Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

September 9, 2016

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

Notice of Exempt Modification
219 Nells Rock Road, Shelton, CT 06484
Latitude- 41.30416500
Longitude- -73.11827700

Dear Ms. Bachman,

T-Mobile currently maintains (6) existing antennas at the 135' level of the existing 165' self-support tower at 219 Nells Rock Road in Shelton, CT. The tower and property is owned by AT&T. T-Mobile now intends to replace (6) of its existing antennas with (6) new 700 MHz antennas. These antennas would be installed at the same 135' level of the tower. T-Mobile also intends to install (6) remote radio-heads and (1) fiber cable.

This facility was approved by the Council in Docket No. 45 on September 14, 1984. This approval included conditions, none of which have been violated or could be feasibly violated by this modification. This modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Mark A. Lauretti, Mayor of the City of Shelton, as well as the property owner and tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-72(b)(2).

1. The proposed modification will not result in an increase in the height of the existing structure

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Kyle Richers

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
908-447-4716
krichers@transcendwireless.com

Attachments:

cc: Mark A. Lauretti- as elected official
AT&T- tower and property owner

City of Shelton
Property Listing Report

Parcel ID 90.-2

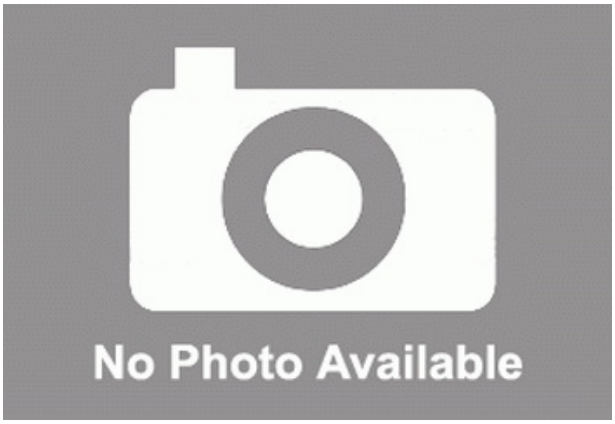
Account 7658

Property Information

Owner	NEW CINGULAR WIRELESS PCS LLC
Address	161 NELLS ROCK RD
Mailing Address	909 CHESTNUT ST RM 36-M-1 ST LOUIS, , MO 63101
Land Use	- RESIDENTIAL
Land Class	4-2

Census Tract	1103
Neighborhood	
Zoning	R-1
Acreage	1.3
Utilities	ELECTRIC
Lot Setting/ Desc	/

Photo



PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings		
Outbuildings		
Improvements		
Extras		
Land		
Total	197300	138110
Previous		

Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Total Rooms	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

EXTERIOR WALLS:	
Primary	
Secondary	
INTERIOR WALLS:	
Primary	
Secondary	
FLOORS:	
Primary	
Secondary	
HEATING/AC:	
Heating Type	
Heating Fuel	
AC Type	

BUILDING AREA:

Effective Building Area	
Gross Building Area	
Total Living Area	

SALES HISTORY:

Sale Date	20150623
Sale Price	0
Book/ Page	3564/303

Report Created On 9/7/2016

City of Shelton

Geographic Information System (GIS)

Date Printed: 9/7/2016

MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The City of Shelton and its mapping contractors assume no legal responsibility for the information contained herein.

0 100 Feet

N W E S

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11199A

Shelton/ Buddington Rd_1
219 Nells Rock Road (S.N.E.T)
Shelton, CT 06484

September 1, 2016

EBI Project Number: 6216003863

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	7.98 %

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

EBI Consulting
environmental | engineering | due diligence

September 1, 2016

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11199A – Shelton/ Buddington Rd_1**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **219 Nells Rock Road (S.N.E.T), Shelton, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **219 Nells Rock Road (S.N.E.T), Shelton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) Since the 2100 MHz UMTS radios are ground mounted there are additional cabling losses accounted for. For each ground 2100 MHz UMTS RF path an additional 2.96 dB of cable loss was factored into the calculations. This is based on manufacturers Specifications for 280 feet of 1-5/8” coax cable on each path.

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** & **Commscope DBXNH-6565A-VTM** for 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope DBXNH-6565A-VTM** has a maximum gain of **15.5 dBd** at its main lobe 2100 MHz and **11.3 dBd** at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerline of the proposed antennas is **135 feet** above ground level (AGL).

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

11) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	135	Height (AGL):	135	Height (AGL):	135
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A1 MPE%	1.51	Antenna B1 MPE%	1.51	Antenna C1 MPE%	1.51
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DBXNH-6565A-VTM	Make / Model:	Commscope DBXNH-6565A-VTM	Make / Model:	Commscope DBXNH-6565A-VTM
Gain:	15.5 dBd / 11.3 dBd	Gain:	15.5 dBd / 11.3 dBd	Gain:	15.5 dBd / 11.3 dBd
Height (AGL):	135	Height (AGL):	135	Height (AGL):	135
Frequency Bands	2100 MHz (AWS) / 700 MHz	Frequency Bands	2100 MHz (AWS) / 700 MHz	Frequency Bands	2100 MHz (AWS) / 700 MHz
Channel Count	3	Channel Count	3	Channel Count	3
Total TX Power(W):	90	Total TX Power(W):	90	Total TX Power(W):	90
ERP (W):	1,481.53	ERP (W):	1,481.53	ERP (W):	1,481.53
Antenna A2 MPE%	0.42	Antenna B2 MPE%	0.42	Antenna C2 MPE%	0.42

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**1.93 %**
AT&T	0.87 %
Verizon Wireless	4.24 %
Sprint	0.48 %
Clearwire	0.15 %
PageNet	0.27 %
Arrow Bus	0.04 %
Metricon	0.00 %
Site Total MPE %:	**7.98 %**

T-Mobile Sector A Total:	1.93 %
T-Mobile Sector B Total:	1.93 %
T-Mobile Sector C Total:	1.93 %
Site Total:	7.98 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	135	10.09	AWS - 2100 MHz	1000	1.01%
T-Mobile PCS - 1900 MHz UMTS	2	1,167.14	135	5.04	PCS - 1900 MHz	1000	0.50%
T-Mobile AWS - 2100 MHz UMTS	2	538.42	135	2.33	AWS - 2100 MHz	1000	0.23%
T-Mobile 700 MHz LTE	1	404.69	135	0.87	700 MHz	467	0.19%
						Total:	**1.93%**

Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	1.93 %
Sector B:	1.93 %
Sector C:	1.93 %
T-Mobile Per Sector Maximum:	1.93 %
Site Total:	7.98 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.98%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

AT&T Towers
2300 Northlake Center Dr. Suite 405
Tucker, GA 30084-4032
(404) 532-5855

Chris Scheks
520 South Main Street, Suite 2531
Akron, OH 44311
(614) 588-8973
cscheks@gpdgroup.com

GPD #: 2016723.01.SNET025.08
August 23, 2016

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**SNET025**
	Site FA:	**10137492**
	Site Name:	**SHELTON**
	AT&T Project:	**Wireline T-Mobile Tower Only Modification 04.29.2016**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2005 CT Building Code & ASCE 7-05** **90 mph fastest mile with 0" ice** **38 mph fastest mile with 3/4" ice**
SITE DATA:		**2 Oak Valley Rd, Shelton, CT 06484, Fairfield County** **Latitude 41° 18' 15.012" N, Longitude 73° 7' 6" W** **Market: NEW ENGLAND** **162.5' Modified Self Support Tower**

Ms. Deborah Krenc,

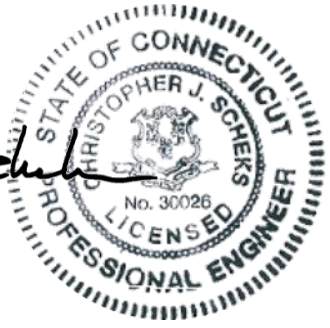
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	88.7%	Pass
Foundation Ratio with Proposed Equipment:	71.1%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



Christopher J. Scheks, P.E.
Connecticut #: 0030026

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by T-Mobile to AT&T Towers. This report was commissioned by Ms. Deborah Krenc of AT&T Towers.

The proposed coax shall be stacked in a single row with remaining 1-5/8" coax supplying the 135' elevation in a single row on tower face D in order for the results of this analysis to be valid. Please see appendix C for the proposed feedline layout.

All modifications designed by GPD (Project #: 2013723.SNET025.01, dated 3/1/13) were considered in the analysis.

All modifications designed by GPD (Project #: 2014701.02, dated 2/10/20148/23/2016) were considered in the analysis.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	47.3%	Pass
Leg Bolts	76.7%	Pass
Diagonals	88.7%	Pass
Horizontals	69.4%	Pass
Redundant Members	79.7%	Pass
Inner Bracing	42.1%	Pass
Member Bolts	59.4%	Pass
Anchor Rods	41.5%	Pass
Foundations	71.1%	Pass

ANALYSIS METHOD

RISA3D (version 14.0.0) and tnxTower (version 7.0.5.1), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being provided without the benefit of a recent site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
AT&T Tower Sketch	AT&T Tower Sketch Issue 6, dated 6/6/2010	N/A
Site Lease Application	T-Mobile Application, dated 5/18/2016	AT&T
Tower Design	Not Provided	N/A
Foundation Mapping	WEI Project #: 2010-1160, dated 7/20/10	Siterra
Geotechnical Report	WEI Project #: 2010-1160, dated 7/20/10	Siterra
Previous Structural Analysis	GPD Project #: 2013723.01.SNET025.04, dated 10/4/2013	Siterra
Tower Mapping	GPD Group and MTSI Northeast, dated 7/1/10	Siterra
Modification Drawings	GPD Project #: 2013723.01.SNET025.01, dated 3/1/2013	Siterra
Modification Drawings	GPD Project #: 2014701.02, dated 2/10/2014	Siterra
Post Modification Inspection	GPD Project #: 2013723.01.SNET025.03, dated 9/26/2013	Siterra
Post Modification Inspection	GPD Project: #: 2014723.01.SNET025.07, dated 6/4/2014	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous structural analysis by GPD (Project #: 2013723.01.SNET025.04, dated 10/4/2013), site photos, and the provided site lease application (dated 5/18/2016), and is assumed to be accurate.
12. No future AT&T loading has been included based on standard AT&T Tower wireline protocol.
13. The proposed coax shall be stacked in a single row with remaining 1-5/8" coax supplying the 135' elevation in a single row on tower face D in order for the results of this analysis to be valid
14. The azimuth of tower face A is assumed to be 57 degrees based on the AT&T Tower Sketch Issue 6, dated 6/6/2010.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	SHELTON
Site Number	SNET025
FA Number	10137492
Date of Analysis	8/23/2016
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	SST	
Tower Height (top of steel AGL)	162.5'	
Tower Manufacturer	Unknown	
Tower Model	Unknown	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	WEI Project #: 2010-1160	7/20/2010
Tower Mapping	GPD Group and MTSI Northeast	7/1/2010
Previous Structural Analysis	2013723.SNET025.01	3/1/2013
Modification Drawings	2013723.SNET025.01	3/1/2013
Modification Drawings	GPD Project #: 2014701.02	2/10/2014
Foundation Mapping	WEI Project #: 2010-1160	7/20/2010

Design Parameters

Design Code Used	TIA/EIA-222-F, ASCE 7-05 & 2005 CT Building Code
Location of Tower (County, State)	Fairfield, CT
Basic Wind Speed (mph)	90 (Fastest Mile)
Ice Thickness (in)	0.75
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition (Modified)	
Tower (%)	88.7%
Tower Base (%)	41.5%
Foundation (%)	71.1%
Foundation Adequate?	Yes

All modifications designed by GPD (Project #: 2013723.SNET025.01, dated 3/1/13) were considered in the analysis.

All modifications designed by GPD (Project #: 2014701.02, dated 2/10/2014) were considered in the analysis.

Steel Yield Strength (ksi)

Legs	36
Bracing	36
Bolts	A307
Anchor Rods	C1015

Note: Material grades are assumed based on experience with similar towers.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Unknown	162.5	175	1	Light	Unknown	Beacon		1	Unknown	13' W5 x 13' Post	1	Unknown	1/2"	Face D
Unknown	162.5	173	1	Omni	Unknown	10' Omni		1	Unknown	28' Platform w/ rails	1	Unknown	7/8"	Face C
Unknown	162.5	165	1	Omni	Unknown	5' Omni				on the same top platform	1	Unknown	1-1/4"	Face D
Unknown	162.5	163	2	Dipole	Unknown	10' Dipole		1	Unknown	10' Post with (2) 2' Side Arms	2	Unknown	7/8"	Face D
Unknown	162.5										1	Conduit	2"	Face D
AT&T Mobility	162.5	163	2	Panel	Powerwave	RA21.7770.00	143			on the same top platform	12	Unknown	1-5/8"	Face D
AT&T Mobility	162.5	161	4	Panel	Powerwave	RA21.7770.00	25/265	2	Unknown	W8 x 19' Beams				
AT&T Mobility	162.5	163	2	TMA	Powerwave	LGP21401				on the same mounts				
AT&T Mobility	162.5	161	4	TMA	Powerwave	LGP21401				on the same mounts				
AT&T Mobility	162.5	162	3	Panel	Powerwave	P65-16-XLH-RR	90/210/340			on the same mounts	1	Fiber Cable	1/2"	Face D
AT&T Mobility	162.5	162	6	RRH	Ericsson	RBS 6000				on the same mounts	2	DC Power	7/8"	Face D
AT&T Mobility	162.5	162	3	Surge	Raycap	DC6-48-60-18-8F				on the same mounts				
Sprint	149	149	4	Panel	Allgon	7184.05	120/270	3	Unknown	14' T-Boom	6	Unknown	1-5/8"	Face B
Sprint	149	149	2	Panel	Allgon	7182.07	0			on the existing mounts	3	Hybriflex	1-1/4"	Face B
Sprint	149	149	3	Panel	RFS	APXVSPP18-C-A20	10/130/250			on the existing mounts				
Sprint	145	145	3	RRU	Andrew	800MHz 2x50w		3	Commscope	PM-SC2-B-8 and DA-C200				
Sprint	145	145	3	RRU	Panasonic	1900MHz 2x40w				on the same dual pipe mounts				
Sprint	145	145	3	Notch Filter	Andrew	800 MHz Notch Filter				attached to 800MHz RRU				
Misc	144	144						2	Unknown	30' x 30' Cross Catwalk w/ rails				
T-Mobile	135	135	6	Panel	Celwave	APX16DWV-16DWV-S-E-ACU		3	Unknown	2' Standoffs	12	Unknown	1-5/8"	Face D
T-Mobile	135	135	3	TMA	Ericsson	KRY 112 489/2				on same mounts				
T-Mobile	135	135	3	TMA	Ericsson	KRY 112 144				on same mounts				
T-Mobile	135	135	12	RET	Celwave	ACU-A20-N				on same mounts				
Verizon	124	125	6	Panel	Andrew	DB846F65ZAXY	20/190/270	3	Unknown	12' T-Frames	18	Unknown	1-5/8"	Face C
Verizon	124	125	3	Panel	Antel	BXA-70063/6CF	20/190/270			on same mounts	1	Hybrid	1-5/8"	Face C
Verizon	124	125	3	Panel	Antel	BXA 171063/8BF	20/190/270			on same mounts				
Verizon	124	125	2	Panel	Antel	BXA 185063/12CF	190/270			on same mounts				
Verizon	124	125	1	Panel	Antel	BXA 185085/12CF	20			on same mounts				
Verizon	124	125	3	RRH	Alcatel Lucent	RRH 2x40 AWS				on same mounts				
Verizon	124	125	1	Distribution Box	RFS	DB-T1-6Z-8AB-0Z				on same mounts				
Misc	112.5	112.5						1	Unknown	4.25' x 7' Catwalk				
Misc	87.5	87.5						2	Unknown	23' x 3' Catwalks				
Sprint	65	65	1	GPS	PCTEL	GPS-TMG-HR-26NCM		1	Unknown	Leg Mounted	1	Unknown	1/2"	Face D
Misc	62.5	62.5						1	Unknown	13' x 4.25' Catwalk				
Misc	25	25						1	Unknown	13' x 4.25' Catwalk				

Note: The (6) existing APX16DWV-16DWV-S-E-ACU Antennas, (3) KRY 112 489/2 TMAs, (12) ACU-A20-N RETs, (6) 1-5/8" coax at 135' shall be removed prior to the installation of the proposed configuration and have not been considered in this analysis. All other existing/reserved equipment shall be reused.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
T-Mobile	135	135	3	Panel	Ericsson	AIR21 B4A/B2P	60/180/300			on the existing mounts	1	Fiber	7/8"	Face D
T-Mobile	135	135	3	Panel	Andrew	DBXNH-6565A-A2M	60/180/300			on the existing mounts				
T-Mobile	135	135	3	RRU	Ericsson	RRUS11 B2				on the existing mounts				
T-Mobile	135	135	3	RRU	Ericsson	RRUS11 B12				on the existing mounts				

Note: The proposed equipment shall be installed in addition to the remaining existing/reserved loading at the same elevation. The proposed coax shall be stacked in a single row with remaining 1-5/8" coax supplying the 136' elevation in a single row on tower face D in order for the results of this analysis to be val

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face

APPENDIX B

Software Output Files and Calculations

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 162.50 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 12.25 ft at the top and 36.25 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 90 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* ft	*Face Offset* in	*Lateral Offset (Frac FW)*	*#*	*# Per Row*	*Clear Spacing* in	*Width or Diameter* in	*Perimeter* in	*Weight* plf
Feedline Ladder (Af)	A	Yes	Af (CfAe)	149.00 - 10.00	0.0000	0	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	149.00 - 10.00	0.0000	0	6	6	1.0000	1.9800		0.82
1-1/4" Hybrid Cable	A	Yes	Ar (CfAe)	149.00 - 10.00	0.0000	0.04	3	3	1.0000	1.2500		1.00
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	65.00 - 10.00	0.0000	-0.45	2	2	0.2500	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	162.50 - 68.00	0.0000	-0.45	1	1	0.2500	0.6300		0.15
2" Flex Conduit	C	Yes	Ar (CfAe)	162.50 - 10.00	0.0000	-0.44	1	1	0.2500	2.0000		0.32
Feedline Ladder (Af)	C	Yes	Af (CfAe)	135.00 - 10.00	0.0000	0	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	135.00 - 10.00	0.0000	0.03	6	6	1.0000	1.9800		0.82
7/8" Fiber	C	Yes	Ar (CfAe)	135.00 - 10.00	0.0000	0	1	1	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	162.50 - 10.00	0.0000	-0.03	2	2	1.0000	1.0900		0.33
Feedline Ladder (Af)	C	Yes	Af (CfAe)	162.50 - 10.00	-1.0000	0.2	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	162.50 - 10.00	-6.0000	0.2	12	4	2.0000 1.0000	1.9800		0.82
1/2" Fiber Cable	C	Yes	Ar (CfAe)	162.50 - 10.00	-5.0000	0.18	1	1	0.6300	0.6300		0.15
7/8" DC Power Cable	C	Yes	Ar (CfAe)	162.50 - 10.00	-5.0000	0.18	2	2	0.8750	0.8750		0.60
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	162.50 - 10.00	-1.0000	0.23	1	1	1.0000	1.5500		0.66
LDF5-50A (7/8 FOAM)	D	Yes	Ar (CfAe)	162.50 - 10.00	0.0000	-0.48	1	1	1.0000	1.0900		0.33
Feedline Ladder (Af)	D	Yes	Af (CfAe)	124.00 - 10.00	0.0000	0.45	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	D	Yes	Ar (CfAe)	124.00 - 10.00	0.0000	0.45	18	9	1.0000	1.9800		0.82
1-5/8" Hybrid Cable	D	Yes	Ar (CfAe)	124.00 - 10.00	0.0000	0.49	1	1	1.9800	1.9800		0.82

