



Filed by:  
Kri Pelletier, Property Specialist - SBA Communications  
134 Flanders Rd., Suite 125, Westborough, MA 01581  
508.251.0720 x 3804 - kpelletier@sbsite.com

June 29, 2018

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

**Notice of Exempt Modification**  
**2172 Glasgo Road, Griswold, CT 06351**  
**41 32 14.52 N**  
**-71 52 24.41 W**  
**Sprint #: CT23XC502\_DOMU**

Dear Ms. Bachman:

Sprint currently maintains antennas at the 165-foot level of the existing 195-foot Guyed Tower at 2172 Glasgo Road, Griswold, CT. The tower is owned by SBA Towers II LLC. The property is owned by Courtland and Bridget Kinnie. Sprint now intends to replace (6) existing cell antenna with (6) newer technology cell antennas at the 165-foot level of the tower. Sprint's proposed full scope of work is as follows:

Remove:

- (6) 1-5/8" lines

Remove and Replace:

- Remove:
  - (9) Decibel - DB908h90e-m – Panel Antennas (6 actual – 3 are entitlements only)
- Replace with:
  - (3) CommScope - NNVV-65B-R4 – Panel Antennas
  - (3) RFS - APXVTM14-C-I20 – Panel Antennas

Install:

- (3) ALU 1900 Mhz RRUs
- (6) ALU 800 Mhz RRUs
- (3) ALU TD-RRH8x20-25 RRUs
- (4) 1-1/4" fiber
- (3) Tie-back kits Sitepro SPTB
- (3) V-brace kits Sitepro SFR-K-L
- (6) Pipe 2.OSTD

Existing Equipment to Remain (Including entitlements):

- (3) Sector Frames



This facility was approved prior to the Council's jurisdiction. The Town of Griswold's Planning and Zoning Commission approved a 195' tower on August 10, 1998 under original building permit 201-98. The Tower was approved as a co-location facility. No further conditions were set forth. It is SBA's opinion that this proposed modification is in full compliance.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to Kevin Skulczyck, First Selectman for the Town of Griswold, and Mario J. Tristany, Jr., Town Planner for the Town of Griswold, as well as to the Property Owner. Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above-referenced telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kri Pelletier  
Property Specialist  
SBA COMMUNICATIONS CORPORATION  
134 Flanders Rd., Suite 125  
Westborough, MA 01581  
508.251.0720 x3804 + T  
508.366.2610 + F  
203.446.7700 + C  
kpelletier@sbsite.com

#### Attachments

cc: Kevin Skulczyck, First Selectman – as elected official  
*Town of Griswold, 28 Main Street, Jewett City, CT 06351*  
Mario J. Tristany, Jr., Town Planner – as representative for respective planning and zoning department  
*Town of Griswold, 28 Main Street, Jewett City, CT 06351*  
Courtland and Bridget Kinnie / with attachments  
*2139 Glasgo Road Griswold CT 06351*

## POWER DENSITY

### SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	<b>1.29 %</b>	Antenna B1 MPE%	<b>1.29 %</b>	Antenna C1 MPE%	<b>1.29 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	RFS APXVTM14- ALU- I20	Make / Model:	RFS APXVTM14- ALU- I20	Make / Model:	RFS APXVTM14- ALU- I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	<b>0.89 %</b>	Antenna B2 MPE%	<b>0.89 %</b>	Antenna C2 MPE%	<b>0.89 %</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	<b>2.18 %</b>
T-Mobile	1.15 %
<b>Site Total MPE %:</b>	<b>3.33 %</b>

SPRINT Sector A Total:	2.18 %
SPRINT Sector B Total:	2.18 %
SPRINT Sector C Total:	2.18 %
<b>Site Total:</b>	<b>3.33 %</b>

SPRINT_ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu$ W/cm <sup>2</sup> )	Frequency (MHz)	Allowable MPE ( $\mu$ W/cm <sup>2</sup> )	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	165	0.54	850 MHz	567	0.10%
Sprint 850 MHz LTE	2	941.82	165	2.68	850 MHz	567	0.47%
Sprint 1900 MHz (PCS) CDMA	5	511.82	165	3.64	1900 MHz (PCS)	1000	0.36%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	165	3.64	1900 MHz (PCS)	1000	0.36%
Sprint 2500 MHz (BRS) LTE	8	778.09	165	8.85	2500 MHz (BRS)	1000	0.89%
<b>Total:</b>						<b>2.18%</b>	<b>2.18%</b>

ORIGIN ID:BBEA (508) 251-0720  
KRI PELLETIER  
55A COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

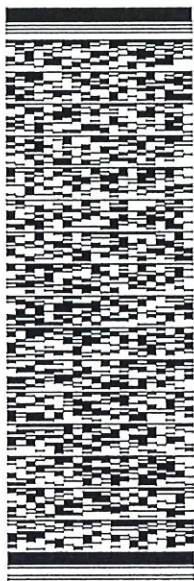
SHIP DATE: 29 JUN 18  
ACTWGT: 1.00 LB  
CAD: 105843304/INET3980

BILL SENDER

TO KEVIN SKULCZYCK, FIRST SELECTMAN  
TOWN OF GRISWOLD  
28 MAIN STREET

JEWETT CITY CT 06351

(508) 251-0720 X 3804 REF: 10569200950089  
INV. DEPT:



J181118012601111

552J293DFIDCA5

TRK# 7725 9929 9259  
0201

MON - 02 JUL 12:00P  
PRIORITY OVERNIGHT

SE GONA

06351  
BDL  
CT-US



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KRI BEL LETTER  
SEA COMMUNICATIONS CORPORATION  
34 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 29 JUN 18  
ACTWGT: 1.00 LB  
CAD: 105843304/NET3980

BILL SENDER

TO MARIO J. TRISTANY, JR., TOWN PLANNE  
TOWN OF GRISWOLD  
28 MAIN STREET

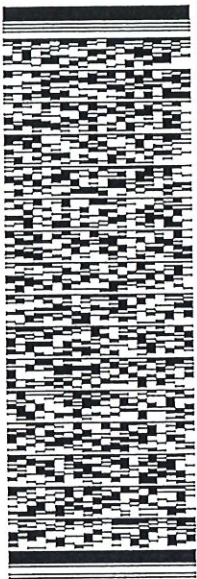
JEWETT CITY CT 06351

(508) 251-0720 X.3804

REF: 10-56-92009-6099

PO:

DEPT:



J181118012601uv

552J293DF/DCA5

TRK# 7725 9930 9920  
0201

MON - 02 JUL 12:00P  
PRIORITY OVERNIGHT

SE GONA

06351  
BDL  
CT-US



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ORIGIN ID:BBFA (508) 251-0720  
KRI BEL LETTER  
SBA COMMUNICATIONS CORPORATION  
34 FLANDERS RD  
SUITE 105  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 29 JUN 18  
ACTWGT: 1.00 LB  
CAD: 105843304/N/E/3980

BILL SENDER

TO COURTLAND AND BRIDGET KINNIE

2139 GLASGO ROAD

GRISWOLD CT 06351

(508) 251-0720 X 3804

REF: 10-56-92009-8089

P.O.

DEPT:



J181118012601uv

TRK# 7725 9932 8167  
0201

MON - 02 JUL 12:00P  
PRIORITY OVERNIGHT

SE GONA

06351  
CT-US BDL



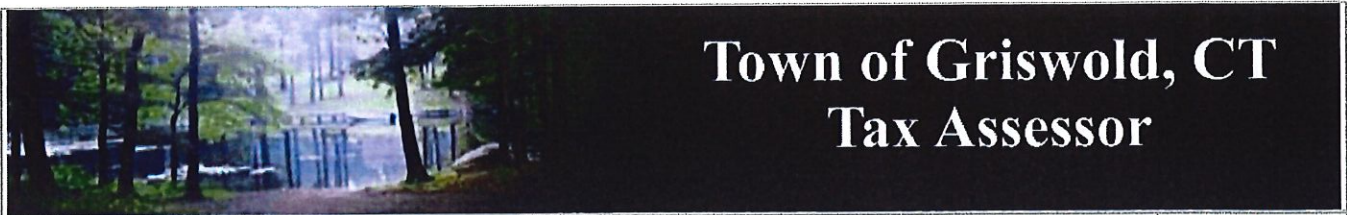
552J293DF/DCA5

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# Town of Griswold, CT Tax Assessor

<a href="#">Recent Sales in Neighborhood</a>	<a href="#">Previous Parcel</a>	<a href="#">Next Parcel</a>	<a href="#">Field Definitions</a>	<a href="#">Return to Main Search</a>	<a href="#">Griswold Home</a>
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Owner and Parcel Information			
Owner Name	KINNIE COURTLAND & BRIDGET	Today's Date	May 8, 2018
Mailing Address	2139 GLASGO RD	Parcel ID	5929 (Account #: K0211400)
	GRISWOLD, CT 06351	Subdivison	TOWER COMPOUND
Location Address	2172 GLASGO RD	Census Tract	7091
Map / Block / Lot	91 / 162 / 3A	Acreage	0.02
Use Class / Description	4310 TEL REL TW	Parcel Map	
Assessing Neighborhood	0060A	Utilities	

Current Appraised Value Information							
Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
\$ 0	\$ 0	\$ 88,100	\$ 150,000		\$ 238,100	\$ 238,100	\$ 166,670

Assessment History				
Year	Building	OB/Misc	Land	Total Assessment
Current	0	\$ 61,670	\$ 105,000	\$ 166,670
2016	0	\$ 61,670	\$ 105,000	\$ 166,670
2015	0	\$ 55,510	\$ 105,000	\$ 160,510

Land Information				
Use	Class	Zoning	Area	Value
TEL REL TW	I	R80	0.02 AC	\$ 150,000

Building Information	
No Building Information available for this parcel.	

Out Buildings / Extra Features				
Description	Sub Description	Area	Year Built	Value
CONC PAD/CELL SITES		100 S.F.	2005	\$ 300
CELL TOWER		195 HEIGHT	1999	\$ 87,800

Sale Information						
Sale Date	Sale Price	Deed Book/Page	Sale Qualification	Reason	Vacant or Improved	Owner
12/27/1996		176/ 903	Unqualified	1	Improved	KINNIE COURTLAND & BRIDGET
12/27/1996		176/ 902	Unqualified	1	Improved	KINNIE ET AL
12/27/1996		176/ 901	Unqualified	1	Improved	KINNIE ET AL
12/27/1996		176/ 900	Unqualified	1	Improved	KINNIE ET AL
12/29/1995		169/ 238	Unqualified	1	Improved	KINNIE FAMILY TRUST II TOWER SBA TOWER 11 LLC
12/29/1995		169/ 238	Unqualified	1	Improved	KINNIE FAMILY TRUST II
01/03/1994		156/ 99	Unqualified	1	Improved	KINNIE BYRON P JR & PAULINE CLAIRE
01/17/1964		00049/0085	Unqualified	1		KINNIE BYRON P JR & PAULINE C

Permit Information								
Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
253-15	05/20/2015	MN	SWAP 3 EXISTING CELL	\$ 15,000	07/23/2015	100	07/23/2015	87-16 CC
134-06	10/20/2005	AD	CELL ANTENNA	\$ 40,000		100	12/13/2005	111-06 CC
201-98	02/23/1999	CM	195FT TOWER	\$ 43,000	08/23/1999	100	08/23/1999	226-07 CC

<a href="#">Recent Sales in Neighborhood</a>	<a href="#">Previous Parcel</a>	<a href="#">Next Parcel</a>	<a href="#">Field Definitions</a>	<a href="#">Return to Main Search Page</a>	<a href="#">Griswold Home</a>
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# Town of Griswold, CT Tax Assessor

Recent Sales in Neighborhood	Previous Parcel	Next Parcel	Field Definitions	Return to Main Search	Griswold Home
<b>Owner and Parcel Information</b>					
<b>Owner Name</b>	KINNIE COURTLAND & BRIDGET		<b>Today's Date</b>	May 8, 2018	
<b>Mailing Address</b>	2139 GLASGO RD GRISWOLD, CT 06351		<b>Parcel ID</b>	5929 (Account #: K0211400)	
<b>Location Address</b>	2172 GLASGO RD		<b>Subdivision</b>	TOWER COMPOUND	
<b>Map / Block / Lot</b>	91 / 162 / 3A		<b>Census Tract</b>	7091	
<b>Use Class / Description</b>	4310 TEL REL TW		<b>Acreage</b>	0.02	
<b>Assessing Neighborhood</b>	0060A		<b>Parcel Map</b>		
			<b>Utilities</b>		

Current Appraised Value Information							
Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
\$ 0	\$ 0	\$ 88,100	\$ 150,000		\$ 238,100	\$ 238,100	\$ 166,670

Assessment History				
Year	Building	OB/Misc	Land	Total Assessment
Current	0	\$ 61,670	\$ 105,000	\$ 166,670
2016	0	\$ 61,670	\$ 105,000	\$ 166,670
2015	0	\$ 55,510	\$ 105,000	\$ 160,510

Land Information			
Use	Class	Zoning	Area
TEL REL TW	I	R80	0.02 AC
			<b>Value</b>
			\$ 150,000

**Building Information**

No Building Information available for this parcel.

Out Buildings / Extra Features			
Description	Sub Description	Area	Year Built
CONC PAD/CELL SITES		100 S.F.	2005
CELL TOWER		195 HEIGHT	1999
			<b>Value</b>
			\$ 300
			\$ 87,800



Sale Information

Sale Date	Sale Price	Deed Book/Page	Sale Qualification	Reason	Vacant or Improved	Owner
12/27/1996		176/ 903	Unqualified	1	Improved	KINNIE COURTLAND & BRIDGET
12/27/1996		176/ 902	Unqualified	1	Improved	KINNIE ET AL
12/27/1996		176/ 901	Unqualified	1	Improved	KINNIE ET AL
12/27/1996		176/ 900	Unqualified	1	Improved	KINNIE ET AL
12/29/1995		169/ 238	Unqualified	1	Improved	KINNIE FAMILY TRUST II TOWER SBA TOWER 11 LLC
12/29/1995		169/ 238	Unqualified	1	Improved	KINNIE FAMILY TRUST II
01/03/1994		156/ 99	Unqualified	1	Improved	KINNIE BYRON P JR & PAULINE CLAIRE
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134-06	10/20/2005	AD	CELL ANTENNA	\$ 40,000		100	12/13/2005	111-06 CC
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----------------------------------------------	---------------------------------	-----------------------------	-----------------------------------	--------------------------------------------	-------------------------------

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

SPRINT Existing Facility

Site ID: CT23XC502

Griswold  
2172 Glasgo Road  
Griswold, CT 06351

**June 28, 2018**

**EBI Project Number: 6218004708**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>3.33 %</b>



June 28, 2018

SPRINT

Attn: RF Engineering Manager  
1 International Boulevard, Suite 800  
Mahwah, NJ 07495

## Emissions Analysis for Site: **CT23XC502 – Griswold**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **2172 Glasgo Road, Griswold, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 850 MHz Band is approximately  $567 \mu\text{W}/\text{cm}^2$ . The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **2172 Glasgo Road, Griswold, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.
- 3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.



- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **Commscope NNVV-65B-R4 and the RFS APXVTM14-ALU-I20** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerlines of the proposed antennas are **165 feet** above ground level (AGL) for **Sector A**, **165 feet** above ground level (AGL) for **Sector B** and **165 feet** above ground level (AGL) for Sector C.
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



## SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	<b>1.29 %</b>	Antenna B1 MPE%	<b>1.29 %</b>	Antenna C1 MPE%	<b>1.29 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	RFS APXVTM14-ALU-I20	Make / Model:	RFS APXVTM14-ALU-I20	Make / Model:	RFS APXVTM14-ALU-I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>	Height (AGL):	<b>165 feet</b>
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	<b>0.89 %</b>	Antenna B2 MPE%	<b>0.89 %</b>	Antenna C2 MPE%	<b>0.89 %</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	<b>2.18 %</b>
T-Mobile	1.15 %
<b>Site Total MPE %:</b>	<b>3.33 %</b>

SPRINT Sector A Total:	2.18 %
SPRINT Sector B Total:	2.18 %
SPRINT Sector C Total:	2.18 %
<b>Site Total:</b>	<b>3.33 %</b>

SPRINT _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	165	0.54	850 MHz	567	0.10%
Sprint 850 MHz LTE	2	941.82	165	2.68	850 MHz	567	0.47%
Sprint 1900 MHz (PCS) CDMA	5	511.82	165	3.64	1900 MHz (PCS)	1000	0.36%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	165	3.64	1900 MHz (PCS)	1000	0.36%
Sprint 2500 MHz (BRS) LTE	8	778.09	165	8.85	2500 MHz (BRS)	1000	0.89%
						<b>Total:</b>	<b>2.18%</b>



## Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	2.18 %
Sector B:	2.18 %
Sector C:	2.18 %
SPRINT Maximum Total (per sector):	2.18 %
Site Total:	3.33 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **3.33 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



**Tower Engineering Solutions**

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8445 Freeport Parkway, Suite 375, Irving, Texas 75063

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**Structural Analysis Report**

**Existing 195 ft PIROD Guyed Tower**  
**Customer Name: SBA Communications Corp**  
**Customer Site Number: CT10013-A**  
**Customer Site Name: Griswold Glasgo**  
**Carrier Name: Sprint Nextel**  
**Carrier Site ID / Name: CT23XC502 / Griswold**  
**Site Location: 2172 Glasgo Road**  
**Griswold, Connecticut**  
**New London County**  
**Latitude: 41.537366**  
**Longitude: -71.873447**

**Analysis Result:**

**Max Structural Usage: 53.4% [Pass]**  
**Max Foundation Usage: 27.0% [Pass]**  
**Additional Usage Caused by Mount Modification: +1%**

**Report Prepared By: Tawfeeq Alajaj**





## Introduction

The purpose of this report is to summarize the analysis results on the 195 ft PIROD Guyed Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

## Sources of Information

<b>Tower Drawings</b>	Pirod Inc. (Drawing No. 204648-B) Original Tower Drawings dated February 17, 1999.
<b>Foundation Drawing</b>	Pirod Inc. (Drawing No. 204648-B) Original Tower Drawings dated February 17, 1999.
<b>Geotechnical Report</b>	FDH Engineering, Inc. (Project No. 1207122EG1) Geotechnical Evaluation of Subsurface Conditions dated August 15, 2012.
<b>Modification Drawings</b>	N/A

## Analysis Criteria

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

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 135$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft

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	185.0	3	Commscope - LNX-6515DS-A1M - Panel	(3) Sector Frames	(12) 1 5/8"	T-Mobile
2		3	EMS - RR901702DP - Panel			
3		3	RFS - APX16PV-16VL-E - Panel			
4		3	Ericsson KRY 112 489/2 TMA			
5		3	Kathrein 782 11056 Bias-T			
-	165.0	9	Decibel - DB908h90e-m - Panel	(3) Sector Frames	(6) 1 5/8"	Sprint Nextel

**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
6	165.0	3	CommScope - NNVV-65B-R4 - Panel	(3) Modified Sector Frame with (3) tie-back kit Sitepro SPTB, (3) v-brace kit Sitepro SFR-K-L & (6) new Pipe2.0STD	(4) 1-1/4" Fiber	Sprint Nextel
7		3	RFS - APXVTM14-C-I20 - Panel			
8		3	ALU 1900 Mhz RRUs			
9		6	ALU 800 Mhz RRUs			
10		3	ALU TD-RRH8x20-25 RRUs			

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

## **Analysis Results**

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

Tower Component	Legs	Diagonals	Horizontals	Guy Wires
Max. Usage:	<b>53.4%</b>	<b>32.7%</b>	<b>32.8%</b>	<b>37.8%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

Reactions (kips)	Base Reactions		Inner Anchors	
	Axial	Shear	Uplift	Shear
Analysis Reactions	160.6	1.8	48.7	44.6

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 ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.0362 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 ANSI/TIA/EIA 222-G 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 analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. 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 EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. 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.
8. 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.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

## Structure: CT10013-A-SBA

**Site Name:** Griswold Glasgo

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

6/4/2018

**Type:** Guyed

**Base Shape:** Triangle

**Basic WS:** 105.00

**Height:** 195.00 (ft)

**Base Width:** 0.00

**Basic Ice WS:** 50.00

**Base Elev:** 0.00 (ft)

**Top Width:** 3.00

**Operational WS:** 60.00

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### Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-8	SOL 2" SOLID	SOL 7/8" SOLID	SOL 7/8" SOLID
9-11	SOL 1 3/4" SOLID	SOL 1" SOLID	SOL 1" SOLID

### Discrete Appurtenances

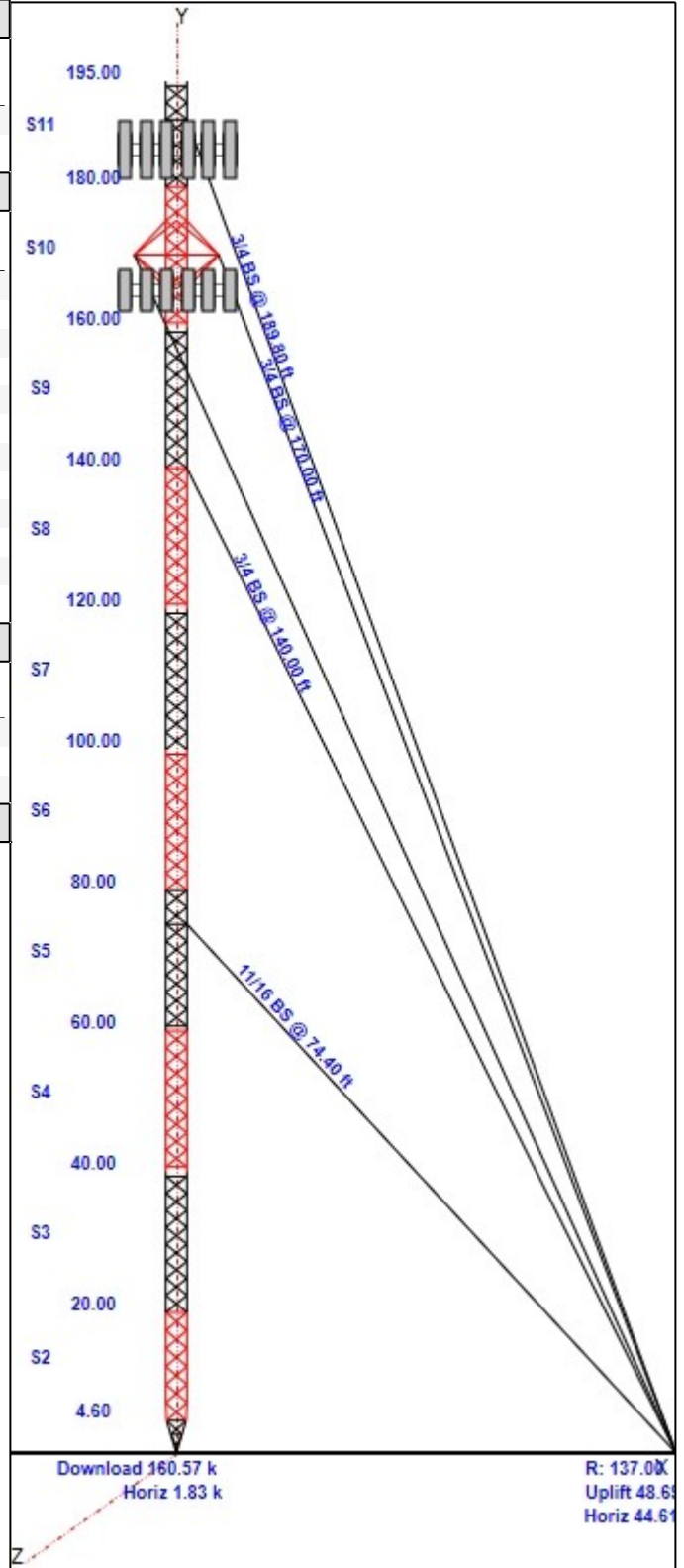
Attach Elev (ft)	Force Elev (ft)	Qty	Description
185.00	185.00	3	LNx-6515DS-A1M
185.00	185.00	3	RR901702DP
185.00	185.00	3	APX16PV-16VL-E
185.00	185.00	3	Ericsson KRY 112 489/2 TMA
185.00	185.00	3	Kathrein 782 11056 Bias-T
185.00	185.00	3	Sector Frames
165.00	165.00	3	NNVV-65B-R4
165.00	165.00	3	APXVTM14-C-I20
165.00	165.00	3	ALU 1900 Mhz RRUs
165.00	165.00	6	ALU 800 Mhz RRUs
165.00	165.00	3	ALU TD-RRH8x20-25 RRUs
165.00	165.00	3	Sector Frame

### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	185.00	12	1 5/8" Coax
0.00	165.00	4	1-1/4" Fiber
0.00	165.00	1	Safety Cable

### Max Guy Wire

37.83% @ 75.1667 ft - 11/16 BS



## Structure: CT10013-A-SBA

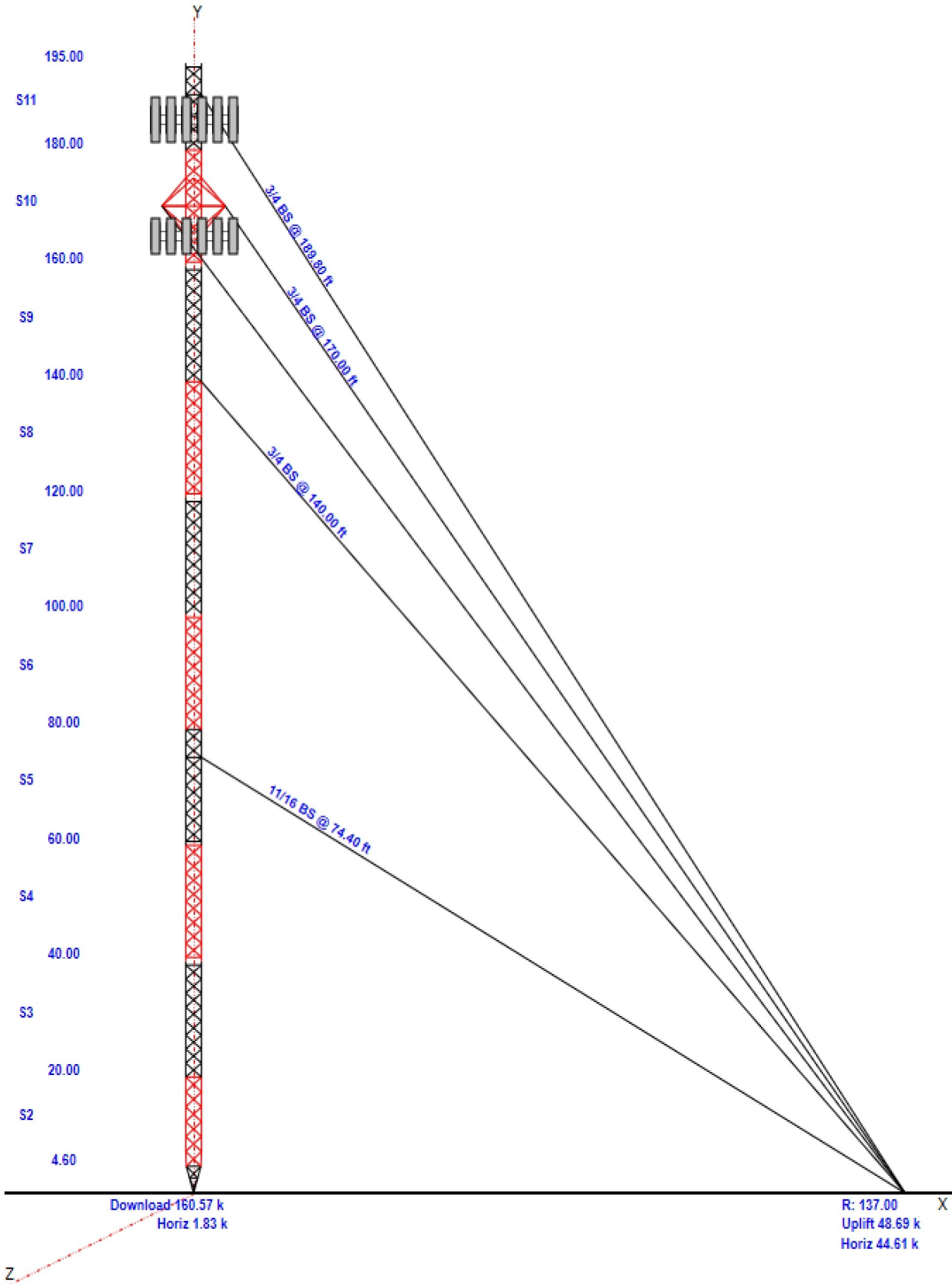
**Site Name:** Griswold Glasgo  
**Type:** Guyed  
**Height:** 195.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** Triangle  
**Base Width:** 0.00  
**Top Width:** 3.00

**Code:** EIA/TIA-222-G  
**Basic WS:** 105.00  
**Basic Ice WS:** 50.00  
**Operational WS:** 60.00

6/4/2018

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## Anchor Drops with Guy Radius - Structure: CT10013-A-SBA

