	17.77 44.239	17.52	0.00	0.14	2.81	0.85	1.00	0.00	46.90	104.28	0.00	7,516.4	0.0	3182.35	1879.02	5,061.37
2	30.0	17.78 40.806	17.52	0.00	0.14	2.79	0.85	1.00	0.00	43.99	104.28	0.00	7,332.9	0.0	29/1.84	1880.61	4,852.45
3	50.0	20.58 37.445	10.69	0.00	0.15	2.78	0.85	1.00	0.00	40.63	104.28	0.00	0,780.6	0.0	3103.00	21/0.13	5,339.79
4	0.0	22.00 29.022	15.09	0.00	0.14	2.01	0.05	1.00	0.00	31 17	104.28	0.00	5 867 0	0.0	2939.12	2393.11	5 152 70
6	110.0	25 77 26 314	1/ 10	0.00	0.14	2.19	0.00	1.00	0.00	30.00	104.20	0.00	1 811 A	0.0	2800 /2	2725 06	5 616 30
7	130.0	27 03 10 106	13 35	0.00	0.10	2.70	0.85	1.00	0.00	23 57	103.06	0.00	4 468 7	0.0	2/13 50	2021.00	5 234 81

0.20 2.59 0.85 1.00 0.00 9.05 21.76 0.00 1,145.1

20.97 91.41 0.00 3,677.3

3,128.6

51,105.6

0.0 2208.40 2562.55 4,770.95

0.0 1976.43 2223.22 4,199.65

0.0 954.48 609.01 1,563.49

47,427.44

0.0

0.16 2.75 0.85 1.00 0.00

9 170.0 29.19 14.015 11.68 0.00 0.17 2.69 0.85 1.00 0.00 18.48 78.73 0.00

150.0 28.16 16.544 12.52 0.00

10 185.0 29.90 7.266 5.01 0.00

8

							ę	Sec	tion	Force	es						
Stru	cture:	MA12227	7-A-SB/	4				C	Code:		TIA-	-222-G		3/2	3/2022		
Site	Name:	Truro						E	Expos	ure:	В				YA		
Heid	ht:	190.00 (f	ť)					(	Crest	Heiaht	t: 0.00	)				ІІт	
Pag		0.000 (ft)	-)						Sito C	lace		Stiff Sc	sil	~			
Das	e Liev.	0.000 (11)		_						01			711	1	10	Tower Engir	eering Solutions
Gh:		0.85		Горо	grapi	ny:	1		struct	Class	5: II			Pa	age: 10	romer Engli	itering seraitons
Loa	d Case	: 1.2D + 1	.0Di + '	1.0Wi N	lorma	l Win	d			1.2	2D + 1.	0Di + ′	1.0Wi 40	) mph Wi	nd at No	ormal Fro	om Face
		Wind Load Fa	actor:	1.00								•=•				- Footow	1 00
		Dead Load Fa	actor:	1.20										wind i	mportant	ce Factor:	1.00
	Ice	Dead Load Fa	actor:	1.00										Ice I	mportand	ce Factor:	1.00
		Total	Total	lce								Ice					
	Wind	Flat	Round	Round					Ice	Eff	Linear	<sup>.</sup> Linear	Total		Struct	Linear	Total
Sect	Height	qz Area	Area	Area	Sol Patio	Cf	Df	Dr	Thick	Area	Area	Area	Weight	Weight	Force	Force	Force
Jeq	(11)		(Sqlt)		Natio	0.54			(11)	(3411)	(3411)	(Sqit)	(0)		(10)	(U)	(0)
1	10.0	2.44 44.239	56.44	38.91	0.23	2.51	1.00	1.00	1.33	76.95	166.42	48.81	17,862.	/840./	400.25	342.42	720.50
2	50.0	2.44 40.606	57.05	40.00	0.24	2.40	1.00	1.00	1.49	70.86	160.73	04.40 62.55	17 207	9766.7	302.02	307.40	739.50 930.11
3	70.0	2.02 37.443	57.05	40.37	0.25	2.43	1.00	1.00	1.50	62.46	171 51	64.60	16.974	9375.0	412.00	420.23	976.95
5	0.0	3 34 26 961	53 13	37.03	0.23	2.40	1.00	1.00	1.02	58.25	172.80	66.33	16 101	8278.7	305 32	515 75	010.05
6	110.0	3 54 26 314	55.06	J1 77	0.27	2.00	1.00	1.00	1.00	60.02	172.03	67.69	14 976	8457 0	400.04	5/3 61	052.65
7	130.0	3 71 10 106	52.90	29.67	0.31	2.21	1.00	1.00	1.09	50.55	172.42	68.24	12 717	7759.9	260.01	566 11	952.05
7 Q	150.0	3 86 16 544	47.02	35.49	0.31	2.21	1.00	1.00	1.72	45.97	1/2.43	62.54	11 965	6062.6	332.04	508.82	927.33
0	170.0	4 00 14 015	47.99	30.40	0.34	2.20	1.00	1.00	1.75	45.67	149.02	51 54	10 202	6031.0	200 54	125 19	724 72
10	185.0	4 10 7 266	24 43	10 42	0.57	1 01	1.00	1.00	1.77	23.03	33 58	14 55	3 825 8	2200 0	150.04	92 91	251.00
10	105.0	4.10 7.200	24.45	13.42	0.50	1.51	1.00	1.00	1.70	25.55	55.50	14.55	141 511 5	73370	- 153.00 -	52.51	7 906 77
													141,511.5	13310.	1		7,000.77
Loa	d Case	: 1.2D + 1	.0Di + 1	1.0Wi 6	0° Wi	nd					1.2D	+ 1.0D	i + 1.0W	Vi 40 mph	Wind a	at 60° Fro	om Face
		Wind Load Fa	actor:	1.00										Wind I	mportanc	ce Factor:	1.00
		Dead Load Fa	actor:	1.20													
	lce	Dead Load Fa	actor:	1.00										Ice I	mportand	ce Factor:	1.00
		Total	Total	lce								lce					
0	Wind	Flat	Round	Round	0.1				ICe	Eff	Linear	· Linear	Total	Mainh4	Struct	Linear	Total
Sect	reight (ft)	(nsf) (soff)	Area (soft)	Area (soft)	Ratio	Cf	Df	Dr	(in)	Area (soft)	Area (soft)	Area (soft)	(lb)	lce (lb)	(lb)	(lb)	(lb)
	()		(0410)	(0414)		0.54	0.00	1.00	(,	(0410)	(0410)	(0410)	()	70.40 7	(10)	(1.0)	(10)
1	10.0	2.44 44.239	50.44	38.91	0.23	2.51	0.80	1.00	1.33	68.10	100.42	48.81	17,862.	/840./	354.23	342.42	696.65
2	50.0	2.44 40.606	50.41	40.00	0.24	2.40	0.00	1.00	1.49	62.27	1/2.09	04.40	10,370.	0001.1	340.37	406.00	705.40
3	20.0	2.02 37.443	57.05	40.37	0.25	2.43	0.00	1.00	1.50	03.37	109.73	02.00	17,007.	0/00./	309.23	420.23	795.40
4	10.0	3.1129.822	55.72	39.03	0.25	2.43	0.80	1.00	1.02	52.90	172.00	66.22	16 101	03/3.0	302.20	410.34 515.75	030.00
5	90.0 110.0	3 54 20.901	55.13	J1.21	0.21	2.38	0.00	1.00	1.00	54 76	172.09	67.69	1/ 976	0210.1 8/57 0	372 17	5/2 61	014.40
0	120.0	3.04 20.314	52.90	41.//	0.31	2.21	0.00	1.00	1.09	16 71	179.49	07.00	14,070.	0437.0	323 50	566 44	800.03
/ Q	150.0	3 86 16 544	17 00	35.49	0.31	2.21	0.00	1.00	1.72	40.71	1/2.43	62.54	11 965	6062 6	308.00	508.92	816.00
a	170.0	4 00 14 015	47.99	32 30	0.34	2.20	0.00	1.00	1.73	38.60	128.02	51 54	10 202	6031.0	270 30	425 18	704.48
10	185.0	4 10 7 266	24 42	19 42	0.57	1 01	0.00	1.00	1 78	22 48	33 58	14 55	3 825 8	2200 0	140 42	92 01	242 33
10	100.0	4.10 1.200	24.43	10.42	0.00	1.31	0.00	1.00	1.70	22.40	00.00	·55	141 511 5	73370	_ 173.42 _ 7		7 483 54
														10010.			1,400.01

							ę	Sect	ion	Force	s						
Stru	cture:	MA12227	7-A-SBA	٩				С	ode:		TIA-	222-G		3/2	3/2022	4	
Site	Name	Truro						E	xpos	ure:	В			,	YA	((#))	
Heid	aht:	190.00 (f	t)					C	Crest	Heiaht	t: 0.00	)					
Poo		0.000 (ft)	-)					6		lace	יים. יים	Stiff Sc	.ii	~ •			
Das	e Elev:	0.000 (11)		_				0		1055.	U	Sun Sc	11	4		Tower Engi	neering Solutions
Gh:		0.85		Торо	graph	y:	1	S	Struct	Class	: 11			Pa	age: 11	Tower Elign	Solutions
Load Case:         1.2D + 1.0Di + 1.0Wi 90° Wind         1.2D + 1.0Di + 1.0Wi 40 mph Wind at 90° From Face           Wind Load Factor:         1.00         1.00																	
Wind Load Factor: 1.00 Wind Importance Factor: 1.0															1.00		
Dead Load Factor: 1.20																	
Ice Dead Load Factor: 1.00 Ice Importance Factor: 1.														1.00			
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	lce Round Area (sqft)	Sol Ratio	Cf	Df	Dr	lce Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (Ib)	Weight Ice (Ib)	Struct Force (Ib)	Linear Force (lb)	Total Force (lb)
1	10.0	2.44 44.239	56.44	38.91	0.23	2.51	0.85	1.00	1.33	70.31	166.42	48.81	17,862.	7840.7	365.73	342.42	708.15
2	30.0	2.44 40.806	58.41	40.88	0.24	2.46	0.85	1.00	1.49	68.74	172.09	54.48	18,378.	8601.1	350.78	357.48	708.27
3	50.0	2.82 37.445	57.05	40.37	0.25	2.43	0.85	1.00	1.56	65.25	169.73	62.55	17,807.	8766.7	380.16	426.23	806.39
4	70.0	3.1129.822	55.72	39.03	0.25	2.43	0.85	1.00	1.62	57.99	171.51	64.69	16,874.	8375.0	371.82	476.34	848.16
5	90.0	3.34 26.961	53.13	37.27	0.27	2.39	0.85	1.00	1.66	54.21	172.89	66.33	16,101.	8278.7	367.88	515.75	883.63
6	110.0	3.54 26.314	55.96	41.77	0.31	2.27	0.85	1.00	1.69	56.07	174.01	67.68	14,876.	8457.0	382.14	543.61	925.75
7	130.0	3.71 19.196	52.02	38.67	0.31	2.27	0.85	1.00	1.72	47.67	172.43	68.24	13,717.	7758.8	340.35	566.44	906.79
8	150.0	3.86 16.544	47.99	35.48	0.34	2.20	0.85	1.00	1.75	43.38	149.62	62.54	11,865.	6962.6	314.07	508.82	822.89
9	170.0	4.00 14.015	43.98	32.30	0.37	2.12	0.85	1.00	1.77	39.39	128.27	51.54 14.55	3 925 9	2200.0	284.30	425.18	244.75
10	105.0	4.10 1.200	24.43	19.42	0.50	1.91	0.00	1.00	1.70	22.04	55.50	14.55	J,02J.0	72270	7	92.91	7 564 22
													141,311.3	73370.	1		1,304.32