Discrete Tower Loads

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral* ft *Vert* ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
Top Platform w/ Hand Rail	C	None		0.0000	162.50	No Ice	100.20	100.20	11871.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						1/2" Ice	111.30	111.30	15623.000
						1" Ice	122.40	122.40	19375.000
						2" Ice	144.60	144.60	26879.000
						4" Ice	189.00	189.00	41887.000
Flash Beacon Lighting	C	From Leg	0.00	0.0000	162.50	No Ice	2.70	2.70	50.000
			0.00			1/2" Ice	3.10	3.10	70.000
			12.50			1" Ice	3.50	3.50	90.000
						2" Ice	4.30	4.30	130.000
						4" Ice	5.90	5.90	210.000
W5 x 13' Mount	C	From Leg	0.00	0.0000	162.50	No Ice	5.42	5.42	210.000
			0.00			1/2" Ice	7.00	7.00	280.000
			6.25			1" Ice	8.58	8.58	350.000
						2" Ice	11.75	11.75	490.000
						4" Ice	18.08	18.08	770.000
10' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	2.00	2.00	20.000
			5.00			1/2" Ice	3.02	3.02	35.501
			5.50			1" Ice	4.07	4.07	57.466
						2" Ice	5.70	5.70	121.404
						4" Ice	8.26	8.26	333.577
10' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	2.00	2.00	20.000
			5.00			1/2" Ice	3.02	3.02	35.501
			-4.50			1" Ice	4.07	4.07	57.466
						2" Ice	5.70	5.70	121.404
						4" Ice	8.26	8.26	333.577
5' Omni	B	From Face	7.00	0.0000	162.50	No Ice	1.00	1.00	15.000
			-3.00			1/2" Ice	1.39	1.39	22.865
			2.50			1" Ice	1.70	1.70	34.140
						2" Ice	2.35	2.35	67.534
						4" Ice	3.78	3.78	181.970
10' P4x.237 Mount Pipe	D	From Face	7.00	0.0000	162.50	No Ice	4.50	4.50	129.600
			-5.00			1/2" Ice	5.24	5.24	160.913
			5.50			1" Ice	5.85	5.85	198.946
						2" Ice	7.09	7.09	295.781
						4" Ice	9.69	9.69	576.804
2' Standoff	D	From Face	6.50	0.0000	162.50	No Ice	1.36	1.36	50.000
			-5.00			1/2" Ice	2.45	2.45	75.000
			9.50			1" Ice	3.50	3.50	100.000
						2" Ice	5.74	5.74	150.000
						4" Ice	10.12	10.12	250.000
2' Standoff	D	From Face	7.50	0.0000	162.50	No Ice	1.36	1.36	50.000
			-5.00			1/2" Ice	2.45	2.45	75.000
			9.50			1" Ice	3.50	3.50	100.000
						2" Ice	5.74	5.74	150.000
						4" Ice	10.12	10.12	250.000
10' Omni	D	From Face	8.00	0.0000	162.50	No Ice	2.00	2.00	25.000
			-5.00			1/2" Ice	3.02	3.02	40.501
			15.50			1" Ice	4.07	4.07	62.466
						2" Ice	5.70	5.70	126.404
						4" Ice	8.26	8.26	338.577
***									
W8 x 19' Beams	A	From Leg	5.00	13.0000	162.50	No Ice	17.00	1.00	290.000
			0.00			1/2" Ice	19.00	1.50	340.000
			1.00			1" Ice	21.00	2.00	330.000
						2" Ice	25.00	3.00	370.000
						4" Ice	33.00	5.00	450.000
W8 x 19' Beams	D	From Leg	5.00	-17.0000	162.50	No Ice	17.00	1.00	290.000
			0.00			1/2" Ice	19.00	1.50	340.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			1.00			1" Ice	21.00	2.00	330.000
						2" Ice	25.00	3.00	370.000
						4" Ice	33.00	5.00	450.000
(2) RA21.7770.00 w/Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	7.15	5.13	65.550
			0.00			1/2" Ice	7.82	6.25	121.085
			-1.50			1" Ice	8.42	7.08	183.814
						2" Ice	9.65	8.78	334.487
						4" Ice	12.25	12.44	770.719
(2) RA21.7770.00 w/Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	7.15	5.13	65.550
			0.00			1/2" Ice	7.82	6.25	121.085
			-1.50			1" Ice	8.42	7.08	183.814
						2" Ice	9.65	8.78	334.487
						4" Ice	12.25	12.44	770.719
(2) RA21.7770.00 w/Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	7.15	5.13	65.550
			0.00			1/2" Ice	7.82	6.25	121.085
			0.50			1" Ice	8.42	7.08	183.814
						2" Ice	9.65	8.78	334.487
						4" Ice	12.25	12.44	770.719
(2) LGP21401	A	From Leg	5.00	13.0000	162.50	No Ice	1.29	0.23	14.100
			0.00			1/2" Ice	1.45	0.31	21.263
			-1.50			1" Ice	1.61	0.40	30.319
						2" Ice	1.97	0.61	54.887
						4" Ice	2.79	1.12	135.288
(2) LGP21401	D	From Leg	5.00	-17.0000	162.50	No Ice	1.29	0.23	14.100
			0.00			1/2" Ice	1.45	0.31	21.263
			-1.50			1" Ice	1.61	0.40	30.319
						2" Ice	1.97	0.61	54.887
						4" Ice	2.79	1.12	135.288
(2) LGP21401	C	From Face	7.00	-4.0000	162.50	No Ice	1.29	0.23	14.100
			0.00			1/2" Ice	1.45	0.31	21.263
			0.50			1" Ice	1.61	0.40	30.319
						2" Ice	1.97	0.61	54.887
						4" Ice	2.79	1.12	135.288
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	5.00	-32.0000	162.50	No Ice	8.40	6.13	85.900
			0.00			1/2" Ice	8.95	7.07	149.069
			-0.50			1" Ice	9.51	7.90	219.945
						2" Ice	10.65	9.59	388.082
						4" Ice	13.03	13.22	860.498
P65-16-XLH-RR w/ Mount Pipe	D	From Leg	5.00	-72.0000	162.50	No Ice	8.40	6.13	85.900
			0.00			1/2" Ice	8.95	7.07	149.069
			-0.50			1" Ice	9.51	7.90	219.945
						2" Ice	10.65	9.59	388.082
						4" Ice	13.03	13.22	860.498
P65-16-XLH-RR w/ Mount Pipe	C	From Face	7.00	-57.0000	162.50	No Ice	8.40	6.13	85.900
			0.00			1/2" Ice	8.95	7.07	149.069
			-0.50			1" Ice	9.51	7.90	219.945
						2" Ice	10.65	9.59	388.082
						4" Ice	13.03	13.22	860.498
(2) RBS 6000	A	From Leg	5.00	-32.0000	162.50	No Ice	2.94	1.19	55.000
			0.00			1/2" Ice	3.17	1.35	74.320
			-0.50			1" Ice	3.41	1.52	96.557
						2" Ice	3.91	1.89	150.558
						4" Ice	5.02	2.72	302.116
(2) RBS 6000	D	From Leg	5.00	-72.0000	162.50	No Ice	2.94	1.19	55.000
			0.00			1/2" Ice	3.17	1.35	74.320
			-0.50			1" Ice	3.41	1.52	96.557
						2" Ice	3.91	1.89	150.558

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						4" Ice	5.02	2.72	302.116
(2) RBS 6000	C	From Face	7.00 0.00 -0.50	-57.0000	162.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.19 1.35 1.52 1.89 2.72	55.000 74.320 96.557 150.558 302.116
DC6-48-60-18-8F Surge Suppression Unit	A	From Leg	5.00 0.00 -0.50	-32.0000	162.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	18.900 36.615 56.825 105.337 239.015
DC6-48-60-18-8F Surge Suppression Unit	D	From Leg	5.00 0.00 -0.50	-72.0000	162.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	18.900 36.615 56.825 105.337 239.015
DC6-48-60-18-8F Surge Suppression Unit	C	From Face	7.00 0.00 -0.50	-57.0000	162.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	18.900 36.615 56.825 105.337 239.015
***									
Sabre 14' T-Boom (1)	A	From Leg	1.96 -0.42 0.00	-12.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	25.00 33.12 41.24 57.49 89.97	25.00 33.12 41.24 57.49 89.97	380.000 556.690 733.380 1086.760 1793.520
Sabre 14' T-Boom (1)	B	From Leg	1.90 0.62 0.00	18.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	25.00 33.12 41.24 57.49 89.97	25.00 33.12 41.24 57.49 89.97	380.000 556.690 733.380 1086.760 1793.520
Sabre 14' T-Boom (1)	C	From Leg	1.41 1.41 0.00	45.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	25.00 33.12 41.24 57.49 89.97	25.00 33.12 41.24 57.49 89.97	380.000 556.690 733.380 1086.760 1793.520
(2) 7182.07 w/ Mount Pipe	A	From Leg	3.92 -0.84 0.00	-12.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.89 3.41 3.93 4.97 7.05	2.89 3.41 3.93 4.97 7.05	10.000 12.000 14.000 18.000 26.000
(2) 7184.05 w/ Mount Pipe	B	From Leg	3.80 1.24 0.00	18.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.13 3.52 3.91 4.77 6.73	2.67 3.35 3.99 5.32 8.20	29.123 57.835 92.076 180.150 462.741
(2) 7184.05 w/ Mount Pipe	C	From Leg	2.82 2.82 0.00	78.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.13 3.52 3.91 4.77 6.73	2.67 3.35 3.99 5.32 8.20	29.123 57.835 92.076 180.150 462.741
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	3.92 -0.84 0.00	-12.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	78.900 144.306 217.469 390.338 872.839

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	3.80 1.24 0.00	18.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	78.900 144.306 217.469 390.338 872.839
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	2.82 2.82 0.00	78.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	78.900 144.306 217.469 390.338 872.839
800MHZ 2X50W RRH	A	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	53.000 74.187 98.387 156.608 317.771
800MHZ 2X50W RRH	B	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	53.000 74.187 98.387 156.608 317.771
800MHZ 2X50W RRH	C	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	53.000 74.187 98.387 156.608 317.771
800 External Notch Filter	A	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.000 16.814 24.257 44.808 114.010
800 External Notch Filter	B	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.000 16.814 24.257 44.808 114.010
800 External Notch Filter	C	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.000 16.814 24.257 44.808 114.010
1900MHz 4X40W RRH	A	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.84 3.09 3.61 4.74	59.500 82.622 108.978 172.167 345.906
1900MHz 4X40W RRH	B	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.84 3.09 3.61 4.74	59.500 82.622 108.978 172.167 345.906
1900MHz 4X40W RRH	C	From Leg	1.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.84 3.09 3.61 4.74	59.500 82.622 108.978 172.167 345.906
(2) 2.5" x 3.5' Mount Pipe	A	From Leg	0.50 0.00	0.0000	145.00	No Ice 1/2" Ice	0.74 0.96	0.74 0.96	20.000 26.726

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	1.18	1.18	35.997
						2" Ice	1.66	1.66	62.786
						4" Ice	2.92	2.92	153.627
(2) 2.5" x 3.5' Mount Pipe	B	From Leg	0.50	0.0000	145.00	No Ice	0.74	0.74	20.000
			0.00			1/2" Ice	0.96	0.96	26.726
			0.00			1" Ice	1.18	1.18	35.997
						2" Ice	1.66	1.66	62.786
						4" Ice	2.92	2.92	153.627
(2) 2.5" x 3.5' Mount Pipe	C	From Leg	0.50	0.0000	145.00	No Ice	0.74	0.74	20.000
			0.00			1/2" Ice	0.96	0.96	26.726
			0.00			1" Ice	1.18	1.18	35.997
						2" Ice	1.66	1.66	62.786
						4" Ice	2.92	2.92	153.627
30' x 30' Cross Catwalk w/ Handrails	C	None		0.0000	144.00	No Ice	78.00	78.00	5664.000
						1/2" Ice	84.00	84.00	7807.000
						1" Ice	90.00	90.00	9950.000
						2" Ice	102.00	102.00	14236.000
						4" Ice	126.00	126.00	22808.000
***									
2' Standoff - Round (GPD)	A	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
						2" Ice	3.74	4.78	109.160
						4" Ice	6.34	7.94	180.920
2' Standoff - Round (GPD)	B	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
						2" Ice	3.74	4.78	109.160
						4" Ice	6.34	7.94	180.920
2' Standoff - Round (GPD)	D	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
						2" Ice	3.74	4.78	109.160
						4" Ice	6.34	7.94	180.920
AIR21 B4A/B2P w/ mount pipe	A	From Leg	2.00	48.0000	135.00	No Ice	6.61	5.54	101.250
			1.00			1/2" Ice	7.08	6.27	156.434
			0.00			1" Ice	7.55	7.01	218.215
						2" Ice	8.53	8.54	364.474
						4" Ice	10.60	11.87	774.945
AIR21 B4A/B2P w/ mount pipe	B	From Leg	2.00	78.0000	135.00	No Ice	6.61	5.54	101.250
			1.00			1/2" Ice	7.08	6.27	156.434
			0.00			1" Ice	7.55	7.01	218.215
						2" Ice	8.53	8.54	364.474
						4" Ice	10.60	11.87	774.945
AIR21 B4A/B2P w/ mount pipe	D	From Leg	2.00	78.0000	135.00	No Ice	6.61	5.54	101.250
			1.00			1/2" Ice	7.08	6.27	156.434
			0.00			1" Ice	7.55	7.01	218.215
						2" Ice	8.53	8.54	364.474
						4" Ice	10.60	11.87	774.945
DBXNH-6565A-A2M w/ mount pipe	A	From Leg	2.00	-72.0000	135.00	No Ice	5.95	4.67	60.255
			-1.00			1/2" Ice	6.38	5.31	110.757
			0.00			1" Ice	6.82	5.99	167.983
						2" Ice	7.72	7.39	301.685
						4" Ice	9.64	10.54	678.109
DBXNH-6565A-A2M w/ mount pipe	B	From Leg	2.00	-42.0000	135.00	No Ice	5.95	4.67	60.255
			-1.00			1/2" Ice	6.38	5.31	110.757
			0.00			1" Ice	6.82	5.99	167.983

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	7.72	7.39	301.685
						4" Ice	9.64	10.54	678.109
DBXNH-6565A-A2M w/ mount pipe	D	From Leg	2.00 -1.00 0.00	18.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.95 6.38 6.82 7.72 9.64	4.67 5.31 5.99 7.39 10.54	60.255 110.757 167.983 301.685 678.109
RRUS 11 B2	A	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
RRUS 11 B2	B	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
RRUS 11 B2	D	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
RRUS 11 B12	A	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
RRUS 11 B12	B	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
RRUS 11 B12	D	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.55 3.80 4.33 5.50	1.36 1.54 1.73 2.13 3.04	50.700 71.570 95.487 153.237 313.848
KRY 112 144/1	A	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	11.000 14.176 18.583 31.870 81.778
KRY 112 144/1	B	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	11.000 14.176 18.583 31.870 81.778
KRY 112 144/1	D	From Leg	2.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	11.000 14.176 18.583 31.870 81.778
***									
Sabre 12' T-Boom (1)	A	From Leg	0.50 0.00 0.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice	18.81 24.75 30.69 42.57	10.62 15.16 19.70 28.78	513.500 719.590 925.680 1337.860

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						4" Ice	66.33	46.94	2162.220
Sabre 12' T-Boom (1)	C	From Leg	0.50 0.00 0.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	18.81 24.75 30.69 42.57 66.33	10.62 15.16 19.70 28.78 46.94	513.500 719.590 925.680 1337.860 2162.220
Sabre 12' T-Boom (1)	D	From Leg	0.50 0.00 0.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	18.81 24.75 30.69 42.57 66.33	10.62 15.16 19.70 28.78 46.94	513.500 719.590 925.680 1337.860 2162.220
(2) DB846F65ZAXY w/Mount Pipe	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.27 7.88 8.48 9.72 12.33	7.82 9.01 9.91 11.81 15.98	46.550 113.929 189.249 367.339 867.348
(2) DB846F65ZAXY w/Mount Pipe	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.27 7.88 8.48 9.72 12.33	7.82 9.01 9.91 11.81 15.98	46.550 113.929 189.249 367.339 867.348
(2) DB846F65ZAXY w/Mount Pipe	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.27 7.88 8.48 9.72 12.33	7.82 9.01 9.91 11.81 15.98	46.550 113.929 189.249 367.339 867.348
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	42.246 101.122 167.674 327.411 787.150
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	42.246 101.122 167.674 327.411 787.150
BXA-70063-6CF-EDIN-4 w/ Mount Pipe	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	42.246 101.122 167.674 327.411 787.150
BXA-171063/8CF w/Mount Pipe	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.14 3.52 3.92 4.80 6.71	3.51 4.13 4.76 6.06 9.09	28.902 61.615 99.831 195.696 492.459
BXA-171063/8CF w/Mount Pipe	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.14 3.52 3.92 4.80 6.71	3.51 4.13 4.76 6.06 9.09	28.902 61.615 99.831 195.696 492.459
BXA-171063/8CF w/Mount Pipe	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.14 3.52 3.92 4.80 6.71	3.51 4.13 4.76 6.06 9.09	28.902 61.615 99.831 195.696 492.459
BXA-185085/12CF w/ Mount Pipe	A	From Leg	1.00	8.0000	124.00	No Ice	4.77	5.36	47.740

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	5.22	6.17	93.913
			1.00			1" Ice	5.68	6.98	148.113
						2" Ice	6.62	8.67	279.046
						4" Ice	8.61	12.24	670.416
BXA-185063/12CF w/ mount pipe	C	From Leg	1.00	-2.0000	124.00	No Ice	5.00	5.30	40.550
			0.00			1/2" Ice	5.55	6.47	86.486
			1.00			1" Ice	6.07	7.35	139.852
						2" Ice	7.13	9.15	272.505
						4" Ice	9.38	12.94	675.519
BXA-185063/12CF w/ mount pipe	D	From Leg	1.00	-12.0000	124.00	No Ice	5.00	5.30	40.550
			0.00			1/2" Ice	5.55	6.47	86.486
			1.00			1" Ice	6.07	7.35	139.852
						2" Ice	7.13	9.15	272.505
						4" Ice	9.38	12.94	675.519
RRH2x40-AWS	A	From Leg	1.00	8.0000	124.00	No Ice	2.52	1.59	43.000
			0.00			1/2" Ice	2.75	1.80	60.396
			1.00			1" Ice	2.99	2.01	80.692
						2" Ice	3.50	2.46	130.758
						4" Ice	4.61	3.48	274.237
RRH2x40-AWS	C	From Leg	1.00	-2.0000	124.00	No Ice	2.52	1.59	43.000
			0.00			1/2" Ice	2.75	1.80	60.396
			1.00			1" Ice	2.99	2.01	80.692
						2" Ice	3.50	2.46	130.758
						4" Ice	4.61	3.48	274.237
RRH2x40-AWS	D	From Leg	1.00	-12.0000	124.00	No Ice	2.52	1.59	43.000
			0.00			1/2" Ice	2.75	1.80	60.396
			1.00			1" Ice	2.99	2.01	80.692
						2" Ice	3.50	2.46	130.758
						4" Ice	4.61	3.48	274.237
DB-T1-6Z-8AB-0Z	C	From Leg	1.00	8.0000	124.00	No Ice	5.60	2.33	44.000
			0.00			1/2" Ice	5.92	2.56	80.134
			1.00			1" Ice	6.24	2.79	120.222
						2" Ice	6.91	3.28	213.037
						4" Ice	8.37	4.37	454.667
***									
4.25' x 7' Catwalk	B	From Face	0.00	0.0000	112.50	No Ice	11.50	8.90	750.000
			0.00			1/2" Ice	13.40	10.50	1000.000
			0.00			1" Ice	15.30	12.10	1250.000
						2" Ice	19.10	15.30	1750.000
						4" Ice	26.70	21.70	2750.000
23' x 3' Catwalk	A	From Face	0.00	0.0000	87.50	No Ice	31.40	12.80	1784.000
			0.00			1/2" Ice	36.80	15.70	2514.000
			0.00			1" Ice	42.20	18.60	3244.000
						2" Ice	53.00	24.40	4704.000
						4" Ice	74.60	36.00	7624.000
23' x 3' Catwalk	B	From Face	0.00	0.0000	87.50	No Ice	31.40	12.80	1784.000
			0.00			1/2" Ice	36.80	15.70	2514.000
			0.00			1" Ice	42.20	18.60	3244.000
						2" Ice	53.00	24.40	4704.000
						4" Ice	74.60	36.00	7624.000
GPS-TMG-HR-26N	B	From Leg	0.50	0.0000	65.00	No Ice	0.16	0.16	0.600
			0.00			1/2" Ice	0.21	0.21	2.371
			0.00			1" Ice	0.28	0.28	5.075
						2" Ice	0.44	0.44	14.061
						4" Ice	0.86	0.86	51.788
13' x 4.25' Catwalk	B	From Face	0.00	0.0000	62.50	No Ice	18.85	7.00	1250.000
			0.00			1/2" Ice	26.00	8.00	1750.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
13' x 4.25' Catwalk	B	From Face	0.00 0.00 0.00 0.00 0.00 0.00	0.0000	25.00	1" Ice 2" Ice 4" Ice No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	33.15 47.45 76.05 18.85 26.00 33.15 47.45 76.05	9.00 11.00 15.00 7.00 8.00 9.00 11.00 15.00	2250.000 3250.000 5250.000 1250.000 1750.000 2250.000 3250.000 5250.000

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A572-50	29000	11200	.295	.65	.49	50	1.1	58	1.2
2	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]
1	gen_Conc3NW	3155	1372	.15	.6	.145
2	gen_Conc4NW	3644	1584	.15	.6	.145
3	gen_Conc3LW	2085	906	.15	.6	.11
4	gen_Conc4LW	2408	1047	.15	.6	.11
5	gen_Alum	10600	4077	.3	1.29	.173
6	gen_Steel	29000	11154	.3	.65	.49
7	RIGID	1e+6		.3	0	0

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_T1	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
2	TWR_HTOP_GIRT_...	MC18x58_HRA	Beam	Channel	A36	Typical	17.1	17.8	676	2.81
3	TWR_DIAG_T1	L3 1/2x3 1/2x1/4	Column	Single Angle	A36	Typical	1.69	2.01	2.01	.039
4	TWR_HSTEP_T1	L2x2 1/2x1/4	Beam	Single Angle	A36	Typical	1.06	.654	.372	.023
5	TWR_RED_VERT_T1	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
6	TWR_LEG_T2	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
7	TWR_HTOP_GIRT_...	LL3.5x3x5x3	Beam	None	A36	Typical	3.9	6.9	4.66	.136
8	TWR_DIAG_T2	L3 1/2x3x1/4	Column	Single Angle	A36	Typical	1.56	1.3	1.91	.036
9	TWR_HSTEP_T2	C6x10.5	Beam	Channel	A36	Typical	3.07	.86	15.1	.128
10	TWR_RED_VERT_T2	L2.5x2.5x3	Beam	Channel	A36	Typical	.901	.535	.535	.011
11	TWR_LEG_T3	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
12	TWR_HTOP_GIRT_...	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
13	TWR_INNER_SUPP...	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
14	TWR_DIAG_T3	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
15	TWR_HSTEP_T3	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
16	TWR_RED_VERT_T3	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
17	TWR_LEG_T4	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
18	TWR_HTOP_GIRT_...	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
19	TWR_DIAG_NOMO...	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
20	TWR_HSTEP_T4	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
21	TWR_RED_VERT_T4	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
22	TWR_LEG_T5	L6x6x3/4	Column	Single Angle	A36	Typical	8.44	28.2	28.2	1.61
23	TWR_HORZ_T5	2L2 1/2x2 1/2x1/4x3...	Beam	None	A36	Typical	2.38	3.347	1.41	.049
24	TWR_DIAG_T5	2L2 1/2x2 1/2x1/4x3...	Column	None	A36	Typical	2.38	4.237	1.41	.049
25	TWR_RED_HORZ_T5	L2x2 1/2x3/16_HRA	Beam	Single Angle	A36	Typical	.809	.509	.291	.01
26	TWR_RED_DIAG_T5	L2x2 1/2x3/16_HRA	Column	Single Angle	A36	Typical	.809	.509	.291	.01
27	TWR_INNER_SUPP...	2L2 1/2x2 1/2x3/16x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
28	TWR_LEG_T6	L6x6x7/8	Column	Single Angle	A36	Typical	9.734	31.917	31.917	2.484
29	TWR_HORZ_T6	2L2 1/2x2 1/2x1/4x3...	Beam	None	A36	Typical	2.38	3.347	1.41	.049
30	TWR_DIAG_T6	2L2 1/2x2 1/2x1/4x3...	Column	None	A36	Typical	2.38	4.237	1.41	.049
31	TWR_RED_HORZ_T6	L2x2 1/2x3/16_HRA	Beam	Single Angle	A36	Typical	.809	.509	.291	.01
32	TWR_RED_DIAG_T6	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
33	TWR_INNER_SUPP...	2L2 1/2x2 1/2x3/16x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
34	TWR_LEG_T7	L8x8x7/8	Column	Single Angle	A36	Typical	13.234	79.581	79.581	3.378
35	TWR_HORZ_T7	LL3x2.5x4x3	Beam	None	A36	Typical	2.64	3.31	2.32	.059
36	TWR_DIAG_T7	2L2 1/2x2 1/2x1/4x3...	Column	None	A36	Typical	2.38	4.237	1.41	.049
37	TWR_RED_HORZ_T7	L2 1/2x2 1/2x1/4	Beam	Single Angle	A36	Typical	1.19	.692	.692	.026
38	TWR_RED_DIAG_T7	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
39	TWR_INNER_SUPP...	2L2 1/2x2 1/2x3/16x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
40	TWR_LEG_T8	L8x8x7/8	Column	Single Angle	A36	Typical	13.234	79.581	79.581	3.378
41	TWR_DIAG_T8	2L3x3x3/8x3/8	Column	Single Angle	A36	Typical	4.22	8.394	3.52	.198
42	TWR_HORZ_T8	LL3x2.5x4x3	Beam	None	A36	Typical	2.64	3.31	2.32	.059
43	TWR_DIAG_T8_UN...	2L2 1/2x3 1/2x1/4x3...	Column	None	A36	Typical	2.88	9.97	1.55	.06
44	TWR_RED_HORZ_T8	L2x2 1/2x3/16_HRA	Beam	Single Angle	A36	Typical	.809	.509	.291	.01
45	TWR_RED_HORZ_...	LL2.5x2.5x4x6	Beam	None	A36	Typical	2.38	4.21	1.38	.052
46	TWR_RED_DIAG_T8	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
47	TWR_RED_DIAG_2...	L3 1/2x3x1/4	Column	Single Angle	A36	Typical	1.56	1.3	1.91	.036
48	TWR_RED_HIP_T8	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
49	TWR_RED_HIP_2_T8	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
50	TWR_RED_HIPDIA_...	LL2.5x2.5x4x3	Column	None	A36	Typical	2.38	3.31	1.38	.052
51	TWR_INNER_SUPP...	L3x3x1/4	Beam	Single Angle	A36	Typical	1.44	1.24	1.24	.032
52	TWR_LEG_T9	L8X8X1_HRA	Column	Single Angle	A36	Typical	15	89	89	5.08
53	TWR_HORZ_T9	2L3x3x3/8x3/8	Beam	None	A36	Typical	4.22	8.394	3.52	.198
54	TWR_DIAG_T9	LL3x3.5x6x6	Column	None	A36	Typical	4.64	15.2	3.69	.228
55	TWR_RED_HORZ_T9	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
56	TWR_RED_HORZ_...	LL2.5x2.5x4x6	Beam	None	A36	Typical	2.38	4.21	1.38	.052
57	TWR_RED_DIAG_T9	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
58	TWR_RED_DIAG_2...	LL2.5x2x4x6	Column	None	A36	Typical	2.14	2.5	1.31	.047
59	TWR_RED_SUBHO...	LL2.5x3.5x4x6	Beam	None	A36	Typical	2.9	9.93	1.55	.064
60	TWR_RED_SUBDIA...	LL3x3.5x6x6	Column	None	A36	Typical	4.64	15.2	3.69	.228
61	TWR_RED_VERT_T9	L3x3x1/4	Column	Single Angle	A36	Typical	1.44	1.24	1.24	.032
62	TWR_RED_HIP_T9	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
63	TWR_RED_HIP_2_T9	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
64	TWR_RED_HIPDIA_...	LL2.5x2.5x4x3	Column	Single Angle	A36	Typical	2.38	3.31	1.38	.052
65	TWR_INNER_SUPP...	LL2.5x3x4x3	Beam	None	A36	Typical	2.64	5.47	1.47	.059
66	TWR_INNER_KICK_...	L2.5x2.5x4	Beam	Single Angle	A36	Typical	1.19	.692	.692	.026
67	TWR_INNER_SQUA...	LL2.5x2.5x4x3	Beam	None	A36	Typical	2.38	3.31	1.38	.052
68	TWR_INNER_SQUA...	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
69	TWR_INNER_KICK_...	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
70	TWR_INNER_MID_T8	L2.5x2.5x4	Beam	Single Angle	A36	Typical	1.19	.692	.692	.026
71	TWR_INNER_SQUA...	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
72	TWR_INNER_KICK_...	L2.5x2.5x4	Beam	Single Angle	A36	Typical	1.19	.692	.692	.026
73	TWR_INNER_MID_T7	L2.5x2.5x4	Beam	Single Angle	A36	Typical	1.19	.692	.692	.026
74	TWR_INNER_SQUA...	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
75	TWR_INNER_KICK_...	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
76	TWR_INNER_SQUA...	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
77	TWR_INNER_KICK_...	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
78	TWR_INNER_SQUA...	L3x2.5x4	Beam	Single Angle	A36	Typical	1.32	.734	1.16	.03
79	TWR_INNER_KICK_...	L2.5x2x3	Beam	Single Angle	A36	Typical	.818	.292	.511	.01

