STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

July 23, 2013

Jennifer Palumbo
Real Estate Consultant
48 Spruce Street
Oakland, NJ 07436

RE: **EM-SPRINT-015-121015** – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 1280 Chopsey Hill Road, Bridgeport, Connecticut.

Dear Ms. Palumbo:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Prior to antenna installation, Sprint shall verify that the tower reinforcements described in the structural analysis report prepared by Glenmartin dated April 5, 2013, and stamped by Chi S. Lee have been implemented;
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the structural analysis;
- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated September 19, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/jb

c: The Honorable Bill Finch, Mayor, City of Bridgeport
David Kooris, Planning Director, City of Bridgeport
Global Tower Partners

Martin, David C.

From: Jennifer Notaro <jnotaro@transcendwireless.com>
Sent: Tuesday, July 02, 2013 1:22 PM
To: Martin, David C.
Cc: 'Roberts, Linda'; Bachman, Melanie; Cunliffe, Fred; 'Catalano, Lauren (Lauren)** CTR **'
Subject: CT03XC325 Sprint Exempt Modification filings
Attachments: CT03XC325 CT-5035_Post Mod Passing SA_Sprint_Verizon_T-Mobile_041213.pdf

David

It's been a long time coming ... but here's the passing full SA for CT03XC325 Chopsey Hill Road in Bridgeport.

Jennifer Notaro
Transcend Wireless
48 Spruce Street
Oakland, NJ 07436
Cell: 845-499-4712
Fax: 201-684-0066

From: Jennifer Notaro [mailto:jnotaro@transcendwireless.com]
Sent: Tuesday, March 12, 2013 3:32 PM
To: 'Martin, David C.'
Cc: 'Roberts, Linda'; 'Bachman, Melanie'; 'Cunliffe, Fred'; 'Catalano, Lauren (Lauren)** CTR **'
Subject: RE: Sprint Exempt Modification filings

David

Please see the attached structural for 627 Honeyspot Road in Stratford (CT60XC969) for your review.

Jennifer Notaro
Transcend Wireless
48 Spruce Street
Oakland, NJ 07436
C: 845-499-4712
F: 201-684-0066
****Please note new e-mail address****
jnotaro@transcendwireless.com

From: Martin, David C. [mailto:David.C.Martin@ct.gov]
Sent: Wednesday, December 05, 2012 9:02 AM
To: 'Jennifer Palumbo Notaro'
Cc: Roberts, Linda; Bachman, Melanie; Cunliffe, Fred; 'Catalano, Lauren (Lauren)** CTR **'
Subject: RE: Sprint Exempt Modification filings

Jennifer,

Thank you for sending me the revised structural analyses. However, we still appear to have the same problem. Both of these analyses seem only to be looking at the frame or structure that the antennas will be attached to and not at the entire tower. Here is KMB's conclusion for the Honeyspot Road site (emphasis added):

Based on our structural calculations the maximum stress on any antenna supporting member will be

10.678 ksi, which is less than the allowable member stress of 30.723 ksi.

Here is a typical conclusion from one of the structural analyses that we normally receive (emphasis added):

"The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time."

From: Jennifer Palumbo Notaro [mailto:jpalumbo@transcendwireless.com]
Sent: Tuesday, December 04, 2012 4:37 PM
To: Martin, David C.
Cc: Roberts, Linda; Bachman, Melanie; Cunliffe, Fred; 'Catalano, Lauren (Lauren)** CTR **'
Subject: RE: Sprint Exempt Modification filings

David

Please see the revised passing structural analyses per your request.

Jennifer Palumbo Notaro
Transcend Wireless
48 Spruce Street
Oakland, NJ 07436
C: 845-499-4712

From: Martin, David C. [mailto:David.C.Martin@ct.gov]
Sent: Wednesday, October 17, 2012 10:53 AM
To: JPalumbo@Transcendwireless.com
Cc: Roberts, Linda; Bachman, Melanie; Cunliffe, Fred
Subject: Sprint Exempt Modification filings

Jennifer Palumbo,

As in my previous email, there is a similar problem with the exempt modification filings for Sprint sites at 627 Honeyspot Road in Stratford ((CT60XC969) and 1280 Chopsey Hill Road in Bridgeport (CT03XC325). Please submit revised structural analyses for these two sites so that I may proceed with processing them.

David Martin
Siting Analyst

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 1 of 38

Global Tower Partners, LLC
750 Park of Commerce, Suite 300
Boca Raton, FL 33487

Attn: John Bozzetto
jbozzetto@gtpsites.com
561-886-5877

Steve Sirignano
ssirignano@gtpsites.com
561-886-3952

All documents and details are prepared under the direct supervision of a registered professional engineer under the laws of State of **Connecticut**. Enclosed calculations are certified and meet all specified purchaser requirements.

Proposed modification

- Reinforce Main Diagonals:
  1) 0' – 30' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
  2) 100' – 120' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
  3) 140' – 160' Install ½ pipe 3.5"OD x .30" thick
- Reinforce Redundant Diagonals:
  1) 10' – 20' Install ½ pipe 2.375"OD x .154" thick

Maximum stress ratio after the proposed modification:

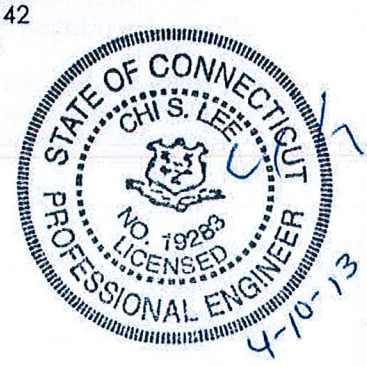
- Tower Legs - 46%
- Tower Main Bracings - 93% (1)
- Tower Redundant Bracings – 91% (2)
- Foundation – Acceptable (3)

Notes:
(1) Pre-Mods ratio was 140%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
(2) Pre-Mods ratio was 110%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
(3) Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"

With the proposed modification listed above, we concluded that the 240 ft Self Supported Tower and its foundation is structurally capable of supporting the proposed equipment and meets the requirements per **TIA/EIA-222-F-1996 & 2003 IBC** standards.

Prepared by
Xinguo Cai, PhD, PE
Project Engineer
GlenMartin Holding Inc.
Phone: 573-227-0031
Email: xinguo.cai@glenmartin.com

Reviewed by
Chi S. Lee, P.E., S.E.
Consulting Engineer
5801 Lorraine Ave. Sioux City, IA 51106
Phone & Fax: (712) 276-2142
Email: chislee-pe@q.com



Structural Analysis Report
(Post-Mods)

Introduction

This report summarizes the results of the Post-Mods structural analysis performed on the 240 ft. Self Supported Tower located in Fairfield county (1000 Trumbull Ave., Bridgeport), CT. The Post-Mods analysis is based on the Structural Analysis Report by Structural Components LLC. (File # CT-5035_SA_021913_Verizon.pdf, dated 02/19/2013).

Analysis

The tower was analyzed using tnxTower Software. The analysis assumes the tower is an un-corroded condition and have not deteriorated; and it therefore assumes the tower's capacity has not significantly changed from the "As-New" condition.

Basic wind speed:	85 mph (fastest mile), equivalent to 100 mph (3-second gust)
Wind with Ice:	½" ice with 74 mph (fastest mile)
Service wind speed:	50 mph (fastest mile)
Standard:	TIA/EIA-222-F-1996 & 2003 IBC

Antenna Loading

The analysis uses the same loading as the Structural Analysis Report by Structural Components LLC. (File # CT-5035_SA_021913_Verizon.pdf, dated 02/19/2013).

Proposed modification

- Reinforce Main Diagonals:
  1) 0' – 30' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
  2) 100' – 120' Install L2.5"x2.5"x3/8" (This has already been done per Inspection)
  3) 140' – 160' Install ½ pipe 3.5"OD x .30" thick
- Reinforce Redundant Diagonals:
  1) 10' – 20' Install ½ pipe 2.375"OD x .154" thick

Analysis Results

Maximum stress ratio after the proposed modification:

- Tower Legs - 46%
- Tower Main Bracings - 93% (1)
- Tower Redundant Bracings – 91% (2)
- Foundation – Acceptable (3)

Notes:

(1) Pre-Mods ratio was 140%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
(2) Pre-Mods ratio was 110%. Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"
(3) Reference Structural Components LLC Report "CT-5035_SA_021913_Verizon.pdf"

Conclusion

With the proposed modification listed above, we concluded that the 240 ft Self Supported Tower and its foundation is structurally capable of supporting the proposed equipment and meets the requirements per **TIA/EIA-222-F-1996 & 2003 IBC** standards.

Client should note that in the event a significant equipment modification is desired, separate specific analysis should be performed to guarantee structural integrity.

APPENDIX

1. Analysis disclosure notes
2. Tower Analysis Profile
3. Reinforced Member Property
4. Tower Analysis Output

APPENDIX 1. Analysis disclosure notes

1) All information produced through GlenMartin is the property of GlenMartin. Reproduction or modification of documentation in whole or part is strictly prohibited without GlenMartin written permission. This effort ensures both protection and safety of analysis studies.

2) All structures analyzed by GlenMartin assume proper installation from initial construction with successive maintenance performed on a routine basis. No comments can be made as to potential corrosion or misuse due to overloading, damage or member substitutes. Reduction in capacity due to cyclic loading has not been considered. All studies reflect data provided through client and applicable summary data sheets.

3) The client shall be responsible for supplying accurate and complete information as to proposed appurtenance loading. GlenMartin assumes field observations have been made or will be performed for verification of supplied data.

4) GlenMartin is not responsible for informing insurance carriers, regulatory officials or other concerned parties as to the proposed alterations to structure loading. Client accepts all liability and responsibility as to the use of and application of supplied review analysis.

5) Wind and Ice loading of all structures based on supplied request of client. Assumed loading shall be based on latest ANSI/EIA/TIA 222 code if not specified. Review of product conformance to local, state, or federal requirements is the responsibility of client.

6) Load carrying capacity of proposed mounts or hardware has not been investigated. Auxiliary studies may be made of such appurtenances at an additional cost to client.

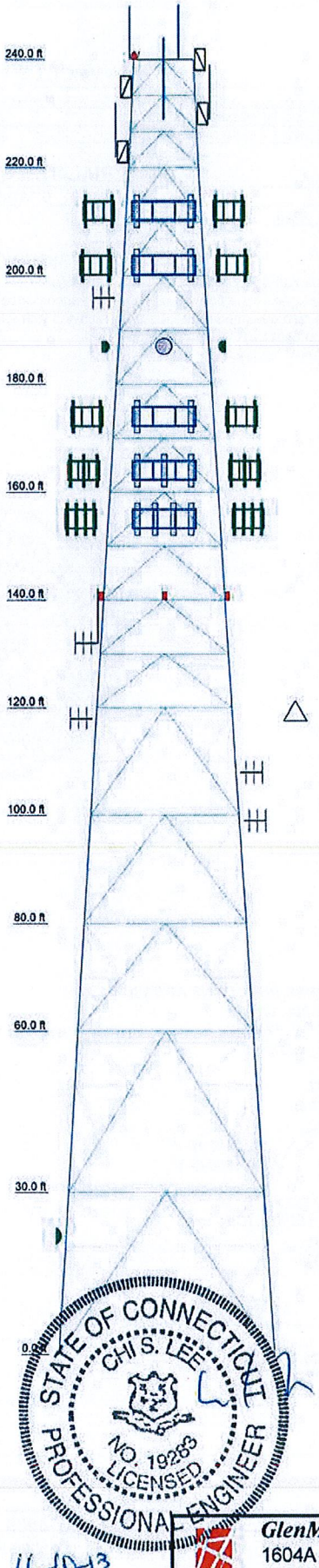
7) Stresses due to erection have not been considered in this study.

8) All work performed on structure is the responsibility of client. All safety procedures, equipment, temporary guying, scaffolding, or other working aids shall be reviewed by client.

APPENDIX 2. Tower Analysis Profile

(see document in next page)

Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs		P10x.5 (10" x-stf)		ROHN 8 EH	P8x.5 (8" x-stf)		ROHN 8 EH	P8x.5 (8" x-stf)			
Leg Grade		A572-50									
Diagonals	P3x.216 w/ L2.5x2.5x3/8		P3x.216 (3" std)		B	P3x.216 (3" std)	A	P2.5x.203 (2 1/2" std)		P2x.154 (2" Std.)	
Diagonal Grade			A572-50								
Top Girts					N.A.					P2x.154 (2" Std.)	
Horizontals	P3.5x.226 (3 1/2" std)		P3x.216 (3" std)			P2.5x.203 (2 1/2" std)			P2x.154 (2" Std.)		
Red. Horizontals		P1.5x.145 (1 1/2" std)							N.A.		
Red. Diagonals	D	P1.5x.145 (1 1/2" std)		P2x.154 (2" Std.)	C				N.A.		
Red. Hips		P1.5x.145 (1 1/2" std)							N.A.		
Inner Bracing		P3x.216 (3" std)			P2x.154 (2" Std.)		L3 1/2x3 1/2x1/4	L3x3x3/16	L2 1/2x2 1/2x3/16	L2x2x1/8	
Face Width (ft) 40.3333	36.5833	32.8333	30.3333	27.6771	25.1771	22.6771	20.1771	17.6771	15.1771	12.9271	10.9271
# Panels @ (ft)	2 @ 30		3 @ 20				10 @ 10				3 @ 6.66667
Weight (lb) 64877.5	11434.5	8248.2	6344.0	5405.0	5481.6	5266.5	5640.9	4426.4	4019.6	3336.1	3673.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
5/8" x 8' Lightning Rod	240	(3) 10' Sector Frames	174
Flash Beacon Lighting	240	(4) LGP21901 Diplexer (ATI)	164
3" Dia 10' Omni	240	(4) LGP21901 Diplexer (ATI)	164
4" dia x 4' pipe mount	240	(4) LGP21901 Diplexer (ATI)	164
2' Side Arm Mount	240	DC6-48-60-18-8F (ATI)	164
3" Dia 8' Omni (DEAD)	235	(3) 10' Sector Frames	164
2' Side Arm Mount (DEAD)	235	(2) RRU 11 Single (ATI)	164
4" Dia 8' Omni	230	(4) LGP 21401 (ATI)	164
3" Dia 8' Omni	230	(4) LGP 21401 (ATI)	164
2' Side Arm Mount	230	(4) LGP 21401 (ATI)	164
2' Side Arm Mount	230	4" Dia 20' Omni	164
2' Side Arm Mount	230	(2) 7770 (ATI)	164
4" x 12' Omni	223	(2) 7770 (ATI)	164
2' Side Arm Mount	223	(2) 7770 (ATI)	164
(2) HBX-6516DS-VTM (MetroPCS)	212	P65-16-XLH-RR (ATI)	164
(2) HBX-6516DS-VTM (MetroPCS)	212	P65-16-XLH-RR (ATI)	164
(2) HBX-6516DS-VTM (MetroPCS)	212	P65-16-XLH-RR (ATI)	164
(3) 10' Sector Frames (MetroPCS)	212	(2) RRU 11 Single (ATI)	164
AIR 21 B2AB4P (TMobile)	202	(2) RRU 11 Single (ATI)	164
AIR 21 B2AB4P (TMobile)	202	(2) FD9R6004/2C-3L Diplexer (Verizon)	155
AIR 21 B2AB4P (TMobile)	202	(2) FD9R6004/2C-3L Diplexer (Verizon)	155
AIR 21 B4A B2P (TMobile)	202	(2) ALU RRH2X40 AWS (Verizon)	155
AIR 21 B4A B2P (TMobile)	202	(2) ALU RRH2X40 AWS (Verizon)	155
AIR 21 B4A B2P (TMobile)	202	(2) ALU RRH2X40 AWS (Verizon)	155
KRY 112 144/1 (TMobile)	202	DB T1 6Z 8AB OZ (Verizon)	155
KRY 112 144/1 (TMobile)	202	(3) 10' Sector Frames (Verizon)	155
KRY 112 144/1 (TMobile)	202	BXA-80063/6 (Verizon)	155
(3) 10' Sector Frames (TMobile)	202	BXA-80063/6 (Verizon)	155
3' Yagi	196	BXA-80063/6 (Verizon)	155
4" dia x 4' pipe mount	196	BXA-171063-8CF (Verizon)	155
4" dia x 4' pipe mount	187	BXA-171063-8CF (Verizon)	155
4" dia x 4' pipe mount	187	BXA-171063-8CF (Verizon)	155
4" dia x 4' pipe mount	187	BXA-70063-6CF (Verizon)	155
VHLP800-11	187	BXA-70063-6CF (Verizon)	155
2ft HP Dish w/Shroud	187	BXA-70063-6CF (Verizon)	155
2ft HP Dish w/Shroud	187	MGD3-800 (Verizon)	155
Notch Filters (Sprint)	180.6	MGD3-800 (Verizon)	155
Notch Filters (Sprint)	180.6	MGD3-800 (Verizon)	155
Notch Filters (Sprint)	180.6	(2) FD9R6004/2C-3L Diplexer (Verizon)	155
LLPX310R (Clearwire)	180.6	Small Light	140
LLPX310R (Clearwire)	180.6	Small Light	140
LLPX310R (Clearwire)	180.6	Small Light	140
DAP Heads (Clearwire)	180.6	1.5" Dia 8' Omni (DEAD)	137
DAP Heads (Clearwire)	180.6	2' Side Arm Mount (DEAD)	137
DAP Heads (Clearwire)	180.6	2' Side Arm Mount (DEAD)	132
APXVSPP18-C-A20 (Sprint)	180.6	4' Yagi (DEAD)	132
APXV9ERR18-C (Sprint)	180.6	2' Side Arm Mount (DEAD)	118
(2) 1900MHz 2x40W RRU (Sprint)	180.6	2" Dia 10' Omni	118
(2) 1900MHz 2x40W RRU (Sprint)	180.6	2' Side Arm Mount (DEAD)	108
(2) 1900MHz 2x40W RRU (Sprint)	180.6	3" Dia 10' Omni	108
(3) 10' Sector Frames (Sprint)	180.6	3' Yagi (DEAD)	99
(2) RR90-11-00DBL (Sprint)	180.6	2' Side Arm Mount (DEAD)	99
(2) RR90-11-00DBL (Sprint)	180.6	Side Arm Mount	80
(2) RR90-11-00DBL (Sprint)	180.6	3ft Dish w/o Radome	22
APXVSPP18-C-A20 (Sprint)	180.6	4" dia x 4' pipe mount	22
800MHz 2x50W RRU (Sprint)	180.6	GPS Unit w/ mt (Verizon)	20
800MHz 2x50W RRU (Sprint)	180.6	GPS Unit w/ mt (TMobile)	8
800MHz 2x50W RRU (Sprint)	180.6		
(2) 950F65T4E-M	174		
(2) 5' x 5" x 2" PCS Panels	174		
(2) 5' x 5" x 2" PCS Panels	174		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	C	P1.5x.145 (1 1/2" std)
B	P2.5x.203 w/ L2.5x2.5x3/8	D	P1.5x.145 w/ 1/2 pipe 2.375"x.154"

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.

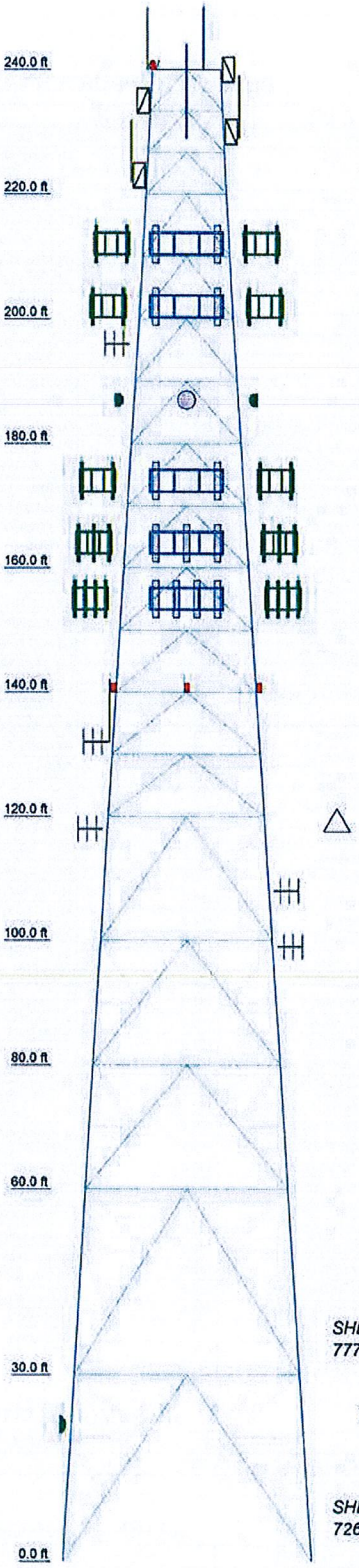
STATE OF CONNECTICUT
CHI S. LEE
NO. 19283
LICENSED
PROFESSIONAL ENGINEER

4-10-13

GlenMartin Holding Inc.
1604A Business Loop 70 W
Columbia, MO 65202
Phone: (800) 486-1223
FAX: (660) 882-7200

Job: Site: Tartaglia CT-5035			
Project: Post Mod SA for a 240 ft SST			
Client: GTP	Drawn by: XIN		App'd:
Code: TIA/EIA-222-F	Date: 04/05/13		Scale: NTS
Path:			Dwg No. E-1

Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs		P10x.5 (10" x-stf)		ROHN 8 EH	P8x.5 (8" x-stf)		ROHN 8 EH		P8x.5 (8" x-stf)		
Leg Grade					A572-50						
Diagonals	P3x.216 w/ L2.5x2.5x3/8		P3x.216 (3" std)		B	P3x.216 (3" std)	A		P2.5x.203 (2 1/2" std)		P2x.154 (2" Std.)
Diagonal Grade						A572-50					
Top Girts					N.A.						P2x.154 (2" Std.)
Horizontals	P3.5x.226 (3 1/2" std)		P3x.216 (3" std)			P2.5x.203 (2 1/2" std)				P2x.154 (2" Std.)	
Red. Horizontals			P1.5x.145 (1 1/2" std)					N.A.			
Red. Diagonals	D	P1.5x.145 (1 1/2" std)		P2x.154 (2" Std.)	C			N.A.			
Red. Hips			P1.5x.145 (1 1/2" std)					N.A.			
Inner Bracing		P3x.216 (3" std)			P2x.154 (2" Std.)	L3 1/2x3 1/2x1/4		L3x3x3/16	L2 1/2x2 1/2x3/16	L2x2x1/8	
Face Width (ft) 40.3333	36.5833	32.8333	30.3333	27.6771	25.1771	22.6771	20.1771	17.6771	15.1771	12.9271	10.9271
# Panels @ (ft)	2 @ 30			3 @ 20				10 @ 10			3 @ 6.66667
Weight (lb) 64877.5	11436.6	9348.2	6344.0	5406.6	5481.6	5366.5	5640.9	4424.4	4016.6	3836.1	3673.9



SYMBOL LIST

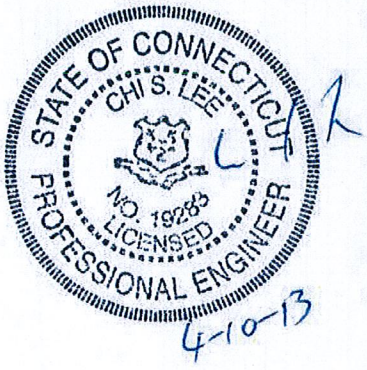
MARK	SIZE	MARK	SIZE
A	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	C	P1.5x.145 (1 1/2" std)
B	P2.5x.203 w/ L2.5x2.5x3/8	D	P1.5x.145 w/ 1/2 pipe 2.375"x.154"

MATERIAL STRENGTH

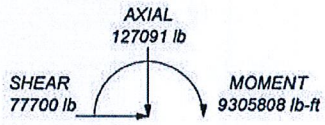
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

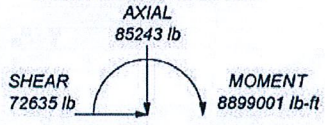
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 92.7%



MAX. CORNER REACTIONS AT BASE:
DOWN: 308768 lb
UPLIFT: -226266 lb
SHEAR: 46372 lb



TORQUE 79787 lb-ft
74 mph WIND - 0.5000 in ICE



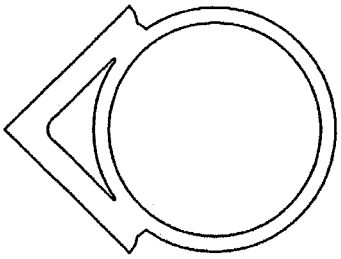
TORQUE 73687 lb-ft
REACTIONS - 85 mph WIND

GlenMartin Holding Inc.
1604A Business Loop 70 W
Columbia, MO 65202
Phone: (800) 486-1223
FAX: (660) 882-7200

