



# 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](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

February 20, 2019

Kristina Cottone  
Smartlink, LLC  
85 Rangeway Road, Building 3, Suite 102  
North Billerica, MA 01862

RE: **EM-AT&T-014-190211** – AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 4 Beaver Road, Branford, Connecticut.

Dear Ms. Cottone:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on February 11, 2019. On February 13, 2019, the Council issued a letter (enclosed) stating that the above referenced request for exempt modification was incomplete because the Post-Modification Mount Analysis Report (MA) referenced in the Construction Drawings (CD) were not provided and the Structural Analysis provided does not account for the proposed mount modifications as indicated in sheets C3, C4, S1, and S2 of the CD. The Council recommended that Smartlink, LLC provide a mount analysis for the proposed equipment that is stamped and signed by a professional engineer duly licensed in the State of Connecticut and an updated Structural Analysis Report accounting for any required antenna mount modifications on or before March 18, 2019.

On February 18, 2019, the Council received a MA prepared by Infinigy and dated January 31, 2019 and a CD prepared by Infinigy and last revised February 13, 2019. Staff has reviewed the response and observed the following deficiencies:

- a. The Structural Analysis Report dated January 7, 2018 does not account for the mount modifications proposed in the MA dated January 31, 2019. The SA must be rerun with the proposed mount modifications.
- b. The revised CD references a January 21, 2019 MA; however, the MA submitted is dated January 31, 2019.

Therefore, the exempt modification request remains incomplete at this time. The Council recommends that Smartlink, LLC provide a Structural Analysis Report that accounts for the mount modifications proposed in the MA and a CD that references the correct date of the MA, on or before March 25, 2019. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to March 25, 2019.

This notice of incompleteness shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman  
Executive Director

MAB/IN

Enclosure: Incomplete Letter dated February 13, 2019.

- c: The Honorable James B. Cosgrove, First Selectman, Town of Branford  
Harry Smith, Town Planner, Town of Branford





STATE OF CONNECTICUT

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February 13, 2019

Kristina Cottone
Smartlink, LLC
85 Rangeway Road, Building 3, Suite 102
North Billerica, MA 01862

RE: EM-AT&T-014-190211 - AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 4 Beaver Road, Branford, Connecticut.

Dear Ms. Cottone:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on February 11, 2019.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "...any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

Staff has reviewed this exempt modification request for completeness and has identified a deficiency in the request. The construction drawing Sheet C3 and C4 prepared by Infinigy, last revised on January 23, 2019, includes a mount note referencing a post-modification mount analysis report prepared by Infinigy and dated January 21, 2019. No post-modification mount analysis report is included with the request for exempt modification and the Structural Analysis Report provided with the request does not account for the proposed mount modifications as shown on drawing S2.

Therefore, the exempt modification request is incomplete at this time. The Council recommends that Smartlink provide a mount analysis for the proposed equipment that is stamped and signed by a professional engineer duly licensed in the State of Connecticut and an updated Structural Analysis Report accounting for any required antenna mount modifications on or before March 18, 2019. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to March 18, 2019.

This notice of incompleteness shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

[Handwritten signature of Melanie Bachman]

Melanie Bachman
Executive Director

MAB/FOC/CW/in

c: The Honorable James B. Cosgrove, First Selectman, Town of Branford
Harry Smith, Town Planner, Town of Branford



## Robidoux, Evan

---

**From:** Kristina Cottone <kristina.cottone@smartlinkllc.com>  
**Sent:** Monday, February 18, 2019 1:43 PM  
**To:** Robidoux, Evan  
**Cc:** CSC-DL Siting Council  
**Subject:** RE: Council Incomplete Letter for EM-AT&T-014-190211-BeaverRd-Branford  
**Attachments:** 10035093\_DE125\_190131\_CTL02175.pdf; 10035093\_ATC Mount Mods Approval.pdf; 10035093\_AE201\_190213\_CTL02175\_REV2.pdf; 10035093\_CSC Letter 2.pdf

Hello Evan,

I sent out hard copies of the following, as requested: Mount Analysis post Mount Mods, updated Construction Drawings including the Mount Mods, as well as confirmation from American Tower Corporation, stating no need to re-run the Structural Analysis to include the Mount Mods.

Please let me know if you have any other questions.

Thank you,



**Kristina Cottone | Real Estate Specialist**

**Smartlink**

85 Rangeway Road – Building 3 Suite 102

North Billerica MA, 01862

(m) 978.551.8627

[Kristina.cottone@Smartlinkllc.com](mailto:Kristina.cottone@Smartlinkllc.com)

[smartlinkllc.com](http://smartlinkllc.com)

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---

**From:** Robidoux, Evan

**Sent:** Friday, February 15, 2019 3:23 PM

**To:** Kristina Cottone

**Cc:** CSC-DL Siting Council

**Subject:** Council Incomplete Letter for EM-AT&T-014-190211-BeaverRd-Branford

Please see the attached correspondence.

Evan Robidoux  
Clerk Typist  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051



February 18<sup>th</sup>, 2019

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

**Re:** Notice of Exempt Modification – Antenna Swap and RRU Add  
**Property Address:** 4 Beaver Road Branford, CT 06405  
**Applicant:** AT&T Mobility, LLC

Dear Ms. Bachman:

I am submitting the attached post mods-Mount Analysis prepared by Infinigy, dated January 31<sup>st</sup>, 2019, as a supplement to the Exempt Modification Filing **EM-AT&T-014-190211-BeaverRd-Branford** originally submitted February 6<sup>th</sup>, 2019. I also included revised Construction Drawings dated February 13<sup>th</sup>, 2019, prepared by Infinigy, as well as an email from American Tower Corporation, stating that their engineering team stated that there is no need to re-run the Structural Analysis with the mount mods. This report fully evaluates the structure and mount's ability to support AT&T's proposed equipment, as requested by the Connecticut Siting Council. Please feel free to reach out if you have any questions.

Sincerely,

Kristina Cottone

CC w/enclosures:

James B. Cosgrove – First Selectman, Town of Branford, CT

Harry Smith – Town Planner and Zoning, Town of Branford, CT

Property Owner- Joyce Tipping (C/O Trustees)

Structure Owner, American Tower Corporation LLC

C/O Ryan Tierney-Project Manager- American Tower Corporation



February 18<sup>th</sup>, 2019

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

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Sincerely,

Kristina Cottone

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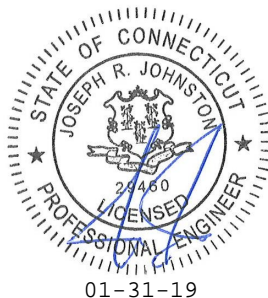
C/O Ryan Tierney-Project Manager- American Tower Corporation

## Post Mod Mount Analysis Report

January 31, 2019

Site Name	Branford West
Site Number	CTL02175
FA Number	10035093
PTN Number	2051A0KG4B/ 2051A0KDHJ/ 2051A0KDWH/ 2051A0KDX0
PACE Number	MRCTB034842/ MRCTB034853/ MRCTB034891/ MRCTB034896
Client	Smartlink
Carrier	AT&T
Infinigy Job Number	499-006
Site Location	4 Beaver Road Branford, CT 06405 41° 16' 48.57" N NAD83 72° 50' 30.30" W NAD83
Mount Centerline EL.	113.0 ft
Mount Classification	Sector Frame
Mount Usage	<b>55.2%</b>
Overall Result	<b>Pass</b>
Note	<b>See appended documents for mount modifications.</b>

Upon reviewing the results of this analysis, it is our opinion that the post modification mount meets the specified TIA code requirements. The antenna mounts and connections are therefore deemed adequate to support the final loading configuration as listed in this report.



Brenden Archer  
Project Engineer I

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**Introduction**

Infinigy Engineering has been requested to perform a post modification mount analysis on the existing AT&T mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.2 analysis software.

**Supporting Documentation**

<b>Previous Analysis</b>	Hudson Design Group, dated December 5, 2016
<b>Construction Drawings</b>	Infinigy Engineering Job #499-006, dated January 2, 2019
<b>RFDS</b>	AT&T RFDS ID #2586603, dated December 14, 2018
<b>Photos</b>	Infinigy Engineering Job #499-006, dated November 18, 2018

**Analysis Code Requirements**

Wind Speed	101 mph (3-Second Gust, $V_{ASD}$ ) / 130 mph (3-Second Gust, $V_{ULT}$ )
Wind Speed w/ ice	50 mph (3-Second Gust, $V_{ASD}$ ) w/ 0.75" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2015 IBC/ 2018 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft

**Conclusion**

Upon reviewing the results of this analysis, it is our opinion that the post modification mount meets the specified TIA code requirements. The antenna mounts and connections are therefore deemed adequate to support the final loading configuration as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Brenden Archer  
 Project Engineer I | Infinigy  
 1033 Watervliet Shaker Road, Albany, NY 12205  
 (O) (518) 690-0790  
[barcher@infinigy.com](mailto:barcher@infinigy.com) | [www.infinigy.com](http://www.infinigy.com)

**Final Configuration Loading**

Mount CL (ft)	Rad. HT(ft)	Vert. O/S(ft)	Horiz. O/S(ft) <sup>(1)</sup>	Qty	Appurtenance <sup>(2),(3)</sup>	Carrier
113.0	113.0	0.0	12.0	3	Powerwave 7770	AT&T
			9.0	3	Andrew SBNHH-1D65A	
			0.0, 4.0	6	Kathrein 800-10964	
			12.0	3	Powerwave LGP21401	
			--	3	Ericsson RRUS-32	
			--	6	Ericsson RRUS-8843 B2/B66A	
			--	3	Ericsson RRUS-4449 B5/B12	
--	3	Raycap DC6-48-60-18-8F				

(1)Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.

(2)Radios are mounted to tower face.

(3)Raycaps are mounted to tower leg.

**Structure Usages**

Diagonals	12.6%	Pass
Horizontals	55.2%	Pass
Mount Pipe	46.3%	Pass
<b>Results</b>	<b>55.2%</b>	<b>Pass</b>

**Mount Connection Reactions**

Reaction Data	Design Reactions	Analysis Reactions	Result
Tension (kips)	12.34	1.68	13.6%
Shear (kips)	7.70	1.41	18.3%
Unity Check	--	--	31.9%

\*Assumed (2) 1/2" A307 Anchors. Contractor to field to verify anchor diameters prior to proper installation.

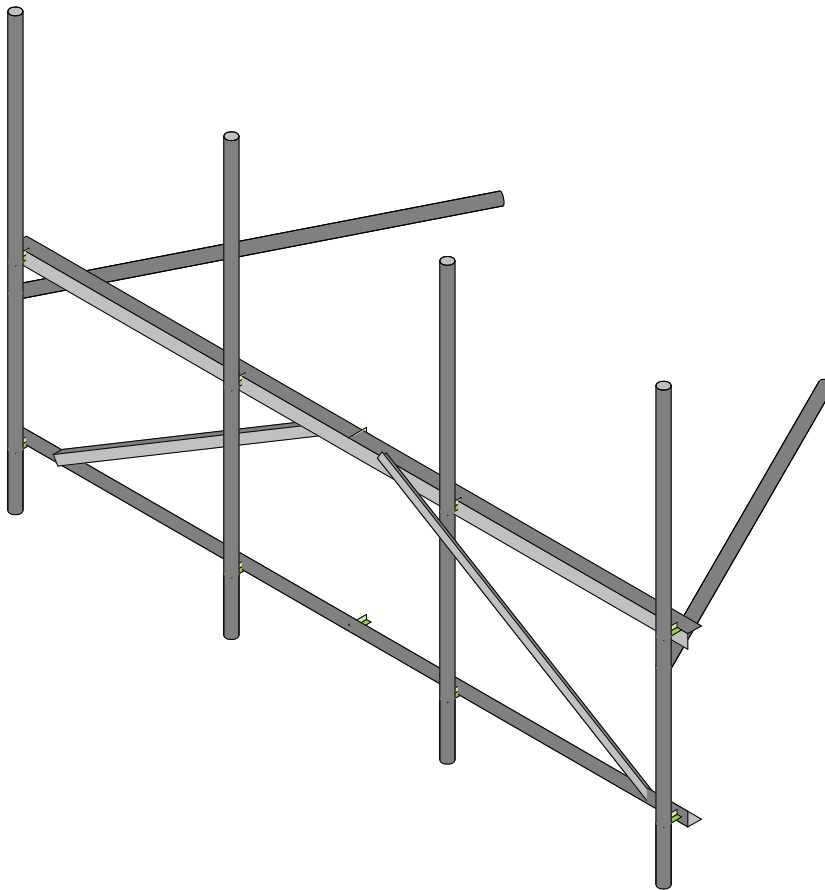
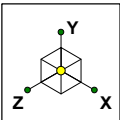
- Mount Connection reactions are acceptable per code calculate capacity.

## **Assumptions and Limitations**

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure’s condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

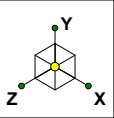
Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

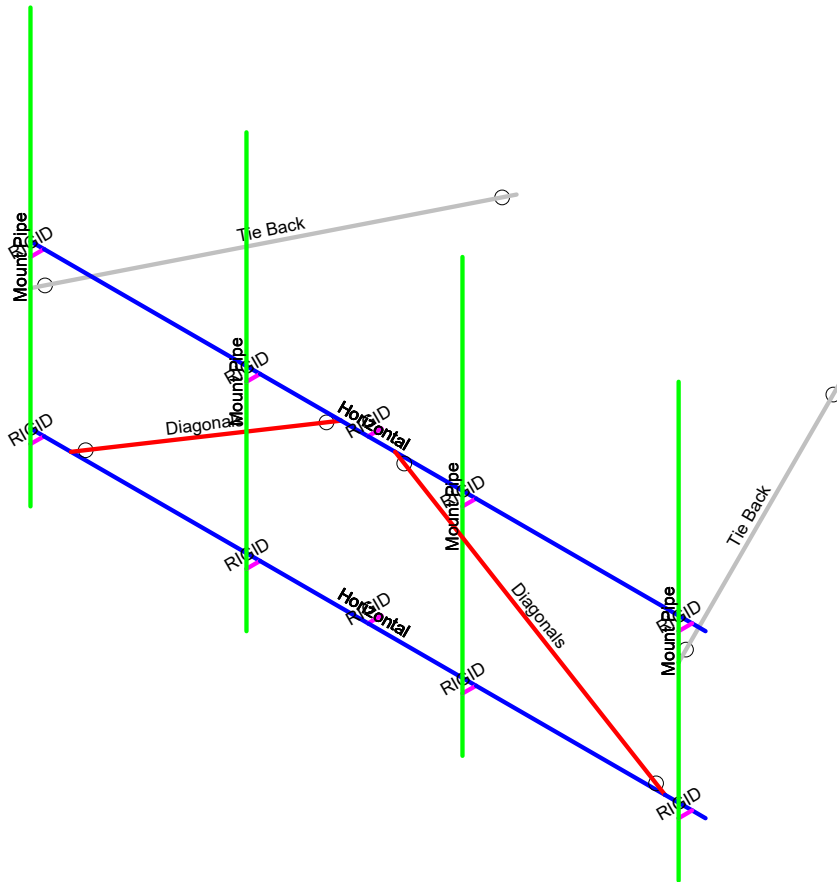


Envelope Only Solution

Infinigy Engineering, PLLC	CTL02175	Final Configuration
BDA		Jan 16, 2019 at 11:41 AM
499-006		Mod_CTL02175.r3d



Section Sets	
<span style="color: blue;">█</span>	Horizontal
<span style="color: green;">█</span>	Mount Pipe
<span style="color: red;">█</span>	Diagonals
<span style="color: gray;">█</span>	Tie Back
<span style="color: magenta;">█</span>	RIGID



Envelope Only Solution

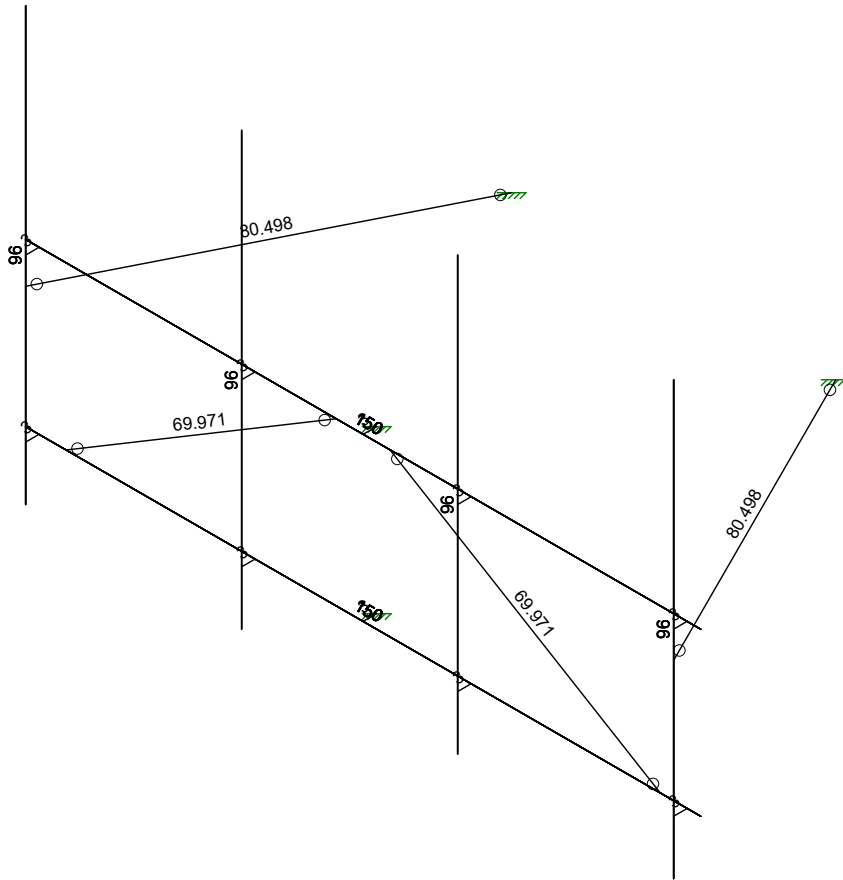
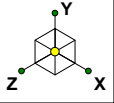
Infinigy Engineering, PLLC
BDA
499-006