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	GEN1	RE4X4	Beam	gen_Conc...	16	21.333	21.333	31.573
2	TWR_DIAG_T4		Column	gen_Steel	1.688	3.145	4.477	8.878
3	TWR_DIAG_MOD_T8	4L2.5X3.5X1/4X3/4_GMB	Beam	gen_Steel	5.726	19.75	5.194	24.944
4	TWR_HTOP_GIRT_T1	PL20x5/16 w/ (2) L3 1/2x6x3/8	Beam	gen_Steel	13.13	41.892	800.01	1.039

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
1	M74	N45	N30		84.921	TWR_DIAG_T4	Column	None	gen_Steel	DR1
2	M75	N46	N29		95.079	TWR_DIAG_T4	Column	None	gen_Steel	DR1
3	M76	N46	N31		84.921	TWR_DIAG_T4	Column	None	gen_Steel	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
4	M77	N47	N30		95.079	TWR_DIAG_T4	Column	None	gen_Steel	DR1
5	M78	N47	N32		84.921	TWR_DIAG_T4	Column	None	gen_Steel	DR1
6	M79	N48	N31		95.079	TWR_DIAG_T4	Column	None	gen_Steel	DR1
7	M80	N48	N29		84.921	TWR_DIAG_T4	Column	None	gen_Steel	DR1
8	M81	N45	N32		95.079	TWR_DIAG_T4	Column	None	gen_Steel	DR1
9	M9	N2	N3		84.18	TWR_DIAG_T1	Column	Single Angle	A36	Typical
10	M10	N4	N1		95.82	TWR_DIAG_T1	Column	Single Angle	A36	Typical
11	M11	N4	N5		84.18	TWR_DIAG_T1	Column	Single Angle	A36	Typical
12	M12	N6	N3		95.82	TWR_DIAG_T1	Column	Single Angle	A36	Typical
13	M13	N6	N7		84.18	TWR_DIAG_T1	Column	Single Angle	A36	Typical
14	M14	N8	N5		95.82	TWR_DIAG_T1	Column	Single Angle	A36	Typical
15	M15	N8	N1		84.18	TWR_DIAG_T1	Column	Single Angle	A36	Typical
16	M16	N2	N7		95.82	TWR_DIAG_T1	Column	Single Angle	A36	Typical
17	M29	N17	N4		84.506	TWR_DIAG_T2	Column	Single Angle	A36	Typical
18	M30	N18	N2		95.494	TWR_DIAG_T2	Column	Single Angle	A36	Typical
19	M31	N18	N6		84.506	TWR_DIAG_T2	Column	Single Angle	A36	Typical
20	M32	N19	N4		95.494	TWR_DIAG_T2	Column	Single Angle	A36	Typical
21	M33	N19	N8		84.506	TWR_DIAG_T2	Column	Single Angle	A36	Typical
22	M34	N20	N6		95.494	TWR_DIAG_T2	Column	Single Angle	A36	Typical
23	M35	N20	N2		84.506	TWR_DIAG_T2	Column	Single Angle	A36	Typical
24	M36	N17	N8		95.494	TWR_DIAG_T2	Column	Single Angle	A36	Typical
25	M54	N29	N18		84.743	TWR_DIAG_T3	Column	Single Angle	A36	Typical
26	M55	N30	N17		95.257	TWR_DIAG_T3	Column	Single Angle	A36	Typical
27	M56	N30	N19		84.743	TWR_DIAG_T3	Column	Single Angle	A36	Typical
28	M57	N31	N18		95.257	TWR_DIAG_T3	Column	Single Angle	A36	Typical
29	M58	N31	N20		84.743	TWR_DIAG_T3	Column	Single Angle	A36	Typical
30	M59	N32	N19		95.257	TWR_DIAG_T3	Column	Single Angle	A36	Typical
31	M60	N32	N17		84.743	TWR_DIAG_T3	Column	Single Angle	A36	Typical
32	M61	N29	N20		95.257	TWR_DIAG_T3	Column	Single Angle	A36	Typical
33	M91	N57	N63		353.813	TWR_DIAG_T5	Column	None	A36	Typical
34	M94	N58	N63		6.187	TWR_DIAG_T5	Column	None	A36	Typical
35	M98	N58	N69		353.813	TWR_DIAG_T5	Column	None	A36	Typical
36	M101	N59	N69		6.187	TWR_DIAG_T5	Column	None	A36	Typical
37	M105	N59	N74		353.813	TWR_DIAG_T5	Column	None	A36	Typical
38	M108	N60	N74		6.187	TWR_DIAG_T5	Column	None	A36	Typical
39	M112	N60	N78		353.813	TWR_DIAG_T5	Column	None	A36	Typical
40	M115	N57	N78		6.187	TWR_DIAG_T5	Column	None	A36	Typical
41	M124	N61	N81		353.525	TWR_DIAG_T5	Column	None	A36	Typical
42	M127	N62	N81		6.475	TWR_DIAG_T5	Column	None	A36	Typical
43	M131	N62	N86		353.525	TWR_DIAG_T5	Column	None	A36	Typical
44	M134	N68	N86		6.475	TWR_DIAG_T5	Column	None	A36	Typical
45	M138	N68	N90		353.525	TWR_DIAG_T5	Column	None	A36	Typical
46	M141	N73	N90		6.475	TWR_DIAG_T5	Column	None	A36	Typical
47	M145	N73	N94		353.525	TWR_DIAG_T5	Column	None	A36	Typical
48	M148	N61	N94		6.475	TWR_DIAG_T5	Column	None	A36	Typical
49	M161	N97	N103		354.248	TWR_DIAG_T6	Column	None	A36	Typical
50	M164	N98	N103		5.752	TWR_DIAG_T6	Column	None	A36	Typical
51	M168	N98	N109		354.248	TWR_DIAG_T6	Column	None	A36	Typical
52	M171	N99	N109		5.752	TWR_DIAG_T6	Column	None	A36	Typical
53	M175	N99	N114		354.248	TWR_DIAG_T6	Column	None	A36	Typical
54	M178	N100	N114		5.752	TWR_DIAG_T6	Column	None	A36	Typical
55	M182	N100	N118		354.248	TWR_DIAG_T6	Column	None	A36	Typical
56	M185	N97	N118		5.752	TWR_DIAG_T6	Column	None	A36	Typical
57	M194	N101	N121		354.05	TWR_DIAG_T6	Column	None	A36	Typical
58	M197	N102	N121		5.95	TWR_DIAG_T6	Column	None	A36	Typical
59	M201	N102	N126		354.05	TWR_DIAG_T6	Column	None	A36	Typical
60	M204	N108	N126		5.95	TWR_DIAG_T6	Column	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
61	M208	N108	N130		354.05	TWR_DIAG_T6	Column	None	A36	Typical
62	M211	N113	N130		5.95	TWR_DIAG_T6	Column	None	A36	Typical
63	M215	N113	N134		354.05	TWR_DIAG_T6	Column	None	A36	Typical
64	M218	N101	N134		5.95	TWR_DIAG_T6	Column	None	A36	Typical
65	M231	N137	N141		354.414	TWR_DIAG_T7	Column	None	A36	Typical
66	M234	N138	N141		5.586	TWR_DIAG_T7	Column	None	A36	Typical
67	M238	N138	N146		354.414	TWR_DIAG_T7	Column	None	A36	Typical
68	M241	N139	N146		5.586	TWR_DIAG_T7	Column	None	A36	Typical
69	M245	N139	N150		354.414	TWR_DIAG_T7	Column	None	A36	Typical
70	M248	N140	N150		5.586	TWR_DIAG_T7	Column	None	A36	Typical
71	M252	N140	N154		354.414	TWR_DIAG_T7	Column	None	A36	Typical
72	M255	N137	N154		5.586	TWR_DIAG_T7	Column	None	A36	Typical
73	M268	N157	N161		352.278	TWR_DIAG_T8	Column	Single Angle	A36	Typical
74	M273	N158	N161		7.722	TWR_DIAG_T8	Column	Single Angle	A36	Typical
75	M279	N158	N170		352.278	TWR_DIAG_T8	Column	Single Angle	A36	Typical
76	M284	N159	N170		7.722	TWR_DIAG_T8	Column	Single Angle	A36	Typical
77	M294	N159	N177		352.278	TWR_DIAG_T8	Column	Single Angle	A36	Typical
78	M299	N160	N177		7.722	TWR_DIAG_T8	Column	Single Angle	A36	Typical
79	M309	N160	N184		352.278	TWR_DIAG_T8	Column	Single Angle	A36	Typical
80	M314	N157	N184		7.722	TWR_DIAG_T8	Column	Single Angle	A36	Typical
81	M337	N189	N201		352.933	TWR_DIAG_T9	Column	None	A36	Typical
82	M342	N190	N201		7.067	TWR_DIAG_T9	Column	None	A36	Typical
83	M353	N190	N210		352.933	TWR_DIAG_T9	Column	None	A36	Typical
84	M358	N191	N210		7.067	TWR_DIAG_T9	Column	None	A36	Typical
85	M372	N191	N219		352.933	TWR_DIAG_T9	Column	None	A36	Typical
86	M377	N192	N219		7.067	TWR_DIAG_T9	Column	None	A36	Typical
87	M391	N192	N226		352.933	TWR_DIAG_T9	Column	None	A36	Typical
88	M396	N189	N226		7.067	TWR_DIAG_T9	Column	None	A36	Typical
89	M90	N61	N62		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
90	M97	N62	N68		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
91	M104	N68	N73		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
92	M111	N73	N61		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
93	M123	N45	N46		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
94	M130	N46	N47		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
95	M137	N47	N48		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
96	M144	N48	N45		355.777	TWR_HORZ_T5	Beam	None	A36	Typical
97	M160	N101	N102		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
98	M167	N102	N108		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
99	M174	N108	N113		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
100	M181	N113	N101		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
101	M193	N57	N58		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
102	M200	N58	N59		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
103	M207	N59	N60		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
104	M214	N60	N57		355.777	TWR_HORZ_T6	Beam	None	A36	Typical
105	M230	N97	N98		355.777	TWR_HORZ_T7	Beam	None	A36	Typical
106	M237	N98	N99		355.777	TWR_HORZ_T7	Beam	None	A36	Typical
107	M244	N99	N100		355.777	TWR_HORZ_T7	Beam	None	A36	Typical
108	M251	N100	N97		355.777	TWR_HORZ_T7	Beam	None	A36	Typical
109	M267	N137	N138		355.777	TWR_HORZ_T8	Beam	None	A36	Typical
110	M278	N138	N139		355.777	TWR_HORZ_T8	Beam	None	A36	Typical
111	M293	N139	N140		355.777	TWR_HORZ_T8	Beam	None	A36	Typical
112	M308	N140	N137		355.777	TWR_HORZ_T8	Beam	None	A36	Typical
113	M336	N157	N158		355.777	TWR_HORZ_T9	Beam	None	A36	Typical
114	M352	N158	N159		355.777	TWR_HORZ_T9	Beam	None	A36	Typical
115	M371	N159	N160		355.777	TWR_HORZ_T9	Beam	None	A36	Typical
116	M390	N160	N157		355.777	TWR_HORZ_T9	Beam	None	A36	Typical
117	M17	N13	N14		85.777	TWR_HSTEP_T1	Beam	Single Angle	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
118	M18	N14	N15		85.777	TWR_HSTEP_T1	Beam	Single Angle	A36	Typical
119	M19	N15	N16		85.777	TWR_HSTEP_T1	Beam	Single Angle	A36	Typical
120	M20	N16	N13		85.777	TWR_HSTEP_T1	Beam	Single Angle	A36	Typical
121	M37	N25	N26		175.777	TWR_HSTEP_T2	Beam	Channel	A36	Typical
122	M38	N26	N27		175.777	TWR_HSTEP_T2	Beam	Channel	A36	Typical
123	M39	N27	N28		175.777	TWR_HSTEP_T2	Beam	Channel	A36	Typical
124	M40	N28	N25		175.777	TWR_HSTEP_T2	Beam	Channel	A36	Typical
125	M62	N41	N42		355.777	TWR_HSTEP_T3	Beam	None	A36	Typical
126	M63	N42	N43		355.777	TWR_HSTEP_T3	Beam	None	A36	Typical
127	M64	N43	N44		355.777	TWR_HSTEP_T3	Beam	None	A36	Typical
128	M65	N44	N41		355.777	TWR_HSTEP_T3	Beam	None	A36	Typical
129	M82	N53	N54		355.777	TWR_HSTEP_T4	Beam	None	A36	Typical
130	M83	N54	N55		355.777	TWR_HSTEP_T4	Beam	None	A36	Typical
131	M84	N55	N56		355.777	TWR_HSTEP_T4	Beam	None	A36	Typical
132	M85	N56	N53		355.777	TWR_HSTEP_T4	Beam	None	A36	Typical
133	M5	N1	N3		175.777	TWR_HTOP_GIRT_T1	Beam	None	gen_Steel	DR1
134	M6	N3	N5		175.777	TWR_HTOP_GIRT_T1	Beam	None	gen_Steel	DR1
135	M7	N5	N7		175.777	TWR_HTOP_GIRT_T1	Beam	None	gen_Steel	DR1
136	M8	N7	N1		175.777	TWR_HTOP_GIRT_T1	Beam	None	gen_Steel	DR1
137	M25	N2	N4		355.777	TWR_HTOP_GIRT_T2	Beam	None	A36	Typical
138	M26	N4	N6		355.777	TWR_HTOP_GIRT_T2	Beam	None	A36	Typical
139	M27	N6	N8		355.777	TWR_HTOP_GIRT_T2	Beam	None	A36	Typical
140	M28	N8	N2		355.777	TWR_HTOP_GIRT_T2	Beam	None	A36	Typical
141	M45	N17	N18		355.777	TWR_HTOP_GIRT_T3	Beam	None	A36	Typical
142	M46	N18	N19		355.777	TWR_HTOP_GIRT_T3	Beam	None	A36	Typical
143	M47	N19	N20		355.777	TWR_HTOP_GIRT_T3	Beam	None	A36	Typical
144	M48	N20	N17		355.777	TWR_HTOP_GIRT_T3	Beam	None	A36	Typical
145	M70	N29	N30		355.777	TWR_HTOP_GIRT_T4	Beam	None	A36	Typical
146	M71	N30	N31		355.777	TWR_HTOP_GIRT_T4	Beam	None	A36	Typical
147	M72	N31	N32		355.777	TWR_HTOP_GIRT_T4	Beam	None	A36	Typical
148	M73	N32	N29		355.777	TWR_HTOP_GIRT_T4	Beam	None	A36	Typical
149	M480	N17	N273			TWR_INNER_KICK_T4	Beam	Single Angle	A36	Typical
150	M481	N274	N18			TWR_INNER_KICK_T4	Beam	Single Angle	A36	Typical
151	M482	N275	N19			TWR_INNER_KICK_T4	Beam	Single Angle	A36	Typical
152	M483	N276	N20			TWR_INNER_KICK_T4	Beam	Single Angle	A36	Typical
153	M469	N61	N265			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
154	M470	N266	N62			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
155	M471	N267	N68			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
156	M472	N268	N73			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
157	M473	N46	N270			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
158	M474	N271	N47			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
159	M475	N272	N48			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
160	M476	N45	N269			TWR_INNER_KICK_T5	Beam	Single Angle	A36	Typical
161	M455	N101	N257			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
162	M456	N102	N258			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
163	M457	N108	N259			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
164	M458	N113	N260			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
165	M459	N57	N261			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
166	M460	N58	N262			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
167	M461	N59	N263			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
168	M462	N60	N264			TWR_INNER_KICK_T6	Beam	Single Angle	A36	Typical
169	M442A	N97	N249			TWR_INNER_KICK_T7	Beam	Single Angle	A36	Typical
170	M443	N250	N98			TWR_INNER_KICK_T7	Beam	Single Angle	A36	Typical
171	M444	N251	N99			TWR_INNER_KICK_T7	Beam	Single Angle	A36	Typical
172	M445	N100	N252			TWR_INNER_KICK_T7	Beam	Single Angle	A36	Typical
173	M427A	N137	N242A			TWR_INNER_KICK_T8	Beam	Single Angle	A36	Typical
174	M428	N138	N241A			TWR_INNER_KICK_T8	Beam	Single Angle	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
175	M429	N139	N244A			TWR_INNER_KICK_T8	Beam	Single Angle	A36	Typical
176	M430	N140	N243A			TWR_INNER_KICK_T8	Beam	Single Angle	A36	Typical
177	M400A	N229	N158			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
178	M401A	N159	N230			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
179	M402	N160	N231			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
180	M403A	N157	N232			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
181	M408A	N226	N233			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
182	M409A	N219	N234			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
183	M410A	N210	N235			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
184	M411A	N201	N236			TWR_INNER_KICK_T9	Beam	Single Angle	A36	Typical
185	M446	N154	N253			TWR_INNER_MID_T7	Beam	Single Angle	A36	Typical
186	M447	N141	N254			TWR_INNER_MID_T7	Beam	Single Angle	A36	Typical
187	M448	N255	N146			TWR_INNER_MID_T7	Beam	Single Angle	A36	Typical
188	M431	N184	N245			TWR_INNER_MID_T8	Beam	Single Angle	A36	Typical
189	M432	N246	N177			TWR_INNER_MID_T8	Beam	Single Angle	A36	Typical
190	M433	N247	N170			TWR_INNER_MID_T8	Beam	Single Angle	A36	Typical
191	M434	N248	N161			TWR_INNER_MID_T8	Beam	Single Angle	A36	Typical
192	M476A	N273	N274			TWR_INNER_SQUARE_T4	Beam	Single Angle	A36	Typical
193	M477	N274	N275			TWR_INNER_SQUARE_T4	Beam	Single Angle	A36	Typical
194	M478	N275	N276			TWR_INNER_SQUARE_T4	Beam	Single Angle	A36	Typical
195	M479	N276	N273			TWR_INNER_SQUARE_T4	Beam	Single Angle	A36	Typical
196	M461A	N265	N266		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
197	M462A	N266	N267		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
198	M463	N267	N268		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
199	M464	N268	N265		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
200	M465	N269	N270		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
201	M466	N270	N271		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
202	M467	N271	N272		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
203	M468	N272	N269		90	TWR_INNER_SQUARE_T5	Beam	None	A36	Typical
204	M447A	N257	N258		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
205	M448A	N258	N259		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
206	M449	N259	N260		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
207	M450	N260	N257		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
208	M451	N261	N262		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
209	M452	N262	N263		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
210	M453	N263	N264		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
211	M454	N264	N261		90	TWR_INNER_SQUARE_T6	Beam	None	A36	Typical
212	M438B	N249	N250		90	TWR_INNER_SQUARE_T7	Beam	None	A36	Typical
213	M439A	N250	N251		90	TWR_INNER_SQUARE_T7	Beam	None	A36	Typical
214	M440A	N251	N252		90	TWR_INNER_SQUARE_T7	Beam	None	A36	Typical
215	M441A	N252	N249		90	TWR_INNER_SQUARE_T7	Beam	None	A36	Typical
216	M423B	N241A	N242A		90	TWR_INNER_SQUARE_T8	Beam	None	A36	Typical
217	M424A	N242A	N243A		90	TWR_INNER_SQUARE_T8	Beam	None	A36	Typical
218	M425A	N243A	N244A		90	TWR_INNER_SQUARE_T8	Beam	None	A36	Typical
219	M426A	N244A	N241A		90	TWR_INNER_SQUARE_T8	Beam	None	A36	Typical
220	M404	N231	N232		90	TWR_INNER_SQUARE_T9	Beam	None	A36	Typical
221	M405	N232	N229		90	TWR_INNER_SQUARE_T9	Beam	None	A36	Typical
222	M406A	N229	N230		90	TWR_INNER_SQUARE_T9	Beam	None	A36	Typical
223	M407	N230	N231		90	TWR_INNER_SQUARE_T9	Beam	None	A36	Typical
224	M49	N33	N34		90	TWR_INNER_SUPP_T3	Beam	None	A36	Typical
225	M50	N34	N35		90	TWR_INNER_SUPP_T3	Beam	None	A36	Typical
226	M51	N35	N36		90	TWR_INNER_SUPP_T3	Beam	None	A36	Typical
227	M52	N36	N33		90	TWR_INNER_SUPP_T3	Beam	None	A36	Typical
228	M118	N63	N69		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
229	M119	N69	N74		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
230	M120	N74	N78		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
231	M121	N78	N63		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
232	M151	N81	N86		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
233	M152	N86	N90		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
234	M153	N90	N94		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
235	M154	N94	N81		90	TWR_INNER_SUPP_T5	Beam	None	A36	Typical
236	M188	N103	N109		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
237	M189	N109	N114		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
238	M190	N114	N118		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
239	M191	N118	N103		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
240	M221	N121	N126		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
241	M222	N126	N130		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
242	M223	N130	N134		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
243	M224	N134	N121		90	TWR_INNER_SUPP_T6	Beam	None	A36	Typical
244	M258	N141	N146		90	TWR_INNER_SUPP_T7	Beam	None	A36	Typical
245	M259	N146	N150		90	TWR_INNER_SUPP_T7	Beam	None	A36	Typical
246	M260	N150	N154		90	TWR_INNER_SUPP_T7	Beam	None	A36	Typical
247	M261	N154	N141		90	TWR_INNER_SUPP_T7	Beam	None	A36	Typical
248	M327	N161	N170		90	TWR_INNER_SUPP_T8	Beam	Single Angle	A36	Typical
249	M328	N170	N177		90	TWR_INNER_SUPP_T8	Beam	Single Angle	A36	Typical
250	M329	N177	N184		90	TWR_INNER_SUPP_T8	Beam	Single Angle	A36	Typical
251	M330	N184	N161		90	TWR_INNER_SUPP_T8	Beam	Single Angle	A36	Typical
252	M412	N201	N210		90	TWR_INNER_SUPP_T9	Beam	None	A36	Typical
253	M413	N210	N219		90	TWR_INNER_SUPP_T9	Beam	None	A36	Typical
254	M414	N219	N226		90	TWR_INNER_SUPP_T9	Beam	None	A36	Typical
255	M415	N226	N201		90	TWR_INNER_SUPP_T9	Beam	None	A36	Typical
256	M1	N2	N1		135	TWR_LEG_T1	Column	Single Angle	A36	Typical
257	M2	N4	N3		135	TWR_LEG_T1	Column	Single Angle	A36	Typical
258	M3	N6	N5		135	TWR_LEG_T1	Column	Single Angle	A36	Typical
259	M4	N8	N7		135	TWR_LEG_T1	Column	Single Angle	A36	Typical
260	M21	N17	N2		135	TWR_LEG_T2	Column	Single Angle	A36	Typical
261	M22	N18	N4		135	TWR_LEG_T2	Column	Single Angle	A36	Typical
262	M23	N19	N6		135	TWR_LEG_T2	Column	Single Angle	A36	Typical
263	M24	N20	N8		135	TWR_LEG_T2	Column	Single Angle	A36	Typical
264	M41	N29	N17		135	TWR_LEG_T3	Column	Single Angle	A36	Typical
265	M42	N30	N18		135	TWR_LEG_T3	Column	Single Angle	A36	Typical
266	M43	N31	N19		135	TWR_LEG_T3	Column	Single Angle	A36	Typical
267	M44	N32	N20		135	TWR_LEG_T3	Column	Single Angle	A36	Typical
268	M66	N45	N29		135	TWR_LEG_T4	Column	Single Angle	A36	Typical
269	M67	N46	N30		135	TWR_LEG_T4	Column	Single Angle	A36	Typical
270	M68	N47	N31		135	TWR_LEG_T4	Column	Single Angle	A36	Typical
271	M69	N48	N32		135	TWR_LEG_T4	Column	Single Angle	A36	Typical
272	M86	N57	N45		135	TWR_LEG_T5	Column	Single Angle	A36	Typical
273	M87	N58	N46		135	TWR_LEG_T5	Column	Single Angle	A36	Typical
274	M88	N59	N47		135	TWR_LEG_T5	Column	Single Angle	A36	Typical
275	M89	N60	N48		135	TWR_LEG_T5	Column	Single Angle	A36	Typical
276	M156	N97	N57		135	TWR_LEG_T6	Column	Single Angle	A36	Typical
277	M157	N98	N58		135	TWR_LEG_T6	Column	Single Angle	A36	Typical
278	M158	N99	N59		135	TWR_LEG_T6	Column	Single Angle	A36	Typical
279	M159	N100	N60		135	TWR_LEG_T6	Column	Single Angle	A36	Typical
280	M226	N137	N97		135	TWR_LEG_T7	Column	Single Angle	A36	Typical
281	M227	N138	N98		135	TWR_LEG_T7	Column	Single Angle	A36	Typical
282	M228	N139	N99		135	TWR_LEG_T7	Column	Single Angle	A36	Typical
283	M229	N140	N100		135	TWR_LEG_T7	Column	Single Angle	A36	Typical
284	M263	N157	N137		135	TWR_LEG_T8	Column	Single Angle	A36	Typical
285	M264	N158	N138		135	TWR_LEG_T8	Column	Single Angle	A36	Typical
286	M265	N159	N139		135	TWR_LEG_T8	Column	Single Angle	A36	Typical
287	M266	N160	N140		135	TWR_LEG_T8	Column	Single Angle	A36	Typical
288	M332	N189	N157		135	TWR_LEG_T9	Column	Single Angle	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
289	M333	N190	N158		135	TWR_LEG_T9	Column	Single Angle	A36	Typical
290	M334	N191	N159		135	TWR_LEG_T9	Column	Single Angle	A36	Typical
291	M335	N192	N160		135	TWR_LEG_T9	Column	Single Angle	A36	Typical
292	M272	N165	N137		95.752	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
293	M277	N168	N138		84.248	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
294	M283	N172	N138		95.752	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
295	M288	N175	N139		84.248	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
296	M298	N179	N139		95.752	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
297	M303	N182	N140		84.248	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
298	M313	N186	N140		95.752	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
299	M318	N188	N137		84.248	TWR_RED_DIAG_2_T8	Column	Single Angle	A36	Typical
300	M341	N193	N157		95.382	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
301	M346	N197	N158		84.618	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
302	M357	N204	N158		95.382	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
303	M362	N206	N159		84.618	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
304	M376	N213	N159		95.382	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
305	M381	N215	N160		84.618	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
306	M395	N222	N160		95.382	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
307	M400	N224	N157		84.618	TWR_RED_DIAG_2_T9	Column	None	A36	Typical
308	M93	N65	N61		96.829	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
309	M96	N66	N62		83.171	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
310	M100	N70	N62		96.829	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
311	M103	N71	N68		83.171	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
312	M107	N75	N68		96.829	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
313	M110	N76	N73		83.171	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
314	M114	N79	N73		96.829	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
315	M117	N80	N61		83.171	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
316	M126	N83	N45		97.272	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
317	M129	N84	N46		82.728	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
318	M133	N87	N46		97.272	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
319	M136	N88	N47		82.728	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
320	M140	N91	N47		97.272	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
321	M143	N92	N48		82.728	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
322	M147	N95	N48		97.272	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
323	M150	N96	N45		82.728	TWR_RED_DIAG_T5	Column	Single Angle	A36	Typical
324	M163	N105	N101		96.187	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
325	M166	N106	N102		83.813	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
326	M170	N110	N102		96.187	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
327	M173	N111	N108		83.813	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
328	M177	N115	N108		96.187	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
329	M180	N116	N113		83.813	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
330	M184	N119	N113		96.187	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
331	M187	N120	N101		83.813	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
332	M196	N123	N57		96.475	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
333	M199	N124	N58		83.525	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
334	M203	N127	N58		96.475	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
335	M206	N128	N59		83.525	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
336	M210	N131	N59		96.475	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
337	M213	N132	N60		83.525	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
338	M217	N135	N60		96.475	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
339	M220	N136	N57		83.525	TWR_RED_DIAG_T6	Column	Single Angle	A36	Typical
340	M233	N143	N97		95.95	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
341	M236	N144	N98		84.05	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
342	M240	N147	N98		95.95	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
343	M243	N148	N99		84.05	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
344	M247	N151	N99		95.95	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
345	M250	N152	N100		84.05	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
346	M254	N155	N100		95.95	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
347	M257	N156	N97		84.05	TWR_RED_DIAG_T7	Column	Single Angle	A36	Typical
348	M271	N163	N164		99.346	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
349	M276	N166	N169		80.654	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
350	M287	N173	N176		80.654	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