Job: Site: Tartaglia CT-5035		
Project: Post Mod SA for a 240 ft SST		
Client: GTP	Drawn by: XIN	App'd:
Code: TIA/EIA-222-F	Date: 04/05/13	Scale: NTS
Path:		Dwg No. E-1

APPENDIX 3. Reinforced Member Property

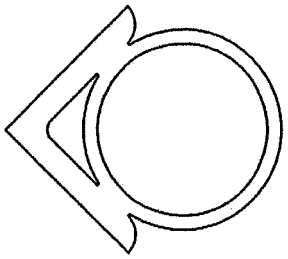
(see document in next page)



---------- REGIONS ----------

Area: 3.949
Perimeter: 28.091
Bounding box: X: -2.159 -- 2.596
Y: -1.768 -- 1.768
Centroid: X: 0.000
Y: 0.000
Moments of inertia: X: 4.511
Y: 7.073
Product of inertia: XY: 0.000
Radii of gyration: X: 1.069
Y: 1.338

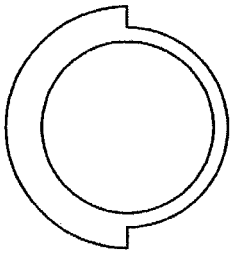
Sec 11 Diagonal
P3x.216 w/ L2.5"x2.5"x3/8"



---------- REGIONS ----------

Area: 3.400
Perimeter: 24.020
Bounding box: X: -1.808 -- 2.193
Y: -1.768 -- 1.768
Centroid: X: 0.000
Y: 0.000
Moments of inertia: X: 2.964
Y: 3.851
Product of inertia: XY: 0.000
Radii of gyration: X: 0.934
Y: 1.064

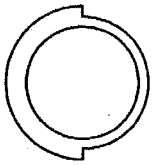
Sec 7 Diagonal
P2.5x.203 w/ L2.5"x2.5"x3/8"



---------- REGIONS ----------

Area: 3.200
Perimeter: 18.331
Bounding box: X: -1.264 -- 1.912
Y: -1.738 -- 1.738
Centroid: X: 0.000
Y: 0.000
Moments of inertia: X: 3.432
Y: 2.713
Product of inertia: XY: 0.000
Radii of gyration: X: 1.036
Y: 0.921

Sec 5 Diagonal
P2.5x.203 w/ 1/2 pipe 3.5"x.300"



---------- REGIONS ----------

Area: 1.296
Perimeter: 11.819
Bounding box: X: -0.853 -- 1.201
Y: -1.104 -- 1.104
Centroid: X: 0.000
Y: 0.000
Moments of inertia: X: 0.573
Y: 0.492
Product of inertia: XY: 0.000
Radii of gyration: X: 0.665
Y: 0.616

Sec 11 Redundant Diagonal
P1.5x.145 w/ 1/2 pipe 2.375"x.154"

APPENDIX 4. Tower Analysis Output

(see document in next page)

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 9 of 38

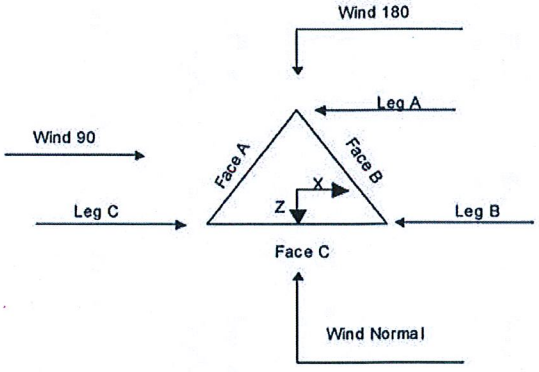
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 240.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 10.93 ft at the top and 40.33 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

- Tower is located in Fairfield County, Connecticut.
- Basic wind speed of 85 mph.
- Nominal ice thickness of 0.5000 in.
- Ice density of 56 pcf.
- A wind speed of 74 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 50 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.333.
- Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		



Triangular Tower

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 10 of 38

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	240.00-220.00			10.93	1	20.00
T2	220.00-200.00			12.93	1	20.00
T3	200.00-180.00			15.18	1	20.00
T4	180.00-160.00			17.68	1	20.00
T5	160.00-140.00			20.18	1	20.00
T6	140.00-120.00			22.68	1	20.00
T7	120.00-100.00			25.18	1	20.00
T8	100.00-80.00			27.68	1	20.00
T9	80.00-60.00			30.33	1	20.00
T10	60.00-30.00			32.83	1	30.00
T11	30.00-0.00			36.58	1	30.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	240.00-220.00	6.67	K Brace Down	No	Yes	0.0000	0.0000
T2	220.00-200.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T3	200.00-180.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T4	180.00-160.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T5	160.00-140.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T6	140.00-120.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T7	120.00-100.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T8	100.00-80.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T9	80.00-60.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T10	60.00-30.00	30.00	K2 Down	No	Yes	0.0000	0.0000
T11	30.00-0.00	30.00	K2 Down	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 240.00-220.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Pipe	P2x.154 (2" Std.)	A572-50 (50 ksi)
T2 220.00-200.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T3 200.00-180.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T4 180.00-160.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T5 160.00-140.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Arbitrary Shape	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	A572-50 (50 ksi)
T6 140.00-120.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T7 120.00-100.00	Pipe	P8x.5 (8" x-str)	A572-50 (50 ksi)	Arbitrary Shape	P2.5x.203 w/ L2.5x2.5x3/8	A572-50 (50 ksi)
T8 100.00-80.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T9 80.00-60.00	Pipe	P10x.5 (10" x-str)	A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T10 60.00-30.00	Pipe	P10x.5 (10" x-str)	A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T11 30.00-0.00	Pipe	P10x.5 (10" x-str)	A572-50 (50 ksi)	Arbitrary Shape	P3x.216 w/ L2.5x2.5x3/8	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 240.00-220.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2x.154 (2" Std.)	A572-50 (50 ksi)
T2 220.00-200.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2x.154 (2" Std.)	A572-50 (50 ksi)
T3 200.00-180.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2x.154 (2" Std.)	A572-50 (50 ksi)
T4 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T5 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T6 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T7 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Pipe	P2.5x.203 (2 1/2" std)	A572-50 (50 ksi)
T8 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T9 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T10 60.00-30.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T11 30.00-0.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3.5x.226 (3 1/2" std)	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 240.00-220.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T2 220.00-200.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T3 200.00-180.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 180.00-160.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T5 160.00-140.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T6 140.00-120.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T7 120.00-100.00	Solid Round		A572-50 (50 ksi)	Pipe	P2x.154 (2" Std.)	A572-50 (50 ksi)
T8 100.00-80.00	Solid Round		A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T9 80.00-60.00	Solid Round		A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T10 60.00-30.00	Solid Round		A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)
T11 30.00-0.00	Solid Round		A572-50 (50 ksi)	Pipe	P3x.216 (3" std)	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T7	A572-50	Horizontal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
120.00-100.00	(50 ksi)	Diagonal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Hip (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Hip Diagonal		P2.5x.203 (2.5" Std)	1
T8	A572-50	Horizontal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
100.00-80.00	(50 ksi)	Diagonal (1)	Pipe	P2x.154 (2" Std.)	1
		Hip (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Hip Diagonal		P2.5x.203 (2 1/2" std)	1
T9 80.00-60.00	A572-50	Horizontal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
	(50 ksi)	Diagonal (1)	Pipe	P2x.154 (2" Std.)	1
		Hip (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Hip Diagonal		P3x.216 (3" std)	1
T10	A572-50	Horizontal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
60.00-30.00	(50 ksi)	Horizontal (2)		P2x.154 (2" Std.)	
		Diagonal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Diagonal (2)		P2x.154 (2" Std.)	
		Hip (1)	Pipe	P1.5x.145 (1 1/2" std)	1
		Hip (2)		P1.5x.145 (1 1/2" std)	
		Hip Diagonal		P3x.216 (3" std)	1
T11 30.00-0.00	A572-50	Horizontal (1)	Pipe	P1.5x.145 (1 1/2" std)	1
	(50 ksi)	Horizontal (2)		P2x.154 (2" Std.)	
		Diagonal (1)	Arbitrary Shape	P1.5x.145 w/ 1/2 pipe	1
		Diagonal (2)		2.375"x.154"	
		Hip (1)	Pipe	P2.5x.203	1
		Hip (2)		P1.5x.145 (1 1/2" std)	
		Hip Diagonal		P2x.154 (2" Std.) P3x.216 (3" std)	1

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000
240.00-220.00			(36 ksi)					
T2	0.00	0.0000	A36	1	1	1	36.0000	36.0000
220.00-200.00			(36 ksi)					
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000
200.00-180.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
180.00-160.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
160.00-140.00			(36 ksi)					
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000
140.00-120.00			(36 ksi)					
T7	0.00	0.0000	A36	1	1	1	36.0000	36.0000
120.00-100.00			(36 ksi)					
T8 100.00-80.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T9 80.00-60.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T10 60.00-30.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T11 30.00-0.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					

Tower Section Geometry (cont'd)

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 13 of 38

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors[1] X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	No	No	1	1	1	1	1	1	1	1
240.00-220.00				1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T7	No	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T8	No	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T9 80.00-60.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10	No	No	1	1	1	1	1	1	1	1
60.00-30.00				1	1	1	1	1	1	1
T11 30.00-0.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
240.00-220.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
220.00-200.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
200.00-180.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
180.00-160.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
160.00-140.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	1.0000	8	0.6250	3	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
140.00-120.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	1.0000	8	0.7500	3	0.7500	2	0.7500	0	0.6250	0	0.7500	2	0.6250	0
120.00-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8 100.00-80.00	Flange	1.0000	12	0.7500	3	0.7500	2	0.6250	0	0.6250	0	0.7500	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9 80.00-60.00	Flange	1.0000	12	0.7500	3	0.7500	2	0.6250	0	0.6250	0	0.7500	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10 60.00-30.00	Flange	1.0000	12	0.7500	3	0.7500	2	0.6250	0	0.6250	0	0.7500	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11 30.00-0.00	Flange	1.0000	0	0.8750	3	0.7500	2	0.6250	0	0.6250	0	0.7500	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 14 of 38

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	240.00 - 5.00	0.0000	0.49	1	1	1.5500	1.5500		0.66
LDF5-50A (7/8 FOAM)	A	Yes	Ar (CfAe)	230.00 - 5.00	0.0000	-0.48	2	2	0.5000	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	223.00 - 5.00	0.0000	0.47	1	1	1.5500	1.5500		0.66
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	212.00 - 5.00	-3.0000	0.4	12	6	0.5000	1.9800		0.82
LDF5-50A (7/8 FOAM)	A	Yes	Ar (CfAe)	196.00 - 5.00	0.0000	-0.46	1	1	1.0900	1.0900		0.33
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	187.00 - 5.00	0.0000	0.25	4	4	0.5000	0.6300		0.15
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	180.60 - 5.00	-2.0000	0.4	6	6	0.5000	1.9800		0.82
2" Rigid Conduit	B	Yes	Ar (CfAe)	180.60 - 5.00	0.0000	0.3	2	2	1.0000	2.0000		2.80
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	180.60 - 5.00	0.0000	0.25	3	3	1.5500	1.5500		0.66
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CfAe)	174.00 - 5.00	0.0000	0.45	6	6	0.5000	1.9800		0.82
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	164.00 - 5.00	0.0000	0.35	1	1	1.5500	1.5500		0.66
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	164.00 - 5.00	-3.0000	0.45	12	6	0.5000	1.9800		0.82
LDF2-50A (3/8 FOAM)	A	Yes	Ar (CfAe)	164.00 - 5.00	-2.0000	0.35	3	3	0.4400	0.4400		0.08
LDF7-50A (1-5/8 FOAM) (Verizon)	A	Yes	Ar (CfAe)	155.00 - 5.00	0.0000	-0.35	12	6	0.5000	1.9800		0.82
1" Conduit	C	Yes	Ar (CfAe)	240.00 - 5.00	0.0000	0.4	1	1	1.0000	1.0000		0.75
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	132.00 - 5.00	0.0000	0.49	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	118.00 - 5.00	0.0000	0.2	1	1	1.0900	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	108.00 - 5.00	0.0000	0.42	1	1	1.5500	1.5500		0.66
LDF4P-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	99.00 - 5.00	0.0000	0.48	1	1	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM) (Verizon)	A	Yes	Ar (CfAe)	20.00 - 5.00	0.0000	-0.5	1	1	0.6300	0.6300		0.15
Cat 5	A	Yes	Ar (CfAe)	22.00 - 5.00	0.0000	-0.49	1	1	0.3750	0.3750		0.10
LDF4P-50A (1/2 FOAM) ***	A	Yes	Ar (CfAe)	8.00 - 5.00	0.0000	-0.48	1	1	0.6300	0.6300		0.15
LDF7-50A (1-5/8 FOAM) (TMobile)	B	Yes	Ar (CfAe)	202.00 - 5.00	0.0000	-0.45	12	6	0.5000	1.9800		0.82
1-5/8" Hybrid (TMobile)	B	Yes	Ar (CfAe)	202.00 - 5.00	0.0000	-0.43	1	1	1.9800	1.9800		0.82
1-5/8" Hybrid (Verizon)	A	Yes	Ar (CfAe)	155.00 - 5.00	0.0000	-0.43	1	1	1.9800	1.9800		0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	240.00-220.00	A	1.817	0.000	0.000	0.000	6.60
		B	0.000	0.000	0.000	0.000	0.00
		C	4.638	0.000	0.000	0.000	30.18
T2	220.00-200.00	A	15.513	0.000	0.000	0.000	131.28
		B	2.310	0.000	0.000	0.000	21.32
		C	6.833	0.000	0.000	0.000	41.40

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 15 of 38

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T3	200.00-180.00	A	24.887	0.000	0.000	0.000	215.28
		B	24.770	0.000	0.000	0.000	220.76
		C	7.660	0.000	0.000	0.000	45.54
T4	180.00-160.00	A	29.650	0.000	0.000	0.000	256.92
		B	47.827	0.000	0.000	0.000	406.08
		C	34.900	0.000	0.000	0.000	182.04
T5	160.00-140.00	A	64.575	0.000	0.000	0.000	578.10
		B	53.767	0.000	0.000	0.000	435.60
		C	36.967	0.000	0.000	0.000	192.60
T6	140.00-120.00	A	70.350	0.000	0.000	0.000	631.40
		B	54.397	0.000	0.000	0.000	437.40
		C	36.967	0.000	0.000	0.000	192.60
T7	120.00-100.00	A	70.350	0.000	0.000	0.000	631.40
		B	54.817	0.000	0.000	0.000	438.60
		C	39.635	0.000	0.000	0.000	203.82
T8	100.00-80.00	A	70.350	0.000	0.000	0.000	631.40
		B	55.814	0.000	0.000	0.000	441.45
		C	41.367	0.000	0.000	0.000	212.40
T9	80.00-60.00	A	70.350	0.000	0.000	0.000	631.40
		B	55.867	0.000	0.000	0.000	441.60
		C	41.367	0.000	0.000	0.000	212.40
T10	60.00-30.00	A	105.525	0.000	0.000	0.000	947.10
		B	83.800	0.000	0.000	0.000	662.40
		C	62.050	0.000	0.000	0.000	318.60
T11	30.00-0.00	A	89.414	0.000	0.000	0.000	793.65
		B	69.833	0.000	0.000	0.000	552.00
		C	51.708	0.000	0.000	0.000	265.50

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	240.00-220.00	A	0.500	1.742	1.325	0.000	0.000	25.61
		B		0.000	0.000	0.000	0.000	0.00
		C		8.221	0.000	0.000	0.000	77.31
T2	220.00-200.00	A	0.500	6.463	15.050	0.000	0.000	379.85
		B		0.993	2.067	0.000	0.000	59.44
		C		11.833	0.000	0.000	0.000	109.82
T3	200.00-180.00	A	0.500	11.237	23.317	0.000	0.000	619.77
		B		11.034	22.794	0.000	0.000	621.61
		C		12.365	0.620	0.000	0.000	122.15
T4	180.00-160.00	A	0.500	13.407	28.037	0.000	0.000	741.25
		B		21.127	45.783	0.000	0.000	1051.50
		C		30.400	20.667	0.000	0.000	528.56
T5	160.00-140.00	A	0.500	26.750	62.417	0.000	0.000	1652.16
		B		22.617	51.983	0.000	0.000	1140.41
		C		33.800	20.667	0.000	0.000	559.16
T6	140.00-120.00	A	0.500	29.233	67.583	0.000	0.000	1800.77
		B		24.247	51.983	0.000	0.000	1150.50
		C		33.800	20.667	0.000	0.000	559.16
T7	120.00-100.00	A	0.500	29.233	67.583	0.000	0.000	1800.77
		B		25.333	51.983	0.000	0.000	1157.22
		C		38.635	20.667	0.000	0.000	597.88
T8	100.00-80.00	A	0.500	29.233	67.583	0.000	0.000	1800.77
		B		27.914	51.983	0.000	0.000	1173.18
		C		41.533	20.667	0.000	0.000	623.43
T9	80.00-60.00	A	0.500	29.233	67.583	0.000	0.000	1800.77
		B		28.050	51.983	0.000	0.000	1174.02
		C		41.533	20.667	0.000	0.000	623.43
T10	60.00-30.00	A	0.500	43.850	101.375	0.000	0.000	2701.16
		B		42.075	77.975	0.000	0.000	1761.04
		C		62.300	31.000	0.000	0.000	935.15

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 16 of 38

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T11	30.00-0.00	A	0.500	40.935	84.479	0.000	0.000	2276.88
		B		35.063	64.979	0.000	0.000	1467.53
		C		51.917	25.833	0.000	0.000	779.29

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
5/8" x 8' Lightning Rod	B	From Face	0.00	0.0000	240.00	No Ice	0.50	0.50	10.00
			0.00			1/2" Ice	1.31	1.31	15.56
			5.00						
Flash Beacon Lighting	C	From Leg	0.00	0.0000	240.00	No Ice	2.70	2.70	50.00
			0.00			1/2" Ice	3.10	3.10	70.00
			0.00						
3" Dia 10' Omni	C	From Leg	1.00	0.0000	240.00	No Ice	3.00	3.00	25.00
			0.00			1/2" Ice	4.03	4.03	46.79
			5.00						
4" dia x 4' pipe mount	C	From Leg	0.00	0.0000	240.00	No Ice	1.21	1.21	43.20
			0.00			1/2" Ice	1.47	1.47	54.83
			0.00						
2' Side Arm Mount	B	From Leg	1.50	0.0000	240.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
3" Dia 8' Omni (DEAD)	A	From Leg	3.00	0.0000	235.00	No Ice	2.40	2.40	20.00
			0.00			1/2" Ice	3.19	3.19	37.51
			4.00						
3" Dia 8' Omni	A	From Leg	3.00	0.0000	230.00	No Ice	2.40	2.40	20.00
			0.00			1/2" Ice	3.19	3.19	37.51
			4.00						
4" Dia 8' Omni	B	From Leg	3.00	0.0000	230.00	No Ice	2.40	2.40	20.00
			0.00			1/2" Ice	3.19	3.19	37.51
			4.00						
4" x 12' Omni	C	From Leg	3.00	0.0000	223.00	No Ice	3.60	3.60	30.00
			0.00			1/2" Ice	4.83	4.83	56.06
			4.00						
2' Side Arm Mount (DEAD)	C	From Leg	1.50	0.0000	235.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
2' Side Arm Mount	A	From Leg	1.50	0.0000	230.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
2' Side Arm Mount	A	From Leg	1.50	0.0000	230.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
2' Side Arm Mount	B	From Leg	1.50	0.0000	230.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
2' Side Arm Mount	C	From Leg	1.50	0.0000	223.00	No Ice	2.00	2.00	50.00
			0.00			1/2" Ice	3.00	3.00	100.00
			0.00						
(2) HBX-6516DS-VTM (MetroPCS)	A	From Leg	4.00	0.0000	212.00	No Ice	3.49	3.17	28.15
			0.00			1/2" Ice	3.87	3.80	58.44
			0.00						
(2) HBX-6516DS-VTM (MetroPCS)	B	From Leg	4.00	0.0000	212.00	No Ice	3.49	3.17	28.15
			0.00			1/2" Ice	3.87	3.80	58.44
			0.00						
(2) HBX-6516DS-VTM (MetroPCS)	C	From Leg	4.00	0.0000	212.00	No Ice	3.49	3.17	28.15
			0.00			1/2" Ice	3.87	3.80	58.44
			0.00						
(3) 10' Sector Frames (MetroPCS)	C	None		0.0000	212.00	No Ice	23.00	23.00	700.00
						1/2"	34.00	34.00	1000.00

GLENMARTIN
1604 Business Loop 70 W, A
Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
						Ice			
3' Yagi	C	From Leg	1.50	0.0000	196.00	No Ice	2.08	2.08	30.95
			0.00			1/2"	3.79	3.79	51.64
			0.00			Ice			
4" dia x 4' pipe mount	C	From Leg	0.00	0.0000	196.00	No Ice	1.21	1.21	43.20
			0.00			1/2"	1.47	1.47	54.83
			0.00			Ice			
4" dia x 4' pipe mount	A	From Leg	0.00	0.0000	187.00	No Ice	1.21	1.21	43.20
			0.00			1/2"	1.47	1.47	54.83
			0.00			Ice			
4" dia x 4' pipe mount	B	From Leg	0.00	0.0000	187.00	No Ice	1.21	1.21	43.20
			0.00			1/2"	1.47	1.47	54.83
			0.00			Ice			
4" dia x 4' pipe mount	C	From Leg	0.00	0.0000	187.00	No Ice	1.21	1.21	43.20
			0.00			1/2"	1.47	1.47	54.83
			0.00			Ice			
(3) 10' Sector Frames	C	None		0.0000	180.60	No Ice	23.00	23.00	700.00
(Sprint)						1/2"	34.00	34.00	1000.00
						Ice			
(2) RR90-11-00DBL	A	From Leg	3.00	0.0000	180.60	No Ice	5.60	3.27	21.00
(Sprint)			0.00			1/2"	5.99	3.63	55.48
			0.00			Ice			
(2) RR90-11-00DBL	B	From Leg	3.00	0.0000	180.60	No Ice	5.60	3.27	21.00
(Sprint)			0.00			1/2"	5.99	3.63	55.48
			0.00			Ice			
(2) RR90-11-00DBL	C	From Leg	3.00	0.0000	180.60	No Ice	5.60	3.27	21.00
(Sprint)			0.00			1/2"	5.99	3.63	55.48
			0.00			Ice			
APXVSPP18-C-A20	A	From Leg	3.00	0.0000	180.60	No Ice	8.26	5.28	57.00
(Sprint)			0.00			1/2"	8.81	5.74	106.52
			0.00			Ice			
APXVSPP18-C-A20	B	From Leg	3.00	0.0000	180.60	No Ice	8.26	5.28	57.00
(Sprint)			0.00			1/2"	8.81	5.74	106.52
			0.00			Ice			
APXV9ERR18-C	C	From Leg	3.00	0.0000	180.60	No Ice	8.40	5.81	62.00
(Sprint)			0.00			1/2"	8.95	6.27	114.52
			0.00			Ice			
(2) 1900MHz 2x40W RRU	A	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.19	44.00
(Sprint)			0.00			1/2"	3.17	1.35	63.32
			0.00			Ice			
(2) 1900MHz 2x40W RRU	B	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.19	44.00
(Sprint)			0.00			1/2"	3.17	1.35	63.32
			0.00			Ice			
(2) 1900MHz 2x40W RRU	C	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.19	44.00
(Sprint)			0.00			1/2"	3.17	1.35	63.32
			0.00			Ice			
800MHz 2x50W RRU	A	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.52	54.00
(Sprint)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
800MHz 2x50W RRU	B	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.52	54.00
(Sprint)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
800MHz 2x50W RRU	C	From Leg	3.00	0.0000	180.60	No Ice	2.94	1.52	54.00
(Sprint)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
Notch Filters	A	From Leg	3.00	0.0000	180.60	No Ice	0.87	0.42	9.45
(Sprint)			0.00			1/2"	0.99	0.52	15.75
			0.00			Ice			
Notch Filters	B	From Leg	3.00	0.0000	180.60	No Ice	0.87	0.42	9.45
(Sprint)			0.00			1/2"	0.99	0.52	15.75
			0.00			Ice			
Notch Filters	C	From Leg	3.00	0.0000	180.60	No Ice	0.87	0.42	9.45
(Sprint)			0.00			1/2"	0.99	0.52	15.75