**Site Name:** Griswold Glasgo

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

6/4/2018

**Type:** Guyed

**Base Shape:** Triangle

**Basic WS:** 105.00

**Height:** 195.00 (ft)

**Base Width:** 0.00

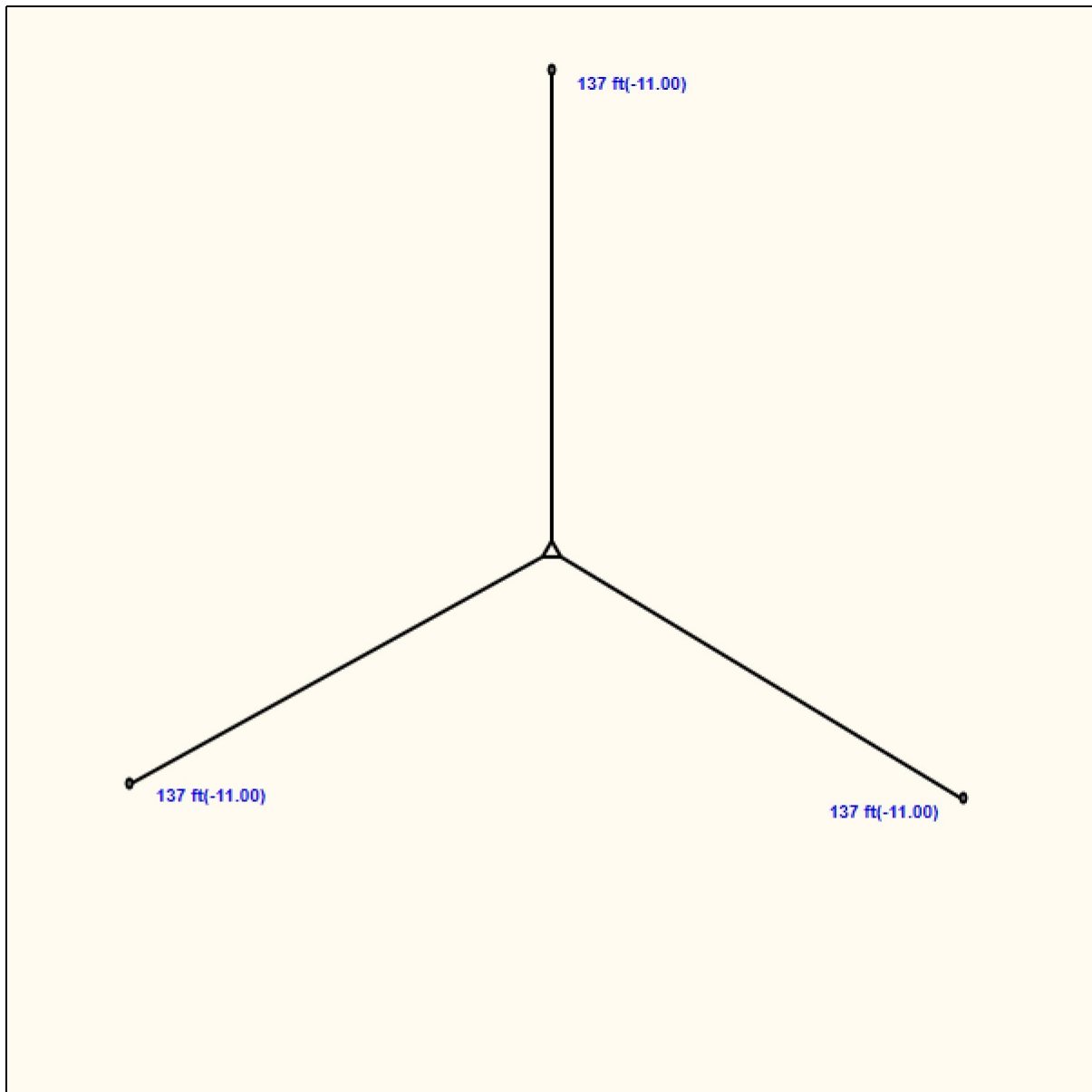
**Basic Ice WS:** 50.00

**Base Elev:** 0.00 (ft)

**Top Width:** 3.00

**Operational WS:** 60.00

Page: 3

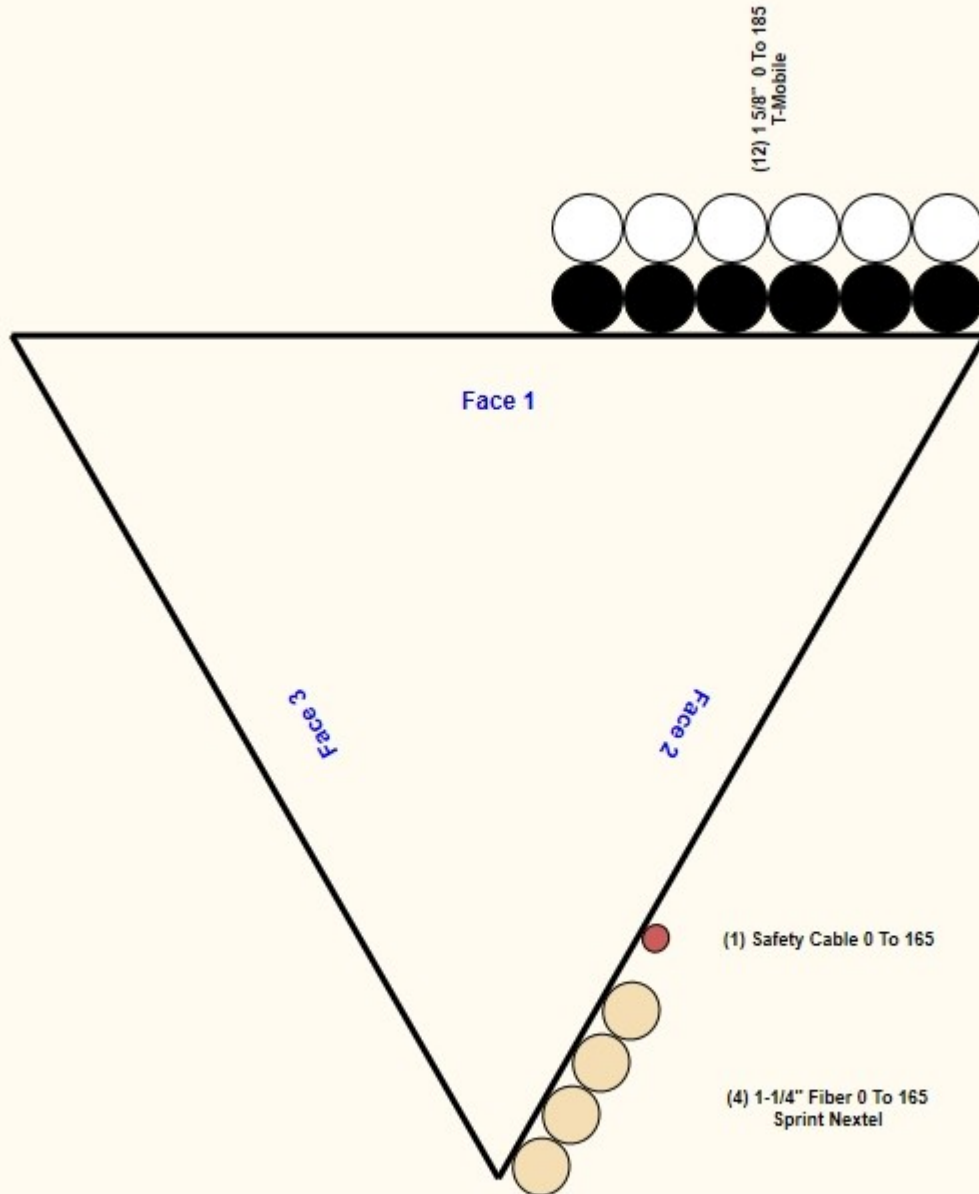


Structure: CT10013-A-SBA - Coax Line Placement

Type: Guyed  
Site Name: Griswold Glasgo  
Height: 195.00 (ft)

6/4/2018

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## Loading Summary

<b>Structure:</b> CT10013-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/4/2018
<b>Site Name:</b> Griswold Glasgo	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 5



### Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
185.00	LNX-6515DS-A1M	3	49.80	11.470	284.53	14.811	96.400	11.900	7.100	0.80	0.80	0.000
185.00	RR901702DP	3	13.50	4.360	115.10	5.370	56.000	8.000	2.800	0.80	0.73	0.000
185.00	APX16PV-16VL-E	3	39.60	6.030	172.27	7.136	53.000	12.900	3.100	0.80	0.62	0.000
185.00	Ericsson KRY 112 489/2 TMA	3	15.40	0.650	33.42	1.276	11.000	6.100	3.900	0.80	0.67	0.000
185.00	Kathrein 782 11056 Bias-T	3	2.60	0.280	9.28	0.690	5.700	5.000	1.500	0.80	0.67	0.000
185.00	Sector Frames	3	660.00	32.000	1508.04	61.696	0.000	0.000	0.000	0.75	0.75	0.000
165.00	NNVV-65B-R4	3	77.40	12.270	366.56	13.745	72.000	19.600	7.800	0.80	0.74	0.000
165.00	APXVTM14-C-I20	3	56.20	6.340	219.05	7.468	56.300	12.600	6.300	0.80	0.77	0.000
165.00	ALU 1900 Mhz RRUs	3	60.00	2.770	144.49	4.054	25.000	11.100	11.400	0.80	0.67	0.000
165.00	ALU 800 Mhz RRUs	6	53.00	2.490	127.89	3.648	19.700	13.000	10.800	0.80	0.67	0.000
165.00	ALU TD-RRH8x20-25 RRUs	3	70.00	4.050	182.15	4.874	26.100	18.600	6.700	0.80	0.67	0.000
165.00	Sector Frame	3	650.00	25.000	1568.94	45.146	0.000	0.000	0.000	0.75	0.75	0.000
<b>Totals:</b>		<b>39</b>	<b>5,401.50</b>		<b>14,578.80</b>						<b>Number of Appurtenances :</b>	<b>12</b>

## Loading Summary

<b>Structure:</b> CT10013-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/4/2018
<b>Site Name:</b> Griswold Glasgo	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 6



### Linear Appurtenances Properties

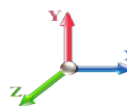
Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	185.00	1 5/8" Coax	12	1.98	1.04	50.00	1	Block		N	1.00	1.00	
0.00	165.00	1-1/4" Fiber	4	1.25	0.66	100.00	2	Individual NR		N	1.00	1.00	
0.00	165.00	Safety Cable	1	0.38	0.27	100.00	2	Individual NR		N	1.00	1.00	

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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**Load Case:** 1.2D + 1.6W Normal Wind

1.2D + 1.6W 105 mph Wind at Normal To Face

<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	<b>Ice Importance Factor:</b> 1.00
<b>Ice Dead Load Factor:</b> 0.00	

Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	1.00	1.00	0.00	1.70	8.53	0.00	383.5	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	1.00	1.00	0.00	5.03	28.56	0.00	1,248.2	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	1.00	1.00	0.00	6.63	37.09	0.00	1,637.3	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	1.00	1.00	0.00	7.14	37.09	0.00	1,671.7	0.0	721.43	1216.99	1,938.41
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	1.00	1.00	0.00	7.01	37.09	0.00	1,649.7	0.0	810.20	1386.39	2,196.59
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	1.00	1.00	0.00	6.40	37.09	0.00	1,580.7	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	1.00	1.00	0.00	6.55	30.37	0.00	1,557.2	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	1.00	1.00	0.00	5.34	7.03	0.00	1,023.0	0.0	665.06	298.37	963.43
														<b>15,596.9</b>	<b>0.0</b>			<b>18,099.16</b>

**Load Case:** 1.2D + 1.6W 60° Wind

1.2D + 1.6W 105 mph Wind at 60° From Face

<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	<b>Ice Importance Factor:</b> 1.00
<b>Ice Dead Load Factor:</b> 0.00	

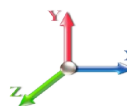
Sect Seq	Wind Height (ft)	Total Flat qz Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	0.80	1.00	0.00	1.70	8.53	0.00	383.5	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	0.80	1.00	0.00	5.03	28.56	0.00	1,248.2	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	0.80	1.00	0.00	6.63	37.09	0.00	1,637.3	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	0.80	1.00	0.00	7.04	37.09	0.00	1,671.7	0.0	711.32	1216.99	1,928.31
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	0.80	1.00	0.00	6.91	37.09	0.00	1,649.7	0.0	798.64	1386.39	2,185.03
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	0.80	1.00	0.00	6.40	37.09	0.00	1,580.7	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	0.80	1.00	0.00	6.55	30.37	0.00	1,557.2	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	0.80	1.00	0.00	5.24	7.03	0.00	1,023.0	0.0	652.61	298.37	950.98
														<b>15,596.9</b>	<b>0.0</b>			<b>18,065.05</b>

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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 Page: 8



**Load Case:** 1.2D + 1.6W 90° Wind

1.2D + 1.6W 105 mph Wind at 90° From Face

**Wind Load Factor:** 1.60  
**Dead Load Factor:** 1.20  
**Ice Dead Load Factor:** 0.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	0.85	1.00	0.00	1.70	8.53	0.00	383.5	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	0.85	1.00	0.00	5.03	28.56	0.00	1,248.2	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	0.85	1.00	0.00	6.63	37.09	0.00	1,637.3	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	0.85	1.00	0.00	7.06	37.09	0.00	1,671.7	0.0	713.85	1216.99	1,930.84
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,615.2	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	0.85	1.00	0.00	6.93	37.09	0.00	1,649.7	0.0	801.53	1386.39	2,187.92
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	0.85	1.00	0.00	6.40	37.09	0.00	1,580.7	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	0.85	1.00	0.00	6.55	30.37	0.00	1,557.2	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	0.85	1.00	0.00	5.27	7.03	0.00	1,023.0	0.0	655.72	298.37	954.09
														<b>15,596.9</b>	<b>0.0</b>			

**Load Case:** 0.9D + 1.6W Normal Wind

0.9D + 1.6W 105 mph Wind at Normal To Face

**Wind Load Factor:** 1.60  
**Dead Load Factor:** 0.90  
**Ice Dead Load Factor:** 0.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

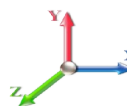
Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	1.00	1.00	0.00	1.70	8.53	0.00	287.6	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	1.00	1.00	0.00	5.03	28.56	0.00	936.1	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	1.00	1.00	0.00	6.63	37.09	0.00	1,228.0	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	1.00	1.00	0.00	7.14	37.09	0.00	1,253.8	0.0	721.43	1216.99	1,938.41
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	1.00	1.00	0.00	7.01	37.09	0.00	1,237.2	0.0	810.20	1386.39	2,196.59
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	1.00	1.00	0.00	6.40	37.09	0.00	1,185.6	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	1.00	1.00	0.00	6.55	30.37	0.00	1,167.9	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	1.00	1.00	0.00	5.34	7.03	0.00	767.3	0.0	665.06	298.37	963.43
														<b>11,697.7</b>	<b>0.0</b>			

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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**Load Case:** 0.9D + 1.6W 60° Wind

0.9D + 1.6W 105 mph Wind at 60° From Face

<b>Wind Load Factor:</b> 1.60 <b>Dead Load Factor:</b> 0.90 <b>Ice Dead Load Factor:</b> 0.00	<b>Wind Importance Factor:</b> 1.00 <b>Ice Importance Factor:</b> 1.00
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Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	0.80	1.00	0.00	1.70	8.53	0.00	287.6	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	0.80	1.00	0.00	5.03	28.56	0.00	936.1	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	0.80	1.00	0.00	6.63	37.09	0.00	1,228.0	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	0.80	1.00	0.00	7.04	37.09	0.00	1,253.8	0.0	711.32	1216.99	1,928.31
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	0.80	1.00	0.00	6.91	37.09	0.00	1,237.2	0.0	798.64	1386.39	2,185.03
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	0.80	1.00	0.00	6.40	37.09	0.00	1,185.6	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	0.80	1.00	0.00	6.55	30.37	0.00	1,167.9	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	0.80	1.00	0.00	5.24	7.03	0.00	767.3	0.0	652.61	298.37	950.98
														<b>11,697.7</b>	<b>0.0</b>			

**Load Case:** 0.9D + 1.6W 90° Wind

0.9D + 1.6W 105 mph Wind at 90° From Face

<b>Wind Load Factor:</b> 1.60 <b>Dead Load Factor:</b> 0.90 <b>Ice Dead Load Factor:</b> 0.00	<b>Wind Importance Factor:</b> 1.00 <b>Ice Importance Factor:</b> 1.00
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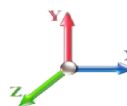
Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	20.39	0.000	2.64	0.00	0.37	2.12	0.85	1.00	0.00	1.70	8.53	0.00	287.6	0.0	100.16	202.65	302.81
2	12.3	20.39	0.000	8.65	0.00	0.18	2.67	0.85	1.00	0.00	5.03	28.56	0.00	936.1	0.0	372.75	678.43	1,051.18
3	30.0	23.56	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	557.15	1018.16	1,575.31
4	50.0	26.24	0.000	11.38	0.00	0.18	2.67	0.85	1.00	0.00	6.63	37.09	0.00	1,228.0	0.0	630.16	1133.76	1,763.92
5	70.0	28.17	0.500	11.38	0.00	0.19	2.64	0.85	1.00	0.00	7.06	37.09	0.00	1,253.8	0.0	713.85	1216.99	1,930.84
6	90.0	29.70	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	702.13	1283.11	1,985.24
7	110.0	30.98	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,211.4	0.0	732.43	1338.48	2,070.90
8	130.0	32.09	0.500	11.17	0.00	0.18	2.65	0.85	1.00	0.00	6.93	37.09	0.00	1,237.2	0.0	801.53	1386.39	2,187.92
9	150.0	33.07	0.000	11.01	0.00	0.18	2.68	0.85	1.00	0.00	6.40	37.09	0.00	1,185.6	0.0	772.00	1428.79	2,200.79
10	170.0	33.95	0.000	11.25	0.00	0.18	2.67	0.85	1.00	0.00	6.55	30.37	0.00	1,167.9	0.0	807.02	1243.57	2,050.59
11	187.5	34.66	0.500	8.30	0.00	0.19	2.64	0.85	1.00	0.00	5.27	7.03	0.00	767.3	0.0	655.72	298.37	954.09
														<b>11,697.7</b>	<b>0.0</b>			

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	4.62	0.000	7.40	4.76	0.92	1.96	1.00	1.00	1.15	7.38	9.41	4.41	797.3	413.8	56.88	5.54	62.43
2	12.3	4.62	0.000	27.00	18.35	0.52	1.88	1.00	1.00	1.36	18.85	32.05	17.44	2,940.2	1692.0	139.23	127.16	266.38
3	30.0	5.34	0.000	37.08	25.91	0.54	1.85	1.00	1.00	1.49	26.45	42.04	24.76	4,073.5	2458.3	222.25	186.98	409.22
4	50.0	5.95	0.000	39.43	28.05	0.58	1.82	1.00	1.00	1.56	28.88	42.30	26.06	4,310.6	2673.3	266.04	197.73	463.76
5	70.0	6.39	0.500	41.20	29.82	0.61	1.80	1.00	1.00	1.62	31.48	42.48	26.95	4,533.2	2861.5	307.64	199.35	506.99
6	90.0	6.73	0.000	40.09	28.92	0.58	1.82	1.00	1.00	1.66	29.53	42.62	27.64	4,464.6	2849.4	306.92	225.75	532.67
7	110.0	7.02	0.000	40.68	29.51	0.59	1.81	1.00	1.00	1.69	30.15	42.73	28.20	4,544.0	2928.8	325.93	233.29	559.22
8	130.0	7.28	0.500	42.04	30.86	0.62	1.80	1.00	1.00	1.72	32.35	42.83	28.67	4,715.5	3065.8	359.10	227.98	587.08
9	150.0	7.50	0.000	41.45	30.44	0.60	1.80	1.00	1.00	1.75	31.06	42.91	29.09	4,657.3	3076.5	356.78	244.38	601.16
10	170.0	7.70	0.000	42.95	31.70	0.62	1.79	1.00	1.00	1.77	32.78	36.26	7.36	4,281.1	2723.9	384.21	153.82	538.04
11	187.5	7.86	0.500	32.70	24.40	0.64	1.78	1.00	1.00	1.78	25.85	8.52	0.00	2,562.4	1539.4	308.02	30.50	338.52
														<b>41,879.5</b>	<b>26282.6</b>			<b>4,865.48</b>

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

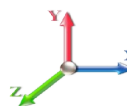
Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	2.3	4.62	0.000	7.40	4.76	0.92	1.96	0.80	1.00	1.15	7.38	9.41	4.41	797.3	413.8	56.88	5.54	62.43
2	12.3	4.62	0.000	27.00	18.35	0.52	1.88	0.80	1.00	1.36	18.85	32.05	17.44	2,940.2	1692.0	139.23	127.16	266.38
3	30.0	5.34	0.000	37.08	25.91	0.54	1.85	0.80	1.00	1.49	26.45	42.04	24.76	4,073.5	2458.3	222.25	186.98	409.22
4	50.0	5.95	0.000	39.43	28.05	0.58	1.82	0.80	1.00	1.56	28.88	42.30	26.06	4,310.6	2673.3	266.04	197.73	463.76
5	70.0	6.39	0.500	41.20	29.82	0.61	1.80	0.80	1.00	1.62	31.38	42.48	26.95	4,533.2	2861.5	306.67	199.35	506.02
6	90.0	6.73	0.000	40.09	28.92	0.58	1.82	0.80	1.00	1.66	29.53	42.62	27.64	4,464.6	2849.4	306.92	225.75	532.67
7	110.0	7.02	0.000	40.68	29.51	0.59	1.81	0.80	1.00	1.69	30.15	42.73	28.20	4,544.0	2928.8	325.93	233.29	559.22
8	130.0	7.28	0.500	42.04	30.86	0.62	1.80	0.80	1.00	1.72	32.25	42.83	28.67	4,715.5	3065.8	357.99	227.98	585.97
9	150.0	7.50	0.000	41.45	30.44	0.60	1.80	0.80	1.00	1.75	31.06	42.91	29.09	4,657.3	3076.5	356.78	244.38	601.16
10	170.0	7.70	0.000	42.95	31.70	0.62	1.79	0.80	1.00	1.77	32.78	36.26	7.36	4,281.1	2723.9	384.21	153.82	538.04
11	187.5	7.86	0.500	32.70	24.40	0.64	1.78	0.80	1.00	1.78	25.75	8.52	0.00	2,562.4	1539.4	306.83	30.50	337.33
														<b>41,879.5</b>	<b>26282.6</b>			<b>4,862.20</b>

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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**Load Case:** 1.2D + 1.0Di + 1.0Wi 90° Wind

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face

**Wind Load Factor:** 1.00  
**Dead Load Factor:** 1.20  
**Ice Dead Load Factor:** 1.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.3	4.62	0.000	7.40	4.76	0.92	1.96	0.85	1.00	1.15	7.38	9.41	4.41	797.3	413.8	56.88	5.54	62.43
2	12.3	4.62	0.000	27.00	18.35	0.52	1.88	0.85	1.00	1.36	18.85	32.05	17.44	2,940.2	1692.0	139.23	127.16	266.38
3	30.0	5.34	0.000	37.08	25.91	0.54	1.85	0.85	1.00	1.49	26.45	42.04	24.76	4,073.5	2458.3	222.25	186.98	409.22
4	50.0	5.95	0.000	39.43	28.05	0.58	1.82	0.85	1.00	1.56	28.88	42.30	26.06	4,310.6	2673.3	266.04	197.73	463.76
5	70.0	6.39	0.500	41.20	29.82	0.61	1.80	0.85	1.00	1.62	31.41	42.48	26.95	4,533.2	2861.5	306.91	199.35	506.26
6	90.0	6.73	0.000	40.09	28.92	0.58	1.82	0.85	1.00	1.66	29.53	42.62	27.64	4,464.6	2849.4	306.92	225.75	532.67
7	110.0	7.02	0.000	40.68	29.51	0.59	1.81	0.85	1.00	1.69	30.15	42.73	28.20	4,544.0	2928.8	325.93	233.29	559.22
8	130.0	7.28	0.500	42.04	30.86	0.62	1.80	0.85	1.00	1.72	32.27	42.83	28.67	4,715.5	3065.8	358.27	227.98	586.24
9	150.0	7.50	0.000	41.45	30.44	0.60	1.80	0.85	1.00	1.75	31.06	42.91	29.09	4,657.3	3076.5	356.78	244.38	601.16
10	170.0	7.70	0.000	42.95	31.70	0.62	1.79	0.85	1.00	1.77	32.78	36.26	7.36	4,281.1	2723.9	384.21	153.82	538.04
11	187.5	7.86	0.500	32.70	24.40	0.64	1.78	0.85	1.00	1.78	25.77	8.52	0.00	2,562.4	1539.4	307.13	30.50	337.63
													<b>41,879.5</b>	<b>26282.6</b>				<b>4,863.02</b>

**Load Case:** 1.0D + 1.0W Normal Wind

1.0D + 1.0W 60 mph Wind at Normal To Face

**Wind Load Factor:** 1.00  
**Dead Load Factor:** 1.00  
**Ice Dead Load Factor:** 0.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

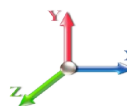
Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	2.3	6.66	0.000	2.64	0.00	0.37	2.12	1.00	1.00	0.00	1.70	8.53	0.00	319.6	0.0	20.44	41.36	61.80
2	12.3	6.66	0.000	8.65	0.00	0.18	2.67	1.00	1.00	0.00	5.03	28.56	0.00	1,040.1	0.0	76.07	138.45	214.53
3	30.0	7.69	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	113.70	207.79	321.49
4	50.0	8.57	0.000	11.38	0.00	0.18	2.67	1.00	1.00	0.00	6.63	37.09	0.00	1,364.4	0.0	128.60	231.38	359.98
5	70.0	9.20	0.500	11.38	0.00	0.19	2.64	1.00	1.00	0.00	7.14	37.09	0.00	1,393.1	0.0	147.23	248.36	395.59
6	90.0	9.70	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	143.29	261.86	405.15
7	110.0	10.12	0.000	11.17	0.00	0.18	2.68	1.00	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	149.47	273.16	422.63
8	130.0	10.48	0.500	11.17	0.00	0.18	2.65	1.00	1.00	0.00	7.01	37.09	0.00	1,374.7	0.0	165.35	282.94	448.28
9	150.0	10.80	0.000	11.01	0.00	0.18	2.68	1.00	1.00	0.00	6.40	37.09	0.00	1,317.3	0.0	157.55	291.59	449.14
10	170.0	11.09	0.000	11.25	0.00	0.18	2.67	1.00	1.00	0.00	6.55	30.37	0.00	1,297.6	0.0	164.70	253.79	418.49
11	187.5	11.32	0.500	8.30	0.00	0.19	2.64	1.00	1.00	0.00	5.34	7.03	0.00	852.5	0.0	135.73	60.89	196.62
													<b>12,997.4</b>	<b>0.0</b>				<b>3,693.71</b>

## Section Forces

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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**Load Case:** 1.0D + 1.0W 60° Wind

1.0D + 1.0W 60 mph Wind at 60° From Face

**Wind Load Factor:** 1.00  
**Dead Load Factor:** 1.00  
**Ice Dead Load Factor:** 0.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
												Linear Area (sqft)	Linear Area (sqft)						
1	2.3	6.66	0.000	2.64	0.00	0.37	2.12	0.80	1.00	0.00	1.70	8.53	0.00	319.6	0.0	20.44	41.36	61.80	
2	12.3	6.66	0.000	8.65	0.00	0.18	2.67	0.80	1.00	0.00	5.03	28.56	0.00	1,040.1	0.0	76.07	138.45	214.53	
3	30.0	7.69	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	113.70	207.79	321.49	
4	50.0	8.57	0.000	11.38	0.00	0.18	2.67	0.80	1.00	0.00	6.63	37.09	0.00	1,364.4	0.0	128.60	231.38	359.98	
5	70.0	9.20	0.500	11.38	0.00	0.19	2.64	0.80	1.00	0.00	7.04	37.09	0.00	1,393.1	0.0	145.17	248.36	393.53	
6	90.0	9.70	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	143.29	261.86	405.15	
7	110.0	10.12	0.000	11.17	0.00	0.18	2.68	0.80	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	149.47	273.16	422.63	
8	130.0	10.48	0.500	11.17	0.00	0.18	2.65	0.80	1.00	0.00	6.91	37.09	0.00	1,374.7	0.0	162.99	282.94	445.92	
9	150.0	10.80	0.000	11.01	0.00	0.18	2.68	0.80	1.00	0.00	6.40	37.09	0.00	1,317.3	0.0	157.55	291.59	449.14	
10	170.0	11.09	0.000	11.25	0.00	0.18	2.67	0.80	1.00	0.00	6.55	30.37	0.00	1,297.6	0.0	164.70	253.79	418.49	
11	187.5	11.32	0.500	8.30	0.00	0.19	2.64	0.80	1.00	0.00	5.24	7.03	0.00	852.5	0.0	133.18	60.89	194.08	
														<b>12,997.4</b>	<b>0.0</b>				<b>3,686.74</b>

**Load Case:** 1.0D + 1.0W 90° Wind

1.0D + 1.0W 60 mph Wind at 90° From Face

**Wind Load Factor:** 1.00  
**Dead Load Factor:** 1.00  
**Ice Dead Load Factor:** 0.00

**Wind Importance Factor:** 1.00  
**Ice Importance Factor:** 1.00

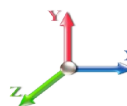
Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
												Linear Area (sqft)	Linear Area (sqft)						
1	2.3	6.66	0.000	2.64	0.00	0.37	2.12	0.85	1.00	0.00	1.70	8.53	0.00	319.6	0.0	20.44	41.36	61.80	
2	12.3	6.66	0.000	8.65	0.00	0.18	2.67	0.85	1.00	0.00	5.03	28.56	0.00	1,040.1	0.0	76.07	138.45	214.53	
3	30.0	7.69	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	113.70	207.79	321.49	
4	50.0	8.57	0.000	11.38	0.00	0.18	2.67	0.85	1.00	0.00	6.63	37.09	0.00	1,364.4	0.0	128.60	231.38	359.98	
5	70.0	9.20	0.500	11.38	0.00	0.19	2.64	0.85	1.00	0.00	7.06	37.09	0.00	1,393.1	0.0	145.68	248.36	394.05	
6	90.0	9.70	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	143.29	261.86	405.15	
7	110.0	10.12	0.000	11.17	0.00	0.18	2.68	0.85	1.00	0.00	6.49	37.09	0.00	1,346.0	0.0	149.47	273.16	422.63	
8	130.0	10.48	0.500	11.17	0.00	0.18	2.65	0.85	1.00	0.00	6.93	37.09	0.00	1,374.7	0.0	163.58	282.94	446.51	
9	150.0	10.80	0.000	11.01	0.00	0.18	2.68	0.85	1.00	0.00	6.40	37.09	0.00	1,317.3	0.0	157.55	291.59	449.14	
10	170.0	11.09	0.000	11.25	0.00	0.18	2.67	0.85	1.00	0.00	6.55	30.37	0.00	1,297.6	0.0	164.70	253.79	418.49	
11	187.5	11.32	0.500	8.30	0.00	0.19	2.64	0.85	1.00	0.00	5.27	7.03	0.00	852.5	0.0	133.82	60.89	194.71	
														<b>12,997.4</b>	<b>0.0</b>				<b>3,688.48</b>



## Force/Stress Compression Summary

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

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

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### LEG MEMBERS

Sect	Top Elev	Member	Force (kips)		Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
			Load Case			X	Y	Z				
1	4.6	SOL - 2" SOLID	-54.39	1.2D + 1.0Di + 1.0Wi 60° Wind	2.12	100	100	100	50.80	50.00	117.06	46.5 Member X
2	20	SOL - 2" SOLID	-57.18	1.2D + 1.0Di + 1.0Wi 60° Wind	2.57	100	100	100	61.60	50.00	107.12	53.4 Member X
3	40	SOL - 2" SOLID	-56.83	1.2D + 1.0Di + 1.0Wi 60° Wind	2.42	100	100	100	58.00	50.00	110.55	51.4 Member X
4	60	SOL - 2" SOLID	-55.28	1.2D + 1.0Di + 1.0Wi 60° Wind	2.42	100	100	100	58.00	50.00	110.55	50.0 Member X
5	80	SOL - 2" SOLID	-50.35	1.2D + 1.0Di + 1.0Wi Normal	2.42	100	100	100	58.00	50.00	110.55	45.5 Member X
6	100	SOL - 2" SOLID	-44.60	1.2D + 1.0Di + 1.0Wi 90° Wind	2.42	100	100	100	58.00	50.00	110.55	40.3 Member X
7	120	SOL - 2" SOLID	-45.66	1.2D + 1.0Di + 1.0Wi 60° Wind	2.42	100	100	100	58.00	50.00	110.55	41.3 Member X
8	140	SOL - 2" SOLID	-44.36	1.2D + 1.0Di + 1.0Wi 60° Wind	2.42	100	100	100	58.00	50.00	110.55	40.1 Member X
9	160	SOL - 1 3/4" SOLID	-34.22	1.2D + 1.0Di + 1.0Wi 60° Wind	2.42	100	100	100	66.28	50.00	78.50	43.6 Member X
10	180	SOL - 1 3/4" SOLID	-38.00	1.2D + 1.6W 60° Wind	2.42	100	100	100	66.28	50.00	78.50	48.4 Member X
11	195	SOL - 1 3/4" SOLID	-14.67	1.2D + 1.6W 60° Wind	2.39	100	100	100	65.52	50.00	79.08	18.5 Member X

### HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)		Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
			Load Case			X	Y	Z								
1	4.6								0.00	0	0					
2	20								0.00	0	0					
3	40								0.00	0	0					
4	60	SOL - 7/8" SOLID	-0.18	0.9D + 1.6W Normal Wind	3.00	100	100	100	115.17	50.00	10.24	0	0			2 Member X
5	80	SOL - 7/8" SOLID	-0.27	0.9D + 1.6W 60° Wind	3.00	100	100	100	115.17	50.00	10.24	0	0			3 Member X
6	100								0.00	0	0					
7	120								0.00	0	0					
8	140	SOL - 7/8" SOLID	-0.04	0.9D + 1.6W 60° Wind	3.00	100	100	100	115.17	50.00	10.24	0	0			0 Member X
9	160	SOL - 1" SOLID	-0.29	0.9D + 1.6W 60° Wind	3.00	100	100	100	100.80	50.00	16.81	0	0			2 Member X
10	180	SOL - 1" SOLID	-2.33	0.9D + 1.6W Normal Wind	3.00	100	100	100	100.80	50.00	16.81	0	0			14 Member X
11	195								0.00	0	0					

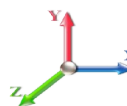
### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)		Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
			Load Case			X	Y	Z								
1	4.6	SOL - 7/8" SOLID	-7.07	1.2D + 1.0Di + 1.0Wi Normal	2.25	50	50	50	55.42	50.00	21.62	0	0			33 Member X
2	20	SOL - 7/8" SOLID	-0.93	1.2D + 1.6W 90° Wind	3.95	50	50	50	97.44	50.00	13.51	0	0			7 Member X
3	40	SOL - 7/8" SOLID	-0.72	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			6 Member X
4	60	SOL - 7/8" SOLID	-1.57	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			13 Member X
5	80	SOL - 7/8" SOLID	-1.89	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			16 Member X
6	100	SOL - 7/8" SOLID	-1.80	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			15 Member X
7	120	SOL - 7/8" SOLID	-0.93	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			8 Member X
8	140	SOL - 7/8" SOLID	-1.20	1.2D + 1.6W 90° Wind	3.85	50	50	50	95.07	36.00	12.11	0	0			10 Member X
9	160	SOL - 1" SOLID	-1.48	1.2D + 1.6W 90° Wind	3.85	50	50	50	83.21	50.00	21.30	0	0			7 Member X
10	180	SOL - 1" SOLID	-4.57	0.9D + 1.6W 90° Wind	3.85	50	50	50	83.21	50.00	21.30	0	0			21 Member X
11	195	SOL - 1" SOLID	-1.36	1.2D + 1.6W 60° Wind	3.83	50	50	50	82.83	50.00	21.40	0	0			6 Member X

## Force/Stress Tension Summary

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Code:** EIA/TIA-222-G  
**Exposure:** C  
**Crest Height:** 0.00  
**Site Class:** D - Stiff Soil  
**Struct Class:** II  
**Topography:** 1

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### LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	4.6				0	0.00		
2	20				0	0.00		
3	40				0	0.00		
4	60				0	0.00		
5	80				0	0.00		
6	100				0	0.00		
7	120				0	0.00		
8	140				0	0.00		
9	160				0	0.00		
10	180				0	0.00		
11	195	SOL - 1 3/4" SOLID	0.43	0.9D + 1.6W 60° Wind	50	108.24	0.4	Member

### HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	4.6	SOL - 7/8" SOLID	8.87	1.2D + 1.0Di + 1.0Wi Nc	50	27.06	0	0				32.8	Member
2	20	SOL - 7/8" SOLID	0.69	1.2D + 1.0Di + 1.0Wi Nc	50	27.06	0	0				2.5	Member
3	40	SOL - 7/8" SOLID	0.35	1.2D + 1.0Di + 1.0Wi 6C	50	27.06	0	0				1.3	Member
4	60	SOL - 7/8" SOLID	0.70	1.2D + 1.6W 60° Wind	50	27.06	0	0				2.6	Member
5	80	SOL - 7/8" SOLID	0.77	1.2D + 1.6W Normal Wi	50	27.06	0	0				2.8	Member
6	100	SOL - 7/8" SOLID	0.60	1.2D + 1.6W Normal Wi	50	27.06	0	0				2.2	Member
7	120	SOL - 7/8" SOLID	0.29	1.2D + 1.0Di + 1.0Wi Nc	50	27.06	0	0				1.1	Member
8	140	SOL - 7/8" SOLID	0.48	1.2D + 1.6W Normal Wi	50	27.06	0	0				1.8	Member
9	160	SOL - 1" SOLID	0.54	1.2D + 1.6W Normal Wi	50	35.34	0	0				1.5	Member
10	180	SOL - 1" SOLID	2.63	1.2D + 1.6W 60° Wind	50	35.34	0	0				7.4	Member
11	195	SOL - 1" SOLID	0.31	0.9D + 1.6W Normal Wi	50	35.34	0	0				0.9	Member

### 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	4.6	SOL - 7/8" SOLID	0.00		50	0.00	0	0					
2	20	SOL - 7/8" SOLID	2.09	1.2D + 1.0Di + 1.0Wi 9C	50	27.06	0	0				7.7	Member
3	40	SOL - 7/8" SOLID	0.55	1.2D + 1.6W 90° Wind	36	19.48	0	0				2.8	Member
4	60	SOL - 7/8" SOLID	1.13	1.2D + 1.6W 90° Wind	36	19.48	0	0				5.8	Member
5	80	SOL - 7/8" SOLID	1.88	0.9D + 1.6W 90° Wind	36	19.48	0	0				9.6	Member
6	100	SOL - 7/8" SOLID	1.61	1.2D + 1.6W 90° Wind	36	19.48	0	0				8.3	Member
7	120	SOL - 7/8" SOLID	0.72	0.9D + 1.6W 90° Wind	36	19.48	0	0				3.7	Member
8	140	SOL - 7/8" SOLID	1.07	1.2D + 1.6W 90° Wind	36	19.48	0	0				5.5	Member
9	160	SOL - 1" SOLID	1.42	0.9D + 1.6W 90° Wind	50	35.34	0	0				4.0	Member
10	180	SOL - 1" SOLID	5.02	0.9D + 1.6W 90° Wind	50	35.34	0	0				14.2	Member
11	195	SOL - 1" SOLID	1.31	1.2D + 1.6W 60° Wind	50	35.34	0	0				3.7	Member

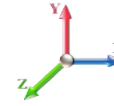
## Support Forces Summary

**Structure:** CT10013-A-SBA  
**Site Name:** Griswold Glasgo  
**Height:** 195.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 0.85

**Topography:** 1

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

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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
<hr/>					
1.2D + 1.6W Normal Wind	1	0.00	109.67	-1.79	
	A1	0.00	-7.77	5.03	
	A1b	29.19	-37.97	-18.49	
	A1a	-29.19	-37.97	-18.49	
<hr/>					
1.2D + 1.6W 60° Wind	1	-1.56	110.92	-0.90	
	A1	-1.37	-18.46	15.03	
	A1b	12.33	-18.46	-8.70	
	A1a	-38.57	-48.59	-22.27	
<hr/>					
1.2D + 1.6W 90° Wind	1	-1.81	110.77	-0.01	
	A1	-1.70	-28.36	24.94	
	A1b	6.47	-10.89	-4.53	
	A1a	-36.81	-45.84	-20.40	
<hr/>					
0.9D + 1.6W Normal Wind	1	0.00	104.37	-1.82	
	A1	0.00	-7.85	5.09	
	A1b	29.23	-38.04	-18.51	
	A1a	-29.23	-38.04	-18.51	
<hr/>					
0.9D + 1.6W 60° Wind	1	-1.58	105.71	-0.91	
	A1	-1.37	-18.56	15.11	
	A1b	12.41	-18.56	-8.74	
	A1a	-38.63	-48.69	-22.30	
<hr/>					
0.9D + 1.6W 90° Wind	1	-1.83	105.51	-0.01	
	A1	-1.70	-28.44	25.00	
	A1b	6.53	-10.98	-4.56	
	A1a	-36.86	-45.91	-20.43	
<hr/>					
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	160.57	-0.46	
	A1	0.00	-22.21	20.88	
	A1b	26.12	-31.59	-16.25	
	A1a	-26.12	-31.59	-16.25	
<hr/>					
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.36	159.88	-0.21	
	A1	-1.01	-25.25	23.91	
	A1b	20.20	-25.25	-12.83	
	A1a	-29.27	-34.63	-16.90	
<hr/>					
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.44	160.20	0.03	
	A1	-1.23	-28.41	27.32	
	A1b	18.46	-23.00	-11.25	
	A1a	-28.86	-33.82	-16.07	
<hr/>					
1.0D + 1.0W Normal Wind	1	0.00	83.31	-0.41	
	A1	0.00	-16.35	14.34	
	A1b	17.41	-22.45	-10.37	
	A1a	-17.41	-22.45	-10.37	
<hr/>					
1.0D + 1.0W 60° Wind	1	-0.35	83.21	-0.20	
	A1	-0.28	-18.39	16.28	
	A1b	13.96	-18.39	-8.38	
	A1a	-19.22	-24.47	-11.10	
<hr/>					

1.0D + 1.0W 90° Wind	1	-0.40	83.25	0.00
	A1	-0.34	-20.42	18.27
	A1b	12.79	-16.90	-7.55
	A1a	-18.85	-23.93	-10.72

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Max Reactions (kips)	Base	Anchor 1
Vertical	160.57	48.69
Horizontal	1.83	44.61

## Cable Forces Summary

<b>Structure:</b> CT10013-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/4/2018
<b>Site Name:</b> Griswold Glasgo	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 17



Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kips)	Applied Tension (kips)	Use %
1.2D + 1.6W Normal	75.17	11/16 BS	A1	35	34.80	0.21	1
			A1b	35a	34.80	10.14	29
			A1a	35b	34.80	10.14	29
	140.00	3/4 BS	A1	64	40.80	1.42	3
			A1b	64a	40.80	11.43	28
			A1a	64b	40.80	11.43	28
	189.56		A1	86	40.80	3.40	8
			A1b	86a	40.80	10.27	25
			A1a	86b	40.80	10.27	25
	170.33		A1	T4	40.80	2.59	6
			A1a	T4b	40.80	10.88	27
			A1b	T4a	40.80	10.09	25
			A1b	T4	40.80	10.88	27
			A1a	T4a	40.80	10.09	25
			A1	T4b	40.80	2.59	6
	1.2D + 1.6W 60° Wind	75.17	11/16 BS	A1	35	34.80	3.38
A1b				35a	34.80	3.38	10
A1a				35b	34.80	13.16	38
140.00		3/4 BS	A1	64	40.80	4.65	11
			A1b	64a	40.80	4.65	11
			A1a	64b	40.80	15.05	37
189.56			A1	86	40.80	6.06	15
			A1b	86a	40.80	6.06	15
			A1a	86b	40.80	12.65	31
170.33			A1	T4	40.80	5.69	14
			A1a	T4b	40.80	13.32	33
			A1b	T4a	40.80	5.23	13
			A1b	T4	40.80	5.69	14
			A1a	T4a	40.80	13.32	33
			A1	T4b	40.80	5.23	13
1.2D + 1.6W 90° Wind		75.17	11/16 BS	A1	35	34.80	6.92
	A1b			35a	34.80	1.11	3
	A1a			35b	34.80	12.59	36
	140.00	3/4 BS	A1	64	40.80	8.01	20
			A1b	64a	40.80	2.32	6
			A1a	64b	40.80	14.16	35
	189.56		A1	86	40.80	8.21	20
			A1b	86a	40.80	4.20	10
			A1a	86b	40.80	11.97	29
	170.33		A1	T4	40.80	8.40	21
			A1a	T4b	40.80	12.32	30
			A1b	T4a	40.80	3.31	8
			A1b	T4	40.80	3.53	9
			A1a	T4a	40.80	12.76	31
			A1	T4b	40.80	7.59	19
	0.9D + 1.6W Normal	75.17	11/16 BS	A1	35	34.80	0.22
A1b				35a	34.80	10.12	29
A1a				35b	34.80	10.12	29
140.00		3/4 BS	A1	64	40.80	1.43	4
			A1b	64a	40.80	11.44	28
			A1a	64b	40.80	11.44	28
189.56			A1	86	40.80	3.43	8
			A1b	86a	40.80	10.30	25

0.9D + 1.6W Normal	189.56	3/4 BS	A1a	86b	40.80	10.30	25
	170.33		A1	T4	40.80	2.61	6
			A1a	T4b	40.80	10.90	27
			A1b	T4a	40.80	10.11	25
			A1b	T4	40.80	10.90	27
			A1a	T4a	40.80	10.11	25
0.9D + 1.6W 60° Wind	75.17	11/16 BS	A1	35	34.80	3.40	10
			A1b	35a	34.80	3.40	10
			A1a	35b	34.80	13.16	38
	140.00	3/4 BS	A1	64	40.80	4.67	11
			A1b	64a	40.80	4.67	11
			A1a	64b	40.80	15.08	37
	189.56		A1	86	40.80	6.09	15
			A1b	86a	40.80	6.09	15
			A1a	86b	40.80	12.68	31
	170.33		A1	T4	40.80	5.72	14
			A1a	T4b	40.80	13.35	33
			A1b	T4a	40.80	5.26	13
			A1b	T4	40.80	5.72	14
			A1a	T4a	40.80	13.35	33
			A1	T4b	40.80	5.26	13
0.9D + 1.6W 90° Wind	75.17	11/16 BS	A1	35	34.80	6.91	20
			A1b	35a	34.80	1.12	3
			A1a	35b	34.80	12.57	36
	140.00	3/4 BS	A1	64	40.80	8.03	20
			A1b	64a	40.80	2.34	6
			A1a	64b	40.80	14.18	35
	189.56		A1	86	40.80	8.24	20
			A1b	86a	40.80	4.23	10
			A1a	86b	40.80	12.00	29
	170.33		A1	T4	40.80	8.43	21
			A1a	T4b	40.80	12.35	30
			A1b	T4a	40.80	3.34	8
			A1b	T4	40.80	3.56	9
			A1a	T4a	40.80	12.79	31
			A1	T4b	40.80	7.62	19
1.2D + 1.0Di + 1.0Wi	75.17	11/16 BS	A1	35	34.80	6.39	18
			A1b	35a	34.80	9.23	27
			A1a	35b	34.80	9.23	27
	140.00	3/4 BS	A1	64	40.80	6.99	17
			A1b	64a	40.80	10.08	25
			A1a	64b	40.80	10.08	25
	189.56		A1	86	40.80	7.59	19
			A1b	86a	40.80	10.13	25
			A1a	86b	40.80	10.13	25
	170.33		A1	T4	40.80	7.30	18
			A1a	T4b	40.80	10.09	25
			A1b	T4a	40.80	9.74	24
			A1b	T4	40.80	10.09	25
			A1a	T4a	40.80	9.74	24
			A1	T4b	40.80	7.30	18
1.2D + 1.0Di + 1.0Wi	75.17	11/16 BS	A1	35	34.80	7.23	21
			A1b	35a	34.80	7.23	21
			A1a	35b	34.80	10.05	29
	140.00	3/4 BS	A1	64	40.80	7.96	20
			A1b	64a	40.80	7.96	20
			A1a	64b	40.80	11.08	27
	189.56		A1	86	40.80	8.44	21
			A1b	86a	40.80	8.44	21
			A1a	86b	40.80	10.94	27
	170.33		A1	T4	40.80	8.34	20
			A1a	T4b	40.80	10.76	26
			A1b	T4a	40.80	7.93	19
			A1b	T4	40.80	8.34	20
			A1a	T4a	40.80	10.76	26
			A1	T4b	40.80	7.93	19

1.2D + 1.0Di + 1.0Wi	75.17	11/16 BS	A1	35	34.80	8.23	24
			A1b	35a	34.80	6.58	19
			A1a	35b	34.80	9.85	28
	140.00	3/4 BS	A1	64	40.80	9.02	22
			A1b	64a	40.80	7.23	18
			A1a	64b	40.80	10.82	27
	189.56		A1	86	40.80	9.29	23
			A1b	86a	40.80	7.82	19
			A1a	86b	40.80	10.72	26
	170.33		A1	T4	40.80	9.26	23
			A1a	T4b	40.80	10.46	26
			A1b	T4a	40.80	7.41	18
			A1b	T4	40.80	7.61	19
			A1a	T4a	40.80	10.62	26
			A1	T4b	40.80	8.79	22
1.0D + 1.0W Normal	75.17	11/16 BS	A1	35	34.80	4.12	12
			A1b	35a	34.80	6.03	17
			A1a	35b	34.80	6.03	17
	140.00	3/4 BS	A1	64	40.80	4.50	11
			A1b	64a	40.80	6.58	16
			A1a	64b	40.80	6.58	16
	189.56		A1	86	40.80	4.92	12
			A1b	86a	40.80	6.30	15
			A1a	86b	40.80	6.30	15
	170.33		A1	T4	40.80	4.69	12
			A1a	T4b	40.80	6.38	16
			A1b	T4a	40.80	6.21	15
			A1b	T4	40.80	6.38	16
			A1a	T4a	40.80	6.21	15
			A1	T4b	40.80	4.69	12
1.0D + 1.0W 60° Wind	75.17	11/16 BS	A1	35	34.80	4.74	14
			A1b	35a	34.80	4.74	14
			A1a	35b	34.80	6.65	19
	140.00	3/4 BS	A1	64	40.80	5.19	13
			A1b	64a	40.80	5.19	13
			A1a	64b	40.80	7.26	18
	189.56		A1	86	40.80	5.38	13
			A1b	86a	40.80	5.38	13
			A1a	86b	40.80	6.75	17
	170.33		A1	T4	40.80	5.32	13
			A1a	T4b	40.80	6.82	17
			A1b	T4a	40.80	5.13	13
			A1b	T4	40.80	5.32	13
			A1a	T4a	40.80	6.82	17
			A1	T4b	40.80	5.13	13
1.0D + 1.0W 90° Wind	75.17	11/16 BS	A1	35	34.80	5.39	15
			A1b	35a	34.80	4.28	12
			A1a	35b	34.80	6.49	19
	140.00	3/4 BS	A1	64	40.80	5.89	14
			A1b	64a	40.80	4.69	11
			A1a	64b	40.80	7.08	17
	189.56		A1	86	40.80	5.84	14
			A1b	86a	40.80	5.04	12
			A1a	86b	40.80	6.63	16
	170.33		A1	T4	40.80	5.87	14
			A1a	T4b	40.80	6.64	16
			A1b	T4a	40.80	4.79	12
			A1b	T4	40.80	4.88	12
			A1a	T4a	40.80	6.72	16
			A1	T4b	40.80	5.65	14

## Analysis Summary

<b>Structure:</b> CT10013-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/4/2018
<b>Site Name:</b> Griswold Glasgo	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 20



### Max Reactions

Base:	160.57 (Vertical)	1.83 (Horizontal)
Anchor 1:	48.69 (Vertical)	44.61 (Horizontal)

### Max Usages

Max Leg: 53.4% (1.2D + 1.0Di + 1.0Wi 60° Wind - Sect 2)  
 Max Diag: 32.7% (1.2D + 1.0Di + 1.0Wi Normal Wind - Sect 1)  
 Max Horiz: 32.8% (1.2D + 1.0Di + 1.0Wi Normal Wind - Sect 1)  
 Max Cable: 37.8% (0.9D + 1.6W 60° Wind) - Elev: 75 ft

### Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.6W 105 mph Wind at 60° From Face	165.50	0.3737	0.0011	0.0373
	184.78	0.3599	0.0016	0.0536
0.9D + 1.6W 105 mph Wind at 90° From Face	165.50	0.3819	0.0537	0.0997
	184.78	0.3581	0.0504	0.1029
0.9D + 1.6W 105 mph Wind at Normal To Face	165.50	0.3821	0.0014	0.1131
	184.78	0.3471	-0.0016	0.1200
1.0D + 1.0W 60 mph Wind at 60° From Face	165.50	0.0501	0.0001	0.0212
	184.78	0.0437	0.0003	0.0219
1.0D + 1.0W 60 mph Wind at 90° From Face	165.50	0.0457	0.0011	0.0317
	184.78	0.0386	0.0029	0.0255
1.0D + 1.0W 60 mph Wind at Normal To Face	165.50	0.0411	-0.0001	0.0362
	184.78	0.0327	0.0003	0.0280
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	165.50	0.0617	0.0003	0.0649
	184.78	0.0397	0.0007	0.0693
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	165.50	0.0458	0.0094	0.1124
	184.78	0.0439	0.0177	0.1010
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	165.50	0.0010	0.0004	0.1375
	184.78	0.0399	-0.0006	0.1248
1.2D + 1.6W 105 mph Wind at 60° From Face	165.50	0.3752	0.0011	0.0375
	184.78	0.3614	0.0016	0.0535
1.2D + 1.6W 105 mph Wind at 90° From Face	165.50	0.3843	0.0542	0.1006
	184.78	0.3603	0.0509	0.1035
1.2D + 1.6W 105 mph Wind at Normal To Face	165.50	0.3853	0.0014	0.1140
	184.78	0.3501	0.0016	0.1206





# Guyed Tower Base Design

Date  
6/4/2018

<b>Customer Name:</b>	SBA Communications Corp	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	195
<b>Site Nmber:</b>	CT10013-A-SBA	<b>Engineer Name:</b>	T. Alajaj
<b>Engr. Number:</b>	53474	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations

**Structure Type:**

Guyed Tower

**Analysis or Design?**

Analysis

**Base Reactions (Factored):**

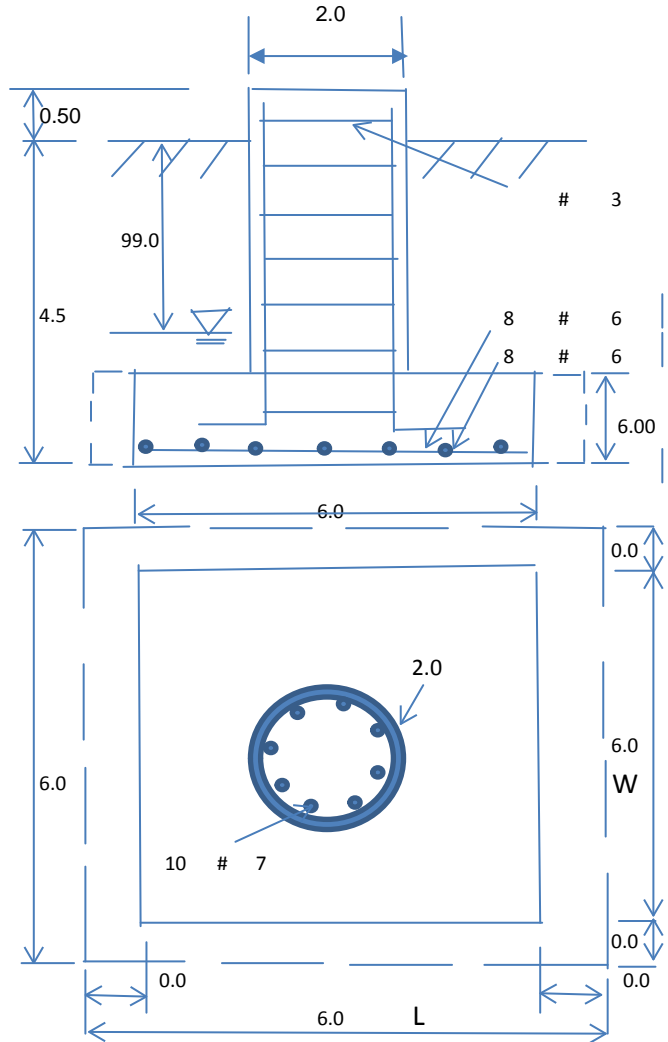
Axial Load (Kips):	160.6	Shear Force (Kips):	1.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	
Allowable overstress %:	5.0%		

**Foundation Geometries:**

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	2.0	Depth of Base BG (ft.):	4.5
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	6.00
Length of Pad (ft.):	6	Width of Pad (ft.):	6
Final Length of pad (ft)	6.0	Final width of pad (ft):	6.0

**Material Properties and Reabr Info:**

Concrete Strength (psi):	4500	Steel Elastic Modulus:	29000 ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	36
Vertical Rebar Size #:	7	Tie / Stirrup Size #:	3
Qty. of Vertical Rebars:	10	Tie Spacing (in):	6.0
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	6
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0 pcf
Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	8	Qty. of Rebar in Pad (W):	8



**Soil Design Parameters:**

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	50.0 Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4 pcf
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	0 Psf
		Angle from Top of Pad:	30
		Angle from Bottm of Pad:	30
		Angle from Bottm of Pad:	25

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.6
Total Dry Soil Volume (cu. Ft.):	-49.29	Total Dry Soil Weight (Kips):	-5.67
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	-5.67	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	212.86	Total Dry Concrete Weight (Kips):	31.93
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	31.93	Total Vertical Load on Base (Kips):	186.83

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	4799.0	<	Allowable Factored Soil Bearing (psf):	18000	0.27	OK!
Calculated Foundation Allowable Axail Capacity (Kips):	648.0	>	Design Factored Axial Load (Kips):	170	0.26	OK!

Load/  
Capacity  
Ratio

Check the capacities of Reinforcing Concrete:

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

Load/  
Capacity  
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.60	Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn,Kips-Ft):	227.0	> Design Factored Moment (Mu, Kips-Ft)	-1.8	0.01	OK!
Calculated Shear Capacity (Kips):	70.9	> Design Factored Shear (Kips):	1.8	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	324.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	887.9	> Design Factored Axial Load (Pu Kips):	160.6	0.18	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.17	OK!			
Pier Reinforcement Ratio:	0.013				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips);	497.2	> One-Way Factored Shear (L-Dir Kips):	0.0	0.00	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	497.2	> One-Way Factored Shear (W-Dir Kips)	0.0	0.00	OK!
Two-Way Design Shear Capacity (Kips):	4018.7	> Two-Way Factored Shear (Kips):	0.0	0.00	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0007	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0007	OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	1080.8	> Moment at Bottom ( L-Direct. K-Ft):	56.1	0.05	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	1080.8	> Moment at Bottom ( W-Dir. Kips-Ft):	56.1	0.05	OK!



# Guy Anchor Analysis and Design

Date

43255

<b>Customer Name:</b>	SBA Communications Corp	<b>EIA/TIA Standard:</b>	EA-222-G
<b>Site Name:</b>	0	<b>Structure Height (Ft.):</b>	195
<b>Site Number:</b>	CT10013-A-SBA	<b>Engineer Name:</b>	T. Alana
<b>Engr. Number:</b>	53474	<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations

**Number of Anchors:** 1 Set

**Soil Design Parameters:**

Soil Unit Weight (pcf):	125.0	Soil Unit Weight:	65.0	cf	Cohesion of Soils (psf):	2100
Water Table Depth (ft):	99.0	Unit Weight of Water:	62.4	pcf	Internal Angle of Friction (°):	0
Ultimate Lateral Resistance (psf):	0	Ultimate Sin Friction:	200	sf	Coefficient of Shear Friction:	0.30
Conical Failure Angle from Top:	30	Failure Angle from Bottom:	20			

**Material Properties:**

Concrete Strength (psi):	3000	Unit Weight of Concrete:	150.0	pcf	Horizontal Rebar Yield (psi):	60000
Shear Strength Reduction Factor:	0.75				Flexure Strength Reduction Factor:	0.9

**A. Inner Anchors:**

Radius (ft.): 137

**1. Design Reactions (Factored):**

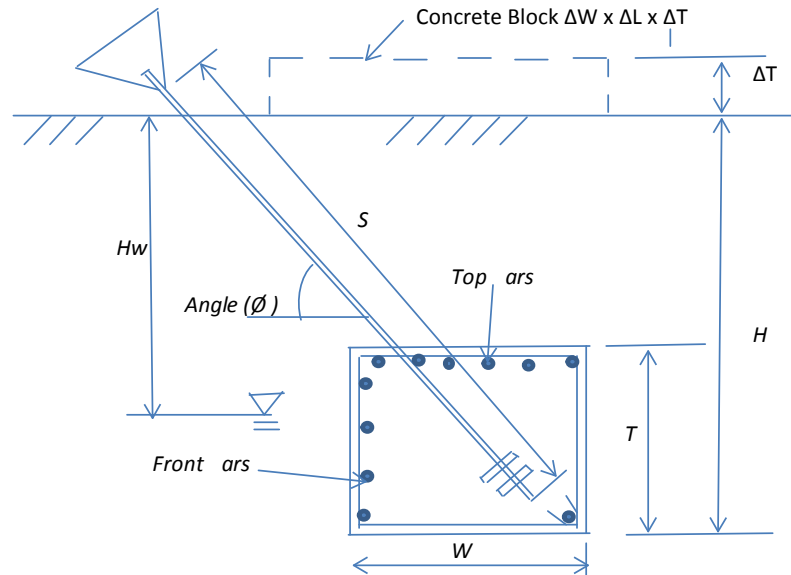
Uplift (kips): 48.7      Shear (kips): 44.6      Angle of force resultant (∅): 47.5

**2. Foundation Geometries:**

Anchor Depth (ft.):	13.0	Anchor with/without toe:	0	Water Table below grade (ft.):	99.00
Length of Anchor (ft.):	14.0	Width of Anchor (ft.):	4.0	Thickness of Anchor (ft.):	4.0
Concrete top of Anchor:	0				

(1). Inner Anchors:

Radius (ft.):	137		
H (ft.):	13.0	Hw(ft.):	99.0
L (ft.):	14.0	W (ft.):	4.0
T (ft.):	4.0	Angle (∅):	47.5
S (ft.):	18.31		
Top bars:	4	#	9
Front bars:	4	#	9
Concrete Volume (Cu. Ft.)/Each:	8.30		



3. Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	1507.78	Total Dry Soil Weight (Kips):	225.65
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	188.47	Weight of the Concrete Block at Top (Kips):	0.00
Total Dry Concrete Volume (cu. Ft.):	224.00	Total Dry Concrete Weight (Kip):	33.60
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	33.60	Weight Reduction Factor:	0.9
Uplift Strength Reduction Factor on Soil:	0.75	Shear Strength Reduction Factor on Soil:	0.75

4. Check Soil and Foundation Capacities:

Nominal Factored Uplift Resistance:	181.04	Kips > Design Uplift Force (Kips):	48.7	OK!
Ultimate Shear Friction Resistance at base:	20.86	Kips Ultimate Resistance Pressure:	5575.0	Psf
Factored Shear Resistance:	254.60	Kips > Design Shear Force (Kips):	44.6	OK!