351	M297	N178	N176		99.346	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
352	M302	N180	N183		80.654	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
353	M312	N185	N183		99.346	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
354	M317	N187	N164		80.654	TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
355	M438A	N169	N171			TWR_RED_DIAG_T8	Column	Single Angle	A36	Typical
356	M340	N195	N196		98.224	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
357	M345	N198	N200		81.776	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
358	M356	N205	N200		98.224	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
359	M361	N207	N209		81.776	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
360	M375	N214	N209		98.224	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
361	M380	N216	N218		81.776	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
362	M394	N223	N218		98.224	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
363	M399	N225	N196		81.776	TWR_RED_DIAG_T9	Column	Single Angle	A36	Typical
364	M435	N172	N241A			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
365	M436	N241A	N168			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
366	M437	N175	N244A			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
367	M438	N244A	N179			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
368	M439	N165	N242A			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
369	M440	N242A	N188			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
370	M441	N186	N243A			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
371	M442	N243A	N182			TWR_RED_HIPDIA_T8	Column	None	A36	Typical
372	M412A	N193	N232			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
373	M413A	N232	N224			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
374	M414A	N222	N231			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
375	M415A	N231	N215			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
376	M416	N213	N230			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
377	M417	N230	N206			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
378	M418	N204	N229			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
379	M419	N229	N197			TWR_RED_HIPDIA_T9	Column	Single Angle	A36	Typical
380	M290	N168	N172		90	TWR_RED_HIP_2_T8	Beam	Single Angle	A36	Typical
381	M305	N175	N179		90	TWR_RED_HIP_2_T8	Beam	Single Angle	A36	Typical
382	M320	N182	N186		90	TWR_RED_HIP_2_T8	Beam	Single Angle	A36	Typical
383	M324	N165	N188		90	TWR_RED_HIP_2_T8	Beam	Single Angle	A36	Typical
384	M365	N197	N204		90	TWR_RED_HIP_2_T9	Beam	Single Angle	A36	Typical
385	M384	N206	N213		90	TWR_RED_HIP_2_T9	Beam	Single Angle	A36	Typical
386	M403	N215	N222		90	TWR_RED_HIP_2_T9	Beam	Single Angle	A36	Typical
387	M406	N193	N224		90	TWR_RED_HIP_2_T9	Beam	Single Angle	A36	Typical
388	M270	N164	N165		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
389	M275	N168	N169		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
390	M281	N169	N172		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
391	M286	N175	N176		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
392	M296	N176	N179		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
393	M301	N182	N183		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
394	M311	N183	N186		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
395	M316	N188	N164		85.777	TWR_RED_HORZ_2_T8	Beam	None	A36	Typical
396	M339	N196	N193		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
397	M344	N197	N200		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
398	M355	N200	N204		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
399	M360	N206	N209		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
400	M374	N209	N213		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
401	M379	N215	N218		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
402	M393	N218	N222		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
403	M398	N224	N196		85.777	TWR_RED_HORZ_2_T9	Beam	None	A36	Typical
404	M92	N64	N65		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
405	M95	N66	N67		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
406	M99	N67	N70		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
407	M102	N71	N72		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
408	M106	N72	N75		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
409	M109	N76	N77		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
410	M113	N77	N79		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
411	M116	N80	N64		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
412	M125	N82	N83		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
413	M128	N84	N85		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
414	M132	N85	N87		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
415	M135	N88	N89		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
416	M139	N89	N91		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
417	M142	N92	N93		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
418	M146	N93	N95		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
419	M149	N96	N82		85.777	TWR_RED_HORZ_T5	Beam	Single Angle	A36	Typical
420	M162	N104	N105		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
421	M165	N106	N107		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
422	M169	N107	N110		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
423	M172	N111	N112		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
424	M176	N112	N115		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
425	M179	N116	N117		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
426	M183	N117	N119		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
427	M186	N120	N104		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
428	M195	N122	N123		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
429	M198	N124	N125		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
430	M202	N125	N127		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
431	M205	N128	N129		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
432	M209	N129	N131		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
433	M212	N132	N133		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
434	M216	N133	N135		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
435	M219	N136	N122		85.777	TWR_RED_HORZ_T6	Beam	Single Angle	A36	Typical
436	M232	N142	N143		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
437	M235	N144	N145		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
438	M239	N145	N147		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
439	M242	N148	N149		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
440	M246	N149	N151		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
441	M249	N152	N153		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
442	M253	N153	N155		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
443	M256	N156	N142		85.777	TWR_RED_HORZ_T7	Beam	Single Angle	A36	Typical
444	M269	N162	N163		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
445	M274	N166	N167		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
446	M280	N167	N171		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
447	M285	N173	N174		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
448	M295	N174	N178		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
449	M300	N180	N181		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
450	M310	N181	N185		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
451	M315	N187	N162		85.777	TWR_RED_HORZ_T8	Beam	Single Angle	A36	Typical
452	M338	N194	N195		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
453	M343	N198	N199		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
454	M354	N199	N205		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
455	M359	N207	N208		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
456	M373	N208	N214		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
457	M378	N216	N217		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
458	M392	N217	N223		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical
459	M397	N225	N194		85.777	TWR_RED_HORZ_T9	Beam	Single Angle	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
460	M348	N193	N201		352.561	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
461	M349	N197	N201		7.439	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
462	M367	N204	N210		352.561	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
463	M368	N206	N210		7.439	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
464	M386	N213	N219		352.561	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
465	M387	N215	N219		7.439	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
466	M408	N222	N226		352.561	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
467	M409	N224	N226		7.439	TWR_RED_SUBDIA_T9	Column	None	A36	Typical
468	M347	N193	N197		355.777	TWR_RED_SUBHOR_T9	Beam	None	A36	Typical
469	M363	N204	N206		355.777	TWR_RED_SUBHOR_T9	Beam	None	A36	Typical
470	M382	N213	N215		355.777	TWR_RED_SUBHOR_T9	Beam	None	A36	Typical
471	M401	N222	N224		355.777	TWR_RED_SUBHOR_T9	Beam	None	A36	Typical
472	M484	N9	N277			TWR_RED_VERT_T1	Beam	Single Angle	A36	Typical
473	M488	N10	N285			TWR_RED_VERT_T1	Beam	Single Angle	A36	Typical
474	M492	N11	N293			TWR_RED_VERT_T1	Beam	Single Angle	A36	Typical
475	M496	N12	N301			TWR_RED_VERT_T1	Beam	Single Angle	A36	Typical
476	M485	N21	N33			TWR_RED_VERT_T2	Beam	Channel	A36	Typical
477	M489	N22	N34			TWR_RED_VERT_T2	Beam	Channel	A36	Typical
478	M493	N23	N35			TWR_RED_VERT_T2	Beam	Channel	A36	Typical
479	M497	N24	N36			TWR_RED_VERT_T2	Beam	Channel	A36	Typical
480	M486	N37	N278			TWR_RED_VERT_T3	Beam	None	A36	Typical
481	M490	N38	N286			TWR_RED_VERT_T3	Beam	None	A36	Typical
482	M494	N39	N294			TWR_RED_VERT_T3	Beam	None	A36	Typical
483	M498	N40	N302			TWR_RED_VERT_T3	Beam	None	A36	Typical
484	M420	N213	N237			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
485	M421	N215	N238			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
486	M422	N222	N239			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
487	M423	N224	N240			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
488	M424	N206	N241			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
489	M425	N204	N242			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
490	M426	N197	N243			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
491	M427	N193	N244			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
492	M420A	N226	N237A			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
493	M421A	N201	N238A			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
494	M422A	N210	N239A			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
495	M423A	N219	N240A			TWR_RED_VERT_T9	Column	Single Angle	A36	Typical
496	M487	N49	N81			TWR_RED_VERT_T4	Beam	None	A36	Typical
497	M491	N50	N86			TWR_RED_VERT_T4	Beam	None	A36	Typical
498	M495	N51	N90			TWR_RED_VERT_T4	Beam	None	A36	Typical
499	M499	N52	N94			TWR_RED_VERT_T4	Beam	None	A36	Typical
500	m53	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
501	m122	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
502	m155	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
503	m192	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
504	m225	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
505	m262	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
506	m331	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
507	m282	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
508	m289	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
509	m304	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
510	m319	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
511	m323	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
512	m291	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
513	m306	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
514	m321	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
515	m325	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
516	m292	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
517	m307	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
518	m322	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
519	m326	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
520	m350	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
521	m351	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
522	m369	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
523	m370	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
524	m388	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
525	m389	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
526	m410	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
527	m411	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
528	m364	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
529	m383	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
530	m366	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical
531	m385	N1	N1			TWR_RED_VERT_T4	Beam	None	A36	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
1	M9	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
2	M10	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
3	M11	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
4	M12	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
5	M13	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
6	M14	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
7	M15	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
8	M16	TWR_DIAG_T1	18.183	9.05	9.05	9.05	9.05	9.05	.94	.94		Lateral
9	M29	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
10	M30	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
11	M31	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
12	M32	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
13	M33	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
14	M34	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
15	M35	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
16	M36	TWR_DIAG_T2	19.562	9.72	9.72	9.72	9.72	9.72	.92	.92		Lateral
17	M54	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
18	M55	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
19	M56	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
20	M57	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
21	M58	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
22	M59	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
23	M60	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
24	M61	TWR_DIAG_T3	21.013	10.44	10.44	10.44	10.44	10.44	.91	.91		Lateral
25	M91	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
26	M94	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
27	M98	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
28	M101	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
29	M105	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
30	M108	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
31	M112	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
32	M115	TWR_DIAG_T5	17.121	16.28	8.14	8.14	8.14	8.14	1.02	1		Lateral
33	M124	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
34	M127	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
35	M131	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
36	M134	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
37	M138	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
38	M141	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
39	M145	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
40	M148	TWR_DIAG_T5	16.506	15.665	7.833	7.833	7.833	7.833	1.02	1		Lateral
41	M161	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
42	M164	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
43	M168	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
44	M171	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
45	M175	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
46	M178	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
47	M182	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
48	M185	TWR_DIAG_T6	18.429	17.61	8.805	8.805	8.805	8.805	1.02	1		Lateral
49	M194	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
50	M197	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
51	M201	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
52	M204	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
53	M208	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
54	M211	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
55	M215	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
56	M218	TWR_DIAG_T6	17.763	16.944	8.472	8.472	8.472	8.472	1.02	1		Lateral
57	M231	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
58	M234	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
59	M238	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
60	M241	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
61	M245	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
62	M248	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
63	M252	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
64	M255	TWR_DIAG_T7	19.116	18.01	9.005	9.005	9.005	9.005	1.02	1		Lateral
65	M268	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
66	M273	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
67	M279	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
68	M284	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
69	M294	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
70	M299	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
71	M309	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
72	M314	TWR_DIAG_T8	29.89	19.427	9.963	9.963	9.963	9.963	1.01	1		Lateral
73	M337	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
74	M342	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
75	M353	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
76	M358	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
77	M372	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
78	M377	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
79	M391	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
80	M396	TWR_DIAG_T9	30.934	20.623	10.311	10.311	10.311	10.311	1.04	1		Lateral
81	M90	TWR_HORZ_T5	21.481	10.25	10.25	10.25	10.25	10.74	1.04	.94		Lateral
82	M97	TWR_HORZ_T5	21.481	10.25	10.25	10.25	10.25	10.74	1.04	.94		Lateral
83	M104	TWR_HORZ_T5	21.481	10.25	10.25	10.25	10.25	10.74	1.04	.94		Lateral
84	M111	TWR_HORZ_T5	21.481	10.25	10.25	10.25	10.25	10.74	1.04	.94		Lateral
85	M123	TWR_HORZ_T5	19.635	9.327	9.327	9.327	9.327	9.817	1.05	.94		Lateral
86	M130	TWR_HORZ_T5	19.635	9.327	9.327	9.327	9.327	9.817	1.05	.94		Lateral
87	M137	TWR_HORZ_T5	19.635	9.327	9.327	9.327	9.327	9.817	1.05	.94		Lateral
88	M144	TWR_HORZ_T5	19.635	9.327	9.327	9.327	9.327	9.817	1.05	.94		Lateral
89	M160	TWR_HORZ_T6	25.173	12.1	12.1	12.1	12.1	12.587	1.03	.91		Lateral
90	M167	TWR_HORZ_T6	25.173	12.1	12.1	12.1	12.1	12.587	1.03	.91		Lateral
91	M174	TWR_HORZ_T6	25.173	12.1	12.1	12.1	12.1	12.587	1.03	.91		Lateral
92	M181	TWR_HORZ_T6	25.173	12.1	12.1	12.1	12.1	12.587	1.03	.91		Lateral
93	M193	TWR_HORZ_T6	23.327	11.177	11.177	11.177	11.177	11.663	1.04	.91		Lateral
94	M200	TWR_HORZ_T6	23.327	11.177	11.177	11.177	11.177	11.663	1.04	.91		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
95	M207	TWR_HORZ_T6	23.327	11.177	11.177	11.177	11.177	11.663	1.04	.91		Lateral
96	M214	TWR_HORZ_T6	23.327	11.177	11.177	11.177	11.177	11.663	1.04	.91		Lateral
97	M230	TWR_HORZ_T7	27.019	13.02	13.02	13.02	13.02	13.51	1.05	.9		Lateral
98	M237	TWR_HORZ_T7	27.019	13.02	13.02	13.02	13.02	13.51	1.05	.9		Lateral
99	M244	TWR_HORZ_T7	27.019	13.02	13.02	13.02	13.02	13.51	1.05	.9		Lateral
100	M251	TWR_HORZ_T7	27.019	13.02	13.02	13.02	13.02	13.51	1.05	.9		Lateral
101	M267	TWR_HORZ_T8	28.865	13.77	13.77	13.77	13.77	14.433	1.05	.89		Lateral
102	M278	TWR_HORZ_T8	28.865	13.77	13.77	13.77	13.77	14.433	1.05	.89		Lateral
103	M293	TWR_HORZ_T8	28.865	13.77	13.77	13.77	13.77	14.433	1.05	.89		Lateral
104	M308	TWR_HORZ_T8	28.865	13.77	13.77	13.77	13.77	14.433	1.05	.89		Lateral
105	M336	TWR_HORZ_T9	32.558	15.779	Segment	Segment	Segment	Seg...	1.02	.98		Lateral
106	M352	TWR_HORZ_T9	32.558	15.779	Segment	Segment	Segment	Seg...	1.02	.98		Lateral
107	M371	TWR_HORZ_T9	32.558	15.779	Segment	Segment	Segment	Seg...	1.02	.98		Lateral
108	M390	TWR_HORZ_T9	32.558	15.779	Segment	Segment	Segment	Seg...	1.02	.98		Lateral
109	M17	TWR_HSTEP_T1	13.108	6.06	6.06	6.06	6.06	6.06	1	1		Lateral
110	M18	TWR_HSTEP_T1	13.108	6.06	6.06	6.06	6.06	6.06	1	1		Lateral
111	M19	TWR_HSTEP_T1	13.108	6.06	6.06	6.06	6.06	6.06	1	1		Lateral
112	M20	TWR_HSTEP_T1	13.108	6.06	6.06	6.06	6.06	6.06	1	1		Lateral
113	M37	TWR_HSTEP_T2	14.962	7.23	7.23	7.23	7.23	7.23	1	1		Lateral
114	M38	TWR_HSTEP_T2	14.962	7.23	7.23	7.23	7.23	7.23	1	1		Lateral
115	M39	TWR_HSTEP_T2	14.962	7.23	7.23	7.23	7.23	7.23	1	1		Lateral
116	M40	TWR_HSTEP_T2	14.962	7.23	7.23	7.23	7.23	7.23	1	1		Lateral
117	M62	TWR_HSTEP_T3	16.815	7.92	7.92	7.92	7.92	7.92	1.14	1		Lateral
118	M63	TWR_HSTEP_T3	16.815	7.92	7.92	7.92	7.92	7.92	1.14	1		Lateral
119	M64	TWR_HSTEP_T3	16.815	7.92	7.92	7.92	7.92	7.92	1.14	1		Lateral
120	M65	TWR_HSTEP_T3	16.815	7.92	7.92	7.92	7.92	7.92	1.14	1		Lateral
121	M82	TWR_HSTEP_T4	18.666	8.845	8.845	8.845	8.845	8.845	1.11	1		Lateral
122	M83	TWR_HSTEP_T4	18.666	8.845	8.845	8.845	8.845	8.845	1.11	1		Lateral
123	M84	TWR_HSTEP_T4	18.666	8.845	8.845	8.845	8.845	8.845	1.11	1		Lateral
124	M85	TWR_HSTEP_T4	18.666	8.845	8.845	8.845	8.845	8.845	1.11	1		Lateral
125	M25	TWR_HTOP_GIRT_T2	14.096	13.14	6.57	6.57	6.57	6.57	1.05	1		Lateral
126	M26	TWR_HTOP_GIRT_T2	14.096	13.14	6.57	6.57	6.57	6.57	1.05	1		Lateral
127	M27	TWR_HTOP_GIRT_T2	14.096	13.14	6.57	6.57	6.57	6.57	1.05	1		Lateral
128	M28	TWR_HTOP_GIRT_T2	14.096	13.14	6.57	6.57	6.57	6.57	1.05	1		Lateral
129	M45	TWR_HTOP_GIRT_T3	15.942	7.48	7.48	7.48	7.48	7.971	1.15	1		Lateral
130	M46	TWR_HTOP_GIRT_T3	15.942	7.48	7.48	7.48	7.48	7.971	1.15	1		Lateral
131	M47	TWR_HTOP_GIRT_T3	15.942	7.48	7.48	7.48	7.48	7.971	1.15	1		Lateral
132	M48	TWR_HTOP_GIRT_T3	15.942	7.48	7.48	7.48	7.48	7.971	1.15	1		Lateral
133	M70	TWR_HTOP_GIRT_T4	17.788	16.83	8.415	8.415	8.415	8.415	1.12	1		Lateral
134	M71	TWR_HTOP_GIRT_T4	17.788	16.83	8.415	8.415	8.415	8.415	1.12	1		Lateral
135	M72	TWR_HTOP_GIRT_T4	17.788	16.83	8.415	8.415	8.415	8.415	1.12	1		Lateral
136	M73	TWR_HTOP_GIRT_T4	17.788	16.83	8.415	8.415	8.415	8.415	1.12	1		Lateral
137	M480	TWR_INNER_KICK_T4	5.636	Segment	Segment	Segment	Segment		1	1		Lateral
138	M481	TWR_INNER_KICK_T4	5.636	Segment	Segment	Segment	Segment		1	1		Lateral
139	M482	TWR_INNER_KICK_T4	5.636	Segment	Segment	Segment	Segment		1	1		Lateral
140	M483	TWR_INNER_KICK_T4	5.636	Segment	Segment	Segment	Segment		1	1		Lateral
141	M469	TWR_INNER_KICK_T5	7.595	Segment	Segment	Segment	Segment		1	1		Lateral
142	M470	TWR_INNER_KICK_T5	7.595	Segment	Segment	Segment	Segment		1	1		Lateral
143	M471	TWR_INNER_KICK_T5	7.595	Segment	Segment	Segment	Segment		1	1		Lateral
144	M472	TWR_INNER_KICK_T5	7.595	Segment	Segment	Segment	Segment		1	1		Lateral
145	M473	TWR_INNER_KICK_T5	6.942	Segment	Segment	Segment	Segment		1	1		Lateral
146	M474	TWR_INNER_KICK_T5	6.942	Segment	Segment	Segment	Segment		1	1		Lateral
147	M475	TWR_INNER_KICK_T5	6.942	Segment	Segment	Segment	Segment		1	1		Lateral
148	M476	TWR_INNER_KICK_T5	6.942	Segment	Segment	Segment	Segment		1	1		Lateral
149	M455	TWR_INNER_KICK_T6	8.9	Segment	Segment	Segment	Segment		1	1		Lateral
150	M456	TWR_INNER_KICK_T6	8.9	Segment	Segment	Segment	Segment		1	1		Lateral
151	M457	TWR_INNER_KICK_T6	8.9	Segment	Segment	Segment	Segment		1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
152	M458	TWR_INNER_KICK_T6	8.9	Segment	Segment	Segment	Segment		1	1		Lateral
153	M459	TWR_INNER_KICK_T6	8.247	Segment	Segment	Segment	Segment		1	1		Lateral
154	M460	TWR_INNER_KICK_T6	8.247	Segment	Segment	Segment	Segment		1	1		Lateral
155	M461	TWR_INNER_KICK_T6	8.247	Segment	Segment	Segment	Segment		1	1		Lateral
156	M462	TWR_INNER_KICK_T6	8.247	Segment	Segment	Segment	Segment		1	1		Lateral
157	M442A	TWR_INNER_KICK_T7	9.553	Segment	Segment	Segment	Segment		1	1		Lateral
158	M443	TWR_INNER_KICK_T7	9.553	Segment	Segment	Segment	Segment		1	1		Lateral
159	M444	TWR_INNER_KICK_T7	9.553	Segment	Segment	Segment	Segment		1	1		Lateral
160	M445	TWR_INNER_KICK_T7	9.553	Segment	Segment	Segment	Segment		1	1		Lateral
161	M427A	TWR_INNER_KICK_T8	10.205	Segment	Segment	Segment	Segment		1	1		Lateral
162	M428	TWR_INNER_KICK_T8	10.205	Segment	Segment	Segment	Segment		1	1		Lateral
163	M429	TWR_INNER_KICK_T8	10.205	Segment	Segment	Segment	Segment		1	1		Lateral
164	M430	TWR_INNER_KICK_T8	10.205	Segment	Segment	Segment	Segment		1	1		Lateral
165	M400A	TWR_INNER_KICK_T9	11.511	Segment	Segment	Segment	Segment		1	1		Lateral
166	M401A	TWR_INNER_KICK_T9	11.511	Segment	Segment	Segment	Segment		1	1		Lateral