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 18 of 38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
			0.00			Ice			
LLPX310R	A	From Leg	3.00	0.0000	180.60	No Ice	4.90	1.94	29.00
(Clearwire)			0.00			1/2"	5.25	2.21	55.14
			0.00			Ice			
LLPX310R	B	From Leg	3.00	0.0000	180.60	No Ice	4.90	1.94	29.00
(Clearwire)			0.00			1/2"	5.25	2.21	55.14
			0.00			Ice			
LLPX310R	C	From Leg	3.00	0.0000	180.60	No Ice	4.90	1.94	29.00
(Clearwire)			0.00			1/2"	5.25	2.21	55.14
			0.00			Ice			
DAP Heads	A	From Leg	2.00	0.0000	180.60	No Ice	3.54	2.27	45.00
(Clearwire)			0.00			1/2"	3.80	2.51	70.08
			0.00			Ice			
DAP Heads	B	From Leg	2.00	0.0000	180.60	No Ice	3.54	2.27	45.00
(Clearwire)			0.00			1/2"	3.80	2.51	70.08
			0.00			Ice			
DAP Heads	C	From Leg	2.00	0.0000	180.60	No Ice	3.54	2.27	45.00
(Clearwire)			0.00			1/2"	3.80	2.51	70.08
			0.00			Ice			
(2) 950F65T4E-M	A	From Leg	3.00	0.0000	174.00	No Ice	6.13	4.24	16.00
			0.00			1/2"	6.59	4.62	54.95
			0.00			Ice			
(2) 5' x 5" x 2" PCS Panels	B	From Leg	3.00	0.0000	174.00	No Ice	3.26	1.67	50.00
			0.00			1/2"	3.64	2.16	66.14
			0.00			Ice			
(2) 5' x 5" x 2" PCS Panels	C	From Leg	3.00	0.0000	174.00	No Ice	3.26	1.67	50.00
			0.00			1/2"	3.64	2.16	66.14
			0.00			Ice			
(3) 10' Sector Frames	C	From Leg	0.00	0.0000	174.00	No Ice	23.00	23.00	700.00
			0.00			1/2"	34.00	34.00	1000.00
			0.00			Ice			
4" Dia 20' Omni	C	From Leg	1.00	0.0000	164.00	No Ice	4.00	4.00	55.00
			0.00			1/2"	6.00	6.00	100.00
			0.00			Ice			
(2) 7770	A	From Leg	3.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)			0.00			1/2"	6.31	3.27	67.63
			0.00			Ice			
(2) 7770	B	From Leg	3.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)			0.00			1/2"	6.31	3.27	67.63
			0.00			Ice			
(2) 7770	C	From Leg	3.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)			0.00			1/2"	6.31	3.27	67.63
			0.00			Ice			
P65-16-XLH-RR	A	From Leg	3.00	0.0000	164.00	No Ice	8.40	4.70	29.00
(AT&T)			0.00			1/2"	8.95	5.15	76.28
			0.00			Ice			
P65-16-XLH-RR	B	From Leg	3.00	0.0000	164.00	No Ice	8.40	4.70	29.00
(AT&T)			0.00			1/2"	8.95	5.15	76.28
			0.00			Ice			
P65-16-XLH-RR	C	From Leg	3.00	0.0000	164.00	No Ice	8.40	4.70	29.00
(AT&T)			0.00			1/2"	8.95	5.15	76.28
			0.00			Ice			
(2) RRU 11 Single	A	From Leg	2.00	0.0000	164.00	No Ice	2.94	1.52	54.00
(AT&T)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
(2) RRU 11 Single	B	From Leg	2.00	0.0000	164.00	No Ice	2.94	1.52	54.00
(AT&T)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
(2) RRU 11 Single	C	From Leg	2.00	0.0000	164.00	No Ice	2.94	1.52	54.00
(AT&T)			0.00			1/2"	3.17	1.69	75.64
			0.00			Ice			
(4) LGP 21401	A	From Leg	2.00	0.0000	164.00	No Ice	0.95	0.37	17.50
(AT&T)			0.00			1/2"	1.09	0.48	23.31

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 19 of 38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft	°	ft		ft²	ft²	lb
			0.00			Ice			
(4) LGP 21401	B	From Leg	2.00	0.0000	164.00	No Ice	0.95	0.37	17.50
(AT&T)			0.00			1/2"	1.09	0.48	23.31
			0.00			Ice			
(4) LGP 21401	C	From Leg	2.00	0.0000	164.00	No Ice	0.95	0.37	17.50
(AT&T)			0.00			1/2"	1.09	0.48	23.31
			0.00			Ice			
(4) LGP21901 Diplexer	A	From Leg	2.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2"	0.30	0.17	7.70
			0.00			Ice			
(4) LGP21901 Diplexer	B	From Leg	2.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2"	0.30	0.17	7.70
			0.00			Ice			
(4) LGP21901 Diplexer	C	From Leg	2.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2"	0.30	0.17	7.70
			0.00			Ice			
DC6-48-60-18-8F	C	From Leg	1.00	0.0000	164.00	No Ice	2.22	2.22	42.00
(AT&T)			0.00			1/2"	2.44	2.44	61.25
			0.00			Ice			
(3) 10' Sector Frames	C	None		0.0000	164.00	No Ice	23.00	23.00	700.00
						1/2"	34.00	34.00	1000.00
						Ice			
BXA-80063/6	A	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	14.90
(Verizon)			0.00			1/2"	8.28	4.20	55.55
			0.00			Ice			
BXA-80063/6	B	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	14.90
(Verizon)			0.00			1/2"	8.28	4.20	55.55
			0.00			Ice			
BXA-80063/6	C	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	14.90
(Verizon)			0.00			1/2"	8.28	4.20	55.55
			0.00			Ice			
BXA-171063-8CF	A	From Leg	3.00	0.0000	155.00	No Ice	2.94	2.16	10.50
(Verizon)			0.00			1/2"	3.26	2.46	29.28
			0.00			Ice			
BXA-171063-8CF	B	From Leg	3.00	0.0000	155.00	No Ice	2.94	2.16	10.50
(Verizon)			0.00			1/2"	3.26	2.46	29.28
			0.00			Ice			
BXA-171063-8CF	C	From Leg	3.00	0.0000	155.00	No Ice	2.94	2.16	10.50
(Verizon)			0.00			1/2"	3.26	2.46	29.28
			0.00			Ice			
BXA-70063-6CF	A	From Leg	3.00	0.0000	155.00	No Ice	7.73	4.16	14.00
(Verizon)			0.00			1/2"	8.27	4.60	56.49
			0.00			Ice			
BXA-70063-6CF	B	From Leg	3.00	0.0000	155.00	No Ice	7.73	4.16	14.00
(Verizon)			0.00			1/2"	8.27	4.60	56.49
			0.00			Ice			
BXA-70063-6CF	C	From Leg	3.00	0.0000	155.00	No Ice	7.73	4.16	14.00
(Verizon)			0.00			1/2"	8.27	4.60	56.49
			0.00			Ice			
MGD3-800	A	From Leg	3.00	0.0000	155.00	No Ice	3.23	2.37	15.00
(Verizon)			0.00			1/2"	3.57	2.70	35.03
			0.00			Ice			
MGD3-800	B	From Leg	3.00	0.0000	155.00	No Ice	3.23	2.37	15.00
(Verizon)			0.00			1/2"	3.57	2.70	35.03
			0.00			Ice			
MGD3-800	C	From Leg	3.00	0.0000	155.00	No Ice	3.23	2.37	15.00
(Verizon)			0.00			1/2"	3.57	2.70	35.03
			0.00			Ice			
(2) FD9R6004/2C-3L Diplexer	A	From Leg	2.00	0.0000	155.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2"	0.45	0.14	4.90
			0.00			Ice			
(2) FD9R6004/2C-3L Diplexer	B	From Leg	2.00	0.0000	155.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2"	0.45	0.14	4.90

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 20 of 38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft	°	ft		ft²	ft²	lb
			0.00			Ice			
(2) FD9R6004/2C-3L Diplexer	C	From Leg	2.00	0.0000	155.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2"	0.45	0.14	4.90
			0.00			Ice			
(2) ALU RRH2X40 AWS	A	From Leg	2.00	0.0000	155.00	No Ice	2.53	1.59	44.00
(Verizon)			0.00			1/2"	2.76	1.80	61.44
			0.00			Ice			
(2) ALU RRH2X40 AWS	B	From Leg	2.00	0.0000	155.00	No Ice	2.53	1.59	44.00
(Verizon)			0.00			1/2"	2.76	1.80	61.44
			0.00			Ice			
(2) ALU RRH2X40 AWS	C	From Leg	2.00	0.0000	155.00	No Ice	2.53	1.59	44.00
(Verizon)			0.00			1/2"	2.76	1.80	61.44
			0.00			Ice			
DB T1 6Z 8AB OZ	C	From Leg	1.00	0.0000	155.00	No Ice	5.60	2.33	44.00
(Verizon)			0.00			1/2"	5.92	2.56	80.13
			0.00			Ice			
(3) 10' Sector Frames	C	From Leg	0.00	0.0000	155.00	No Ice	23.00	23.00	700.00
(Verizon)			0.00			1/2"	34.00	34.00	1000.00
			0.00			Ice			
Small Light	A	From Leg	0.50	0.0000	140.00	No Ice	0.13	0.13	2.00
			0.00			1/2"	0.19	0.19	4.01
			0.00			Ice			
Small Light	B	From Leg	0.50	0.0000	140.00	No Ice	0.13	0.13	2.00
			0.00			1/2"	0.19	0.19	4.01
			0.00			Ice			
Small Light	C	From Leg	0.50	0.0000	140.00	No Ice	0.13	0.13	2.00
			0.00			1/2"	0.19	0.19	4.01
			0.00			Ice			
1.5" Dia 8' Omni	C	From Leg	1.00	0.0000	137.00	No Ice	2.00	2.00	5.00
(DEAD)			0.00			1/2"	3.03	3.03	18.00
			0.00			Ice			
2' Side Arm Mount	C	From Leg	1.00	0.0000	137.00	No Ice	2.00	2.00	50.00
(DEAD)			0.00			1/2"	3.00	3.00	100.00
			0.00			Ice			
2' Side Arm Mount	C	From Leg	1.00	0.0000	132.00	No Ice	2.00	2.00	50.00
(DEAD)			0.00			1/2"	3.00	3.00	100.00
			0.00			Ice			
4' Yagi	C	From Leg	1.00	0.0000	132.00	No Ice	2.08	2.08	30.95
(DEAD)			0.00			1/2"	3.79	3.79	51.64
			0.00			Ice			
3' Yagi	B	From Leg	1.00	0.0000	99.00	No Ice	2.08	2.08	30.95
(DEAD)			0.00			1/2"	3.79	3.79	51.64
			0.00			Ice			
2' Side Arm Mount	B	From Leg	0.00	0.0000	99.00	No Ice	2.00	2.00	50.00
(DEAD)			0.00			1/2"	3.00	3.00	100.00
			0.00			Ice			
2' Side Arm Mount	B	From Leg	0.00	0.0000	118.00	No Ice	2.00	2.00	50.00
(DEAD)			0.00			1/2"	3.00	3.00	100.00
			0.00			Ice			
2' Side Arm Mount	B	From Leg	0.00	0.0000	108.00	No Ice	2.00	2.00	50.00
(DEAD)			0.00			1/2"	3.00	3.00	100.00
			0.00			Ice			
2" Dia 10' Omni	C	From Leg	1.00	0.0000	118.00	No Ice	2.00	2.00	10.00
			0.00			1/2"	3.03	3.03	25.00
			0.00			Ice			
3" Dia 10' Omni	B	From Leg	1.00	0.0000	108.00	No Ice	3.00	3.00	25.00
			0.00			1/2"	4.03	4.03	46.79
			0.00			Ice			
Side Arm Mount	C	None		0.0000	80.00	No Ice	6.00	6.00	100.00
						1/2"	8.00	8.00	150.00
						Ice			
GPS Unit w/ mt	C	None		0.0000	20.00	No Ice	1.80	1.80	15.00
(Verizon)						1/2"	2.30	2.30	19.50

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 21 of 38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
4" dia x 4' pipe mount	C	None		0.0000	22.00	Ice No Ice 1/2" Ice	1.21 1.47	1.21 1.47	43.20 54.83
GPS Unit w/ mt (TMobile)	C	None		0.0000	8.00	No Ice 1/2" Ice	1.80 2.30	1.80 2.30	15.00 19.50
***									
AIR 21 B2AB4P (TMobile)	A	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	83.00 124.90
AIR 21 B2AB4P (TMobile)	B	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	83.00 124.90
AIR 21 B2AB4P (TMobile)	C	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	83.00 124.90
AIR 21 B4A B2P (TMobile)	A	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	70.00 111.90
AIR 21 B4A B2P (TMobile)	B	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	70.00 111.90
AIR 21 B4A B2P (TMobile)	C	From Leg	3.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	6.53 6.98	4.36 4.77	70.00 111.90
KRY 112 144/1 (TMobile)	A	From Leg	2.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	0.41 0.50	0.17 0.24	11.00 14.18
KRY 112 144/1 (TMobile)	B	From Leg	2.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	0.41 0.50	0.17 0.24	11.00 14.18
KRY 112 144/1 (TMobile)	C	From Leg	2.00 0.00 0.00	0.0000	202.00	No Ice 1/2" Ice	0.41 0.50	0.17 0.24	11.00 14.18
(3) 10' Sector Frames (TMobile)	C	None		0.0000	202.00	No Ice 1/2" Ice	23.00 34.00	23.00 34.00	700.00 1000.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight lb
3ft Dish w/o Radome	C	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	0.0000		22.00	3.00	No Ice 1/2" Ice	7.07 7.47	50.00 88.35
VHLP800-11	A	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	0.0000		187.00	3.00	No Ice 1/2" Ice	7.07 7.47	47.60 85.95
2ft HP Dish w/Shroud	B	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 0.00	0.0000		187.00	2.00	No Ice 1/2" Ice	3.14 3.41	27.00 45.00
2ft HP Dish w/Shroud	C	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 0.00	0.0000		187.00	2.00	No Ice 1/2" Ice	3.14 3.41	27.00 45.00

Tower Pressures - No Ice

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 22 of 38

$G_H = 1.102$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 240.00-220.00	230.00	1.741	32	252.935	A	0.000	47.067	28.798	61.19	0.000	0.000
					B	0.000	45.384		63.45	0.000	0.000
					C	0.000	49.680		57.97	0.000	0.000
T2 220.00-200.00	210.00	1.697	31	295.439	A	0.000	59.733	28.811	48.23	0.000	0.000
					B	0.000	47.327		60.87	0.000	0.000
					C	0.000	51.578		55.86	0.000	0.000
T3 200.00-180.00	190.00	1.649	30	342.945	A	0.000	70.339	28.825	40.98	0.000	0.000
					B	0.000	70.229		41.04	0.000	0.000
					C	0.000	54.090		53.29	0.000	0.000
T4 180.00-160.00	170.00	1.597	30	392.945	A	0.000	78.089	28.825	36.91	0.000	0.000
					B	0.000	95.207		30.28	0.000	0.000
					C	0.000	83.033		34.71	0.000	0.000
T5 160.00-140.00	150.00	1.541	29	442.945	A	0.000	115.642	28.825	24.93	0.000	0.000
					B	0.000	105.515		27.32	0.000	0.000
					C	0.000	89.775		32.11	0.000	0.000
T6 140.00-120.00	130.00	1.48	27	492.945	A	0.000	123.601	28.825	23.32	0.000	0.000
					B	0.000	108.631		26.53	0.000	0.000
					C	0.000	92.274		31.24	0.000	0.000
T7 120.00-100.00	110.00	1.411	26	542.945	A	0.000	129.763	28.825	22.21	0.000	0.000
					B	0.000	111.631		25.82	0.000	0.000
					C	0.000	93.827		30.72	0.000	0.000
T8 100.00-80.00	90.00	1.332	25	594.511	A	0.000	131.963	28.834	21.85	0.000	0.000
					B	0.000	114.562		25.17	0.000	0.000
					C	0.000	97.243		29.65	0.000	0.000
T9 80.00-60.00	70.00	1.24	23	649.618	A	0.000	143.026	35.927	25.12	0.000	0.000
					B	0.000	124.550		28.85	0.000	0.000
					C	0.000	106.057		33.87	0.000	0.000
T10 60.00-30.00	45.00	1.093	20	1068.177	A	0.000	213.710	53.890	25.22	0.000	0.000
					B	0.000	188.129		28.65	0.000	0.000
					C	0.000	162.524		33.16	0.000	0.000
T11 30.00-0.00	15.00	1	18	1180.677	A	0.000	213.206	53.890	25.28	0.000	0.000
					B	0.000	189.398		28.45	0.000	0.000
					C	0.000	166.942		32.28	0.000	0.000

Discrete Appurtenance Pressures - No Ice $G_H = 1.102$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft²	C_AA_C Side ft²
5/8" x 8' Lightning Rod	60.0000	10.00	2.73	-1.58	245.00	1.773	33	0.50	0.50
Flash Beacon Lighting	240.0000	50.00	-5.46	3.15	240.00	1.763	33	2.70	2.70
3" Dia 10' Omni	240.0000	25.00	-6.33	3.65	245.00	1.773	33	3.00	3.00
4" dia x 4' pipe mount	240.0000	43.20	-5.46	3.15	240.00	1.763	33	1.21	1.21
2' Side Arm Mount	120.0000	50.00	6.76	3.90	240.00	1.763	33	2.00	2.00
3" Dia 8' Omni	0.0000	20.00	0.00	-9.60	239.00	1.761	33	2.40	2.40
3" Dia 8' Omni	0.0000	20.00	0.00	-9.89	234.00	1.750	32	2.40	2.40
4" Dia 8' Omni	120.0000	20.00	8.56	4.94	234.00	1.750	32	2.40	2.40
4" x 12' Omni	240.0000	30.00	-8.91	5.15	227.00	1.735	32	3.60	3.60
2' Side Arm Mount	240.0000	50.00	-7.01	4.05	235.00	1.752	32	2.00	2.00
2' Side Arm Mount	0.0000	50.00	0.00	-8.39	230.00	1.741	32	2.00	2.00
2' Side Arm Mount	0.0000	50.00	0.00	-8.39	230.00	1.741	32	2.00	2.00
2' Side Arm Mount	120.0000	50.00	7.26	4.19	230.00	1.741	32	2.00	2.00
2' Side Arm Mount	240.0000	50.00	-7.61	4.40	223.00	1.726	32	2.00	2.00
HBX-6516DS-VTM	0.0000	56.30	0.00	-11.98	212.00	1.701	31	6.98	6.35
HBX-6516DS-VTM	120.0000	56.30	10.38	5.99	212.00	1.701	31	6.98	6.35
HBX-6516DS-VTM	240.0000	56.30	-10.38	5.99	212.00	1.701	31	6.98	6.35
(3) 10' Sector Frames	0.0000	700.00	0.00	0.00	212.00	1.701	31	23.00	23.00
3' Yagi	240.0000	30.95	-9.14	5.28	196.00	1.664	31	2.08	2.08
4" dia x 4' pipe mount	240.0000	43.20	-7.84	4.53	196.00	1.664	31	1.21	1.21
4" dia x 4' pipe mount	0.0000	43.20	0.00	-9.70	187.00	1.641	30	1.21	1.21

GLENMARTIN
1604 Business Loop 70 W, A
Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
CT-5035, Tartaglia	CT-5035	CT	23 of 38

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
4" dia x 4' pipe mount	120.0000	43.20	8.40	4.85	187.00	1.641	30	1.21	1.21
4" dia x 4' pipe mount	240.0000	43.20	-8.40	4.85	187.00	1.641	30	1.21	1.21
(3) 10' Sector Frames	0.0000	700.00	0.00	0.00	180.60	1.625	30	23.00	23.00
RR90-11-00DBL	0.0000	42.00	0.00	-13.16	180.60	1.625	30	11.20	6.53
RR90-11-00DBL	120.0000	42.00	11.40	6.58	180.60	1.625	30	11.20	6.53
RR90-11-00DBL	240.0000	42.00	-11.40	6.58	180.60	1.625	30	11.20	6.53
APXVSPP18-C-A20	0.0000	57.00	0.00	-13.16	180.60	1.625	30	8.26	5.28
APXVSPP18-C-A20	120.0000	57.00	11.40	6.58	180.60	1.625	30	8.26	5.28
APXV9ERR18-C	240.0000	62.00	-11.40	6.58	180.60	1.625	30	8.40	5.81
1900MHz 2x40W RRU	0.0000	88.00	0.00	-13.16	180.60	1.625	30	5.88	2.38
1900MHz 2x40W RRU	120.0000	88.00	11.40	6.58	180.60	1.625	30	5.88	2.38
1900MHz 2x40W RRU	240.0000	88.00	-11.40	6.58	180.60	1.625	30	5.88	2.38
800MHz 2x50W RRU	0.0000	54.00	0.00	-13.16	180.60	1.625	30	2.94	1.52
800MHz 2x50W RRU	120.0000	54.00	11.40	6.58	180.60	1.625	30	2.94	1.52
800MHz 2x50W RRU	240.0000	54.00	-11.40	6.58	180.60	1.625	30	2.94	1.52
Notch Filters	0.0000	9.45	0.00	-13.16	180.60	1.625	30	0.87	0.42
Notch Filters	120.0000	9.45	11.40	6.58	180.60	1.625	30	0.87	0.42
Notch Filters	240.0000	9.45	-11.40	6.58	180.60	1.625	30	0.87	0.42
LLPX310R	0.0000	29.00	0.00	-13.16	180.60	1.625	30	4.90	1.94
LLPX310R	120.0000	29.00	11.40	6.58	180.60	1.625	30	4.90	1.94
LLPX310R	240.0000	29.00	-11.40	6.58	180.60	1.625	30	4.90	1.94
DAP Heads	0.0000	45.00	0.00	-12.16	180.60	1.625	30	3.54	2.27
DAP Heads	120.0000	45.00	10.53	6.08	180.60	1.625	30	3.54	2.27
DAP Heads	240.0000	45.00	-10.53	6.08	180.60	1.625	30	3.54	2.27
950F65T4E-M	0.0000	32.00	0.00	-13.64	174.00	1.608	30	12.25	8.47
5' x 5" x 2" PCS Panels	120.0000	100.00	11.81	6.82	174.00	1.608	30	6.53	3.33
5' x 5" x 2" PCS Panels	240.0000	100.00	-11.81	6.82	174.00	1.608	30	6.53	3.33
(3) 10' Sector Frames	240.0000	700.00	-9.21	5.32	174.00	1.608	30	23.00	23.00
4" Dia 20' Omni	240.0000	55.00	-10.70	6.18	164.00	1.581	29	4.00	4.00
7770	0.0000	70.00	0.00	-14.36	164.00	1.581	29	11.76	5.86
7770	120.0000	70.00	12.44	7.18	164.00	1.581	29	11.76	5.86
7770	240.0000	70.00	-12.44	7.18	164.00	1.581	29	11.76	5.86
P65-16-XLH-RR	0.0000	29.00	0.00	-14.36	164.00	1.581	29	8.40	4.70
P65-16-XLH-RR	120.0000	29.00	12.44	7.18	164.00	1.581	29	8.40	4.70
P65-16-XLH-RR	240.0000	29.00	-12.44	7.18	164.00	1.581	29	8.40	4.70
RRU 11 Single	0.0000	108.00	0.00	-13.36	164.00	1.581	29	5.88	3.04
RRU 11 Single	120.0000	108.00	11.57	6.68	164.00	1.581	29	5.88	3.04
RRU 11 Single	240.0000	108.00	-11.57	6.68	164.00	1.581	29	5.88	3.04
LGP 21401	0.0000	70.00	0.00	-13.36	164.00	1.581	29	3.81	1.47
LGP 21401	120.0000	70.00	11.57	6.68	164.00	1.581	29	3.81	1.47
LGP 21401	240.0000	70.00	-11.57	6.68	164.00	1.581	29	3.81	1.47
LGP21901 Diplexer	0.0000	22.00	0.00	-13.36	164.00	1.581	29	0.93	0.47
LGP21901 Diplexer	120.0000	22.00	11.57	6.68	164.00	1.581	29	0.93	0.47
LGP21901 Diplexer	240.0000	22.00	-11.57	6.68	164.00	1.581	29	0.93	0.47
DC6-48-60-18-8F	240.0000	42.00	-10.70	6.18	164.00	1.581	29	2.22	2.22
(3) 10' Sector Frames	0.0000	700.00	0.00	0.00	164.00	1.581	29	23.00	23.00
BXA-80063/6	0.0000	14.90	0.00	-15.01	155.00	1.556	29	7.74	3.76
BXA-80063/6	120.0000	14.90	13.00	7.51	155.00	1.556	29	7.74	3.76
BXA-80063/6	240.0000	14.90	-13.00	7.51	155.00	1.556	29	7.74	3.76
BXA-171063-8CF	0.0000	10.50	0.00	-15.01	155.00	1.556	29	2.94	2.16
BXA-171063-8CF	120.0000	10.50	13.00	7.51	155.00	1.556	29	2.94	2.16
BXA-171063-8CF	240.0000	10.50	-13.00	7.51	155.00	1.556	29	2.94	2.16
BXA-70063-6CF	0.0000	14.00	0.00	-15.01	155.00	1.556	29	7.73	4.16
BXA-70063-6CF	120.0000	14.00	13.00	7.51	155.00	1.556	29	7.73	4.16
BXA-70063-6CF	240.0000	14.00	-13.00	7.51	155.00	1.556	29	7.73	4.16
MGD3-800	0.0000	15.00	0.00	-15.01	155.00	1.556	29	3.23	2.37
MGD3-800	120.0000	15.00	13.00	7.51	155.00	1.556	29	3.23	2.37
MGD3-800	240.0000	15.00	-13.00	7.51	155.00	1.556	29	3.23	2.37
FD9R6004/2C-3L Diplexer	0.0000	5.20	0.00	-14.01	155.00	1.556	29	0.73	0.17
FD9R6004/2C-3L Diplexer	120.0000	5.20	12.13	7.01	155.00	1.556	29	0.73	0.17
FD9R6004/2C-3L Diplexer	240.0000	5.20	-12.13	7.01	155.00	1.556	29	0.73	0.17
ALU RRH2X40 AWS	0.0000	88.00	0.00	-14.01	155.00	1.556	29	5.06	3.18