CTL02175

Final Configuration

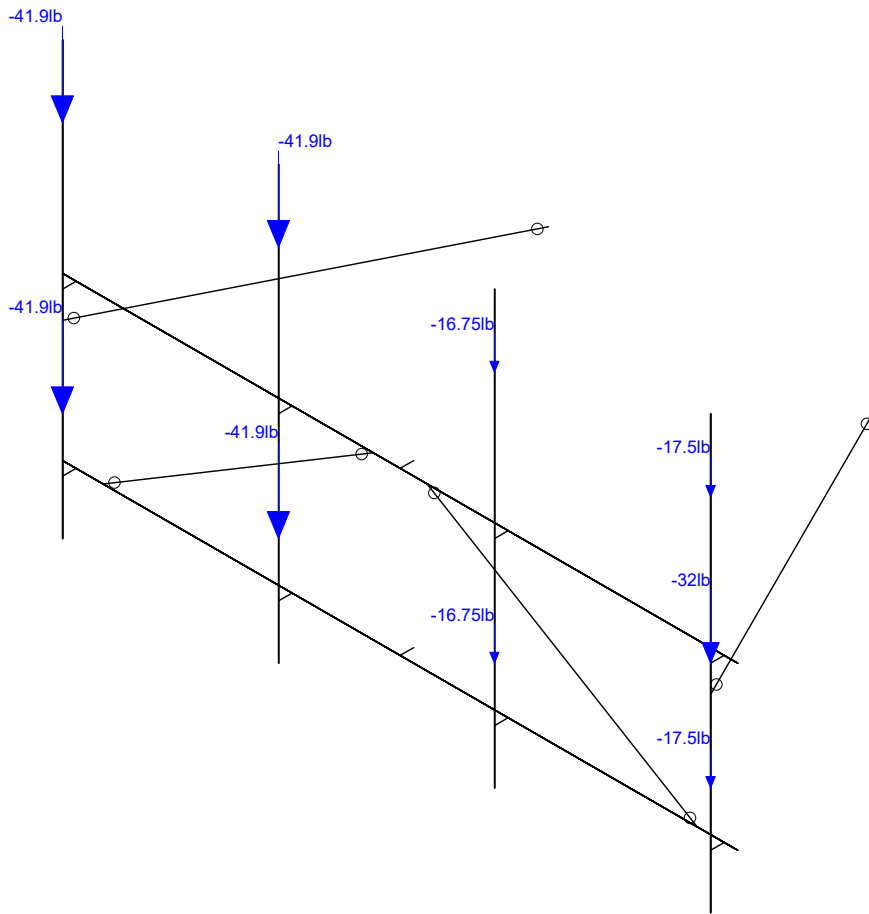
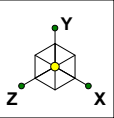
Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d



Member Length (in) Displayed  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02175	Final Configuration
BDA		Jan 16, 2019 at 11:42 AM
499-006		Mod_CTL02175.r3d



Loads: BLC 1, Self Weight  
Envelope Only Solution

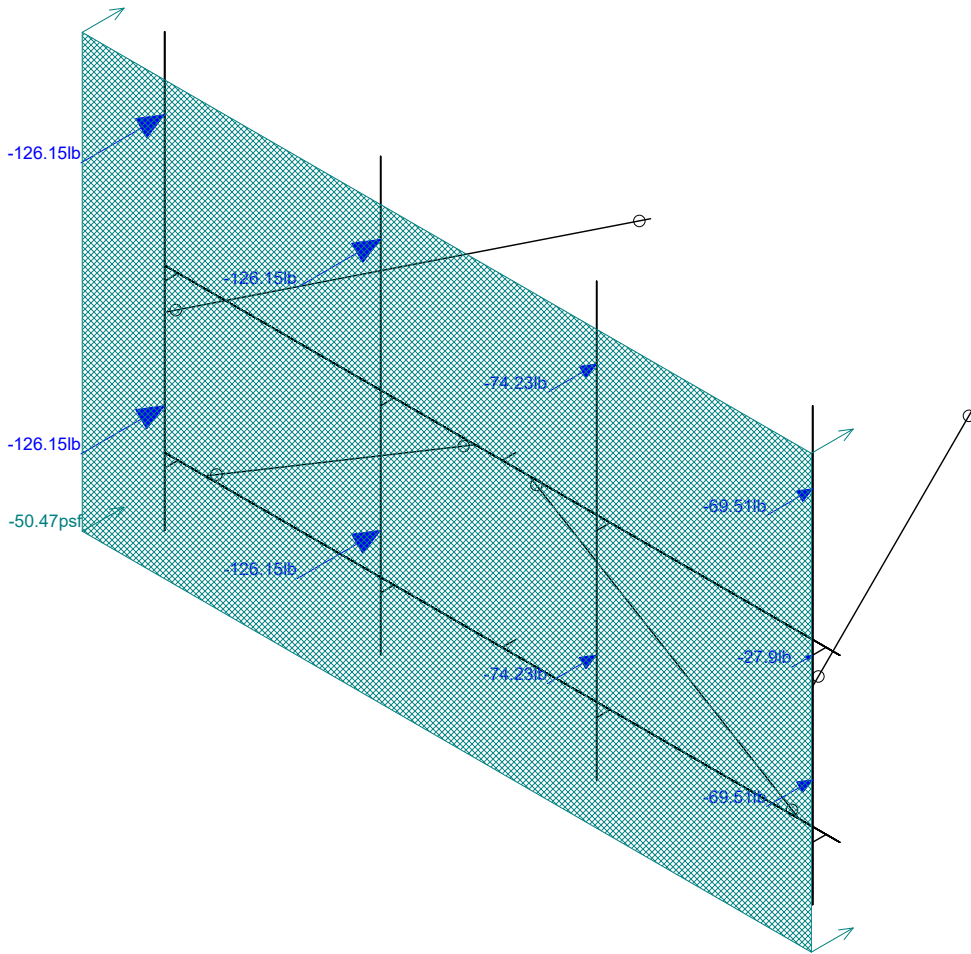
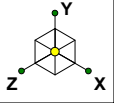
Infinigy Engineering, PLLC  
BDA  
499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d



Loads: BLC 2, Wind Load AZI 000  
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Infinigy Engineering, PLLC  
BDA  
499-006

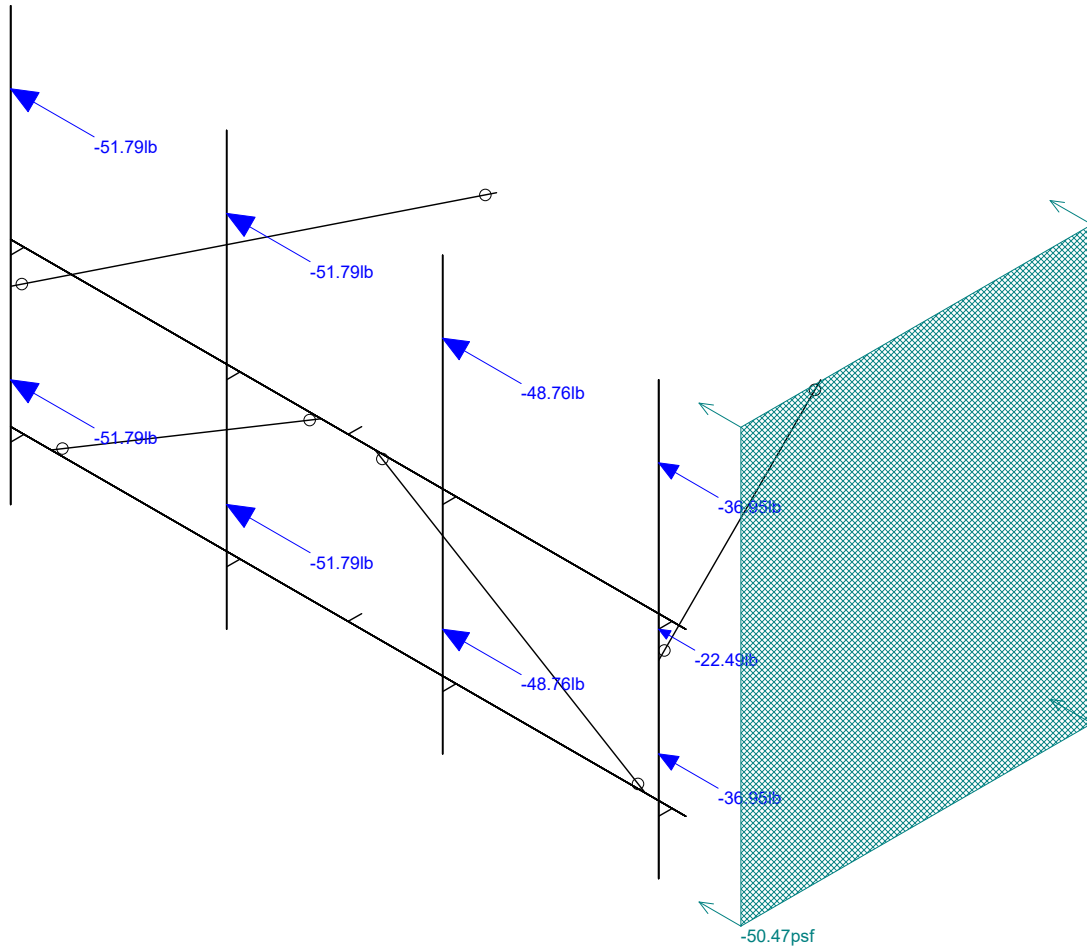
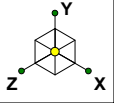
CTL02175

Final Configuration

Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d





Loads: BLC 3, Wind Load AZI 090  
Envelope Only Solution

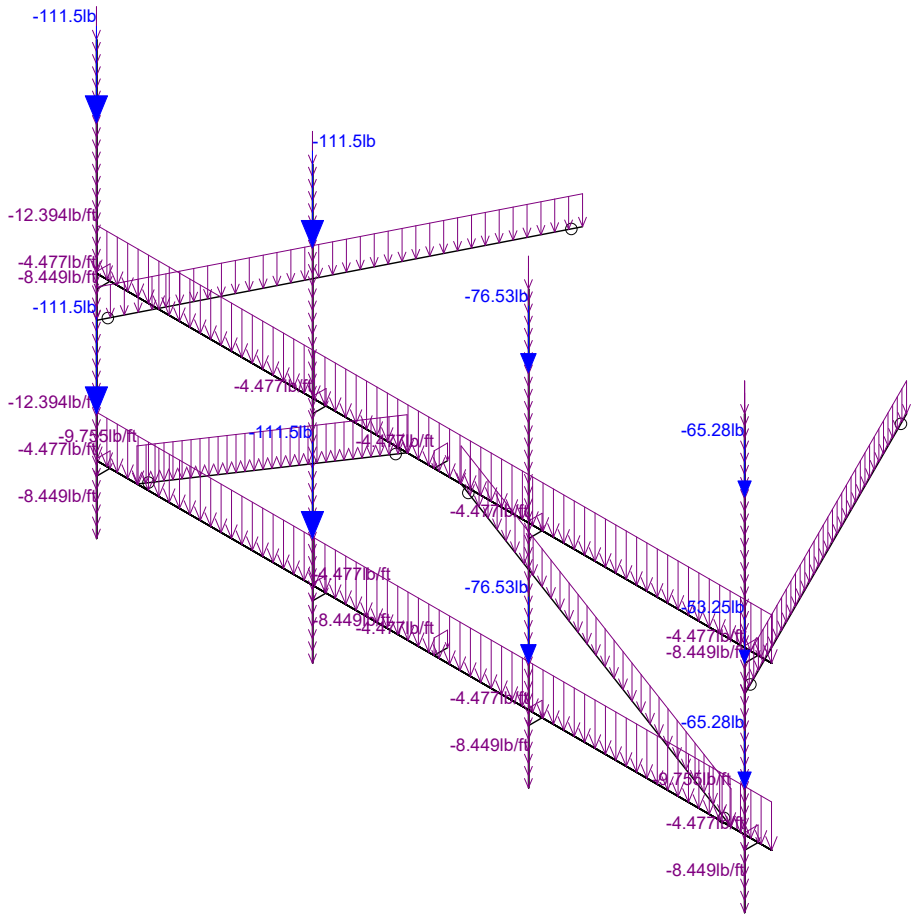
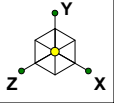
Infinigy Engineering, PLLC  
BDA  
499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d



Loads: BLC 4, Ice Weight  
Envelope Only Solution

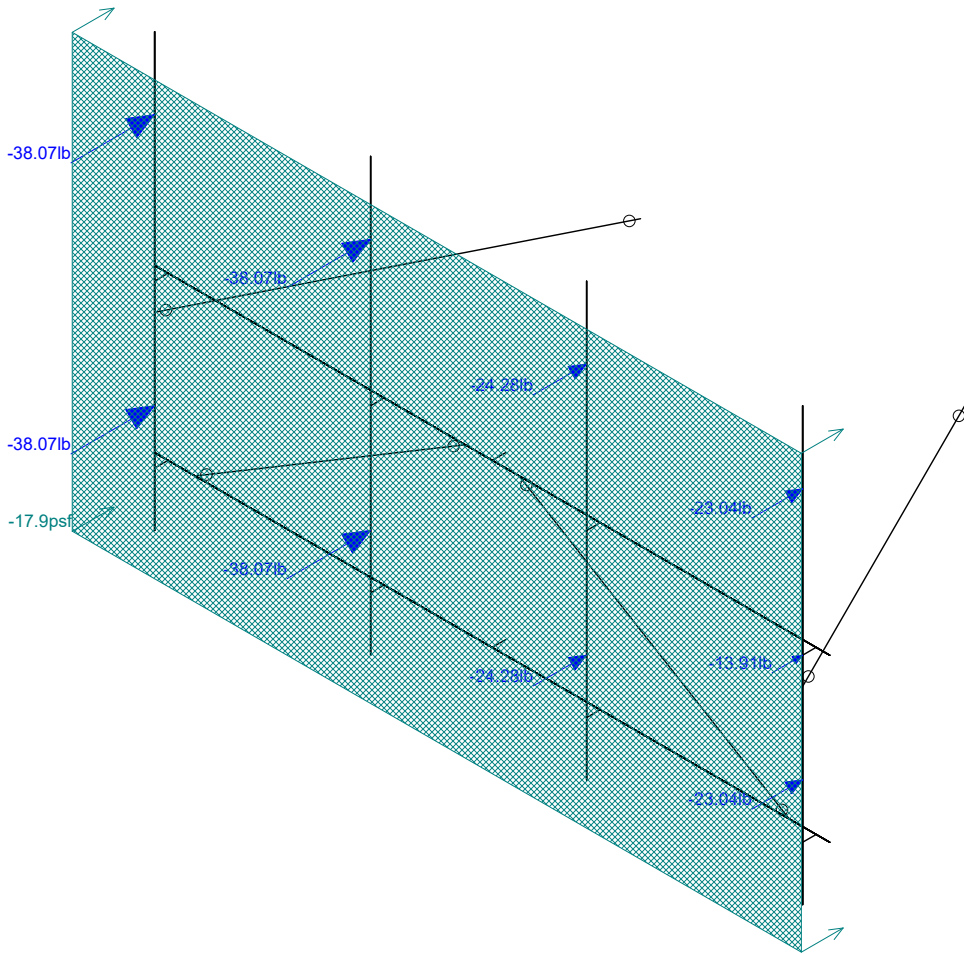
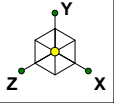
Infinigy Engineering, PLLC  
BDA  
499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d