I	Load	d Case	: 1.0D + 1	.0W No	ormal W	/ind							1.0D	) + 1.0W	60 mph	Wind at	Normal	To Face
I			Wind Load Fa	actor:	1.00										Wind Ir	nportanc	e Factor:	1.00
I			Dead Load Fa	actor:	1.00											•		
I		lce	Dead Load Fa	actor:	0.00										Ice Ir	nportanc	e Factor:	1.00
			Total	Total	lce								lce					
		Wind	Flat	Round	Round					lce	Eff	Linear	Linear	Total		Struct	Linear	Total
	Sect Seq	Height (ft)	qz Area (psf) (sqft)	Area (sqft)	Area (sqft)	Sol Ratio	Cf	Df	Dr	Thick (in)	Area (sqft)	Area (sqft)	Area (sqft)	Weight (Ib)	Weight Ice (lb)	Force (lb)	Force (lb)	Force (lb)
	1	10.0	5.48 44.239	17.52	0.00	0.14	2.81	1.00	1.00	0.00	54.17	104.28	0.00	8,351.6	0.0	708.99	362.47	1,071.45
	2	30.0	5.49 40.806	17.52	0.00	0.14	2.79	1.00	1.00	0.00	50.74	104.28	0.00	8,147.6	0.0	661.18	362.77	1,023.95
	3	50.0	6.35 37.445	16.69	0.00	0.15	2.78	1.00	1.00	0.00	46.91	104.28	0.00	7,534.0	0.0	704.66	419.78	1,124.43
	4	70.0	6.99 29.822	16.69	0.00	0.14	2.81	1.00	1.00	0.00	39.28	104.28	0.00	7,082.8	0.0	655.62	462.14	1,117.76
	5	90.0	7.51 26.961	15.85	0.00	0.14	2.79	1.00	1.00	0.00	35.95	104.28	0.00	6,518.9	0.0	640.71	496.54	1,137.25
	6	110.0	7.96 26.314	14.19	0.00	0.16	2.75	1.00	1.00	0.00	34.37	104.28	0.00	5,349.4	0.0	638.81	525.84	1,164.65
	7	130.0	8.34 19.196	13.35	0.00	0.15	2.79	1.00	1.00	0.00	26.77	103.06	0.00	4,965.2	0.0	528.86	544.22	1,073.08
	8	150.0	8.69 16.544	12.52	0.00	0.16	2.75	1.00	1.00	0.00	23.66	91.41	0.00	4,085.9	0.0	480.54	494.32	974.86
	9	170.0	9.01 14.015	11.68	0.00	0.17	2.69	1.00	1.00	0.00	20.68	78.73	0.00	3,476.2	0.0	426.50	428.86	855.36
	10	185.0	9.23 7.266	5.01	0.00	0.20	2.59	1.00	1.00	0.00	10.14	21.76	0.00	1,272.3	0.0	206.29	117.48	323.77
														56,784.0	0.0	)	-	9,866.56

							ę	Sect	tion	Force	es						
Stru Site	cture: Name	MA12227 : Truro	7-A-SBA	4				C	Code: Expos	ure:	TIA- B	222-G		3/2	3/2022 ¥ <b>4</b>	(((Ħ)))	
Heig	ght:	190.00 (f	t)					C	Crest	Height	<b>t:</b> 0.00	)			x		7 <b>C</b>
Bas	e Elev:	0.000 (ft)						S	Site C	lass:	D - S	Stiff So	oil	Z			
Gh:		0.85		Торо	graph	าง:	1	S	Struct	Class	: 11			Pa	age: 12	Tower Engin	eering Solutions
				· · · ·	<u> </u>	-									<u> </u>		
Load	d Case	•: 1.0D + 1	.0W 60	° Wind								1.0	D + 1.0V	V 60 mph	wind a	at 60° Fro	om Face
		Wind Load Fa	actor:	1.00										Wind I	mportan	ce Factor:	1.00
	_	Dead Load Fa	actor:	1.00										1		<b>-</b> 4	4.00
	Ice	Dead Load Fa	actor:	0.00										Ice li	mportan	ce Factor:	1.00
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	lce Round Area (sqft)	Sol Ratio	Cf	Df	Dr	lce Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (Ib)	Weight Ice (Ib)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	5.48 44.239	17.52	0.00	0.14	2.81	0.80	1.00	0.00	45.32	104.28	0.00	8,351.6	0.0	593.18	362.47	955.65
2	30.0	5.49 40.806	17.52	0.00	0.14	2.79	0.80	1.00	0.00	42.58	104.28	0.00	8,147.6	0.0	554.83	362.77	917.61
3	50.0	6.35 37.445	16.69	0.00	0.15	2.78	0.80	1.00	0.00	39.42	104.28	0.00	7,534.0	0.0	592.16	419.78	1,011.94
4	70.0	6.99 29.822	16.69	0.00	0.14	2.81	0.80	1.00	0.00	33.31	104.28	0.00	7,082.8	0.0	556.07	462.14	1,018.20
5	90.0	7.51 26.961	15.85	0.00	0.14	2.79	0.80	1.00	0.00	30.56	104.28	0.00	6,518.9	0.0	544.61	496.54	1,041.15
6	110.0	7.96 26.314	14.19	0.00	0.16	2.75	0.80	1.00	0.00	29.11	104.28	0.00	5,349.4	0.0	541.01	525.84	1,066.85
7	130.0	8.34 19.196	13.35	0.00	0.15	2.79	0.80	1.00	0.00	22.93	103.06	0.00	4,965.2	0.0	453.01	544.22	997.23
8	150.0	8.69 16.544	12.52	0.00	0.16	2.75	0.80	1.00	0.00	20.35	91.41	0.00	4,085.9	0.0	413.33	494.32	907.65
9	170.0	9.01 14.015	11.68	0.00	0.17	2.69	0.80	1.00	0.00	17.87	78.73	0.00	3,476.2	0.0	368.68	428.86	797.54
10	185.0	9.23 7.266	5.01	0.00	0.20	2.59	0.80	1.00	0.00	8.69	21.76	0.00	1,272.3	0.0	176.73	117.48	294.21
													56,784.0	0.0	0	_	9,008.02
Load	d Case	: 1.0D + 1	.0W 90	° Wind								1.0	D + 1.0V	V 60 mph	Wind a	at 90° Fro	om Face
Wind Load Factor: 1.00														Wind I	mportan	e Factor	1 00
		Dead Load Fa	actor:	1.00													1.00
	Ice	Dead Load Fa	actor:	0.00										Ice li	mportan	ce Factor:	1.00
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	lce Round Area (sqft)	Sol Ratio	Cf	Df	Dr	lce Thick (in)	Eff Area (sqft)	Linear Area (sqft)	lce Linear Area (sqft)	Total Weight (Ib)	Weight Ice (Ib)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	5.48 44.239	17.52	0.00	0.14	2.81	0.85	1.00	0.00	47.53	104.28	0.00	8.351.6	0.0	622.13	362.47	984.60

2

3

4 5

6

7

8 9

10

30.0

50.0

70.0

90.0

110.0

130.0

150.0

170.0

185.0

5.49 40.806

6.35 37.445

6.99 29.822

7.51 26.961

7.96 26.314

8.34 19.196

8.69 16.544

9.01 14.015

9.23 7.266

17.52

16.69

16.69

15.85

14.19

13.35

12.52

11.68

5.01

0.00

0.00

0.00

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0.00

0.00

0.14 2.79

0.15 2.78

0.14 2.81

0.14 2.79

0.16 2.75

0.15 2.79

0.16 2.75

0.17 2.69

0.85 1.00 0.00

0.00

0.00

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0.85 1.00

0.85 1.00

0.85 1.00

0.85 1.00

0.85 1.00

0.85 1.00

0.20 2.59 0.85 1.00 0.00

0.85 1.00 0.00

44.62 104.28

30.43 104.28

104.28

104.28

104.28

103.06

91.41

78.73

21.76

41.30

34.80

31.91

23.89

21.17

18.57

9.05

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

8,147.6

7,534.0

7,082.8

6,518.9

5,349.4

4,965.2

4,085.9

3,476.2

1,272.3

56,784.0

0.0

0.0

0.0

0.0

0.0

0.0

581.42

620.29

580.95

568.64

565.46

0.0 430.13 494.32

0.0 383.13 428.86

0.0 184.12 117.48

0.0 471.97

362.77

419.78

462.14

496.54

525.84

544.22

944.19

1,040.06

1,043.09

1,065.18

1,091.30

1,016.19

924.45

812.00

301.60

9,222.66

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	· · · · · · · · · · · · · · · · · · ·	

		Force/Stress	Compressio	n Summary		
Structure:	MA12227-A-SBA		Code:	TIA-222-G	3/23/2022	44.000.N
Site Name:	Truro		Exposure:	В	Y	((H))
Height:	190.00 (ft)		Crest Height:	0.00	x	EC
Base Elev:	0.000 (ft)		Site Class:	D - Stiff Soil	Z	
Gh:	0.85	Topography: 1	Struct Class:	Ш	Page: 13	Tower Engineering Solutions
			EG MEMBERS			

	Тор	Force		Len	В	racing	g %		Fy	Mem Cap	Leg	
Sect	Elev	Member (kips)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kips)	Use %	Controls
1	20 SOL - 5 1/4" SC	-400.81	1.2D + 1.6W Normal Wind	6.51	100	100	100	59.51	50.00	751.93	53.3	Member X
2	40 SOL - 5 1/4" SC	-359.56	1.2D + 1.6W Normal Wind	6.51	100	100	100	59.51	50.00	751.93	47.8	Member X
3	60 SOL - 5" SOLID	-316.20	1.2D + 1.6W Normal Wind	6.51	100	100	100	62.48	50.00	664.15	47.6	Member X
4	80 SOL - 5" SOLID	-272.20	1.2D + 1.6W Normal Wind	6.51	100	100	100	62.48	50.00	664.15	41.0	Member X
5	100 SOL - 4 3/4" SC	-227.27	1.2D + 1.6W Normal Wind	6.51	100	100	100	65.77	50.00	581.20	39.1	Member X
6	120 SOL - 4 1/4" SC	-183.32	1.2D + 1.6W Normal Wind	4.88	100	100	100	55.13	50.00	511.15	35.9	Member X
7	140 SOL - 4" SOLID	-136.44	1.2D + 1.6W Normal Wind	4.88	100	100	100	58.58	50.00	439.99	31.0	Member X
8	160 SOL - 3 3/4" SC	-86.64	1.2D + 1.6W Normal Wind	4.88	100	100	100	62.48	50.00	373.59	23.2	Member X
9	180 SOL - 3 1/2" S0	LID -39.59	1.2D + 1.6W Normal Wind	4.88	100	100	100	66.95	50.00	311.97	12.7	Member X
10	190 SOL - 3" SOLID	-8.47	1.2D + 1.6W Normal Wind	0.25	100	100	100	4.01	50.00	317.73	2.7	Member X

# <u>Splices</u>

			Top Splic	е					Bottom Sp	lice			
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	1.2D + 1.6W Normal Wind	368.39	0.00	0.0			1.2D + 1.6W Normal Wind	408.27	0.00			
2	40	1.2D + 1.6W Normal Wind	325.20	0.00	0.0			1.2D + 1.6W Normal Wind	368.39	0.00		1/2 A325	6
3	60	1.2D + 1.6W Normal Wind	281.20	0.00	0.0			1.2D + 1.6W Normal Wind	325.20	0.00		1/2 A325	6
4	80	1.2D + 1.6W Normal Wind	236.34	0.00	0.0			1.2D + 1.6W Normal Wind	281.20	0.00		1/2 A325	6
5	100	1.2D + 1.6W Normal Wind	190.39	0.00	0.0			1.2D + 1.6W Normal Wind	236.34	0.00		1/2 A325	6
6	120	1.2D + 1.6W Normal Wind	143.56	0.00	0.0			1.2D + 1.6W Normal Wind	190.39	0.00		3/8 A325	6
7	140	1.2D + 1.6W Normal Wind	93.43	0.00	0.0			1.2D + 1.6W Normal Wind	143.56	0.00		3/8 A325	6
8	160	1.2D + 1.6W Normal Wind	46.17	0.00	0.0			1.2D + 1.6W Normal Wind	93.43	0.00		3/8 A325	6
9	180	1.2D + 1.6W Normal Wind	8.71	0.00	0.0			1.2D + 1.6W Normal Wind	46.17	0.00		3/8 A325	6
10	190	1.2D + 1.0Di + 1.0Wi 60° Wind	0.39	0.00	0.0			1.2D + 1.6W Normal Wind	8.71	0.00		3/8 A325	6

	HUKIZUNTAL MEMBERS																
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bı X	acing Y	g% Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20										0.00	0	0				
2	40										0.00	0	0				
3	60										0.00	0	0				
4	80										0.00	0	0				
5	100										0.00	0	0				
6	120										0.00	0	0				
7	140										0.00	0	0				
8	160										0.00	0	0				
9	180										0.00	0	0				
10	190	SAE - 2X2X0.1875	-0.13	0.9D + 1.6W 90° Wind	5.41	100	100	100	164.65	36.00	5.92	1	1	12.43	9.79	2	Member Z