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 24 of 38

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_c Front ft^2	C_AA_c Side ft^2
ALU RRH2X40 AWS	120.0000	88.00	12.13	7.01	155.00	1.556	29	5.06	3.18
ALU RRH2X40 AWS	240.0000	88.00	-12.13	7.01	155.00	1.556	29	5.06	3.18
DB T1 6Z 8AB OZ	240.0000	44.00	-11.27	6.51	155.00	1.556	29	5.60	2.33
(3) 10' Sector Frames	240.0000	700.00	-10.40	6.01	155.00	1.556	29	23.00	23.00
Small Light	0.0000	2.00	0.00	-13.59	140.00	1.511	28	0.13	0.13
Small Light	120.0000	2.00	11.77	6.80	140.00	1.511	28	0.13	0.13
Small Light	240.0000	2.00	-11.77	6.80	140.00	1.511	28	0.13	0.13
1.5" Dia 8' Omni	240.0000	5.00	-12.39	7.15	137.00	1.502	28	2.00	2.00
2' Side Arm Mount	240.0000	50.00	-12.39	7.15	137.00	1.502	28	2.00	2.00
2' Side Arm Mount	240.0000	50.00	-12.70	7.33	132.00	1.486	27	2.00	2.00
4' Yagi	240.0000	30.95	-12.70	7.33	132.00	1.486	27	2.08	2.08
3' Yagi	120.0000	30.95	14.77	8.53	99.00	1.369	25	2.08	2.08
2' Side Arm Mount	120.0000	50.00	13.90	8.03	99.00	1.369	25	2.00	2.00
2' Side Arm Mount	120.0000	50.00	12.71	7.34	118.00	1.439	27	2.00	2.00
2' Side Arm Mount	120.0000	50.00	13.34	7.70	108.00	1.403	26	2.00	2.00
2" Dia 10' Omni	240.0000	10.00	-13.58	7.84	118.00	1.439	27	2.00	2.00
3" Dia 10' Omni	120.0000	25.00	14.20	8.20	108.00	1.403	26	3.00	3.00
Side Arm Mount	0.0000	100.00	0.00	0.00	80.00	1.288	24	6.00	6.00
GPS Unit w/ mt	0.0000	15.00	0.00	0.00	20.00	1.000	18	1.80	1.80
4" dia x 4' pipe mount	0.0000	43.20	0.00	0.00	22.00	1.000	18	1.21	1.21
GPS Unit w/ mt	0.0000	15.00	0.00	0.00	8.00	1.000	18	1.80	1.80
AIR 21 B2AB4P	0.0000	83.00	0.00	-11.63	202.00	1.678	31	6.53	4.36
AIR 21 B2AB4P	120.0000	83.00	10.07	5.82	202.00	1.678	31	6.53	4.36
AIR 21 B2AB4P	240.0000	83.00	-10.07	5.82	202.00	1.678	31	6.53	4.36
AIR 21 B4A B2P	0.0000	70.00	0.00	-11.63	202.00	1.678	31	6.53	4.36
AIR 21 B4A B2P	120.0000	70.00	10.07	5.82	202.00	1.678	31	6.53	4.36
AIR 21 B4A B2P	240.0000	70.00	-10.07	5.82	202.00	1.678	31	6.53	4.36
KRY 112 144/1	0.0000	11.00	0.00	-10.63	202.00	1.678	31	0.41	0.17
KRY 112 144/1	120.0000	11.00	9.21	5.32	202.00	1.678	31	0.41	0.17
KRY 112 144/1	240.0000	11.00	-9.21	5.32	202.00	1.678	31	0.41	0.17
(3) 10' Sector Frames	0.0000	700.00	0.00	0.00	202.00	1.678	31	23.00	23.00
	Sum Weight:	8805.10							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
22.00	3ft Dish w/o Radome	240.0000	50.00	-19.66	11.35	1.000	7.07	18
187.00	VHLP800-11	0.0000	47.60	0.00	-11.70	1.641	7.07	30
187.00	2ft HP Dish w/Shroud	120.0000	27.00	10.13	5.85	1.641	3.14	30
187.00	2ft HP Dish w/Shroud	240.0000	27.00	-10.13	5.85	1.641	3.14	30
		Sum Weight:	151.60					

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice

Comb. No.	Description
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	240 - 220	2.266	37	0.0550	0.0261
T2	220 - 200	2.029	37	0.0551	0.0255
T3	200 - 180	1.784	37	0.0550	0.0244
T4	180 - 160	1.532	37	0.0540	0.0227
T5	160 - 140	1.274	37	0.0520	0.0202
T6	140 - 120	1.033	37	0.0480	0.0179
T7	120 - 100	0.798	37	0.0426	0.0149
T8	100 - 80	0.604	38	0.0359	0.0124
T9	80 - 60	0.427	27	0.0285	0.0097
T10	60 - 30	0.274	33	0.0221	0.0072
T11	30 - 0	0.078	31	0.0121	0.0027

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
240.00	5/8" x 8' Lightning Rod	37	2.266	0.0550	0.0261	Inf
235.00	3" Dia 8' Omni	37	2.207	0.0551	0.0259	Inf
230.00	3" Dia 8' Omni	37	2.148	0.0551	0.0258	872773
223.00	4" x 12' Omni	37	2.065	0.0551	0.0256	515654
212.00	(2) HBX-6516DS-VTM	37	1.932	0.0551	0.0251	515990
202.00	AIR 21 B2AB4P	37	1.809	0.0550	0.0245	646791
196.00	3' Yagi	37	1.735	0.0549	0.0241	565310
187.00	VHLP800-11	37	1.621	0.0545	0.0234	400254
180.60	(3) 10' Sector Frames	37	1.539	0.0541	0.0228	368484
174.00	(2) 950F65T4E-M	37	1.454	0.0536	0.0220	Inf
164.00	4" Dia 20' Omni	37	1.325	0.0525	0.0207	219527
155.00	BXA-80063/6	37	1.213	0.0511	0.0196	243646
140.00	Small Light	37	1.033	0.0480	0.0179	446320

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 26 of 38

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
137.00	1.5" Dia 8' Omni	37	0.997	0.0472	0.0175	Inf
132.00	2' Side Arm Mount	37	0.936	0.0459	0.0167	270192
118.00	2' Side Arm Mount	37	0.777	0.0420	0.0146	85093
108.00	2' Side Arm Mount	38	0.678	0.0387	0.0134	188893
99.00	3' Yagi	38	0.595	0.0356	0.0123	Inf
80.00	Side Arm Mount	27	0.427	0.0285	0.0097	144876
22.00	3ft Dish w/o Radome	31	0.047	0.0090	0.0018	80294
20.00	GPS Unit w/ mt	31	0.041	0.0082	0.0016	88323
8.00	GPS Unit w/ mt	31	0.013	0.0033	0.0006	220808

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	240 - 220	6.591	15	0.1566	0.0838
T2	220 - 200	5.919	15	0.1569	0.0817
T3	200 - 180	5.223	15	0.1566	0.0781
T4	180 - 160	4.503	15	0.1541	0.0736
T5	160 - 140	3.768	15	0.1485	0.0666
T6	140 - 120	3.075	15	0.1377	0.0588
T7	120 - 100	2.395	15	0.1228	0.0484
T8	100 - 80	1.827	15	0.1042	0.0401
T9	80 - 60	1.301	15	0.0832	0.0310
T10	60 - 30	0.840	19	0.0649	0.0226
T11	30 - 0	0.242	19	0.0357	0.0082

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
240.00	5/8" x 8' Lightning Rod	15	6.591	0.1566	0.0838	613385
235.00	3" Dia 8' Omni	15	6.424	0.1567	0.0834	613385
230.00	3" Dia 8' Omni	15	6.257	0.1568	0.0829	306692
223.00	4" x 12' Omni	15	6.021	0.1569	0.0821	181199
212.00	(2) HBX-6516DS-VTM	15	5.643	0.1570	0.0804	180020
202.00	AIR 21 B2AB4P	15	5.293	0.1567	0.0785	214294
196.00	3' Yagi	15	5.081	0.1563	0.0773	190864
187.00	VHLP800-11	15	4.758	0.1553	0.0754	141519
180.60	(3) 10' Sector Frames	15	4.525	0.1542	0.0738	130857
174.00	(2) 950F65T4E-M	15	4.281	0.1529	0.0717	Inf
164.00	4" Dia 20' Omni	15	3.912	0.1500	0.0680	77937
155.00	BXA-80063/6	15	3.592	0.1463	0.0648	87185
140.00	Small Light	15	3.075	0.1377	0.0588	130146
137.00	1.5" Dia 8' Omni	15	2.970	0.1357	0.0574	291278
132.00	2' Side Arm Mount	15	2.796	0.1322	0.0547	97972
118.00	2' Side Arm Mount	15	2.333	0.1211	0.0475	29773
108.00	2' Side Arm Mount	15	2.045	0.1122	0.0434	67267
99.00	3' Yagi	15	1.800	0.1032	0.0397	585477
80.00	Side Arm Mount	15	1.301	0.0832	0.0310	50555
22.00	3ft Dish w/o Radome	19	0.147	0.0267	0.0054	26593
20.00	GPS Unit w/ mt	19	0.128	0.0244	0.0048	29252
8.00	GPS Unit w/ mt	19	0.042	0.0099	0.0017	73129

Bolt Design Data

GLENMARTIN
1604 Business Loop 70 W, A
Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	240	Leg	A325N	1.0000	8	95.98	34557.50	0.003 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	483.46	6442.72	0.075 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	491.93	6442.72	0.076 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	166.26	6442.72	0.026 ✓	1.333	Bolt Shear
T2	220	Leg	A325N	1.0000	8	558.60	34557.10	0.016 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	1395.18	6442.72	0.217 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1239.00	6442.72	0.192 ✓	1.333	Bolt Shear
T3	200	Leg	A325N	1.0000	8	1851.79	34555.60	0.054 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	2039.83	6442.72	0.317 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	2003.79	6442.72	0.311 ✓	1.333	Bolt Shear
T4	180	Leg	A325N	1.0000	8	3719.89	34556.60	0.108 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	3312.74	6442.72	0.514 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3482.90	6442.72	0.541 ✓	1.333	Bolt Shear
T5	160	Leg	A325N	1.0000	8	6435.55	34557.50	0.186 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	4453.57	6442.72	0.691 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	4953.63	6442.72	0.769 ✓	1.333	Bolt Shear
T6	140	Leg	A325N	1.0000	8	9584.75	34557.50	0.277 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	4599.84	6442.72	0.714 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	5368.73	6442.72	0.833 ✓	1.333	Bolt Shear
T7	120	Leg	A325N	1.0000	8	10964.90	34557.40	0.317 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	6813.96	9277.52	0.734 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	5689.13	9277.52	0.613 ✓	1.333	Bolt Shear
T8	100	Leg	A325N	1.0000	12	9306.80	34557.50	0.269 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	6784.10	9277.52	0.731 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	6017.61	9277.52	0.649 ✓	1.333	Bolt Shear
T9	80	Leg	A325N	1.0000	12	11237.50	34557.50	0.325 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	7128.74	9277.52	0.768 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	6677.54	9277.52	0.720 ✓	1.333	Bolt Shear
T10	60	Leg	A325N	1.0000	12	13103.10	34557.50	0.379 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	9382.20	9277.52	1.011 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	7244.52	9277.52	0.781 ✓	1.333	Bolt Shear
T11	30	Diagonal	A325N	0.8750	3	10021.30	12627.70	0.794 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	8199.49	9277.52	0.884 ✓	1.333	Bolt Shear

Compression Checks

Leg Design Data (Compression)

GLENMARTIN
1604 Business Loop 70 W, A
Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio P / P_a
T1	240 - 220	P8x.5 (8" x-str)	20.03	6.68	27.8 K=1.00	27.415	12.7627	-3578.50	349895.00	0.010 ✓
T2	220 - 200	P8x.5 (8" x-str)	20.04	10.02	41.8 K=1.00	25.579	12.7627	-10942.50	326464.00	0.034 ✓
T3	200 - 180	P8x.5 (8" x-str)	20.05	10.03	41.8 K=1.00	25.576	12.7627	-26300.80	326426.00	0.081 ✓
T4	180 - 160	P8x.5 (8" x-str)	20.05	10.03	41.8 K=1.00	25.576	12.7627	-46859.30	326426.00	0.144 ✓
T5	160 - 140	ROHN 8 EH	20.05	10.03	41.8 K=1.00	25.576	12.7627	-75057.20	326426.00	0.230 ✓
T6	140 - 120	P8x.5 (8" x-str)	20.05	10.03	41.8 K=1.00	25.576	12.7627	-106289.00	326426.00	0.326 ✓
T7	120 - 100	P8x.5 (8" x-str)	20.05	10.03	41.8 K=1.00	25.576	12.7627	-122279.00	326426.00	0.375 ✓
T8	100 - 80	ROHN 8 EH	20.06	10.03	41.8 K=1.00	25.575	12.7627	-153433.00	326400.00	0.470 ✓
T9	80 - 60	P10x.5 (10" x-str)	20.05	10.03	33.2 K=1.00	26.753	16.1007	-184479.00	430750.00	0.428 ✓
T10	60 - 30	P10x.5 (10" x-str)	30.08	10.03	33.2 K=1.00	26.753	16.1007	-217351.00	430750.00	0.505 ✓
T11	30 - 0	P10x.5 (10" x-str)	30.08	10.03	33.2 K=1.00	26.753	16.1007	-264329.00	430750.00	0.614 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio P / P_a
T1	240 - 220	P2x.154 (2" Std.)	9.29	8.77	133.7 K=1.00	8.351	1.0745	-1450.38	8973.46	0.162 ✓
T2	220 - 200	P2.5x.203 (2 1/2" std)	12.56	11.96	151.5 K=1.00	6.504	1.7040	-4185.55	11082.70	0.378 ✓
T3	200 - 180	P2.5x.203 (2 1/2" std)	13.35	12.81	162.2 K=1.00	5.674	1.7040	-6119.48	9668.25	0.633 ✓
T4	180 - 160	P2.5x.203 (2 1/2" std)	14.21	13.70	173.6 K=1.00	4.957	1.7040	-9938.22	8446.62	1.177 ✓
T5	160 - 140	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	15.12	14.64	190.8 K=1.00	4.102	3.2000	-13360.70	13127.00	1.018 ✓
T6	140 - 120	P3x.216 (3" std)	16.08	15.62	161.1 K=1.00	5.753	2.2285	-13799.50	12820.40	1.076 ✓
T7	120 - 100	P2.5x.203 w/ L2.5x2.5x3/8	24.33	12.17	156.3 K=1.00	6.112	3.4000	-20441.90	20781.70	0.984 ✓
T8	100 - 80	P3x.216 (3" std)	25.11	12.56	129.5 K=1.00	8.906	2.2285	-20352.30	19846.40	1.025 ✓
T9	80 - 60	P3x.216 (3" std)	25.88	12.94	133.5 K=1.00	8.382	2.2285	-21386.20	18679.00	1.145 ✓
T10	60 - 30	P3x.216 (3" std)	35.15	11.72	120.8 K=1.00	10.226	2.2285	-28146.60	22787.50	1.235 ✓
T11	30 - 0	P3x.216 w/ L2.5x2.5x3/8	36.16	12.05	135.3 K=1.00	8.155	3.9490	-30064.00	32204.00	0.934 ✓

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 29 of 38

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	240 - 220	P2x.154 (2" Std.)	12.26	5.77	88.0 K=1.00	17.370	1.0745	-947.02	18664.30	0.051 ✓
T2	220 - 200	P2x.154 (2" Std.)	14.05	6.67	101.6 K=1.00	14.325	1.0745	-2476.04	15392.90	0.161 ✓
T3	200 - 180	P2x.154 (2" Std.)	16.43	7.85	119.7 K=1.00	10.416	1.0745	-3943.25	11191.70	0.352 ✓
T4	180 - 160	P2.5x.203 (2 1/2" std)	18.93	9.10	115.3 K=1.00	11.230	1.7040	-6915.01	19137.00	0.361 ✓
T5	160 - 140	P2.5x.203 (2 1/2" std)	21.43	10.35	131.1 K=1.00	8.682	1.7040	-9696.96	14795.30	0.655 ✓
T6	140 - 120	P2.5x.203 (2 1/2" std)	23.93	11.60	147.0 K=1.00	6.913	1.7040	-10455.40	11779.50	0.888 ✓
T7	120 - 100	P2.5x.203 (2 1/2" std)	25.18	12.23	154.9 K=1.00	6.224	1.7040	-11378.30	10606.20	1.073 ✓
T8	100 - 80	P3x.216 (3" std)	27.68	13.48	139.0 K=1.00	7.728	2.2285	-12035.20	17221.10	0.699 ✓
T9	80 - 60	P3x.216 (3" std)	30.33	14.81	152.7 K=1.00	6.404	2.2285	-13257.10	14270.40	0.929 ✓
T10	60 - 30	P3x.216 (3" std)	32.83	15.97	164.7 K=1.00	5.506	2.2285	-14489.00	12270.00	1.181 ✓
T11	30 - 0	P3.5x.226 (3 1/2" std)	36.58	17.84	160.2 K=1.00	5.819	2.6795	-16399.00	15593.60	1.052 ✓

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	240 - 220	P2x.154 (2" Std.)	10.93	5.10	77.8 K=1.00	19.446	1.0745	-332.53	20895.00	0.016 ✓

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T7	120 - 100	P1.5x.145 (1 1/2" std)	6.29	5.93	114.4 K=1.00	11.413	0.7995	-2122.07	9123.81	0.233 ✓
T8	100 - 80	P1.5x.145 (1 1/2" std)	6.92	6.56	126.4 K=1.00	9.341	0.7995	-2663.38	7468.07	0.357 ✓
T9	80 - 60	P1.5x.145 (1 1/2" std)	7.58	7.14	137.5 K=1.00	7.895	0.7995	-3201.50	6311.95	0.507 ✓
T10	60 - 30	P1.5x.145 (1 1/2" std)	5.47	5.02	96.8 K=1.00	15.429	0.7995	-3771.97	12335.10	0.306 ✓
T11	30 - 0	P1.5x.145 (1 1/2" std)	6.10	5.65	108.9 K=1.00	12.596	0.7995	-4587.24	10069.60	0.456 ✓

Redundant Horizontal (2) Design Data (Compression)

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 30 of 38

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T10	60 - 30	P2x.154 (2" Std.)	10.94	10.50	160.0 K=1.00	5.832	1.0745	-3771.97	6266.24	0.602 ✓
T11	30 - 0	P2x.154 (2" Std.)	12.19	11.75	179.1 K=1.00	4.657	1.0745	-4587.24	5003.56	0.917 ✓

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T7	120 - 100	P1.5x.145 (1 1/2" std)	11.50	10.77	207.6 K=1.00	3.463	0.7995	-1938.73	2768.87	0.700 ✓
T8	100 - 80	P2x.154 (2" Std.)	11.80	11.12	169.6 K=1.00	5.192	1.0745	-2271.32	5578.53	0.407 ✓
T9	80 - 60	P2x.154 (2" Std.)	12.19	11.56	176.2 K=1.00	4.808	1.0745	-2572.75	5166.85	0.498 ✓
T10	60 - 30	P1.5x.145 (1 1/2" std)	11.12	10.09	194.6 K=1.00	3.945	0.7995	-3832.03	3154.04	1.215 ✓
T11	30 - 0	P1.5x.145 w/ 1/2 pipe 2.375"x.154"	11.41	10.47	204.0 K=1.00	3.587	1.2960	-4290.29	4649.08	0.923 ✓

Redundant Diagonal (2) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T10	60 - 30	P2x.154 (2" Std.)	14.37	13.75	209.6 K=1.00	3.398	1.0745	-2477.03	3651.26	0.678 ✓
T11	30 - 0	P2.5x.203	15.30	14.70	186.3 K=1.00	4.305	1.7040	-2877.07	7335.57	0.392 ✓

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T7	120 - 100	P1.5x.145 (1 1/2" std)	6.29	6.29	121.3 K=1.00	10.147	0.7995	-36.20	8111.69	0.004 ✓
T8	100 - 80	P1.5x.145 (1 1/2" std)	6.92	6.92	133.4 K=1.00	8.396	0.7995	-39.57	6712.46	0.006 ✓
T9	80 - 60	P1.5x.145 (1 1/2" std)	7.58	7.58	146.2 K=1.00	6.990	0.7995	-37.41	5588.33	0.007 ✓
T10	60 - 30	P1.5x.145 (1 1/2" std)	5.47	5.47	105.5 K=1.00	13.414	0.7995	-89.81	10723.70	0.008 ✓
T11	30 - 0	P1.5x.145 (1 1/2" std)	6.10	6.10	117.5 K=1.00	10.813	0.7995	-105.19	8644.47	0.012 ✓

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 31 of 38

Redundant Hip (2) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T10	60 - 30	P1.5x.145 (1 1/2" std)	10.94	10.94	210.9 K=1.00	3.356	0.7995	-44.58	2682.97	0.017 ✓
T11	30 - 0	P2x.154 (2" Std.)	12.19	12.19	185.9 K=1.00	4.321	1.0745	-44.71	4642.74	0.010 ✓

Redundant Hip Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T7	120 - 100	P2.5x.203 (2.5" Std)	15.07	15.07	190.9 K=1.00	4.096	1.7040	-60.33	6980.15	0.009 ✓
T8	100 - 80	P2.5x.203 (2 1/2" std)	15.92	15.92	201.6 K=1.00	3.673	1.7040	-63.52	6259.44	0.010 ✓
T9	80 - 60	P3x.216 (3" std)	16.81	16.81	173.3 K=1.00	4.970	2.2285	-54.49	11074.80	0.005* ✓
T10	60 - 30	P3x.216 (3" std)	17.80	17.80	183.6 K=1.00	4.429	2.2285	-90.88	9870.93	0.009 ✓
T11	30 - 0	P3x.216 (3" std)	19.19	19.19	197.9 K=1.00	3.811	2.2285	-99.55	8493.69	0.012 ✓

*DL controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in²	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	240 - 220	L2x2x1/8	5.46	5.46	164.9 K=1.00	5.490	0.4844	-5.76	2659.43	0.002 ✓
T2	220 - 200	L2x2x1/8	7.03	7.03	212.1 K=1.00	3.320	0.4844	-5.46	1608.11	0.003 ✓
T3	200 - 180	L2 1/2x2 1/2x3/16	8.21	8.21	199.1 K=1.00	3.767	0.9020	-6.63	3397.38	0.002 ✓
T4	180 - 160	L3x3x3/16	9.46	9.46	190.5 K=1.00	4.113	1.0900	-9.69	4483.33	0.002 ✓
T5	160 - 140	L3 1/2x3 1/2x1/4	10.71	10.71	185.2 K=1.00	4.352	1.6900	-13.69	7354.08	0.002 ✓
T6	140 - 120	L3 1/2x3 1/2x1/4	11.96	11.96	206.9 K=1.00	3.490	1.6900	-12.50	5897.59	0.002 ✓
T7	120 - 100	P2x.154 (2" Std.)	12.59	12.59	191.9 K=1.00	4.054	1.0745	-21.08	4356.59	0.005 ✓
T8	100 - 80	P3x.216 (3" std)	13.84	13.84	142.7 K=1.00	7.332	2.2285	-26.17	16338.30	0.002 ✓
T9	80 - 60	P3x.216 (3" std)	15.17	15.17	156.4 K=1.00	6.104	2.2285	-26.32	13602.10	0.002 ✓
T10	60 - 30	P3x.216 (3" std)	16.42	16.42	169.3 K=1.00	5.210	2.2285	-34.93	11609.60	0.003 ✓
T11	30 - 0	P3x.216 (3" std)	18.29	18.29	188.6 K=1.00	4.196	2.2285	-36.15	9351.47	0.004 ✓