Loads: BLC 5, Wind + Ice Load AZI 000  
Envelope Only Solution

Infinigy Engineering, PLLC

BDA

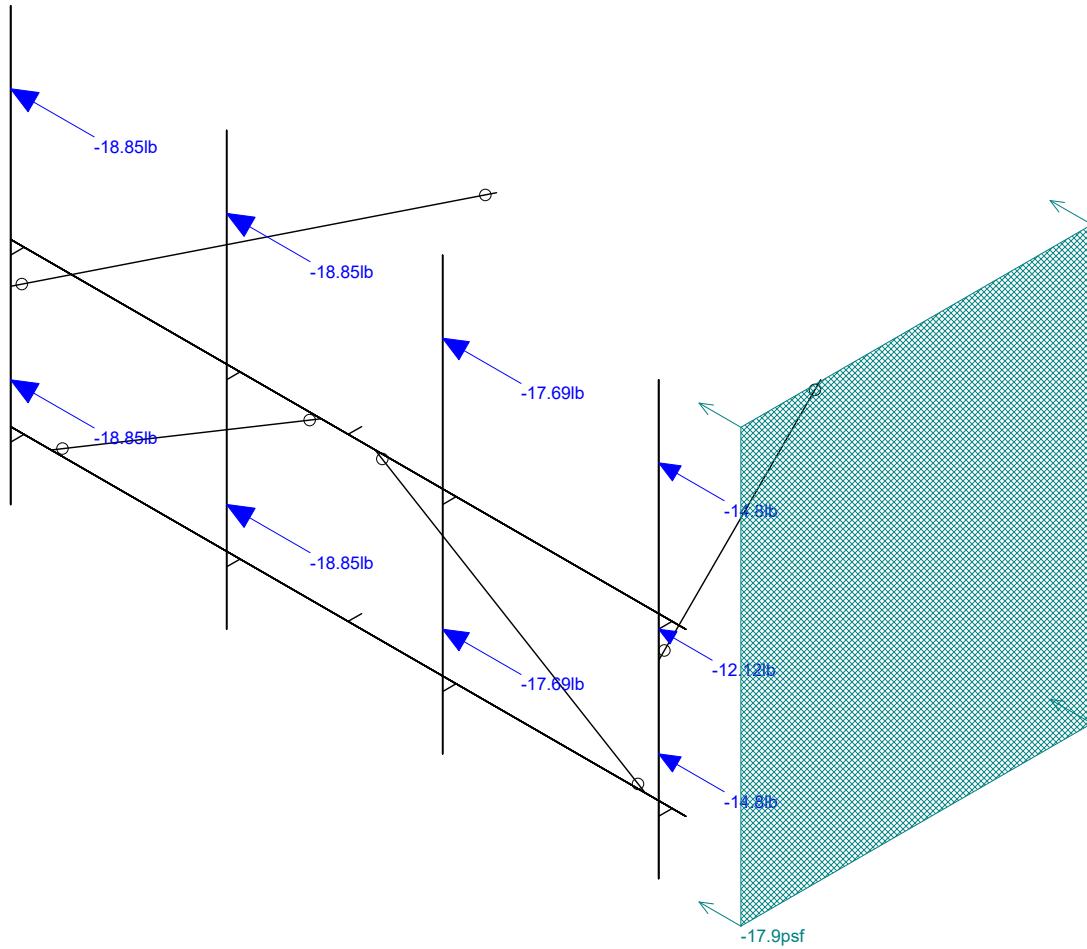
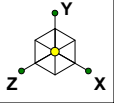
499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:42 AM

Mod\_CTL02175.r3d



Loads: BLC 6, Wind + Ice Load AZI 090  
Envelope Only Solution

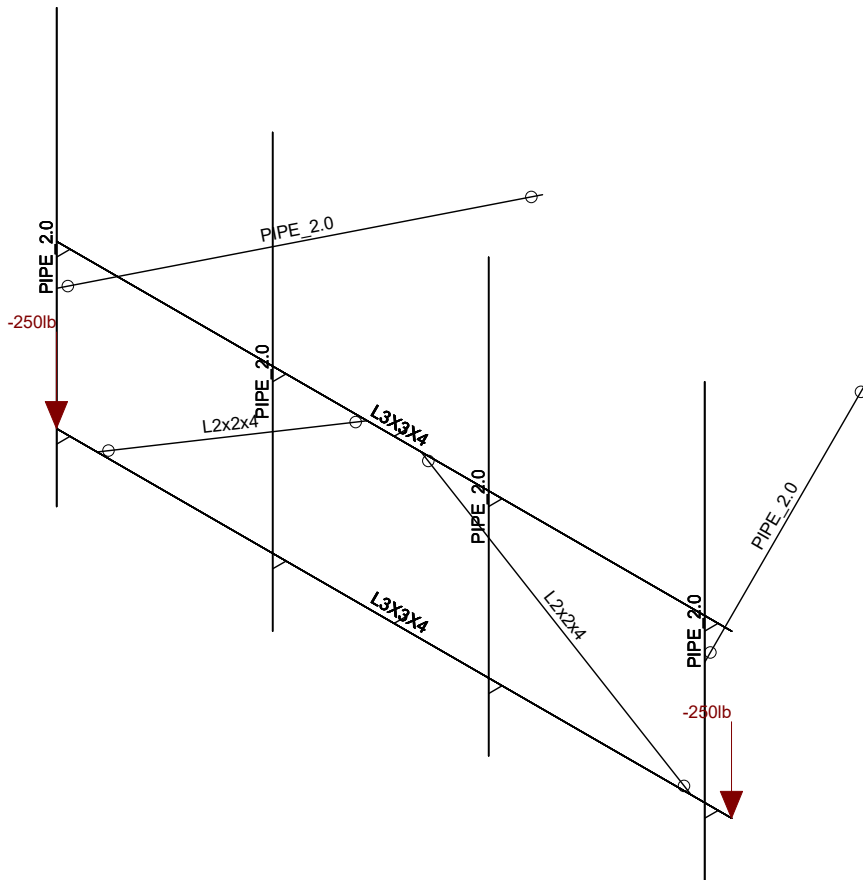
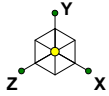
Infinigy Engineering, PLLC  
BDA  
499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:43 AM

Mod\_CTL02175.r3d



Loads: BLC 7, Service Live 1  
Envelope Only Solution

Infinigy Engineering, PLLC

BDA

499-006

CTL02175

Final Configuration

Jan 16, 2019 at 11:43 AM

Mod\_CTL02175.r3d

Site Name: CTL02175  
 Client: Smartlink  
 Carrier: AT&T  
 Engineer: BDA  
 Date: 1/16/2019



INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code: 2015 IBC  
 Structure Load Standard: TIA-222-G  
 Antenna Load Standard: TIA-222-G  
 Structure Risk Category: II  
 Structure Type: Mount - Sector  
 Number of Sectors: 3  
 Structure Shape 1: Flat

Rooftop Inputs:

Rooftop Wind Speed-Up?: No

Wind Loading Inputs:

Design Wind Velocity: 101 mph (nominal 3-second gust)  
 Wind Centerline 1 ( $z_1$ ): 113.0 ft  
 Side Face Angle ( $\theta$ ): 60 degrees  
 Exposure Category: B  
 Topographic Category: 1

Wind with No Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
25.24	1.00	50.47

Wind with Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
6.22	1.00	17.90

Ice Loading Inputs:

Is Ice Loading Needed?: Yes  
 Ice Wind Velocity: 50 mph (nominal 3-second gust)  
 Base Ice Thickness: 0.75 in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	$K_a$	Front Shape	Side Shape	$q_z$ (psf)	EPA ( $ft^2$ )	$F_z$ (lbs)	$F_x$ (lbs)	$F_z(60)$ (lbs)	$F_x(30)$ (lbs)
Powerwave 7770	113.0	3	1.00	Flat	Flat	25.24	5.51	139.01	73.90	90.18	122.73
Andrew SBNHH-1D65A	113.0	3	1.00	Flat	Flat	25.24	5.88	148.46	97.51	110.25	135.72
Kathrein 800-10964	113.0	3	1.00	Flat	Flat	25.24	10.00	252.29	103.57	140.75	215.11
Kathrein 800-10964	113.0	3	1.00	Flat	Flat	25.24	10.00	252.29	103.57	140.75	215.11
Powerwave LGP21401	113.0	6	1.00	Flat	Flat	25.24	0.55	13.95	11.24	11.92	13.27
Ericsson RRUS-32	113.0	3	1.00	Flat	Flat	25.24	2.74	69.21	42.10	48.88	62.44
Ericsson RRUS-8843 B2/B66A	113.0	3	1.00	Flat	Flat	25.24	1.65	41.64	34.38	36.20	39.83
Ericsson RRUS-4449 B5/B12	113.0	3	1.00	Flat	Flat	25.24	1.97	49.69	39.90	42.35	47.24
Raycap DC6-48-60-18-8F	113.0	3	1.00	Round	Round	25.24	1.21	30.58	30.58	30.58	30.58

## Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N1	N2		270	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N3	N4		180	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N6	N18			RIGID	None	None	RIGID	Typical
4	M4	N5	N17			RIGID	None	None	RIGID	Typical
5	M7	N7	N19			RIGID	None	None	RIGID	Typical
6	M8	N8	N20			RIGID	None	None	RIGID	Typical
7	MP1	N14	N11			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
8	MP4	N15	N12			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
9	M12	N26	N23		180	Diagonals	Beam	Single Angle	A36 Gr.36	Typical
10	M13	N25	N24			Diagonals	Beam	Single Angle	A36 Gr.36	Typical
11	M14	N22	N30			RIGID	None	None	RIGID	Typical
12	M15	N21	N29			RIGID	None	None	RIGID	Typical
13	M16	N29A	N30A			Tie Back	Beam	Pipe	A53 Gr.B	Typical
14	M17	N38	N42			RIGID	None	None	RIGID	Typical
15	M18	N37	N41			RIGID	None	None	RIGID	Typical
16	MP2	N40	N39			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
17	M20	N44	N48			RIGID	None	None	RIGID	Typical
18	M21	N43	N47			RIGID	None	None	RIGID	Typical
19	MP3	N46	N45			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
20	M20A	N45A	N46A			Tie Back	Beam	Pipe	A53 Gr.B	Typical

## Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		10	30	0
3	Total General		10	30	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2x2x4	2	139.9	0
7	A36 Gr.36	L3X3X4	2	300	.1
8	A53 Gr.B	PIPE_2.0	6	545	.2
9	Total HR Steel		10	984.9	.3

## Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(...
1	Self Weight	DL		-1			9		
2	Wind Load AZI 000	WLZ					9	1	
3	Wind Load AZI 090	WLX					9	1	
4	Ice Weight	OL1					9	20	
5	Wind + Ice Load AZI 000	OL2					9	1	
6	Wind + Ice Load AZI 090	OL3					9	1	
7	Service Live 1	LL				2			
8	Seismic Load AZI 000	ELZ							
9	Seismic Load AZI 090	ELX							
10	BLC 2 Transient Area Loads	None						10	
11	BLC 3 Transient Area Loads	None						18	
12	BLC 5 Transient Area Loads	None						10	
13	BLC 6 Transient Area Loads	None						18	

## Load Combinations

	Description	S..P...	S..B..Fa...	BLC	Fac...	BLCFa...	B..F...	B..F...	B..F...	B..F...	B..F...	B..F...	B..F...	B..F...
1	1.4D	Y.. Y	DL 1.4											
2	1.2D + 1.6W AZI 000	Y.. Y	DL 1.2 WLZ 1.6											
3	1.2D + 1.6W AZI 030	Y.. Y	DL 1.2 WLZ 1.3...W... .8											
4	1.2D + 1.6W AZI 060	Y.. Y	DL 1.2 WLZ .8 W... 1.3...											
5	1.2D + 1.6W AZI 090	Y.. Y	DL 1.2 W... 1.6											
6	1.2D + 1.6W AZI 120	Y.. Y	DL 1.2 WLZ -.8 W... 1.3...											
7	1.2D + 1.6W AZI 150	Y.. Y	DL 1.2 WLZ -1.3...W... .8											
8	1.2D + 1.6W AZI 180	Y.. Y	DL 1.2 WLZ -1.6											
9	1.2D + 1.6W AZI 210	Y.. Y	DL 1.2 WLZ -1.3...W... -.8											
10	1.2D + 1.6W AZI 240	Y.. Y	DL 1.2 WLZ -.8 W... -1...											
11	1.2D + 1.6W AZI 270	Y.. Y	DL 1.2 W... -1.6											
12	1.2D + 1.6W AZI 300	Y.. Y	DL 1.2 WLZ .8 W... -1...											
13	1.2D + 1.6W AZI 330	Y.. Y	DL 1.2 WLZ 1.3...W... -.8											
14	0.9D + 1.6W AZI 000	Y.. Y	DL .9 WLZ 1.6											
15	0.9D + 1.6W AZI 030	Y.. Y	DL .9 WLZ 1.3...W... .8											
16	0.9D + 1.6W AZI 060	Y.. Y	DL .9 WLZ .8 W... 1.3...											
17	0.9D + 1.6W AZI 090	Y.. Y	DL .9 W... 1.6											
18	0.9D + 1.6W AZI 120	Y.. Y	DL .9 WLZ -.8 W... 1.3...											
19	0.9D + 1.6W AZI 150	Y.. Y	DL .9 WLZ -1.3...W... .8											
20	0.9D + 1.6W AZI 180	Y.. Y	DL .9 WLZ -1.6											
21	0.9D + 1.6W AZI 210	Y.. Y	DL .9 WLZ -1.3...W... -.8											
22	0.9D + 1.6W AZI 240	Y.. Y	DL .9 WLZ -.8 W... -1...											
23	0.9D + 1.6W AZI 270	Y.. Y	DL .9 W... -1.6											
24	0.9D + 1.6W AZI 300	Y.. Y	DL .9 WLZ .8 W... -1...											
25	0.9D + 1.6W AZI 330	Y.. Y	DL .9 WLZ 1.3...W... -.8											
26	1.2D + 1.0Di	Y.. Y	DL 1.2 OL1 1											
27	1.2D + 1.0Di + 1.0Wi AZI 000	Y.. Y	DL 1.2 OL1 1 OL2 1											
28	1.2D + 1.0Di + 1.0Wi AZI 030	Y.. Y	DL 1.2 OL1 1 OL2 .866 ... .5											
29	1.2D + 1.0Di + 1.0Wi AZI 060	Y.. Y	DL 1.2 OL1 1 OL2 .5 ... .8...											
30	1.2D + 1.0Di + 1.0Wi AZI 090	Y.. Y	DL 1.2 OL1 1 ... 1											
31	1.2D + 1.0Di + 1.0Wi AZI 120	Y.. Y	DL 1.2 OL1 1 OL2 -.5 ... .8...											
32	1.2D + 1.0Di + 1.0Wi AZI 150	Y.. Y	DL 1.2 OL1 1 OL2 -.866... .5											
33	1.2D + 1.0Di + 1.0Wi AZI 180	Y.. Y	DL 1.2 OL1 1 OL2 -.1											
34	1.2D + 1.0Di + 1.0Wi AZI 210	Y.. Y	DL 1.2 OL1 1 OL2 -.866... -.5											
35	1.2D + 1.0Di + 1.0Wi AZI 240	Y.. Y	DL 1.2 OL1 1 OL2 -.5 ... -...											
36	1.2D + 1.0Di + 1.0Wi AZI 270	Y.. Y	DL 1.2 OL1 1 ... -1											
37	1.2D + 1.0Di + 1.0Wi AZI 300	Y.. Y	DL 1.2 OL1 1 OL2 .5 ... -...											
38	1.2D + 1.0Di + 1.0Wi AZI 330	Y.. Y	DL 1.2 OL1 1 OL2 .866 ... -.5											
39	1.2D + 1.5L + 1.0WL (30 mph) AZI 000	Y.. Y	DL 1.2 LL 1.5 WLZ .089											
40	1.2D + 1.5L + 1.0WL (30 mph) AZI 030	Y.. Y	DL 1.2 LL 1.5 WLZ .077 ... .0...											
41	1.2D + 1.5L + 1.0WL (30 mph) AZI 060	Y.. Y	DL 1.2 LL 1.5 WLZ .044 ... .0...											
42	1.2D + 1.5L + 1.0WL (30 mph) AZI 090	Y.. Y	DL 1.2 LL 1.5 ... .0...											
43	1.2D + 1.5L + 1.0WL (30 mph) AZI 120	Y.. Y	DL 1.2 LL 1.5 WLZ -.044... .0...											
44	1.2D + 1.5L + 1.0WL (30 mph) AZI 150	Y.. Y	DL 1.2 LL 1.5 WLZ -.077... .0...											
45	1.2D + 1.5L + 1.0WL (30 mph) AZI 180	Y.. Y	DL 1.2 LL 1.5 WLZ -.089											
46	1.2D + 1.5L + 1.0WL (30 mph) AZI 210	Y.. Y	DL 1.2 LL 1.5 WLZ -.077... -...											
47	1.2D + 1.5L + 1.0WL (30 mph) AZI 240	Y.. Y	DL 1.2 LL 1.5 WLZ -.044... -...											
48	1.2D + 1.5L + 1.0WL (30 mph) AZI 270	Y.. Y	DL 1.2 LL 1.5 ... -...											
49	1.2D + 1.5L + 1.0WL (30 mph) AZI 300	Y.. Y	DL 1.2 LL 1.5 WLZ .044 ... -...											
50	1.2D + 1.5L + 1.0WL (30 mph) AZI 330	Y.. Y	DL 1.2 LL 1.5 WLZ .077 ... -...											



## Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	N29	max	-28.933	19	591.883	27	133.309	33	-.003	20	.187	8	.065	25
2		min	-149.843	27	9.693	20	4.069	14	-.149	27	-.185	2	-.131	7
3	N30	max	1407.901	5	1678.953	33	1074.79	14	-.049	14	.387	4	.006	15
4		min	-1311.845	23	262.307	14	-1127.988	8	-.423	33	-.38	22	-.102	34
5	N30A	max	317.703	14	42.374	33	659.32	14	.015	14	0	50	.031	14
6		min	-321.447	8	10.403	25	-666.915	8	-.019	8	0	1	-.038	8
7	N46A	max	414.079	8	42.399	33	842.758	14	.03	14	0	50	.069	8
8		min	-409.442	14	10.421	15	-852.212	8	-.034	8	0	1	-.059	14
9	Totals:	max	1425.679	5	2304.228	27	2580.937	2						
10		min	-1425.679	23	527.123	20	-2580.934	20						

## Envelope AISC 15th(360-16): LRFD Steel Code Checks

Member	Shape	Code Che...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*P...	phi*M...	phi*M.....	Eqn
1	M2	L3X3X4	.552	75	2	.087	75	z	8	4948.021	46656	1.688	2.766 ... H2-1
2	M1	L3X3X4	.484	75	31	.049	7.813	z	32	4948.021	46656	1.688	2.931 ... H2-1
3	MP1	PIPE 2.0	.463	42	2	.111	42		8	14916.096	32130	1.872	1.872 ... H1-1b
4	MP2	PIPE 2.0	.376	48	8	.126	48		8	14916.096	32130	1.872	1.872 ... H1-1b
5	MP4	PIPE 2.0	.318	42	2	.072	42		7	14916.096	32130	1.872	1.872 ... H1-1b
6	MP3	PIPE 2.0	.256	48	2	.073	48		8	14916.096	32130	1.872	1.872 ... H1-1b
7	M12	L2x2x4	.126	34.986	38	.009	69.971	z	2	6523.676	3058...	.691	1.356 ... H2-1
8	M13	L2x2x4	.121	34.986	32	.009	69.971	z	2	6523.676	3058...	.691	1.356 ... H2-1
9	M20A	PIPE 2.0	.053	40.249	4	.048	0		8	18732.27	32130	1.872	1.872 ... H1-1b
10	M16	PIPE 2.0	.050	40.249	12	.028	0		8	18732.27	32130	1.872	1.872 ... H1-1b

## Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design R...	A [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]	
1	Horizontal	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
2	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Diagonals	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
4	Tie Back	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

## Joint Boundary Conditions

Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N29	Reaction	Reaction	Reaction	Reaction	Reaction
2	N30	Reaction	Reaction	Reaction	Reaction	Reaction
3	N30A	Reaction	Reaction	Reaction	Reaction	Reaction
4	N46A	Reaction	Reaction	Reaction	Reaction	Reaction

## Member Advanced Data

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1					Yes				None
2	M2					Yes				None
3	M3					Yes	** NA **			None
4	M4					Yes	** NA **			None
5	M7					Yes	** NA **			None
6	M8					Yes	** NA **			None
7	MP1					Yes				None
8	MP4					Yes				None
9	M12	BenPIN	BenPIN			Yes				None
10	M13	BenPIN	BenPIN			Yes				None
11	M14					Yes	** NA **			None

## Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
12	M15						Yes	** NA **			None
13	M16	BenPIN	BenPIN				Yes				None
14	M17						Yes	** NA **			None
15	M18						Yes	** NA **			None
16	MP2						Yes				None
17	M20						Yes	** NA **			None
18	M21						Yes	** NA **			None
19	MP3						Yes				None
20	M20A	BenPIN	BenPIN				Yes				None

## Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Horizontal	150			Lbyy						Lateral
2	M2	Horizontal	150			Lbyy						Lateral
3	MP1	Mount Pipe	96			Lbyy						Lateral
4	MP4	Mount Pipe	96			Lbyy						Lateral
5	M12	Diagonals	69.971			Lbyy						Lateral
6	M13	Diagonals	69.971			Lbyy						Lateral
7	M16	Tie Back	80.498			Lbyy						Lateral
8	MP2	Mount Pipe	96			Lbyy						Lateral
9	MP3	Mount Pipe	96			Lbyy						Lateral
10	M20A	Tie Back	80.498			Lbyy						Lateral

## Joint Loads and Enforced Displacements (BLC 7 : Service Live 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2...]
1	N1	L	Y	-250
2	N2	L	Y	-250

## Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in, %]
1	MP4	Y	-17.5	24
2	MP3	Y	-16.75	24
3	MP2	Y	-41.9	24
4	MP1	Y	-41.9	24
5	MP4	Y	-32	48
6	MP4	Y	-17.5	80
7	MP3	Y	-16.75	80
8	MP2	Y	-41.9	80
9	MP1	Y	-41.9	80

## Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in, %]
1	MP4	Z	-69.51	24
2	MP3	Z	-74.23	24
3	MP2	Z	-126.15	24
4	MP1	Z	-126.15	24
5	MP4	Z	-27.9	48
6	MP4	Z	-69.51	80
7	MP3	Z	-74.23	80
8	MP2	Z	-126.15	80
9	MP1	Z	-126.15	80

### Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4	X	-36.95	24
2	MP3	X	-48.76	24
3	MP2	X	-51.79	24
4	MP1	X	-51.79	24
5	MP4	X	-22.49	48
6	MP4	X	-36.95	80
7	MP3	X	-48.76	80
8	MP2	X	-51.79	80
9	MP1	X	-51.79	80

### Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4	Y	-65.28	24
2	MP3	Y	-76.53	24
3	MP2	Y	-111.5	24
4	MP1	Y	-111.5	24
5	MP4	Y	-53.25	48
6	MP4	Y	-65.28	80
7	MP3	Y	-76.53	80
8	MP2	Y	-111.5	80
9	MP1	Y	-111.5	80

### Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4	Z	-23.04	24
2	MP3	Z	-24.28	24
3	MP2	Z	-38.07	24
4	MP1	Z	-38.07	24
5	MP4	Z	-13.91	48
6	MP4	Z	-23.04	80
7	MP3	Z	-24.28	80
8	MP2	Z	-38.07	80
9	MP1	Z	-38.07	80

### Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4	X	-14.8	24
2	MP3	X	-17.69	24
3	MP2	X	-18.85	24
4	MP1	X	-18.85	24
5	MP4	X	-12.12	48
6	MP4	X	-14.8	80
7	MP3	X	-17.69	80
8	MP2	X	-18.85	80
9	MP1	X	-18.85	80

### Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/ft.F,psf]	Start Location[in...]	End Location[in...]
1	M1	Y	-12.394	-12.394	0	%100
2	M2	Y	-12.394	-12.394	0	%100
3	M3	Y	-4.477	-4.477	0	%100
4	M4	Y	-4.477	-4.477	0	%100
5	M7	Y	-4.477	-4.477	0	%100
6	M8	Y	-4.477	-4.477	0	%100

### Member Distributed Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...]	End Location[in...]
7	MP1	Y	-8.449	-8.449	0	%100
8	MP4	Y	-8.449	-8.449	0	%100
9	M12	Y	-9.755	-9.755	0	%100
10	M13	Y	-9.755	-9.755	0	%100
11	M14	Y	-4.477	-4.477	0	%100
12	M15	Y	-4.477	-4.477	0	%100
13	M16	Y	-8.449	-8.449	0	%100
14	M17	Y	-4.477	-4.477	0	%100
15	M18	Y	-4.477	-4.477	0	%100
16	MP2	Y	-8.449	-8.449	0	%100
17	M20	Y	-4.477	-4.477	0	%100
18	M21	Y	-4.477	-4.477	0	%100
19	MP3	Y	-8.449	-8.449	0	%100
20	M20A	Y	-8.449	-8.449	0	%100

### Member Distributed Loads (BLC 10 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...]	End Location[in...]
1	M1	Z	-12.617	-12.617	0	150
2	M2	Z	-12.617	-12.617	0	150
3	MP1	Z	-9.989	-9.989	0	96
4	MP4	Z	-9.989	-9.989	0	96
5	M12	Z	-8.412	-8.412	0	69.971
6	M13	Z	-8.412	-8.412	0	69.971
7	M16	Z	-4.467	-4.467	0	80.498
8	MP2	Z	-9.989	-9.989	0	96
9	MP3	Z	-9.989	-9.989	0	96
10	M20A	Z	-4.467	-4.467	0	80.498

### Member Distributed Loads (BLC 11 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...]	End Location[in...]
1	M3	X	0	0	0	3
2	M4	X	0	0	0	3
3	M7	X	0	0	0	3
4	M8	X	0	0	0	3
5	MP1	X	-9.989	-9.989	0	96
6	MP4	X	-9.989	-9.989	0	96
7	M12	X	-4.328	-4.328	0	69.971
8	M13	X	-4.328	-4.328	0	69.971
9	M14	X	0	0	0	3
10	M15	X	0	0	0	3
11	M16	X	-8.934	-8.934	0	80.498
12	M17	X	0	0	0	3
13	M18	X	0	0	0	3
14	MP2	X	-9.989	-9.989	0	96
15	M20	X	0	0	0	3
16	M21	X	0	0	0	3
17	MP3	X	-9.989	-9.989	0	96
18	M20A	X	-8.934	-8.934	0	80.498

### Member Distributed Loads (BLC 12 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...]	End Location[in...]
1	M1	Z	-4.475	-4.475	0	150
2	M2	Z	-4.475	-4.475	0	150
3	MP1	Z	-3.543	-3.543	0	96
4	MP4	Z	-3.543	-3.543	0	96

**Member Distributed Loads (BLC 12 : BLC 5 Transient Area Loads) (Continued)**

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
5	M12	Z	-2.983	-2.983	0	69.971
6	M13	Z	-2.983	-2.983	0	69.971
7	M16	Z	-1.584	-1.584	0	80.498
8	MP2	Z	-3.543	-3.543	0	96
9	MP3	Z	-3.543	-3.543	0	96
10	M20A	Z	-1.584	-1.584	0	80.498

**Member Distributed Loads (BLC 13 : BLC 6 Transient Area Loads)**

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
1	M3	X	0	0	0	3
2	M4	X	0	0	0	3
3	M7	X	0	0	0	3
4	M8	X	0	0	0	3
5	MP1	X	-3.543	-3.543	0	96
6	MP4	X	-3.543	-3.543	0	96
7	M12	X	-1.535	-1.535	0	69.971
8	M13	X	-1.535	-1.535	0	69.971
9	M14	X	0	0	0	3
10	M15	X	0	0	0	3
11	M16	X	-3.169	-3.169	0	80.498
12	M17	X	0	0	0	3
13	M18	X	0	0	0	3
14	MP2	X	-3.543	-3.543	0	96
15	M20	X	0	0	0	3
16	M21	X	0	0	0	3
17	MP3	X	-3.543	-3.543	0	96
18	M20A	X	-3.169	-3.169	0	80.498

**Member Area Loads (BLC 2 : Wind Load AZI 000)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N32	N31	N33	N34	Z	Open Structure	-50.47

**Member Area Loads (BLC 3 : Wind Load AZI 090)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N34	N33	N35	N36	X	Open Structure	-50.47

**Member Area Loads (BLC 5 : Wind + Ice Load AZI 000)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N32	N31	N33	N34	Z	Open Structure	-17.9

**Member Area Loads (BLC 6 : Wind + Ice Load AZI 090)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N34	N33	N35	N36	X	Open Structure	-17.9

**GENERAL NOTES:**

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

**STEEL CONSTRUCTION NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
  - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
  - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
  - RECTANGULAR HSS TO BE A500, GRADE B. Fy=46 KSI, U.N.O.
  - ROUND HSS TO BE A500, GRADE B. Fy=42 KSI, U.N.O.
  - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
  - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
  - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
  - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
  - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
  - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
  - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

**CONCRETE CONSTRUCTION NOTES:**

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

**FIBER REINFORCED POLYMER (FRP) NOTES:**

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER		
	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

**WOOD CONSTRUCTION NOTES:**

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

**MASONRY CONSTRUCTION NOTES:**

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
  - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
  - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
  - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
  - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
  - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

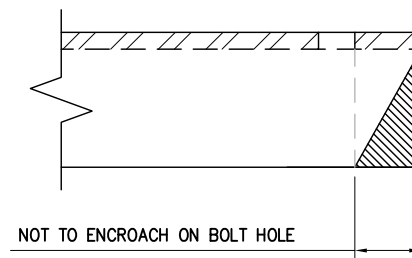
**TOWER PLUMB & TENSION NOTES:**


1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

**SPECIAL INSPECTIONS NOTES:**

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
  - a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
  - b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
  - c. MECHANICAL AND EPOXIED ANCHORAGES.
  - d. FIBER REINFORCED POLYMER.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.


**MAXIMUM ALLOWABLE ANGLE CLIP**



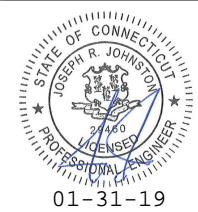


1033 Watervliet Shaker Rd  
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01-31-19

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0	ISSUED FOR REVIEW	TAG	01/21/19
No.	Submittal / Revision	App'd	Date

Drawn: TAG Date: 01/21/19  
 Designed: BA Date: 01/21/19  
 Checked: NO Date: 01/21/19

Project Number: 499-006

Project Title: **BRANFORD WEST**  
**CTL02175**  
**FA# 10035093**  
 4 BEAVER ROAD  
 BRANFORD, CT 06405

Prepared For: 

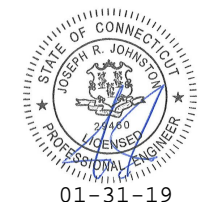
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Drawing Scale: AS NOTED  
 Date: 01/22/19

Drawing Title: **GENERAL NOTES**

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Drawing Number: **S1**



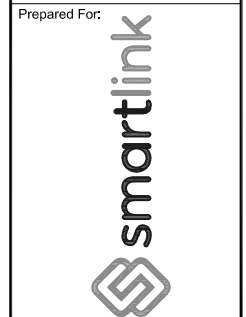
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499-006

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**BRANFORD WEST**  
 CTL02175  
 FA# 10035093  
 4 BEAVER ROAD  
 BRANFORD, CT 06405