					DIAGO	NAL I	MEME	BER	s								
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Br X	acing Y	j% Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20	SAE - 4X4X0.25	-11.4	1.2D + 1.6W 90° Wind	23.12	49	49	49	170.99	36.00	14.99	1	1	24.35	17.4	76	Member Z
2	40	SAE - 4X4X0.25	-12.0	1.2D + 1.6W 90° Wind	20.29	49	49	49	150.04	36.00	19.47	1	1	24.35	17.4	69	Bolt Bear
3	60	SAE - 4X4X0.25	-11.3	1.2D + 1.6W 90° Wind	18.59	49	49	49	137.49	36.00	23.19	1	1	24.35	17.4	65	Bolt Bear
4	80	SAE - 3.5X3.5X0.25	-10.5	1.2D + 1.6W 90° Wind	18.00	49	49	49	152.51	36.00	16.41	1	1	24.35	17.4	64	Member Z
5	100	SAE - 3.5X3.5X0.25	-10.1	1.2D + 1.6W 90° Wind	15.27	49	49	49	129.37	36.00	22.69	1	1	24.35	17.4	58	Bolt Bear
6	120	SAE - 3X3X0.1875	-8.94	1.2D + 1.6W 90° Wind	12.90	48	48	48	124.65	36.00	15.59	1	1	24.35	13.0	68	Bolt Bear

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					Force/Stre	ess Cor	npi	ress	ioi	n Sun	nmar	у						
Str	uctu	re:	MA12227-A	-SBA		Co	de:			TIA-2	22-G			3/23/	2022	4		
Sit	e Na	me:	Truro			Ex	pos	ure:		В				Y		(QA		
He	ight:		190.00 (ft)			Cro	est	Heig	ht:	0.00					x		L	C
Ba	se El	lev:	0.000 (ft)			Sit	e C	ass:		D - St	tiff Soi	I		2				
Gh	:		0.85		Topography: 1	Str	uct	Clas	s:	П				Pag	je: 14	Tower	Engine	ering Solutions
						DIAGO	NAL	MEME	BER	S								
Sect	Top Elev		Member	Force (kips)	Load Case	Len (ft)	Bi X	acing Y	% Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
7	140	SAE	- 2.5X2.5X0.25	-8.27	1.2D + 1.6W 90° Wind	12.45	48	48	48	146.07	36.00	12.60	1	1	24.35	17.4	66	Member Z
8	160	SAE	- 2.5X2.5X0.1875	-6.95	1.2D + 1.6W 90° Wind	10.82	48	48	48	125.91	36.00	12.69	1	1	24.35	13.0	55	Member Z
9	180	SAE ·	- 2.5X2.5X0.1875	-5.86	1.2D + 1.6W 90° Wind	9.25	48	48	48	110.71	36.00	15.33	1	1	24.35	13.0	45	Bolt Bear

6.91 47 47 47 104.15 36.00 13.00 1 1 12.43 9.79 20 Bolt Bear

190 SAE - 2X2X0.1875 -1.99 0.9D + 1.6W 90° Wind

10

		Forc	e/Stres	ss Tension S	ummary		
Structure:	MA12227-A-SBA			Code:	TIA-222-G	3/23/2022	44.000.5N
Site Name:	Truro			Exposure:	В	¥A	((HI))
Height:	190.00 (ft)			Crest Height:	0.00	x	EC
Base Elev:	0.000 (ft)			Site Class:	D - Stiff Soil	Z	
Gh:	0.85	Topography:	1	Struct Class:	II	Page: 15	Tower Engineering Solutions

### LEG MEMBERS

						wern		
	Тор		Force		Fy	Cap	Leg	
Sect	Elev	Member	(kips)	Load Case	(ksi)	(kips)	Use %	Controls
1	20	SOL - 5 1/4" SOLID	341.05	0.9D + 1.6W 60° Wind	50	974.16	35.0	Member
2	40	SOL - 5 1/4" SOLID	308.47	0.9D + 1.6W 60° Wind	50	974.16	31.7	Member
3	60	SOL - 5" SOLID	273.82	0.9D + 1.6W 60° Wind	50	883.58	31.0	Member
4	80	SOL - 5" SOLID	237.92	0.9D + 1.6W 60° Wind	50	883.58	26.9	Member
5	100	SOL - 4 3/4" SOLID	200.65	0.9D + 1.6W 60° Wind	50	797.45	25.2	Member
6	120	SOL - 4 1/4" SOLID	161.70	0.9D + 1.6W 60° Wind	50	638.37	25.3	Member
7	140	SOL - 4" SOLID	120.89	0.9D + 1.6W 60° Wind	50	565.47	21.4	Member
8	160	SOL - 3 3/4" SOLID	77.42	0.9D + 1.6W 60° Wind	50	497.03	15.6	Member
9	180	SOL - 3 1/2" S0LID	35.68	0.9D + 1.6W 60° Wind	50	432.95	8.2	Member
10	190	SOL - 3" SOLID	5.39	0.9D + 1.6W 60° Wind	50	318.11	1.7	Member

# **Splices**

			Top Spli	ce					Bottom Sp	lice			
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.6W 60° Wind	308.07	0.00	0.0			0.9D + 1.6W 60° Wind	341.0	0.00			
2	40	0.9D + 1.6W 60° Wind	273.34	0.00	0.0			0.9D + 1.6W 60° Wind	308.0	663.98	46.4	1 1/2 A32	25 6
3	60	0.9D + 1.6W 60° Wind	237.48	0.00	0.0			0.9D + 1.6W 60° Wind	273.3	663.98	41.2	1 1/2 A32	25 6
4	80	0.9D + 1.6W 60° Wind	200.24	0.00	0.0			0.9D + 1.6W 60° Wind	237.4	663.98	35.8	1 1/2 A32	25 6
5	100	0.9D + 1.6W 60° Wind	161.33	0.00	0.0			0.9D + 1.6W 60° Wind	200.2	663.98	30.2	1 1/2 A32	25 6
6	120	0.9D + 1.6W 60° Wind	120.64	0.00	0.0			0.9D + 1.6W 60° Wind	161.3	545.68	29.6	1 3/8 A32	25 6
7	140	0.9D + 1.6W 60° Wind	77.18	0.00	0.0			0.9D + 1.6W 60° Wind	120.6	545.68	22.1	1 3/8 A32	25 6
8	160	0.9D + 1.6W 60° Wind	35.49	0.00	0.0			0.9D + 1.6W 60° Wind	77.18	545.68	14.1	1 3/8 A32	25 6
9	180	0.9D + 1.6W 60° Wind	5.23	0.00	0.0			0.9D + 1.6W 60° Wind	35.49	545.68	6.5	1 3/8 A32	25 6
10	190		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	5.23	545.68	1.0	1 3/8 A32	25 6

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	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	140	-			36	0.00	0	0					
8	160	-			36	0.00	0	0					
9	180	-			36	0.00	0	0					
10	190	SAE - 2X2X0.1875	0.17	1.2D + 1.6W 60° Wind	36	18.58	1	1	12.43	9.79	7.50	2.3	Blck 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	20	SAE - 4X4X0.25	12.27 0.9D	+ 1.6W 90° Wind	36	55.14	1	1	24.35	17.40	16.95	72.4	Blck Shear
2	40	SAE - 4X4X0.25	11.88 0.9D	+ 1.6W 90° Wind	36	55.14	1	1	24.35	17.40	16.95	70.1	Blck Shear
3	60	SAE - 4X4X0.25	11.19 0.9D	+ 1.6W 90° Wind	36	55.14	1	1	24.35	17.40	16.95	66.0	Blck Shear
4	80	SAE - 3.5X3.5X0.25	10.55 1.2D	+ 1.6W 90° Wind	36	46.98	1	1	24.35	17.40	16.95	62.2	Blck Shear
5	100	SAE - 3.5X3.5X0.25	9.94 1.2D	+ 1.6W 90° Wind	36	46.98	1	1	24.35	17.40	16.95	58.6	Blck Shear
6	120	SAE - 3X3X0.1875	8.87 1.20	+ 1.6W 90° Wind	36	29.44	1	1	24.35	13.05	10.67	83.1	Blck Shear
7	140	SAE - 2.5X2.5X0.25	8.36 1.2D	+ 1.6W 90° Wind	36	30.67	1	1	24.35	17.40	12.87	64.9	Blck Shear

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Force/Stress Tension Summary													
Stru	cture:	MA12227-A-SBA		С	ode:		TIA-22	2-G		3/23/	2022	4	
Site	Name:	Truro		E	xposure	e:	В			x* deale wh			
Heig	jht:	190.00 (ft)	С	Crest Height:			0.00						
Base	e Elev:	0.000 (ft)		S	ite Clas	s:	D - Stif	f Soil		2			
Gh:		0.85	Topography	<b>y:</b> 1 S	truct CI	ass:	II			Pag	je: 16	Tower Engi	neering Solutions
				DIAGON	NAL MEMI	BERS							
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
8	160	SAE - 2.5X2.5X0.1875	6.91	1.2D + 1.6W 90° W	ind 36	23.31	1	1	24.35	13.05	9.65	5 71.5	Blck Shear
9	180	SAE - 2.5X2.5X0.1875	5.81	1.2D + 1.6W 90° W	ind 36	23.31	1	1	24.35	13.05	9.65	5 60.2	Blck Shear
10	190	SAE - 2X2X0.1875	2.01	1.2D + 1.6W 90° W	ind 36	18.58	1	1	12.43	9.79	7.50	26.8	Blck Shear

	Seismic Section Forces														
Struct	ure:	MA1222	7-A-SBA	4			Co	de:	TI	A-222-G		3	/23/2022		-
							Evr		D					(((H)))	
Sile Na	ame.	Turo					EX	Josure.	D				¥4		
Height	t: <sup>·</sup>	190.00 (	(ft)				Cre	est Height:	0.	00			X		
Base E	Elev: (	D.000 (fl	t)				Site	e Class:	D	<ul> <li>Stiff Soil</li> </ul>		z			
Gh:	(	).85		Тор	oarai	<b>ohv:</b> 1	Str	uct Class:	Ш			í	Page: 17	Tower Engineering Solution	s
					- 5 - 1	. ,									_
Load	Case:	1.2D +	1.0E												
	Dead	d Load	Factor	1.2	0	<b>Sds</b> 0.175	Ss	0.1640	Fa	1.6000	Ke	0.0000			
	Seismi	c Load	Factor	1.0	0	<b>Sd1</b> 0.091	S1	0.0570	Fv	2.4000	Kg	0.0000			
Seismi	c Impo	rtance	Factor	1 0	0	<b>SA</b> 0 152	P	3 0000	Vs	4 1917	f1	1 6710			
	•			1.0	0			0.0000							
	Flev	W7				Fsz									
Sect #	(ft)	(lb)	а	b	с	(lb)									
1	10.00	8351.5	0.01	0.05	0.03	27.09									
2	30.00	8147.6	0.05	0.07	0.04	56.67									
3	50.00	7534.0	0.13	0.07	0.03	83.30									
4	70.00	7082.8	0.26	0.05	0.02	116.77									
5	90.00	6518.8	0.42	0.01	0.01	144.44									
6	110.00	5349.3	0.63	-0.06	0.02	147.16									
7	130.00	6958.1	0.88	-0.12	0.08	243.53									
8	150.00	5774.4	1.18	-0.02	0.24	296.45									
9	170.00	8876.3	1.51	0.53	0.56	758.88									
10	185.00	4138.3	1.79	1.50	0.96	526.43									
Load	Case:	0 9D +	1 0F												
	-				~	<b>0</b> • • • • • • •	•	0 4 0 4 0	_	4 0000	14.	0 0000			
	Dead	d Load	Factor	0.9	0	<b>Sas</b> 0.175	SS	0.1640	⊦а	1.6000	ĸe	0.0000			
	Seismi	c Load	Factor	1.0	0	<b>Sd1</b> 0.091	S1	0.0570	F٧	2.4000	Kg	0.0000			
Seismi	c Impo	rtance l	Factor	1.0	0	<b>SA</b> 0.152	R	3.0000	Vs	4.1917	f1	1.6710			
						Lateral									_
	Elev	Wz				Fsz									
Sect #	(ft)	(lb)	а	b	С	(lb)									
1	10.00	8351.5	0.01	0.05	0.03	27.09									
2	30.00	8147.6	0.05	0.07	0.04	56.67									
3	50.00	7534.0	0.13	0.07	0.03	83.30									
4	/0.00	/082.8	0.26	0.05	0.02	116.77									
5	90.00	6518.8	0.42	0.01	0.01	144.44									
6 7	120.00	6050 4	0.63	-0.06	0.02	147.10									
ן ג	150.00	5774 4	1 12	-0.12	0.00	243.33									
q	170.00	8876.3	1.10	0.53	0.24	758 88									
10	185.00	4138.3	1.79	1.50	0.96	526.43									