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 32 of 38

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
T1	240 - 220	P8x.5 (8" x-str)	20.03	6.68	27.8	30.000	12.7627	767.87	382882.00	0.002 ✓
T2	220 - 200	P8x.5 (8" x-str)	20.04	10.02	41.8	30.000	12.7627	4468.78	382882.00	0.012 ✓
T3	200 - 180	P8x.5 (8" x-str)	20.05	10.03	41.8	30.000	12.7627	14814.30	382882.00	0.039 ✓
T4	180 - 160	P8x.5 (8" x-str)	20.05	10.03	41.8	30.000	12.7627	29759.10	382882.00	0.078 ✓
T5	160 - 140	ROHN 8 EH	20.05	10.03	41.8	30.000	12.7627	51484.40	382882.00	0.134 ✓
T6	140 - 120	P8x.5 (8" x-str)	20.05	10.03	41.8	30.000	12.7627	76678.00	382882.00	0.200 ✓
T7	120 - 100	P8x.5 (8" x-str)	20.05	10.03	41.8	30.000	12.7627	88154.90	382882.00	0.230 ✓
T8	100 - 80	ROHN 8 EH	20.06	10.03	41.8	30.000	12.7627	112157.00	382882.00	0.293 ✓
T9	80 - 60	P10x.5 (10" x-str)	20.05	10.03	33.2	30.000	16.1007	135371.00	483020.00	0.280 ✓
T10	60 - 30	P10x.5 (10" x-str)	30.08	10.03	33.2	30.000	16.1007	159143.00	483020.00	0.329 ✓
T11	30 - 0	P10x.5 (10" x-str)	30.08	10.03	33.2	30.000	16.1007	192808.00	483020.00	0.399 ✓

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
T1	240 - 220	P2x.154 (2" Std.)	9.29	8.77	133.7	30.000	1.0745	1350.04	32235.90	0.042 ✓
T2	220 - 200	P2.5x.203 (2 1/2" std)	12.56	11.96	151.5	30.000	1.7040	4039.61	51121.50	0.079 ✓
T3	200 - 180	P2.5x.203 (2 1/2" std)	13.35	12.81	162.2	30.000	1.7040	5933.17	51121.50	0.116 ✓
T4	180 - 160	P2.5x.203 (2 1/2" std)	14.21	13.70	173.6	30.000	1.7040	9675.94	51121.50	0.189 ✓
T5	160 - 140	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	15.12	14.64	190.8	30.000	3.2000	12900.90	96000.00	0.134 ✓
T6	140 - 120	P3x.216 (3" std)	16.08	15.62	161.1	30.000	2.2285	13353.60	66854.10	0.200 ✓
T7	120 - 100	P2.5x.203 w/ L2.5x2.5x3/8	24.33	12.17	156.3	30.000	3.4000	19857.40	102000.00	0.195 ✓
T8	100 - 80	P3x.216 (3" std)	25.11	12.56	129.5	30.000	2.2285	19603.20	66854.10	0.293

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 33 of 38

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in²	lb	lb	
T9	80 - 60	P3x.216 (3" std)	25.88	12.94	133.5	30.000	2.2285	20654.80	66854.10	0.309 ✓
T10	60 - 30	P3x.216 (3" std)	35.15	11.72	120.8	30.000	2.2285	27461.60	66854.10	0.411 ✓
T11	30 - 0	P3x.216 w/ L2.5x2.5x3/8	36.16	12.05	135.3	30.000	3.9490	28348.60	118470.00	0.239 ✓

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in²	lb	lb	
T1	240 - 220	P2x.154 (2" Std.)	12.26	5.77	88.0	30.000	1.0745	983.86	32235.90	0.031 ✓
T2	220 - 200	P2x.154 (2" Std.)	14.05	6.67	101.6	30.000	1.0745	2478.00	32235.90	0.077 ✓
T3	200 - 180	P2x.154 (2" Std.)	16.43	7.85	119.7	30.000	1.0745	4007.58	32235.90	0.124 ✓
T4	180 - 160	P2.5x.203 (2 1/2" std)	18.93	9.10	115.3	30.000	1.7040	6965.80	51121.50	0.136 ✓
T5	160 - 140	P2.5x.203 (2 1/2" std)	21.43	10.35	131.1	30.000	1.7040	9907.26	51121.50	0.194 ✓
T6	140 - 120	P2.5x.203 (2 1/2" std)	23.93	11.60	147.0	30.000	1.7040	10737.50	51121.50	0.210 ✓
T7	120 - 100	P2.5x.203 (2 1/2" std)	25.18	12.23	154.9	30.000	1.7040	11353.50	51121.50	0.222 ✓
T8	100 - 80	P3x.216 (3" std)	27.68	13.48	139.0	30.000	2.2285	11905.10	66854.10	0.178 ✓
T9	80 - 60	P3x.216 (3" std)	30.33	14.81	152.7	30.000	2.2285	13355.10	66854.10	0.200 ✓
T10	60 - 30	P3x.216 (3" std)	32.83	15.97	164.7	30.000	2.2285	14359.80	66854.10	0.215 ✓
T11	30 - 0	P3.5x.226 (3 1/2" std)	36.58	17.84	160.2	30.000	2.6795	15611.60	80386.20	0.194 ✓

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in²	lb	lb	
T1	240 - 220	P2x.154 (2" Std.)	10.93	5.10	77.8	30.000	1.0745	315.63	32235.90	0.010 ✓

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in²	lb	lb	
T7	120 - 100	P1.5x.145 (1 1/2" std)	6.29	5.93	114.4	30.000	0.7995	2122.07	23983.70	0.088

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 34 of 38

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T8	100 - 80	P1.5x.145 (1 1/2" std)	6.92	6.56	126.4	30.000	0.7995	2663.38	23983.70	0.111
T9	80 - 60	P1.5x.145 (1 1/2" std)	7.58	7.14	137.5	30.000	0.7995	3201.50	23983.70	0.133
T10	60 - 30	P1.5x.145 (1 1/2" std)	5.47	5.02	96.8	30.000	0.7995	3771.97	23983.70	0.157
T11	30 - 0	P1.5x.145 (1 1/2" std)	6.10	5.65	108.9	30.000	0.7995	4587.24	23983.70	0.191

Redundant Horizontal (2) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T10	60 - 30	P2x.154 (2" Std.)	10.94	10.50	160.0	30.000	1.0745	3771.97	32235.90	0.117
T11	30 - 0	P2x.154 (2" Std.)	12.19	11.75	179.1	30.000	1.0745	4587.24	32235.90	0.142

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T7	120 - 100	P1.5x.145 (1 1/2" std)	11.50	10.77	207.6	30.000	0.7995	1938.73	23983.70	0.081
T8	100 - 80	P2x.154 (2" Std.)	11.80	11.12	169.6	30.000	1.0745	2271.32	32235.90	0.070
T9	80 - 60	P2x.154 (2" Std.)	12.19	11.56	176.2	30.000	1.0745	2572.75	32235.90	0.080
T10	60 - 30	P1.5x.145 (1 1/2" std)	11.12	10.09	194.6	30.000	0.7995	3832.03	23983.70	0.160
T11	30 - 0	P1.5x.145 w/ 1/2 pipe 2.375"x.154"	11.41	10.47	204.0	30.000	1.2960	4290.29	38880.00	0.110

Redundant Diagonal (2) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T10	60 - 30	P2x.154 (2" Std.)	14.37	13.75	209.6	30.000	1.0745	2477.03	32235.90	0.077
T11	30 - 0	P2.5x.203	15.30	14.70	186.3	30.000	1.7040	2877.07	51121.50	0.056

Redundant Hip (1) Design Data (Tension)

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 35 of 38

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T10	60 - 30	P1.5x.145 (1 1/2" std)	5.47	5.47	105.5	30.000	0.7995	8.67	23983.70	0.000 ✓
T11	30 - 0	P1.5x.145 (1 1/2" std)	6.10	6.10	117.5	30.000	0.7995	23.83	23983.70	0.001 ✓

Redundant Hip (2) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T10	60 - 30	P1.5x.145 (1 1/2" std)	10.94	10.94	210.9	30.000	0.7995	12.53	23983.70	0.001 ✓
T11	30 - 0	P2x.154 (2" Std.)	12.19	12.19	185.9	30.000	1.0745	10.59	32235.90	0.000 ✓

Redundant Hip Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T7	120 - 100	P2.5x.203 (2.5" Std)	15.07	15.07	190.9	30.000	1.7040	83.13	51121.50	0.002 ✓
T8	100 - 80	P2.5x.203 (2 1/2" std)	15.92	15.92	201.6	30.000	1.7040	92.23	51121.50	0.002 ✓
T9	80 - 60	P3x.216 (3" std)	16.81	16.81	173.3	30.000	2.2285	98.97	66854.10	0.001 ✓
T10	60 - 30	P3x.216 (3" std)	14.04	14.04	144.8	30.000	2.2285	212.78	66854.10	0.003 ✓
T11	30 - 0	P3x.216 (3" std)	14.82	14.82	152.9	30.000	2.2285	202.77	66854.10	0.003 ✓

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	240 - 220	L2x2x1/8	5.46	5.46	104.7	21.600	0.4844	5.76	10462.50	0.001 ✓
T2	220 - 200	L2x2x1/8	7.03	7.03	134.6	21.600	0.4844	0.04	10462.50	0.000 ✓
T4	180 - 160	L3x3x3/16	8.84	8.84	113.0	21.600	1.0900	0.57	23544.00	0.000 ✓
T7	120 - 100	P2x.154 (2" Std.)	12.59	12.59	191.9	30.000	1.0745	1.80	32235.90	0.000 ✓
T8	100 - 80	P3x.216 (3" std)	13.84	13.84	142.7	30.000	2.2285	1.39	66854.10	0.000 ✓
T9	80 - 60	P3x.216 (3" std)	15.17	15.17	156.4	30.000	2.2285	0.96	66854.10	0.000 ✓
T10	60 - 30	P3x.216 (3" std)	16.42	16.42	169.3	30.000	2.2285	11.97	66854.10	0.000 ✓

GLENMARTIN 1604 Business Loop 70 W, A Columbia, MO 65202 Phone: (660) 880-2734	**Structure:** 240' Self Supported Tower	**Customer Name:** GTP	**City:** Bridgeport	**Proposed Carrier:** Verizon
	Project: Post Mods SA	**Customer Site Name:** Tartaglia	**County:** Fairfield	**Date:** 04/05/2013
	Job #: CT-5035, Tartaglia	**Customer Site #:** CT-5035	**State:** CT	**Page:** 36 of 38

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio P / P_a
	ft		ft	ft		ksi	in²	lb	lb	
T11	30 - 0	P3x.216 (3" std)	18.29	18.29	188.6	30.000	2.2285	11.66	66854.10	0.000 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
T1	240 - 220	Leg	P8x.5 (8" x-str)	1	-3578.50	466410.02	0.8	Pass
T2	220 - 200	Leg	P8x.5 (8" x-str)	40	-10942.50	435176.49	2.5	Pass
T3	200 - 180	Leg	P8x.5 (8" x-str)	69	-26300.80	435125.84	6.0	Pass
T4	180 - 160	Leg	P8x.5 (8" x-str)	96	-46859.30	435125.84	10.8	Pass
T5	160 - 140	Leg	ROHN 8 EH	121	-75057.20	435125.84	17.2	Pass
T6	140 - 120	Leg	P8x.5 (8" x-str)	150	-106289.00	435125.84	24.4	Pass
T7	120 - 100	Leg	P8x.5 (8" x-str)	177	-122279.00	435125.84	28.1	Pass
T8	100 - 80	Leg	ROHN 8 EH	210	-153433.00	435091.18	35.3	Pass
T9	80 - 60	Leg	P10x.5 (10" x-str)	243	-184479.00	574189.73	32.1	Pass
T10	60 - 30	Leg	P10x.5 (10" x-str)	276	-217351.00	574189.73	37.9	Pass
T11	30 - 0	Leg	P10x.5 (10" x-str)	327	-264329.00	574189.73	46.0	Pass
T1	240 - 220	Diagonal	P2x.154 (2" Std.)	14	-1450.38	11961.62	12.1	Pass
T2	220 - 200	Diagonal	P2.5x.203 (2 1/2" std)	50	-4185.55	14773.24	28.3	Pass
T3	200 - 180	Diagonal	P2.5x.203 (2 1/2" std)	77	-6119.48	12887.78	47.5	Pass
T4	180 - 160	Diagonal	P2.5x.203 (2 1/2" std)	104	-9938.22	11259.34	88.3	Pass
T5	160 - 140	Diagonal	P2.5x.203 w/ 1/2 pipe 3.5"x.300"	131	-13360.70	17498.29	76.4	Pass
T6	140 - 120	Diagonal	P3x.216 (3" std)	158	-13799.50	17089.59	80.7	Pass
T7	120 - 100	Diagonal	P2.5x.203 w/ L2.5x2.5x3/8	195	-20441.90	27702.00	73.8	Pass
T8	100 - 80	Diagonal	P3x.216 (3" std)	231	-20352.30	26455.25	76.9	Pass
T9	80 - 60	Diagonal	P3x.216 (3" std)	264	-21386.20	24899.11	85.9	Pass
T10	60 - 30	Diagonal	P3x.216 (3" std)	309	-28146.60	30375.74	92.7	Pass
T11	30 - 0	Diagonal	P3x.216 w/ L2.5x2.5x3/8	360	-30064.00	42927.93	70.0	Pass
T1	240 - 220	Horizontal	P2x.154 (2" Std.)	13	-947.02	24879.51	3.8	Pass
T2	220 - 200	Horizontal	P2x.154 (2" Std.)	49	-2476.04	20518.74	12.1	Pass
T3	200 - 180	Horizontal	P2x.154 (2" Std.)	76	-3943.25	14918.54	26.4	Pass
T4	180 - 160	Horizontal	P2.5x.203 (2 1/2" std)	103	-6915.01	25509.62	27.1	Pass
T5	160 - 140	Horizontal	P2.5x.203 (2 1/2" std)	130	-9696.96	19722.13	49.2	Pass
T6	140 - 120	Horizontal	P2.5x.203 (2 1/2" std)	157	-10455.40	15702.07	66.6	Pass
T7	120 - 100	Horizontal	P2.5x.203 (2 1/2" std)	194	-11378.30	14138.06	80.5	Pass
T8	100 - 80	Horizontal	P3x.216 (3" std)	227	-12035.20	22955.72	52.4	Pass
T9	80 - 60	Horizontal	P3x.216 (3" std)	260	-13257.10	19022.44	69.7	Pass
T10	60 - 30	Horizontal	P3x.216 (3" std)	303	-14489.00	16355.91	88.6	Pass
T11	30 - 0	Horizontal	P3.5x.226 (3 1/2" std)	354	-16399.00	20786.27	78.9	Pass
T1	240 - 220	Top Girt	P2x.154 (2" Std.)	4	-332.53	27853.03	1.2	Pass
T7	120 - 100	Redund Horz 1 Bracing	P1.5x.145 (1 1/2" std)	190	-2122.07	12162.04	17.4	Pass
T8	100 - 80	Redund Horz 1 Bracing	P1.5x.145 (1 1/2" std)	223	-2663.38	9954.94	26.8	Pass
T9	80 - 60	Redund Horz 1 Bracing	P1.5x.145 (1 1/2" std)	256	-3201.50	8413.83	38.1	Pass
T10	60 - 30	Redund Horz 1 Bracing	P1.5x.145 (1 1/2" std)	295	-3771.97	16442.69	22.9	Pass
T11	30 - 0	Redund Horz 1 Bracing	P1.5x.145 (1 1/2" std)	346	-4587.24	13422.78	34.2	Pass
T10	60 - 30	Redund Horz 2 Bracing	P2x.154 (2" Std.)	296	-3771.97	8352.90	45.2	Pass
T11	30 - 0	Redund Horz 2 Bracing	P2x.154 (2" Std.)	347	-4587.24	6669.75	68.8	Pass
T7	120 - 100	Redund Diag 1 Bracing	P1.5x.145 (1 1/2" std)	191	-1938.73	3690.90	52.5	Pass
T8	100 - 80	Redund Diag 1 Bracing	P2x.154 (2" Std.)	230	-2271.32	7436.18	30.5	Pass
T9	80 - 60	Redund Diag 1 Bracing	P2x.154 (2" Std.)	263	-2572.75	6887.41	37.4	Pass
T10	60 - 30	Redund Diag 1	P1.5x.145 (1 1/2" std)	297	-3832.03	4204.34	91.1	Pass

GLENMARTIN
1604 Business Loop 70 W, A
·Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
T11	30 - 0	Bracing Redund Diag 1 Bracing	P1.5x.145 w/ 1/2 pipe	348	-4290.29	6197.22	69.2	Pass
T10	60 - 30	Redund Diag 2 Bracing	2.375"x.154" P2x.154 (2" Std.)	308	-2477.03	4867.13	50.9	Pass
T11	30 - 0	Redund Diag 2 Bracing	P2.5x.203	359	-2877.07	9778.31	29.4	Pass
T7	120 - 100	Redund Hip 1 Bracing	P1.5x.145 (1 1/2" std)	201	-36.20	10812.88	0.3	Pass
T8	100 - 80	Redund Hip 1 Bracing	P1.5x.145 (1 1/2" std)	234	-39.57	8947.71	0.4	Pass
T9	80 - 60	Redund Hip 1 Bracing	P1.5x.145 (1 1/2" std)	267	-37.41	7449.24	0.5	Pass
T10	60 - 30	Redund Hip 1 Bracing	P1.5x.145 (1 1/2" std)	314	-89.81	14294.69	0.6	Pass
T11	30 - 0	Redund Hip 1 Bracing	P1.5x.145 (1 1/2" std)	365	-105.19	11523.08	0.9	Pass
T10	60 - 30	Redund Hip 2 Bracing	P1.5x.145 (1 1/2" std)	319	-44.58	3576.40	1.2	Pass
T11	30 - 0	Redund Hip 2 Bracing	P2x.154 (2" Std.)	366	-44.71	6188.77	0.7	Pass
T7	120 - 100	Redund Hip Diagonal Bracing	P2.5x.203 (2.5" Std)	204	-60.33	9304.54	0.6	Pass
T8	100 - 80	Redund Hip Diagonal Bracing	P2.5x.203 (2 1/2" std)	237	-63.52	8343.83	0.8	Pass
T9	80 - 60	Redund Hip Diagonal Bracing	P3x.216 (3" std)	259	-54.49	11074.80	0.5	Pass
T10	60 - 30	Redund Hip Diagonal Bracing	P3x.216 (3" std)	317	-90.88	13157.95	0.7	Pass
T11	30 - 0	Redund Hip Diagonal Bracing	P3x.216 (3" std)	368	-99.55	11322.09	0.9	Pass
T1	240 - 220	Inner Bracing	L2x2x1/8	16	-3.07	2815.90	0.2	Pass
T2	220 - 200	Inner Bracing	L2x2x1/8	52	-5.46	2143.61	0.3	Pass
T3	200 - 180	Inner Bracing	L2 1/2x2 1/2x3/16	79	-6.61	4528.71	0.2	Pass
T4	180 - 160	Inner Bracing	L3x3x3/16	106	-9.60	5976.28	0.3	Pass
T5	160 - 140	Inner Bracing	L3 1/2x3 1/2x1/4	135	-13.69	9802.99	0.3	Pass
T6	140 - 120	Inner Bracing	L3 1/2x3 1/2x1/4	162	-12.50	7861.49	0.3	Pass
T7	120 - 100	Inner Bracing	P2x.154 (2" Std.)	206	-21.08	5807.33	0.4	Pass
T8	100 - 80	Inner Bracing	P3x.216 (3" std)	240	-23.84	21778.95	0.3	Pass
T9	80 - 60	Inner Bracing	P3x.216 (3" std)	273	-23.96	18131.60	0.4	Pass
T10	60 - 30	Inner Bracing	P3x.216 (3" std)	323	-33.38	15475.60	0.4	Pass
T11	30 - 0	Inner Bracing	P3x.216 (3" std)	375	-36.15	12465.51	0.4	Pass
							Summary	
						Leg (T11)	46.0	Pass
						Diagonal (T10)	92.7	Pass
						Horizontal (T10)	88.6	Pass
						Top Girt (T1)	1.2	Pass
						Redund Horz 1 Bracing (T9)	38.1	Pass
						Redund Horz 2 Bracing (T11)	68.8	Pass
						Redund Diag 1 Bracing (T10)	91.1	Pass
						Redund Diag 2 Bracing (T10)	50.9	Pass
						Redund Hip 1 Bracing	0.9	Pass

GLENMARTIN
1604 Business Loop 70 W, A
Columbia, MO 65202
Phone: (660) 880-2734

Structure:	Customer Name:	City:	Proposed Carrier:
240' Self Supported Tower	GTP	Bridgeport	Verizon
Project:	**Customer Site Name:**	**County:**	**Date:**
Post Mods SA	Tartaglia	Fairfield	04/05/2013
Job #:	**Customer Site #:**	**State:**	**Page:**
CT-5035, Tartaglia	CT-5035	CT	38 of 38

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
						(T11) Redund Hip 2 Bracing	1.2	Pass
						(T10) Redund Hip Diagonal Bracing	0.9	Pass
						(T11) Inner Bracing	0.4	Pass
						(T11) Bolt Checks	75.9	Pass
						RATING =	**92.7**	**Pass**

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

October 16, 2012

The Honorable Bill Finch
Mayor
City of Bridgeport
City Hall Annex
999 Broad Street
Bridgeport, CT 06604

RE: **EM-SPRINT-015-121015** – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 1280 Chopsey Hill Road, Bridgeport, Connecticut.

Dear Mayor Finch:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72. A copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by October 30, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

L Roberts

Linda Roberts
Executive Director

LR/jbw

c: Michael Nidoh, Planning Director, City of Bridgeport

CSC
CONNECTICUT SITING COUNCIL

EM-SPRINT-015-121015

Sprint

Together with Nextel

48 Spruce Street
Oakland, NJ 07436
Phone: (845) 499-4712
Jennifer Palumbo

September 19, 2012

Hand Delivered

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 1280 Chopsey Hill Road, Bridgeport, CT 06606. Known to Sprint Spectrum L.P. as site CT03XC325.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Code Division Multiple Access ("CDMA") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, Sprint Spectrum L.P. plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

CDMA employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

As part of the project the new multi-mode 800/1900 antenna will replace existing antennas. These antennas will provide more flexibility for optimization by allowing fast and easy electrical tilt adjustment from remote location and will enable the transmission of multiple technologies from a single antenna. As Sprint Nextel's network evolves to meet the demands of its customers, it is essential for Sprint Nextel to install modern

equipment and antennas in order to provide reliable wireless voice and data services. The proposed equipment will include multi-mode radios that will allow Sprint Nextel to transmit at different frequencies using different technologies, including LTE technology. Likewise, the proposed antennas are quad-pole multi-band high gain antennas that will allow Sprint to operate using its multiple frequency bands and technologies, including LTE technology. The proposed equipment and antennas will improve the reliability, coverage and capacity of Sprint Nextel's voice and data networks across Sprint Nextel's various FCC licensed frequency bands and significantly increase the data speeds of Sprint Nextel's network by utilizing the latest LTE technology. Without the proposed modifications Sprint Nextel will be unable to provide reliable wireless voice and data service using the latest technologies.

Sprint Spectrum L.P. will have an interim (testing) period during the modification/installation prior to the final configuration. This antenna configuration is shown on the attached drawings of the planned modifications. Also included is the power density calculation reflecting the change in Sprint's operations at the site and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modification as defined Connecticut General Statues ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more CDMA transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons Sprint Spectrum L.P. respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (845)-499-4712 or email JPalumbo@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Jennifer Palumbo
Real Estate Consultant

Sprint

Together with Nextel

48 Spruce Street
Oakland, NJ 07436
Phone: (845) 499-4712
Jennifer Palumbo

September 19, 2012

Hand Delivered

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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For the foregoing reasons Sprint Spectrum L.P. respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (845)-499-4712 or email JPalumbo@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Jennifer Palumbo
Real Estate Consultant

Structural Analysis Report

For

1280 Chopsey Hill Road
Bridgeport, CT

Site ID: CT03XC325

KMB ID: 332.1467

Prepared For:

Sprint-Nextel
1 International Blvd
Mahwah, NJ 07495

Date: 7/06/2012

Analyzed By:

Jiang J. Yu, P.E.

Reviewed By:

STATE OF CONNECTICUT
STEPHEN A. BRAY
No. 26657
LICENSED
PROFESSIONAL ENGINEER

Stephen A. Bray, P.E.
CT PE License No. 26657

Contents

1.0 Introduction

Pursuant to your request, we have prepared this report describing the methodology and codes used to review the reactions imparted upon the existing antenna mounts.

The existing installation consists of three (3) antenna sectors and equipment platform on grade. Sprint-Nextel proposes to replace one (1) antenna per sector and add the associated remote radio units and combiners.