5. Design Concrete Block:

Rebar Size (#):	9	Wind Load Factor on Concrete Design:	1.00	
Qty. of the Rebar at top of the block:	4	Qty. of the Rebar in the front of the block:	4	
Area of Single Rebar (sq. in.):	1.00	Factor for concrete compression zone:	0.85	
One Way Shear due to Shear Force (Kips):	22.3	One Way Shear Capacity for shear (kips):	173.5	OK!
One Way Shear due to Uplift (Kips):	24.3	One Way Shear Capacity for uplift (kips):	173.5	OK!
Moment due to Shear Load ( Kips-ft):	78.1	Flexural Capacity for Shear Load (Kips-ft):	791.6	OK!
Moment due to uplift Load ( Kips-ft):	85.2	Flexural Capacity for uplift Load (Kips-ft):	791.6	OK!
Ratio of Design Moment/Moment capacity:	0.11			
Max. Ratio of Shear Force/Shear capacity:	0.14	OK!		

## Antenna Mount Structural Analysis



Source: SBA Date: 11.12.2017

SBA Site: CT10013-A Griswold Glasgo  
Sprint Site Number: CT23XC502  
Project: Sprint D0 Macro Upgrade

Prepared For: Sprint

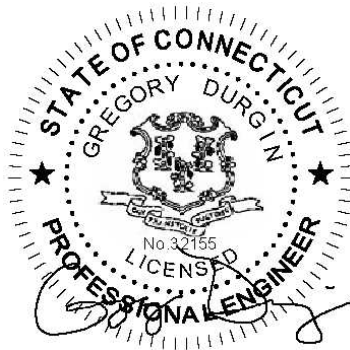
Mount Description: (3) Sector Frames

Site Location: 2172 Glasgo Road, Griswold, CT  
New London County  
41.537366°, -71.873447°

Design Codes: ANSI/TIA-222-G  
IBC 2012 w/ 2016 CT Building Code

Analysis Load Case: Sprint Final Configuration

Analysis Result: Adequate @ 86% - **Once Augmented**  
**See Conclusion**



Revision 0  
March 15, 2018

CT23XC502-PASSING-MOUNT-STRUCTURAL-ANALYSIS-03-15-18

## **1.0 Introduction**

An antenna mount structural analysis has been performed on Sprint's existing mount assembly located at the CT10013-A Griswold Glasgo communications site in New London County, CT considering the final equipment loading configuration listed in Section 3.0.

## **2.0 Analysis Criteria**

An elastic three-dimensional model of the mount structure has been analyzed pursuant to the following criteria:

- IBC 2012 - International Building Code.
- ANSI/TIA-222-G - Structural Standard for Antenna Supporting Structures and Antennas.
- AISC - Steel Construction Manual.
- ANSI/AWS D1.1 - Structural Welding Code.

Wind w/o ice = 135 mph (3-sec gust Ultimate Wind Speed)	
Wind w/o ice = 105 mph (3-sec gust Equivalent per TIA-222-G Tower Code)	
Wind with ice = 50 mph (3-sec gust, 3/4" Ice)	Topographic Category 1
Exposure Category B	Structure Class II

The following documents were provided:

<ul style="list-style-type: none"> <li>• <u>Prelim Construction Drawings</u> Infinigy, 1/18/18.</li> <li>• <u>Mount and Tower Record Documents</u> SBA</li> <li>• <u>Mount Assessment</u> Westchester, 12/21/17.</li> <li>• <u>RF Design</u> Sprint DOMU Project</li> </ul>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The results of the analysis are illustrated in Section 4.0. If any of the existing or proposed conditions reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

### **3.0 Appurtenance Information**

**Table 3.1 – Sprint Final Configuration<sup>1</sup>**

<b>COR</b>	<b>(Quantity) Appurtenance Make/Model</b>	<b>Mount Description</b>
165.0'±	(3) RFS APXVTM14-ALU-I20	(3) Sector Frames
	(3) COMMSCOPE NNVV-65B-R4	
	(6) ALU 800MHz RRH	
	(3) ALU 1900MHz RRH	
	(3) ALU 2500MHz RRH	

1. Refer to antenna installation Construction Drawings (by others, when applicable) for additional information regarding final antenna and equipment orientations.
2. Panel antennas to be installed in Positions 2 and 3. RRH units to be installed on dual swivel brackets behind panel antennas in Positions 2 and 3.

### **4.0 Analysis Results**

**Table 4.1 – Existing Mount Capacity**

<b>Load Case</b>	<b>Governing Mount Component<sup>1</sup></b>	<b>% Capacity<sup>2</sup></b>	<b>Result</b>
Final Sprint Configuration	Top Rail	86%	Inadequate <sup>3</sup>
	Connection Capacity	>200%	

1. Refer to the Calculations & Software Output portion of this report for mount component and structural information.
2. Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.3. 105% is an acceptable allowable stress percentage for mount components.
3. Structural augments to the existing mount structure are required to obtain a mount structure capable of supporting the currently proposed final loading configuration in Table 3.1.

**Table 4.2 – Augmented Mount Capacity**

Load Case	Governing Mount Component <sup>1</sup>	% Capacity <sup>2</sup>	Result
Final Sprint Configuration	Vertical Bracing	86%	<b>Adequate Once Augmented<sup>3</sup></b>

1. Refer to the Calculations & Software Output portion of this report for mount component and structural information.
2. Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.3. 105% is an acceptable allowable stress percentage for mount components.
3. Refer to [GeoStructural Mount Augmentation Drawings](#) and Section 5.0 for information regarding required mount augmentations.

**Table 4.3 – Structural Component Material Strengths**

Structural Component	Nominal Strength/Material <sup>4</sup>
Pipe	F <sub>y</sub> = 35 ksi (A53, Gr. B)
Tube	F <sub>y</sub> = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate / Bar	F <sub>y</sub> = 36 ksi (A36)
Uni-Strut	F <sub>y</sub> = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
Stainless Steel Bolts	18-8 Stainless, Grade 316/304 F <sub>y</sub> = 74 ksi (Yield) & F <sub>u</sub> = 29 ksi (Tension)
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F <sub>y</sub> = 57 ksi (Yield) & F <sub>u</sub> = 74 ksi (Tension)
Welds	E70XX Electrodes

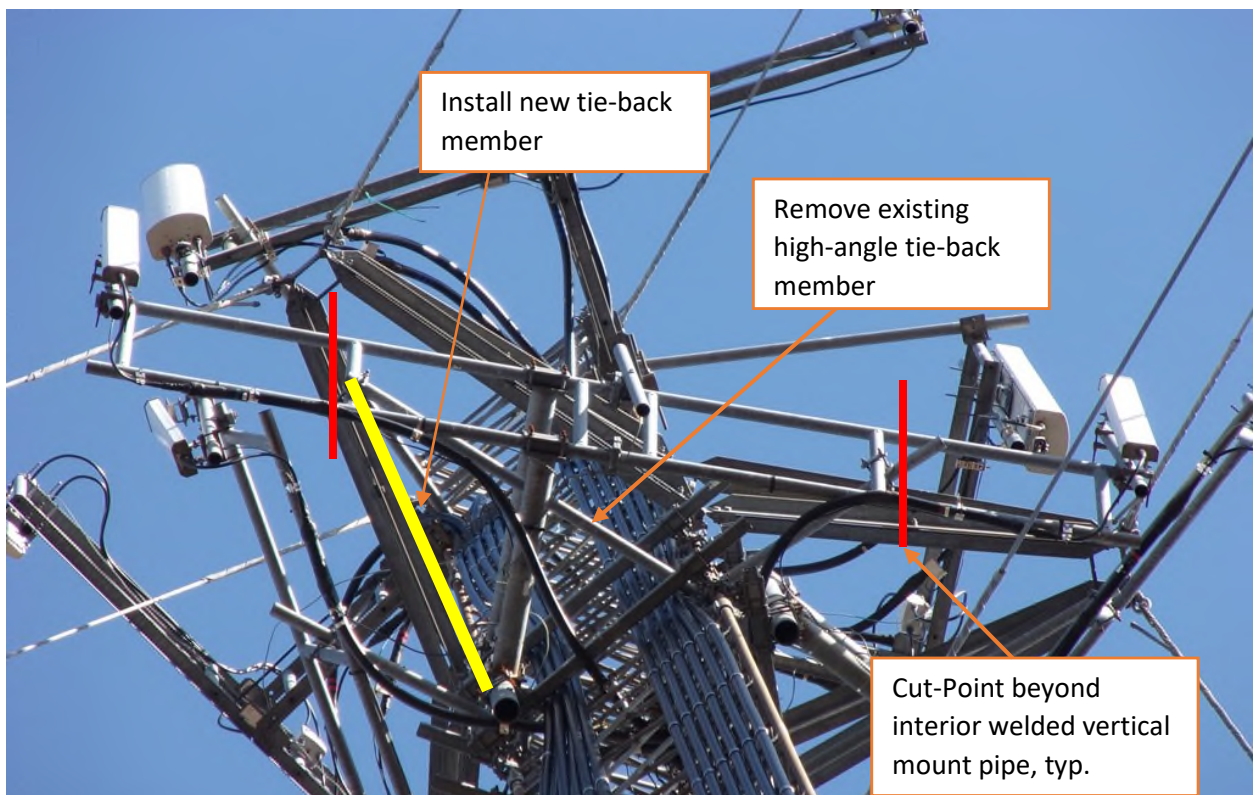
1. Strengths listed were assumed for this analysis and are based upon ASTM, AISC, RCSC, AWS and ACI preferred specification values. Values and materials are consistent with industry standards. Material strengths were taken from original design documents when available.



## 5.0 Conclusion & Recommendations

Based on Sprint's final equipment loading configuration, the existing mount assembly does not have sufficient capacity to support the loading considered in this analysis pursuant to the listed standards. Structural augments (reinforcements) will be required and are briefly summarized below:

- Modify (Cut) the front face of the mount to an 8.0' face width;
  - Top and bottom pipe rails to be cut just beyond the welded interior vertical pipes.
  - Existing high-angle tie-back to be removed and replaced. Second tie-back to remain.
- Install Tie-Back Kit; located at the terminal end vertical mount pipe near the cut face of the mount to the same tower leg as the standoff members similar to existing.
  - Sitepro1 SPTB, (3) total.
- Install V-Brace Kit; located at the rail level of the existing mount top face rail.
  - Sitepro1 SFR-K-L, (3) total. Attach SFR-K-L gate foot brackets to existing tower legs and angle kicker channel brackets to existing mount top face rail.
    - In order for the kicker angles to fit-up as designed, it may be necessary to provide (12) total L2-1/2x2-1/2x3/16 x ~8' long replacement angles, field-cut and drill to suit. Contractor to verify in field.
  - Sitepro1 SCX<sub>x</sub>-K, (6) total. (6) New Pipe2.0STD will be required. Attach new mount pipes to existing top rail.
- Panel antennas to be installed in Positions 2 and 3. RRH units to be installed on dual swivel brackets behind panel antennas in Positions 2 and 3.



Once the recommended augments are successfully implemented, the **augmented** mount assembly has sufficient capacity to support the loading considered in this analysis pursuant to the listed standards.

**Augmentation Requirements:**

- **In order to obtain a mount structure capable of supporting the currently proposed final loading configuration, upgrade augments must be installed in accordance with GeoStructural's *Mount Augmentation Drawings*.**
- **Antennas and equipment shall be installed centered vertically on the mount front face rails. If this assumption is incorrect, the results of this analysis will be affected.**

This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If any of the existing or proposed conditions (appurtenance loading, member sizes, etc.) reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

Prepared by:



**Jesse Drennen, PE, MLE**  
208.761.7986  
[jesse.drennen@geostructural.com](mailto:jesse.drennen@geostructural.com)

Reviewed and Approved by:



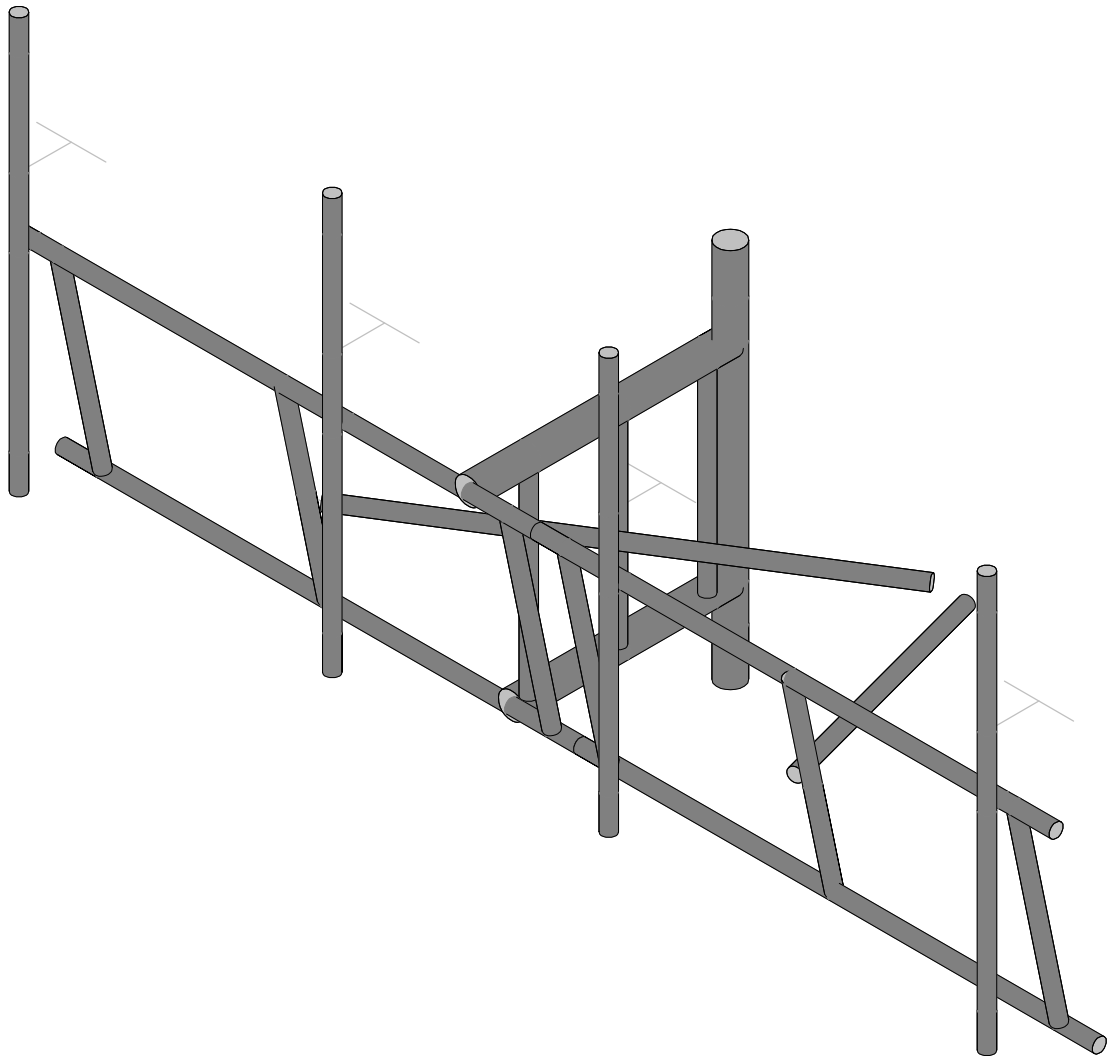
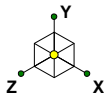
**Don George, PE, SE, MLSE**  
208.602.6569  
[don.george@geostructural.com](mailto:don.george@geostructural.com)

## **6.0 Standard Conditions**

- All data required to complete our structural analysis was furnished by our client and provided record data. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.
- The default Structure Classification is Class II in accordance with ANSI/TIA-222-G §A.2.2 & §A.15.3 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.
- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222-G §15.5 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.
- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.
- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.
- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.
- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.
- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

## **7.0 Calculations & Software Output**

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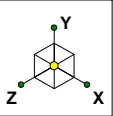
Jesse Drennen, PE

CT23XC502

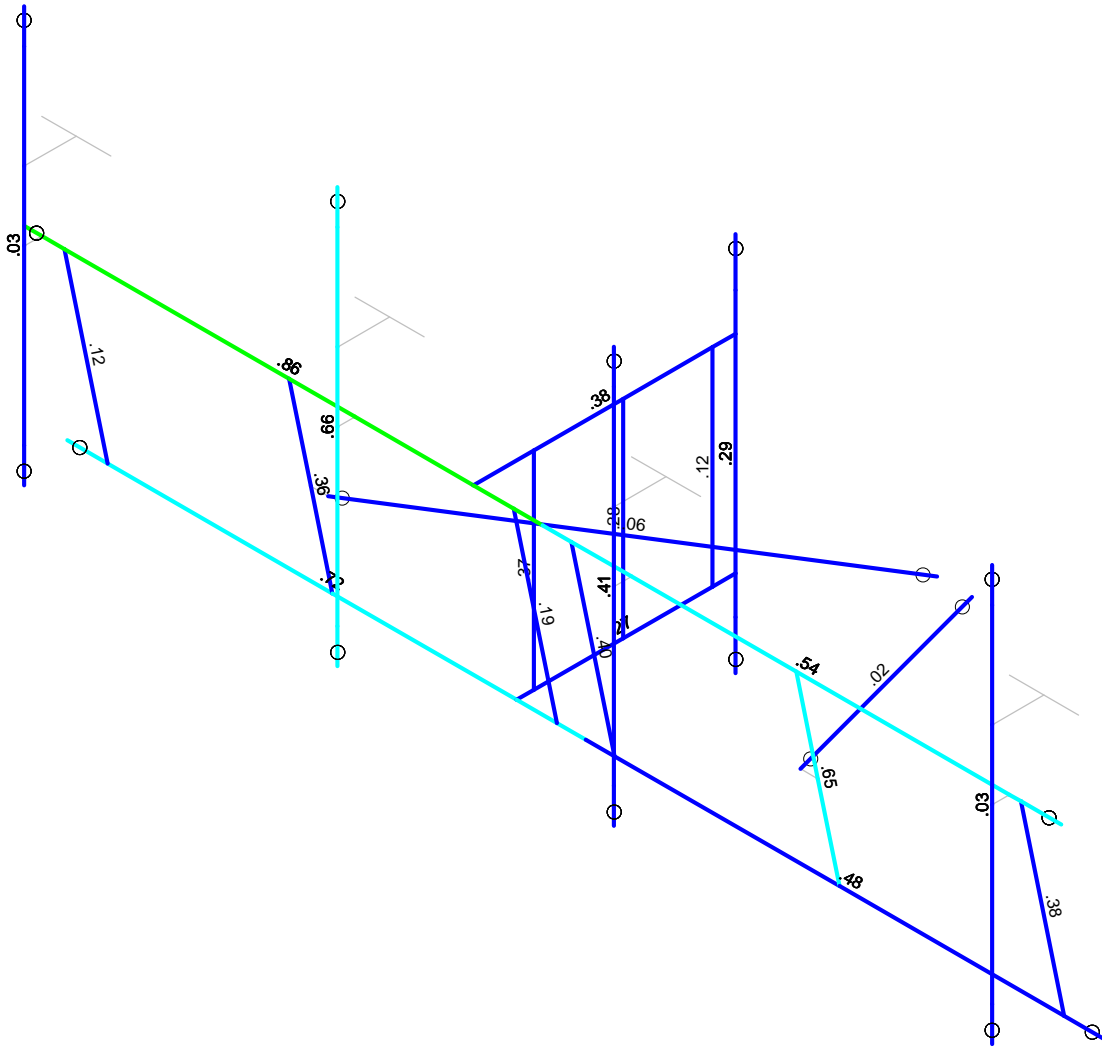
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CT23XC502\_Mount Analysis\_R0 1...



Code Check ( Env )	
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Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)  
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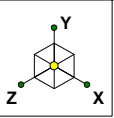
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CT23XC502

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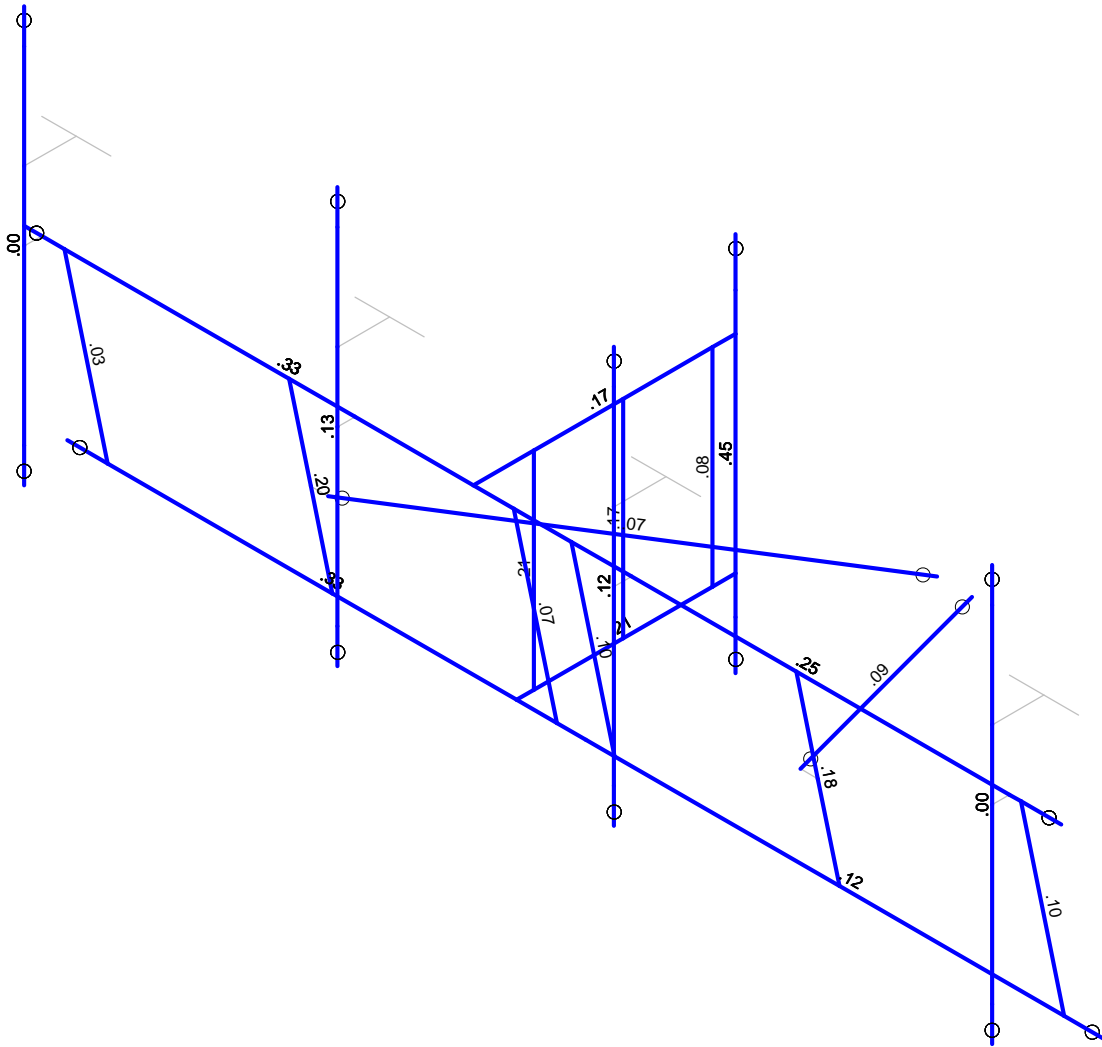
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Shear Check  
( Env )

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- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



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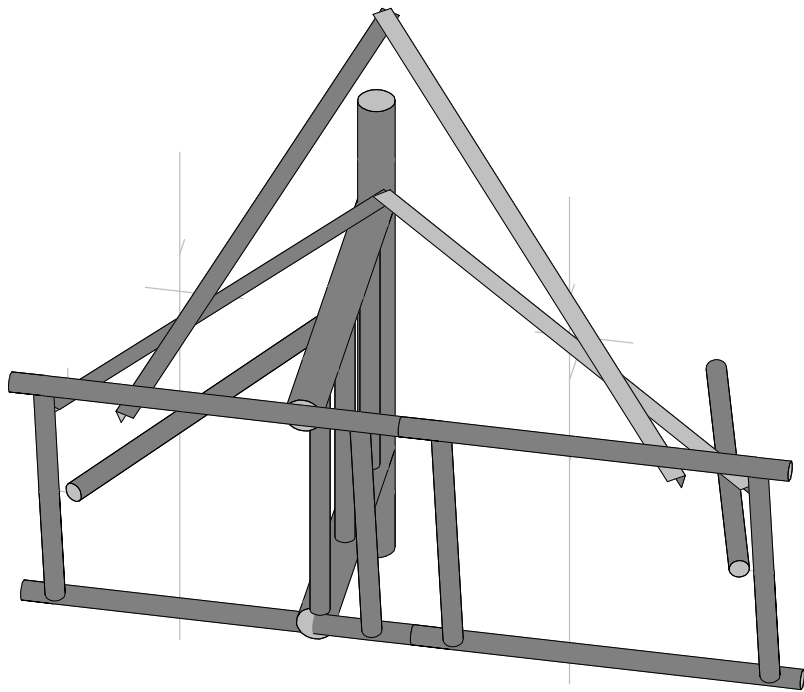
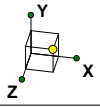
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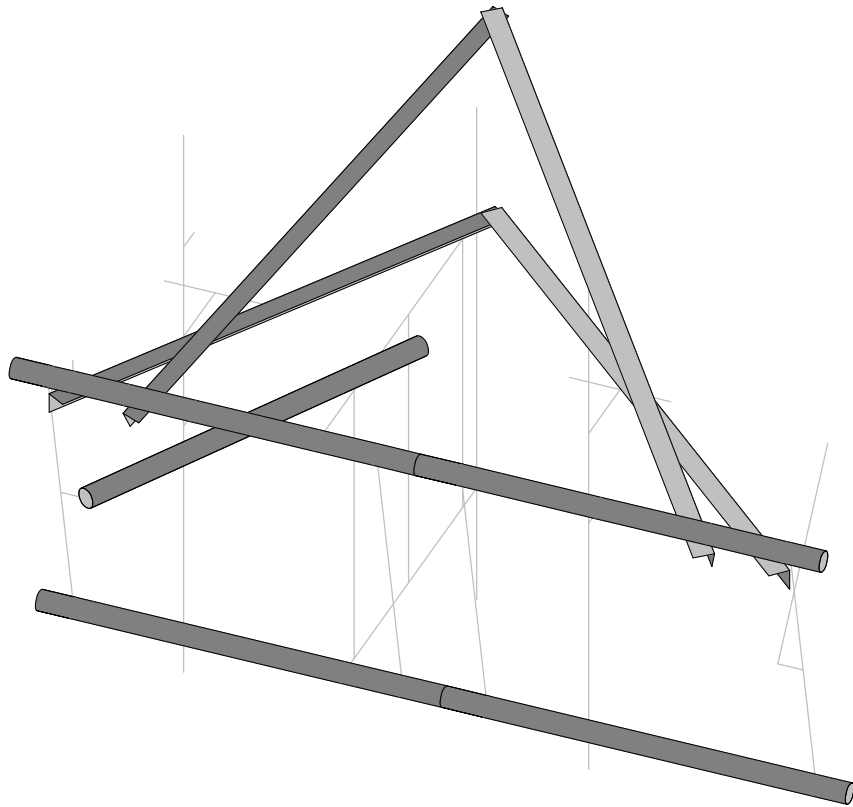
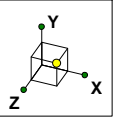
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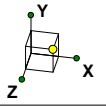
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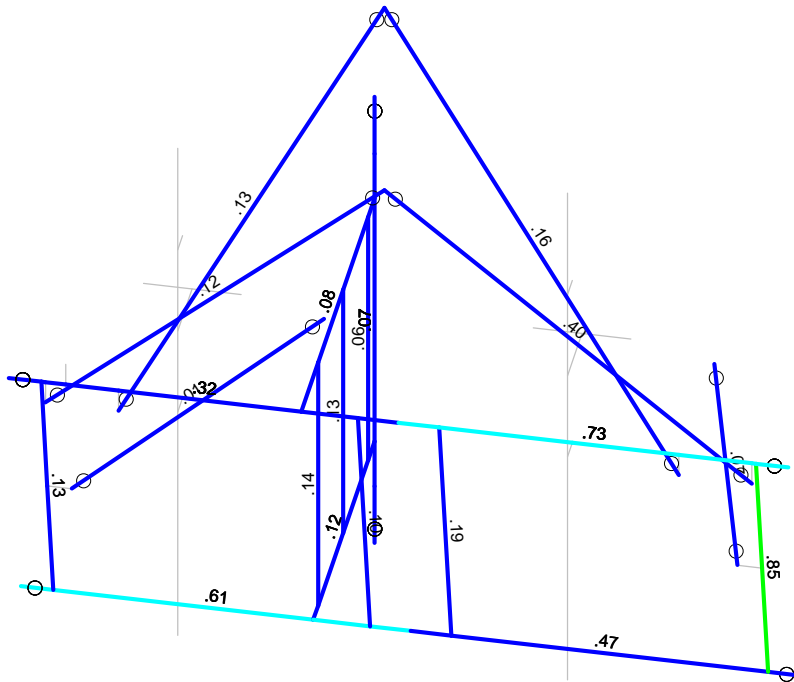
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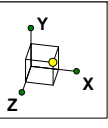


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Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



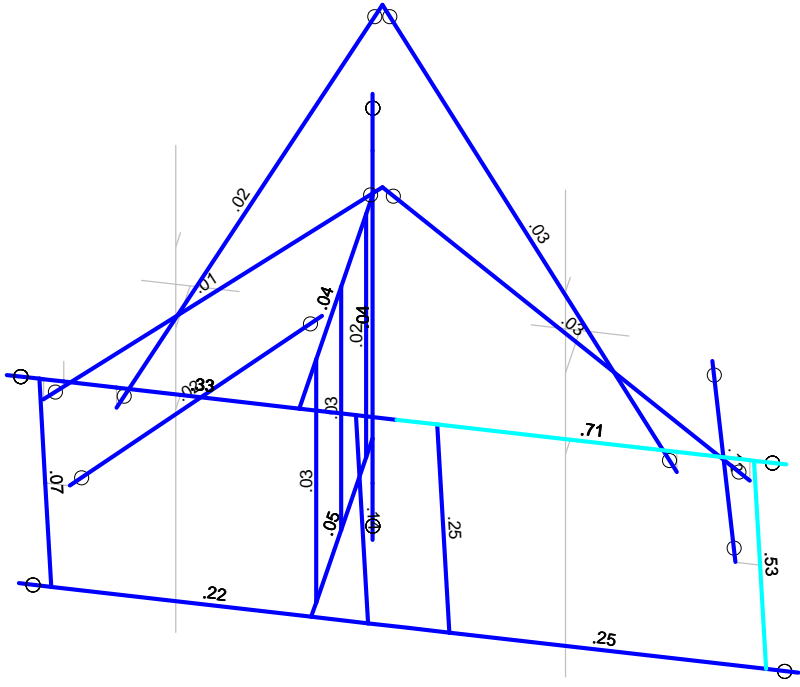
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Shear Check  
( Env )

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)  
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		CT23XC502_Mount Analysis_R0 1...