	Sup	oport F	orces Si	ummary			
Structure: MA12227-A-SBA	N N	C	ode:	TIA-222	2-G	3/23/2022	44111.55
Site Name: Truro		E	kposure:	В		¥	de mant
Height: 190.00 (ft)		С	rest Heigh	nt: 0.00		X	EC
Base Elev: 0.000 (ft)		Si	te Class:	D - Stiff	Soil	Z	
<b>Gh:</b> 0.85	Topography: 1	St	ruct Clas	s:		Page: 18	Tower Engineering Solutions
Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift	(+) = Down	
1.2D + 1.6W Normal Wind	1	-0.01	407.36	-39.25			
	1a 15	12.48	-162.45	-13.74			
		-12.47	-162.44	-13.76			
1.2D + 1.6W 60° Wind	1	-4.98	207.62	-19.20			
	1a 1b	-19.12	207.62	5.29 -17 22			
		-29.02		-11.22			
1.2D + 1.6W 90° Wind	1	-6.01	27.49	-1.45			
	1a 1b	-29.73	-288 88	-12.38			
0.9D + 1.6W Normal Wind	1	-0.01	400.14	-38.88			
	1a 1b	-12.79	-169.14	-13.93			
0.9D + 1.6W 60° Wind	1	-4.99	200.58	-18.83			
	1b	-30.14	-339.30	-17.40			
				1.09			
0.9D + 1.6W 90 Wind	1a	-0.01	336 70	-1.00			
	1b	-27.99	-295.46	-12.55			
1 2D + 1 0Di + 1 0W/i Normal Wind		0.00	113.46	4 5 1			
	1a	3.01	28.99	-4.51			
	1b	-3.01	29.03	-2.66			
1 2D + 1 0Di + 1 0Wi 60° Wind	1	0.76	84 62				
	1a	-1.77	84.61	0.14			
	1b	-5.70	2.24	-3.29			
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.89	57.15	1.12			
	1a	-3.37	105.02	1.44			
	1b	-5.33	9.30	-2.56			
1.2D + 1.0E	1	0.00	45.23	6.15			
	1a	7.12	18.63	-4.26			
	1b	-7.12	18.63	-4.26			
0.9D + 1.0E	1	0.00	38.34	6.54			
	1a	7.45	11.76	-4.45			
	1b	-7.45	11.76	-4.45			
1.0D + 1.0W Normal Wind	1	0.00	96.04	-8.57			
	1a	1.59	-13.66	-2.16			
	1b	-1.59	-13.65	-2.17			
1.0D + 1.0W 60° Wind	1	-0.98	57.61	-4.67			
	1a	-4.53	57.61	1.48			
	1b	-4.91	-46.49	-2.84			
1.0D + 1.0W 90° Wind	1	-1.17	22.91	-1.22			
	1a	-6.60	83.82	3.14			
	1b	-4.49	-38.00	-1.92			

# Max Reactions

	Leg		Ov	erturning		
Max Uplift:	-339.30	(kips)	Moment:	7401.92	t (ft-kips)	
Max Down:	407.36	(kips)	Total Down:	82.48	6 (kips)	
Max Shear:	39.25	(kips)	Total Shear:	66.75	i (kips)	

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Analysis Summary													
Structure:	MA12227-A-SBA			Code:	TIA-222-G	3/23/2022	44.000.55						
Site Name:	Truro			Exposure:	В		de utersk						
Height:	190.00 (ft)			Crest Height:	0.00		EC						
Base Elev:	0.000 (ft)			Site Class:	D - Stiff Soil								
Gh:	0.85	Topography:	1	Struct Class:	П	Page: 20	Tower Engineering Solutions						

# **Max Reactions**

	Leg			Overturning									
Max Uplift:	-339.30	(kips)	Moment:	7401.92	(ft-kips)								
Max Down:	407.36	(kips)	Total Down:	82.48	(kips)								
Max Shear:	39.25	(kips)	Total Shear:	66.75	(kips)								

# **Anchor Bolts**

Interaction Ratio:	0.37		
Detail Type:	А		
Yield Strength (Ksi):	50.00	Tensile Strength (Ksi):	65.00
Bolt Size (in.):	2.00	Number Bolts:	8

# Max Usages

Max Leg: 53.3% (1.2D + 1.6W Normal Wind - Sect 1) Max Diag: 83.1% (1.2D + 1.6W 90° Wind - Sect 6) Max Horiz: 2.3% (1.2D + 1.6W 60° Wind - Sect 10)

# Max Deflection, Twist and Sway

0.9D + 1.0E - Normal To Face         139.75         0.0276         0.0011         0.0266           154.88         0.0336         0.0011         0.0239           174.88         0.0420         0.0011         0.0247           186.58         0.0471         0.0011         0.0247           186.58         0.0471         0.0011         0.0247           186.58         0.0471         0.0011         0.0248           190.00         0.0485         -0.0011         0.0253           0.9D + 1.6W 108 mph Wind at 60° From Face         139.75         0.4960         0.0184         0.4466           154.88         0.5973         0.0174         0.3821         174.88         0.7367         0.0174         0.3928           165.13         0.6692         0.0174         0.3928         186.58         0.8174         0.0174         0.3928           190.00         0.8402         -0.0169         0.3840         190.00         0.8402         -0.0169         0.3840           0.9D + 1.6W 108 mph Wind at 90° From Face         139.75         0.5022         -0.0210         0.4415           190.00         0.8402         -0.0169         0.3840         190.00         0.8499         -0.0207         0.4002	Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	
154.88       0.0336       0.0011       0.0234         165.13       0.0379       0.0011       0.0239         174.88       0.0420       0.0011       0.0247         186.58       0.0471       0.0011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         190.00       0.0485       -0.011       0.0248         174.88       0.5973       0.0174       0.3821         174.88       0.5973       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867       -0.0169       0.3946         190.00       0.8499       -0.0197       0.3967       -0.0169       0.3946         190.00       0.8499       -	0.9D + 1.0E - Normal To Face	139.75	0.0276	0.0011	0.0266	
165.13       0.0379       0.0011       0.0239         174.88       0.0420       0.0011       0.0247         186.58       0.0471       0.0011       0.0248         190.00       0.0485       -0.0011       0.0253         0.9D + 1.6W 108 mph Wind at 60° From Face       139.75       0.4960       0.0184       0.4466         154.88       0.5973       0.0174       0.3792         165.13       0.6692       0.0174       0.3821         174.88       0.7367       0.0174       0.3928         186.58       0.8174       0.0174       0.3928         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         165.13       0.6772       -0.0201       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.3867         165.13       0.6772       -0.0201       0.3867         165.13       0.6772       -0.0201       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         190.00       0.8499       -0.0197 <td< td=""><td></td><td>154.88</td><td>0.0336</td><td>0.0011</td><td>0.0234</td><td></td></td<>		154.88	0.0336	0.0011	0.0234	
174.88       0.0420       0.0011       0.0247         186.58       0.0471       0.0011       0.0248         190.00       0.0485       -0.0011       0.0253         0.9D + 1.6W 108 mph Wind at 60° From Face       139.75       0.4960       0.0184       0.4466         154.88       0.5973       0.0174       0.3792       0.3621         165.13       0.6692       0.0174       0.3821       0.3928         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         165.13       0.6772       -0.0201       0.4415         165.88       0.8604       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0177       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         190.00       0.8499       -0.0177       0.3867 <td></td> <td>165.13</td> <td>0.0379</td> <td>0.0011</td> <td>0.0239</td> <td></td>		165.13	0.0379	0.0011	0.0239	
186.58       0.0471       0.0011       0.0248         190.00       0.0485       -0.011       0.0253         0.9D + 1.6W 108 mph Wind at 60° From Face       139.75       0.4960       0.0184       0.4466         154.88       0.5973       0.0174       0.3792         165.13       0.6692       0.0174       0.3821         174.88       0.7367       0.0174       0.3913         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       <		174.88	0.0420	0.0011	0.0247	
190.00       0.0485       -0.0011       0.0253         0.9D + 1.6W 108 mph Wind at 60° From Face       139.75       0.4960       0.0184       0.4466         154.88       0.5973       0.0174       0.3792         165.13       0.6692       0.0174       0.3821         174.88       0.7367       0.0178       0.3928         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         165.13       0.6772       -0.0201       0.3867         165.8       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         165.13       0.6999       0.0182       0.3970         165.13       0.6999       0.0182       0.3970		186.58	0.0471	0.0011	0.0248	
0.9D + 1.6W 108 mph Wind at 60° From Face 139.75 0.4960 0.0184 0.4466 154.88 0.5973 0.0174 0.3792 165.13 0.6692 0.0174 0.3821 174.88 0.7367 0.0178 0.3928 186.58 0.8174 0.0174 0.3913 190.00 0.8402 -0.0169 0.3840 0.9D + 1.6W 108 mph Wind at 90° From Face 139.75 0.5022 -0.0210 0.4415 154.88 0.6046 -0.0200 0.3867 165.13 0.6772 -0.0211 0.3894 174.88 0.7454 -0.0207 0.4002 186.58 0.8268 -0.0203 0.3946 190.00 0.8499 -0.0197 0.3867 0.9D + 1.6W 108 mph Wind at Normal To Face 139.75 0.5200 -0.0188 0.4658 0.8268 0.6252 0.0181 0.3943 165.13 0.6999 0.0182 0.3970 174.88 0.7700 0.0187 0.4080 186.58 0.8539 0.0183 0.4062 190.00 0.8775 -0.0178 0.3988		190.00	0.0485	-0.0011	0.0253	
154.88       0.5973       0.0174       0.3792         165.13       0.6692       0.0174       0.3821         174.88       0.7367       0.0178       0.3928         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0177       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         190.00       0.8499       -0.0177       0.3943         190.01       0.8499       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         165.13       0.6999       0.0182       0.397	0.9D + 1.6W 108 mph Wind at 60° From Face	139.75	0.4960	0.0184	0.4466	
165.13       0.6692       0.0174       0.3821         174.88       0.7367       0.0178       0.3928         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         165.13       0.6772       -0.0201       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00		154.88	0.5973	0.0174	0.3792	
174.88       0.7367       0.0178       0.3928         186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867       165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002       186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867       0.5022       0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		165.13	0.6692	0.0174	0.3821	
186.58       0.8174       0.0174       0.3913         190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		174.88	0.7367	0.0178	0.3928	
190.00       0.8402       -0.0169       0.3840         0.9D + 1.6W 108 mph Wind at 90° From Face       139.75       0.5022       -0.0210       0.4415         154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		186.58	0.8174	0.0174	0.3913	
0.9D + 1.6W 108 mph Wind at 90° From Face 139.75 0.5022 -0.0210 0.4415 154.88 0.6046 -0.0200 0.3867 165.13 0.6772 -0.0201 0.3894 174.88 0.7454 -0.0207 0.4002 186.58 0.8268 -0.0203 0.3946 190.00 0.8499 -0.0197 0.3867 0.9D + 1.6W 108 mph Wind at Normal To Face 139.75 0.5200 -0.0188 0.4658 154.88 0.6252 0.0181 0.3943 165.13 0.6999 0.0182 0.3970 174.88 0.7700 0.0187 0.4080 186.58 0.8539 0.0183 0.4062 190.00 0.8775 -0.0178 0.3988		190.00	0.8402	-0.0169	0.3840	
154.88       0.6046       -0.0200       0.3867         165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988	0.9D + 1.6W 108 mph Wind at 90° From Face	139.75	0.5022	-0.0210	0.4415	
165.13       0.6772       -0.0201       0.3894         174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		154.88	0.6046	-0.0200	0.3867	
174.88       0.7454       -0.0207       0.4002         186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		165.13	0.6772	-0.0201	0.3894	
186.58       0.8268       -0.0203       0.3946         190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		174.88	0.7454	-0.0207	0.4002	
190.00       0.8499       -0.0197       0.3867         0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		186.58	0.8268	-0.0203	0.3946	
0.9D + 1.6W 108 mph Wind at Normal To Face       139.75       0.5200       -0.0188       0.4658         154.88       0.6252       0.0181       0.3943         165.13       0.6999       0.0182       0.3970         174.88       0.7700       0.0187       0.4080         186.58       0.8539       0.0183       0.4062         190.00       0.8775       -0.0178       0.3988		190.00	0.8499	-0.0197	0.3867	
154.880.62520.01810.3943165.130.69990.01820.3970174.880.77000.01870.4080186.580.85390.01830.4062190.000.8775-0.01780.3988	0.9D + 1.6W 108 mph Wind at Normal To Face	139.75	0.5200	-0.0188	0.4658	
165.130.69990.01820.3970174.880.77000.01870.4080186.580.85390.01830.4062190.000.8775-0.01780.3988		154.88	0.6252	0.0181	0.3943	
174.880.77000.01870.4080186.580.85390.01830.4062190.000.8775-0.01780.3988		165.13	0.6999	0.0182	0.3970	
186.580.85390.01830.4062190.000.8775-0.01780.3988		174.88	0.7700	0.0187	0.4080	
190.00 0.8775 -0.0178 0.3988		186.58	0.8539	0.0183	0.4062	
		190.00	0.8775	-0.0178	0.3988	