2.0 Design Codes

As part of the design process, structural engineers, licensed to practice in the State of Connecticut, have reviewed the existing platform and connections to which the proposed additional loads will be applied. The applicable design codes which govern the structural analysis of this project are as follows:

International Building Code – CT Edition 2009

"IBC 2009 - CT Edition"

American Institute of Steel Construction

"Steel Construction Manual – 9th Edition"

Masonry Standards Joint Committee Code

"2005 Masonry Standards Joint Committee Code"

3.0 Conclusion

Based on our structural calculations the maximum stress on any antenna supporting member will be 10.141 ksi, which is less than the allowable member stress of 23.1 ksi.

Since the equipment is located on a concrete slab on grade, it is concluded that the existing slab is structurally sufficient to support the proposed loading.

The proposed antenna systems are calculated to be within acceptable tolerances for pipe stress, deflection, and bending moment at critical bending section. Please refer to the calculations in Appendix A.

Appendix A

Structural Calculations

KMB DESIGN GROUP, LLC

Project ID: Alcatel-Lucent (CT03XC325)
Site: 1280 Chosey Hill Road
Address Bridgeport, CT 06606

KMB ID 332.1467
By: PRW
Date: 7/6/2012

Rev: 0
Chk: JY
Date: 7/6/2012

Antenna Mount Structural Calculation (All Sectors)
WIND LOAD CALCULATION (Per IBC 2009)

Antenna Height z	180.58	feet
Basic wind speed (3 sec gust)	120	mph
Importance factor, *I*	1.00	
Exposure Category	C	
Located on hill or escarpment?	N	(Y/N)
Direction factor	0.85	

Exposure dependent factors from Tables C6-2 and C6-6

α =	9.5		α–bar =	0.1538
z_g =	900	feet	*b*-bar =	0.65
			c =	0.20
			l =	500
			ε =	0.200

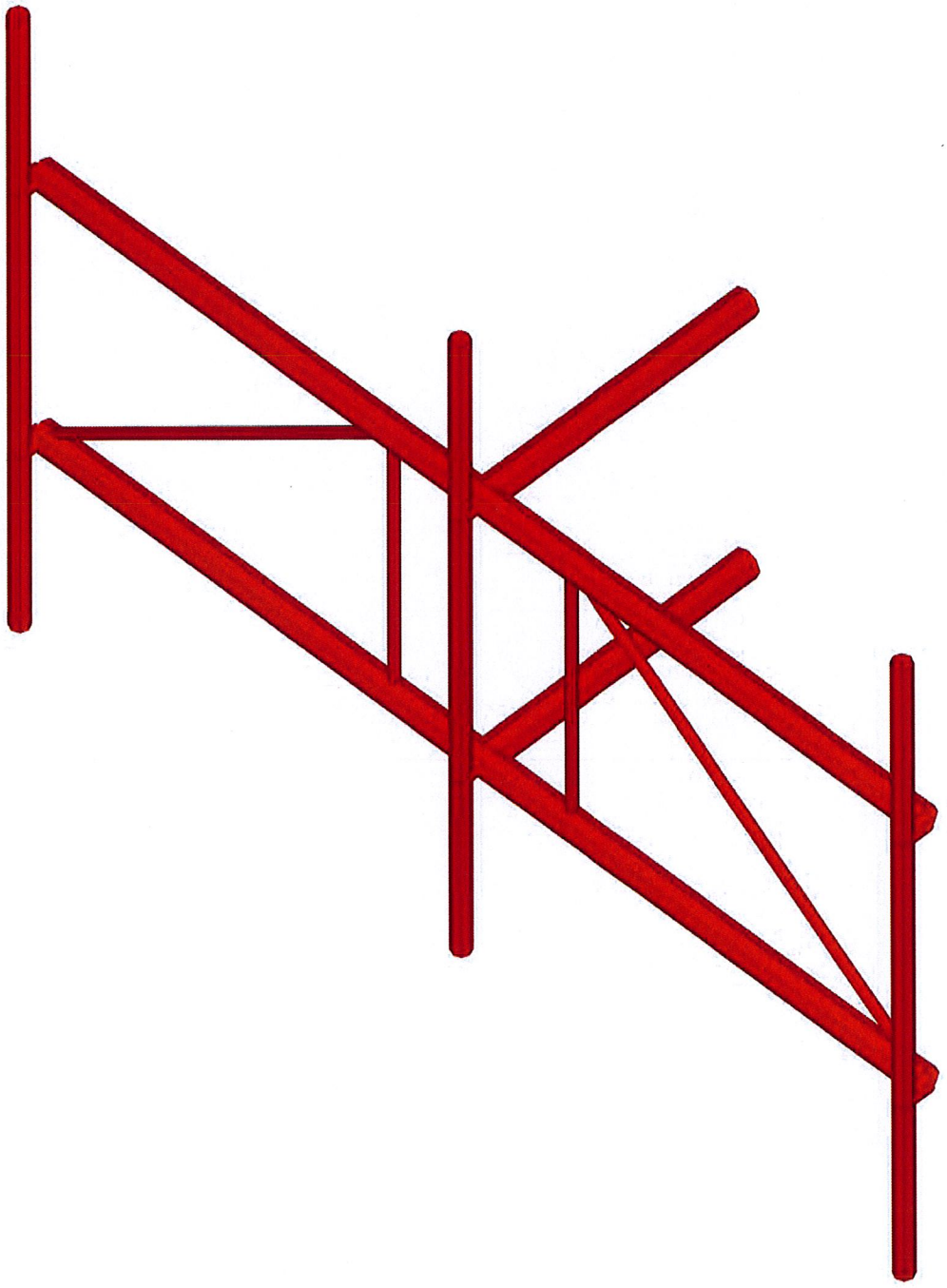
G = 1.000 gust effect factor

Height	*Kzt*	*Kz*	*qz*	*p*
180.58	1.00	1.43	52.84	44.91

Cf 1 =	Cf 2 =	Cf 3 =	Cf 4 =
1.4	1.25	0.7	1.0
p0	*p1*	*p2*	*p3*
62.88	56.14	31.44	44.91

Antenna forces calculations

		A	F	weight
800/1900 Mhz antenna		5.9	370.9711 LBS	65
Existing Clearwire Antennas		7.5	471.5734 LBS	50
3" Sch 40 Pipe	3.5		16.37408 *plf*	



CT03XC325

VisualAnalysis 6.00 Report

Project File: 332.1467 ANTENNA.vap
Folder: X:\Jobs\187 - KMB Design Group\12-187-244 - ALU Structural Work\KMB Jobs\PAT\332.1467\

Nodal Displacements

Node	Result Case Name	DX in	DY in	DZ in	RX deg	RY deg	RZ deg
N001	16-9	-0.054	-0.045	-0.414	0.049	**-0.490**	0.019
N002	16-9	-0.054	-0.021	-0.001	0.043	-0.183	0.019
N003	16-9	-0.054	-0.002	0.093	0.043	-0.053	0.022
N004	16-9	-0.067	-0.047	-0.399	0.009	-0.466	0.023
N005	16-9	-0.067	-0.022	-0.000	0.038	-0.201	0.019
N006	16-9	-0.067	-0.003	0.120	0.035	-0.077	0.020
N007	16-9	**0.000**	**-0.000**	-0.000	0.000	**-0.000**	**0.000**
N008	16-9	-0.000	-0.000	-0.000	0.000	-0.000	0.000
N009	16-9	-0.079	-0.047	-0.414	0.052	-0.488	0.018
N010	16-9	-0.064	-0.023	-0.001	0.036	-0.184	0.020
N011	16-9	-0.057	-0.004	0.093	0.046	-0.055	0.022
N012	16-9	-0.091	-0.048	-0.399	0.003	-0.467	0.022
N013	16-9	-0.077	-0.023	-0.000	0.018	-0.200	0.020
N014	16-9	-0.071	-0.005	0.120	0.034	-0.075	0.020
N015	16-9	-0.079	-0.005	**0.131**	0.024	-0.075	0.020
N016	16-9	-0.048	-0.004	0.071	0.056	-0.055	0.022
N017	16-9	-0.085	-0.023	-0.005	-0.022	-0.200	0.020
N018	16-9	-0.055	-0.023	-0.028	0.077	-0.184	0.020
N019	16-9	**-0.100**	**-0.048**	-0.408	**-0.029**	-0.467	0.022
N020	16-9	-0.072	-0.047	**-0.446**	**0.084**	-0.488	0.018
N021	16-9	-0.054	-0.018	0.032	0.040	-0.128	0.016
N022	16-9	-0.067	-0.018	0.036	0.039	-0.149	0.017
N023	16-9	-0.054	-0.026	-0.052	0.040	-0.303	**0.025**
N024	16-9	-0.067	-0.026	-0.054	0.033	-0.303	0.024

MAX. DEFLECTION

Nodal Reactions

Node	Result Case Name	FX K	FY K	FZ K	MX K-in	MY K-in	MZ K-in
N007	16-9	**-0.075**	**0.180**	**0.884**	**-4.814**	**5.988**	**-0.590**
N008	16-9	**0.075**	**0.221**	**0.659**	**-5.377**	**9.397**	**-0.594**

Member Min/Max Stresses

Extreme	Item	Member	Result Case Name	Offset in	fa Ksi	fby(+z) Ksi	fby(-z) Ksi	fbz(+y) Ksi	fbz(-y) Ksi
Max	fby(+z)	BmX003-3	16-9	12.000	-0.075	10.141	-10.141	0.878	-0.878
Max	fby(-z)	V001	16-9	0.000	0.411	-4.207	4.207	0.214	-0.214
Max	fbz(+y)	BmZ001	16-9	36.000	-0.317	5.765	-5.765	3.299	-3.299
Max	fbz(-y)	BmZ005	16-9	0.000	-0.155	-0.196	0.196	-4.311	4.311
Max	fx	V001	16-9	0.000	0.411	-4.207	4.207	0.214	-0.214
Min	fby(+z)	V001	16-9	0.000	0.411	-4.207	4.207	0.214	-0.214
Min	fby(-z)	BmX003-3	16-9	12.000	-0.075	10.141	-10.141	0.878	-0.878
Min	fbz(+y)	BmZ005	16-9	0.000	-0.155	-0.196	0.196	-4.311	4.311
Min	fbz(-y)	BmZ001	16-9	36.000	-0.317	5.765	-5.765	3.299	-3.299
Min	fx	BmZ002	16-9	0.000	-0.425	5.340	-5.340	-0.780	0.780

MAX. STRESS

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT03XC325

1280 Chopsey Hill
1280 Chopsey Hill Road
Bridgeport, CT 06606

August 21, 2012

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

EBI Consulting

environmental | engineering | due diligence

August 21, 2012

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

Re: Emissions Values for Site **CT03XC325 – 1280 Chopsey Hill**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 1280 Chopsey Hill Road, Bridgeport, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 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 public 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 public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 1280 Chopsey Hill Road, Bridgeport, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. 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 emissions were calculated using the following assumptions:

1) 7 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) 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.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the RFS APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **180.6 feet** above ground level (AGL)
7) 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 calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT03XC325 - 1280 Chopsey Hill Road
Site Addresss	1280 Chopsey Hill Road, Bridgeport, CT 06606
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	7	140	15.9	180.6	174.6	1/2 "	0.5	0	4854.3159	57.24605	5.72461%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	180.6	174.6	1/2 "	0.5	0	389.96892	4.598831	0.81108%
															Sector total Power Density Value:		6.536%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	7	140	15.9	180.6	174.6	1/2 "	0.5	0	4854.3159	57.24605	5.72461%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	180.6	174.6	1/2 "	0.5	0	389.96892	4.598831	0.81108%
															Sector total Power Density Value:		6.536%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	7	140	15.9	180.6	174.6	1/2 "	0.5	0	4854.3159	57.24605	5.72461%
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															Sector total Power Density Value:		6.536%

Site Composite MPE %	
Carrier	MPE %
Sprint	19.607%
Marcus	2.550%
AT&T	3.700%
Redstar	0.570%
Metrocall	4.000%
Clinton Tower	4.080%
AAT	3.680%
Nextel	1.450%
Verizon Wireless	13.350%
Clearwire	0.530%
T-Mobile	1.970%
MetroPCS	4.870%
Total Site MPE %	**60.357%**

Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **19.607% (6.536% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **60.357%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

Know what's **below.**
Call before you dig.

APPROVALS				
		APPROVED	APPROVED AS NOTED	DISAPPROVED REVISE
SPRINT REPRESENTATIVES	DATE	☐	☐	☐
SPRINT RF ENGINEER	DATE	☐	☐	☐
SITE OWNER	DATE	☐	☐	☐
	DATE	☐	☐	☐

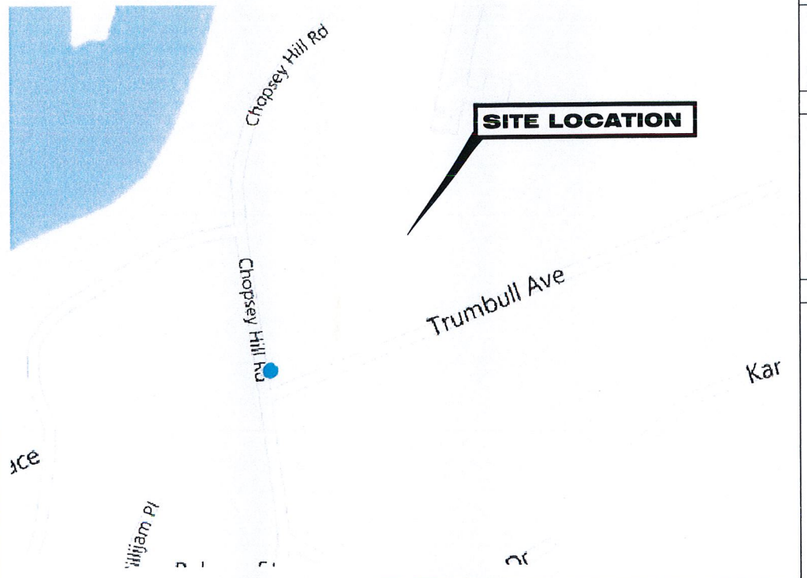
Sprint®

SITE ID: CT03XC325
SITE NAME: 1280 CHOPSEY HILL ROAD

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

NETWORK VISION CONSTRUCTION DRAWINGS

AERIAL VIEW
SCALE: NTS



LOCATION MAP
SCALE: NTS

DRAWING INDEX

DWG #	DRAWING TITLES
A01	COVER SHEET
C01	GENERAL NOTES 1 OF 2
C01A	GENERAL NOTES 2 OF 2
C02	COMPOUND PLAN
C02A	ELEVATION
C03	EQUIPMENT PLANS
C03A	EQUIPMENT & ANTENNA SPECIFICATIONS
C04	ANTENNA PLANS (ALL SECTORS)
C04A	RRH PLANS (ALL SECTORS)
C04B	RRH MOUNT DETAILS (ALL SECTORS)
C05	SITE DETAILS
C06	RF SCHEDULE
C06A	RF DATA SHEET
C07	AAV DRAWINGS - COVER SHEET
C07A	AAV DRAWINGS - SITE PHOTOS
C07B	AAV DRAWINGS - COMPOUND PLAN
C07C	AAV DRAWINGS - DETAILS
E01	ELECTRICAL NOTES
E02	ELECTRICAL & GROUNDING DETAILS

CODES & STANDARDS

These documents are in compliance & all construction to be in accordance with the following codes & standards as applicable:

State Building Code: 2005 Connecticut Supplement

2003 International Building Code
2003 International Residential Code
2003 International Existing Building Code
2003 International Mechanic Code
2003 International Plumbing Code
2003 International Energy Conservation Code (re-adopted with changes)
ICC/ANSI A117.1-2003 Assessible and Usable Buildings and Facilities

2005 National Electrical Code (NFPA-70)

DRIVING DIRECTIONS

1. DEPART 1 INTERNATIONAL BLVD, MAHWAH, NJ 07495
2. HEAD NORTH ON INTERNATIONAL BLVD TOWARD QUEENSLAND RD
3. TURN RIGHT ONTO PARK LN
4. CONTINUE STRAIGHT ONTO LEISURE LN
5. SLIGHT RIGHT ONTO NJ-17 N
6. TAKE THE EXIT TOWARD I-287 N/NJ-17 N
7. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-287 N/I-87/NJ-17 N/N Y. THRUWAY AND MERGE ONTO I-287 N/NJ-17 N
8. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-87 S/I-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY AND MERGE ONTO I-287 E/I-87 S
9. CONTINUE TO FOLLOW I-287 E
10. TAKE THE EXIT ONTO I-95 N
11. ENTERING CONNECTICUT
12. TAKE EXIT 27A FOR CONNECTICUT 25/CONNECTICUT 8 TOWARD TRUMBULL/WATERBURY
13. MERGE ONTO CT-25 N/CT-8 N
14. TAKE EXIT 5 TOWARD US-1/BOSTON AVE/NORTH AVE
15. SHARP RIGHT ONTO CHOPSEY HILL RD
16. TURN RIGHT ONTO CHOPSEY HILL RD/POND ST
17. CONTINUE TO FOLLOW CHOPSEY HILL RD
18. DESTINATION WILL BE ON THE RIGHT

SITE INFORMATION

BLOCK	2617
LOT	001
MAP	210
ZONING CLASSIFICATION	RA-2
ZONING JURISDICTION	CITY OF BRIDGEPORT

PROJECT INFORMATION:

SITE ADDRESS:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

COORDINATES:
LATITUDE: 41° 13' 10.55"
LONGITUDE: -73° 12' 4.70"
DATUM : NAD 83

STRUCTURE HEIGHT:
±240'-0" (TOP OF LATTICE TOWER)

PROJECT DIRECTORY:

PROPERTY OWNER:
UNISON SITE MANAGEMENT LLC

APPLICANT:
SPRINT-NEXTEL
6200 SPRINT PARKWAY
OVERLAND PARK, KS 66251

ENGINEER:
KMB DESIGN GROUP, LLC
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
KEITH DRENNAN - PROJECT MANAGER
(732) 280-5623

POWER COMPANY:
THE UNITED ILLUMINATING COMPANY
157 CHURCH STREET
NEW HAVEN, CT 06510
1-800-CALL-UI

CONSTRUCTION MANAGER:
TODD AMANN
(914) 715-9363

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
6	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

KMB DESIGN GROUP
kmbdg.com
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WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT · STEPHEN A. BRAY · 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

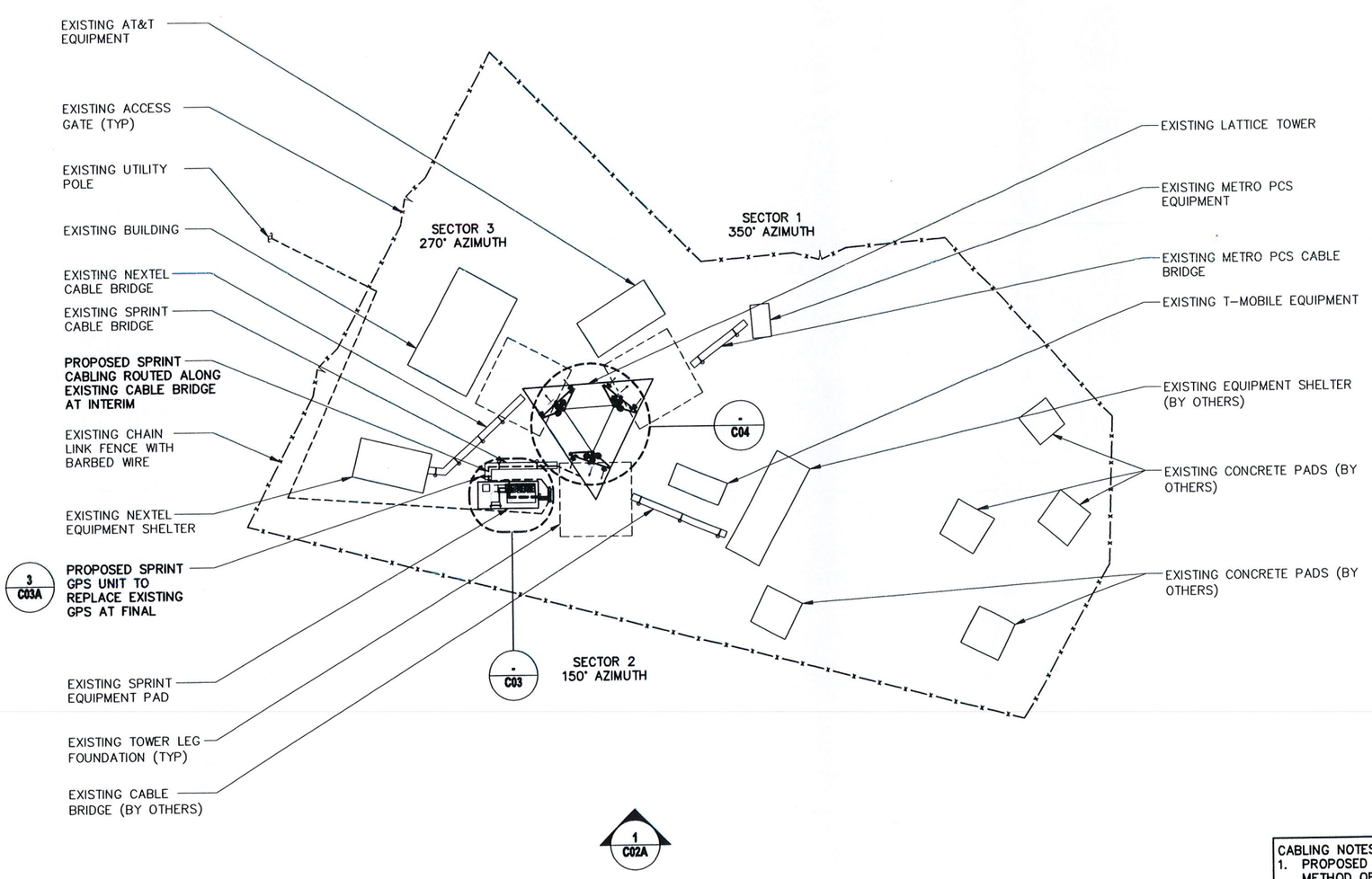
PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: COVER SHEET

SHEET NUMBER: A01 REV.: 0

K:\332_Sprint_332.1000_Alcatel-Lucent\332.1467_CT03XC325_1280 Chopsey Hill Road\332.1467_CAD\332.1467_Construction\332.1467_A01.dwg, 9/13/2012 10:59:26 AM, ezampitella



10 0 5 10 20 40
(IN FEET)

1 COMPOUND PLAN

11x17 SCALE: 1" = 40' | 24x36 SCALE:1" = 20'

CABLING NOTES:
1. PROPOSED CABLING TO FOLLOW EXISTING ROUTE AND METHOD OF ATTACHMENT AT INTERIM.
2. EXISTING COAXIAL CABLES TO BE REMOVED AT FINAL.
3. CONTRACTOR TO REPAIR/REPLACE ANY MISSING/DAMAGED CABLE TRAY AND ADD HURRICANE STRAPS AS REQUIRED IF APPLICABLE.

GENERAL NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.
2. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED WITH GALVANIZED GROUND BARS. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.
3. CONTRACTOR TO RESTORE ANY RUST AREA TO ORIGINAL CONDITION AND PROTECTIVE COATING TO BE APPLIED.
4. STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.