167	M402	TWR_INNER_KICK_T9	11.511	Segment	Segment	Segment	Segment		1	1		Lateral
168	M403A	TWR_INNER_KICK_T9	11.511	Segment	Segment	Segment	Segment		1	1		Lateral
169	M408A	TWR_INNER_KICK_T9	8.139	Segment	Segment	Segment	Segment		1	1		Lateral
170	M409A	TWR_INNER_KICK_T9	8.139	Segment	Segment	Segment	Segment		1	1		Lateral
171	M410A	TWR_INNER_KICK_T9	8.139	Segment	Segment	Segment	Segment		1	1		Lateral
172	M411A	TWR_INNER_KICK_T9	8.139	Segment	Segment	Segment	Segment		1	1		Lateral
173	M446	TWR_INNER_MID_T7	6.755	Segment	Segment	Segment	Segment		1	1		Lateral
174	M447	TWR_INNER_MID_T7	6.755	Segment	Segment	Segment	Segment		1	1		Lateral
175	M448	TWR_INNER_MID_T7	6.755	Segment	Segment	Segment	Segment		1	1		Lateral
176	M431	TWR_INNER_MID_T8	7.216	Segment	Segment	Segment	Segment		1	1		Lateral
177	M432	TWR_INNER_MID_T8	7.216	Segment	Segment	Segment	Segment		1	1		Lateral
178	M433	TWR_INNER_MID_T8	7.216	Segment	Segment	Segment	Segment		1	1		Lateral
179	M434	TWR_INNER_MID_T8	7.216	Segment	Segment	Segment	Segment		1	1		Lateral
180	M476A	TWR_INNER_SQUARE_...	7.971	7.971	7.971	7.971	7.971	7.971	1	1		Lateral
181	M477	TWR_INNER_SQUARE_...	7.971	7.971	7.971	7.971	7.971	7.971	1	1		Lateral
182	M478	TWR_INNER_SQUARE_...	7.971	7.971	7.971	7.971	7.971	7.971	1	1		Lateral
183	M479	TWR_INNER_SQUARE_...	7.971	7.971	7.971	7.971	7.971	7.971	1	1		Lateral
184	M461A	TWR_INNER_SQUARE_...	10.74	10.74	10.74	10.74	10.74	10.74	1.08	1		Lateral
185	M462A	TWR_INNER_SQUARE_...	10.74	10.74	10.74	10.74	10.74	10.74	1.08	1		Lateral
186	M463	TWR_INNER_SQUARE_...	10.74	10.74	10.74	10.74	10.74	10.74	1.08	1		Lateral
187	M464	TWR_INNER_SQUARE_...	10.74	10.74	10.74	10.74	10.74	10.74	1.08	1		Lateral
188	M465	TWR_INNER_SQUARE_...	9.817	9.871	9.871	9.871	9.871	9.871	1.09	1		Lateral
189	M466	TWR_INNER_SQUARE_...	9.817	9.871	9.871	9.871	9.871	9.871	1.09	1		Lateral
190	M467	TWR_INNER_SQUARE_...	9.817	9.871	9.871	9.871	9.871	9.871	1.09	1		Lateral
191	M468	TWR_INNER_SQUARE_...	9.817	9.871	9.871	9.871	9.871	9.871	1.09	1		Lateral
192	M447A	TWR_INNER_SQUARE_...	12.587	12.587	12.587	12.587	12.587	12.587	1.06	1		Lateral
193	M448A	TWR_INNER_SQUARE_...	12.587	12.587	12.587	12.587	12.587	12.587	1.06	1		Lateral
194	M449	TWR_INNER_SQUARE_...	12.587	12.587	12.587	12.587	12.587	12.587	1.06	1		Lateral
195	M450	TWR_INNER_SQUARE_...	12.587	12.587	12.587	12.587	12.587	12.587	1.06	1		Lateral
196	M451	TWR_INNER_SQUARE_...	11.663	11.663	11.663	11.663	11.663	11.663	1.07	1		Lateral
197	M452	TWR_INNER_SQUARE_...	11.663	11.663	11.663	11.663	11.663	11.663	1.07	1		Lateral
198	M453	TWR_INNER_SQUARE_...	11.663	11.663	11.663	11.663	11.663	11.663	1.07	1		Lateral
199	M454	TWR_INNER_SQUARE_...	11.663	11.663	11.663	11.663	11.663	11.663	1.07	1		Lateral
200	M438B	TWR_INNER_SQUARE_...	13.51	13.51	13.51	13.51	13.51	13.51	1.05	1		Lateral
201	M439A	TWR_INNER_SQUARE_...	13.51	13.51	13.51	13.51	13.51	13.51	1.05	1		Lateral
202	M440A	TWR_INNER_SQUARE_...	13.51	13.51	13.51	13.51	13.51	13.51	1.05	1		Lateral
203	M441A	TWR_INNER_SQUARE_...	13.51	13.51	13.51	13.51	13.51	13.51	1.05	1		Lateral
204	M423B	TWR_INNER_SQUARE_...	14.433	14.433	7.216	7.216	7.216	7.216	1.04	1		Lateral
205	M424A	TWR_INNER_SQUARE_...	14.433	14.433	7.216	7.216	7.216	7.216	1.04	1		Lateral
206	M425A	TWR_INNER_SQUARE_...	14.433	14.433	7.216	7.216	7.216	7.216	1.04	1		Lateral
207	M426A	TWR_INNER_SQUARE_...	14.433	14.433	7.216	7.216	7.216	7.216	1.04	1		Lateral
208	M404	TWR_INNER_SQUARE_...	16.279	16.279	8.14	8.14	8.14	8.14	1.02	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
209	M405	TWR_INNER_SQUARE_...	16.279	16.279	8.14	8.14	8.14	8.14	1.02	1		Lateral
210	M406A	TWR_INNER_SQUARE_...	16.279	16.279	8.14	8.14	8.14	8.14	1.02	1		Lateral
211	M407	TWR_INNER_SQUARE_...	16.279	16.279	8.14	8.14	8.14	8.14	1.02	1		Lateral
212	M49	TWR_INNER_SUPP_T3	11.273	11.273	5.636	5.636	5.636	5.636	1.07	1		Lateral
213	M50	TWR_INNER_SUPP_T3	11.273	11.273	5.636	5.636	5.636	5.636	1.07	1		Lateral
214	M51	TWR_INNER_SUPP_T3	11.273	11.273	5.636	5.636	5.636	5.636	1.07	1		Lateral
215	M52	TWR_INNER_SUPP_T3	11.273	11.273	5.636	5.636	5.636	5.636	1.07	1		Lateral
216	M118	TWR_INNER_SUPP_T5	15.189	15.189	7.595	7.595	7.595	7.595	1.02	1		Lateral
217	M119	TWR_INNER_SUPP_T5	15.189	15.189	7.595	7.595	7.595	7.595	1.02	1		Lateral
218	M120	TWR_INNER_SUPP_T5	15.189	15.189	7.595	7.595	7.595	7.595	1.02	1		Lateral
219	M121	TWR_INNER_SUPP_T5	15.189	15.189	7.595	7.595	7.595	7.595	1.02	1		Lateral
220	M151	TWR_INNER_SUPP_T5	13.884	13.884	6.942	6.942	6.942	6.942	1.02	1		Lateral
221	M152	TWR_INNER_SUPP_T5	13.884	13.884	6.942	6.942	6.942	6.942	1.02	1		Lateral
222	M153	TWR_INNER_SUPP_T5	13.884	13.884	6.942	6.942	6.942	6.942	1.02	1		Lateral
223	M154	TWR_INNER_SUPP_T5	13.884	13.884	6.942	6.942	6.942	6.942	1.02	1		Lateral
224	M188	TWR_INNER_SUPP_T6	17.8	17.8	8.9	8.9	8.9	8.9	1.01	1		Lateral
225	M189	TWR_INNER_SUPP_T6	17.8	17.8	8.9	8.9	8.9	8.9	1.01	1		Lateral
226	M190	TWR_INNER_SUPP_T6	17.8	17.8	8.9	8.9	8.9	8.9	1.01	1		Lateral
227	M191	TWR_INNER_SUPP_T6	17.8	17.8	8.9	8.9	8.9	8.9	1.01	1		Lateral
228	M221	TWR_INNER_SUPP_T6	16.495	16.495	8.248	8.248	8.248	8.248	1.02	1		Lateral
229	M222	TWR_INNER_SUPP_T6	16.495	16.495	8.248	8.248	8.248	8.248	1.02	1		Lateral
230	M223	TWR_INNER_SUPP_T6	16.495	16.495	8.248	8.248	8.248	8.248	1.02	1		Lateral
231	M224	TWR_INNER_SUPP_T6	16.495	16.495	8.248	8.248	8.248	8.248	1.02	1		Lateral
232	M258	TWR_INNER_SUPP_T7	19.105	19.105	9.553	9.553	9.553	9.553	1.01	1		Lateral
233	M259	TWR_INNER_SUPP_T7	19.105	19.105	9.553	9.553	9.553	9.553	1.01	1		Lateral
234	M260	TWR_INNER_SUPP_T7	19.105	19.105	9.553	9.553	9.553	9.553	1.01	1		Lateral
235	M261	TWR_INNER_SUPP_T7	19.105	19.105	9.553	9.553	9.553	9.553	1.01	1		Lateral
236	M327	TWR_INNER_SUPP_T8	20.411	10.206	10.206	10.206	10.206	10.206	1	1		Lateral
237	M328	TWR_INNER_SUPP_T8	20.411	10.206	10.206	10.206	10.206	10.206	1	1		Lateral
238	M329	TWR_INNER_SUPP_T8	20.411	10.206	10.206	10.206	10.206	10.206	1	1		Lateral
239	M330	TWR_INNER_SUPP_T8	20.411	10.206	10.206	10.206	10.206	10.206	1	1		Lateral
240	M412	TWR_INNER_SUPP_T9	23.022	11.511	11.511	11.511	11.511	11.511	1.03	1		Lateral
241	M413	TWR_INNER_SUPP_T9	23.022	11.511	11.511	11.511	11.511	11.511	1.03	1		Lateral
242	M414	TWR_INNER_SUPP_T9	23.022	11.511	11.511	11.511	11.511	11.511	1.03	1		Lateral
243	M415	TWR_INNER_SUPP_T9	23.022	11.511	11.511	11.511	11.511	11.511	1.03	1		Lateral
244	M1	TWR_LEG_T1	12.568	6.724	6.724	6.724	6.724	6.724	1	1		Lateral
245	M2	TWR_LEG_T1	12.568	6.724	6.724	6.724	6.724	6.724	1	1		Lateral
246	M3	TWR_LEG_T1	12.568	6.724	6.724	6.724	6.724	6.724	1	1		Lateral
247	M4	TWR_LEG_T1	12.568	6.724	6.724	6.724	6.724	6.724	1	1		Lateral
248	M21	TWR_LEG_T2	12.568	6.67	6.67	6.67	6.67	6.67	1	1		Lateral
249	M22	TWR_LEG_T2	12.568	6.67	6.67	6.67	6.67	6.67	1	1		Lateral
250	M23	TWR_LEG_T2	12.568	6.67	6.67	6.67	6.67	6.67	1	1		Lateral
251	M24	TWR_LEG_T2	12.568	6.67	6.67	6.67	6.67	6.67	1	1		Lateral
252	M41	TWR_LEG_T3	12.568	6.628	6.628	6.628	6.628	6.628	1	1		Lateral
253	M42	TWR_LEG_T3	12.568	6.628	6.628	6.628	6.628	6.628	1	1		Lateral
254	M43	TWR_LEG_T3	12.568	6.628	6.628	6.628	6.628	6.628	1	1		Lateral
255	M44	TWR_LEG_T3	12.568	6.628	6.628	6.628	6.628	6.628	1	1		Lateral
256	M66	TWR_LEG_T4	12.568	6.594	6.594	6.594	6.594	6.594	1	1		Lateral
257	M67	TWR_LEG_T4	12.568	6.594	6.594	6.594	6.594	6.594	1	1		Lateral
258	M68	TWR_LEG_T4	12.568	6.594	6.594	6.594	6.594	6.594	1	1		Lateral
259	M69	TWR_LEG_T4	12.568	6.594	6.594	6.594	6.594	6.594	1	1		Lateral
260	M86	TWR_LEG_T5	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
261	M87	TWR_LEG_T5	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
262	M88	TWR_LEG_T5	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
263	M89	TWR_LEG_T5	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
264	M156	TWR_LEG_T6	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
265	M157	TWR_LEG_T6	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
266	M158	TWR_LEG_T6	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
267	M159	TWR_LEG_T6	25.136	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
268	M226	TWR_LEG_T7	12.568	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
269	M227	TWR_LEG_T7	12.568	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
270	M228	TWR_LEG_T7	12.568	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
271	M229	TWR_LEG_T7	12.568	6.284	6.284	6.284	6.284	6.284	1	1		Lateral
272	M263	TWR_LEG_T8	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
273	M264	TWR_LEG_T8	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
274	M265	TWR_LEG_T8	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
275	M266	TWR_LEG_T8	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
276	M332	TWR_LEG_T9	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
277	M333	TWR_LEG_T9	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
278	M334	TWR_LEG_T9	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
279	M335	TWR_LEG_T9	25.136	8.379	8.379	8.379	8.379	8.379	1	1		Lateral
280	M272	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
281	M277	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
282	M283	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
283	M288	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
284	M298	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
285	M303	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
286	M313	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
287	M318	TWR_RED_DIAG_2_T8	12.286	11.83	11.83	11.83	11.83	12.286	1	1		Lateral
288	M341	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
289	M346	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
290	M357	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
291	M362	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
292	M376	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
293	M381	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
294	M395	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
295	M400	TWR_RED_DIAG_2_T9	13.214	13.03	13.03	13.03	13.03	13.457	1.07	1		Lateral
296	M93	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
297	M96	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
298	M100	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
299	M103	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
300	M107	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
301	M110	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
302	M114	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
303	M117	TWR_RED_DIAG_T5	7.961	7.56	7.56	7.56	7.56	7.961	1	1		Lateral
304	M126	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
305	M129	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
306	M133	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
307	M136	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
308	M140	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
309	M143	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
310	M147	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
311	M150	TWR_RED_DIAG_T5	7.685	7.285	7.285	7.285	7.285	7.685	1	1		Lateral
312	M163	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
313	M166	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
314	M170	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
315	M173	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
316	M177	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
317	M180	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
318	M184	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
319	M187	TWR_RED_DIAG_T6	8.561	8.19	8.19	8.19	8.19	8.19	1	1		Lateral
320	M196	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
321	M199	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
322	M203	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
323	M206	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
324	M210	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
325	M213	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
326	M217	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
327	M220	TWR_RED_DIAG_T6	8.253	7.98	7.98	7.98	7.98	7.98	1	1		Lateral
328	M233	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
329	M236	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
330	M240	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
331	M243	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
332	M247	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
333	M250	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
334	M254	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
335	M257	TWR_RED_DIAG_T7	8.881	8.53	8.53	8.53	8.53	8.53	1	1		Lateral
336	M271	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
337	M276	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
338	M287	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
339	M297	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
340	M302	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
341	M312	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
342	M317	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1	1		Lateral
343	M438A	TWR_RED_DIAG_T8	9.35	8.62	8.62	8.62	8.62	8.62	1			Lateral
344	M340	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
345	M345	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
346	M356	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
347	M361	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
348	M375	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
349	M380	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
350	M394	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
351	M399	TWR_RED_DIAG_T9	9.642	9.07	9.07	9.07	9.07	9.07	1	1		Lateral
352	M435	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
353	M436	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
354	M437	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
355	M438	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
356	M439	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
357	M440	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
358	M441	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
359	M442	TWR_RED_HIPDIA_T8	11.575	11.575	11.575	11.575	11.575	11.575	1.03			Lateral
360	M412A	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
361	M413A	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
362	M414A	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
363	M415A	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
364	M416	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
365	M417	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
366	M418	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
367	M419	TWR_RED_HIPDIA_T9	12.268	12.268	12.268	12.268	12.268	12.268	1.03			Lateral
368	M290	TWR_RED_HIP_2_T8	13.607	13.607	13.607	13.607	13.607	13.607	1			Lateral
369	M305	TWR_RED_HIP_2_T8	13.607	13.607	13.607	13.607	13.607	13.607	1			Lateral
370	M320	TWR_RED_HIP_2_T8	13.607	13.607	13.607	13.607	13.607	13.607	1			Lateral
371	M324	TWR_RED_HIP_2_T8	13.607	13.607	13.607	13.607	13.607	13.607	1			Lateral
372	M365	TWR_RED_HIP_2_T9	15.348	13.607	13.607	13.607	13.607	13.607	1			Lateral
373	M384	TWR_RED_HIP_2_T9	15.348	13.607	13.607	13.607	13.607	13.607	1			Lateral
374	M403	TWR_RED_HIP_2_T9	15.348	13.607	13.607	13.607	13.607	13.607	1			Lateral
375	M406	TWR_RED_HIP_2_T9	15.348	13.607	13.607	13.607	13.607	13.607	1			Lateral
376	M270	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
377	M275	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
378	M281	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
379	M286	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
380	M296	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
381	M301	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
382	M311	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
383	M316	TWR_RED_HORZ_2_T8	9.622	9.29	9.29	9.29	9.29	9.29	1.07	1		Lateral
384	M339	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
385	M344	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
386	M355	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
387	M360	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
388	M374	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
389	M379	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
390	M393	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
391	M398	TWR_RED_HORZ_2_T9	10.853	10.83	10.83	10.83	10.83	10.83	1.05	1		Lateral
392	M92	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
393	M95	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
394	M99	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
395	M102	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
396	M106	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
397	M109	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
398	M113	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
399	M116	TWR_RED_HORZ_T5	5.37	5.12	5.12	5.12	5.12	5.12	1	1		Lateral
400	M125	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
401	M128	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
402	M132	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
403	M135	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
404	M139	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
405	M142	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
406	M146	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
407	M149	TWR_RED_HORZ_T5	4.909	4.66	4.66	4.66	4.66	4.66	1	1		Lateral
408	M162	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
409	M165	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
410	M169	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
411	M172	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
412	M176	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
413	M179	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
414	M183	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
415	M186	TWR_RED_HORZ_T6	6.293	6.04	6.04	6.04	6.04	6.04	1	1		Lateral
416	M195	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
417	M198	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
418	M202	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
419	M205	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
420	M209	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
421	M212	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
422	M216	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
423	M219	TWR_RED_HORZ_T6	5.832	5.58	5.58	5.58	5.58	5.58	1	1		Lateral
424	M232	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
425	M235	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
426	M239	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
427	M242	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
428	M246	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
429	M249	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
430	M253	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
431	M256	TWR_RED_HORZ_T7	6.755	6.42	6.42	6.42	6.42	6.42	1	1		Lateral
432	M269	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
433	M274	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
434	M280	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
435	M285	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
436	M295	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
437	M300	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
438	M310	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
439	M315	TWR_RED_HORZ_T8	4.811	4.48	4.48	4.48	4.48	4.48	1	1		Lateral
440	M338	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
441	M343	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
442	M354	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
443	M359	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
444	M373	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
445	M378	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
446	M392	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
447	M397	TWR_RED_HORZ_T9	5.426	5.25	5.25	5.25	5.25	5.25	1	1		Lateral
448	M348	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
449	M349	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
450	M367	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
451	M368	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
452	M386	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
453	M387	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
454	M408	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
455	M409	TWR_RED_SUBDIA_T9	10.311			Lbyy			1.15	1		Lateral
456	M347	TWR_RED_SUBHOR_T9	12.083	12.083	5.73	5.73	5.73	5.73	1.15	1		Lateral
457	M363	TWR_RED_SUBHOR_T9	12.083	12.083	5.73	5.73	5.73	5.73	1.15	1		Lateral
458	M382	TWR_RED_SUBHOR_T9	12.083	12.083	5.73	5.73	5.73	5.73	1.15	1		Lateral
459	M401	TWR_RED_SUBHOR_T9	12.083	12.083	5.73	5.73	5.73	5.73	1.15	1		Lateral
460	M484	TWR_RED_VERT_T1	6.706	6.706	6.706	6.706	6.706	6.706	1	1		Lateral
461	M488	TWR_RED_VERT_T1	6.706	6.706	6.706	6.706	6.706	6.706	1	1		Lateral
462	M492	TWR_RED_VERT_T1	6.706	6.706	6.706	6.706	6.706	6.706	1	1		Lateral
463	M496	TWR_RED_VERT_T1	6.706	6.706	6.706	6.706	6.706	6.706	1	1		Lateral
464	M485	TWR_RED_VERT_T2	6.652	6.665	6.665	6.665	6.665	6.665	1	1		Lateral
465	M489	TWR_RED_VERT_T2	6.652	6.665	6.665	6.665	6.665	6.665	1	1		Lateral
466	M493	TWR_RED_VERT_T2	6.652	6.665	6.665	6.665	6.665	6.665	1	1		Lateral
467	M497	TWR_RED_VERT_T2	6.652	6.665	6.665	6.665	6.665	6.665	1	1		Lateral
468	M486	TWR_RED_VERT_T3	6.61	6.61	6.61	6.61	6.61	6.61	1	1		Lateral
469	M490	TWR_RED_VERT_T3	6.61	6.61	6.61	6.61	6.61	6.61	1	1		Lateral
470	M494	TWR_RED_VERT_T3	6.61	6.61	6.61	6.61	6.61	6.61	1	1		Lateral
471	M498	TWR_RED_VERT_T3	6.61	6.61	6.61	6.61	6.61	6.61	1	1		Lateral
472	M420	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
473	M421	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
474	M422	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
475	M423	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
476	M424	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
477	M425	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
478	M426	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
479	M427	TWR_RED_VERT_T9	8.615	8.615	8.615	8.615	8.615	8.615	1	1		Lateral
480	M420A	TWR_RED_VERT_T9	8.356	8.356	8.356	8.356	8.356	8.356	1	1		Lateral
481	M421A	TWR_RED_VERT_T9	8.356	8.356	8.356	8.356	8.356	8.356	1	1		Lateral
482	M422A	TWR_RED_VERT_T9	8.356	8.356	8.356	8.356	8.356	8.356	1	1		Lateral
483	M423A	TWR_RED_VERT_T9	8.356	8.356	8.356	8.356	8.356	8.356	1	1		Lateral
484	M487	TWR_RED_VERT_T4	6.576	6.576	6.576	6.576	6.576	6.576	1	1		Lateral
485	M491	TWR_RED_VERT_T4	6.576	6.576	6.576	6.576	6.576	6.576	1	1		Lateral
486	M495	TWR_RED_VERT_T4	6.576	6.576	6.576	6.576	6.576	6.576	1	1		Lateral
487	M499	TWR_RED_VERT_T4	6.576	6.576	6.576	6.576	6.576	6.576	1	1		Lateral
488	m53	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
489	m122	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
490	m155	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
491	m192	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
492	m225	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
493	m262	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Function
494	m331	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
495	m282	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
496	m289	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
497	m304	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
498	m319	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
499	m323	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
500	m291	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
501	m306	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
502	m321	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
503	m325	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
504	m292	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
505	m307	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
506	m322	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
507	m326	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
508	m350	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
509	m351	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
510	m369	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
511	m370	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
512	m388	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
513	m389	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
514	m410	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
515	m411	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
516	m364	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
517	m383	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
518	m366	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral
519	m385	TWR_RED_VERT_T4	0			Lbyy			1	1		Lateral