1.0D + 1.0W 60 mph Wind at 60° From Face	139.75	0.0955	0.0035	0.0861
	154.88	0.1150	0.0033	0.0729
	165.13	0.1288	0.0033	0.0734
	174.88	0.1418	0.0034	0.0754
	186.58	0.1573	0.0033	0.0752
	190.00	0.1616	-0.0032	0.0738
1  OD + 1  OW 60 mpb Wind at 90° From Face	130 75	0.0067	-0.0040	0.0848
1.0D + 1.0W 00 mpil wind at 90 From Face	159.75	0.0907	-0.0040	0.0040
	165 12	0.1103	-0.0030	0.0743
	100.10	0.1303	-0.0039	0.0746
	174.88	0.1433	-0.0040	0.0768
	186.58	0.1590	-0.0039	0.0758
	190.00	0.1634	-0.0038	0.0742
1.0D + 1.0W 60 mph Wind at Normal To Face	139.75	0.1001	-0.0036	0.0892
	154.88	0.1203	-0.0035	0.0757
	165.13	0.1346	-0.0035	0.0763
	174.88	0.1481	0.0036	0.0785
	186.58	0.1642	-0.0035	0.0779
	190.00	0.1687	-0.0034	0.0765
1.00 + 1.00i + 1.00/i + 1.00/i = 1.000 From Face	120 75	0.0760	0.0007	0.0672
1.2D + 1.0DI + 1.0WI 40 mph Wind at 60 From Face	139.75	0.0762	0.0027	0.0672
	154.88	0.0911	0.0026	0.0564
	165.13	0.1017	0.0026	0.0566
	1/4.88	0.1116	0.0027	0.0579
	186.58	0.1234	0.0026	0.0581
	190.00	0.1268	-0.0025	0.0571
1.2D + 1.0Di + 1.0Wi 40 mph Wind at 90° From Face	139.75	0.0765	-0.0031	0.0658
	154.88	0.0915	-0.0030	0.0572
	165.13	0.1021	-0.0030	0.0574
	174.88	0.1121	-0.0031	0.0589
	186.58	0.1240	-0.0030	0.0582
	190.00	0.1274	-0.0029	0.0571
				· · · · · · · · · · · ·
1.2D + 1.0Di + 1.0Wi 40 mph Wind at Normal From Face	139.75	0.0774	-0.0028	0.0676
	154.88	0.0927	-0.0026	0.0575
	165.13	0.1035	-0.0026	0.0578
	1/4.88	0.1136	-0.0027	0.0596
	186.58	0.1258	-0.0027	0.0588
	190.00	0.1292	-0.0026	0.0580
1.2D + 1.0E - Normal To Face	139.75	0.0277	0.0011	0.0266
	154.88	0.0336	0.0011	0.0235
	165.13	0.0379	0.0011	0.0239
	174.88	0.0421	0.0011	0.0248
	186.58	0.0471	0.0011	0.0248
	190.00	0.0486	-0.0011	0.0254
	· · · · · · · · · · ·			· · · · · · · · · · · · ·
1.2D + 1.6W 108 mph Wind at 60° From Face	139.75	0.4966	0.0185	0.4472
	154.88	0.5980	0.0174	0.3797
	165.13	0.6700	0.0174	0.3827
	174.88	0.7376	0.0178	0.3933
	186.58	0.8184	0.0175	0.3919
	190.00	0.8412	-0.0169	0.3845
1.2D + 1.6W 108 mph Wind at 90° From Face	139.75	0.5028	-0.0210	0.4421
	154.88	0.6053	-0.0200	0.3872
	165 13	0 6780	-0 0202	0 3899
	174.88	0.7462	-0.0207	0.4007
	186 58	0.8278	-0.0203	0 3951
	190.00	0.8510	-0.0197	0.3872
1.2D + 1.6W 108 mph Wind at Normal To Face	139.75	0.5206	-0.0189	0.4664
	154.88	0.6259	0.0181	0.3948
	165.13	0.7008	0.0182	0.3976
	174.88	0.7709	0.0187	0.4086
	186.58	0.8549	0.0183	0.4068
	190.00	0.8786	-0.0178	0.3993

		Last revised on 3-22-2022								
		Mat Foundati	ion Desi	gn f	or Se	If Suppo	orting Tow	/er	Date	
		Customer Name:	SBA Comr	nunica	tions (	orp	TIA Standard	4.	TIA-222-G	
		Site Name	ODA COIIII	lamou			Structure He	iaht (Et ):	190	
		Site Nmber:	MA12227-A	-SBA			Engineer Na	me:	H. You	
Tower Engineering Solutions		Engr. Number:	126493				Engineer Loo	ain ID:		
		9					g	J		
Foundation Info Obtained from:		Drawings/Calculations								
Analysis or Design?		Analysis					./			
Number of Tower Legs:		3 Legs			1	·	K			
Base Reactions (Factored):						$\langle \overset{14'}{\longrightarrow} \rangle$			0.00	
(1). Individual Leg:				/	0'					
Axial Load (Kips):	407.4	Uplift Force (Kips):	339.3		$\sqrt{1}$					
Shear Force (Kips):	39.3				//					
(2). Tower Base:								#DIV/0!	# 0	
Total Vertical Load (Kips):	82.5	Total Shear Force (Kips):	66.8		24.5'			0	# 0	
Moment (Kips-ft):	7401.9			4.5'						
Foundation Geometries:						⊻		54	# 10	
Leg distance (Center-to-Center ft.):	22.5	Mods required -Yes/No ?:	No			-		54	# 10	
Diameter of Pier (ft.): Round	14.0	Pier Height A. G. (ft.):	0.00							
Tower center to mat center (ft):	0	Depth of Base BG (ft.):	4.5				0 0 0			
Length of Pad (ft ):	38	Width of Pad (ft ):	38						4.5'	
Thickness of Pad (ft):	4.50		50	_			000			
					<	19.0	6.495	12.50	5	
Material Properties and Reabr Info:						Mat Center				
Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi	(W)		0.00	Tower Center		
Vertical bar yield (ksi)		Tie steel yield (ksi):			38'		)) 😼 🖌		22.5	
Vertical Rebar Size #:		Tie / Stirrup Size #:								
Qty. of Vertical Rebars:		Tie Spacing (in):								
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10			6.01	12.990		<u>•</u>	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf		$\frown$	1			
Rebar at the bottom of the concrete	pad:					le le	19.486	$\longrightarrow$		
Qty. of Rebar in Pad (L):	66	Qty. of Rebar in Pad (W):	66							
Rebar at the top of the concrete pad	:				<	×	38'	(L)	$\rightarrow$	
Qty. of Rebar in Pad (L):	54	Qty. of Rebar in Pad (W):	54	_						
Soil Design Parameters:					` <		$\rightarrow$	1	<u>`</u> >	
Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf						
Water Table B.G.S. (ft):	24.5	Unit Weight of Water:	62.4	pcf						
Ultimate Bearing Pressure (psf):	4000	Consider ties in concrete shear st	trength:	Yes						
Consider Soil Lateral Resistance ?	Yes	Enter soil C (psf) or Phi (deg.):	30.0	Deg.	(W)	Mat Center 🔍		Tower Center		
		Depth to ignor lateral resistance	1.0	Ft.	38'					
		-								
						$\bigcirc$		$\bigcirc$	<u> </u>	

Apply 1.3	5 for e/	w per G/H:	1.35
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Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compr	ession Strength Reduction Factor:		
Total Dry Soil Volume (cu. Ft.):		0.00	Total Dry Soil Weight (Kips):			
Total Buoyant Soil Volume (cu. F	rt.):	0.00	Total Buoyant Soil Weight (Kips): Weight from the Concrete Block at Top (K):			
Total Effective Soil Weight (Kips)	:	0.00				
Total Dry Concrete Volume (cu.	Ft.):	6500.31	Total D	Dry Concrete Weight (Kips):		
Total Buoyant Concrete Volume	(cu. Ft.):	0.00	Total B	Buoyant Concrete Weight (Kips):		
Total Effective Concrete Weight	(Kips):	975.05	Total V	vertical Load on Base (Kips):		
Check Soil Capacities:						
Calculated Maxium Net Soil Pressure	e under the base (psf):	1622.49	<	Allowable Factored Soil Bearing (psf):		
Allowable Foundation Overturning R	Resistance (kips-ft.):	18240.4	>	Design Factored Momont (kips-ft):		
Factor of Safety Against Overturning	g (O. R. Moment/Design Moment):	2.37	OK!			
Check the capacities of Reinforceing	g Concrete:					
Strength reduction factor (Flexure a	nd axial tension):	0.90	Streng	th reduction factor (Shear):		
Strength reduction factor (Axial com	presion):	0.65	Wind L	oad Factor on Concrete Design:		
(1) Concrete Pier:						
Vertical Steel Rebar A	rea (sq. in./each):	#N/A		Tie / Stirrup Area (sq. in./each):		
Calculated Moment Ca	apacity (Mn,Kips-Ft):	#N/A	#N/A	Design Factored Moment (Mu, Kips-Ft)		
Calculated Shear Capa	city (Kips):	#N/A	#N/A	Design Factored Shear (Kips):		
Calculated Tension Ca	pacity (Tn, Kips):	#N/A	#N/A	Design Factored Tension (Tu Kips):		
Calculated Compression	on Capacity (Pn, Kips):	#N/A	#N/A	Design Factored Axial Load (Pu Kips):		
Moment & Tension St	rength Combination:	#N/A	#N/A	Check Tie Spacing (Design/Req'd):		
Pier Reinforcement Ra	atio:	#N/A		#N/A		
(2).Concrete Pad:						
One-Way Design Shea	r Capacity (L or W Direction, Kips):	1887.3	>	One-Way Factored Shear (L/W-Dir Kips		
One-Way Design Shea	r Capacity (Diagonal Dir., Kips):	947.5	>	One-Way Factored Shear (Dia. Dir, Kips		
Lower Steel Pad Reinfo	orcement Ratio (L or W-Direct. ):	0.0036		Lower Steel Reinf. Ratio (Dia. Dir.):		
Lower Steel Pad Mom	ent Capacity (L or W-Dir. Kips-ft):	18185.3	>	Moment at Bottom ( L-Direct. K-Ft):		
Lower Steel Pad Mom	ent Capacity (Dia. Direction,K-ft):	13242.5	>	Moment at Bottom ( Dia. Dir. K-Ft):		
Upper Steel Pad Reinfo	orcement Ratio (L or W -Direction):	0.0030		Upper Steel Reinf. Ratio (Dia. Dir.):		
Upper Steel Pad Mom	ent Capacity (L or W-Dir., Kips-ft):	15000.2	>	Moment at the top (L-Dir Kips-Ft):		
Upper Steel Pad Mom	ent Capacity (Dia. Direction, K-ft):	12376.1	>	Moment at the top (Dia. Dir., K-Ft):		
Punching Failure Capa	city (Kips):	4230.0	>	Punch. Failure Factored Shear (K):		

0.75 0.00 0.00

0.00 975.05

0.00 1057.52

3000

7703

0.75

1.00

#N/A

0.2

39.3

339.3

407.4

#DIV/0!

258.9

235.8

0.0035

1260.6

1117.6

0.0033

574.1

380.8

407.4

Load/

Capacity Ratio 0.54

0.42

Load/ Capacity

Ratio

#N/A

#N/A

#N/A

#N/A

0.14

0.25

0.07

0.08

0.04

0.03

0.10

OK!

OK!

###

###

###

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OK!

OK!

OK!

OK!

OK!

OK!

OK!