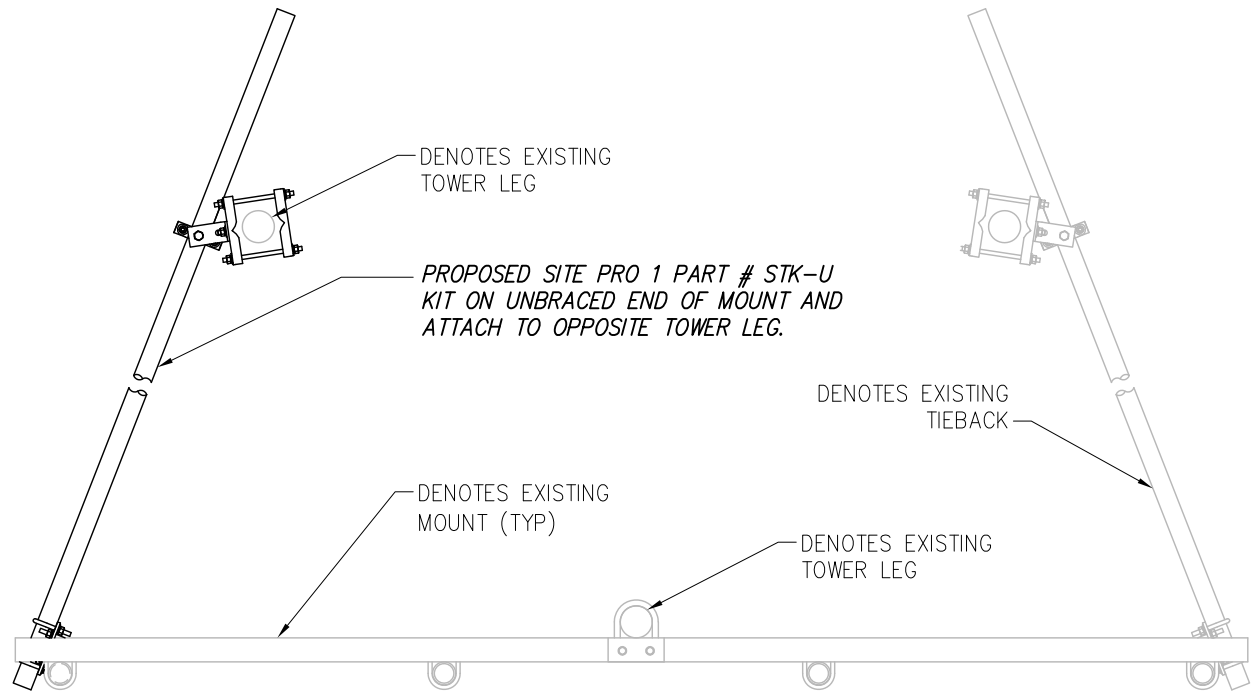
Drawing Scale:  
AS NOTED

Date:  
01/22/19

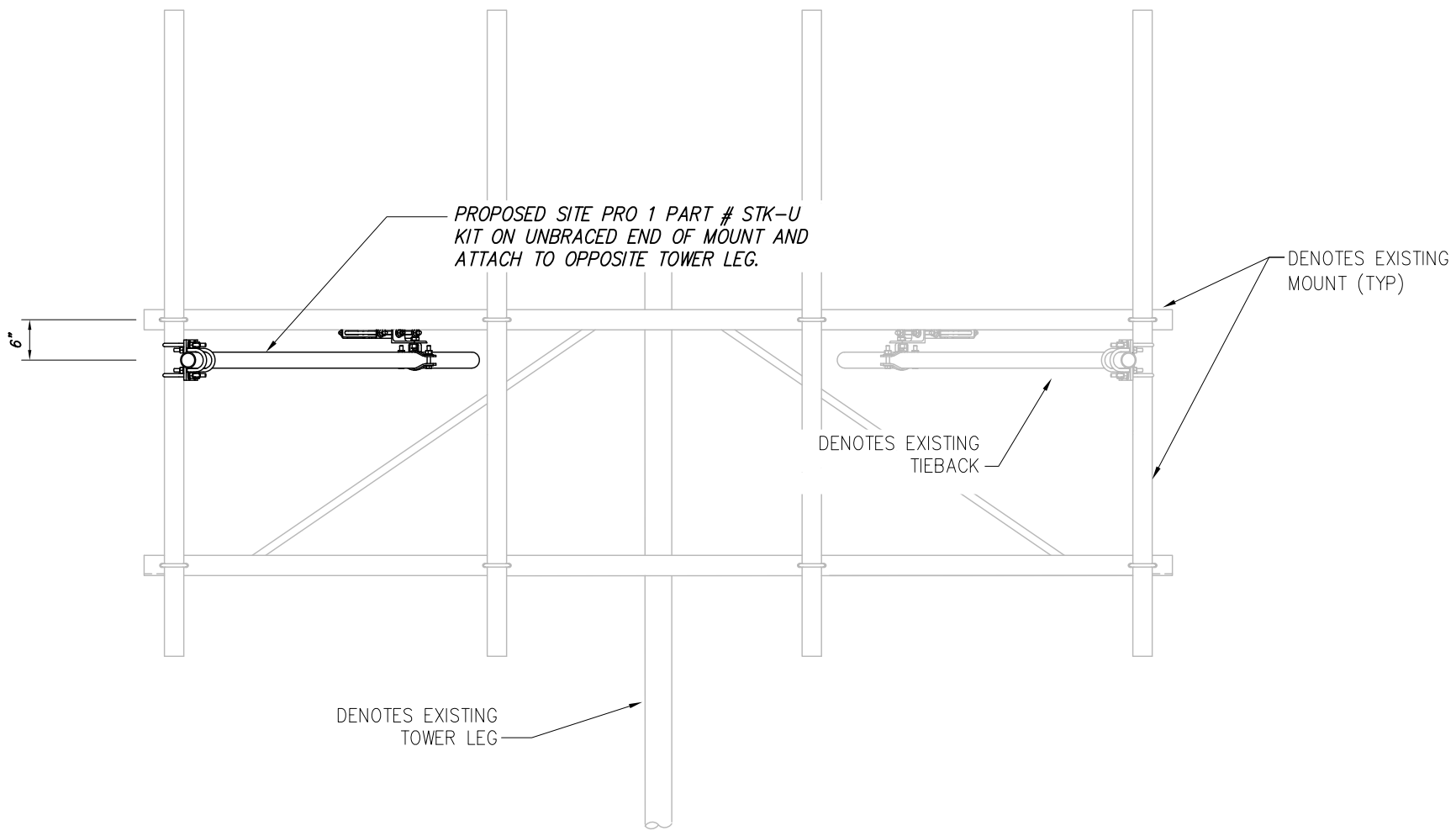
Drawing Title  
**MOUNT MODIFICATION**

Drawing Number  
**S2**

01-31-19



**1 PLAN VIEW**  
 SCALE: NOT TO SCALE



**2 ELEVATION VIEW**  
 SCALE: NOT TO SCALE

## Kristina Cottone

---

**From:** Ryan Tierney <Ryan.Tierney@americantower.com>  
**Sent:** Thursday, January 24, 2019 1:55 PM  
**To:** Kristina Cottone  
**Subject:** RE: CTL02175 ATC#302536

Hi Kristina,

Mount changes approved by ATC engineering.

Thank you,

**Ryan Tierney**

*Account Project Manager*

**American Tower Corporation**

10 Presidential Way

Woburn, MA 01801

781-428-7250 office

[ryan.tierney@americantower.com](mailto:ryan.tierney@americantower.com)

1 C E 227

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---

**From:** Kristina Cottone <kristina.cottone@smartlinkllc.com>  
**Sent:** Wednesday, January 23, 2019 2:42 PM  
**To:** Ryan Tierney <Ryan.Tierney@americantower.com>  
**Subject:** RE: CTL02175 ATC#302536

Hey Ryan,

Any update on the engineering review for the failing mount analysis?

Thank you,



**Kristina Cottone | Real Estate Specialist**  
**Smartlink**

85 Rangeway Road – Building 3 Suite 102

North Billerica MA, 01862

(m) 978.551.8627

[Kristina.cottone@Smartlinkllc.com](mailto:Kristina.cottone@Smartlinkllc.com)

[smartlinkllc.com](http://smartlinkllc.com)

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---

**From:** Ryan Tierney <[Ryan.Tierney@americantower.com](mailto:Ryan.Tierney@americantower.com)>  
**Sent:** Wednesday, January 9, 2019 11:05 AM  
**To:** Kristina Cottone <[kristina.cottone@smartlinkllc.com](mailto:kristina.cottone@smartlinkllc.com)>  
**Subject:** RE: CTL02175 ATC#302536

Thanks!

**Ryan Tierney**  
*Account Project Manager*  
**American Tower Corporation**  
10 Presidential Way  
Woburn, MA 01801  
781-428-7250 office  
[ryan.tierney@americantower.com](mailto:ryan.tierney@americantower.com)  
1 C E 227

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---

**From:** Kristina Cottone <[kristina.cottone@smartlinkllc.com](mailto:kristina.cottone@smartlinkllc.com)>  
**Sent:** Wednesday, January 9, 2019 10:18 AM  
**To:** Ryan Tierney <[Ryan.Tierney@americantower.com](mailto:Ryan.Tierney@americantower.com)>  
**Subject:** RE: CTL02175 ATC#302536

Hey Ryan,

Sorry! Here it is

Thank you,



**Kristina Cottone | Real Estate Specialist**  
**Smartlink**

85 Rangeway Road – Building 3 Suite 102  
North Billerica MA, 01862  
(m) 978.551.8627  
[Kristina.cottone@Smartlinkllc.com](mailto:Kristina.cottone@Smartlinkllc.com)  
[smartlinkllc.com](http://smartlinkllc.com)

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---

**From:** Ryan Tierney <[Ryan.Tierney@americantower.com](mailto:Ryan.Tierney@americantower.com)>  
**Sent:** Wednesday, January 9, 2019 10:14 AM  
**To:** Kristina Cottone <[kristina.cottone@smartlinkllc.com](mailto:kristina.cottone@smartlinkllc.com)>  
**Subject:** RE: CTL02175 ATC#302536

Hey Kristina,

It looks like the attached doc that was sent over is actually the SA that was run. Is there a mount spec you can provide for me that I can send over to engineering?

Thank you,

**Ryan Tierney**  
*Account Project Manager*  
**American Tower Corporation**  
10 Presidential Way  
Woburn, MA 01801  
781-428-7250 office  
[ryan.tierney@americantower.com](mailto:ryan.tierney@americantower.com)  
1 C E 227

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---

**From:** Kristina Cottone <[kristina.cottone@smartlinkllc.com](mailto:kristina.cottone@smartlinkllc.com)>  
**Sent:** Tuesday, January 8, 2019 8:46 AM  
**To:** Ryan Tierney <[Ryan.Tierney@americantower.com](mailto:Ryan.Tierney@americantower.com)>  
**Subject:** CTL02175 ATC#302536

Good morning Ryan,

Attached is the failing mount analysis-mods. Please let me know if you have any questions.

Thank you,



**Kristina Cottone | Real Estate Specialist**  
**Smartlink**  
85 Rangeway Road – Building 3 Suite 102  
North Billerica MA, 01862  
(m) 978.551.8627  
[Kristina.cottone@Smartlinkllc.com](mailto:Kristina.cottone@Smartlinkllc.com)  
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# SHEET INDEX

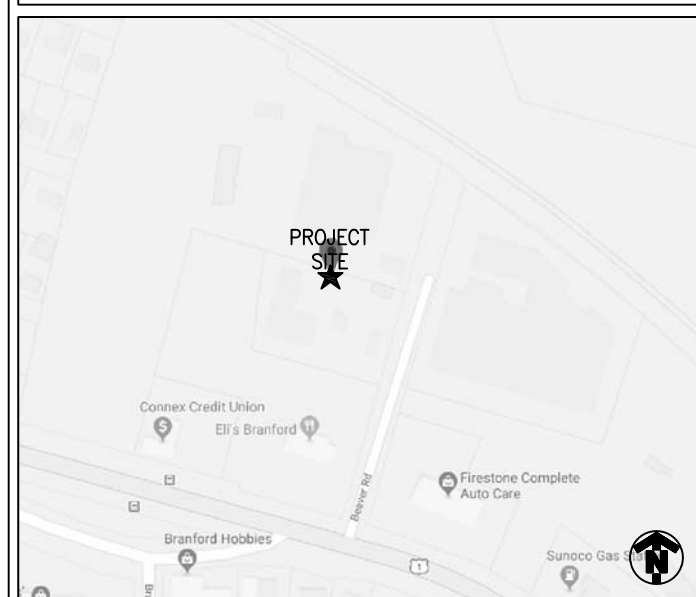
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL & ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS
S1-S2	MODIFICATION DETAILS

# DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I-90 WEST/MASSACHUSETTS TURNPIKE FROM SPEEN STREET. HEAD NORTHEAST TOWARD SPEEN STREET. TURN RIGHT TOWARD SPEEN STREET. TURN RIGHT ONTO SPEEN STREET. TURN RIGHT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I-90/MASSPIKE/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 WEST/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 WEST/MASSACHUSETTS TURNPIKE. FOLLOW I-90 WEST/MASSACHUSETTS TURNPIKE, I-84 AND I-91 SOUTH TO US-1 IN NEW HAVEN COUNTY. TAKE EXIT 51 FROM I-95 NORTH. MERGE ONTO I-90 WEST/MASSACHUSETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I-84. USE THE LEFT 2 LANES TO TAKE EXIT 57 FOR CT-15 SOUTH TOWARD I-91 SOUTH/CHARTER OAK BRIDGE/N.Y.CITY. CONTINUE ONTO CT-15 SOUTH. CONTINUE ONTO CT-15 SOUTH/US-5 SOUTH. TAKE EXIT 86 TO MERGE ONTO I-91 SOUTH TOWARD NEW HAVEN/NEW YORK CITY. USE THE LEFT LANE TO MERGE ONTO I-95 NORTH TOWARD NEW LONDON. TAKE EXIT 51 FOR U.S. 1/FRONTAGE TOWARD EAST HAVEN. FOLLOW US-1 TO BEAVER ROAD IN BRANFORD. MERGE ONTO US-1. TURN LEFT ONTO BEAVER ROAD.

# LOCATION MAP



PROJECT  
**LTE 4C/5C**  
 SITE NAME  
**BRANFORD WEST**  
 CELL SITE ID  
**CTL02175**  
 FA SITE NUMBER  
**10035093**  
 PACE ID  
**MRCTB034842/MCTB034853**  
 SITE ADDRESS  
 4 BEAVER ROAD  
 BRANFORD, CT 06405  
 STRUCTURE TYPE  
**SELF SUPPORT**

# PROJECT TEAM



**PROJECT MANAGER**



1033 Watervliet Shaker Rd  
 Albany, NY 12205  
 Office # (518) 690-0790  
 Fax # (518) 690-0793

**ENGINEER**

**SCOPE OF WORK (PER LTE RFDS, DATED: 12/14/2018, V2.00):**

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.

**TOWER SCOPE**

- REMOVE (3) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS-11
- REMOVE (3) RRUS-12
- INSTALL (3) B5/B12 4449
- INSTALL (3) B2/B66A 8843
- INSTALL (1) DC ONLY SQUID W/ (2) DC CABLES

**GROUND SCOPE**

- SWAP BB WITH 6630
- ADD 2ND 6630

# PROJECT SUMMARY

**SITE NAME:** BRANFORD WEST

**CELL SITE ID:** CTL02175

**FA SITE #:** 10035093

**SITE ADDRESS:** 4 BEAVER ROAD  
BRANFORD, CT 06405

**COUNTY:** NEW HAVEN

**SITE COORDINATES:**

**LATITUDE:** 41.2801589° N (NAD 83)

**LONGITUDE:** 72.8417489° W (NAD 83)

**ELEVATION:** ±158' (AMSL)

**RAD CENTER:** ±113' (AGL)

**LANDLORD:** AMERICAN TOWER CORP.

**APPLICANT:** AT&T MOBILITY  
550 COCHITUATE RD.  
FRAMINGHAM, MA 01701

**CLIENT REPRESENTATIVE:** SMARTLINK, LLC  
85 RANGEWAY RD. SUITE 102  
NORTH BILLERICA, MA 01862


**CONTACT:** ED WEISSMAN  
(917) 528-1857

**ENGINEER:** INFINIGY  
1033 WATERVLIET SHAKER ROAD  
ALBANY, NY 12205

**CONTACT:** ALEX WELLER  
(518) 690-0790

**BUILDING CODE:** CT BUILDING CODE  
UNIFORM BUILDING CODE  
BUILDING OFFICIALS & CODE ADMINISTRATORS  
UNIFORM MECHANICAL CODE  
UNIFORM PLUMBING CODE  
LOCAL BUILDING CODE  
CITY/COUNTY ORDINANCES


**ELECTRICAL CODE:** NATIONAL ELECTRICAL CODE (LATEST EDITION)



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

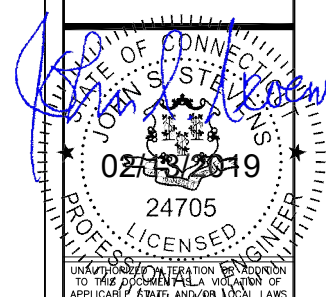
TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG TOLL FREE: 1-800-922-4455 OR www.cbyd.com

CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE



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2	REVISED FOR PERMIT	BMM	02/13/19
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Drawn: BMM Date: 01/02/19  
 Designed: ASW Date: 01/02/19  
 Checked: AD Date: 01/02/19

Project Number: 1106-A0001-C

Project Title: **BRANFORD WEST**  
 CTL02175  
 FA# 10035093  
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Drawing Scale: AS NOTED

CD

Date: 02/13/19

Drawing Title: **TITLE PAGE**

Drawing Number: **T1**

# GENERAL NOTES

## PART 1 – GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
  - A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
  - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
  - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
  - D. AND NFPA 101 (LIFE SAFETY CODE).
  - E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
  - F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
  - A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
  - B. COMPANY: AT&T CORPORATION
  - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
  - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
  - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
  - A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
  - A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
  - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

## PART 2 – EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HERewith, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
  - A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

## PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
  - A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
  - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
  - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
  - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
  - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
  - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

## PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
  - A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
  - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

## PART 5 – TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
  - A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
  - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
  - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
  - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
  - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

## PART 6 – TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
  - A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
  - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
  - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
  - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
  - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
  - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
  - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

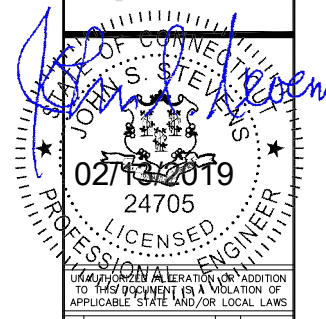
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
-----	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120A DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES

REPRESENTS DETAIL NUMBER  
 REF. DRAWING NUMBER

## ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

**INFINIGY**  
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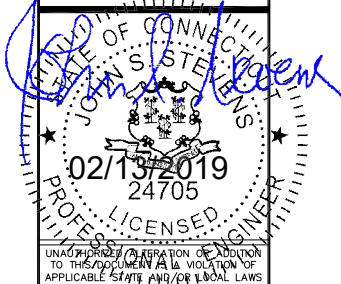
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Prepared For:

Drawing Scale:  
AS NOTED  
 Date:  
02/13/19

Drawing Title:  
**GENERAL NOTES**

Drawing Number:  
**C1**



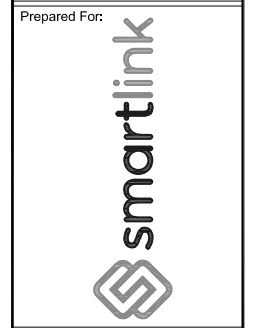
UNLAWFUL PRACTICE OF ENGINEERING IN VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS

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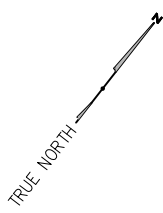
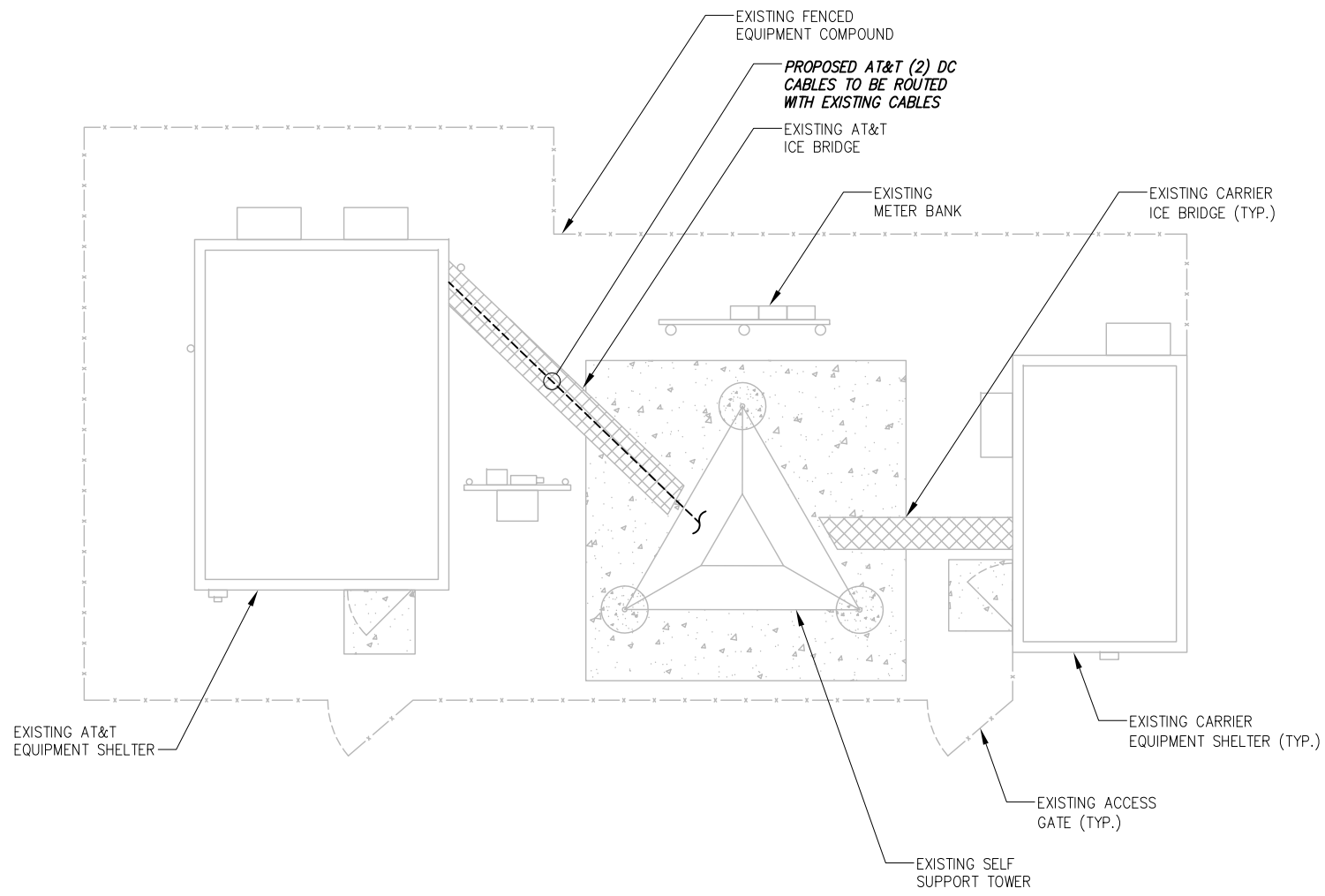
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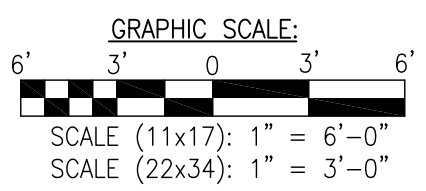
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 Date: 02/13/19

Drawing Title:  
**OVERALL & ENLARGED SITE PLAN**

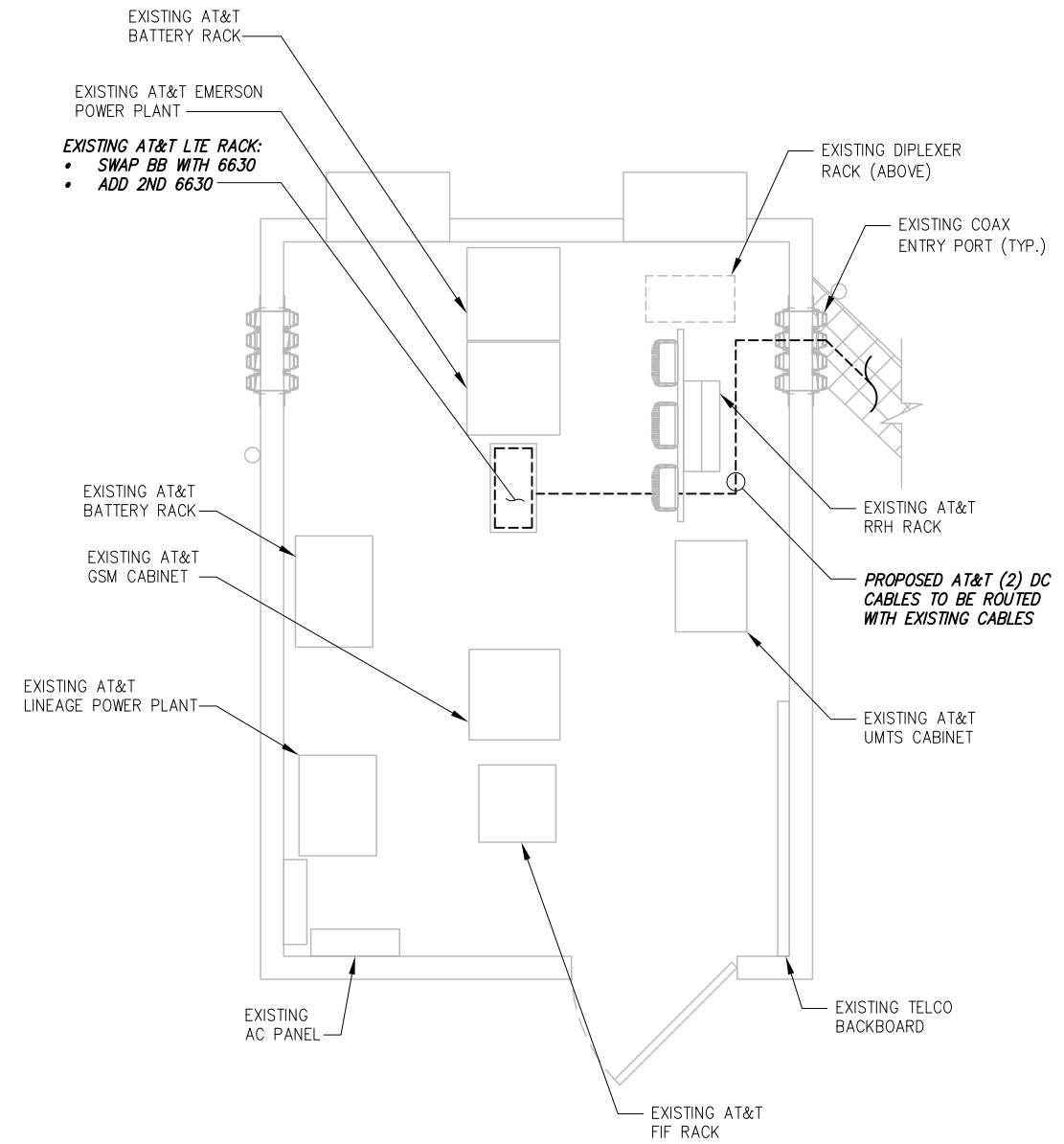
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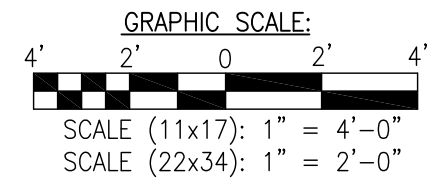
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 SCALE: AS NOTED

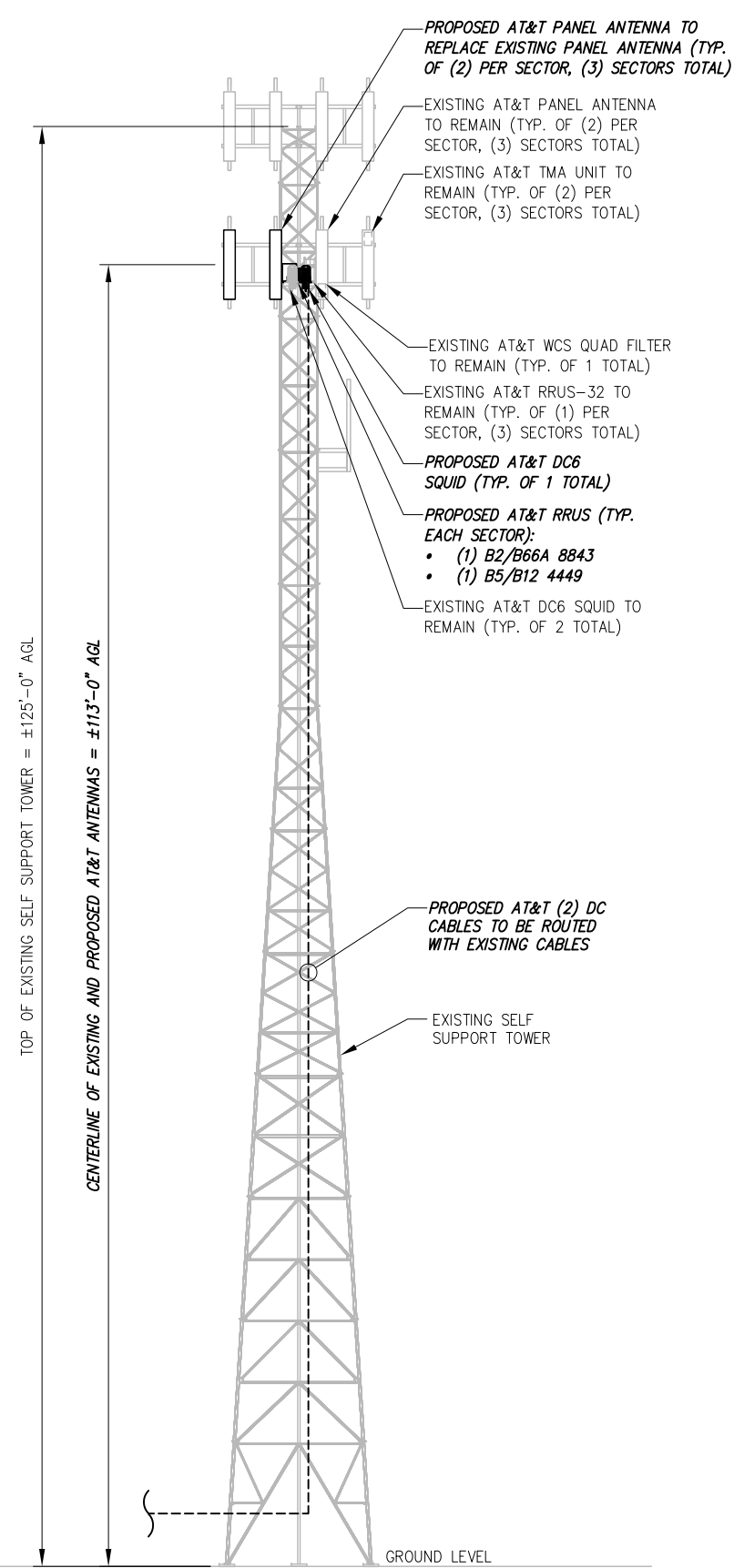


BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING ON 11/26/18 AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.



**2** ENLARGED EQUIPMENT PLAN  
 SCALE: AS NOTED





**NOTE:**

- INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSIS.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'POST MOD MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 01/21/19. SEE SHEETS S1-S2 FOR ADDITIONAL MODIFICATION DETAILS.

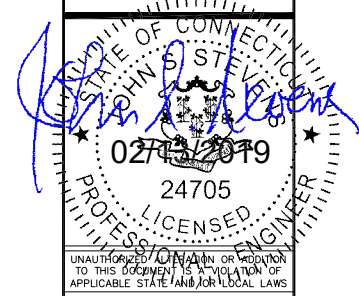
**SEPARATION NOTE:**

- 3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNA
- 6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 12/14/18, V 2.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/DIPLEXER	RRUS	AZIMUTH	ANTENNA CL HEIGHT	CABLE FEEDER		RAYCAP UNIT
								TYPE	LENGTH	
ALPHA	A-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	143°	±113'	(2) (E) 1-5/8" COAX	±125'	(2) (E) DC6 'SQUID' (1) (P) DC6 'SQUID'
	A-2	(E) LTE WCS	ANDREW SBNHH-1D65A	(1) (E) QUAD WCS FILTER	(1) (E) RRUS-32	23°	±113'	(2) (E) 1-5/8" COAX (1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-3	(P) LTE 1900	KATHREIN 800-10964	--	(1) (P) B2/B66A 8843	23°	±113'	(1) (P) FIBER CABLES (2) (P) DC CABLES	--	
	A-4	(P) LTE 700/850/WCS /5G 850	KATHREIN 800-10964	--	(1) (P) B5/B12 4449	23°	±113'	SEE A-2 FOR CABLE INFORMATION	--	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	263°	±113'	(2) (E) 1-5/8" COAX	±125'	
	B-2	(E) LTE WCS	ANDREW SBNHH-1D65A	--	(1) (E) RRUS-32	143°	±113'	(2) (E) 1-5/8" COAX	--	
	B-3	(P) LTE 1900	KATHREIN 800-10964	--	(1) (P) B2/B66A 8843	143°	±113'	SEE A-2 FOR CABLE INFORMATION	--	
	B-4	(P) LTE 700/850/WCS /5G 850	KATHREIN 800-10964	--	(1) (P) B5/B12 4449	143°	±113'	SEE A-2 FOR CABLE INFORMATION	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	23°	±113'	(2) (E) 1-5/8" COAX	±125'	
	G-2	(E) LTE WCS	ANDREW SBNHH-1D65A	--	(1) (E) RRUS-32	263°	±113'	(2) (E) 1-5/8" COAX	--	
	G-3	(P) LTE 1900	KATHREIN 800-10964	--	(1) (P) B2/B66A 8843	263°	±113'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	G-4	(P) LTE 700/850/WCS /5G 850	KATHREIN 800-10964	--	(1) (P) B5/B12 4449	263°	±113'	SEE A-2 FOR CABLE INFORMATION	--	

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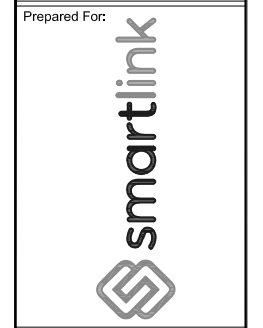
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Project Number: 1106-A0001-C

Project Title:  
**BRANFORD WEST**  
 CTL02175  
 FA# 10035093  
 4 BEAVER ROAD  
 BANFORD, CT 06405



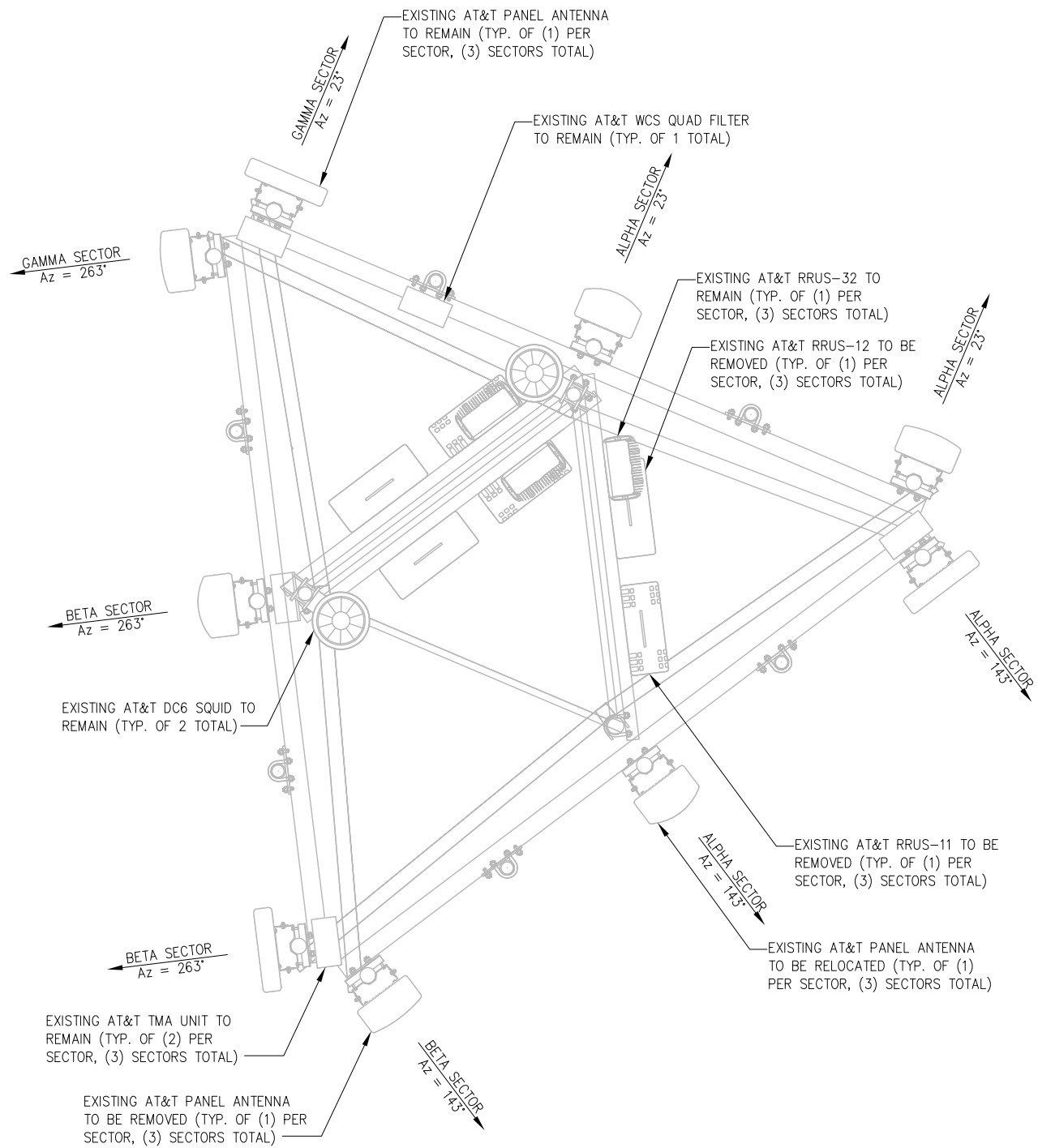
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**ELEVATION VIEW**