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	D	DL		-1		9			
2	Di	SL				9		23	
3	Lm [500]	LL				1			
4	Lv [250]	LL				2			
5	Woz	WL				9		23	
6	Wox	WL				9		23	
7	Wiz	WL				9		23	
8	Wix	WL				9		23	
9	Ez	EL				9			
10	Ex	EL				9			

**Load Combination Design**

	Description	ASIF	CD	ABIF	Service	Hot Rolled	Cold For...	Wood	Concrete	Masonry	Footings	Aluminum	Connecti...
1	1) 1.4D					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	2) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
20	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	3) 0.9D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
26	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
28	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
29	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
31	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
32	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
33	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
34	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
35	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
36	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
37	4) 1.2D+1.0...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
38	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
39	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
40	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
41	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Load Combination Design (Continued)**

	Description	ASIF	CD	ABIF	Service	Hot Rolled	Cold For...	Wood	Concrete	Masonry	Footings	Aluminum	Connecti...
42	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
43	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
44	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
45	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
46	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
47	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
48	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
49	5) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50	6) 1.2D+1.5...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
51	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
52	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
53	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
54	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
55	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
56	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
57	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
58	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
59	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
60	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
61	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62	7) (1.2+0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
63	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
64	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
65	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
66	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
67	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
68	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
69	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
70	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
71	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
72	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
73	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
74	8) (0.9-0.2S...					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Envelope Joint Reactions**

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N56	max	.224	18	.571	32	.938	25	0	1	0	1	0	1
2		min	-.283	11	.002	14	-1.175	7	0	1	0	1	0	1
3	N57	max	.463	5	.93	26	1.2	28	0	1	0	1	0	1
4		min	-.407	23	-.221	20	-.342	22	0	1	0	1	0	1
5	N1	max	.487	11	.024	29	1.803	23	.05	12	0	1	.188	12
6		min	-.441	5	-.001	24	-1.803	5	-.043	18	0	1	-.16	18
7	N66	max	.17	12	.026	36	.299	18	.009	18	0	1	.021	12
8		min	-.159	18	.005	67	-.336	12	-.012	12	0	1	-.016	18
9	N65A	max	1.861	5	.087	35	1.931	4	.002	12	0	1	.002	12
10		min	-1.618	23	.012	65	-1.009	22	-.002	18	0	1	-.002	18
11	N66A	max	.123	40	1.209	32	.127	14	.001	24	.001	18	.002	12
12		min	-.716	50	.004	14	-2.144	32	-.001	6	-.001	12	-.002	18
13	Totals:	max	2.013	5	2.692	31	2.658	2						
14		min	-2.013	23	.597	73	-2.658	20						

**Envelope Member Section Deflections**

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
1	M1	1	max	.003	23	.089	18	.504	11	7.06e-03	12	NC	1	NC	1
2			min	-.003	5	-.163	12	-.491	17	-6.019e-03	18	472.725	18	NC	1
3		2	max	.003	23	.066	18	.38	11	5.295e-03	12	NC	1	NC	1
4			min	-.002	5	-.123	12	-.37	17	-4.514e-03	18	635.292	18	NC	1
5		3	max	.002	23	.044	18	.255	11	3.53e-03	12	NC	1	NC	1
6			min	-.002	5	-.082	12	-.248	17	-3.01e-03	18	961.353	18	NC	1
7		4	max	0	23	.022	18	.128	11	1.765e-03	12	NC	1	NC	1
8			min	0	5	-.041	12	-.125	17	-1.505e-03	18	1936.548	18	NC	1
9		5	max	0	1	0	1	0	1	0	1	NC	1	NC	1
10			min	0	1	0	1	0	1	0	1	NC	1	NC	1
11	M9	1	max	.462	11	.088	20	.44	18	1.408e-02	19	NC	1	NC	1
12			min	-.449	17	-.166	13	-.497	12	-1.653e-02	13	NC	1	NC	1
13		2	max	.462	11	.09	19	.472	18	1.408e-02	19	NC	1	NC	1
14			min	-.449	17	-.169	13	-.533	12	-1.653e-02	13	NC	1	NC	1
15		3	max	.462	11	.092	19	.505	18	1.408e-02	19	NC	1	NC	1
16			min	-.449	17	-.172	13	-.57	12	-1.653e-02	13	NC	1	NC	1
17		4	max	.462	11	.094	19	.537	18	1.408e-02	19	NC	1	NC	1
18			min	-.449	17	-.176	13	-.606	12	-1.653e-02	13	NC	1	NC	1
19		5	max	.462	11	.097	19	.57	18	1.408e-02	19	NC	1	NC	1
20			min	-.449	17	-.179	13	-.642	12	-1.653e-02	13	NC	1	NC	1
21	M10	1	max	.505	18	.092	19	.449	17	1.316e-03	17	NC	1	NC	1
22			min	-.57	12	-.172	13	-.462	11	-1.64e-03	11	NC	1	NC	1
23		2	max	.505	18	.061	20	.474	17	1.316e-03	17	NC	1	NC	1
24			min	-.57	12	-.135	13	-.489	11	-1.64e-03	11	NC	1	NC	1
25		3	max	.505	18	.034	20	.499	17	1.316e-03	17	NC	1	NC	1
26			min	-.57	12	-.11	26	-.516	11	-1.64e-03	11	NC	1	NC	1
27		4	max	.505	18	.007	21	.523	17	1.316e-03	17	NC	1	NC	1
28			min	-.57	12	-.101	26	-.543	11	-1.64e-03	11	NC	1	NC	1
29		5	max	.505	18	.003	23	.548	17	1.316e-03	17	NC	1	NC	1
30			min	-.57	12	-.095	29	-.57	11	-1.64e-03	11	NC	1	NC	1
31	M11	1	max	.003	23	.616	5	.039	18	1.238e-02	11	NC	1	NC	1
32			min	-.095	29	-.61	23	-.06	36	-1.135e-02	17	1048.238	3	1338.324	32
33		2	max	.003	23	.559	5	.204	18	1.238e-02	11	NC	1	NC	1
34			min	-.095	29	-.565	23	-.237	12	-1.135e-02	17	2136.05	27	403.88	12
35		3	max	.003	23	.538	17	.396	18	1.229e-02	11	NC	1	NC	33
36			min	-.095	29	-.556	11	-.444	12	-1.125e-02	17	1735.79	11	186.755	12
37		4	max	.002	23	.558	17	.615	18	1.303e-02	12	NC	1	NC	31
38			min	-.095	29	-.582	11	-.702	12	-1.181e-02	17	2096.714	35	111.815	12
39		5	max	.002	23	.567	17	.852	19	1.336e-02	12	NC	1	NC	4
40			min	-.095	29	-.597	11	-.98	13	-1.21e-02	18	1627.154	35	77.221	13
41	M12	1	max	.361	18	.002	20	.503	17	7.079e-04	20	NC	1	NC	1
42			min	-.406	12	-.095	26	-.516	11	-1.854e-03	50	NC	1	NC	1
43		2	max	.361	18	-.004	21	.511	17	7.079e-04	20	NC	1	NC	1
44			min	-.406	12	-.094	26	-.525	11	-1.854e-03	50	NC	1	NC	1
45		3	max	.361	18	-.005	21	.52	17	7.079e-04	20	NC	1	NC	1
46			min	-.406	12	-.093	27	-.534	11	-1.854e-03	50	NC	1	NC	1
47		4	max	.361	18	-.002	22	.528	17	7.079e-04	20	NC	1	NC	1
48			min	-.406	12	-.094	28	-.544	11	-1.854e-03	50	NC	1	NC	1
49		5	max	.361	18	.003	23	.537	17	7.079e-04	20	NC	1	NC	1
50			min	-.406	12	-.095	29	-.553	11	-1.854e-03	50	NC	1	NC	1
51	M22	1	max	.193	12	.591	23	.515	11	9.854e-03	5	NC	1	NC	1
52			min	-.119	18	-.586	5	-.502	17	-7.559e-03	23	46.711	11	3745.57	15
53		2	max	.193	12	.356	23	.499	11	8.494e-03	5	NC	1	NC	1
54			min	-.119	18	-.362	5	-.485	17	-6.497e-03	23	66.733	11	4766.883	12
55		3	max	.193	12	.121	23	.486	11	7.135e-03	5	NC	1	NC	1
56			min	-.118	18	-.137	5	-.474	17	-5.436e-03	23	116.797	11	2182.55	12







**Envelope Member Section Deflections (Continued)**

Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC	
171	M35	1	max	.425	23	0	19	.065	18	2.112e-03	5	NC	1	NC	1
172			min	-.426	5	-.061	37	-.068	12	-2.085e-03	23	4221.314	41	4799.453	30
173		2	max	.426	23	.027	18	.054	18	4.704e-03	17	NC	3	NC	1
174			min	-.426	5	-.081	36	-.057	12	-4.971e-03	11	1199.416	12	3188.733	5
175		3	max	.426	23	.07	18	.024	11	7.625e-03	17	NC	3	NC	1
176			min	-.426	5	-.13	12	-.023	17	-8.063e-03	11	512.926	12	525.698	11
177		4	max	.426	23	.118	18	.115	11	1.055e-02	17	NC	3	NC	27
178			min	-.427	5	-.19	12	-.105	17	-1.115e-02	11	312.102	12	263.213	11
179		5	max	.426	23	.165	18	.175	12	1.249e-02	17	NC	3	NC	3
180			min	-.427	5	-.249	12	-.151	18	-1.322e-02	11	225.35	12	197.254	12
181	M36	1	max	.516	11	-.005	21	.13	18	3.198e-03	18	NC	1	NC	1
182			min	-.503	17	-.057	27	-.142	12	-3.301e-03	12	NC	1	NC	1
183		2	max	.516	11	-.004	20	.257	18	7.587e-03	18	NC	1	NC	6
184			min	-.503	17	-.077	26	-.287	12	-8.115e-03	12	2773.695	50	412.453	17
185		3	max	.516	11	.004	20	.389	18	1.29e-02	18	NC	8	NC	31
186			min	-.503	17	-.097	26	-.437	12	-1.363e-02	12	1200.118	50	193.644	17
187		4	max	.515	11	.014	20	.509	18	1.867e-02	18	NC	1	NC	39
188			min	-.502	17	-.118	50	-.554	12	-1.934e-02	12	650.206	50	124.799	17
189		5	max	.515	11	.019	20	.633	17	2.219e-02	18	NC	1	NC	1
190			min	-.502	17	-.157	50	-.643	11	-2.375e-02	12	423.332	50	94.071	5
191	M37	1	max	.486	11	.089	18	.131	17	2.185e-02	17	NC	1	NC	1
192			min	-.474	17	-.163	12	-.134	11	-2.288e-02	11	NC	1	NC	1
193		2	max	.486	11	.09	18	.136	5	2.185e-02	17	NC	1	NC	1
194			min	-.474	17	-.164	12	-.138	23	-2.288e-02	11	NC	1	NC	1
195		3	max	.486	11	.09	18	.142	5	2.185e-02	17	NC	1	NC	1
196			min	-.474	17	-.165	12	-.142	23	-2.288e-02	11	NC	1	NC	1
197		4	max	.486	11	.09	18	.147	5	2.185e-02	17	NC	1	NC	1
198			min	-.474	17	-.166	12	-.147	23	-2.288e-02	11	NC	1	NC	1
199		5	max	.486	11	.091	18	.152	5	2.185e-02	17	NC	1	NC	1
200			min	-.474	17	-.167	12	-.151	23	-2.288e-02	11	NC	1	NC	1
201	M35A	1	max	0	18	.006	22	.548	23	9.524e-04	12	NC	1	NC	1
202			min	0	12	-.057	40	-.545	5	-7.486e-04	18	7572.932	22	392.753	8
203		2	max	0	18	.004	22	.413	23	7.143e-04	12	NC	1	NC	1
204			min	0	12	-.045	28	-.411	5	-5.615e-04	18	NC	1	528.05	8
205		3	max	0	18	.002	22	.277	23	4.762e-04	12	NC	1	NC	1
206			min	0	12	-.032	28	-.276	5	-3.743e-04	18	9959.386	27	799.462	8
207		4	max	0	18	0	22	.139	23	2.381e-04	12	NC	1	NC	1
208			min	0	12	-.017	28	-.139	5	-1.872e-04	18	NC	1	1611.089	8
209		5	max	0	1	0	1	0	1	0	1	NC	1	NC	1
210			min	0	1	0	1	0	1	0	1	NC	1	NC	1
211	M36A	1	max	.475	5	.006	22	.268	5	9.711e-04	18	NC	1	NC	1
212			min	-.477	23	-.057	40	-.269	23	-1.08e-03	12	NC	1	NC	1
213		2	max	.475	5	.006	22	.275	5	9.711e-04	18	NC	1	NC	1
214			min	-.477	23	-.058	40	-.277	23	-1.08e-03	12	NC	1	NC	1
215		3	max	.475	5	.007	22	.282	5	9.711e-04	18	NC	1	NC	1
216			min	-.477	23	-.058	40	-.285	23	-1.08e-03	12	NC	1	NC	1
217		4	max	.475	5	.007	22	.289	5	9.711e-04	18	NC	1	NC	1
218			min	-.477	23	-.058	40	-.292	11	-1.08e-03	12	NC	1	NC	1
219		5	max	.475	5	.007	22	.296	17	9.711e-04	18	NC	1	NC	1
220			min	-.477	23	-.058	40	-.3	11	-1.08e-03	12	NC	1	NC	1
221	M37A	1	max	.468	11	.088	20	.191	22	1.212e-02	20	NC	1	NC	1
222			min	-.452	17	-.143	2	-.212	4	-1.416e-02	13	NC	1	NC	1
223		2	max	.468	11	.089	20	.166	22	1.212e-02	20	NC	1	NC	1
224			min	-.452	17	-.145	2	-.187	4	-1.416e-02	13	NC	1	NC	1
225		3	max	.468	11	.09	20	.142	22	1.212e-02	20	NC	1	NC	1
226			min	-.452	17	-.147	2	-.163	4	-1.416e-02	13	NC	1	NC	1
227		4	max	.468	11	.09	20	.124	21	1.212e-02	20	NC	1	NC	1

**Envelope Member Section Deflections (Continued)**

Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC
228		min	-.452	17	-.149	2	-.144	3	-1.416e-02	13	NC	1	NC	1
229	5	max	.468	11	.091	20	.113	21	1.212e-02	20	NC	1	NC	1
230		min	-.452	17	-.151	2	-.133	3	-1.416e-02	13	NC	1	NC	1
231	M38	1	max	.142	22	.09	.452	17	1.348e-03	17	NC	1	NC	1
232		min	-.163	4	-.147	2	-.468	11	-1.85e-03	11	NC	1	NC	1
233		2	max	.142	22	.062	.475	17	1.348e-03	17	NC	1	NC	1
234		min	-.163	4	-.115	2	-.492	11	-1.85e-03	11	NC	1	NC	1
235		3	max	.142	22	.035	.499	17	1.348e-03	17	NC	1	NC	1
236		min	-.163	4	-.083	2	-.516	11	-1.85e-03	11	NC	1	NC	1
237		4	max	.142	22	.01	.523	17	1.348e-03	17	NC	1	NC	1
238		min	-.163	4	-.072	27	-.54	11	-1.85e-03	11	NC	1	NC	1
239		5	max	.142	22	.003	.547	17	1.348e-03	17	NC	1	NC	1
240		min	-.163	4	-.071	41	-.564	11	-1.85e-03	11	NC	1	NC	1
241	M39	1	max	.003	23	.648	.211	22	1.012e-02	23	NC	1	NC	1
242		min	-.071	41	-.654	23	-.232	4	-1.044e-02	5	885.883	5	479.442	43
243		2	max	.003	23	.566	.171	23	1.012e-02	23	NC	1	NC	1
244		min	-.071	41	-.576	11	-.184	5	-1.044e-02	5	2448.144	12	542.936	12
245		3	max	.003	23	.536	.141	23	1.026e-02	23	NC	1	NC	1
246		min	-.071	41	-.549	11	-.149	5	-1.047e-02	5	1372.535	12	343.476	12
247		4	max	.003	23	.557	.222	21	1.208e-02	11	NC	3	NC	26
248		min	-.071	41	-.579	11	-.262	3	-1.163e-02	17	1190.404	50	357.688	13
249		5	max	.003	23	.57	.492	20	1.254e-02	11	NC	3	NC	5
250		min	-.071	41	-.601	11	-.57	2	-1.198e-02	17	877.197	50	137.567	13
251	M40	1	max	.147	23	0	.504	17	5.178e-04	39	NC	1	NC	1
252		min	-.155	5	-.063	40	-.517	11	-1.021e-03	50	NC	1	NC	1
253		2	max	.147	23	0	.512	17	5.178e-04	39	NC	1	NC	1
254		min	-.155	5	-.065	40	-.525	11	-1.021e-03	50	NC	1	NC	1
255		3	max	.147	23	0	.52	17	5.178e-04	39	NC	1	NC	1
256		min	-.155	5	-.067	41	-.532	11	-1.021e-03	50	NC	1	NC	1
257		4	max	.147	23	.002	.527	17	5.178e-04	39	NC	1	NC	1
258		min	-.155	5	-.069	41	-.54	11	-1.021e-03	50	NC	1	NC	1
259		5	max	.147	23	.003	.535	17	5.178e-04	39	NC	1	NC	1
260		min	-.155	5	-.071	41	-.547	11	-1.021e-03	50	NC	1	NC	1
261	M27A	1	max	.652	18	.023	.523	17	6.158e-04	41	NC	1	NC	1
262		min	-.747	12	-.105	26	-.545	11	-8.93e-04	50	NC	1	NC	1
263		2	max	.652	18	.013	.533	17	6.158e-04	41	NC	1	NC	1
264		min	-.747	12	-.102	26	-.555	11	-8.93e-04	50	NC	1	NC	1
265		3	max	.652	18	.006	.542	17	6.158e-04	41	NC	1	NC	1
266		min	-.747	12	-.099	27	-.565	11	-8.93e-04	50	NC	1	NC	1
267		4	max	.652	18	.002	.551	17	6.158e-04	41	NC	1	NC	1
268		min	-.747	12	-.096	28	-.575	11	-8.93e-04	50	NC	1	NC	1
269		5	max	.652	18	.002	.56	17	6.158e-04	41	NC	1	NC	1
270		min	-.747	12	-.095	29	-.585	11	-8.93e-04	50	NC	1	NC	1
271	M28A	1	max	.545	11	.029	.376	22	1.535e-02	19	NC	1	NC	1
272		min	-.524	17	-.081	39	-.416	4	-1.765e-02	13	9068.383	18	270.089	9
273		2	max	.545	11	.026	.265	20	1.537e-02	19	NC	1	NC	1
274		min	-.524	17	-.079	26	-.311	2	-1.767e-02	13	5462.901	10	318.648	11
275		3	max	.545	11	.026	.423	19	1.547e-02	19	NC	1	NC	4
276		min	-.524	17	-.095	26	-.49	13	-1.785e-02	13	4811.821	10	155.202	11
277		4	max	.545	11	.022	.684	18	1.557e-02	19	NC	1	NC	4
278		min	-.523	17	-.106	26	-.782	12	-1.801e-02	13	3944.809	10	101.731	12
279		5	max	.545	11	.018	.975	18	1.557e-02	19	NC	1	NC	3
280		min	-.523	17	-.119	26	-1.104	12	-1.801e-02	13	2378.504	10	75.856	12
281	M30A	1	max	.258	20	.026	.524	17	5.637e-04	18	NC	1	NC	1
282		min	-.302	2	-.077	26	-.545	11	-1.191e-03	50	NC	1	NC	1
283		2	max	.258	20	.015	.533	17	5.637e-04	18	NC	1	NC	1
284		min	-.302	2	-.074	27	-.555	11	-1.191e-03	50	NC	1	NC	1

**Envelope Member Section Deflections (Continued)**

Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC	(n) L/y Ratio	LC	(n) L/z Ratio	LC	
285		3	max	.258	20	.007	21	.542	17	5.637e-04	18	NC	1	NC	1
286			min	-.302	2	-.071	27	-.564	11	-1.191e-03	50	NC	1	NC	1
287		4	max	.258	20	.001	22	.55	17	5.637e-04	18	NC	1	NC	1
288			min	-.302	2	-.071	40	-.574	11	-1.191e-03	50	NC	1	NC	1
289		5	max	.258	20	.003	23	.559	17	5.637e-04	18	NC	1	NC	1
290			min	-.302	2	-.071	41	-.583	11	-1.191e-03	50	NC	1	NC	1
291	M30B	1	max	.013	20	.502	17	.441	17	1.015e-02	23	NC	1	NC	1
292			min	-.112	50	-.513	11	-.486	12	-1.147e-02	5	NC	1	NC	1
293		2	max	.013	20	.502	17	.454	18	1.015e-02	23	NC	1	NC	1
294			min	-.112	50	-.514	11	-.5	12	-1.147e-02	5	NC	1	NC	1
295		3	max	.013	20	.502	17	.468	18	1.015e-02	23	NC	1	NC	1
296			min	-.112	50	-.514	11	-.514	12	-1.147e-02	5	NC	1	NC	1
297		4	max	.013	20	.502	17	.481	18	1.015e-02	23	NC	1	NC	1
298			min	-.112	50	-.515	11	-.528	12	-1.147e-02	5	NC	1	NC	1
299		5	max	.013	20	.502	17	.495	18	1.015e-02	23	NC	1	NC	1
300			min	-.112	50	-.515	11	-.542	12	-1.147e-02	5	NC	1	NC	1
301	M31A	1	max	.017	20	.499	17	.525	17	8.008e-03	23	NC	1	NC	1
302			min	-.143	50	-.511	11	-.542	11	-1.032e-02	5	NC	1	NC	1
303		2	max	.017	20	.5	17	.541	17	8.008e-03	23	NC	1	NC	1
304			min	-.143	50	-.512	11	-.559	11	-1.032e-02	5	NC	1	NC	1
305		3	max	.017	20	.5	17	.556	17	8.008e-03	23	NC	1	NC	1
306			min	-.143	50	-.513	11	-.576	11	-1.032e-02	5	NC	1	NC	1
307		4	max	.017	20	.501	17	.572	17	8.008e-03	23	NC	1	NC	1
308			min	-.143	50	-.514	11	-.592	11	-1.032e-02	5	NC	1	NC	1
309		5	max	.017	20	.502	17	.588	17	8.008e-03	23	NC	1	NC	1
310			min	-.143	50	-.515	11	-.609	11	-1.032e-02	5	NC	1	NC	1
311	M32A	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
312			min	0	1	0	1	0	1	0	1	NC	1	NC	1
313		2	max	.001	33	.237	6	.077	29	3.759e-03	6	NC	1	NC	9
314			min	0	14	-.237	24	-.031	23	-3.834e-03	24	964.327	16	819.247	6
315		3	max	.003	33	.43	6	.123	29	7.519e-03	6	NC	1	NC	9
316			min	0	14	-.437	24	-.039	23	-7.669e-03	24	478.448	16	583.713	6
317		4	max	.004	33	.566	17	.13	28	1.128e-02	6	NC	1	NC	9
318			min	0	14	-.587	12	-.022	22	-1.15e-02	24	315.958	16	710.893	72
319		5	max	.005	33	.668	17	.118	50	1.504e-02	6	NC	1	NC	1
320			min	0	14	-.703	11	-.015	20	-1.534e-02	24	234.964	16	499.247	72
321	M33A	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
322			min	0	1	0	1	0	1	0	1	NC	1	NC	1
323		2	max	.002	23	.248	6	.082	30	4.172e-03	18	NC	1	NC	9
324			min	-.002	5	-.243	24	-.016	24	-4.499e-03	12	1889.06	67	838.485	7
325		3	max	.003	23	.453	6	.13	30	8.343e-03	18	NC	1	NC	10
326			min	-.005	5	-.451	24	-.013	24	-8.998e-03	12	930.774	67	597.421	7
327		4	max	.005	23	.6	6	.134	28	1.251e-02	18	NC	1	NC	10
328			min	-.007	5	-.611	24	.01	23	-1.35e-02	12	609.551	67	533.109	3
329		5	max	.007	23	.724	17	.143	50	1.669e-02	18	NC	1	NC	1
330			min	-.009	5	-.745	11	-.017	20	-1.8e-02	12	449.968	67	368.326	3
331	M34A	1	max	.003	22	.505	17	.227	23	1.039e-02	12	NC	1	NC	1
332			min	-.062	40	-.517	11	-.236	5	-9.482e-03	18	NC	1	NC	1
333		2	max	.003	22	.505	17	.226	23	1.039e-02	12	NC	1	NC	1
334			min	-.062	40	-.517	11	-.235	5	-9.482e-03	18	NC	1	NC	1
335		3	max	.003	22	.504	17	.226	23	1.039e-02	12	NC	1	NC	1
336			min	-.062	40	-.517	11	-.234	5	-9.482e-03	18	NC	1	NC	1
337		4	max	.003	22	.504	17	.226	23	1.039e-02	12	NC	1	NC	1
338			min	-.062	40	-.517	11	-.234	5	-9.482e-03	18	NC	1	NC	1
339		5	max	.003	22	.504	17	.225	23	1.039e-02	12	NC	1	NC	1
340			min	-.062	40	-.517	11	-.233	5	-9.482e-03	18	NC	1	NC	1
341	M35B	1	max	.003	22	.505	17	.315	11	1.076e-02	12	NC	1	NC	1

**Envelope Member Section Deflections (Continued)**

Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [r...	LC (n)	L/y Ratio	LC (n)	L/z Ratio	LC	
342		min	-.059	40	-.517	11	-.309	17	-9.023e-03	18	NC	1	NC	1	
343	2	max	.003	22	.505	17	.315	11	1.076e-02	12	NC	1	NC	1	
344		min	-.059	40	-.517	11	-.31	17	-9.023e-03	18	NC	1	NC	1	
345	3	max	.003	22	.505	17	.316	11	1.076e-02	12	NC	1	NC	1	
346		min	-.059	40	-.517	11	-.31	17	-9.023e-03	18	NC	1	NC	1	
347	4	max	.003	22	.504	17	.316	11	1.076e-02	12	NC	1	NC	1	
348		min	-.059	40	-.517	11	-.31	17	-9.023e-03	18	NC	1	NC	1	
349	5	max	.003	22	.504	17	.316	11	1.076e-02	12	NC	1	NC	1	
350		min	-.059	40	-.517	11	-.311	17	-9.023e-03	18	NC	1	NC	1	
351	M36B	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
352		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
353	2	max	0	32	.04	35	.186	11	8.702e-04	17	NC	1	NC	2	
354		min	0	14	-.018	17	-.178	17	-1.11e-03	11	939.311	25	1109.545	11	
355	3	max	.002	32	.064	36	.344	11	1.74e-03	17	NC	1	NC	14	
356		min	0	14	-.021	18	-.333	17	-2.22e-03	11	469.148	25	790.55	11	
357	4	max	.003	32	.069	37	.467	11	2.611e-03	17	NC	1	NC	2	
358		min	0	14	-.006	18	-.457	17	-3.331e-03	11	312.349	25	730.934	67	
359	5	max	.004	32	.067	40	.563	23	3.481e-03	17	NC	1	NC	1	
360		min	0	14	-.004	22	-.556	5	-4.441e-03	11	233.98	25	527.277	67	
361	M37B	1	max	0	1	0	1	0	1	0	1	NC	1	NC	1
362		min	0	1	0	1	0	1	0	1	NC	1	NC	1	
363	2	max	0	20	.035	34	.183	11	9.982e-05	14	NC	1	NC	7	
364		min	0	26	-.007	16	-.174	17	-3.012e-04	50	1698.187	72	1524.556	10	
365	3	max	0	20	.057	34	.347	11	1.996e-04	14	NC	1	NC	7	
366		min	-.001	26	-.006	16	-.333	17	-6.024e-04	50	843.414	72	1030.151	66	
367	4	max	0	20	.059	35	.485	11	2.995e-04	14	NC	1	NC	7	
368		min	-.002	26	.002	72	-.471	17	-9.036e-04	50	557.667	72	659.402	66	
369	5	max	0	20	.059	40	.605	11	3.993e-04	14	NC	1	NC	1	
370		min	-.002	26	-.003	22	-.592	17	-1.205e-03	50	415.172	72	477.343	66	
371	M38A	1	max	.06	.503	.17	.289	5	9.047e-03	18	NC	1	NC	1	
372		min	-.003	22	-.518	11	-.292	23	-1.078e-02	12	NC	1	NC	1	
373	2	max	.06	40	.504	17	.289	5	9.047e-03	18	NC	1	NC	1	
374		min	-.003	22	-.518	11	-.291	23	-1.078e-02	12	NC	1	NC	1	
375	3	max	.06	40	.504	17	.289	5	9.047e-03	18	NC	1	NC	1	
376		min	-.003	22	-.518	11	-.291	23	-1.078e-02	12	NC	1	NC	1	
377	4	max	.06	40	.504	17	.289	5	9.047e-03	18	NC	1	NC	1	
378		min	-.003	22	-.517	11	-.291	23	-1.078e-02	12	NC	1	NC	1	
379	5	max	.06	40	.504	17	.289	5	9.047e-03	18	NC	1	NC	1	
380		min	-.003	22	-.517	11	-.291	23	-1.078e-02	12	NC	1	NC	1	

**Envelope AISC 14th(360-10): LRFD Steel Code Checks**

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn	
1	M22	PIPE 2.0	.816	1.532	23	.525	1.532	5	28.709	32.13	1.872	1.872	1...	H3-6	
2	M36	PIPE 2.0	.785	3.625	5	.755	3.667	23	26.521	32.13	1.872	1.872	3.2	H3-6	
3	M39	PIPE 2.0	.753	2.75	2	.178	3.75	13	20.867	32.13	1.872	1.872	1...	H1-1b	
4	M27	PIPE 2.0	.586	3	5	.210	4	12	26.521	32.13	1.872	1.872	3...	H1-1b	
5	M11	PIPE 2.0	.492	2.75	3	.107	3.75	6	20.867	32.13	1.872	1.872	1...	H1-1b	
6	M35	PIPE 2.0	.451	.417	12	.233	.417	11	26.521	32.13	1.872	1.872	2...	H1-1b	
7	M33A	L2.5x2.5x3	.406	3.155	6	.028	6.309	y	12	8.249	29.192	.873	1.553	1...	H2-1
8	M28	PIPE 2.0	.341	3	2	.292	3	13	26.521	32.13	1.872	1.872	1...	H1-1b	
9	M25	PIPE 2.0	.187	0	13	.085	1.532	13	28.709	32.13	1.872	1.872	2...	H1-1b	
10	M23	PIPE 2.0	.173	0	12	.238	0	12	28.709	32.13	1.872	1.872	2...	H3-6	
11	M30	PIPE 2.0	.159	0	28	.032	0	50	28.843	32.13	1.872	1.872	2...	H1-1b	
12	M32A	L2.5x2.5x3	.159	3.102	6	.026	6.205	y	24	8.531	29.192	.873	1.561	1...	H2-1
13	M31	PIPE 2.0	.141	3	27	.030	0	50	28.843	32.13	1.872	1.872	1...	H1-1b	

**Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)**

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc	phi*Pnt	phi*Mn	phi*Mn	Cb	Eqn
14	M36B	L2.5x2.5x3	.130	2.598	11	.014	5.196	z	11	12.071	29.192	.873	1.643	1... H2-1
15	M37B	L2.5x2.5x3	.124	2.515	36	.007	0	z	10	12.743	29.192	.873	1.657	1... H2-1
16	M34	PIPE 4.0	.124	0	27	.053	0		26	90.297	93.24	10.631	10.631	2... H1-1b
17	M26	PIPE 2.0	.100	0	6	.129	0		12	28.709	32.13	1.872	1.872	2... H1-1b
18	M33	PIPE 4.0	.087	0	31	.039	2.923		40	89.049	93.24	10.631	10.631	2... H1-1b
19	M28A	PIPE 2.5	.087	1.833	12	.046	5.75		10	30.038	50.715	3.596	3.596	2... H1-1b
20	M29	PIPE 4.0	.070	1.26	26	.043	4.755		28	84.641	93.24	10.631	10.631	1... H1-1b
21	M32	PIPE 2.0	.070	0	26	.018	0		50	28.843	32.13	1.872	1.872	1... H1-1b
22	M1	PIPE 2.0	.068	0	23	.118	3.516		12	27.705	32.13	1.872	1.872	1... H1-1b*
23	M35A	PIPE 2.0	.016	1.948	5	.016	0		12	26.782	32.13	1.872	1.872	1... H1-1b

**SPECIAL CONSTRUCTION NOTE:**  
 SPRINT WORK IS CONTINGENT ON THE FOLLOWING:  
 \* COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS.  
 \* COMPLETION OF AN ANTENNA/RRH MOUNT STRUCTURAL ASSESSMENT.  
 \* GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS AND ASSESSMENT.