# HY520/BAY COMM.-TRURO

5 TOWN DUMP ROAD TRURO, MA 02666 BARNSTABLE COUNTY

# SITE NO.: 4HY0520A

SITE TYPE: 190'± SELF SUPPORT TOWER RF DESIGN GUIDELINE: 67E02C OUTDOOR

SHEET INDEX Y MAP SCALE: 1" = 1000'-0" POAD . I SHEET NO. REV. NO. DESCRIPTION 1330 TITLE SHEET L'io GN-1 GENERAL NOTES COMPOUND PLAN, EQUIPMENT PLANS & PHOTO A-1 TOWER ELEVATION, ANTENNA PLANS & PHOTOS A-2 1 SITE DETAILS A-3 ANTENNA & FEEDLINE CHARTS A-4 ELECTRIC & GROUNDING DETAILS & PHOTOS E-1 SITE DIRECTIONS AST TOWARD COMMERCE WAY. TURN RIGHT ONTO SOUTH WASHINGTON STREET. TO I-495. TURN RIGHT TO MERGE ONTO I-495 SOUTH TOWARD CAPE COD. AT ARY SOUTH. TAKE THE 5TH EXIT ONTO SANDWICH ROAD EAST. TURN RIGHT ONTO NNECTOR. MERGE ONTO US-6 EAST. TURN LEFT ONTO TOWN HALL ROAD. TURN IRURO CENTER ROAD. TURN LEFT ONTO TOWN HALL ROAD. SITE IS LOCATED ON DO NOT SCALE DRAWINGS CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



<u>GENERAL NOTES:</u>	<u>CONCRETE</u>
<ol> <li>FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR – T-MOBILE SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)</li> </ol>	1. ALL CONCRE DESIGN AND CO
OWNER – T-MOBILE OEM – ORIGINAL EQUIPMENT MANUFACTURER	2. ALL CONCRE HIGHER STREND REQUIREMENTS
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.	3. REINFORCING FABRIC SHALL "B" AND ALL H
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.	4. THE FOLLOW DRAWINGS: CONCRETE CONCRETE
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.	#6 AN #5 AN CONCRETE
5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.	OR NOT C SLAB
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.	BEAMS 5 A CHAMEER
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.	4.2.4.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.	PROCEDURE. TH DEPTH OR AS
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE	MANUFACTURER GALVANIZED. EX
ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION. 10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.	(IBC1905.6.2.3) (A) RESULTS (B) CERTIFIC FOR GREATER 1
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL	8. AS AN ALTE CONCRETE FRO
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.	9. EQUIPMENT
13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND	STRUCTUR
PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT. 14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL	1. ALL STEEL V UNLESS OTHER DRAWINGS. STE
15. CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.	2. ALL WELDING
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED.	WHERE FILLET CONSTRUCTION"
SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.	3. BOLTED CON UNLESS NOTED
17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.	4. NON-STRUC OTHERWISE.
18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.	6. ALL STRUCT
SITE WORK GENERAL NOTES:	SOIL COM
1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.	1. EXCAVATE AS AS REQUIRED.
2. 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	2. COMPACTION ENGINEER IS A
DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR 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.	3. AS AN ALTE "COMPACTION E METHOD C.
<ul> <li>3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.</li> <li>4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND</li> </ul>	4. COMPACTED 3" LIFTS ABOVE
DISPOSED OF LEGALLY.	5. AS AN ALTE
5. THE STE SHALL DE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BIS EQUIPMENT AND TOWER AREAS. 6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT	AND SOFT ARE COMPACTED AS
BE PLACED IN ANY FILL OR EMBANKMENT. 7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE	
8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE	CONSTRUC
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 ENGINEERING, OWNER AND/OR LOCAL UTILITIES.	1. FIELD VERIFI SUBCONTRACTO
9. 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 IN THE PROJECT SPECIFICATIONS.	2. COORDINATIO SUBCONTRACTO
10. SUBCONTRACTOR 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.	3. CABLE LADD SUBCONTRACTO REQUIRED TO S
11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T—MOBILE SPECIFICATION FOR SITE SIGNAGE.	

# ETE AND REINFORCING STEEL NOTES:

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

NCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A RENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE ENTS

RCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE ALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS ALL HOOKS SHALL BE STANDARD, UNO.

DLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON

CRETE EXPOSED TO EARTH OR WEATHER: \$6 AND LARGER .....2 IN. #5 AND SMALLER & WWF ......1½ IN. RETE NOT EXPOSED TO EARTH OR WEATHER

NOT CAST AGAINST THE GROUND: SLAB AND WALL ..... 

MFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION

ATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED E. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN URER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED . EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

TE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS 6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER; SULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT. RTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED. TER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF FROM EACH DIFFERENT BATCH PLANT.

IENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

# **TURAL STEEL NOTES:**

EEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS THERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL TION (AISC) "MANUAL OF STEEL CONSTRUCTION".

LDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. LET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL TION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (3/10) AND SHALL HAVE MINIMUM OF TWO BOLTS OTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

TRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE  $\frac{5}{6}$ " DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED

CTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL

RUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

# <u>OMPACTION NOTES FOR SLAB ON GRADE:</u>

TE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE

CTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR IS ACCEPTABLE.

ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH ION EQUIPMENT". LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557

CTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE R (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND D AS STATED ABOVE.

# CTION EQUIPMENT:

DPERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

# RUCTION NOTES:

ERIFICATION:

ACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

INATION OF WORK:

ACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

ACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS TO SUPPORT CABLES TO THE NEW BTS LOCATION.

# **ELECTRICAL INSTALLATION NOTES:**

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

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL. 3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND

TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER). 600 V. OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

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

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

UL. ANSI/IEEE AND NEC.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. 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 RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

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

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA,

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.





EXIST. T-MOBILE PROPANE TANK ON EXIST. CONCRETE PAD (TO REMAIN)





INSTALL EQUIPMENT WITHIN EXIST. RBS 6131 EQUIPMENT CABINET PER MANUFACTURER'S SPECIFICATIONS (REFER TO RFDS) -





PROPOSED EQUIPMENT						
SCALE:	3/8" = 1'-	0"				
0	2'-8"	5'-4"	8'-0"			

- <u>ALL\_SECTORS</u> EXIST. RELOCATED T-MOBILE ERICSSON AIR21 KRC118023-1 B2A/B4P ANTENNAS MOUNTED TO PROP. <u>₽ € EXIST. AT&T ANTENNA.</u> SECTOR FRAME MOUNT (1 PER SECTOR, TOTAL OF 3)  $EL. = 187' \pm AGL$ TOP OF PROP. (3) T-MOBILE ANTENNAS ALL SECTORS EXIST. RELOCATED T-MOBILE ERICSSON AIR21 KRC118023-1 B2P/B4A ANTENNAS MOUNTED TO PROP. SECTOR FRAME MOUNT (1 PER SECTOR, TOTAL OF 3)  $\begin{array}{c|c} \underline{ALL} & \underline{SECTORS} \\ \hline 5 & 2 \\ \hline A-2 & A-3 \end{array} \begin{array}{c} \underline{ALL} & \underline{SECTORS} \\ \hline PROP. & T-MOBILE & ERICSSON & RADIO & 4480 \\ \hline B71+B85 & MOUNTED & TO & EXIST. \\ \hline T-ARM & MOUNT & BEHIND & PROP. & ANTENNAS \end{array}$  $\bigoplus_{EL. = 165' \pm AGL} \underbrace{ANTENNAS}_{ANTENNAS}$ ALL\_SECTORS PROP. T-MOBILE SECTOR FRAME MOUNT (SITE-PRO P/N: VFA12-HD) MOUNTED TO EXIST. SELF-SUPPORT TOWER. (1 PER SECTOR, TOTAL OF 3) 5 V A-2 A-3 TO EXIST. PIPES ON EXIST. T-ARM  $\Phi_{EL. = 138' \pm AGL}^{\underline{Q} \ EXIST. \ SPRINT \ ANTENNAS}$ <u>NOTE:</u> GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.  $\bigoplus_{EL. = 0' AGL}^{GROUND LEVEL}$ EXISTING TOWER PHOTO TOWER ELEVATION 1 A-2 SCALE: N.T.S. SCALE: 1'' = 12' - 0''

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS): GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

# RAD CENTER NOTE:

I-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

SPECIAL CONSTRUCTION NOTE: GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

. = 179'± AGL

EL. = 175'± AGL

(1 PER SECTOR, TOTAL OF 3)

PROP. T-MOBILE ERICSSON -)840590966 PANEL ANTENNAS MOUNTED

MOUNT (1 PER SECTOR, TOTAL OF 3)

ALL SECTORS

1



SEE FEEDLINE SCHEDULE A & B ON SHEET A-4

- EXIST. 190'± SELF-SUPPORT TOWER





-36'

24'

12'







ERICSSON RADIO 4480 B71+B85 DIMENSIONS: 19.2"H x 15.1"W x 7.5"D WEIGHT: 92.6 lbs QUANTITY: 1 PER SECTOR, TOTAL OF 3



2 A-3

FINAL ANTENNA CONFIGURATION									
SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
	A1	ERICSSON AIR21 KRC118023–1 B2A/B4P	175'± AGL	330°	С°	2*	G1900/U1900	_	
	A2	ERICSSON 840590966	175'± AGL	330*	0°	4*	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	A3	Empty Pipe	-	_	_	-	_	_	
	A4	ERICSSON AIR21 KRC118023–1 B2P/B4A	175'± AGL	330°	0*	2°	L2100	_	
	B1	ERICSSON AIR21 KRC118023–1 B2A/B4P	175'± AGL	90°	0°	2*	G1900/U1900	_	
	B2	ERICSSON 840590966	175'± AGL	90*	0*	4*	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	EXIST. (3) $7_8$ " (3x6) HCS FIBER CABLES PROP. (1) 2" (6x24) HCS FIBER CABL
BEIA	B3	Empty Pipe	-	-	_	-	_	-	
	B4	ERICSSON AIR21 KRC118023–1 B2P/B4A	175'± AGL	90°	О°	2*	L2100	_	
	G1	ERICSSON AIR21 KRC118023–1 B2A/B4P	175'± AGL	210°	0°	2*	G1900/U1900	_	
GAMMA	G2	ERICSSON 840590966	175'± AGL	210*	0°	4*	L700/L600/N600	ERICSSON RADIO 4480 B71+B85	
	G3	EMPTY PIPE	-	_	_	-	_	_	
	G4	ERICSSON AIR21 KRC118023–1 B2P/B4A	175'± AGL	210°	0°	2*	L2100	_	
<u>CABLE_NOTE:</u> ANCILLARY_N	CABLE NOTE: EXIST. (4) 1%" COAX CABLES TO REMAIN DISCONNECTED. SEE FEEDLINE SCHEDULE A & B BELOW. ANCILLARY NOTE: EXIST. (3) GENERIC TWIN STYLE 1B AWS TMAS TO BE REMOVED.								

<u>NOTE:</u> RFDS REV4 - 12/28/21



FEEDLINE SCHEDULE				
CHEDULE	FEEDLINES LOCATION			
A	EXISTING TO REMAIN:	(1) $\frac{1}{2}^{"}$ COAX FOR GPS ANTENNA (4) $\frac{15}{8}^{"}$ COAX CABLES (CAPPED & WRAPPED) (3) $\frac{7}{8}^{"}$ (3×6) HCS FIBER CABLE	ROUTED PER	
В	PROPOSED:	(1) 2" (6x24) HCS FIBER CABLE	STRUCTURAL ANALYSIS	
<u>)TE:</u> (ISTING T—MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND EDLINE LEASING ENTITLEMENTS MAY DIFFER.				







SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

- AND LOCAL CODES.

- INSPECTIONS.
- 6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

- MEASURING TAPE AT EACH END.
- 11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- 12. PPC SUPPLIED BY PROJECT OWNER.
- ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- OWNER.
- RING
- ALL LOCATIONS.

- RESISTANCE REQUIRED.
- RECORD RESULTS FOR PROJECT CLOSE OUT.







August 19, 2021

United States Department of Agriculture

Marketing and Regulatory Programs

USDA-APHIS-Wildlife Services 463 West Street Amherst, MA 01002

T 413.253.2403 F 413.253.7577 Brian Medeiros, Project Manager Wireless J. Lee Associates 420 Northboro Road Central Marlborough, MA 01752 Cell: 401-830-6486 E-mail: bmedeiros@jleeassociates.net

Mr. Medeiros,

This letter is to report the survey results of United States Department of Agriculture, Wildlife Services' (USDA, WS) at the cell tower located at 5 Town Dump Road, Truro, MA 02666 with an osprey nest to determine if it was actively being used for nesting. The tower is located on the edge of a grass covered capped landfill in a heavily wooded area consisting part of the Cape Cod National Seashore. Immediately to the north and northwest are lightly developed residential areas. To the southeast within one to five miles are a number of freshwater ponds, Cape Cod Bay is to the west and then Atlantic Ocean is to the east providing fishing habitat for the nesting ospreys.

Figure 1. Signage, 5 Dump Road, Truro, MA 02666



Figure 2. Inactive Osprey Nest on Tower, 5 Dump Road, Truro, MA 02666 on 08/19/2021



On Thursday, August 19, 2021, WS Wildlife Technician (WT) Samuel Vito arrived at the site at 10:30 am and onsite until 11:30 am, 1 hour. He visually confirmed it was the correct tower that needed to be surveyed by checking the signs on the gate and fencing. (see Figure 1). Weather was 79° F, cloudy, with no wind.