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0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

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Stephen A. Bray
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT STEPHEN A. BRAY No. 26657 LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: COMPOUND PLAN

SHEET NUMBER:	REV.:
C02	0

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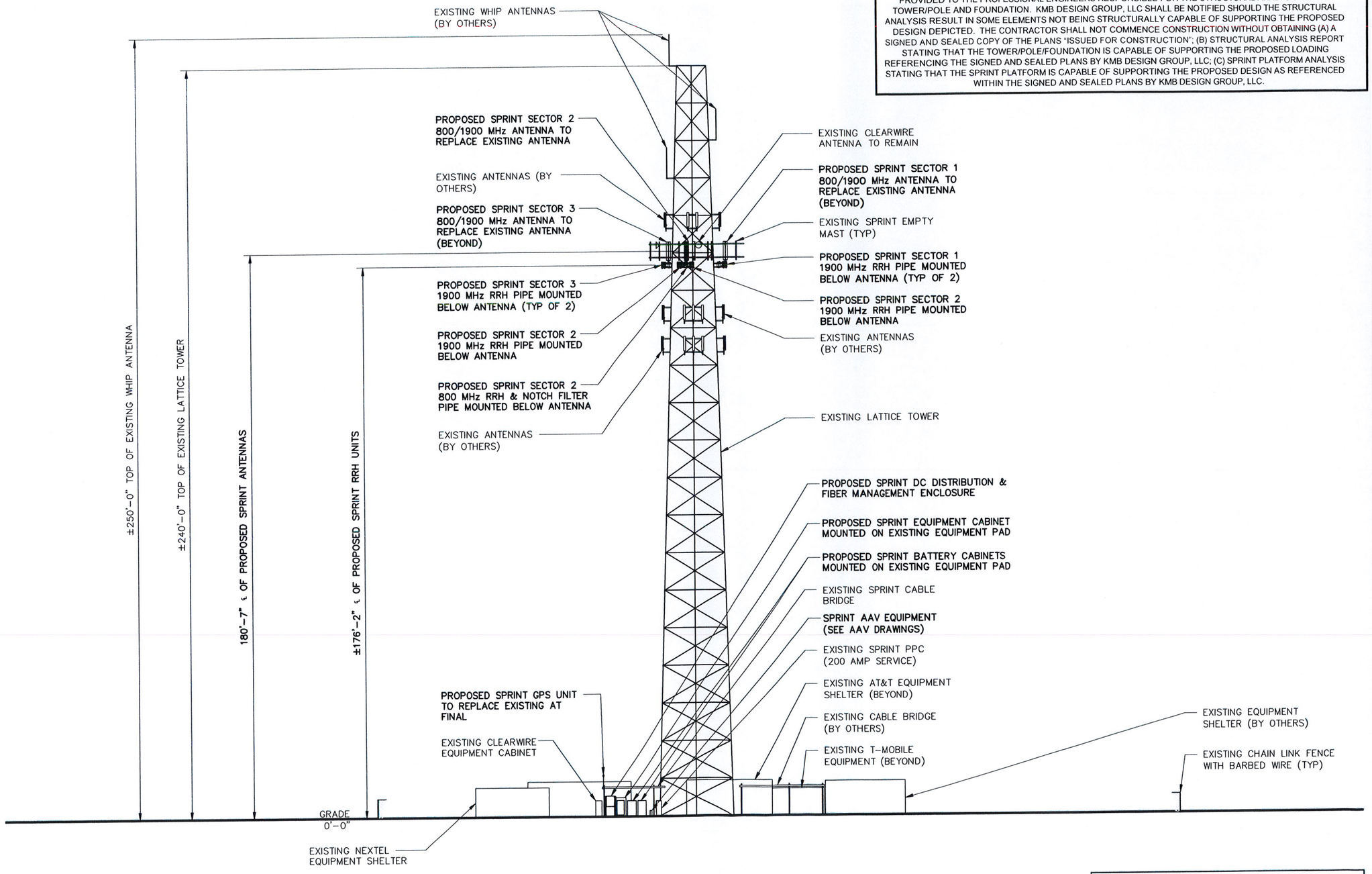

NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.

8 0 4 8 16 32
(IN FEET)

1 **SOUTHEAST ELEVATION**

11x17 SCALE: 1/32" = 1'-0" | 24x36 SCALE: 1/16" = 1'-0"

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0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

KMB DESIGN GROUP
kmbdg.com
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WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A. BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: ELEVATION

SHEET NUMBER: C02A | REV.: 0

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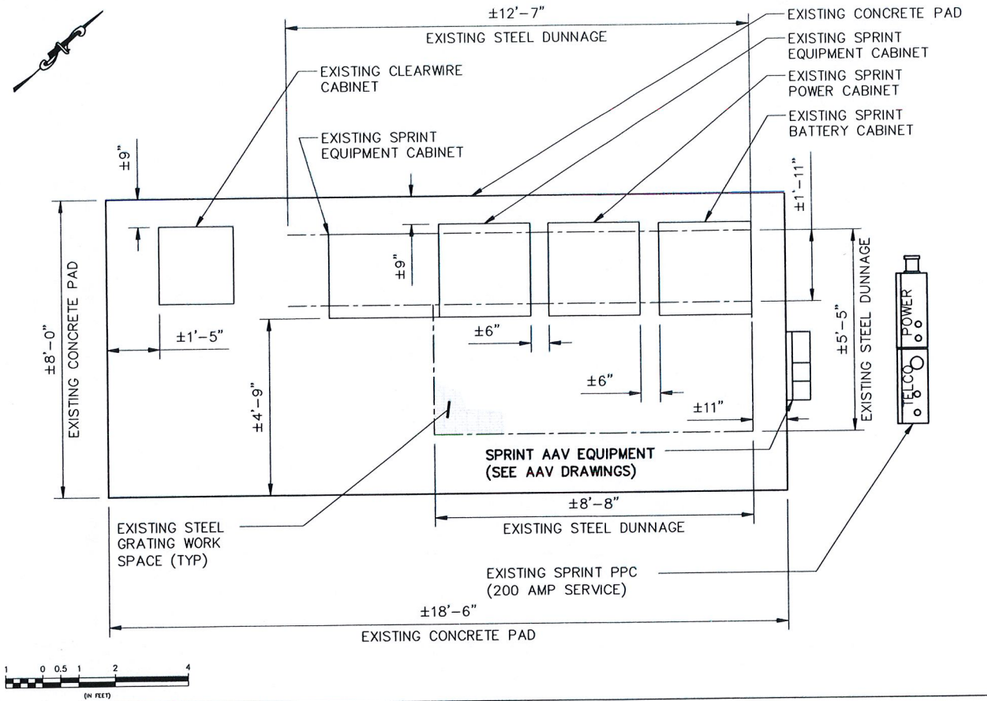
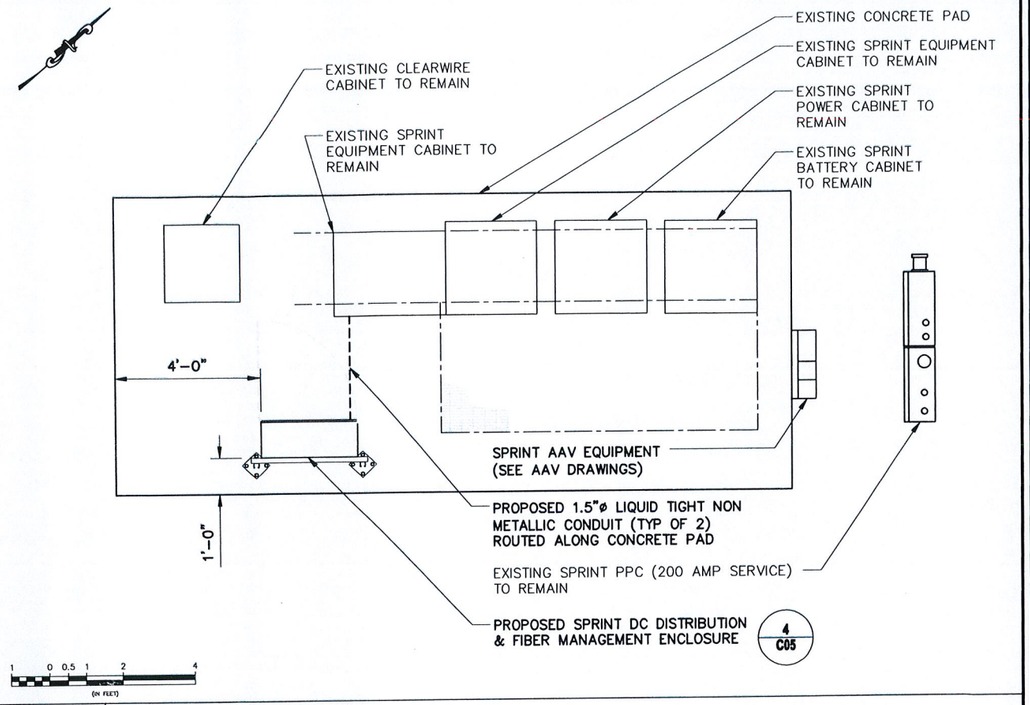


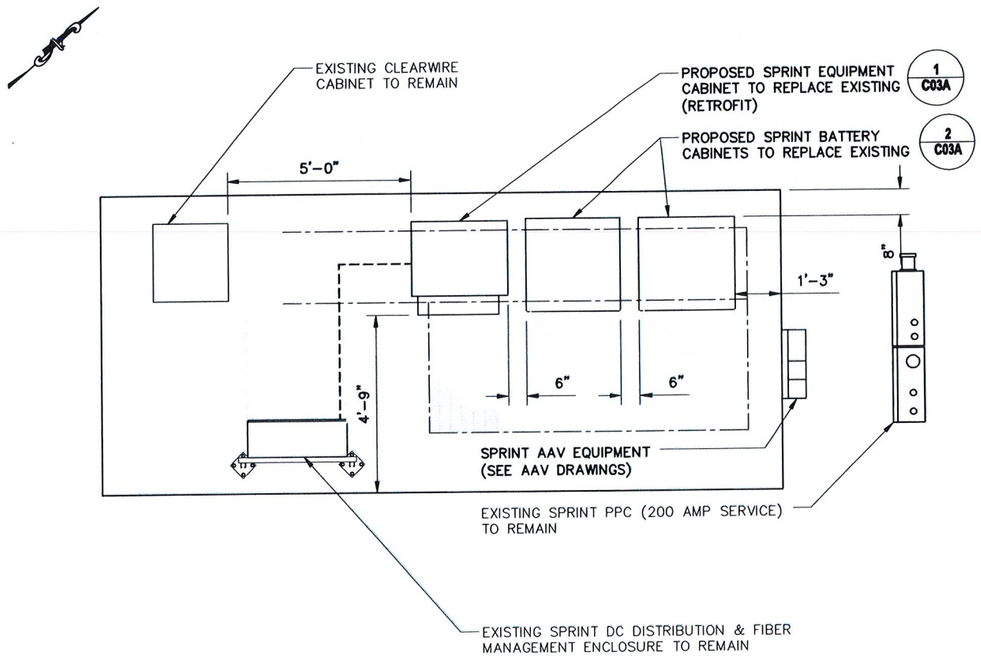
1 EXISTING EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0" | 24x36 SCALE: 1/2" = 1'-0"



2 INTERIM EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0" | 24x36 SCALE: 1/2" = 1'-0"



3 FINAL EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0" | 24x36 SCALE: 1/2" = 1'-0"

NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED.

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0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

KMB DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A. BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: 332.1467

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: EQUIPMENT PLANS

SHEET NUMBER: C03 | REV.: 0

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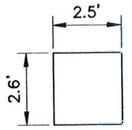
1

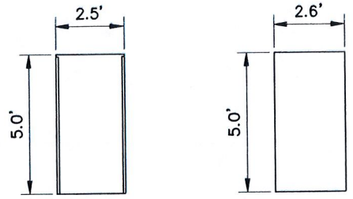
2

BATTERY CABINET SPECIFICATION

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"



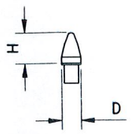
AVAYA 60ECv2
BATTERY CABINET
CABINET WEIGHT: 1625 lbs
FOOTPRINT: 6.5 SF



3

GPS UNIT SPECIFICATIONS

11x17 SCALE: 1/4" = 1'-0" | 24x36 SCALE: 1/2" = 1'-0"



MANUF.: PCTEL
MODEL #: GPS-TMG-HR-26NCM
HEIGHT: 5.0"
DIAMETER: 3.2"
WEIGHT: 0.6 lbs

4

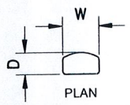
5

6

7

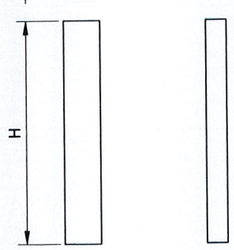
ANTENNA SPECIFICATIONS - 800/1900 MHz

SCALE: NTS



PLAN

MANUF.: RFS
MODEL: APXVSPP18-C-A20
LENGTH 72.0"
WIDTH: 11.8"
DEPTH: 7.0"
WEIGHT: 64.5 lbs
AREA: 5.9 SF



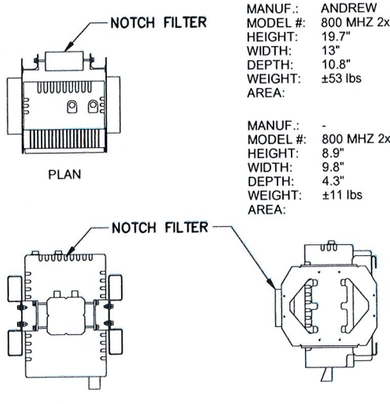
MANUF.: RFS
MODEL: APXVERR18-C-A20
LENGTH 72.0"
WIDTH: 11.8"
DEPTH: 7.0"
WEIGHT: 62.5 lbs
AREA: 5.9 SF

8

9

RRH SPECIFICATIONS - 800 MHz

11x17 SCALE: 1/2" = 1'-0" | 24x36 SCALE: 1" = 1'-0"



PLAN

MANUF.: ANDREW
MODEL #: 800 MHZ 2x50W
HEIGHT: 19.7"
WIDTH: 13"
DEPTH: 10.8"
WEIGHT: ±53 lbs
AREA:

MANUF.: -
MODEL #: 800 MHZ 2x50W
HEIGHT: 8.9"
WIDTH: 9.8"
DEPTH: 4.3"
WEIGHT: ±11 lbs
AREA:

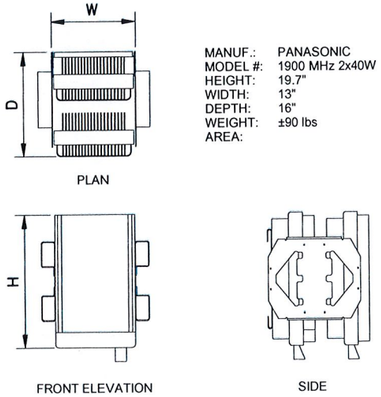
FRONT ELEVATION

SIDE

10

RRH SPECIFICATIONS - 1900 MHz

11x17 SCALE: 1/2" = 1'-0" | 24x36 SCALE: 1" = 1'-0"



PLAN

MANUF.: PANASONIC
MODEL #: 1900 MHz 2x40W
HEIGHT: 19.7"
WIDTH: 13"
DEPTH: 16"
WEIGHT: ±90 lbs
AREA:

FRONT ELEVATION

SIDE

11

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0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

KMB DESIGN GROUP
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1800 ROUTE 34, SUITE 209
WALL, NJ 07719
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Stephen A. Bray
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STATE OF CONNECTICUT
STEPHEN A. BRAY
No. 26657
LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: 332.1467

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

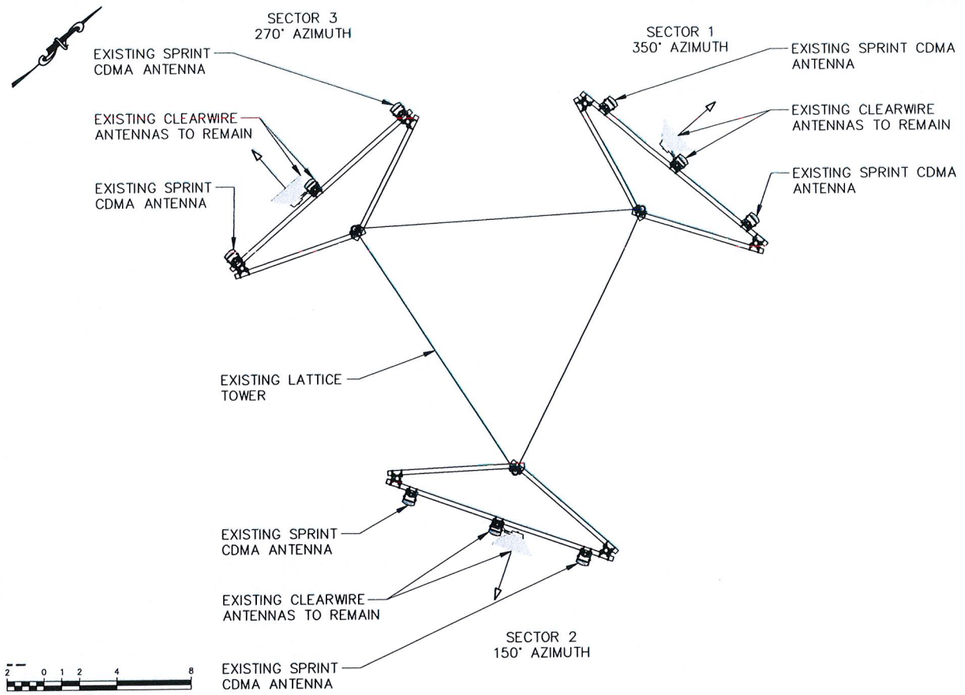
CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

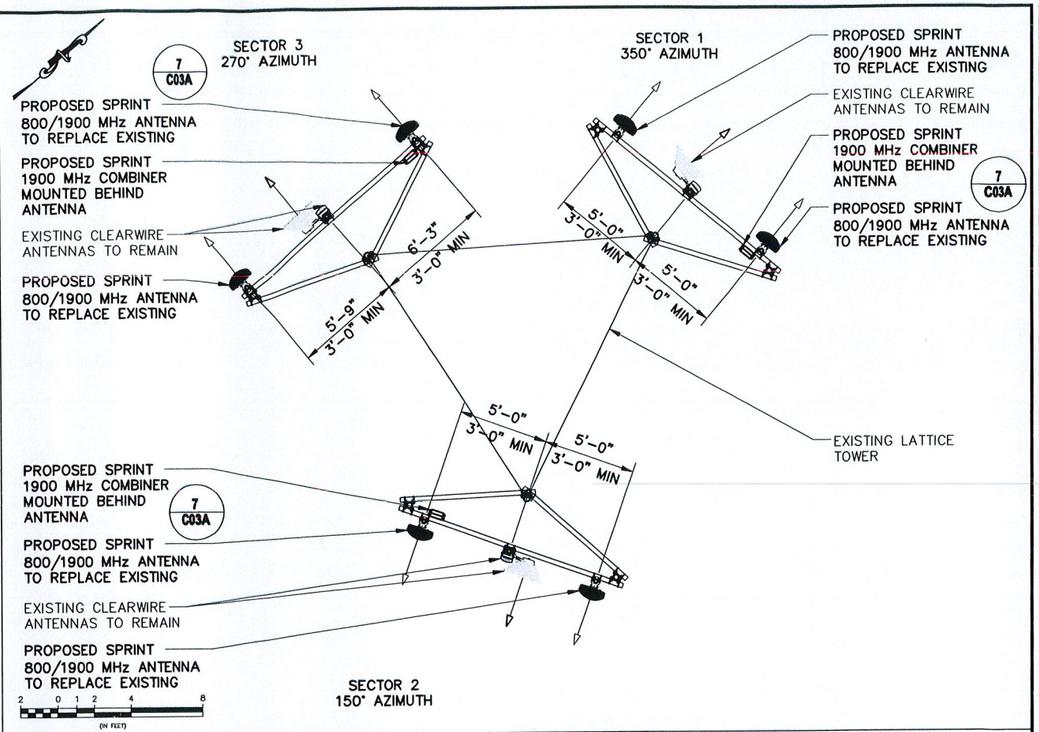
SHEET TITLE: EQUIPMENT & ANTENNA SPECIFICATIONS

SHEET NUMBER: C03A | REV.: 0



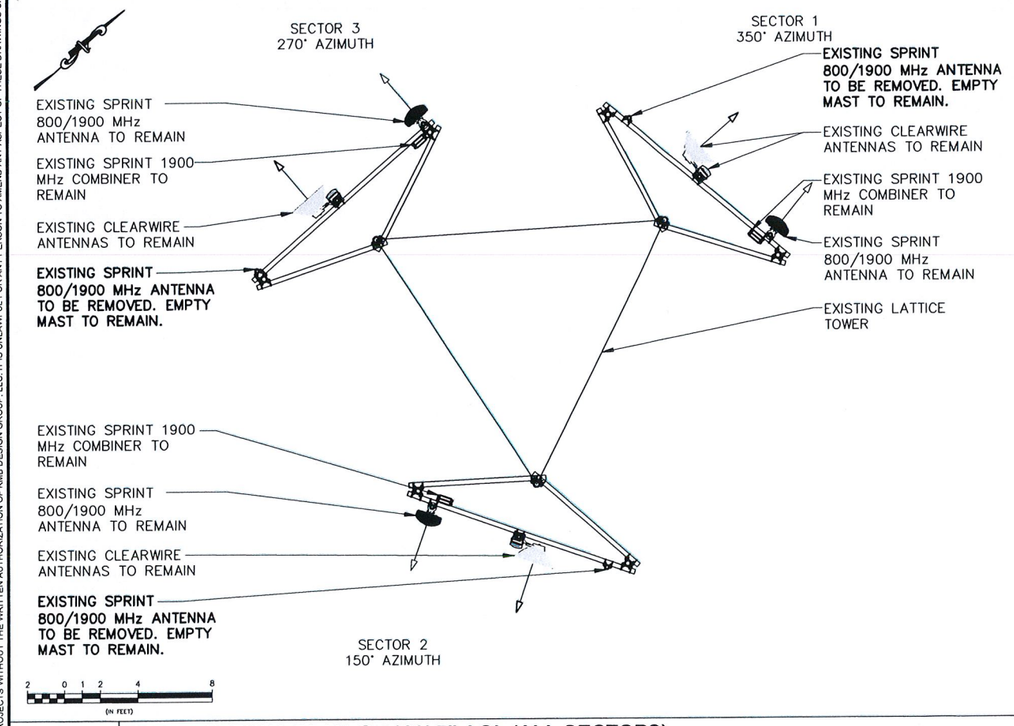
1 **EXISTING ANTENNA PLAN @ ±180'-7" AGL (ALL SECTORS)**

11x17 SCALE: 1/8" = 1'-0" | 24x36 SCALE: 1/4" = 1'-0"



2 **INTERIM ANTENNA PLAN @ ±180'-7" AGL (ALL SECTORS)**

11x17 SCALE: 1/8" = 1'-0" | 24x36 SCALE: 1/4" = 1'-0"



3 **FINAL ANTENNA PLAN @ ±180'-7" AGL (ALL SECTORS)**

11x17 SCALE: 1/8" = 1'-0" | 24x36 SCALE: 1/4" = 1'-0"

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED WITH GALVANIZED GROUND BARS. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

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(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT
STEPHEN A. BRAY
No. 26657
LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

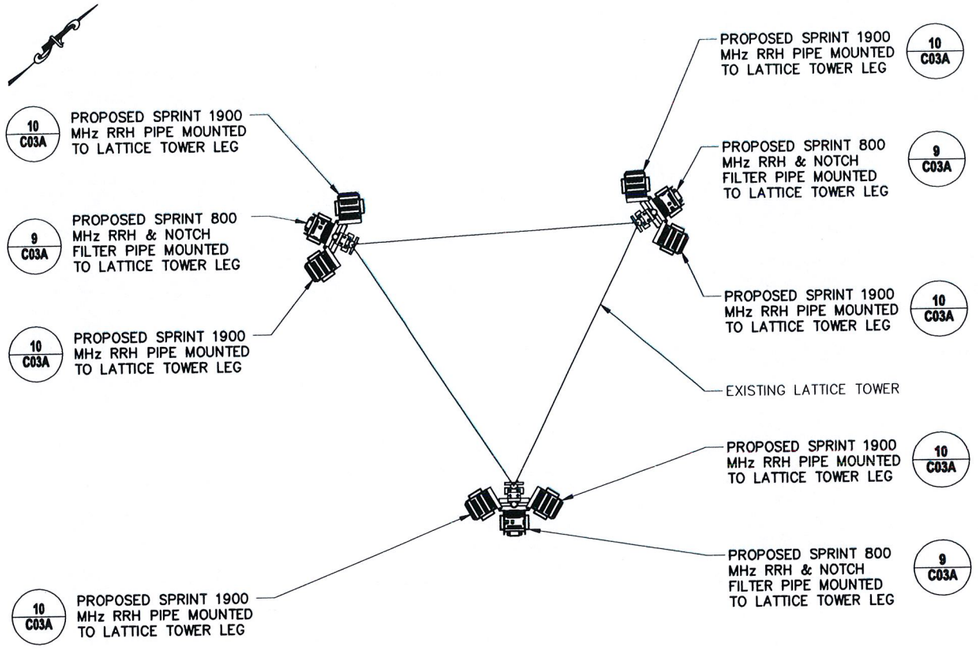
CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

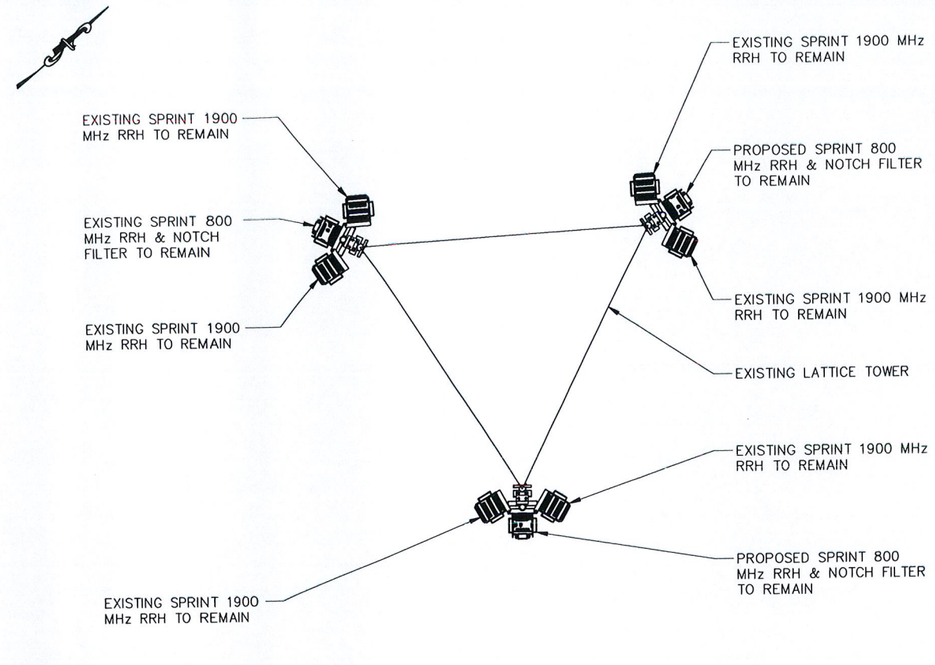
SHEET TITLE: ANTENNA PLANS (ALL SECTORS)

SHEET NUMBER:	REV.:
C04	0



1 INTERIM RRH PLAN @ ±176'-2" AGL (ALL SECTORS)

11x17 SCALE: 1/8" = 1'-0" 24x36 SCALE: 1/4" = 1'-0"



2 FINAL RRH PLAN @ ±176'-2" AGL (ALL SECTORS)

11x17 SCALE: 1/8" = 1'-0" 24x36 SCALE: 1/4" = 1'-0"

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

NOTE:
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CT LICENSE: 26657 9/13/12

PROJECT NUMBER: 332.1467

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: RRH PLANS (ALL SECTORS)

SHEET NUMBER: C04A REV.: 0

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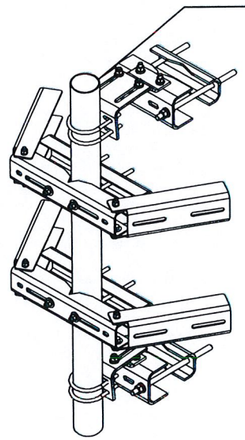

PROPOSED 2" DIA (NOM) SCH 40 PIPE
(LENGTH AS REQUIRED)

NOTE:
RRHs NOT SHOWN FOR CLARITY.