**SPECIAL CONSTRUCTION NOTE:**  
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE SPRINT'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

**PROJECT:** DO MACRO UPGRADE  
EQUIPMENT DEPLOYMENT

**SITE NUMBER:** CT23XC502

**SITE ADDRESS:** 2172 GLASGO ROAD  
GRISWOLD, CT 06351

**SITE TYPE:** GUYED TOWER

PLANS PREPARED FOR:

**Sprint**

INTERNATIONAL BLVD, SUITE 800  
 MAHWAH, NJ 07495  
 TEL: (800) 357-7641

PROJECT MANAGER:

**SBA**

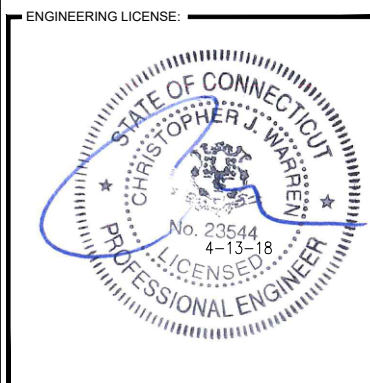
SBA COMMUNICATIONS CORP.  
 134 FLANDERS ROAD, SUITE 125  
 WESTBOROUGH, MA 01581  
 TEL: (508) 251-0720

PLANS PREPARED BY:

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CHECKED BY:

APPROVED BY:

REVISIONS	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

**CT23XC502**

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

**TITLE SHEET  
& PROJECT DATA**

SHEET NUMBER:

**T-1**



SITE INFORMATION	AREA MAP	PROJECT DESCRIPTION	DRAWING INDEX																																							
<p><b>SITE INFORMATION:</b></p> <p><b>LATITUDE (NAD83):</b> 41° 32' 21.1" N 41.53918°</p> <p><b>LONGITUDE (NAD83):</b> -71° 52' 10.2" W -71.86951°</p> <p>STRUCTURE HEIGHT: 195'±</p> <p>STRUCTURE TYPE: GUYED TOWER</p> <p><b>APPLICANT:</b> SPRINT 1 INTERNATIONAL BLVD, SUITE 800 MAHWAH, NJ 07495</p> <p><b>TOWER OWNER:</b> SBA TOWERS II LLC 8051 CONGRESS AVE BOCA RATON, FL 33487</p> <p>SBA SITE ID: CT00594-S</p> <p>SBA SITE NAME: PLAINFIELD NORTH</p> <p>SBA CONTACT: STEPHEN ROTH (800) 539-4920 sroth@sbase.com</p>	<p style="text-align: center;"><b>LOCATION MAP</b></p>	<p>SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.</p> <ul style="list-style-type: none"> <li>REMOVE (6) PANEL ANTENNAS</li> <li>INSTALL (6) PANEL ANTENNAS</li> <li>INSTALL (3) 2.5 GHz RRH'S ON PROPOSED PIPE MOUNT</li> <li>RELOCATE (3) 1900 MHz RRH'S ON PROPOSED PIPE MOUNT</li> <li>INSTALL (6) 800 MHz RRH'S ON PROPOSED PIPE MOUNT</li> <li>REMOVE (6) 1-5/8" COAX CABLES</li> <li>INSTALL (4) HYBRID CABLES</li> <li>INSTALL RAN EQUIPMENT INSIDE EXISTING MMBTS CABINET</li> <li>INSTALL STRUCTURAL AUGMENTS</li> </ul> <p>THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.</p> <p style="text-align: center;"><b>APPLICABLE CODES</b></p> <p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <ol style="list-style-type: none"> <li>INTERNATIONAL BUILDING CODE (2012 IBC)</li> <li>TIA-222-G OR LATEST EDITION</li> <li>NFPA 780 - LIGHTNING PROTECTION CODE</li> <li>2014 NATIONAL ELECTRIC CODE OR LATEST EDITION</li> <li>ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS</li> <li>CT BUILDING CODE</li> <li>LOCAL BUILDING CODE</li> <li>CITY/COUNTY ORDINANCES</li> </ol>	<table border="1"> <thead> <tr> <th>SHEET NO.</th> <th>SHEET TITLE</th> <th>REV.</th> </tr> </thead> <tbody> <tr> <td>T-1</td> <td>TITLE SHEET &amp; PROJECT DATA</td> <td>0</td> </tr> <tr> <td>SP-1</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>SP-2</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>SP-3</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>A-1</td> <td>SITE PLAN</td> <td>0</td> </tr> <tr> <td>A-2</td> <td>TOWER ELEVATION</td> <td>0</td> </tr> <tr> <td>A-3</td> <td>ANTENNA LAYOUT &amp; MOUNTING DETAILS</td> <td>0</td> </tr> <tr> <td>A-4</td> <td>EQUIPMENT &amp; MOUNTING DETAILS</td> <td>0</td> </tr> <tr> <td>A-5</td> <td>DETAILS</td> <td>0</td> </tr> <tr> <td>E-1</td> <td>ELECTRICAL &amp; GROUNDING DETAILS</td> <td>0</td> </tr> <tr> <td>RF-1</td> <td>RF DATA SHEET</td> <td>0</td> </tr> <tr> <td>RF-2</td> <td>PLUMBING DIAGRAM</td> <td>0</td> </tr> </tbody> </table>	SHEET NO.	SHEET TITLE	REV.	T-1	TITLE SHEET & PROJECT DATA	0	SP-1	OUTLINE SPECIFICATIONS	0	SP-2	OUTLINE SPECIFICATIONS	0	SP-3	OUTLINE SPECIFICATIONS	0	A-1	SITE PLAN	0	A-2	TOWER ELEVATION	0	A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0	A-4	EQUIPMENT & MOUNTING DETAILS	0	A-5	DETAILS	0	E-1	ELECTRICAL & GROUNDING DETAILS	0	RF-1	RF DATA SHEET	0	RF-2	PLUMBING DIAGRAM	0
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<p>CALL CONNECTICUT ONE CALL (800) 922-4455 CALL 3 WORKING DAYS BEFORE YOU DIG!</p> <p>Know what's below. Call before you dig. www.call811.com</p>	<p style="text-align: center;"><b>LOCATION MAP</b></p>	<p style="text-align: center;"><b>GENERAL NOTES</b></p> <ol style="list-style-type: none"> <li>THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:       <ul style="list-style-type: none"> <li>ADA COMPLIANCE NOT REQUIRED.</li> <li>POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.</li> <li>NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.</li> </ul> </li> <li>CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.</li> </ol>	<p style="text-align: center;"><b>APPROVALS</b></p> <table border="1"> <thead> <tr> <th>TITLE</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>PROJECT MANAGER:</td> <td></td> <td></td> </tr> <tr> <td>CONSTRUCTION:</td> <td></td> <td></td> </tr> <tr> <td>RF ENGINEER:</td> <td></td> <td></td> </tr> <tr> <td>ZONING/SITE ACQ:</td> <td></td> <td></td> </tr> <tr> <td>OPERATIONS:</td> <td></td> <td></td> </tr> <tr> <td>TOWER OWNER:</td> <td></td> <td></td> </tr> </tbody> </table> <p>THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.</p>	TITLE	SIGNATURE	DATE	PROJECT MANAGER:			CONSTRUCTION:			RF ENGINEER:			ZONING/SITE ACQ:			OPERATIONS:			TOWER OWNER:																				
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THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

**SECTION 01 100 – SCOPE OF WORK**

**PART 1 – GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.
- 1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:
  - A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
    - 1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
    - 5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
    - 3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
    - 4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
    - 5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
    - 6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
    - 7. AMERICAN CONCRETE INSTITUTE (ACI)
    - 8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
    - 9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
    - 10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
    - 11. PORTLAND CEMENT ASSOCIATION (PCA)
    - 12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
    - 13. BRICK INDUSTRY ASSOCIATION (BIA)
    - 14. AMERICAN WELDING SOCIETY (AWS)
    - 15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
    - 16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
    - 17. DOOR AND HARDWARE INSTITUTE (DHI)
    - 18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
    - 19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.
- 1.5 DEFINITIONS:
  - A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
  - B. COMPANY: SPRINT CORPORATION
  - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
  - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
  - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
  - F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
  - G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

- 1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.
- 1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.
- 1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
  - A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
  - B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
  - C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.
- 1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:
- 1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.
- 1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.
- NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193
- 1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.
- 3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

**SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT**

**PART 1 – GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT:
  - A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.
  - B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
    - 1. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
    - 2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
    - 3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
    - 4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
    - 5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
    - 6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.
- 3.2 DELIVERABLES:
  - A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
  - B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.
  - C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

**SECTION 01 300 – CELL SITE CONSTRUCTION CO.**

**PART 1 – GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.
- 1.3 NOTICE TO PROCEED
  - A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.
  - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 FUNCTIONAL REQUIREMENTS:
  - A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.
  - B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.
  - C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES
  - D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:



INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:



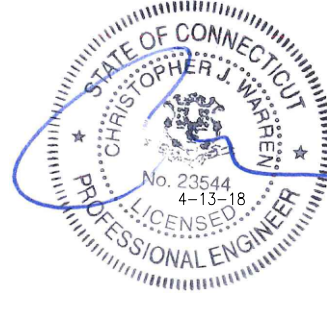
SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
TEL: (508) 251-0720

PLANS PREPARED BY:



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1033 Watervliet Shaker Rd | Albany, NY 12205  
Phone: 518-690-0790 | Fax: 518-690-0793  
www.infinigy.com  
JOB NUMBER 526-104

ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

**CT23XC502**

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

**OUTLINE SPECIFICATIONS**

SHEET NUMBER:

**SP-1**

**CONTINUE FROM SP-1**

- 1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
  - 2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
  - 3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
  - 4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
  - 5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
  - 6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
  - 7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
  - 8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
  - 9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
  - 10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
  - 11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
  - 12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
  - 13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
  - 14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
  - 15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
  - 16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
  - 17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
  - 18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
  - 19. PERFORM ANTENNA AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
  - 20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."
- 3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:
- A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
  - B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
  - C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
    - 1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
    - 2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
  - D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION
  - E. CONDUCT TESTING AS REQUIRED HEREIN.
- 3.3 DELIVERABLES:
- A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER
  - B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
    - 1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
    - 2. PROJECT PROGRESS REPORTS.
    - 3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
    - 4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).

- 5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
- 13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
- 14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

**SECTION 01 400 - SUBMITTALS & TESTS**

**PART 1 - GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT 'STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES' ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.
- 1.3 SUBMITTALS:
  - A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
  - B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.
    - 1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
    - 2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
    - 3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
    - 4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
    - 5. CHEMICAL GROUNDING DESIGN
  - D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

**1.4 TESTS AND INSPECTIONS:**

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - 1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
  - 2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
  - 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
  - 1. AZIMUTH, DOWNTILT, AGL - UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
  - 2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
  - 3. ALL AVAILABLE JURISDICTIONAL INFORMATION
  - 4. PDF SCAN OF REDLINES PRODUCED IN FIELD

- 5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
- 6. LIEN WAIVERS
- 7. FINAL PAYMENT APPLICATION
- 8. REQUIRED FINAL CONSTRUCTION PHOTOS
- 9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
- 10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).
- 1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs
- 1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION**

- 3.1 REQUIREMENTS FOR TESTING:
  - A. THIRD PARTY TESTING AGENCY:
    - 1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
    - 2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
    - 3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
    - 4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
- 3.2 REQUIRED TESTS:
  - A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - 1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
    - 2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
    - 3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
    - 4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
    - 5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
    - 6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
    - 7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
    - 8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
    - 9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

**3.3 REQUIRED INSPECTIONS**

- A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.
- B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - 1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
  - 2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
  - 3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
  - 4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
  - 5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
  - 6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS - ANTENNA ALIGNMENT TOOL (AAT)

PLANS PREPARED FOR:

# Sprint

INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
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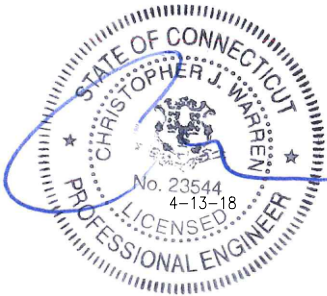
PLANS PREPARED BY:

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APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

**CT23XC502**

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

**OUTLINE SPECIFICATIONS**

SHEET NUMBER:

**SP-2**



CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
  8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
  9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
  10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
  11. ALL AVAILABLE JURISDICTIONAL INFORMATION
  12. PDF SCAN OF REDLINES PRODUCED IN FIELD
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.
- 3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.
- A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.
1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
  2. STRUCTURAL BACKFILL COMPACTION REPORTS.
  3. SITE RESISTANCE TO EARTH TEST.
  4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
  5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
  6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".
- B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;
1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
  2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
  3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS - PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
  4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING - TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
  5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
  6. SITE LAYOUT - PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
  7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
  8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
  9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

- 3.1 WEEKLY REPORTS:
  - A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.
  - B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.
- 3.2 PROJECT CONFERENCE CALLS:
  - A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.
- 3.3 PROJECT TRACKING IN SMS:
  - A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.
- 3.4 ADDITIONAL REPORTING:
  - A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.
- 3.5 PROJECT PHOTOGRAPHS:
  - A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:
    1. SHELTER AND TOWER OVERVIEW.
    2. TOWER FOUNDATION(S) - FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
    3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
    4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
    5. PHOTOS OF TOWER SECTION STACKING.
    6. CONCRETE TESTING / SAMPLES.
    7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
    8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
    9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.
    10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
    11. COAX CABLE ENTRY INTO SHELTER.
    12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
    13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
    14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
    15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
    16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
    17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
    18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
    19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
    20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
    21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
    22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
    23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
25. ALL BTS GROUND CONNECTIONS.
26. ALL GROUND TEST WELLS.
27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
30. GPS ANTENNAS.
31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
32. DOGHOUSE/CABLE EXIT FROM ROOF.
33. EACH SECTOR OF ANTENNAS: ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
34. MASTER BUS BAR.
35. TELCO BOARD AND NIU.
36. ELECTRICAL DISTRIBUTION WALL.
37. CABLE ENTRY WITH SURGE SUPPRESSION.
38. ENTRANCE TO EQUIPMENT ROOM.
39. COAX WEATHERPROOFING--TOP AND BOTTOM OF TOWER.
40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.
41. ANTENNA AND MAST GROUNDING.
42. LANDSCAPING - WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

PLANS PREPARED FOR:



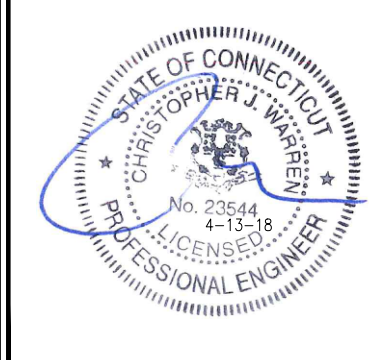
PROJECT MANAGER:



PLANS PREPARED BY:



ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

CT23XC502

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

OUTLINE SPECIFICATIONS

SHEET NUMBER:

SP-3

CHECKED BY:

APPROVED BY:

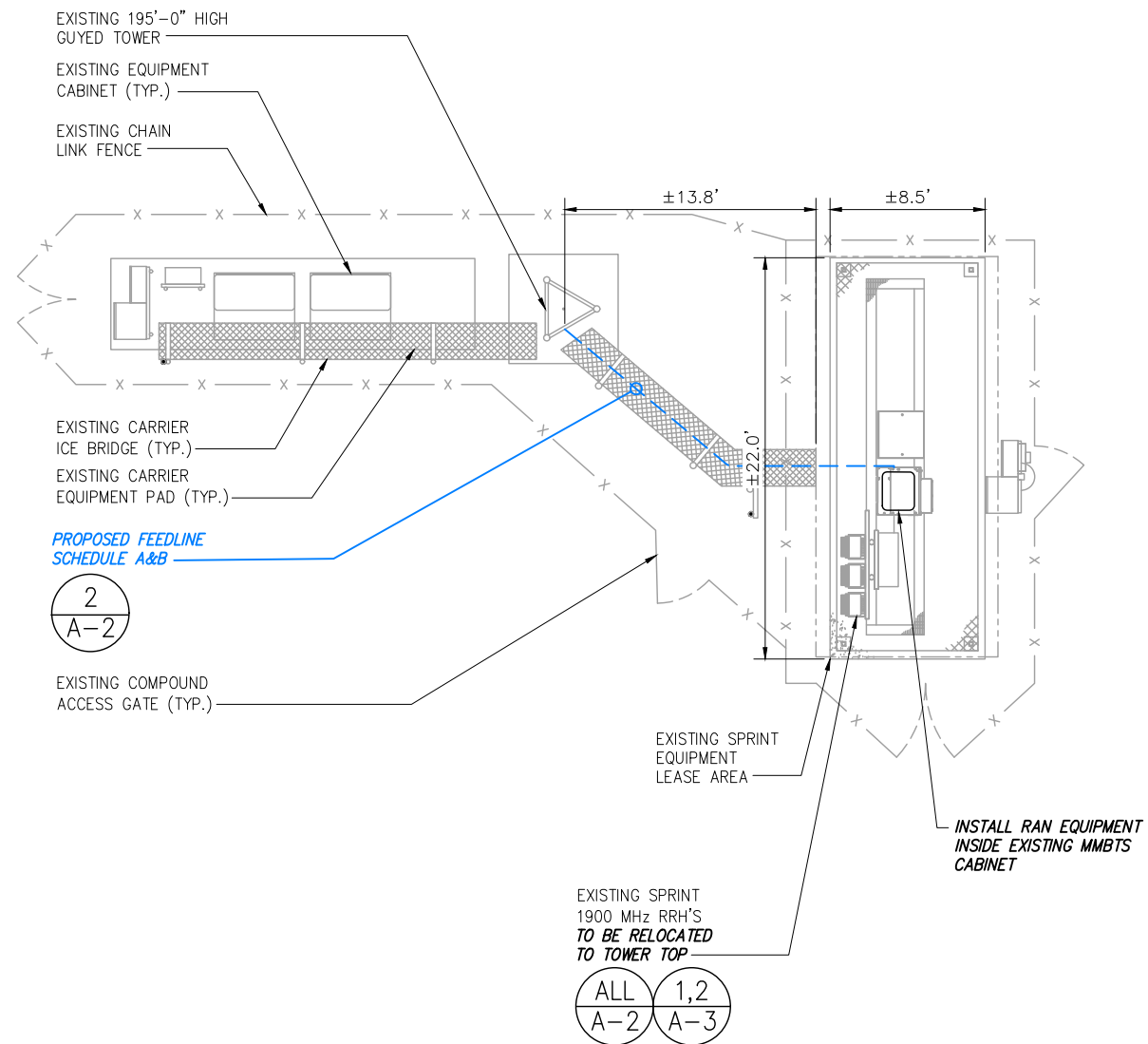
REVISIONS	DESCRIPTION	DATE	BY	REV.

SITE NUMBER:  
**CT23XC502**

SITE ADDRESS:  
 2172 GLASGO ROAD  
 GRISWOLD, CT 06351

SHEET DESCRIPTION:  
**SITE PLAN**

SHEET NUMBER:  
**A-1**



EXISTING SPRINT MM BTS CABINET  
 PROPOSED FEEDLINE SCHEDULE A&B  
 2  
 A-2

EXISTING SPRINT ICE BRIDGE



EXISTING SPRINT FIBER JUNCTION BOX

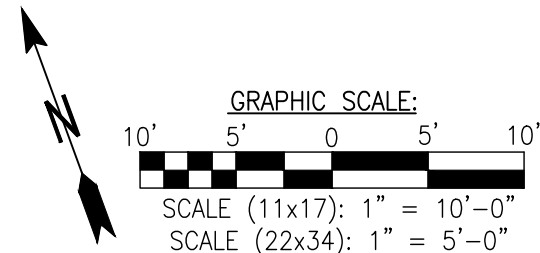
EXISTING SPRINT 1900 MHz RRH'S TO BE RELOCATED TO TOWER TOP

ALL 1,2  
 A-2 A-3

EXISTING CONCRETE PAD

SOURCE: WESTCHESTER SERVICES 11/14/17

EXISTING SPRINT 1900 MHz RRH'S TO BE RELOCATED TO TOWER TOP  
 ALL 1,2  
 A-2 A-3



INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

TOP OF TOWER  
ELEV. = ±195' A.G.L.

☉ OF EXISTING/TO BE  
INSTALLED SPRINT ANTENNAS  
ELEV. = 165' A.G.L.



**NOTE:**  
FOR DETAILS OF MOUNT AUGMENT REFER TO  
MOUNT AUGMENT CD'S DONE BY OTHERS

EXISTING CARRIER  
ANTENNAS (TYP.)

THESE PLANS HAVE BEEN DEVELOPED FOR  
THE MODIFICATION OF AN EXISTING UNMANNED  
TELECOMMUNICATIONS FACILITY OWNED OR  
LEASED BY SPRINT IN ACCORDANCE WITH THE  
SCOPE OF WORK PROVIDED BY SPRINT.  
INFINIGY HAS INCORPORATED THIS SCOPE OF  
WORK IN THE PLANS. THESE PLANS ARE NOT  
FOR CONSTRUCTION UNLESS ACCOMPANIED BY  
A PASSING STRUCTURAL STABILITY ANALYSIS  
PREPARED BY A LICENSED STRUCTURAL  
ENGINEER. STRUCTURAL ANALYSIS MUST  
INCLUDE BOTH TOWER AND MOUNT.

EXISTING  
GUYED TOWER

2  
A-2 PROPOSED FEEDLINE  
SCHEDULE A&B

EXISTING SPRINT  
EQUIPMENT AREA  
INSIDE FENCE

EXISTING CHAIN  
LINK FENCE

GROUND LEVEL

**SPECIAL INSTALLATION NOTE:**  
JUMPERS FROM RRHS TO ANTENNA SHALL NOT  
EXCEED 15'. NOTIFY SPRINT CONSTRUCTION  
MANAGER OF ANY DISCREPANCY

**NOTE:**  
VERIFY PROPOSED AZIMUTHS WITH RF  
ENGINEER PRIOR TO INSTALLATION

**SPECIAL CONSTRUCTION NOTE:**  
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS  
(STRUCTURAL MODIFICATIONS) AT THE SPRINT'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS  
FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION  
DRAWINGS (PROVIDED BY OTHERS).

☉ OF PROPOSED SPRINT ANTENNAS  
ELEV. = 165' A.G.L.



2  
A-2 PROPOSED FEEDLINE  
SCHEDULE A&B

EXISTING CARRIER PANEL  
ANTENNA (TYP.)



FEEDLINE SCHEDULE A  
FEEDLINE SCHEDULE B

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO BE REMOVED: (6) 1 5/8" COAX	GUYED TOWER TO RAD
B	PROPOSED: (4) HYBRID TO 165' RAD	GUYED TOWER TO RAD

**NOTE:**  
EXISTING SPRINT EQUIPMENT FEEDLINE INVENTORY BASED ON  
COLOCATION APPLICATION AND SBA RECORD, NOT FIELD  
OBSERVATIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS  
MAY DIFFER.

SOURCE: WESTCHESTER SERVICES 11/15/17

PLANS PREPARED FOR:

INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:

SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
TEL: (508) 251-0720

PLANS PREPARED BY:

FROM ZERO TO INFINIGY  
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1033 Watervliet Shaker Rd | Albany, NY 12205  
Phone: 518-690-0790 | Fax: 518-690-0793  
www.infinigy.com  
JOB NUMBER 526-104

ENGINEERING LICENSE:

CHECKED BY:

APPROVED BY:

REVISIONS	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

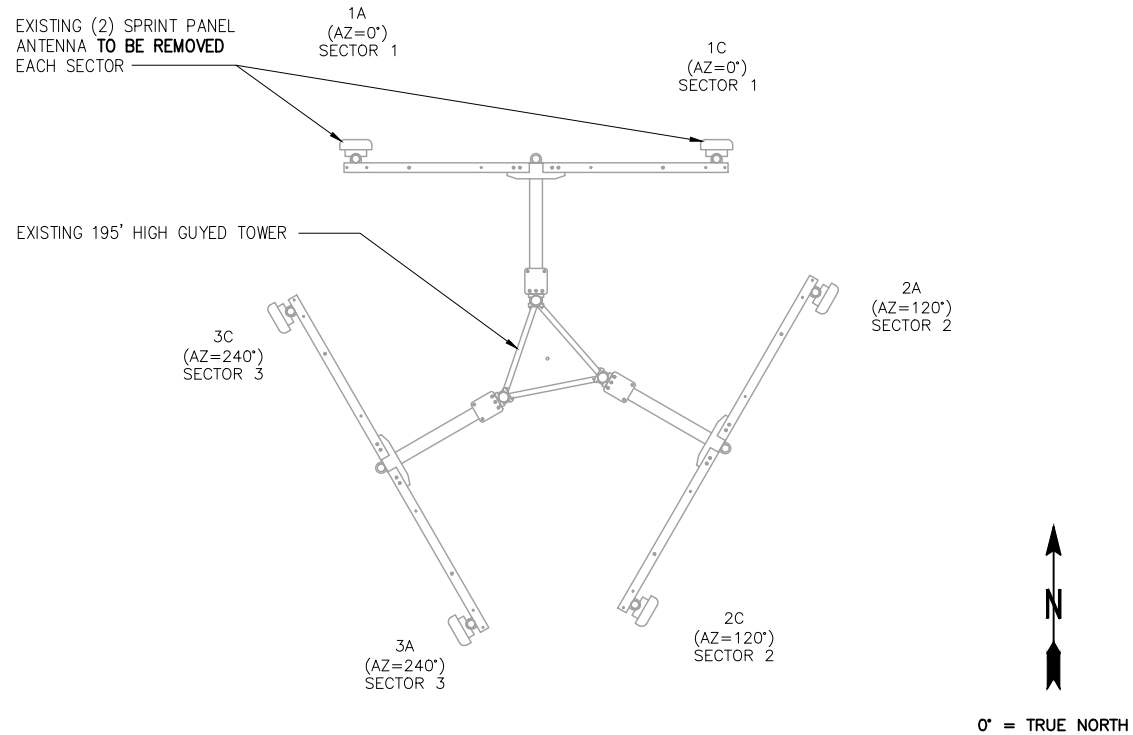
SITE NUMBER:  
**CT23XC502**

SITE ADDRESS:  
2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:  
**TOWER ELEVATION**

SHEET NUMBER:  
**A-2**

**SPECIAL CONSTRUCTION NOTE:**  
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE SPRINT'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA—PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).