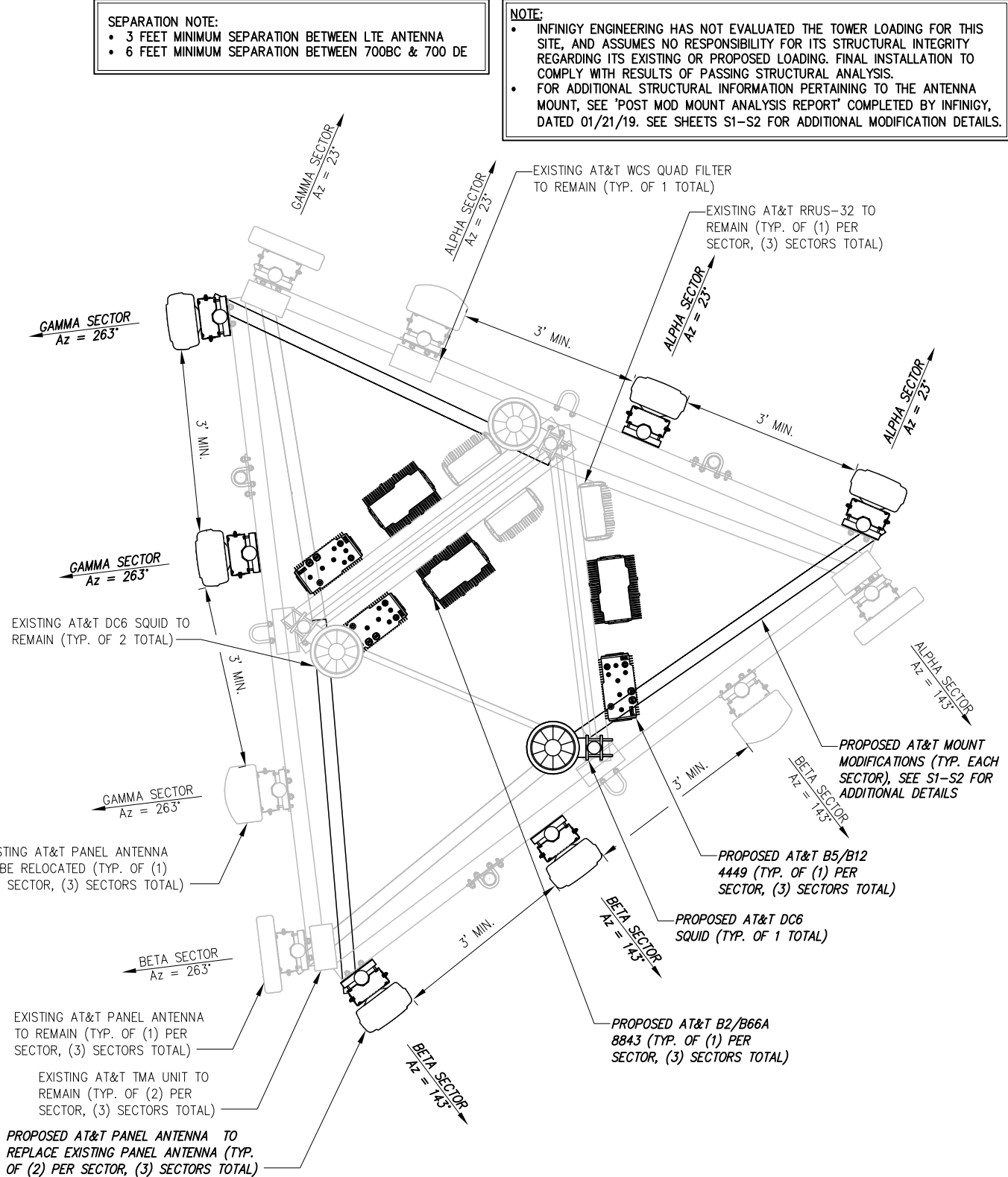
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**1** ELEVATION VIEW  
 NOT TO SCALE

**2** AT&T ANTENNA SCHEDULE  
 NOT TO SCALE

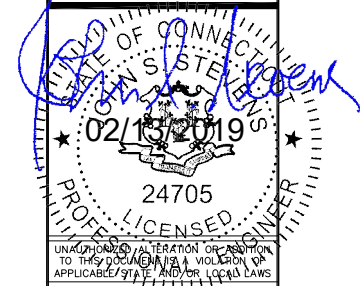


1 ANTENNA ORIENTATION PLAN (EXISTING)  
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2 PROPOSED ANTENNA ORIENTATION PLAN  
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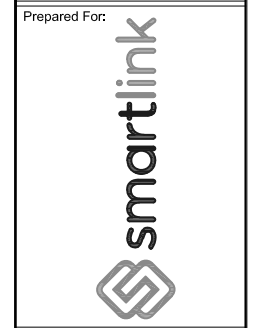


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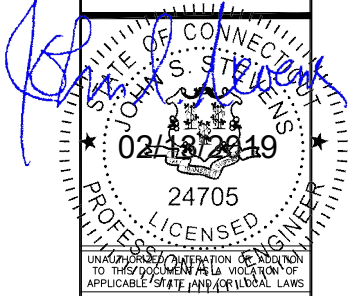
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Drawing Title:  
**ANTENNA ORIENTATION PLAN**

Drawing Number:  
**C4**





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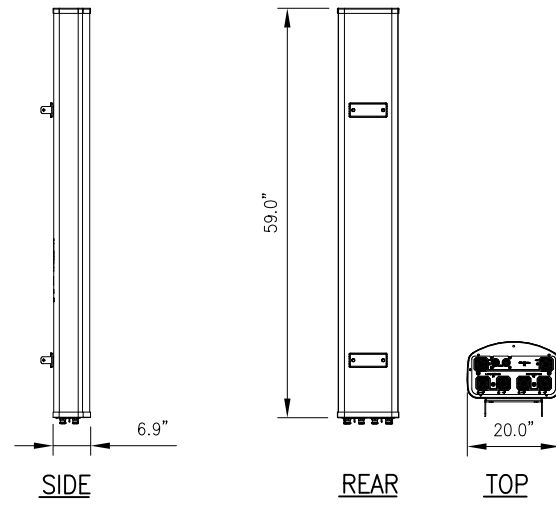
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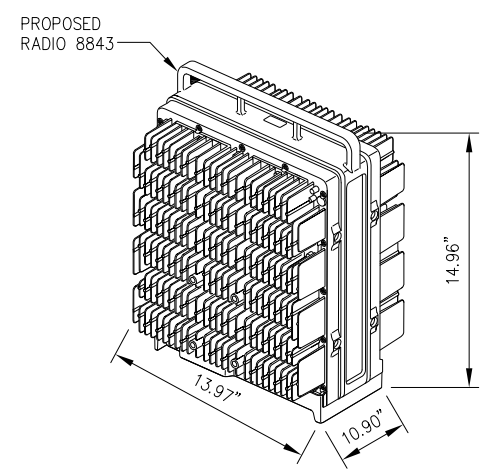
Drawing Title:  
**EQUIPMENT DETAILS**

Drawing Number:  
**C5**



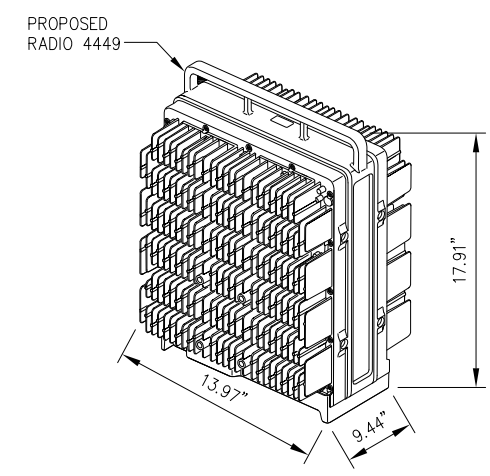
<b>KATHREIN MODEL NO.:</b>	<b>800-10964</b>
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	59.0"x20.0"x6.9"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	113.0 LBS
CONNECTOR:	7-16 DIN FEMALE

**1** ANTENNA DETAIL  
 --- NOT TO SCALE



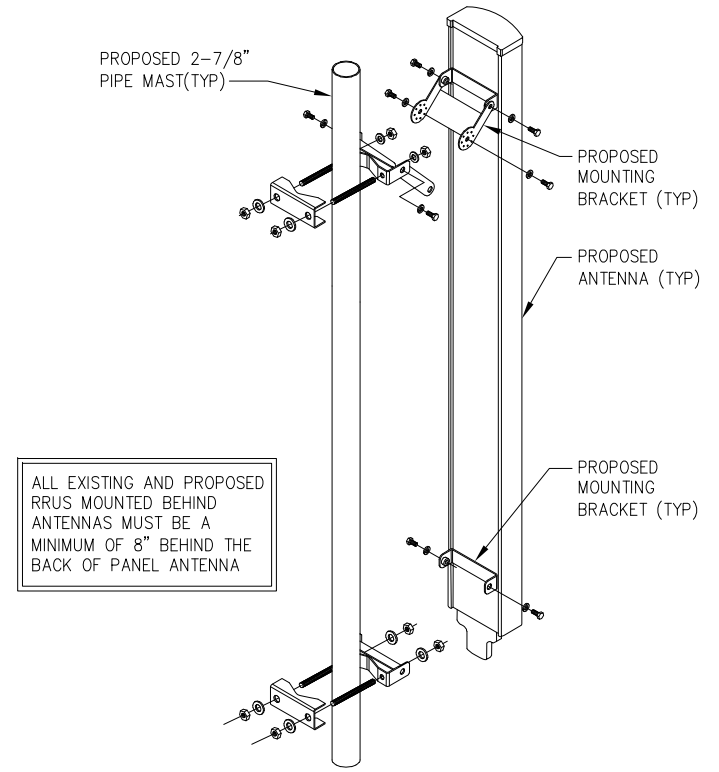
<b>RADIO 8843 SPECIFICATIONS</b>
• HxWxD, (INCHES) : 14.96"x13.97"x10.90"
• WEIGHT (LBS) : 71.87
• COLOR : GRAY

**2** ERICSSON RADIO 8843 DETAIL  
 --- NOT TO SCALE



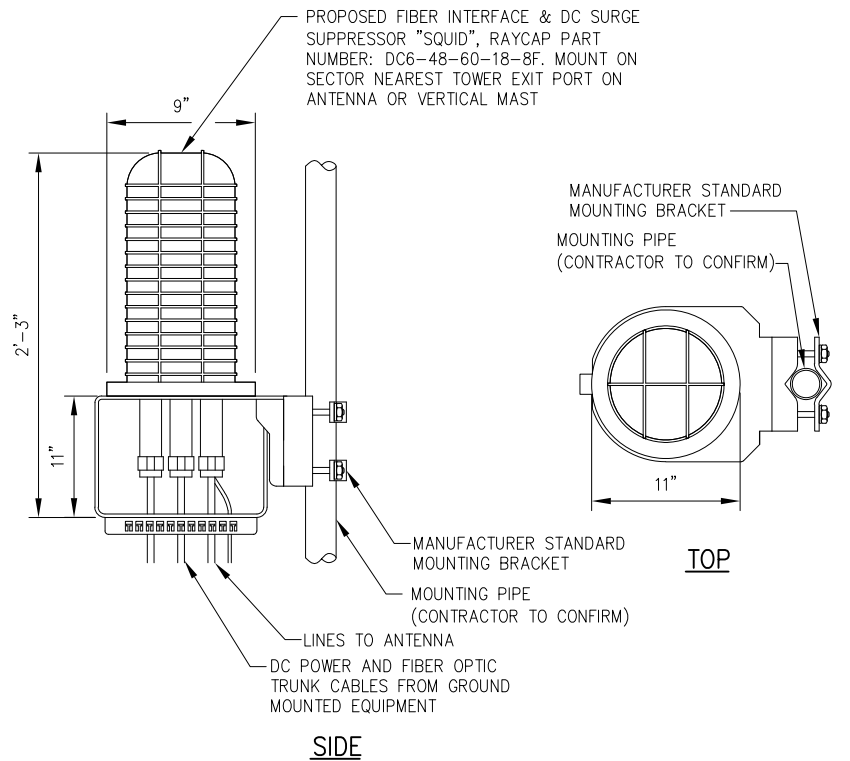
<b>RADIO 4449 SPECIFICATIONS</b>
• HxWxD, (INCHES) : 17.91"x13.97"x9.44"
• WEIGHT (LBS) : 70.54
• COLOR : GRAY

**3** ERICSSON RADIO 4449 DETAIL  
 --- NOT TO SCALE

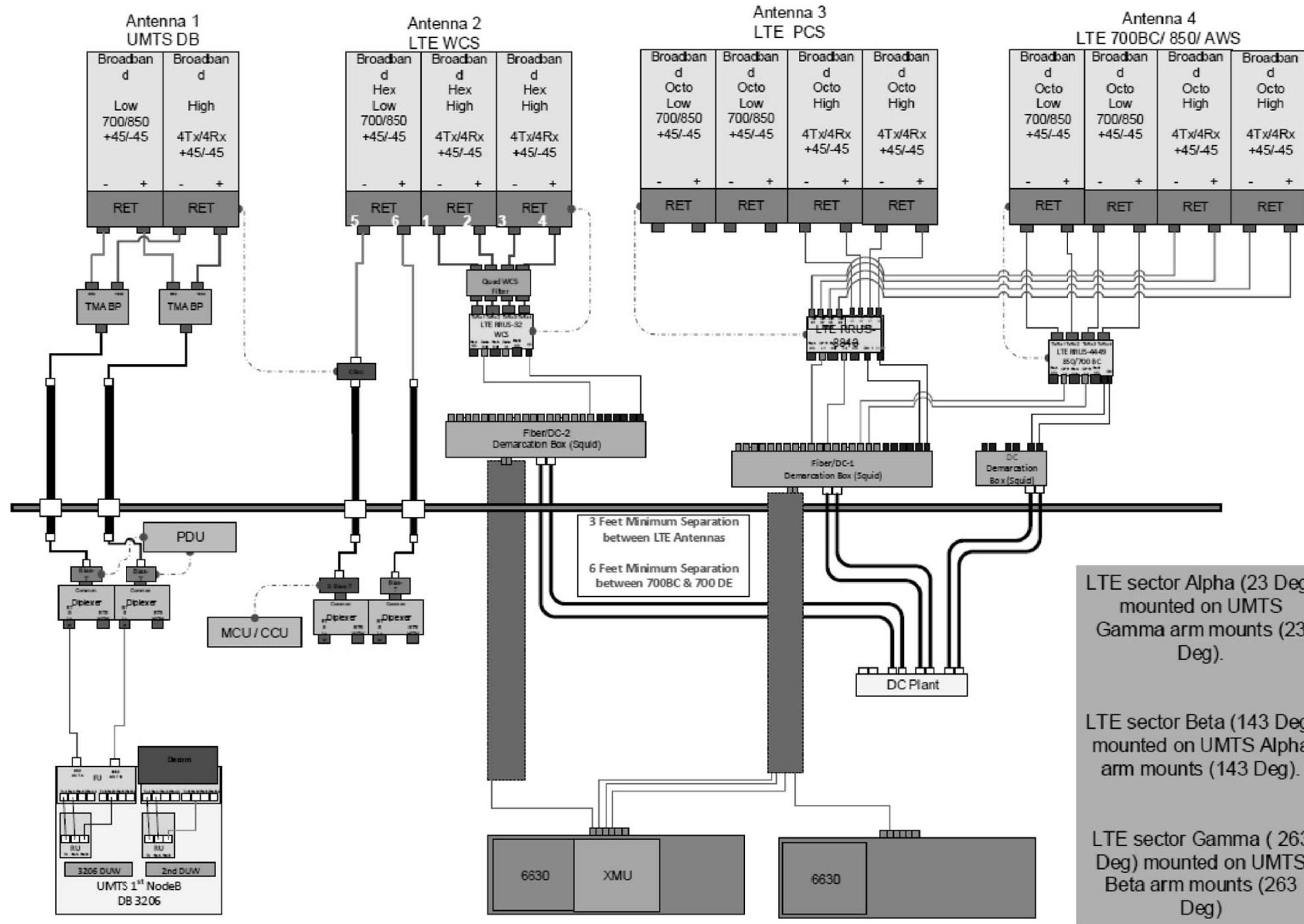


ALL EXISTING AND PROPOSED RRUS MOUNTED BEHIND ANTENNAS MUST BE A MINIMUM OF 8" BEHIND THE BACK OF PANEL ANTENNA

**4** MOUNTING DETAIL  
 --- NOT TO SCALE



**5** SQUID DETAIL  
 --- NOT TO SCALE



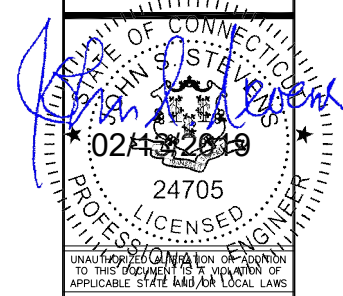
LTE sector Alpha (23 Deg) mounted on UMTS Gamma arm mounts (23 Deg).