Basic Load Cases

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(M...	Surfac...
1	Dead	None		-1		60	368	34		
2	No Ice Wind 0 deg	None				60	874	108		
3	No Ice Wind 45 deg	None				120	858	144		
4	No Ice Wind 90 deg	None				60	880	108		
5	No Ice Wind 135 deg	None				120	864	144		
6	No Ice Wind 180 deg	None				60	874	108		
7	No Ice Wind 225 deg	None				120	858	144		
8	No Ice Wind 270 deg	None				60	880	108		
9	No Ice Wind 315 deg	None				120	864	144		
10	Ice	None				60	366	452		
11	Temperature Drop	None						499		
12	Ice Wind 0 deg	None				60	862	100		
13	Ice Wind 45 deg	None				120	822	136		
14	Ice Wind 90 deg	None				60	870	84		
15	Ice Wind 135 deg	None				120	828	136		
16	Ice Wind 180 deg	None				60	862	100		
17	Ice Wind 225 deg	None				120	822	136		
18	Ice Wind 270 deg	None				60	870	84		
19	Ice Wind 315 deg	None				120	828	136		
20	Service Wind 0 deg	None				60	860	108		
21	Service Wind 45 deg	None				120	830	144		
22	Service Wind 90 deg	None				60	868	92		
23	Service Wind 135 deg	None				120	836	144		
24	Service Wind 180 deg	None				60	860	108		
25	Service Wind 225 deg	None				120	830	144		
26	Service Wind 270 deg	None				60	868	92		

Basic Load Cases (Continued)

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(M...	Surfac...
27	Service Wind 315 deg	None				120	836	144		

Load Combinations

	Description	So...	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
1	Dead Only	Yes			1	1	28	1	29	1	0		0		0		0		0					
2	Dead+Wind 0 deg - No Ice	Yes			1	1	2	1	28	1	29	1	0		0		0		0					
3	Dead+Wind 45 deg - No ...	Yes			1	1	3	1	28	1	29	1	0		0		0		0					
4	Dead+Wind 90 deg - No ...	Yes			1	1	4	1	28	1	29	1	0		0		0		0					
5	Dead+Wind 135 deg - N...	Yes			1	1	5	1	28	1	29	1	0		0		0		0					
6	Dead+Wind 180 deg - N...	Yes			1	1	6	1	28	1	29	1	0		0		0		0					
7	Dead+Wind 225 deg - N...	Yes			1	1	7	1	28	1	29	1	0		0		0		0					
8	Dead+Wind 270 deg - N...	Yes			1	1	8	1	28	1	29	1	0		0		0		0					
9	Dead+Wind 315 deg - N...	Yes			1	1	9	1	28	1	29	1	0		0		0		0					
10	Dead+Ice+Temp	Yes			1	1	10	1	11	1	28	1	29	1	0		0		0					
11	Dead+Wind 0 deg+Ice+T...	Yes			1	1	12	1	10	1	11	1	28	1	29	1	0		0					
12	Dead+Wind 45 deg+Ice+...	Yes			1	1	13	1	10	1	11	1	28	1	29	1	0		0					
13	Dead+Wind 90 deg+Ice+...	Yes			1	1	14	1	10	1	11	1	28	1	29	1	0		0					
14	Dead+Wind 135 deg+Ice...	Yes			1	1	15	1	10	1	11	1	28	1	29	1	0		0					
15	Dead+Wind 180 deg+Ice...	Yes			1	1	16	1	10	1	11	1	28	1	29	1	0		0					
16	Dead+Wind 225 deg+Ice...	Yes			1	1	17	1	10	1	11	1	28	1	29	1	0		0					
17	Dead+Wind 270 deg+Ice...	Yes			1	1	18	1	10	1	11	1	28	1	29	1	0		0					
18	Dead+Wind 315 deg+Ice...	Yes			1	1	19	1	10	1	11	1	28	1	29	1	0		0					
19	Dead+Wind 0 deg - Servi...	Yes			1	1	20	1	28	1	29	1	0		0		0		0					
20	Dead+Wind 45 deg - Ser...	Yes			1	1	21	1	28	1	29	1	0		0		0		0					
21	Dead+Wind 90 deg - Ser...	Yes			1	1	22	1	28	1	29	1	0		0		0		0					
22	Dead+Wind 135 deg - S...	Yes			1	1	23	1	28	1	29	1	0		0		0		0					
23	Dead+Wind 180 deg - S...	Yes			1	1	24	1	28	1	29	1	0		0		0		0					
24	Dead+Wind 225 deg - S...	Yes			1	1	25	1	28	1	29	1	0		0		0		0					
25	Dead+Wind 270 deg - S...	Yes			1	1	26	1	28	1	29	1	0		0		0		0					
26	Dead+Wind 315 deg - S...	Yes			1	1	27	1	28	1	29	1	0		0		0		0					

Envelope AISC 13th(360-05): ASD Steel Code Checks

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
1	M9	L3 1/2x3 ...	.347	6.8...	8	.004	9.66	z	15	11.74	36.431	.613	2.551	1	H2-1
2	M10	L3 1/2x3 ...	.348	7.7...	4	.005	9.66	z	14	11.74	36.431	.613	2.551	1	H2-1
3	M11	L3 1/2x3 ...	.335	6.8...	6	.004	9.66	z	13	11.74	36.431	.613	2.551	1	H2-1
4	M12	L3 1/2x3 ...	.335	7.7...	2	.005	9.66	z	13	11.74	36.431	.613	2.551	1	H2-1
5	M13	L3 1/2x3 ...	.320	6.8...	4	.004	9.66	z	12	11.74	36.431	.613	2.551	1	H2-1
6	M14	L3 1/2x3 ...	.315	7.7...	8	.005	9.66	z	11	11.74	36.431	.613	2.551	1	H2-1
7	M15	L3 1/2x3 ...	.366	6.8...	2	.004	9.66	z	18	11.74	36.431	.613	2.551	1	H2-1
8	M16	L3 1/2x3 ...	.361	7.7...	6	.005	9.66	z	16	11.74	36.431	.613	2.551	1	H2-1
9	M29	L3 1/2x3...	.874	0	8	.005	10....	z	16	8.108	33.629	.509	2.031	1	H2-1
10	M30	L3 1/2x3...	.882	7.9...	4	.005	10....	z	15	8.108	33.629	.509	2.031	1	H2-1
11	M31	L3 1/2x3...	.929	0	6	.005	10....	z	14	8.108	33.629	.509	2.031	1	H2-1
12	M32	L3 1/2x3...	.939	7.9...	2	.005	10....	z	13	8.108	33.629	.509	2.031	1	H2-1
13	M33	L3 1/2x3...	.903	0	4	.005	10....	z	12	8.108	33.629	.509	2.031	1	H2-1
14	M34	L3 1/2x3...	.915	7.9...	8	.005	10....	z	11	8.108	33.629	.509	2.031	1	H2-1
15	M35	L3 1/2x3...	.886	0	2	.005	10....	z	18	8.108	33.629	.509	2.031	1	H2-1
16	M36	L3 1/2x3...	.895	7.9...	6	.005	10....	z	17	8.108	33.629	.509	2.031	1	H2-1
17	M54	L4x3x1/4	1.047	10....	8	.005	10....	z	11	8.278	36.377	.548	2.323	1	H2-1
18	M55	L4x3x1/4	1.065	10....	4	.005	10....	z	15	8.278	36.377	.548	2.323	1	H2-1
19	M56	L4x3x1/4	1.098	10....	6	.005	10....	z	14	8.278	36.377	.548	2.323	1	H2-1
20	M57	L4x3x1/4	1.114	10....	2	.005	10....	z	12	8.278	36.377	.548	2.323	1	H2-1
21	M58	L4x3x1/4	1.101	10....	4	.005	10....	z	12	8.278	36.377	.548	2.323	1	H2-1

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
22	M59	L4x3x1/4	1.119	10....	8	.005	10....	z	18	8.278	36.377	.548	2.323	1	H2-1
23	M60	L4x3x1/4	1.080	10....	2	.005	10....	z	18	8.278	36.377	.548	2.323	1	H2-1
24	M61	L4x3x1/4	1.100	10....	6	.005	10....	z	13	8.278	36.377	.548	2.323	1	H2-1
25	M91	2L2 1/2x...	.864	8.5...	8	.003	8.5...	y	18	15.74	51.305	4.236	1.419	1	H1-1a
26	M94	2L2 1/2x...	.868	8.5...	4	.003	8.5...	y	12	15.74	51.305	4.236	1.419	1	H1-1a
27	M98	2L2 1/2x...	.845	8.5...	6	.003	8.5...	y	16	15.74	51.305	4.236	1.419	1	H1-1a
28	M101	2L2 1/2x...	.848	8.5...	2	.003	8.5...	y	18	15.74	51.305	4.236	1.419	1	H1-1a
29	M105	2L2 1/2x...	.835	8.5...	4	.003	8.5...	y	14	15.74	51.305	4.236	1.419	1	H1-1a
30	M108	2L2 1/2x...	.831	8.5...	8	.003	8.5...	y	15	15.74	51.305	4.236	1.419	1	H1-1a
31	M112	2L2 1/2x...	.882	8.5...	2	.003	8.5...	y	12	15.74	51.305	4.236	1.419	1	H1-1a
32	M115	2L2 1/2x...	.880	8.5...	6	.003	8.5...	y	14	15.74	51.305	4.236	1.419	1	H1-1a
33	M124	2L2 1/2x...	.792	8.2...	8	.003	8.2...	y	18	16.971	51.305	4.236	1.419	1	H1-1a
34	M127	2L2 1/2x...	.796	8.2...	4	.003	8.2...	y	12	16.971	51.305	4.236	1.419	1	H1-1a
35	M131	2L2 1/2x...	.783	8.2...	6	.003	8.2...	y	16	16.971	51.305	4.236	1.419	1	H1-1a
36	M134	2L2 1/2x...	.784	8.2...	2	.003	8.2...	y	18	16.971	51.305	4.236	1.419	1	H1-1a
37	M138	2L2 1/2x...	.776	8.2...	4	.003	8.2...	y	14	16.971	51.305	4.236	1.419	1	H1-1a
38	M141	2L2 1/2x...	.773	8.2...	8	.003	8.2...	y	16	16.971	51.305	4.236	1.419	1	H1-1a
39	M145	2L2 1/2x...	.815	8.2...	2	.003	8.2...	y	12	16.971	51.305	4.236	1.419	1	H1-1a
40	M148	2L2 1/2x...	.814	8.2...	6	.003	8.2...	y	14	16.971	51.305	4.236	1.419	1	H1-1a
41	M161	2L2 1/2x...	1.066	9.2...	8	.004	9.2...	y	18	13.493	51.305	4.236	1.419	1	H1-1a
42	M164	2L2 1/2x...	1.077	9.2...	4	.004	9.2...	y	12	13.493	51.305	4.236	1.419	1	H1-1a
43	M168	2L2 1/2x...	1.036	9.2...	6	.004	9.2...	y	16	13.493	51.305	4.236	1.419	1	H1-1a
44	M171	2L2 1/2x...	1.034	9.2...	2	.004	9.2...	y	18	13.493	51.305	4.236	1.419	1	H1-1a
45	M175	2L2 1/2x...	1.029	9.2...	4	.004	9.2...	y	14	13.493	51.305	4.236	1.419	1	H1-1a
46	M178	2L2 1/2x...	1.018	9.2...	8	.004	9.2...	y	16	13.493	51.305	4.236	1.419	1	H1-1a
47	M182	2L2 1/2x...	1.085	9.2...	2	.004	9.2...	y	12	13.493	51.305	4.236	1.419	1	H1-1a
48	M185	2L2 1/2x...	1.087	9.2...	6	.004	9.2...	y	14	13.493	51.305	4.236	1.419	1	H1-1a
49	M194	2L2 1/2x...	.974	8.8...	8	.003	8.8...	y	18	14.554	51.305	4.236	1.419	1	H1-1a
50	M197	2L2 1/2x...	.985	8.8...	4	.003	8.8...	y	12	14.554	51.305	4.236	1.419	1	H1-1a
51	M201	2L2 1/2x...	.953	8.8...	6	.003	8.8...	y	16	14.554	51.305	4.236	1.419	1	H1-1a
52	M204	2L2 1/2x...	.950	8.8...	2	.003	8.8...	y	18	14.554	51.305	4.236	1.419	1	H1-1a
53	M208	2L2 1/2x...	.949	8.8...	4	.003	8.8...	y	14	14.554	51.305	4.236	1.419	1	H1-1a
54	M211	2L2 1/2x...	.938	8.8...	8	.003	8.8...	y	16	14.554	51.305	4.236	1.419	1	H1-1a
55	M215	2L2 1/2x...	.997	8.8...	2	.003	8.8...	y	12	14.554	51.305	4.236	1.419	1	H1-1a
56	M218	2L2 1/2x...	1.000	8.8...	6	.003	8.8...	y	14	14.554	51.305	4.236	1.419	1	H1-1a
57	M231	2L2 1/2x...	1.122	9.5...	8	.004	19....	y	14	12.91	51.305	4.236	1.419	1	H1-1a
58	M234	2L2 1/2x...	1.133	9.5...	4	.004	19....	y	16	12.91	51.305	4.236	1.419	1	H1-1a
59	M238	2L2 1/2x...	1.098	9.5...	6	.004	19....	y	12	12.91	51.305	4.236	1.419	1	H1-1a
60	M241	2L2 1/2x...	1.093	9.5...	2	.004	19....	y	14	12.91	51.305	4.236	1.419	1	H1-1a
61	M245	2L2 1/2x...	1.080	9.5...	4	.004	19....	y	18	12.91	51.305	4.236	1.419	1	H1-1a
62	M248	2L2 1/2x...	1.068	9.5...	8	.004	19....	y	12	12.91	51.305	4.236	1.419	1	H1-1a
63	M252	2L2 1/2x...	1.146	9.5...	2	.004	19....	y	16	12.91	51.305	4.236	1.419	1	H1-1a
64	M255	2L2 1/2x...	1.151	9.5...	6	.004	19....	y	18	12.91	51.305	4.236	1.419	1	H1-1a
65	M268	2L3x3x3/...	.968	0	8	.003	0	y	16	22.558	90.97	7.569	2.993	1	H1-1a
66	M273	2L3x3x3/...	.975	0	4	.003	0	y	14	22.558	90.97	7.569	2.993	1	H1-1a
67	M279	2L3x3x3/...	.940	0	6	.003	0	y	14	22.558	90.97	7.569	2.993	1	H1-1a
68	M284	2L3x3x3/...	.939	0	2	.003	0	y	12	22.558	90.97	7.569	2.993	1	H1-1a
69	M294	2L3x3x3/...	.924	0	4	.003	0	y	12	22.558	90.97	7.569	2.993	1	H1-1a
70	M299	2L3x3x3/...	.917	0	8	.003	0	y	18	22.558	90.97	7.569	2.993	1	H1-1a
71	M309	2L3x3x3/...	.983	0	2	.003	0	y	18	22.558	90.97	7.569	2.993	1	H1-1a
72	M314	2L3x3x3/...	.984	0	6	.003	0	y	16	22.558	90.97	7.569	2.993	1	H1-1a
73	M337	LL3x3.5x...	.733	0	8	.003	20....	y	16	34.149	100.024	11.274	3.045	1	H1-1a
74	M342	LL3x3.5x...	.757	0	5	.003	20....	y	14	34.149	100.024	11.274	3.045	1	H1-1a
75	M353	LL3x3.5x...	.714	0	6	.003	20....	y	14	34.149	100.024	11.274	3.045	1	H1-1a
76	M358	LL3x3.5x...	.732	0	3	.003	20....	y	12	34.149	100.024	11.274	3.045	1	H1-1a
77	M372	LL3x3.5x...	.722	0	3	.003	20....	y	12	34.149	100.024	11.274	3.045	1	H1-1a
78	M377	LL3x3.5x...	.696	0	8	.003	20....	y	18	34.149	100.024	11.274	3.045	1	H1-1a