EXISTING ANTENNA & RRH LAYOUT

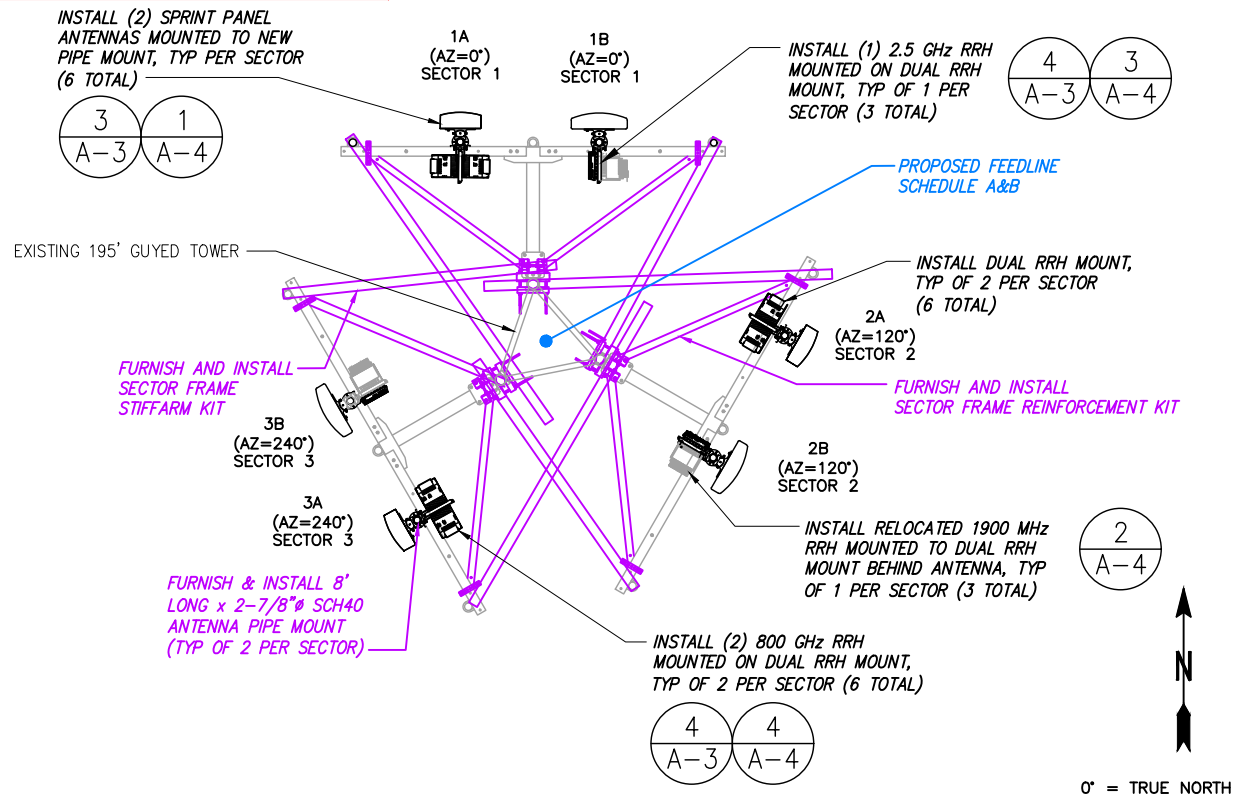
NO SCALE

1

**SPECIAL INSTALLATION NOTE:**  
 JUMPERS FROM RRHs TO ANTENNA SHALL NOT EXCEED 15'. NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY DISCREPANCY

**NOTE:**  
 VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

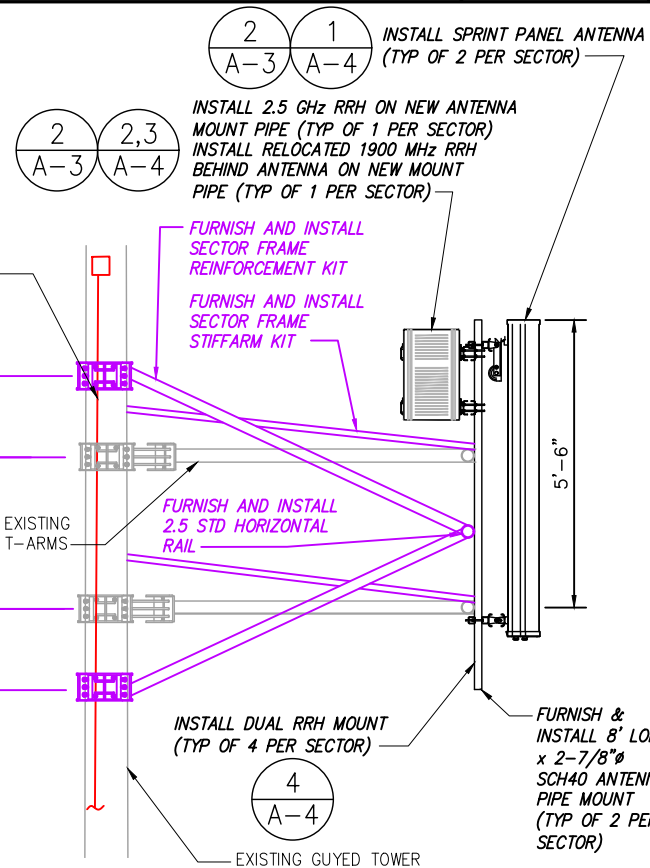
**NOTE:**  
 FOR DETAILS OF MOUNT AUGMENT REFER TO MOUNT AUGMENT CD'S DONE BY OTHERS



FINAL ANTENNA & RRH LAYOUT

NO SCALE

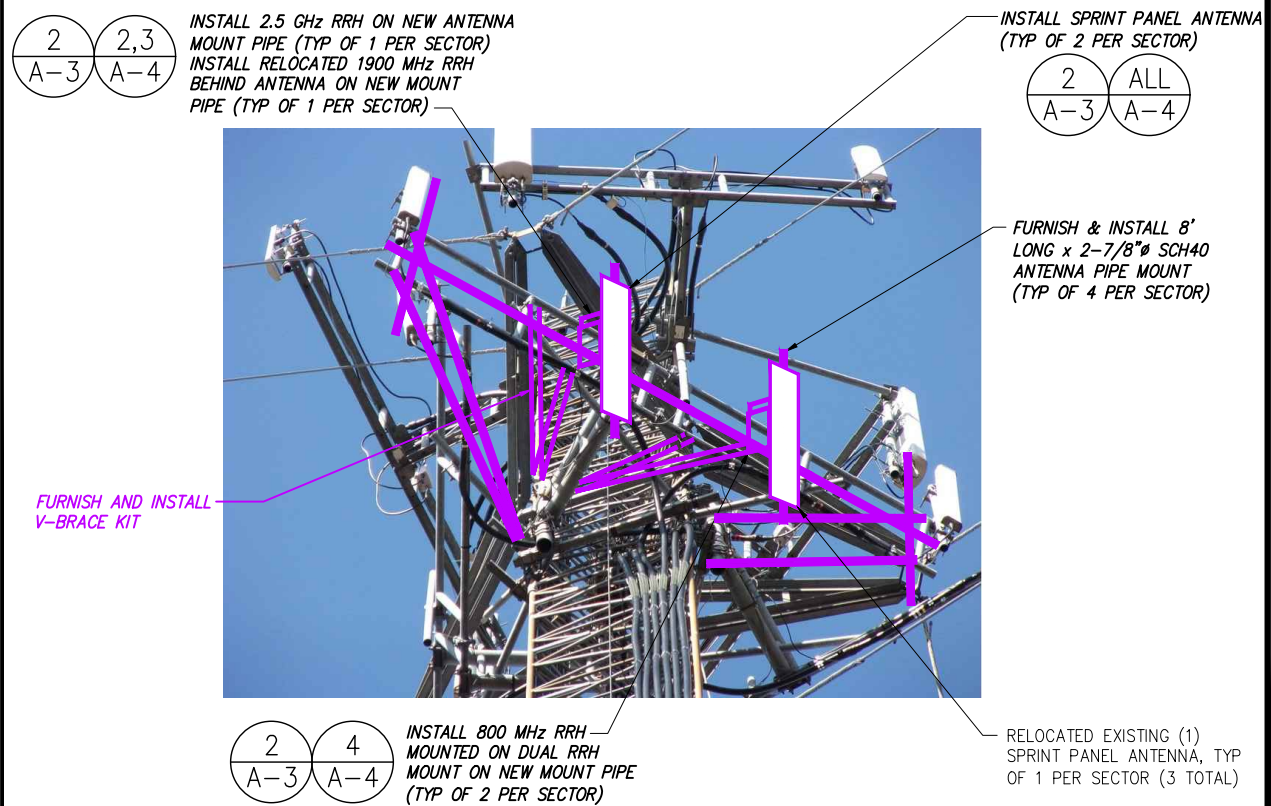
2



TYPICAL MOUNTING DETAIL

NO SCALE

3



ANTENNA & RRH MOUNT PHOTO DETAIL

NO SCALE

4

PLANS PREPARED FOR:

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 MAHWAH, NJ 07495  
 TEL: (800) 357-7641

PROJECT MANAGER:

SBA COMMUNICATIONS CORP.  
 134 FLANDERS ROAD, SUITE 125  
 WESTBOROUGH, MA 01581  
 TEL: (508) 251-0720

PLANS PREPARED BY:

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 Phone: 518-690-0790 | Fax: 518-690-0793  
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 JOB NUMBER: 526-104

ENGINEERING LICENSE:

CHECKED BY:

APPROVED BY:

REVISIONS	DESCRIPTION	DATE	BY	REV.

ISSUED FOR CONSTRUCTION

04/13/18 RWF 0

SITE NUMBER:

CT23XC502

SITE ADDRESS:

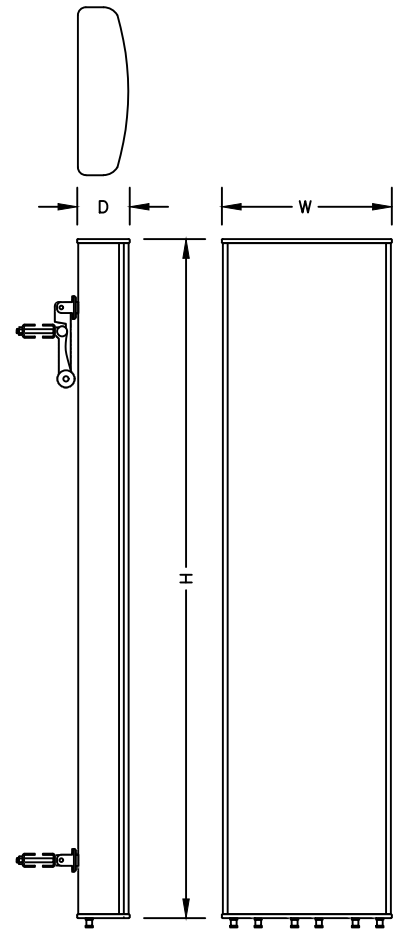
2172 GLASGO ROAD  
 GRISWOLD, CT 06351

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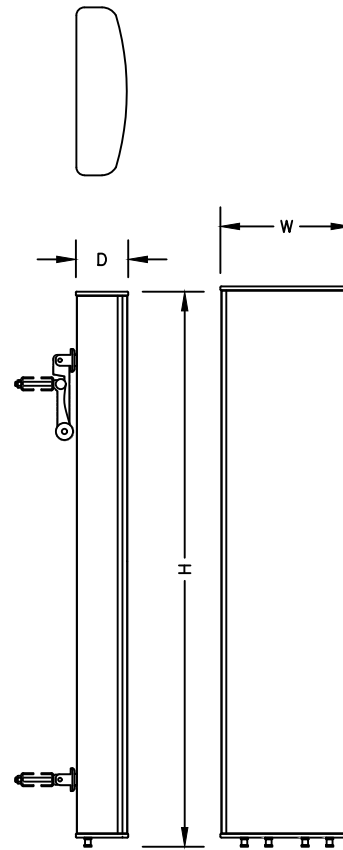
ANTENNA LAYOUT  
 & MOUNTING DETAILS

SHEET NUMBER:

A-3



ANTENNA SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	NNVV-65B-R4
HEIGHT	72"
WIDTH	19.6"
DEPTH	7.8"
WEIGHT	84.7± LBS.



ANTENNA SPECIFICATIONS	
MANUF.	RFS
MODEL #	APXVTM14-ALU-120
HEIGHT	56.3"
WIDTH	12.6"
DEPTH	6.3"
WEIGHT	56.2± LBS.

ANTENNA DETAIL

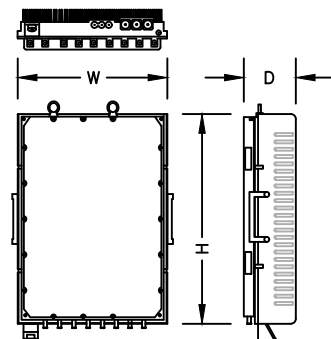
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ANTENNA DETAIL

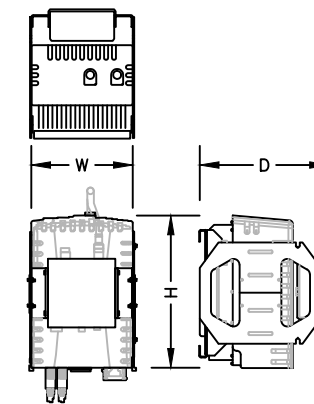
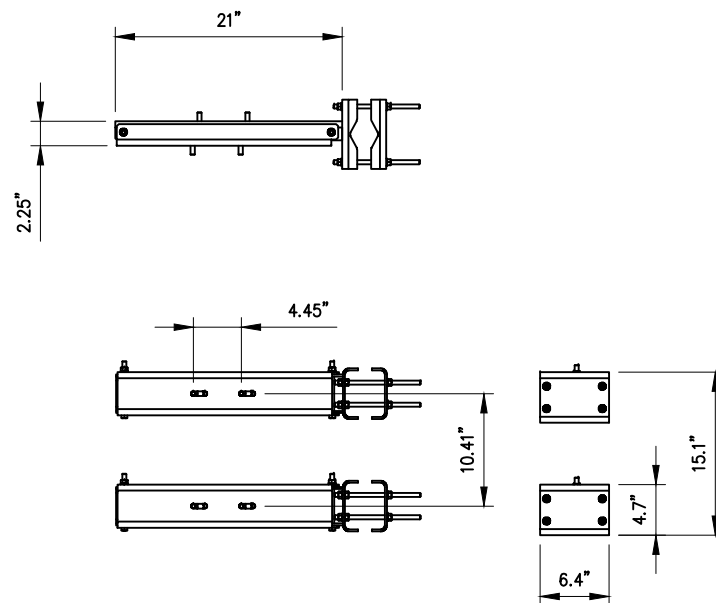
NO SCALE

2



**2.5 GHZ RRH SPECIFICATIONS**

MANUF.	NOKIA (ALU)
MODEL #	TD-RRH8X20-25
HEIGHT	26.1"
WIDTH	18.6"
DEPTH	6.7"
WEIGHT	70± LBS



**800 MHZ RRH SPECIFICATIONS**

MANUF.	NOKIA (ALU)
MODEL #	800MHZ 2X50W
HEIGHT	19.7"
WIDTH	13"
DEPTH	10.8"
WEIGHT	53± LBS

2.5 RRH

NO SCALE

3

DUAL RRH MOUNT DETAIL

NO SCALE

4

800 MHz RRH

NO SCALE

5

PLANS PREPARED FOR:

**Sprint**

INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
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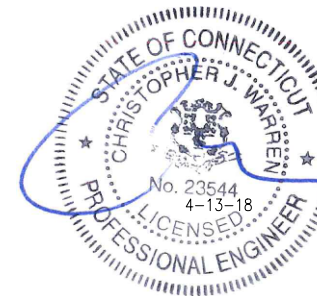
PLANS PREPARED BY:

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www.infinigy.com  
JOB NUMBER 526-104

ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

CT23XC502

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

EQUIPMENT &  
MOUNTING DETAILS

SHEET NUMBER:

A-4

**RFS HYBRIFLEX RISER CABLE SCHEDULE**

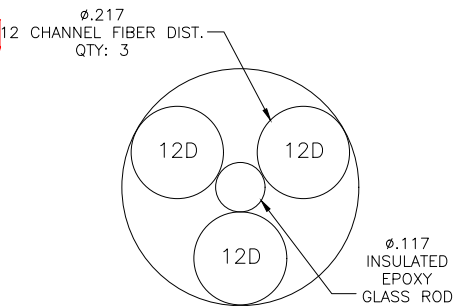
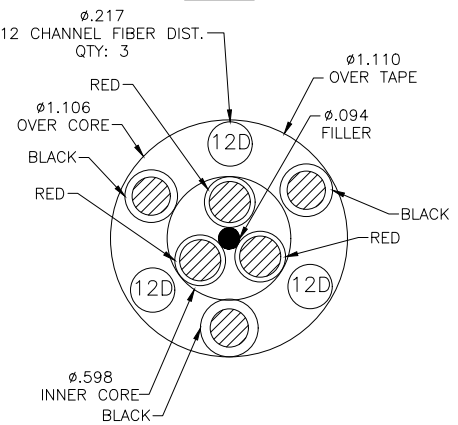
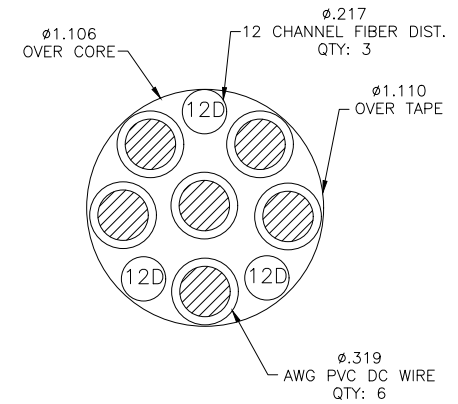
Fiber Only (Existing DC Power)	Hybrid cable MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	Hybrid cable MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	Hybrid cable MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	Hybrid cable MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

**RFS HYBRIFLEX JUMPER CABLE SCHEDULE**

Fiber Only	Hybrid Jumper cable MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	Hybrid Jumper cable MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	Hybrid Jumper cable MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	Hybrid Jumper cable MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

NOTE:  
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE  
AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF  
HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.

- \* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.
- \* SPRINT CM TO CONFIRM HYBRID RISER CABLE AND HYBRID JUMPER CABLE MODEL NUMBERS BEFORE PREPARING BOM.



PLANS PREPARED FOR:  
**Sprint**  
INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:  
**SBA**  
SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
TEL: (508) 251-0720

PLANS PREPARED BY:  
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Phone: 518-690-0790 | Fax: 518-690-0793  
www.infinigy.com  
JOB NUMBER 526-104

ENGINEERING LICENSE:  
  
CHRISTOPHER J. WARREN  
No. 23544  
4-13-18  
PROFESSIONAL ENGINEER

CHECKED BY:

APPROVED BY:

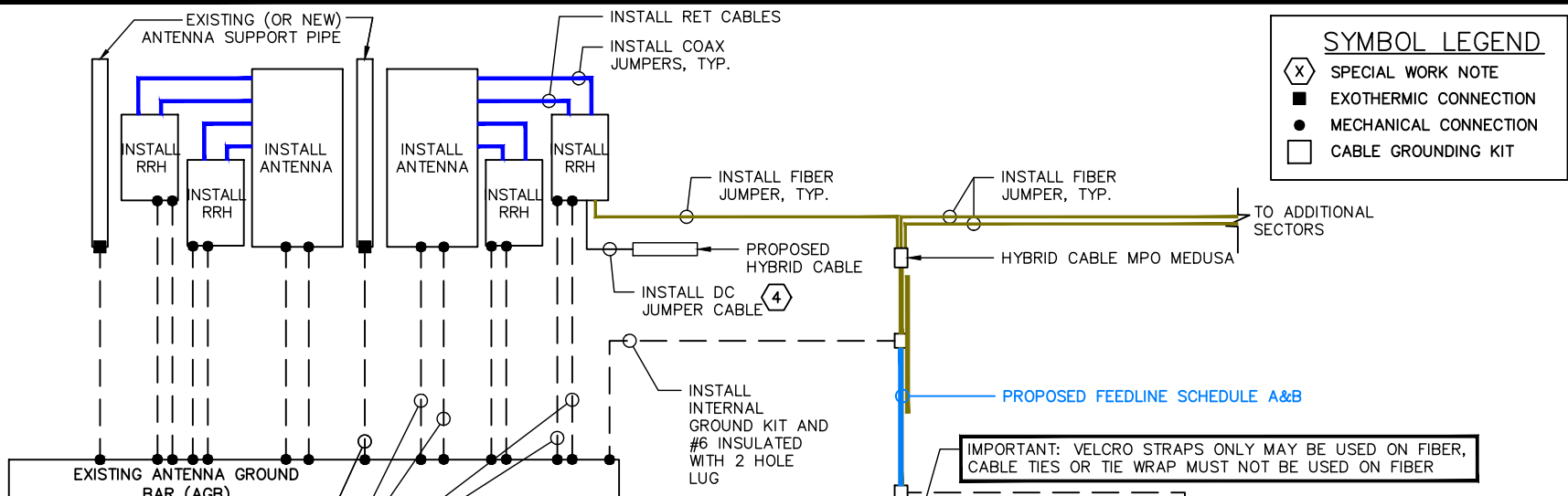
REVISIONS	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:  
**CT23XC502**

SITE ADDRESS:  
2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:  
**DETAILS**

SHEET NUMBER:  
**A-5**



**SYMBOL LEGEND**

- (X) SPECIAL WORK NOTE
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- CABLE GROUNDING KIT

- ELECTRICAL NOTES**
- 1) ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
  - 2) THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND SPRINT CONSTRUCTION MANAGER.
  - 3) ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
  - 4) ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.
  - 5) GENERAL CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.
  - 6) ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
  - 7) THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIALS DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
  - 8) GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
  - 9) ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
  - 10) BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
  - 11) ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
  - 12) RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
  - 13) RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
  - 14) FIBER OPTIC CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 770—OPTICAL FIBER CABLES AND RACEWAYS.
  - 15) COMMUNICATIONS CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 800—COMMUNICATIONS SYSTEMS.

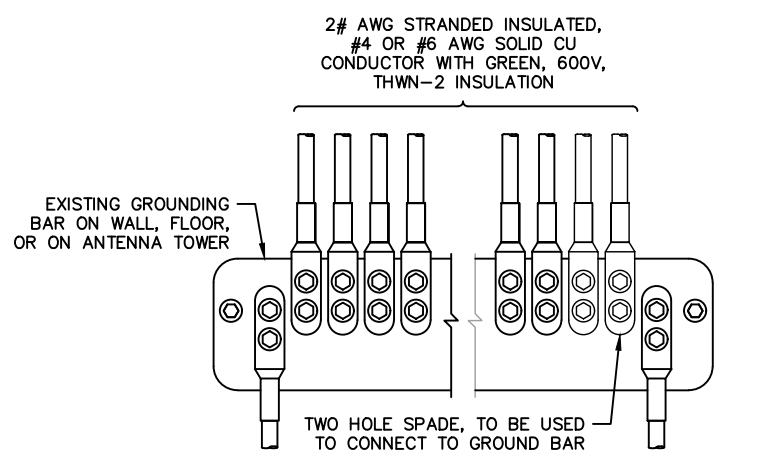
- SPECIAL WORK NOTE:**
1. G.C. TO FURNISH AND INSTALL ALL COMPONENTS TO UPGRADE EXISTING ELECTRICAL SERVICE, CONDUIT, CONDUCTOR, PPC AND MCB IN ACCORDANCE WITH SPRINT CONSTRUCTION STANDARDS NV 2.5 ADDENDUM "ENGINEERING NOTICE 2013-002 (POWER UPGRADES) REV.0" (OR CURRENT VERSION)
  2. G.C. TO FURNISH AND INSTALL UPGRADE THE EXISTING MMBTS BREAKER, CONDUCTOR, AND CONDUIT TO A MINIMUM NEC RATING.
  3. FOR NEW OR REPAIRED GROUNDING EQUIPMENT, REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):  
 -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12 (OR CURRENT VERSION)  
 -SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12 (OR CURRENT VERSION)
  4. USE SPARE DC CABLES COILED UP AT TOWER TOP NV ARRAY TO POWER UP 2.5 RRH. INSIDE EXISTING FIBER DISTRIBUTION BOX, THE SPARE DC CONDUCTORS INTO EXISTING DC BREAKER PANEL PER APPROVED DC WIRING CONNECTIVITY OPTION (BASED ON NV HYBRIFLEX CABLE LENGTH). CONSULT WITH SPRINT CM TO DETERMINE APPROPRIATE DC CONNECTIVITY OPTION, PLUMBING DIAGRAM AND DC BREAKER SIZE.

**PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES:**

1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250—GROUNDING AND BONDING.
2. GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
4. GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
5. ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
6. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
9. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
11. GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
13. EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "c" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI-OXIDANT (THOMAS BETTS KOPR-SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
14. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
15. THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
17. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
18. FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):  
 -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12 (OR CURRENT VERSION)  
 -SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12 (OR CURRENT VERSION)

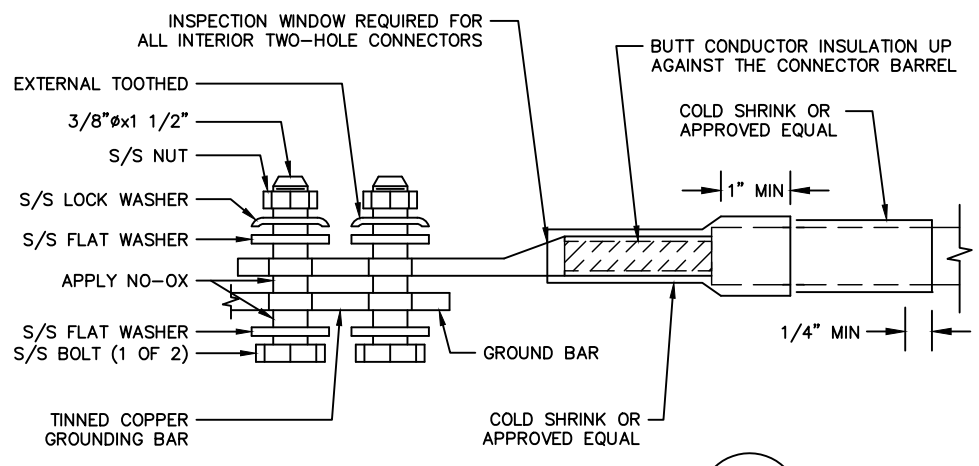
**TYPICAL POWER AND GROUNDING ONE LINE DIAGRAMS**

SCALE: N.T.S.



**INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR**

SCALE: N.T.S.



**TWO HOLE LUG**

SCALE: N.T.S.

PLANS PREPARED FOR:

INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

PROJECT MANAGER:

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PLANS PREPARED BY:

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www.infinigy.com  
JOB NUMBER: 526-104

ENGINEERING LICENSE:

CHRISTOPHER J. WARREN  
No. 23544  
4-13-18  
PROFESSIONAL ENGINEER

CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

**CT23XC502**

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

**ELECTRICAL & GROUNDING DETAILS**

SHEET NUMBER:

**E-1**

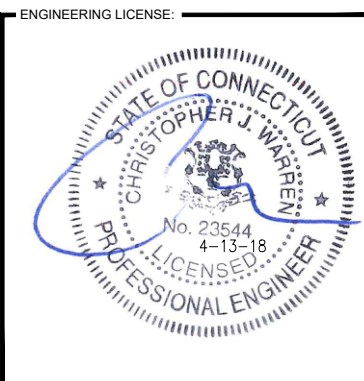


# RF Design Sheet

PLANS PREPARED FOR:  
**Sprint**  
 INTERNATIONAL BLVD, SUITE 800  
 MAHAH, NJ 07495  
 TEL: (800) 357-7641

PROJECT MANAGER:  
  
 SBA COMMUNICATIONS CORP.  
 134 FLANDERS ROAD, SUITE 125  
 WESTBOROUGH, MA 01581  
 TEL: (508) 251-0720

PLANS PREPARED BY:  
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 Phone: 518-690-0790 | Fax: 518-690-0793  
 www.infinigy.com  
 JOB NUMBER: 526-104



CHECKED BY:

APPROVED BY:

REVISIONS	DESCRIPTION	DATE	BY	REV.