The osprey nest appears to be inactive. I monitored from - and observed no activity and heard no noises emanating from the nest. The nest also appeared empty from the ground. One adult osprey was loafing on a dead tree approximately 100yards from the tower upon my arrival but never landed on tower or brought food to nest. Weather was overcast, 78 degrees, no wind. See images below, nest is located at top of tower.

Upon arrival, one osprey was observed on a dead tree approximately 100 m from the tower. This osprey never landed on the tower nor brought food to the nest. He observed no activity or noises emanating from the nest and no ospreys used the tower during the survey (see Figure 2). An unmanned aerial vehicle (UAV) was not used to directly observe the nest because UAVs are not allowed within the boundaries of the Cape Cod National Seashore without special permits.

Based on observations, it is WS's determination is that the nest is inactive, and the ospreys have finished using the nest to raise chicks during the 2021 nesting season.

If you have any questions, comments, or concerns please don't hesitate to contact me on my cell at (413) 687-4310 or by e-mail at

Timothy.S.Cozine@USDA.GOV. WT Vito can be contacted on his cell at (401) 575-9576.

Thank you,

Timothy S. Cozine CWB<sup>®</sup> Staff Wildlife Biologist USDA – APHIS - Wildlife Services MA, CT, and RI Program

The Commonwealth Department of Indu 1 Congress Stree Boston, MA 0. www.mass. Workers' Compensation Insurance TO BE FILED WITH THE PER	of Massachusetts ustrial Accidents et, Suite 100 2114-2017 gov/dia e Affidavit: General Businesses. RMITTING AUTHORITY.			
Applicant Information	Please Print Legibly			
Business/Organization Name: SBA Communications Co	prporation			
Address: 8051 Congress Avenue				
City/State/Zip: Boca Raton, FL 33487 P	hone #: 508-251-0720 x3800			
Are you an employer? Check the appropriate box:         1. ✓ I am a employer with 750 employees (full and/ or part-time).*         2. □ I am a sole proprietor or partnership and have no employees working for me in any capacity. [No workers' comp. insurance required]         3. □ We are a corporation and its officers have exercised their right of exemption per c. 152, §1(4), and we have no employees. [No workers' comp. insurance required]**         4. □ We are a non-profit organization, staffed by volunteers, with no employees. [No workers' comp. insurance req.]         *Any applicant that checks box #1 must also fill out the section below showing their shuld check box #1	Business Type (required):         5.       Retail         6.       Restaurant/Bar/Eating Establishment         7.       Office and/or Sales (incl. real estate, auto, etc.)         8.       Non-profit         9.       Entertainment         10.       Manufacturing         11.       Health Care         12.       Other         Telecommunications			
I am an employer that is providing workers' compensation insura Insurance Company Name: Henderson Bros., Inc./Charter Oak	ance for my employees. Below is the policy information. Fire Ins. Co + Travelers Property & Casualty			
Insurer's Address: Thenderson bloss, inc. 520 Ft. Duqueshe b				
City/State/Zip: 1 itsbudgh, FA 10222         Policy # or Self-ins. Lic. # UB-4L099102/UB-3L884966       Expiration Date: 03/15/2023         Attach a copy of the workers' compensation policy declaration page (showing the policy number and expiration date).         Failure to secure coverage as required under Section 25A of MGL c. 152 can lead to the imposition of criminal penalties of a fine up to \$1,500.00 and/or one-year imprisonment, as well as civil penalties in the form of a STOP WORK ORDER and a fine of up to \$250.00 a day against the violator. Be advised that a copy of this statement may be forwarded to the Office of Investigations of the DIA for insurance coverage verification.				
I do hereby certify, under the pains and penalties of perjury that Signature: Phone #: 508-251-0720 x 3801	the information provided above is true and correct. Date: 9/3/32			

www.mass.gov/dia

# **Information and Instructions**

Massachusetts General Laws chapter 152 requires all employers to provide workers' compensation for their employees. Pursuant to this statute, an *employee* is defined as "...every person in the service of another under any contract of hire, express or implied, oral or written."

An *employer* is defined as "an individual, partnership, association, corporation or other legal entity, or any two or more of the foregoing engaged in a joint enterprise, and including the legal representatives of a deceased employer, or the receiver or trustee of an individual, partnership, association or other legal entity, employing employees. However, the owner of a dwelling house having not more than three apartments and who resides therein, or the occupant of the dwelling house of another who employs persons to do maintenance, construction or repair work on such dwelling house or on the grounds or building appurtenant thereto shall not because of such employment be deemed to be an employer."

MGL chapter 152, §25C(6) also states that "every state or local licensing agency shall withhold the issuance or renewal of a license or permit to operate a business or to construct buildings in the commonwealth for any applicant who has not produced acceptable evidence of compliance with the insurance coverage required." Additionally, MGL chapter 152, §25C(7) states "Neither the commonwealth nor any of its political subdivisions shall enter into any contract for the performance of public work until acceptable evidence of compliance with the insurance with the insurance requirements of this chapter have been presented to the contracting authority."

### Applicants

Please fill out the workers' compensation affidavit completely, by checking the boxes that apply to your situation and, if necessary, supply your insurance company's name, address and phone number along with a certificate of insurance. Limited Liability Companies (LLC) or Limited Liability Partnerships (LLP) with no employees other than the members or partners, are not required to carry workers' compensation insurance. If an LLC or LLP does have employees, a policy is required. Be advised that this affidavit may be submitted to the Department of Industrial Accidents for confirmation of insurance coverage. Also be sure to sign and date the affidavit. The affidavit should be returned to the city or town that the application for the permit or license is being requested, not the Department of Industrial Accidents. Should you have any questions regarding the law or if you are required to obtain a workers' compensation policy, please call the Department at the number listed below. Self-insured companies should enter their self-insurance license number on the appropriate line.

### **City or Town Officials**

Please be sure that the affidavit is complete and printed legibly. The Department has provided a space at the bottom of the affidavit for you to fill out in the event the Office of Investigations has to contact you regarding the applicant. Please be sure to fill in the permit/license number which will be used as a reference number. In addition, an applicant that must submit multiple permit/license applications in any given year, need only submit one affidavit indicating current policy information (if necessary). A copy of the affidavit that has been officially stamped or marked by the city or town may be provided to the applicant as proof that a valid affidavit is on file for future permits or licenses. A new affidavit must be filled out each year. Where a home owner or citizen is obtaining a license or permit not related to any business or commercial venture (i.e. a dog license or permit to burn leaves etc.) said person is NOT required to complete this affidavit.

The Department's address, telephone and fax number:

The Commonwealth of Massachusetts Department of Industrial Accidents 1 Congress Street Boston, MA 02114-2017 Tel. # 617-727-4900 ext. 7406 or 1-877-MASSAFE Fax # 617-727-7749 www.mass.gov/dia



# **TOWN OF TRURO**

PLANNING BOARD Meeting Minutes June 8, 2022 – 5:00 pm REMOTE PLANNING BOARD MEETING

<u>Members Present (Quorum)</u>: Anne Greenbaum (Chair); Rich Roberts (Vice Chair); Jack Riemer (Clerk); R. Bruce Boleyn; Paul Kiernan; Ellery Althaus; Caitlin Townsend

# Members Absent:

Other Participants: Town Planner/Land Use Counsel Barbara Carboni; Planning Department Administrator Liz Sturdy; Select Board Liaison John Dundas; Ben Zehnder (Attorney for Benoit Allehaut and Elizabeth Allehaut – Applicants); Jeffrey Katz (Architect for Benoit Allehaut and Elizabeth Allehaut – Applicants); Shane O'Brien (Representative for Benoit Allehaut and Elizabeth Allehaut – Applicants); Ben Zehnder (Attorney for Rachel Kalin - Applicant); Bryan Wiener (Representative for Rachel Kalin – Applicant); Arthur Bosworth and Stephanie Rein (Applicants); Michael Fee (Attorney for Arthur Bosworth and Stephanie Rein); Karen Ruymann (Resident); David Reid (Attorney for Jay, Patty, and David Wilson, Mitchell Glassman, and Arien Mack – Abutters to 21 and 23 Old Bridge Road)

Remote meeting convened at 5:04 pm, Wednesday, June 8, 2022, by Chair Greenbaum who announced that this was a remote public meeting aired live on Truro TV Channel 18 and was being recorded. Town Planner/Land Use Counsel Carboni also provided information as to how the public may call into the meeting or provide written comment. Members introduced themselves to the public.

# Public Comment Period

Public comment, for items not on the agenda, was opened by Chair Greenbaum. Chair Greenbaum recognized Karen Ruymann, a Truro citizen, who commented on stormwater runoff issues at Pond Village and the need for the Stormwater Bylaw.

No other public comments were made.

# Planner Report

Town Planner/Land Use Counsel Carboni reported that two events were coming up: the Economic Development Committee will host a summit at the Truro Library, on June 15, 2022, at 5:30 pm, to present findings about business owners' issues and existing conditions analysis; and the Truro Housing Authority will host an online forum, led by a consultant, on June 21, 2022, at 6 pm.

# **Chair Report**

Chair Greenbaum reported that she and Vice Chair Roberts had written a letter that will be sent out to the Town's Board Chairs to obtain input from the committees. It will be distributed once addresses and Board Chair names are submitted to Planning Department Administrator Sturdy.

# **Board Action/Review - Temporary Sign Permit**

**Patricia Wheeler - Truro Concert Committee**, requesting four (4) signs, 36" x 24", to be located at: (1) Snow's Park; (2) Route 6 and Standish Way; (3) Route 6 and North Pamet Road; (4) front of Town Rec Building-6A; and one (1) banner, 21" x 96", to be located at the intersection of Route 6 and 6A. The signs and banner will be installed on June 30th and removed August 27th. Requesting 501(c)(3) Charitable Organization exemption.

# Member Boleyn made a motion to approve the temporary signs and the Charitable Organization exemption.

Member Riemer seconded the motion. So voted, 7-0, motion carries.

# Public Hearings – Continued

**2022-003/SPR – Benoit Allehaut and Elizabeth Allehaut** for property located at 40 South Pamet Road (Atlas Map 51, Parcel 40, Registry of Deeds title reference: Book 33897, Page 73). Applicant seeks Residential Site Plan Review under §70 of the Truro Zoning Bylaw for a non-conforming (area) lot in the Seashore District. Applicants propose removal of existing additions, construction of a new addition, and to relocate and reconstruct an existing shed into a two-story shed with attached carport.

Chair Greenbaum recognized Attorney Zehnder who provided an update since the Applicants' last appearance in front of the Planning Board and Attorney Zehnder requested approval of the Residential Site Plan Review. After a lengthy discussion that ensued among the Members and the Applicants' representatives, Town Planner/Land Use Counsel Carboni expressed concern about the Members' decision being contingent upon the Historical Commission's process as it is unsound legally and practically. Members had a lengthy discussion about elevation and maximum height for this project.

# Member Althaus made a motion to approve the Residential Site Plan Review for 2022-003/SPR. Member Townsend seconded the motion. So voted, 5-1-1, the motion carries.

**2022-004/SPR – Outer Shore Nominee Trust, Rachel Kalin, Trustee** for property located at 17 Coast Guard Road (Atlas Map 34, Parcel 3, Registry of Deeds title reference: Book 34387, Page 1). Applicant seeks a Residential Site Plan Review under §70 of the Truro Zoning Bylaw for a lot in the Seashore District. Demolition of 5 of 6 pre-existing, non-conforming cottages (multiple dwellings on a lot) and associated structures; construction of a new one-story single-family dwelling with pool and landscaping; renovation of remaining cottage.

Chair Greenbaum recognized Attorney Zehnder provided an update on this project. Members and the Applicant's representatives discussed the project to include exterior downlighting, interior lighting, and potential light trespassing originating from the property affecting the "night sky".

# Member Althaus made a motion to close the hearing for 2022-004/SPR. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

Prior to the motion to approve, Attorney Zehnder asked Chair Greenbaum if she would conduct a voluntary straw poll among Members and only two Members participated. The two Members expressed support for the project. Attorney Zehnder then asked Members for their concerns so he could share those concerns with the Applicant. Concerns expressed by several Members were the size, scale, and mass of the project as well as the project is not consistent in character with the other structures in the neighborhood. A discussion ensued among the Members and Attorney Zehnder regarding the origination and purpose of the House Size Bylaw in the National Seashore District. Attorney Zehnder requested a continuance in this matter.

# Member Riemer made a motion to continue the hearing for 2022-004/SPR until June 22, 2022. Member Kiernan seconded the motion. So voted, 7-0, the motion carries.