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
79	M391	LL3x3.5x...	.761	0	9	.003	20....	y	18	34.149	100.024	11.274	3.045	1	H1-1a
80	M396	LL3x3.5x...	.746	0	6	.003	20....	y	16	34.149	100.024	11.274	3.045	1	H1-1a
81	M90	2L2 1/2x...	.625	10....	4	.006	10....	y	15	15.854	51.305	3.58	1.419	1	H1-1a
82	M97	2L2 1/2x...	.611	10....	2	.006	10....	y	13	15.854	51.305	3.58	1.419	1	H1-1a
83	M104	2L2 1/2x...	.602	10....	4	.006	10....	y	11	15.854	51.305	3.58	1.419	1	H1-1a
84	M111	2L2 1/2x...	.634	10....	2	.006	10....	y	17	15.854	51.305	3.58	1.419	1	H1-1a
85	M123	2L2 1/2x...	.472	9.8...	4	.006	9.8...	y	16	19.147	51.305	3.58	1.419	1	H1-1a
86	M130	2L2 1/2x...	.466	9.8...	2	.006	9.8...	y	14	19.147	51.305	3.58	1.419	1	H1-1a
87	M137	2L2 1/2x...	.462	9.8...	4	.006	9.8...	y	18	19.147	51.305	3.58	1.419	1	H1-1a
88	M144	2L2 1/2x...	.483	9.8...	2	.006	9.8...	y	16	19.147	51.305	3.58	1.419	1	H1-1a
89	M160	2L2 1/2x...	.916	12....	4	.007	12....	y	15	12.139	51.305	3.58	1.419	1	H1-1a
90	M167	2L2 1/2x...	.883	12....	6	.007	12....	y	13	12.139	51.305	3.58	1.419	1	H1-1a
91	M174	2L2 1/2x...	.878	12....	4	.007	12....	y	11	12.139	51.305	3.58	1.419	1	H1-1a
92	M181	2L2 1/2x...	.925	12....	6	.007	12....	y	17	12.139	51.305	3.58	1.419	1	H1-1a
93	M193	2L2 1/2x...	.756	11....	4	.006	11....	y	15	14.227	51.305	3.58	1.419	1	H1-1a
94	M200	2L2 1/2x...	.732	11....	6	.006	11....	y	13	14.227	51.305	3.58	1.419	1	H1-1a
95	M207	2L2 1/2x...	.734	11....	4	.006	11....	y	11	14.227	51.305	3.58	1.419	1	H1-1a
96	M214	2L2 1/2x...	.772	11....	6	.006	11....	y	17	14.227	51.305	3.58	1.419	1	H1-1a
97	M230	LL3x2.5x...	.684	13....	4	.007	13....	y	12	17.636	56.91	3.54	1.985	1	H1-1a
98	M237	LL3x2.5x...	.666	13....	6	.007	13....	y	18	17.636	56.91	3.54	1.985	1	H1-1a
99	M244	LL3x2.5x...	.657	13....	4	.007	13....	y	14	17.636	56.91	3.54	1.985	1	H1-1a
100	M251	LL3x2.5x...	.695	13....	6	.007	13....	y	12	17.636	56.91	3.54	1.985	1	H1-1a
101	M267	LL3x2.5x...	.784	14....	4	.006	14....	y	14	16.087	56.91	3.54	1.985	1	H1-1a
102	M278	LL3x2.5x...	.756	14....	6	.006	14....	y	14	16.087	56.91	3.54	1.985	1	H1-1a
103	M293	LL3x2.5x...	.745	14....	4	.006	14....	y	12	16.087	56.91	3.54	1.985	1	H1-1a
104	M308	LL3x2.5x...	.791	14....	6	.006	14....	y	16	16.087	56.91	3.54	1.985	1	H1-1a
105	M336	2L3x3x3/...	.455	32....	9	.004	24....	y	5	33.374	90.97	7.569	2.993	1...	H1-1a
106	M352	2L3x3x3/...	.445	32....	7	.004	24....	y	3	33.374	90.97	7.569	2.993	1...	H1-1a
107	M371	2L3x3x3/...	.434	0	7	.004	24....	y	2	33.374	90.97	7.569	2.993	1...	H1-1a
108	M390	2L3x3x3/...	.456	0	5	.004	8.1...	y	9	33.374	90.97	7.569	2.993	1...	H1-1a
109	M17	L2x2 1/2...	.058	10....	17	.005	6.5...	z	18	5.416	22.85	.417	1.423	1	H2-1
110	M18	L2x2 1/2...	.057	10....	15	.005	6.5...	z	16	5.416	22.85	.417	1.423	1	H2-1
111	M19	L2x2 1/2...	.055	10....	14	.005	6.5...	z	16	5.416	22.85	.417	1.423	1	H2-1
112	M20	L2x2 1/2...	.056	10....	18	.005	6.5...	z	12	5.416	22.85	.417	1.423	1	H2-1
113	M37	C6x10.5	.054	7.4...	8	.004	7.4...	y	18	17.173	66.18	1.616	8.803	1	H1-1b
114	M38	C6x10.5	.057	7.4...	6	.004	7.4...	y	16	17.173	66.18	1.616	8.803	1	H1-1b
115	M39	C6x10.5	.057	7.4...	8	.004	7.4...	y	15	17.173	66.18	1.616	8.803	1	H1-1b
116	M40	C6x10.5	.054	7.4...	6	.004	7.4...	y	13	17.173	66.18	1.616	8.803	1	H1-1b
117	M62	2L3x2 1/...	.091	8.4...	13	.005	8.4...	y	12	32.644	56.695	3.608	2.019	1	H1-1b
118	M63	2L3x2 1/...	.091	8.4...	11	.005	8.4...	y	16	32.644	56.695	3.608	2.019	1	H1-1b
119	M64	2L3x2 1/...	.091	8.4...	17	.005	8.4...	y	14	32.644	56.695	3.608	2.019	1	H1-1b
120	M65	2L3x2 1/...	.091	8.4...	15	.005	8.4...	y	13	32.644	56.695	3.608	2.019	1	H1-1b
121	M82	2L3x2 1/...	.105	9.3...	13	.005	9.3...	y	11	29.193	56.695	3.608	2.019	1	H1-1b
122	M83	2L3x2 1/...	.104	9.3...	18	.005	9.3...	y	18	29.193	56.695	3.608	2.019	1	H1-1b
123	M84	2L3x2 1/...	.104	9.3...	13	.005	9.3...	y	14	29.193	56.695	3.608	2.019	1	H1-1b
124	M85	2L3x2 1/...	.105	9.3...	11	.005	9.3...	y	13	29.193	56.695	3.608	2.019	1	H1-1b
125	M25	LL3.5x3x...	.047	7.0...	15	.003	7.0...	y	17	35.867	84.072	6.222	3.417	1	H1-1b
126	M26	LL3.5x3x...	.047	7.0...	13	.003	7.0...	y	15	35.867	84.072	6.222	3.417	1	H1-1b
127	M27	LL3.5x3x...	.047	7.0...	11	.003	7.0...	y	17	35.867	84.072	6.222	3.417	1	H1-1b
128	M28	LL3.5x3x...	.047	7.0...	17	.003	7.0...	y	15	35.867	84.072	6.222	3.417	1	H1-1b
129	M45	2L3x2 1/...	.066	7.9...	15	.004	7.9...	y	12	33.999	56.695	3.608	2.019	1	H1-1b
130	M46	2L3x2 1/...	.066	7.9...	13	.004	7.9...	y	15	33.999	56.695	3.608	2.019	1	H1-1b
131	M47	2L3x2 1/...	.066	7.9...	11	.004	7.9...	y	14	33.999	56.695	3.608	2.019	1	H1-1b
132	M48	2L3x2 1/...	.066	7.9...	17	.004	7.9...	y	15	33.999	56.695	3.608	2.019	1	H1-1b
133	M70	2L3x2 1/...	.109	8.8...	2	.005	8.8...	y	12	9.739	56.695	3.608	2.019	1	H1-1b
134	M71	2L3x2 1/...	.106	8.8...	8	.005	8.8...	y	11	9.739	56.695	3.608	2.019	1	H1-1b
135	M72	2L3x2 1/...	.108	8.8...	6	.005	8.8...	y	13	9.739	56.695	3.608	2.019	1	H1-1b

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
136	M73	2L3x2 1/...	.106	8.8...	4	.005	8.8...	y	12	9.739	56.695	3.608	2.019	1	H1-1b
137	M480	L2.5x2x3	.022	0	16	.002	5.6...	y	9	4.877	17.634	.416	.836	1...	H2-1
138	M481	L2.5x2x3	.023	0	14	.002	5.6...	y	7	4.877	17.634	.416	.836	1...	H2-1
139	M482	L2.5x2x3	.023	0	12	.002	5.6...	y	9	4.877	17.634	.416	.836	1...	H2-1
140	M483	L2.5x2x3	.023	0	18	.002	5.6...	y	7	4.877	17.634	.416	.836	1...	H2-1
141	M469	L2.5x2.5x3	.079	0	7	.003	0	y	5	3.788	19.423	.581	.971	1...	H2-1
142	M470	L2.5x2.5x3	.079	0	5	.003	0	y	3	3.788	19.423	.581	.971	1...	H2-1
143	M471	L2.5x2.5x3	.079	0	3	.003	0	y	5	3.788	19.423	.581	.971	1...	H2-1
144	M472	L2.5x2.5x3	.079	0	9	.003	0	y	3	3.788	19.423	.581	.971	1...	H2-1
145	M473	L2.5x2.5x3	.094	0	5	.002	6.9...	y	7	4.534	19.423	.581	1.002	1...	H2-1
146	M474	L2.5x2.5x3	.093	0	3	.002	0	y	9	4.534	19.423	.581	1.002	1...	H2-1
147	M475	L2.5x2.5x3	.094	0	9	.002	0	y	7	4.534	19.423	.581	1.002	1...	H2-1
148	M476	L2.5x2.5x3	.093	0	7	.002	0	y	9	4.534	19.423	.581	1.002	1...	H2-1
149	M455	L2.5x2.5x3	.090	0	7	.003	0	y	5	2.758	19.423	.581	.912	1...	H2-1
150	M456	L2.5x2.5x3	.092	0	5	.003	8.9	y	3	2.758	19.423	.581	.912	1...	H2-1
151	M457	L2.5x2.5x3	.091	0	3	.003	0	y	5	2.758	19.423	.581	.912	1...	H2-1
152	M458	L2.5x2.5x3	.091	0	9	.003	8.9	y	3	2.758	19.423	.581	.912	1...	H2-1
153	M459	L2.5x2.5x3	.084	0	7	.003	0	y	9	3.212	19.423	.581	.941	1...	H2-1
154	M460	L2.5x2.5x3	.086	0	5	.003	8.2...	y	3	3.212	19.423	.581	.941	1...	H2-1
155	M461	L2.5x2.5x3	.085	0	3	.003	0	y	9	3.212	19.423	.581	.941	1...	H2-1
156	M462	L2.5x2.5x3	.085	0	9	.003	0	y	3	3.212	19.423	.581	.941	1...	H2-1
157	M442A	L2.5x2.5x4	.075	0	7	.003	0	y	5	3.162	25.653	.741	1.291	1...	H2-1
158	M443	L2.5x2.5x4	.076	0	5	.003	0	y	3	3.162	25.653	.741	1.291	1...	H2-1
159	M444	L2.5x2.5x4	.075	0	3	.003	0	y	5	3.162	25.653	.741	1.291	1...	H2-1
160	M445	L2.5x2.5x4	.075	0	9	.003	0	y	3	3.162	25.653	.741	1.291	1...	H2-1
161	M427A	L2.5x2.5x3	.092	0	7	.003	0	y	5	2.098	19.423	.581	.858	1...	H2-1
162	M428	L2.5x2.5x3	.093	0	5	.003	10....	y	3	2.098	19.423	.581	.858	1...	H2-1
163	M429	L2.5x2.5x3	.092	0	3	.003	0	y	5	2.098	19.423	.581	.858	1...	H2-1
164	M430	L2.5x2.5x3	.092	0	9	.003	0	y	3	2.098	19.423	.581	.858	1...	H2-1
165	M400A	L2.5x2.5x4	.119	0	5	.004	11....	y	3	2.178	25.653	.741	1.206	1...	H2-1
166	M401A	L2.5x2.5x4	.119	0	3	.004	11....	y	5	2.178	25.653	.741	1.206	1...	H2-1
167	M402	L2.5x2.5x4	.119	0	9	.007	0	y	12	2.178	25.653	.741	1.206	1...	H2-1
168	M403A	L2.5x2.5x4	.119	0	7	.004	0	y	5	2.178	25.653	.741	1.206	1...	H2-1
169	M408A	L2.5x2.5x4	.050	4.07	8	.002	0	y	7	4.356	25.653	.741	1.358	1...	H2-1
170	M409A	L2.5x2.5x4	.050	4.07	2	.002	0	y	9	4.356	25.653	.741	1.358	1...	H2-1
171	M410A	L2.5x2.5x4	.050	4.07	4	.002	0	y	5	4.356	25.653	.741	1.358	1...	H2-1
172	M411A	L2.5x2.5x4	.050	4.07	6	.002	0	y	7	4.356	25.653	.741	1.358	1...	H2-1
173	M446	L2.5x2.5x4	.034	3.3...	8	.002	6.7...	y	2	6.325	25.653	.741	1.429	1...	H2-1
174	M447	L2.5x2.5x4	.034	3.3...	6	.002	6.7...	y	8	6.325	25.653	.741	1.429	1...	H2-1
175	M448	L2.5x2.5x4	.034	3.3...	4	.002	0	y	2	6.325	25.653	.741	1.429	1...	H2-1
176	M431	L2.5x2.5x4	.039	3.6...	8	.002	7.2...	y	2	5.541	25.653	.741	1.405	1...	H2-1
177	M432	L2.5x2.5x4	.039	3.6...	2	.002	7.2...	y	8	5.541	25.653	.741	1.405	1...	H2-1
178	M433	L2.5x2.5x4	.039	3.6...	4	.002	7.2...	y	2	5.541	25.653	.741	1.405	1...	H2-1
179	M434	L2.5x2.5x4	.039	3.6...	6	.002	7.2...	y	8	5.541	25.653	.741	1.405	1...	H2-1
180	M476A	L3x2.5x4	.056	3.9...	6	.002	7.9...	y	9	5.864	28.455	.833	1.445	1	H2-1
181	M477	L3x2.5x4	.056	3.9...	4	.002	7.9...	y	9	5.864	28.455	.833	1.445	1	H2-1
182	M478	L3x2.5x4	.056	3.9...	2	.002	7.9...	y	9	5.864	28.455	.833	1.445	1	H2-1
183	M479	L3x2.5x4	.056	3.9...	8	.002	7.9...	y	9	5.864	28.455	.833	1.445	1	H2-1
184	M461A	LL2.5x2x...	.071	5.37	2	.003	10....	z	8	9.23	35.353	1.813	1.679	1	H1-1b
185	M462A	LL2.5x2x...	.071	5.37	8	.003	10....	z	6	9.23	35.353	1.813	1.679	1	H1-1b
186	M463	LL2.5x2x...	.071	5.37	6	.003	10....	z	8	9.23	35.353	1.813	1.679	1	H1-1b
187	M464	LL2.5x2x...	.071	5.37	4	.003	10....	z	6	9.23	35.353	1.813	1.679	1	H1-1b
188	M465	LL2.5x2x...	.063	4.9...	2	.003	9.8...	z	8	10.927	35.353	1.813	1.679	1	H1-1b
189	M466	LL2.5x2x...	.063	4.9...	8	.003	9.8...	z	6	10.927	35.353	1.813	1.679	1	H1-1b
190	M467	LL2.5x2x...	.063	4.9...	6	.003	9.8...	z	8	10.927	35.353	1.813	1.679	1	H1-1b
191	M468	LL2.5x2x...	.063	4.9...	4	.003	9.8...	z	6	10.927	35.353	1.813	1.679	1	H1-1b
192	M447A	LL2.5x2x...	.103	6.2...	2	.004	0	z	8	6.72	35.353	1.813	1.679	1	H1-1b

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....	Eqn
193	M448A	LL2.5x2x...	.102	6.2...	8	.004	0	z	6	6.72	35.353	1.813	1.679	1 H1-1b
194	M449	LL2.5x2x...	.103	6.2...	6	.004	0	z	8	6.72	35.353	1.813	1.679	1 H1-1b
195	M450	LL2.5x2x...	.102	6.2...	4	.004	0	z	6	6.72	35.353	1.813	1.679	1 H1-1b
196	M451	LL2.5x2x...	.086	5.8...	2	.004	11....	z	8	7.827	35.353	1.813	1.679	1 H1-1b
197	M452	LL2.5x2x...	.085	5.8...	8	.004	11....	z	2	7.827	35.353	1.813	1.679	1 H1-1b
198	M453	LL2.5x2x...	.086	5.8...	6	.004	11....	z	8	7.827	35.353	1.813	1.679	1 H1-1b
199	M454	LL2.5x2x...	.086	5.8...	4	.004	11....	z	2	7.827	35.353	1.813	1.679	1 H1-1b
200	M438B	LL2.5x2x...	.149	6.7...	2	.005	0	z	8	5.833	35.353	1.813	1.049	1 H1-1b
201	M439A	LL2.5x2x...	.148	6.7...	8	.005	13....	z	2	5.833	35.353	1.813	1.049	1 H1-1b
202	M440A	LL2.5x2x...	.123	6.7...	6	.004	0	z	8	5.833	35.353	1.813	1.679	1 H1-1b
203	M441A	LL2.5x2x...	.148	6.7...	4	.005	0	z	2	5.833	35.353	1.813	1.049	1 H1-1b
204	M423B	LL2.5x2x...	.162	7.2...	2	.005	14....	z	8	6.238	35.353	1.813	1.679	1 H1-1b
205	M424A	LL2.5x2x...	.162	7.2...	4	.005	14....	z	2	6.238	35.353	1.813	1.679	1 H1-1b
206	M425A	LL2.5x2x...	.163	7.2...	6	.005	0	z	8	6.238	35.353	1.813	1.679	1 H1-1b
207	M426A	LL2.5x2x...	.161	7.2...	8	.005	0	z	2	6.238	35.353	1.813	1.679	1 H1-1b
208	M404	LL2.5x2....	.144	8.1...	13	.007	16....	z	15	12.368	51.305	3.54	1.386	1 H1-1b
209	M405	LL2.5x2....	.162	8.1...	11	.008	0	z	17	12.368	51.305	3.54	1.386	1 H1-1b
210	M406A	LL2.5x2....	.139	8.1...	8	.005	16....	z	2	12.368	51.305	3.54	1.386	1 H1-1b
211	M407	LL2.5x2....	.144	8.1...	15	.007	16....	z	17	12.368	51.305	3.54	1.386	1 H1-1b
212	M49	LL2.5x2x...	.172	5.6...	11	.009	0	z	12	9.517	35.353	1.813	1.049	1 H1-1b
213	M50	LL2.5x2x...	.172	5.6...	15	.009	0	z	18	9.517	35.353	1.813	1.049	1 H1-1b
214	M51	LL2.5x2x...	.172	5.6...	13	.009	0	z	12	9.517	35.353	1.813	1.049	1 H1-1b
215	M52	LL2.5x2x...	.172	5.6...	13	.009	0	z	18	9.517	35.353	1.813	1.049	1 H1-1b
216	M118	2L2 1/2x...	.254	7.5...	11	.011	0	z	11	10.468	38.802	2.672	1.737	1 H1-1b
217	M119	2L2 1/2x...	.253	7.5...	15	.011	15....	z	14	10.468	38.802	2.672	1.737	1 H1-1b
218	M120	2L2 1/2x...	.254	7.5...	13	.011	0	z	12	10.468	38.802	2.672	1.737	1 H1-1b
219	M121	2L2 1/2x...	.254	7.5...	11	.011	15....	z	14	10.468	38.802	2.672	1.737	1 H1-1b
220	M151	2L2 1/2x...	.216	6.9...	11	.010	0	z	11	12.418	38.802	2.672	1.737	1 H1-1b
221	M152	2L2 1/2x...	.216	6.9...	15	.010	13....	z	15	12.418	38.802	2.672	1.737	1 H1-1b
222	M153	2L2 1/2x...	.216	6.9...	15	.010	0	z	11	12.418	38.802	2.672	1.737	1 H1-1b
223	M154	2L2 1/2x...	.216	6.9...	11	.010	13....	z	15	12.418	38.802	2.672	1.737	1 H1-1b
224	M188	2L2 1/2x...	.336	8.9	11	.012	0	z	12	7.858	38.802	2.672	1.737	1 H1-1b
225	M189	2L2 1/2x...	.335	8.9	15	.012	17.8	z	14	7.858	38.802	2.672	1.737	1 H1-1b
226	M190	2L2 1/2x...	.336	8.9	13	.012	0	z	12	7.858	38.802	2.672	1.737	1 H1-1b
227	M191	2L2 1/2x...	.336	8.9	13	.012	17.8	z	14	7.858	38.802	2.672	1.737	1 H1-1b
228	M221	2L2 1/2x...	.286	8.2...	11	.012	0	z	12	8.934	38.802	2.672	1.737	1 H1-1b
229	M222	2L2 1/2x...	.287	8.2...	15	.012	16....	z	14	8.934	38.802	2.672	1.737	1 H1-1b
230	M223	2L2 1/2x...	.287	8.2...	13	.012	0	z	12	8.934	38.802	2.672	1.737	1 H1-1b
231	M224	2L2 1/2x...	.287	8.2...	13	.012	16....	z	14	8.934	38.802	2.672	1.737	1 H1-1b
232	M258	2L2 1/2x...	.421	9.5...	11	.014	0	z	12	6.848	38.802	2.672	1.737	1 H1-1b
233	M259	2L2 1/2x...	.408	9.5...	15	.014	19....	z	14	6.848	38.802	2.672	1.737	1 H1-1b
234	M260	2L2 1/2x...	.409	9.5...	13	.014	0	z	12	6.848	38.802	2.672	1.737	1 H1-1b
235	M261	2L2 1/2x...	.421	9.5...	13	.014	19....	z	14	6.848	38.802	2.672	1.737	1 H1-1b
236	M327	L3x3x1/4	.158	20....	2	.006	10....	z	13	5.057	31.042	.447	1.764	1 H2-1
237	M328	L3x3x1/4	.159	0	6	.006	10....	z	13	5.057	31.042	.447	1.764	1 H2-1
238	M329	L3x3x1/4	.159	20....	6	.006	10....	z	11	5.057	31.042	.447	1.764	1 H2-1
239	M330	L3x3x1/4	.159	0	2	.006	10....	z	15	5.057	31.042	.447	1.764	1 H2-1
240	M412	LL2.5x3x...	.082	11....	2	.006	11....	z	14	11.58	56.91	4.932	2.288	1 H1-1b
241	M413	LL2.5x3x...	.082	11....	6	.006	11....	z	12	11.58	56.91	4.932	2.288	1 H1-1b
242	M414	LL2.5x3x...	.082	11....	6	.006	11....	z	18	11.58	56.91	4.932	2.288	1 H1-1b
243	M415	LL2.5x3x...	.082	11....	2	.006	11....	z	16	11.58	56.91	4.932	2.288	1 H1-1b
244	M1	L6x6x1/2	.075	6.9...	7	.066	12....	z	2	96.904	123.952	3.534	19.14	1 H2-1
245	M2	L6x6x1/2	.072	6.1...	14	.061	12....	z	8	96.904	123.952	3.534	19.14	1 H2-1
246	M3	L6x6x1/2	.068	2.0...	13	.059	12....	z	6	96.904	123.952	3.534	19.14	1 H2-1
247	M4	L6x6x1/2	.070	7.0...	9	.066	12....	y	6	96.904	123.952	3.534	19.14	1 H2-1
248	M21	L6x6x1/2	.161	7.4...	7	.022	12....	y	4	97.287	123.952	3.534	19.167	1 H2-1
249	M22	L6x6x1/2	.164	7.4...	5	.030	12....	y	2	97.287	123.952	3.534	19.167	1 H2-1