SITE NUMBER:  
**CT23XC502**

SITE ADDRESS:  
 2172 GLASGO ROAD  
 GRISWOLD, CT 06351

SHEET DESCRIPTION:  
**RF DATA SHEET**

SHEET NUMBER:  
**RF-1**

Site Identification	
Cascade	CT23XC502
SMS Schedule ID	12323172
SMS Schedule Name	DO Macro Upgrade
PID	
RRU OEM	ALU
Switch OEM	Alcatel Lucent
RFDS Issue Date	2017-08-15 00:00:00.0
RFDS Revision Date	2017-10-20 11:03:02.0
RFDS Revision	3

Filter Analysis Complete	YES
RFDS - Issue Date	08/15/2017
Design Status	Complete
Project Description	DO Macro Upgrade - Add 800MHz (3G + 4G) and 2500 MHz

Contact Information	
Engineer Email	Bill.M.Hastings@sprint.com
Sprint Badged RF Engineer	Bill Hastings
RF Engineer Email	Bill.M.Hastings@sprint.com
RF Engineer Phone	978-590-9700
RF Manager	Jonathan Hull
RF Manager Email	Jonathan.B.Hull@Sprint.com
RF Manager Phone	617-233-2920

Carrier Count	
2500 LTE	3
1900 LTE	1
1900 EVDO	
1900 Voice	1
800 LTE	1
800 Voice	1

Location Details	
Latitude	41.53918
Longitude	-71.86951
Market	Northern Connecticut
Region	Northeast
City	Griswold
State	CT
Zip Code	CT/06351
County	New London

2500MHz	3
1900MHz	3
800MHz	3

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
<b>Radio Model</b>						
Model Number	TD-RRH8x20-25	TD-RRH8x20-25	TD-RRH8x20-25	N/A	N/A	N/A
Weight (lbs.)	76.2	76.2	76.2	N/A	N/A	N/A
Dimensions	26 x 18.6 x 6.7	26 x 18.6 x 6.7	26 x 18.6 x 6.7	N/A	N/A	N/A
Manufacturer	ALU	ALU	ALU	N/A	N/A	N/A
Number of RRUs needed	1	1	1	0	0	0

Trunk Cable 1						
Model Number	Hybriflex	N/A	N/A	N/A	N/A	N/A
Weight (Lbs.)	1	N/A	N/A	N/A	N/A	N/A
Dimensions (In.)	1.54	N/A	N/A	N/A	N/A	N/A
Manufacturer	ALU	N/A	N/A	N/A	N/A	N/A

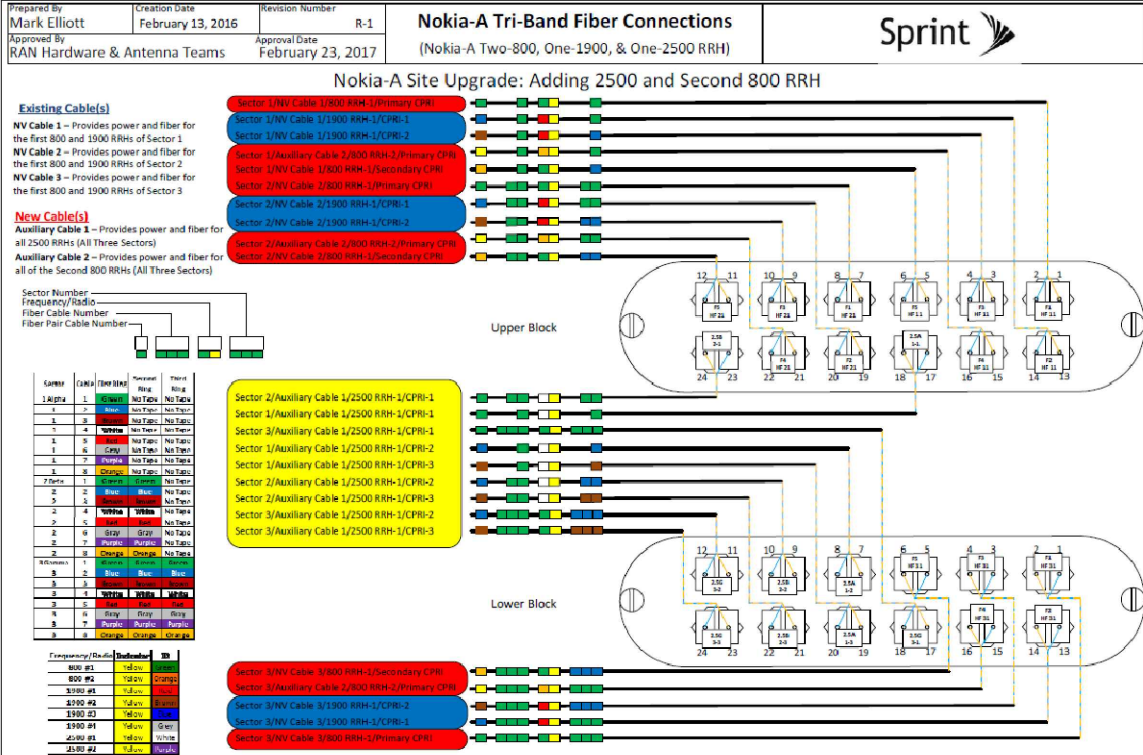
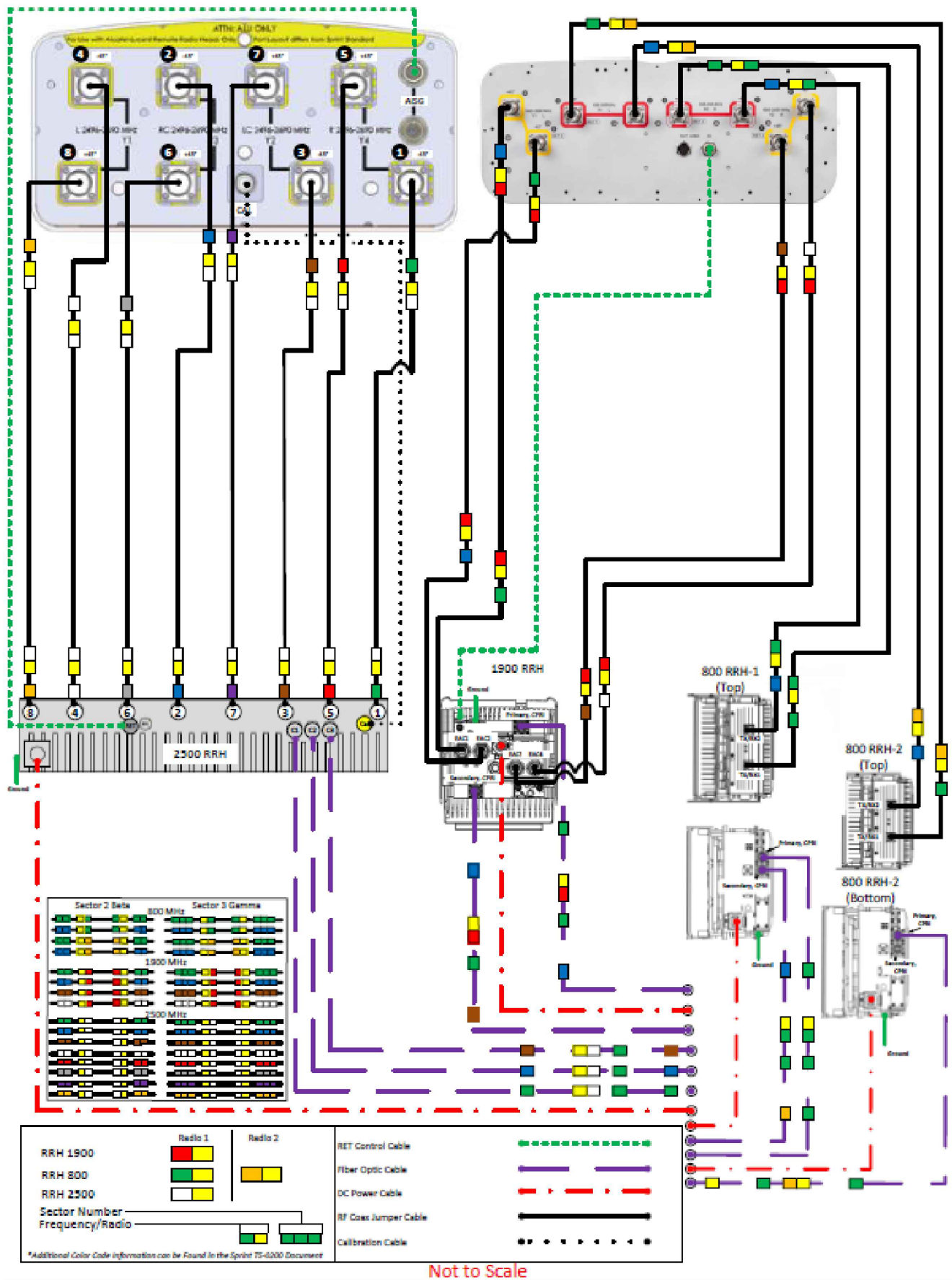
Band: 800	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
<b>Radio Model</b>						
Model Number	RRH-2x50-800	RRH-2x50-800	RRH-2x50-800	N/A	N/A	N/A
Weight (lbs.)	69.1	69.1	69.1	N/A	N/A	N/A
Dimensions	16 x 13 x 10	16 x 13 x 10	16 x 13 x 10	N/A	N/A	N/A
Manufacturer	ALU	ALU	ALU	N/A	N/A	N/A
Number of RRUs needed	2	2	2	0	0	0

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
<b>Antenna 1</b>						
Model Number	APXVTM14-ALU-I20	APXVTM14-ALU-I20	APXVTM14-ALU-I20			
Weight (lbs.)	56.2	56.2	56.2	N/A	N/A	N/A
Dimensions	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3	N/A	N/A	N/A
Manufacturer	RFS	RFS	RFS	N/A	N/A	N/A
Ant 1 Top Jumper Make/Mode/Qty	2.5 Jumper   8	2.5 Jumper   8	2.5 Jumper   8	N/A   0	N/A   0	N/A   0
Ant 1 RF requested Diameter	1/2"	1/2"	1/2"	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	8	N/A	N/A	N/A
Antenna 1 Azimuth	0	120	240	N/A	N/A	N/A
Antenna 1 Mechanical DT	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Center Line (ft)	164.9606352	164.9606352	164.9606352	N/A	N/A	N/A
Antenna 1 Electrical DT	2	2	2	N/A	N/A	N/A
Antenna 1 Electrical DT 2	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 3	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Twist	N/A	N/A	N/A	N/A	N/A	N/A

Band: 1900	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
<b>Antenna 1</b>						
Model Number	NNVV-65B-R4	NNVV-65B-R4	NNVV-65B-R4			
Weight (lbs.)	84.7	84.7	84.7	N/A	N/A	N/A
Dimensions	72 x 19.6 x 7.8	72 x 19.6 x 7.8	72 x 19.6 x 7.8	N/A	N/A	N/A
Manufacturer	CommScope	CommScope	CommScope	N/A	N/A	N/A
Ant 1 Top Jumper Make/Mode/Qty	800/1900 Jumper   4	800/1900 Jumper   4	800/1900 Jumper   4	N/A   0	N/A   0	N/A   0
Ant 1 RF requested Diameter	1/2"	1/2"	1/2"	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	8	N/A	N/A	N/A
Antenna 1 Azimuth	0	120	240	N/A	N/A	N/A
Antenna 1 Mechanical DT	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Center Line (ft)	164.9606352	164.9606352	164.9606352	N/A	N/A	N/A
Antenna 1 Electrical DT	3	3	3	N/A	N/A	N/A
Antenna 1 Electrical DT 2	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 3	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Twist	N/A	N/A	N/A	N/A	N/A	N/A



ALU 211 APXVTM14-ALU-I20 & NNVV-65B-R4 wo Filters



PLUMBING DIAGRAM

NO SCALE

1

PLANS PREPARED FOR:

**Sprint**  
INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
TEL: (800) 357-7641

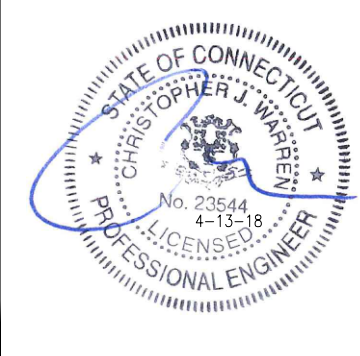
PROJECT MANAGER:

**SBA**  
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134 FLANDERS ROAD, SUITE 125  
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Phone: 518-690-0790 | Fax: 518-690-0793  
www.infinigy.com  
JOB NUMBER 526-104

ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		04/13/18	RWF	0

SITE NUMBER:

CT23XC502

SITE ADDRESS:

2172 GLASGO ROAD  
GRISWOLD, CT 06351

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

RF-2

# CT23XC502

## DO MACRO EQUIPMENT DEPLOYMENT

### MOUNT AUGMENTATION @ 165'

GUYED TOWER

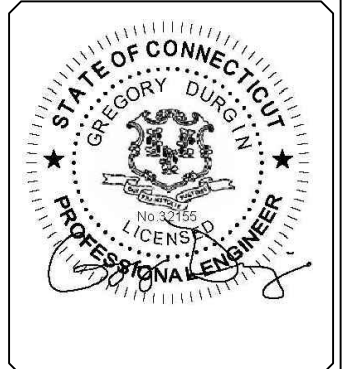
GRISWOLD, CT  
NEW LONDON COUNTY



REVISIONS:			
NO.	DATE	DESCRIPTION	BY
0	4/17/18	ISSUE FOR CONSTRUCTION	JAD

CHECKED BY: \_\_\_\_\_ DWG

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SITE INFORMATION:  
**MOUNT AUGMENTATION**  
 CT23XC502  
 GRISWOLD, CT  
 LATITUDE: 41.537366  
 LONGITUDE: -71.873447

SHEET TITLE:  
**TITLE SHEET**

SHEET NUMBER:  
**S1**

#### SITE INFORMATION

STRUCTURE TYPE: GUYED  
 MOUNT TYPE: SECTOR FRAMES  
 LATITUDE: 41.537366 (NAD 83)  
 LONGITUDE: -71.873447 (NAD 83)  
 CITY, STATE: GRISWOLD, CT  
 COUNTY: NEW LONDON  
 SBA SITE: CT10013-A Griswold Glasgo  
 COORDINATES ARE FOR NAVIGATIONAL PURPOSES ONLY, NOT TO 1A ACCURACY.

#### DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE LABOR & MATERIALS FOR THE DISCREPANCIES.

#### CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE AND DESIGN STANDARD: 2012 IBC / TIA-222-G / 2016 CT

#### RIGGING PLAN REQUIRED

THIS SET OF PLANS DOES "NOT" CONSTITUTE A RIGGING PLAN.  
 A PROPER RIGGING PLAN SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO PROCEEDING ON ANY AUGMENTATIONS SHOWN HEREIN.

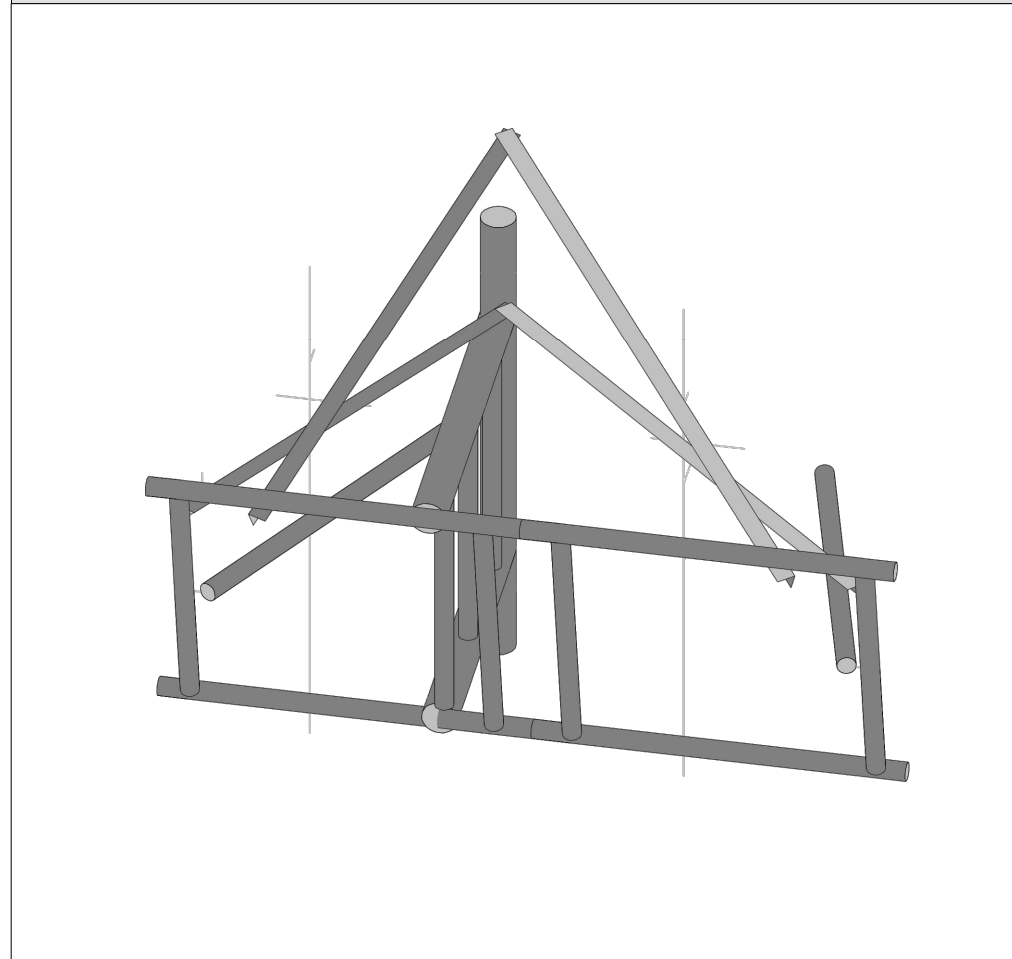
#### GENERAL DESIGN NOTES

- THIS PLAN HAS BEEN DESIGNED UTILIZING THE CORRESPONDING MOUNT STRUCTURAL ANALYSIS.
- THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, ACI, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- ALL STRUCTURE INFORMATION OBTAINED IN THE FORM OF FROM INFORMATION PROVIDED BY THE CLIENT. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED DOCUMENTS. CONTRACTOR SHALL ISSUE A REQUEST FOR INFORMATION (RFI) IN THE EVENT ANY DISCREPANCIES ARE DISCOVERED BETWEEN THESE DOCUMENTS AND THE AS-BUILT CONDITIONS IN THE FIELD IN A SITE VISIT THAT SHALL BE PERFORMED PRIOR TO STARTING FABRICATION OR CONSTRUCTION.
- ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
- ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION (ONLY IF SPECIFICALLY REQUESTED BY ENGINEER).
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

#### SHEET INDEX

SHEET	DESCRIPTION
S-1	TITLE SHEET
S-2	NOTES AND SPECIFICATIONS
S-3	AUGMENTATIONS, SECTIONS & DETAILS

#### MOUNT AUGMENTATION CONFIGURATION



#### AUGMENTATION SCOPE

AUGMENT ALL SECTORS OF CARRIER'S EXISTING MOUNT INSTALLATION AS REQUIRED (UNLESS NOTED OTHERWISE)

### CONTRACTOR NOTES

- PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO TOWER OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED AUGMENTATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
- IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE AUGMENTATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
- THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED AUGMENTATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE AUGMENTATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "AUGMENTATION INSPECTION NOTES" SHEET.
- THE CONTRACTOR SHALL NOTIFY THE TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED AUGMENTATION INSPECTIONS & TESTING (WHEN APPLICABLE).
- IT IS ASSUMED THAT ANY STRUCTURAL AUGMENTATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, ET CETERA.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

### STRUCTURAL ERECTION AND BRACING REQUIREMENTS

- THE STRUCTURAL DRAWINGS ILLUSTRATE THE COMPLETED STRUCTURE WITH ALL ELEMENTS IN THEIR FINAL POSITIONS, PROPERLY SUPPORTED AND BRACED.
- THE CONTRACTOR SHALL PROVIDE SHORING AND BRACING AS REQUIRED DURING CONSTRUCTION TO ENSURE STABILITY. DESIGN AND SEQUENCING OF CONSTRUCTION SHORING AND BRACING IS OUTSIDE THE SCOPE OF THIS WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, GUYING, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.

### BOLTS

- ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED GALVANIZED HIGH STRENGTH ASTM A325 OR A490 BOLTS WITH THREADS EXCLUDED FROM SHEAR PLANE.
- FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES, WITH BOLT HEADS FACING DOWN WHERE APPLICABLE.
- ALL BOLTS AT EVERY CONNECTION SHALL BE INSTALLED SNUG-TIGHT UNTIL THE SECTION IS FULLY COMPACTED AND ALL PLIES ARE JOINED, AND THEN TIGHTENED FURTHER BY AISC - "TURN OF THE NUT" METHOD. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.
- BOLT LENGTHS UP TO AND INCLUDING 4 DIAMETERS SHALL BE TENSIONED 1/3 TURN BEYOND SNUG-TIGHT. BOLT LENGTHS OVER 4 DIAMETERS SHALL BE 1 1/2 TURNS BEYOND SNUG-TIGHT.
- ALL BOLTED CONNECTIONS SHALL USE LOCK WASHERS.

### STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC STEEL CONSTRUCTION MANUAL AND SECTION 4 OF THE TIA CODE.
- PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING MINIMUM GRADES UNLESS OTHERWISE NOTED:
  - CHANNELS & ANGLES ..... ASTM A36, (Fy = 36 KSI)
  - PLATES ..... ASTM A36, (Fy = 36 KSI)
  - PIPES ..... ASTM A53 GR.B, (Fy = 35 KSI)
  - HSS ROUND ..... ASTM A500 GR.B, (Fy = 42 KSI)
  - HSS RECTANGULAR ..... ASTM A500 GR.B, (Fy = 46 KSI)
  - STRUCTURAL BOLTS ..... ASTM A325
  - U-BOLTS ..... ASTM A307 GR.A
  - NUTS FOR BOLTS ..... ASTM A563 (THREADING TO MATCH BOLT)
  - WASHERS FOR BOLTS ..... ASTM F436
  - SEE TABLE 5-1 OF THE TIA CODE FOR ADDITIONAL SHAPES AND STANDARDS THAT ARE NOT LISTED ABOVE.
- NON PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS PER THE TIA CODE:
  - THE CARBON EQUIVALENT OF STEEL SHALL NOT EXCEED 0.65 PER SECTION 5.4.2 OF THE TIA CODE
  - ELONGATION OF STEEL SHALL NOT BE LESS THAN 18%
  - TEST REPORTS SHALL BE IN ACCORDANCE WITH ASTM A6 OR A568
  - TOLERANCES SHALL BE IN ACCORDANCE WITH ASTM A6
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH AND COLD GALVANIZED.
- ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY. WELDING ELECTRODES SHALL BE E70XX.
- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECS AND CODES, LATEST EDITION.
- UPON REQUEST, THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER OF RECORD TO REVIEW FOR COMPLIANCE WITH DESIGN INTENT PRIOR TO THE START OF FABRICATION AND/OR ERECTION.
- TORCH-CUTTING OF ANY KIND SHALL NOT BE PERMITTED.
- ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERSIZE HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (3/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
- ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZINC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
- MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

### CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	CONSTRUCTION INSPECTIONS
	THIRD-PARTY CERTIFIED WELD INSPECTION (INCLUDING IBC SPECIAL INSPECTIONS)
√	GALVANIZING REPAIR MATERIAL PREPARATION, INSPECTION, & PAINT APPLICATION
√	PRIME CONTRACTOR'S AS-BUILT DOCUMENTS (SIGNED & DATED)
√	FABRICATION INSPECTION
√	MATERIAL TEST REPORT(S) / MILL CERTIFICATE(S)
√	PACKING SLIPS FOR STRUCTURAL MATERIALS

### NOMINAL HOLE DIMENSIONS

BOLT Ø	STANDARD HOLE Ø
1/2"Ø	9/16"Ø
5/8"Ø	11/16"Ø
3/4"Ø	13/16"Ø
7/8"Ø	15/16"Ø
1"Ø	1 1/8"Ø

**Sprint**

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WWW.GEOSTRUCTURAL.COM

### REVISIONS:

NO.	DATE	DESCRIPTION	BY
0	4/17/18	ISSUE FOR CONSTRUCTION	JAD

### CHECKED BY:

DWG

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### SITE INFORMATION:

MOUNT AUGMENTATION

CT23XC502

GRISWOLD, CT

LATITUDE: 41.537366  
LONGITUDE: -71.873447

### SHEET TITLE:

NOTES AND SPECIFICATIONS

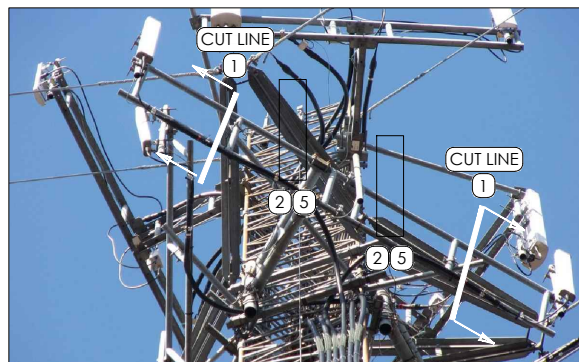
### SHEET NUMBER:

S2

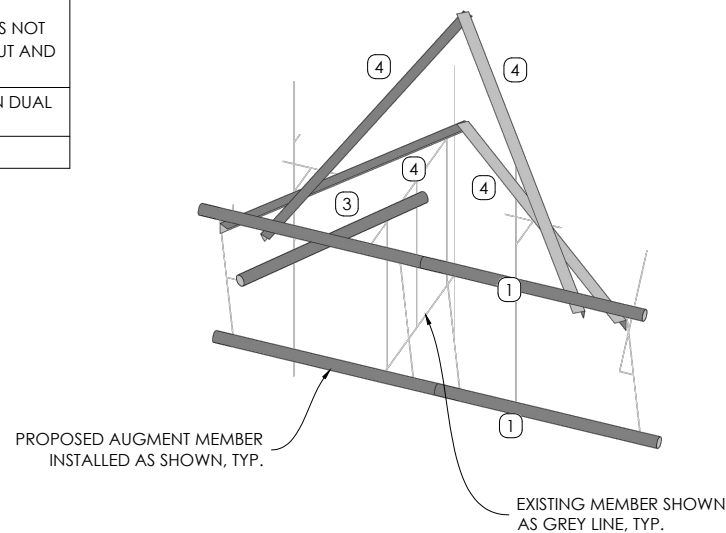
**NEW MOUNT AUGMENTATIONS**

- 1 CONTRACTOR TO MODIFY FACE WIDTH OF EXISTING MOUNT FRAME TO 8.0' WIDE. TOP AND BOTTOM PIPE RAIL MEMBERS TO BE CUT JUST BEYOND THE WELDED INTERIOR MOUNT PIPE LOCATIONS AS DEPICTED IN PHOTO BELOW. APPLY (2) COATS OF COLD-GALV. COMPOUND TO CUT MEMBER ENDS. [TYP. (3) SECTORS]
- 2 PIPE2.0STD MOUNT PIPES, [(6) TOTAL] W/ SITEPRO1 SCX X-K, [(6) TOTAL] CROSS-OVER PLATES. ATTACH ALL MOUNT PIPES TO EXISTING HORIZ. TOP RAIL.
- 3 TIE-BACK KIT SITEPRO1 PART# SPTB. ATTACH TIE-BACK TO EXISTING WELDED VERTICAL PIPE BRACE TO ADJACENT TOWER LEG SIMILAR TO EXISTING. [(3) KITS TOTAL]
- 4 V-BRACE KIT SITEPRO1 PART# SFR-K-L, 1 KIT PER SECTOR. ATTACH SFR-K-L GATE FOOT UPPER BRACKET TO EXISTING TOWER LEG ~2.3' ABOVE EXISTING TOP RAIL CENTERLINE. NOTE: IF THE SFR-K-L KIT IS NOT AVAILABLE, PROVIDE (12) TOTAL L2½x2½x3/16 x ~8' LONG REPLACEMENT ANGLES, FIELD-CUT AND DRILL TO SUIT. [(3) KITS TOTAL]
- 5 PANEL ANTENNAS TO BE INSTALLED IN POSITIONS 2 AND 3. RRH UNITS TO BE INSTALLED ON DUAL SWIVEL BRACKETS BEHIND PANEL ANTENNAS IN POSITIONS 2 AND 3.

AUGMENTATIONS SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ANY NEW EQUIPMENT.



**SECTOR FRAMES @ 165' AUGMENTATION**

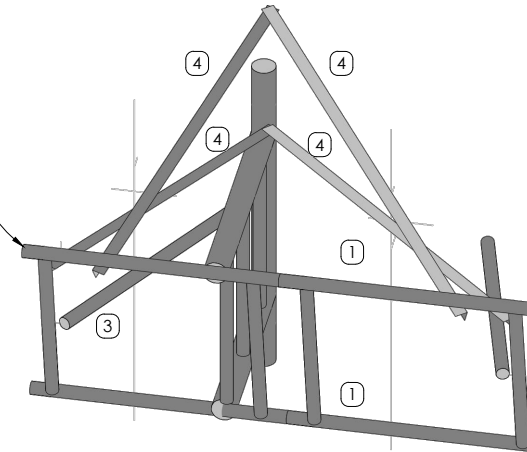


**MOUNT AUGMENTATION ISOLATION**  
SCALE: N.T.S.

**CONSTRUCTION NOTES**

- 1. SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.
- 2. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD-VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.
- 3. CONTRACTOR TO COORDINATE THE TEMPORARY REMOVAL/RELOCATION/REPLACEMENT OF ELEMENTS (E.G. COAX, CLIPS, TMAs, ETC.) CONNECTED TO, OR IN THE DIRECT PATH, OF NEW AUGMENTATION MEMBERS.

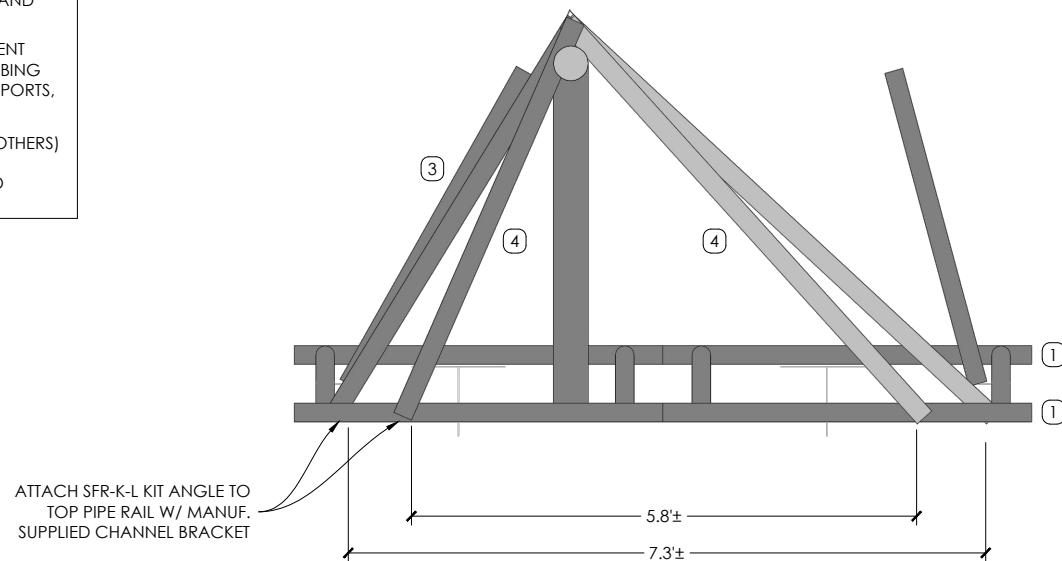
CUT PIPE TOP AND BOTTOM RAIL MEMBER ENDS BEYOND VERTICAL PIPE & APPLY COLD-GALV, TYP.



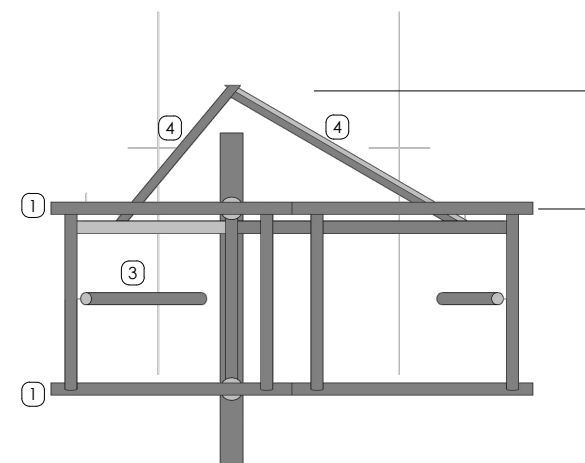
**AUGMENTED MOUNT ISOMETRIC**  
SCALE: N.T.S.

**INSTALLATION NOTES**

- 1. AUGMENT MEMBER(S) MAY NEED TO BE FIELD-CUT TO LENGTH TO ACCOMMODATE THIS INSTALLATION. CONTRACTOR TO CUT AND DRILL TO SUIT AS REQUIRED AND APPLY (2) COATS OF COLD-GALV. COMPOUND TO CUT MEMBER ENDS.
- 2. CONTRACTOR TO CHECK ALL EXISTING MEMBER CONNECTION BOLTS, PARTICULARLY STANDOFF TO TOWER BOLTS, FOR PROPER INSTALLATION AND TIGHTNESS.
- 3. COORDINATE PLACEMENT OF NEW AUGMENT MEMBERS WITH EXISTING TOWER AND CLIMBING FACILITY ELEMENTS (E.G. STEP PEGS, COAX PORTS, ETC.)
- 4. REFER TO CONSTRUCTION DRAWINGS (BY OTHERS) AND MOUNT STRUCTURAL ANALYSIS FOR APPROVED INSTALLATION LOCATIONS AND QUANTITIES OF APPURTENANCES.



**AUGMENTED MOUNT PLAN**  
SCALE: N.T.S.



**AUGMENTED MOUNT FRONT ELEVATION**  
SCALE: N.T.S.

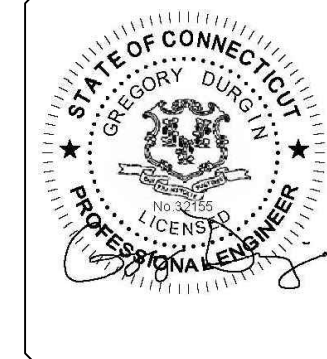


REVISIONS:

0	4/17/18	ISSUE FOR CONSTRUCTION	JAD

CHECKED BY: DWG

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SITE INFORMATION:  
**MOUNT AUGMENTATION**  
 CT23XC502  
 GRISWOLD, CT  
 LATITUDE: 41.537366  
 LONGITUDE: -71.873447

SHEET TITLE:  
**AUGMENTATIONS, SECTIONS & DETAILS**

SHEET NUMBER:  
**S3**