UNIVERSAL SLIDING PIPE MOUNT KIT BY COMMSCOPE, PART # PM-SU35-48 OR AN APPROVED EQUAL
KIT INCLUDES:
UNIVERSAL SADDLE MOUNT, SLIDING PIPE MOUNT BRACKETS PIPE & HARDWARE

UNIVERSAL RRU MOUNT KIT BY COMMSCOPE, PART # RM-RU3 OR AN APPROVED EQUAL
KIT INCLUDES:
BRACKETS & HARDWARE

1 RRH MOUNT DETAIL

SCALE: NTS

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PROJECT NUMBER:
332.1467

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE:
RRH MOUNT DETAILS
(ALL SECTORS)

SHEET NUMBER:	REV.:
C04B	0

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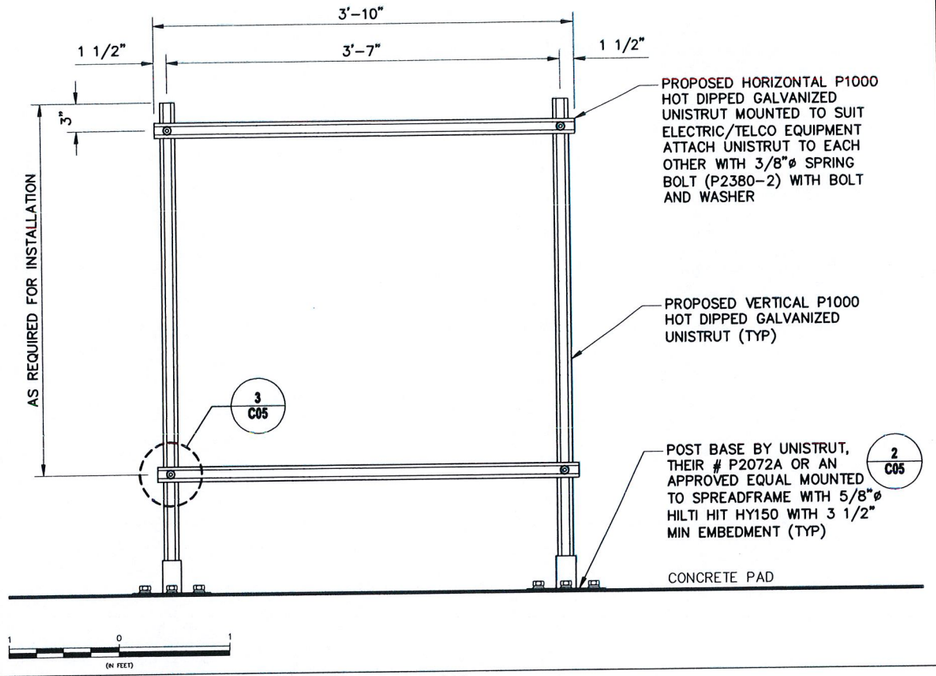
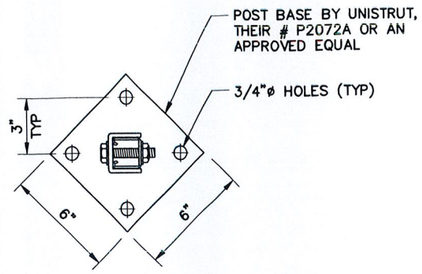


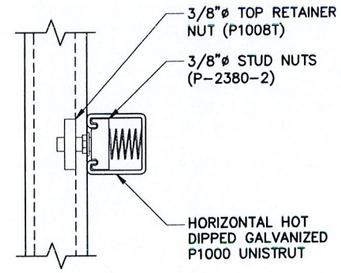
1 UNISTRUT BACKBOARD ELEVATION

11x17 SCALE: 3/4" = 1'-0" | 24x36 SCALE: 1 1/2" = 1'-0"



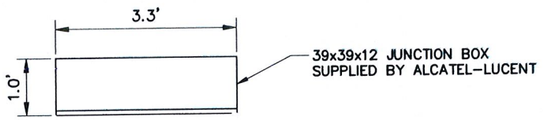
2 POST BASE DETAIL

11x17 SCALE: 1 1/2" = 1'-0" | 24x36 SCALE: 3" = 1'-0"

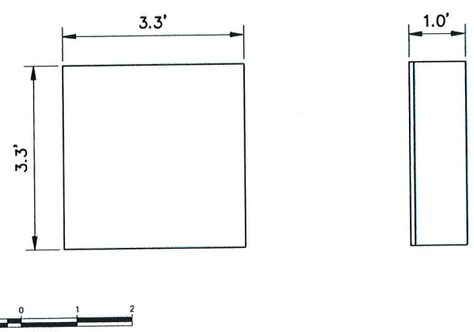


3 UNISTRUT CONNECTION DETAIL

11x17 SCALE: 3" = 1'-0" | 24x36 SCALE: 6" = 1'-0"



JUNCTION BOX TO BE CONFIGURED AS REQUIRED FOR SITE CONDITIONS PER MANUFACTURER'S SPECIFICATIONS



4 DC DISTRIBUTION & FIBER MGMT ENCLOSURE DETAIL

11x17 SCALE: 3/8" = 1'-0" | 24x36 SCALE: 3/4" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

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Stephen A. Bray
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT STEPHEN A. BRAY No. 26657 LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: SITE DETAILS

SHEET NUMBER:	REV.:
C05	0

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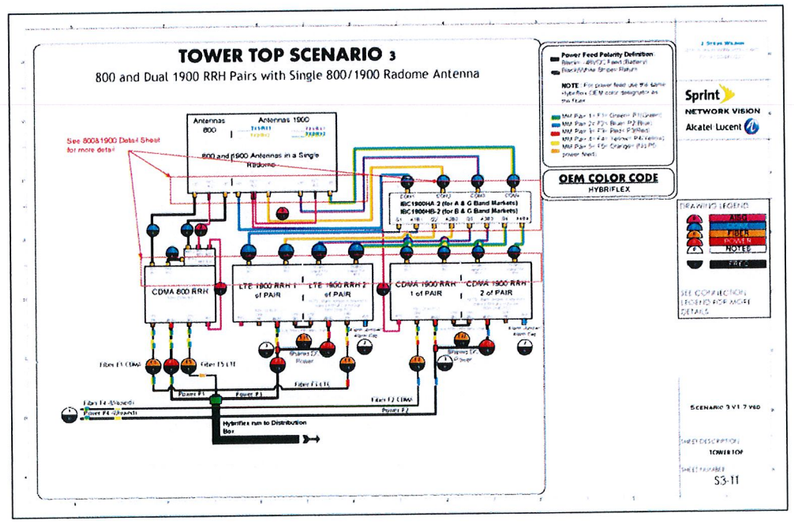
FINAL ANTENNA AND CABLE SCHEDULE

SECTOR	ANTENNA	AZIMUTH (DEGREES)	MECHANICAL DT (DEGREES)	ELECTRICAL DT (DEGREES)	RAD CENTER AGL (FT)	ANTENNA MAKE	ANTENNA MODEL	RRH QTY	TOP COAX JUMPER QTY	TOP COAX JUMPER LENGTH (FT)	COMBINER JUMPER QTY	COMBINER JUMPER LENGTH (FT)	NOTCH FILTER JUMPER QTY	NOTCH FILTER JUMPER LENGTH (FT)	HYBRIFLEX LENGTH (FT)
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	300
	CLEARWIRE	–	–	–	–	–	–	–	–	–	–	–	–	–	
	800/1900	350	0	800: −2 / 1900: −1	180.6	RFS	APXVSPP18-C-A20	800: 1 / 1900: 2	8	10	8	10	1	3	
2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	250
	CLEARWIRE	–	–	–	–	–	–	–	–	–	–	–	–	–	
	800/1900	150	0	800: −8 / 1900: −4	180.6	RFS	APXV9ERR18-C-A20	800: 1 / 1900: 2	8	10	8	10	1	3	
3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	300
	CLEARWIRE	–	–	–	–	–	–	–	–	–	–	–	–	–	
	800/1900	270	0	800: −7 / 1900: −3	180.6	RFS	APXVSPP18-C-A20	800: 1 / 1900: 2	8	10	8	10	1	3	

NOTES:
1. DUE TO FIELD MEASUREMENTS AND THE INSTALLATION OF NEW ANTENNAS THAT VARY IN SIZE FROM THE EXISTING ANTENNAS, THE ANTENNA RAD CENTER HAS CHANGED FROM WHAT IS ON RECORD. THE DATABASE MAY NEED TO BE UPDATED TO MATCH THESE PLANS.
2. SOME CABLING MAY CHANGE AT THE TIME OF CONSTRUCTION. CONTRACTOR TO CONFIRM ALL CABLE LENGTHS, TYPE, QUANTITIES, AND CONFIGURATION PRIOR TO CONSTRUCTION.
3. ALL UNUSED POWER AND FIBER MUST BE PROPERLY TERMINATED AND WEATHERPROOFED.

CONTRACTOR TO VERIFY & USE THE LATEST TOWER TOP SCENARIO AS PROVIDED BY ALCATEL-LUCENT CONSTRUCTION MANAGER



ALL SECTORS

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0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

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Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A. BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER: **332.1467**

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE: RF SCHEDULE

SHEET NUMBER: C06 REV.: 0

GENERAL SPECIFICATIONS

1. Contractor shall verify that the total number of service entrance disconnects in the existing utility company pedestal must not exceed six. If the new service added exceeds this value, contractor must coordinate with the utility company and authority having jurisdiction. Run an additional exclusive and dedicated service lateral set for the new load added to the compound as per NEC Article # 230-2(B)
2. All work should be done in a neat workmanlike manner, left clean and free from defects, and completely operable. The contractor shall provide all equipment as scheduled on the drawings. All materials shall be new and all work and materials shall be guaranteed by the contractor for a period of one (1) year from the date of acceptance by the owner.
3. All work shall be carefully coordinated with the landlord and all trades involved, and the contractor shall provide proper connections, fittings, valves, piping, etc. for all equipment furnished by carrier or other trades involved in this contract.
4. Contractor shall inform the engineer immediately of any conflict discovered before performing any work related to such conflict.
5. Provide all required temporary utilities and pay all associated fees and operating costs.
6. Before submitting this bid, the contractor shall visit the job site to examine and fully acquaint himself with the existing job conditions, paying particular attention to the location of existing conditions to make a complete and operable system without additional cost to the carrier or the engineer.
7. Obtain all permits and approvals from authorities having jurisdiction and paying all fees required.
8. Label all equipment served from Sprint panelboard with phenolic labels sized in relation to usage.
9. Contractor to provide and install engraved label on the Sprint meter socket enclosure.
10. Redlined As-Builts are to be delivered to a Sprint representative.
11. The equipment/protections must be rated for standard of AIC rate higher than incoming equipment and/or utility company AIC rate.

GROUNDING NOTES

1. The subcontractor is responsible for properly sequencing grounding and underground conduit installation as to prevent any loss of continuity in the grounding system or damage to the conduit.
2. All exterior ground conductors shall be #2 AWG solid tinned copper unless otherwise indicated.
3. All ground connections above grade (interior & exterior) shall be formed using high press crimps.
4. All ground connections below grade shall be exothermic (Cadweld).
5. Connections to equipment and enclosures shall be made utilizing two-hole ground lugs with an antioxidant compound.
6. Maximum resistance of the completed ground system shall not exceed 5 Ohms. Testing shall be performed in accordance with technical specification for facility grounding, using fall potential method.
7. Where grounding connections are made to painted metal surfaces shall be scraped clean to bear metal to ensure proper contact. Surfaces shall be restored to match original finishes.
8. Use of 90° bends in the protection grounding conductors shall be avoided when 45° bends can be adequately supported.
9. Ground depth shall be 30" minimum below finished grade, or 6" below frost line, whichever is greater.

ELECTRICAL SYMBOLS		ABBREVIATIONS	
WIRING SYMBOLS		AWG	AMERICAN WIRE GAUGE
	DISCONNECT SWITCH	BCW	BARE COPPER WIRE
M	METER	DWG	DRAWING
	CIRCUIT BREAKER	EMT	ELECTRICAL METALLIC TUBING
	CADWELD TYPE CONNECTION	GEN	GENERATOR
	COMPRESSION TYPE CONNECTION	MGB	MASTER GROUND BAR
	GROUND ROD WITH ACCESS	PVC	RIGID (SCH 40) PVC CONDUIT
	CHEMICAL GROUND ROD	RGS	RIGID GALVANIZED STEEL
	GROUND ROD	RWY	RACEWAY
	CONDUIT TURNING DOWN	TYP	TYPICAL
	CONDUIT TURNING UP		
JB	JUNCTION BOX		
PB	PULL BOX		
	CONDUIT RUNNING ABOVE GRADE		
	CONDUIT RUNNING UNDER GROUND		

ELECTRICAL SPECIFICATIONS

1. General:
   - A. The electrical contractor shall furnish all labor,materials, tools, transportation equipment, services and facilities required for the complete, proper and substantial installation of all electrical work. All fixtures, devices, and equipment shown, noted or required on these drawings, and/or contained herein shall be connected from the source of electric power to the final connection, tested and made ready for satisfactory operation.
   - B. Service equipment shall be 120/240 VAC, 100 Amp, single phase, unless otherwise directed by the Sprint Construction Manager.
   - C. Unless otherwise indicated, the arrangement, position, connections, etc. shown on the drawings shall be taken on a diagram basis. The right is reserved by the engineer to make minor changes in locations and arrangements when required by job development without additional compensation to the contractor.
   - D. All work shall conform to the adopted edition of the National Electrical Code and local, state and applicable codes.
   - E. When a utility company meter is specified, the contractor shall obtain all associated cut-in cards, inspections, etc., necessary to have the meter set. It is the responsibility of the contractor to meet with utility company prior to construction to verify source of electric service, tap and meter location.
2. Identification:
   - A. Provide typewritten directories for panels, indicating use of each branch circuit and designating spare circuits. Handwritten directories are not acceptable.
   - B. All panel boards, switches and other equipment enclosures shall bear engraved nameplates as manufactured by Seton Nameplate Corp., or equal lettering to be 1/2" white letters on black background unless noted otherwise.
3. Raceways:
   - A. Minimum conduit size shall be 3/4" unless otherwise noted on the drawings.
   - B. Exposed raceways shall be run true, plumb, and parallel or perpendicular to building lines.
   - C. Conduit routings are schematic. Sub contractor shall install conduits so that access to equipment is not blocked.
4. Wiring Methods:
   - A. All feeders shall consist of pulled conductors in conduit. All branch circuits shall consist of pulled conductors in conduit. Except 15 and 20 Ampere 1 pole lighting receptacles, miscellaneous branch circuits concealed above suspended ceilings or within dry walls shall consist of type MC metal clad cable if allowed by code. Connections to communications cabinets and vibrating equipment shall consist of pulled conductors in LFMC, maximum 6' in length.
   - B. Conductors shall be continuous from origin to panel or equipment without splices. Where tap splices are necessary and approved, they shall be made with suitable connectors in junction boxes.
   - C. Equipment ground conductors shall be provided for all feeders and branch circuits.
   - D. The contractor shall conceal all conduit routing passing through finished areas. Conduit routing through unfinished shall be supported as specified in drawings. Unless clearly specified, no conduits shall be routed on exterior surface of buildings.
   - E. All conductor terminals shall be U.L. listed for minimum of 75° C.
   - F. Provide fire stopping around all conduits at wall and floor penetrations.
   - G. Seal all exterior wall penetrations as required.
   - H. Underground conduits shall be a minimum of 24" below finished grade. All underground work shall be documented by photograph before any backfill is begun. Photos will be required at time punchlist is performed. Feeders shall be individual conductors in schedule 40 PVC, direct burial conduit. When buried conduits are subject to vehicular traffic, conduits shall be encased in concrete. All sweeps below grade shall be schedule 80 PVC.
   - I. All feeders in "damp" or "wet" locations shall consist of individual conductor in rigid galvanized steel or rigid aluminum conduit. Liquid-tight flexible metallic conduit shall be utilized when connecting to equipment cabinets and vibrating equipment. The maximum length for flexible conduit shall be 6'-0".
5. Wiring Devices:
   - A. Switches, receptacles and other wiring devices shall be specification grade of type, size and rating indicated on the drawings.
6. Disconnect Switches:
   - A. Switches shall be quick-make, quick-break NEMA 1 for indoor use and NEMA 3R for outdoor use as manufactured by General Electric, Square D or equal. Electrical contractor to provide all safety disconnects.
7. Special Requirements:
   - A. The electrical contractor shall furnish and install all power and control wiring for equipment contained in contract documents.
   - B. All work requiring an outage or interruption of service (power, telephone) shall be scheduled only at such time permitted by owner.
8. Lighting fixtures and lamps:
   - A. Lighting fixtures shall be furnished complete with necessary hardware and lamps.
9. Transformers:
   - A. Transformers shall be dry type with average temperature rise not to exceed 150° C (115° C)(80° C)
   - B. Transformers shall be as manufactured by Square D, General Electric, or Siemens.

The contractor is required to contact the utility companies prior to starting construction. This is necessary to reconfirm that the utility points have remained consistent with the contractor documents:

* Telephone Demarcation Point
* Electrical Service Tap Point
* New Utility Meter Location

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

KMB DESIGN GROUP
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CT LICENSE: 26657 9/13/12

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1280 CHOPSEY HILL ROAD
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FAIRFIELD COUNTY

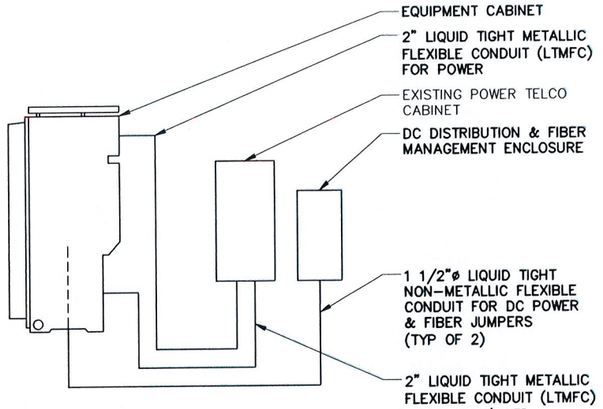
CT03XC325

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

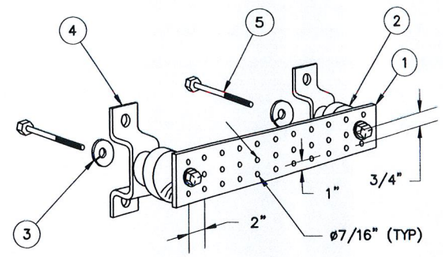
SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER:	REV.:
E01	0



1 PLUMBING SCHEMATIC (IF REQUIRED)

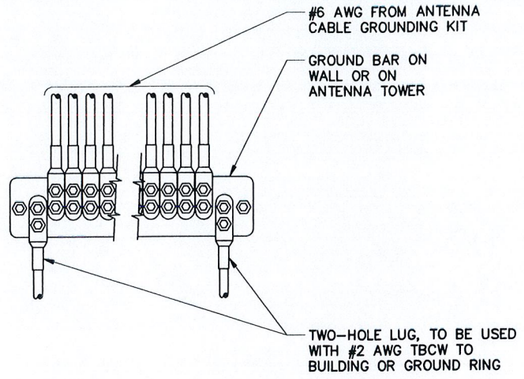
SCALE: NTS



1. GALVANIZED STEEL GROUND BAR, 1/4" x 4" x 20", HAGER PART NO TGBI-14420C OR A.L.T. PART NO. 382227. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

2 GROUND BAR DETAIL

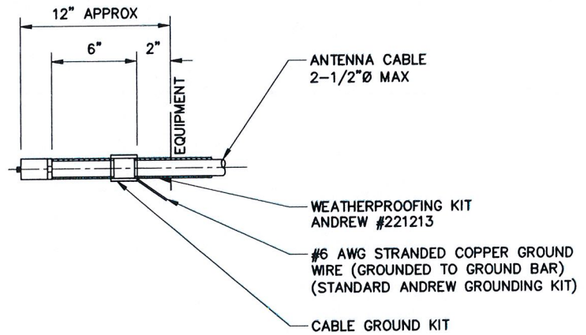
SCALE: NTS



NOTE:
CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS

3 GROUND LUG TO GROUND BAR CONNECTION DETAIL

SCALE: NTS



NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NTS

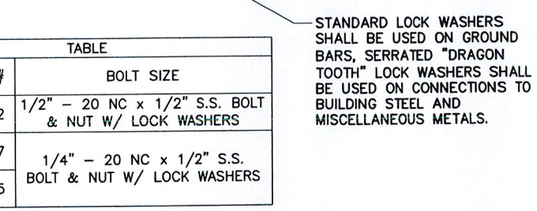
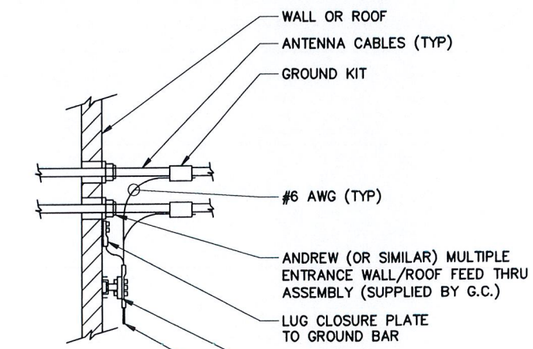


TABLE		
WIRE SIZE	LUG #	BOLT SIZE
#4/0	53212	1/2" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#2	53207	1/4" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#6	53205	

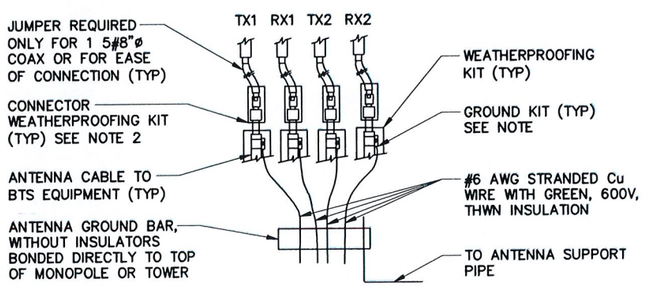
5 GROUND LUG CONNECTION DETAIL

SCALE: NTS



6 CABLE GROUNDING DETAIL

SCALE: NTS



NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.
3. ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH COAX GROUND POINT OR BACK-A-LITE PLATE ON GROUND BAR.

7 GROUND BAR TO GROUND WIRE CONNECTION DETAIL

SCALE: NTS

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
0	07-31-12	ISSUED FOR CONSTRUCTION	MCD	KCD

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LICENSED
PROFESSIONAL ENGINEER

CT LICENSE: 26657 9/13/12

PROJECT NUMBER:
332.1467

SITE INFORMATION:
1280 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

CT03XC325

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
RJS		05-27-12

SHEET TITLE:
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:	REV.:
E02	0

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