**2022-005/SPR – Arthur Bosworth and Stephanie Rein, Out There Grown, LLC (High Dune Craft Cooperative)** for property located at 21 and 23 Old Bridge Road (Atlas Map 50, Parcel 232, Registry of Deeds title reference: Book 377, Page 44). Applicant seeks a Residential Site Plan Review under §70 and §100 of the Truro Zoning Bylaw for a Recreational Marijuana Establishment (RME).

Chair Greenbaum recognized Attorney Fee who stated that the Applicants wanted to withdraw their application as they are going in a different direction. Ms. Rein provided an explanation as to the reasons for the withdrawal.

# Member Boleyn made a motion to accept the withdrawal of the application by Out There Grown, LLC. Member Kiernan seconded the motion. So voted, 7-0, motion carries.

2022-006/SPR – **Debra McCulloch Hopkins, Pure Joy Farm, LLC (High Dune Craft Cooperative)** for property located at 21 and 23 Old Bridge Road (Atlas Map 50, Parcel 232, Registry of Deeds title reference: Book 377, Page 44). Applicant seeks a Residential Site Plan Review under §70 and §100 of the Truro Zoning Bylaw for a Recreational Marijuana Establishment (RME).

Chair Greenbaum recognized Attorney Fee who stated that the Applicant wants to amend her application to include a commercial kitchen to produce cannabis-fused products. Attorney Fee stated the Applicant wishes for a 2-month continuance so the Applicant can discuss with her neighbors her intent to produce cannabis-fused products. Attorney Fee also noted that he will no longer represent Ms. Hopkins moving forward.

Member Boleyn made a motion to continue the hearing for Pure Joy Farm, LLC until August 10, 2022. Member Riemer seconded the motion. So voted, 7-0, motion carries.

### **Minutes**

Chair Greenbaum led the review of the Planning Board's Site Visit minutes from April 19, 2022, for edits or corrections. Members Townsend and Althaus did not vote as they were not there.

Member Boleyn made a motion to approve the minutes as written. Member Kiernan seconded the motion. So voted, 5-0, motion carries.

Chair Greenbaum led the review of the Planning Board's Work Session minutes from May 25, 2022, for edits or corrections. No corrections or edits were noted.

Member Boleyn made a motion to approve the minutes as written. Member Kiernan seconded the motion. So voted, 7-0, motion carries.

Member Riemer made a motion to adjourn the meeting at 7:51 pm. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

Respectfully submitted,

Alexander O. Powers Board/Committee/Commission Support Staff



# **TOWN OF TRURO**

PLANNING BOARD Meeting Minutes June 22, 2022 – 5:00 pm REMOTE PLANNING BOARD MEETING

<u>Members Present (Quorum)</u>: Anne Greenbaum (Chair); Rich Roberts (Vice Chair); Jack Riemer (Clerk); R. Bruce Boleyn; Paul Kiernan; Ellery Althaus; Caitlin Townsend

# Members Absent:

<u>Other Participants</u>: Town Planner/Land Use Counsel Barbara Carboni; Planning Department Administrator Liz Sturdy; Select Board Liaison John Dundas; Rebecca Bruyn (Applicant); Genevieve Morin (Applicant); Marisa Picariello (Applicant); Ben Zehnder (Attorney for Rachel Kalin – Applicant); Bryan Wiener (Site Engineer for Rachel Kalin – Applicant); Tim Cappuccino (Architect for Rachel Kalin – Applicant)

Remote meeting convened at 5:00 pm, Wednesday, June 22, 2022, by Chair Greenbaum who announced that this was a remote public meeting aired live on Truro TV Channel 18 and was being recorded. Town Planner/Land Use Counsel Carboni also provided information as to how the public may call into the meeting or provide written comment. Members introduced themselves to the public.

# Public Comment Period

Public comment, for items not on the agenda, was opened by Chair Greenbaum. No public comments were made.

# Planner Report

Town Planner/Land Use Counsel Carboni reported that the Economic Development Committee's consultant hosted a summit and will submit a revised report over the next couple of months. Town Planner/Land Use Counsel Carboni added that 50-60 people attended last night's Truro Housing Authority online forum.

# Chair Report

Chair Greenbaum commented that Town Planner/Land Use Counsel Carboni had forwarded an email with information regarding "Grow Smart Cape Cod Project" (<u>https://growsmartcapecod.org/</u>) which is a joint project of the Housing Assistance Corporation and the Association to Preserve Cape Cod. The document explores how to increase housing on Cape Cod while balancing the preservation of the environment. Chair Greenbaum encouraged Members to review the material as it has very valuable information and identified areas for potential housing. Chair Greenbaum noted that tomorrow she will email the letter regarding the choke point on Route 6, in Truro, to the Local Comprehensive Planning

Committee and the Walsh Committee. Chair Greenbaum added that coordination in the preparation of the letter was made with the Truro police and fire departments.

Chair Greenbaum announced a work session for July 20, 2022, from 5:00 pm - 6:30 pm to discuss site visits and the different housing funds/balances available in Truro. A discussion to determine timelines for community outreach prior to the development of warrant Articles may be discussed or scheduled for an August work session (TBD).

### **Temporary Sign Permit Applications**

**Marian Averback – The Truro Group, Art Show at the Library**, requesting one (1) sign, 2' x 8', to be located below highway sign at Route 6 and Standish Way. The sign will be installed on July 1st and removed July 30th. Chair Greenbaum recognized Ms. Bruyn who presented to the Members and no Members had any questions.

Member Riemer made a motion to approve the temporary sign for The Truro Group. Member Boleyn seconded the motion. So voted, 7-0, motion carries.

**Kevin Rice – Payomet Performing Arts Center**, requesting two (2) signs, 48" x 36", to be located on Route 6 West and Route 6 East for events June through October. The signs will be for five (5) months: installed June 1st and removed November 1st. A representative from Payomet was not present but Town Planner/Land Use Counsel Carboni opined that the Members may proceed for a decision. The application was vague in terms of specific locations for the two signs and Member Althaus provided previous historical locations for the signs.

Member Althaus made a motion to approve the temporary sign for Payomet Performing Arts Center. Member Boleyn seconded the motion. So voted, 7-0, motion carries.

**Genevieve Morin – Truro Yoga**, requesting one (1) sign, 3' x 2', to be located next to Snow's Park from June 26th through August 29th. The sign will be installed on Fridays and removed on Sundays. Chair Greenbaum recognized Ms. Morin who presented to the Members and no Members had any questions.

Member Boleyn made a motion to approve the temporary sign for Truro Yoga. Member Riemer seconded the motion. So voted, 7-0, motion carries.

**Marisa Picariello – Truro Center for the Arts, Edgewood Farm**, requesting one (1) sign, 48" x 24", to be located at the end of the driveway at 3 Edgewood Way on Route 6 from July 1st through August 27th. The sign will be installed in June and removed on August 31st. Chair Greenbaum recognized Ms. Picariello who presented to the Members and no Members had any questions.

# Member Boleyn made a motion to approve the temporary sign for the Truro Center for the Arts. Member Riemer seconded the motion.

So voted, 7-0, motion carries.

### **Public Hearings - Continued**

**2022-004/SPR – Outer Shore Nominee Trust, Rachel Kalin, Trustee** for property located at 17 Coast Guard Road (Atlas Map 34, Parcel 3, Registry of Deeds title reference: Book 34387, Page 1). Applicant seeks Residential Site Plan Review under §70 of the Truro Zoning Bylaw for a lot in the Seashore District. Demolition of 5 of 6 pre-existing, non-conforming cottages (multiple dwellings on a lot) and associated structures; construction of a new one-story single-family dwelling with pool and landscaping; renovation of remaining cottage.

Chair Greenbaum recognized Attorney Zehnder who introduced the Applicant's representatives and provided an update on the project. The Applicant has redesigned the home reducing the gross floor area to ensure the home is of appropriate size and mass as other homes in the neighborhood. A discussion ensued among the Members and the Applicant's representatives. After the discussion, Chair Greenbaum opened the hearing for public comments and there were none.

# Member Kiernan made a motion to close the hearing for 2022-004/SPR. Member Townsend seconded the motion. So voted, 7-0, motion carries.

Attorney Zehnder asked Chair Greenbaum for a continuance in this matter until July 13, 2022, and Town Planner/Land Use Counsel Carboni opined that this was a reasonable request from the Applicant, and it would show good faith on behalf of the Planning Board.

Member Kiernan made a motion to reopen the hearing in the matter of 2022-004/SPR. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

Member Riemer made a motion to continue the hearing for 2022-004/SPR until July 13, 2022. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

### **Board Action/Review**

Chair Greenbaum led the discussion on the new Telecommunications Site Plan Review (TSPR) procedure and Application as created by Planning Department Administrator Sturdy. Town Planner/Land Use Counsel Carboni presented the fee changes to the Members noting that the fees were set after the review of similar fees in other Cape Cod communities. Chair Greenbaum and Town Planner/Land Use Counsel Carboni reviewed the documents with the Members and answered several questions from the Members.

Member Riemer made a motion to approve the TSPR application packet. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

Chair Greenbaum also noted the Planning Board's gratitude for Planning Department Administrator Sturdy's hard work and diligence in creating the documents.

### **Minutes**

Chair Greenbaum led the review of the minutes for May 4, 2022, for edits or corrections. Member Townsend did not vote as she was not present.

Member made a motion to approve the minutes as written. Member seconded the motion. So voted, 6-0, motion carries.

Member Riemer made a motion to adjourn the meeting at 6:24 pm. Member Boleyn seconded the motion. So voted, 7-0, the motion carries.

Respectfully submitted,

Black eg

Alexander O. Powers Board/Committee/Commission Support Staff

# TRURO PLANNING BOARD

Meeting/Work session July 20, 2022

Attending: Anne Greenbaum – Chair; Rich Roberts – Vice Chair; Jack Riemer – Clerk; Paul Kiernan, Bruce Boleyn, Ellery Althaus, Caitlin Townsend – members

Barbara Carboni - Town Planner/Land Use Counsel

Meeting Called to order at 5:02 pm

No public comments

Minutes

- today's meeting Anne Greenbaum
- May 18, 2022 Motion to approve Jack Riemer, Second Caitlyn Townsend Approved 6-0 Paul Kiernan absent from that meeting & abstained

<u>Site Visit Procedure</u> – Discussion of possible change from scheduled group visit with applicant representative to individual site visits

Barbara Carboni – concerns with group visit:

- 1. Violates spirit of Open Meeting Law
  - a. Questions to applicant and responses provide information to attending Board members that takes place outside of public meeting and is part of the deliberative process
  - b. That the group process is helpful to members confirms this and does not justify continuing to do so
- 2. Communicated with a number of Cape & Island Town Planners
  - a. Almost unanimous that group visits are <u>Not</u> Best Practice

Discussion

- Been practice of the Truro Planning Board for 30 years
- Helpful to have some there to help identify location of specific points on site plan
- Valuable discussion
  - Town Planner don't disagree that discussion gives Board members good information. But that doesn't change that it is OML violation. Productivity does not mean it is a reason to violate OML.
- Safety concerns
  - Going individual, especially if terrain is challenging
  - Helpful to have something to identify members as official ID card or ?

Decision – 3 visit trial of individual visits then discuss

- Barbara Carboni looking at Business Card or ?
- If concerns with safety can go with 1 other member

# Choke Point Update

- Discussion of Choke Point identified by Mr. Kiernan between approximately Hillside Farms & Fisherman's Road
  - Walsh property provides opportunity to create emergency alternative
  - Memo has been sent to Walsh Committee and LCPC
- Question raised as to whether Old King's Highway & Old Outermost Road provides or could provide this alternative access
- Planning Board has raised the issue and potential solutions and communicated to appropriate parties (Town Manager, Public Safety, Walsh & LCPC committees).

# Discussion of Developing Potential Articles for ATM 2023

Will continue at next meeting – Questions to use in reviewing articles from last year & potential new articles to determine what to focus on

- 1. Is this issue of high importance to the Town? If yes,
- 2. Is this issue withing the purview of the Planning Board? If yes,
- 3. Do we **need** to be the mover on this issue? If no, should we pass on the topic & if so to whom? If yes,
- 4. Who do we need to reach out to immediately, Town Boards/Town Department to work with us on it?

Select Board Goal #11 states the Select Board will send a letter to the Planning Board by the end of December outlining the Select Boards priorities in the areas of housing, zoning, land use and economic development. Receiving that in December is too late to impact articles for ATM 2023. Chair to reach out to John Dundas our Select Board liaison with this concern.

Motion to adjourn – Jack Riemer, Second – Bruce Boleyn Vote 7-0

Meeting Adjourned at 6:10 pm

Respectfully submitted,

Anne Greenbaum