LTE sector Beta (143 Deg) mounted on UMTS Alpha arm mounts (143 Deg).

LTE sector Gamma (263 Deg) mounted on UMTS Beta arm mounts (263 Deg).

ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)  
 -- NOT TO SCALE

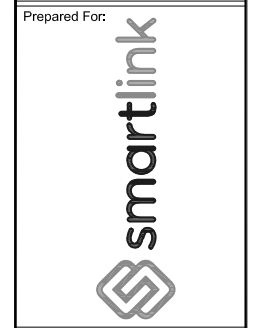


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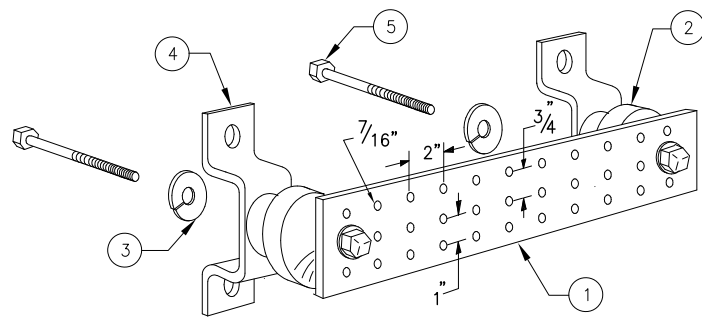
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**PLUMBING DIAGRAM**

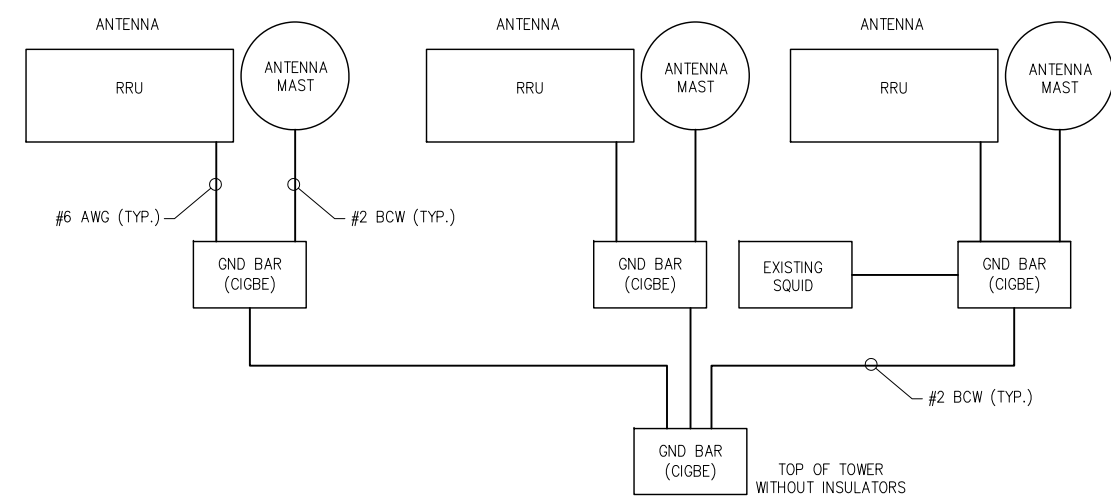
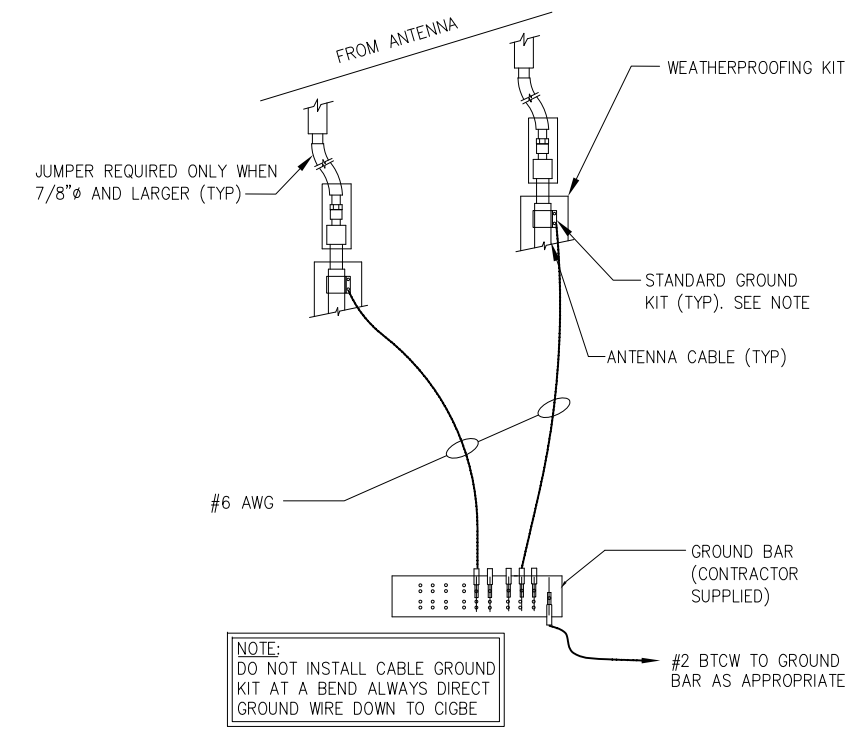
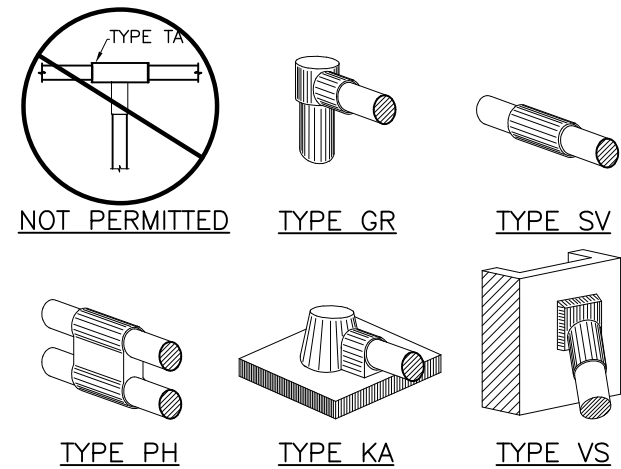
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**C6**

\*BASED ON LTE RFDS, V. 2.0, DATED 12/14/18

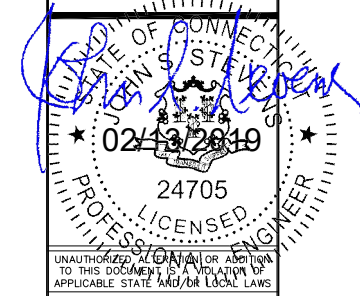


**LEGEND**

- 1 - SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. 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
- 6 - GROUND BAR SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
- 7 - GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
- 8 - GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
- 9 - HARDWARE DIAMETER SHALL BE MINIMUM 3/8"



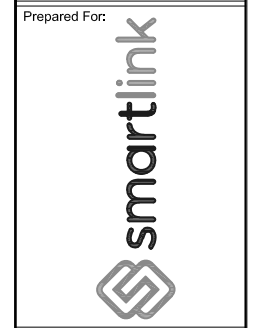
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Drawing Title  
**GROUNDING DETAILS**

Drawing Number  
**C7**

**GENERAL NOTES:**

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

**STEEL CONSTRUCTION NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVALITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
  - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
  - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
  - RECTANGULAR HSS TO BE A500, GRADE B. Fy=46 KSI, U.N.O.
  - ROUND HSS TO BE A500, GRADE B. Fy=42 KSI, U.N.O.
  - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
  - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
  - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
  - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
  - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
  - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
  - CONCRETE REBAR: ADHESIVE - RE600, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

**CONCRETE CONSTRUCTION NOTES:**

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

**FIBER REINFORCED POLYMER (FRP) NOTES:**

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER		
	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

**WOOD CONSTRUCTION NOTES:**

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

**MASONRY CONSTRUCTION NOTES:**

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
  - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
  - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
  - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
  - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
  - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

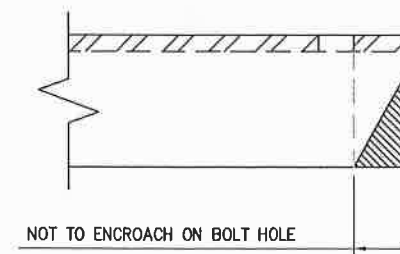
**TOWER PLUMB & TENSION NOTES:**

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

**SPECIAL INSPECTIONS NOTES:**

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
  - a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
  - b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
  - c. MECHANICAL AND EPOXIED ANCHORAGES.
  - d. FIBER REINFORCED POLYMER.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
    - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

**MAXIMUM ALLOWABLE ANGLE CLIP**



**INFINIGY**

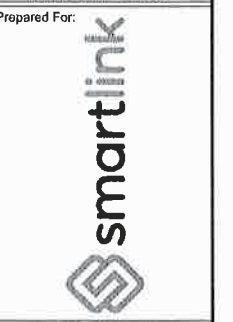
1033 Watervliet Shaker Rd  
Albany, NY 12205  
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ISSUED FOR REVIEW	TAG	01/21/19
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Drawn:	TAG	Date: 01/21/19
Designed:	BA	Date: 01/21/19
Checked:	NO	Date: 01/21/19
Project Number: 499-006		

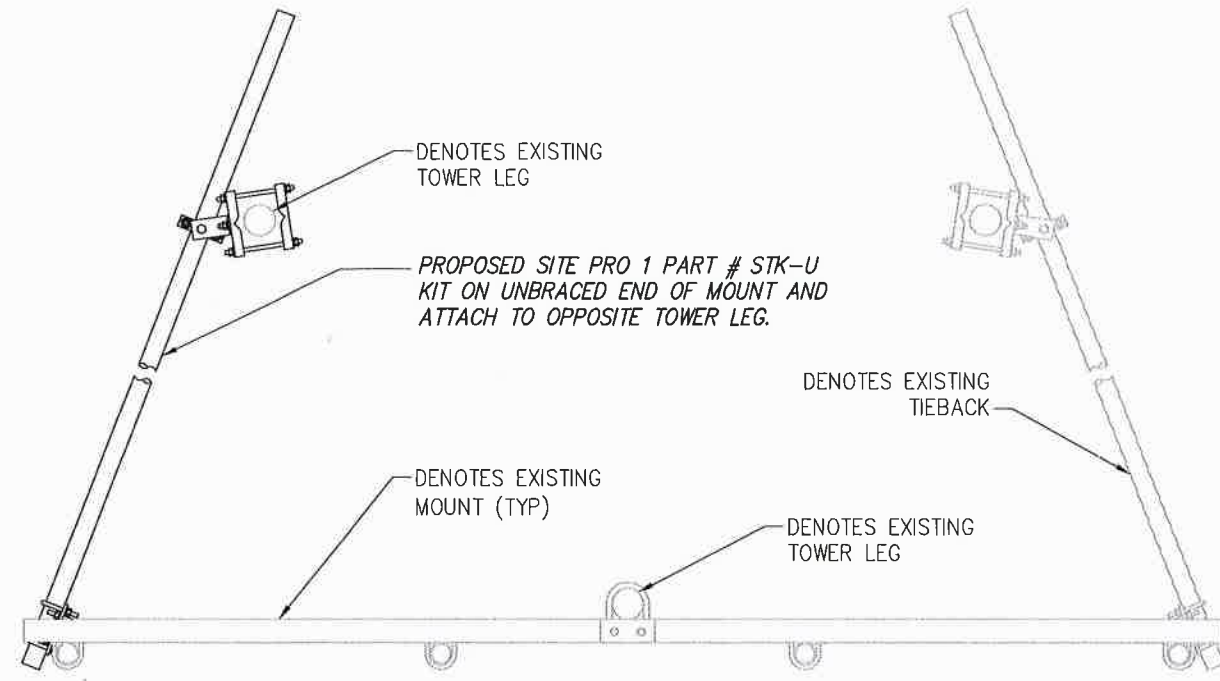
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**BRANFORD WEST**  
CTL02175  
FA# 10035093  
4 BEAVER ROAD  
BRANFORD, CT 06405



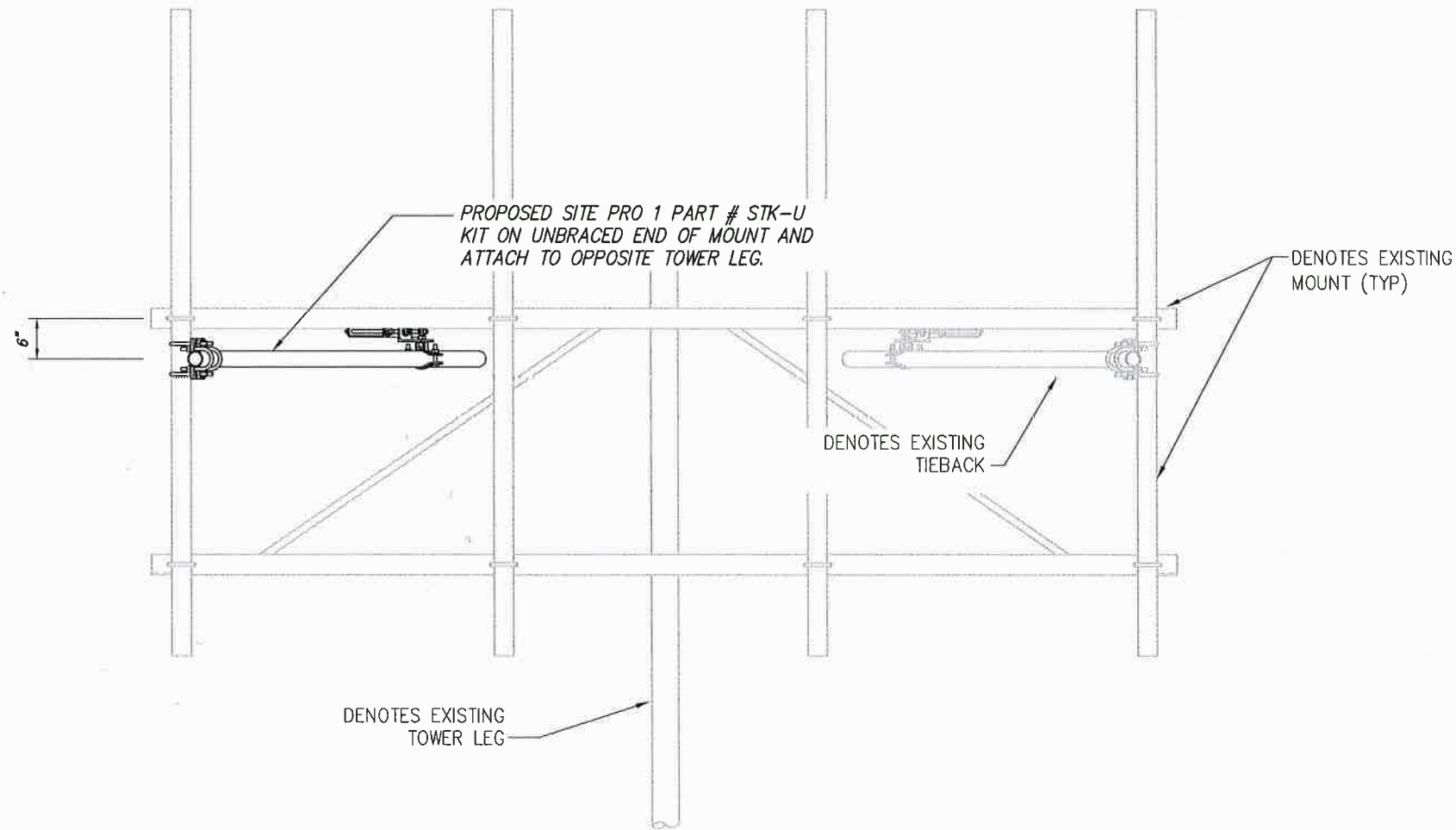
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AS NOTED  
Date:  
01/22/19

Drawing Title  
**GENERAL NOTES**

Drawing Number  
**S1**



1 PLAN VIEW  
SCALE: NOT TO SCALE



2 ELEVATION VIEW  
SCALE: NOT TO SCALE

**INFINIGY**

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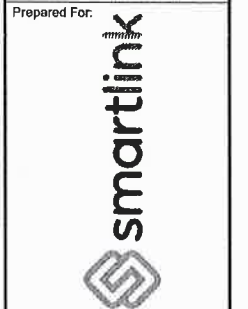
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FA# 10035093  
4 BEAVER ROAD  
BRANFORD, CT 06405



Drawing Scale: AS NOTED  
Date: 01/22/19

Drawing Title:  
MOUNT MODIFICATION

Drawing Number:  
S2