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
250	M23	L6x6x1/2	.157	7.4...	3	.030	12....	z	6	97.287	123.952	3.534	19.167	1	H2-1
251	M24	L6x6x1/2	.160	7.4...	9	.030	12....	z	4	97.287	123.952	3.534	19.167	1	H2-1
252	M41	L6x6x5/8	.265	7.7...	7	.008	12....	z	2	120.574	153.256	4.405	24.171	1	H2-1
253	M42	L6x6x5/8	.260	7.7...	5	.006	12....	y	2	120.574	153.256	4.405	24.171	1	H2-1
254	M43	L6x6x5/8	.264	7.7...	3	.008	12....	y	8	120.574	153.256	4.405	24.171	1	H2-1
255	M44	L6x6x5/8	.265	7.7...	9	.009	12....	y	6	120.574	153.256	4.405	24.171	1	H2-1
256	M66	L6x6x5/8	.399	3.1...	7	.029	12....	z	2	120.87	153.256	4.405	24.189	1	H2-1
257	M67	L6x6x5/8	.393	3.0...	5	.028	12....	z	8	120.87	153.256	4.405	24.189	1	H2-1
258	M68	L6x6x5/8	.393	3.1...	3	.020	12....	z	6	120.87	153.256	4.405	24.189	1	H2-1
259	M69	L6x6x5/8	.395	3.1...	9	.028	12....	y	6	120.87	153.256	4.405	24.189	1	H2-1
260	M86	L6x6x3/4	.511	9.6...	7	.009	0	y	5	146.203	181.94	5.199	28.483	1	H2-1
261	M87	L6x6x3/4	.509	9.6...	5	.008	0	z	7	146.203	181.94	5.199	28.483	1	H2-1
262	M88	L6x6x3/4	.502	9.6...	3	.007	0	y	9	146.203	181.94	5.199	28.483	1	H2-1
263	M89	L6x6x3/4	.509	9.6...	9	.008	0	z	3	146.203	181.94	5.199	28.483	1	H2-1
264	M156	L6x6x7/8	.628	3.1...	7	.012	25....	y	5	168.623	209.843	6.073	32.08	1	H2-1
265	M157	L6x6x7/8	.622	3.1...	5	.010	25....	z	7	168.623	209.843	6.073	32.08	1	H2-1
266	M158	L6x6x7/8	.619	3.1...	3	.011	25....	y	9	168.623	209.843	6.073	32.08	1	H2-1
267	M159	L6x6x7/8	.631	3.1...	9	.013	25....	z	3	168.623	209.843	6.073	32.08	1	H2-1
268	M226	L8x8x7/8	.486	2.0...	7	.012	0	y	5	252.637	285.292	10.936	60.291	1	H2-1
269	M227	L8x8x7/8	.484	1.9...	5	.011	0	z	7	252.637	285.292	10.936	60.291	1	H2-1
270	M228	L8x8x7/8	.482	1.9...	3	.010	0	z	5	252.637	285.292	10.936	60.291	1	H2-1
271	M229	L8x8x7/8	.493	2.0...	9	.011	0	z	3	252.637	285.292	10.936	60.291	1	H2-1
272	M263	L8x8x7/8	.603	17....	7	.008	0	y	5	229.846	285.292	10.936	60.291	1	H2-1
273	M264	L8x8x7/8	.601	17....	5	.008	0	z	7	229.846	285.292	10.936	60.291	1	H2-1
274	M265	L8x8x7/8	.597	3.9...	3	.007	0	y	9	229.846	285.292	10.936	60.291	1	H2-1
275	M266	L8x8x7/8	.607	3.9...	9	.008	0	z	3	229.846	285.292	10.936	60.291	1	H2-1
276	M332	L8X8X1_...	.620	.262	7	.006	25....	z	9	259.839	323.353	12.348	67.401	1	H2-1
277	M333	L8X8X1_...	.617	.262	5	.006	25....	y	3	259.839	323.353	12.348	67.401	1	H2-1
278	M334	L8X8X1_...	.616	.262	3	.006	25....	z	5	259.839	323.353	12.348	67.401	1	H2-1
279	M335	L8X8X1_...	.625	.262	9	.006	25....	y	7	259.839	323.353	12.348	67.401	1	H2-1
280	M272	L3 1/2x3...	.054	0	6	.004	12....	z	11	4.633	33.629	.509	1.853	1	H2-1
281	M277	L3 1/2x3...	.055	0	6	.004	12....	z	11	4.633	33.629	.509	1.853	1	H2-1
282	M283	L3 1/2x3...	.052	0	3	.004	0	z	16	4.633	33.629	.509	1.853	1	H2-1
283	M288	L3 1/2x3...	.065	0	5	.004	0	z	18	4.633	33.629	.509	1.853	1	H2-1
284	M298	L3 1/2x3...	.065	0	9	.004	0	z	14	4.633	33.629	.509	1.853	1	H2-1
285	M303	L3 1/2x3...	.063	0	3	.004	0	z	16	4.633	33.629	.509	1.853	1	H2-1
286	M313	L3 1/2x3...	.063	0	7	.004	0	z	13	4.633	33.629	.509	1.853	1	H2-1
287	M318	L3 1/2x3...	.052	0	9	.004	12....	z	13	4.633	33.629	.509	1.853	1	H2-1
288	M341	LL2.5x2x...	1.058	6.3...	6	.004	0	z	17	8.054	46.132	3.026	1.367	1	H1-1a
289	M346	LL2.5x2x...	1.054	6.3...	6	.004	13....	z	13	8.054	46.132	3.026	2.188	1	H1-1a
290	M357	LL2.5x2x...	1.035	6.3...	4	.004	13....	z	15	8.054	46.132	3.026	1.367	1	H1-1a
291	M362	LL2.5x2x...	1.036	6.3...	4	.004	13....	z	11	8.054	46.132	3.026	2.188	1	H1-1a
292	M376	LL2.5x2x...	1.063	6.3...	2	.004	13....	z	13	8.054	46.132	3.026	1.367	1	H1-1a
293	M381	LL2.5x2x...	1.061	6.3...	2	.004	13....	z	17	8.054	46.132	3.026	2.188	1	H1-1a
294	M395	LL2.5x2x...	1.051	6.3...	8	.004	13....	z	11	8.054	46.132	3.026	1.367	1	H1-1a
295	M400	LL2.5x2x...	1.045	6.3...	8	.004	13....	z	15	8.054	46.132	3.026	2.188	1	H1-1a
296	M93	L2x2 1/2...	.156	0	5	.003	7.9...	z	16	2.694	17.44	.315	.881	1	H2-1
297	M96	L2x2 1/2...	.153	0	7	.003	7.9...	z	14	2.694	17.44	.315	.881	1	H2-1
298	M100	L2x2 1/2...	.152	0	3	.003	0	z	14	2.694	17.44	.315	.881	1	H2-1
299	M103	L2x2 1/2...	.162	0	5	.003	7.9...	z	16	2.694	17.44	.315	.881	1	H2-1
300	M107	L2x2 1/2...	.163	0	9	.003	7.9...	z	12	2.694	17.44	.315	.881	1	H2-1
301	M110	L2x2 1/2...	.163	0	3	.003	7.9...	z	18	2.694	17.44	.315	.881	1	H2-1
302	M114	L2x2 1/2...	.162	0	7	.003	0	z	14	2.694	17.44	.315	.881	1	H2-1
303	M117	L2x2 1/2...	.155	0	9	.003	7.9...	z	16	2.694	17.44	.315	.881	1	H2-1
304	M126	L2x2 1/2...	.113	0	5	.003	0	z	17	2.901	17.44	.315	.902	1	H2-1
305	M129	L2x2 1/2...	.113	0	7	.003	7.6...	z	13	2.901	17.44	.315	.902	1	H2-1
306	M133	L2x2 1/2...	.112	0	3	.003	0	z	15	2.901	17.44	.315	.902	1	H2-1

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
307	M136	L2x2 1/2...	.125	0	5	.003	7.6...	z	11	2.901	17.44	.315	.902	1	H2-1
308	M140	L2x2 1/2...	.126	0	9	.003	0	z	13	2.901	17.44	.315	.902	1	H2-1
309	M143	L2x2 1/2...	.123	0	3	.003	7.6...	z	17	2.901	17.44	.315	.902	1	H2-1
310	M147	L2x2 1/2...	.122	0	7	.003	7.6...	z	11	2.901	17.44	.315	.902	1	H2-1
311	M150	L2x2 1/2...	.112	0	9	.003	0	z	15	2.901	17.44	.315	.902	1	H2-1
312	M163	L2 1/2x2 ...	.145	0	5	.003	0	z	12	3.439	19.444	.233	.902	1	H2-1
313	M166	L2 1/2x2 ...	.138	0	7	.003	0	z	18	3.439	19.444	.233	.902	1	H2-1
314	M170	L2 1/2x2 ...	.137	0	3	.003	8.5...	z	18	3.439	19.444	.233	.902	1	H2-1
315	M173	L2 1/2x2 ...	.141	0	5	.003	0	z	16	3.439	19.444	.233	.902	1	H2-1
316	M177	L2 1/2x2 ...	.141	0	9	.003	0	z	16	3.439	19.444	.233	.902	1	H2-1
317	M180	L2 1/2x2 ...	.147	0	3	.003	0	z	14	3.439	19.444	.233	.902	1	H2-1
318	M184	L2 1/2x2 ...	.145	0	7	.003	0	z	14	3.439	19.444	.233	.902	1	H2-1
319	M187	L2 1/2x2 ...	.143	0	9	.003	0	z	12	3.439	19.444	.233	.902	1	H2-1
320	M196	L2 1/2x2 ...	.125	0	5	.003	0	z	12	3.623	19.444	.233	.912	1	H2-1
321	M199	L2 1/2x2 ...	.120	0	7	.003	0	z	18	3.623	19.444	.233	.912	1	H2-1
322	M203	L2 1/2x2 ...	.120	0	3	.003	0	z	18	3.623	19.444	.233	.912	1	H2-1
323	M206	L2 1/2x2 ...	.125	0	5	.003	0	z	16	3.623	19.444	.233	.912	1	H2-1
324	M210	L2 1/2x2 ...	.125	0	9	.003	0	z	12	3.623	19.444	.233	.912	1	H2-1
325	M213	L2 1/2x2 ...	.129	0	3	.003	8.2...	z	18	3.623	19.444	.233	.912	1	H2-1
326	M217	L2 1/2x2 ...	.127	0	7	.003	8.2...	z	18	3.623	19.444	.233	.912	1	H2-1
327	M220	L2 1/2x2 ...	.124	0	9	.003	8.2...	z	16	3.623	19.444	.233	.912	1	H2-1
328	M233	L2 1/2x2 ...	.283	0	5	.004	0	z	16	3.171	19.444	.233	.885	1	H2-1
329	M236	L2 1/2x2 ...	.270	0	7	.004	0	z	14	3.171	19.444	.233	.885	1	H2-1
330	M240	L2 1/2x2 ...	.270	0	3	.004	0	z	14	3.171	19.444	.233	.885	1	H2-1
331	M243	L2 1/2x2 ...	.266	0	5	.004	0	z	12	3.171	19.444	.233	.885	1	H2-1
332	M247	L2 1/2x2 ...	.267	0	9	.004	0	z	12	3.171	19.444	.233	.885	1	H2-1
333	M250	L2 1/2x2 ...	.276	0	3	.004	8.8...	z	18	3.171	19.444	.233	.885	1	H2-1
334	M254	L2 1/2x2 ...	.274	0	7	.004	8.8...	z	18	3.171	19.444	.233	.885	1	H2-1
335	M257	L2 1/2x2 ...	.281	0	9	.004	8.8...	z	16	3.171	19.444	.233	.885	1	H2-1
336	M271	L2 1/2x2 ...	.187	0	6	.003	9.35	z	17	3.105	19.444	.233	.881	1	H2-1
337	M276	L2 1/2x2 ...	.182	0	6	.003	9.35	z	13	3.105	19.444	.233	.881	1	H2-1
338	M287	L2 1/2x2 ...	.185	0	4	.003	0	z	11	3.105	19.444	.233	.881	1	H2-1
339	M297	L2 1/2x2 ...	.185	0	2	.003	0	z	13	3.105	19.444	.233	.881	1	H2-1
340	M302	L2 1/2x2 ...	.190	0	2	.003	9.35	z	17	3.105	19.444	.233	.881	1	H2-1
341	M312	L2 1/2x2 ...	.186	0	8	.003	9.35	z	11	3.105	19.444	.233	.881	1	H2-1
342	M317	L2 1/2x2 ...	.180	0	8	.003	0	z	15	3.105	19.444	.233	.881	1	H2-1
343	M438A	L2 1/2x2 ...	.179	9.35	4	.002	9.35	y	6	3.105	19.444	.233	.881	1	H2-1
344	M340	L2 1/2x2 ...	.095	0	7	.003	0	z	17	2.804	19.444	.233	.86	1	H2-1
345	M345	L2 1/2x2 ...	.098	0	5	.003	0	z	13	2.804	19.444	.233	.86	1	H2-1
346	M356	L2 1/2x2 ...	.087	0	5	.003	0	z	15	2.804	19.444	.233	.86	1	H2-1
347	M361	L2 1/2x2 ...	.096	0	3	.003	0	z	11	2.804	19.444	.233	.86	1	H2-1
348	M375	L2 1/2x2 ...	.093	0	3	.003	9.6...	z	13	2.804	19.444	.233	.86	1	H2-1
349	M380	L2 1/2x2 ...	.091	0	9	.003	9.6...	z	17	2.804	19.444	.233	.86	1	H2-1
350	M394	L2 1/2x2 ...	.099	0	9	.003	0	z	11	2.804	19.444	.233	.86	1	H2-1
351	M399	L2 1/2x2 ...	.090	0	7	.003	9.6...	z	15	2.804	19.444	.233	.86	1	H2-1
352	M435	LL2.5x2....	.053	5.6...	12	.002	0	y	5	10.751	51.305	3.54	2.217	1	H1-1b
353	M436	LL2.5x2....	.053	5.9...	16	.002	11....	y	5	10.751	51.305	3.54	2.217	1	H1-1b
354	M437	LL2.5x2....	.053	5.6...	14	.002	11....	y	3	10.751	51.305	3.54	2.217	1	H1-1b
355	M438	LL2.5x2....	.053	5.9...	18	.002	11....	y	3	10.751	51.305	3.54	2.217	1	H1-1b
356	M439	LL2.5x2....	.053	5.6...	14	.002	0	y	7	10.751	51.305	3.54	2.217	1	H1-1b
357	M440	LL2.5x2....	.053	5.9...	18	.002	11....	y	7	10.751	51.305	3.54	2.217	1	H1-1b
358	M441	LL2.5x2....	.053	5.6...	16	.002	0	y	9	10.751	51.305	3.54	2.217	1	H1-1b
359	M442	LL2.5x2....	.053	5.9...	12	.002	11....	y	9	10.751	51.305	3.54	2.217	1	H1-1b
360	M412A	LL2.5x2....	.072	6.0...	14	.003	0	y	7	9.571	51.305	3.54	2.217	1	H1-1b
361	M413A	LL2.5x2....	.073	6.2...	18	.003	0	y	7	9.571	51.305	3.54	2.217	1	H1-1b
362	M414A	LL2.5x2....	.073	6.0...	16	.003	12....	y	9	9.571	51.305	3.54	2.217	1	H1-1b
363	M415A	LL2.5x2....	.073	6.2...	12	.003	0	y	9	9.571	51.305	3.54	2.217	1	H1-1b

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....		Eqn
364	M416	LL2.5x2....	.110	6.0...	18	.004	12....	y	16	9.571	51.305	3.54	2.217	1	H1-1b
365	M417	LL2.5x2....	.072	6.2...	14	.003	12....	y	3	9.571	51.305	3.54	2.217	1	H1-1b
366	M418	LL2.5x2....	.071	6.0...	12	.003	12....	y	5	9.571	51.305	3.54	2.217	1	H1-1b
367	M419	LL2.5x2....	.071	6.2...	16	.003	12....	y	5	9.571	51.305	3.54	2.217	1	H1-1b
368	M290	L4x4x3/8	.002	0	5	.006	13....	z	16	10.012	61.653	1.18	4.89	1	H2-1
369	M305	L4x4x3/8	.002	0	3	.006	13....	z	18	10.012	61.653	1.18	4.89	1	H2-1
370	M320	L4x4x3/8	.002	0	9	.006	13....	z	16	10.012	61.653	1.18	4.89	1	H2-1
371	M324	L4x4x3/8	.002	0	7	.006	13....	z	18	10.012	61.653	1.18	4.89	1	H2-1
372	M365	L4x4x3/8	.005	0	18	.006	15....	z	12	10.012	61.653	1.18	4.89	1	H2-1
373	M384	L4x4x3/8	.005	0	16	.006	15....	z	14	10.012	61.653	1.18	4.89	1	H2-1
374	M403	L4x4x3/8	.005	0	14	.006	15....	z	12	10.012	61.653	1.18	4.89	1	H2-1
375	M406	L4x4x3/8	.005	0	12	.006	15....	z	14	10.012	61.653	1.18	4.89	1	H2-1
376	M270	LL2.5x2....	.044	4.8...	18	.004	9.6...	z	16	16.69	51.305	4.209	2.217	1	H1-1b
377	M275	LL2.5x2....	.044	4.8...	12	.004	9.6...	z	14	16.69	51.305	4.209	2.217	1	H1-1b
378	M281	LL2.5x2....	.043	4.8...	16	.004	9.6...	z	14	16.69	51.305	4.209	2.217	1	H1-1b
379	M286	LL2.5x2....	.044	4.8...	9	.004	9.6...	z	12	16.69	51.305	4.209	2.217	1	H1-1b
380	M296	LL2.5x2....	.044	4.8...	5	.004	9.6...	z	12	16.69	51.305	4.209	2.217	1	H1-1b
381	M301	LL2.5x2....	.044	4.8...	7	.004	9.6...	z	18	16.69	51.305	4.209	2.217	1	H1-1b
382	M311	LL2.5x2....	.044	4.8...	3	.004	9.6...	z	18	16.69	51.305	4.209	2.217	1	H1-1b
383	M316	LL2.5x2....	.044	4.8...	14	.004	9.6...	z	16	16.69	51.305	4.209	2.217	1	H1-1b
384	M339	LL2.5x2....	.055	5.4...	11	.004	0	z	16	12.281	51.305	4.209	2.217	1	H1-1b
385	M344	LL2.5x2....	.055	5.4...	11	.004	0	z	14	12.281	51.305	4.209	2.217	1	H1-1b
386	M355	LL2.5x2....	.054	5.4...	17	.004	0	z	14	12.281	51.305	4.209	2.217	1	H1-1b
387	M360	LL2.5x2....	.054	5.4...	17	.004	0	z	12	12.281	51.305	4.209	2.217	1	H1-1b
388	M374	LL2.5x2....	.054	5.4...	15	.004	0	z	12	12.281	51.305	4.209	2.217	1	H1-1b
389	M379	LL2.5x2....	.054	5.4...	15	.004	0	z	18	12.281	51.305	4.209	2.217	1	H1-1b
390	M393	LL2.5x2....	.054	5.4...	13	.004	0	z	18	12.281	51.305	4.209	2.217	1	H1-1b
391	M398	LL2.5x2....	.055	5.4...	13	.004	0	z	16	12.281	51.305	4.209	2.217	1	H1-1b
392	M92	L2x2 1/2...	.090	0	9	.004	5.37	z	18	5.873	17.44	.315	1.079	1	H2-1
393	M95	L2x2 1/2...	.089	0	3	.004	5.37	z	12	5.873	17.44	.315	1.079	1	H2-1
394	M99	L2x2 1/2...	.088	0	7	.004	5.37	z	17	5.873	17.44	.315	1.079	1	H2-1
395	M102	L2x2 1/2...	.093	0	9	.004	5.37	z	17	5.873	17.44	.315	1.079	1	H2-1
396	M106	L2x2 1/2...	.093	0	5	.004	5.37	z	15	5.873	17.44	.315	1.079	1	H2-1
397	M109	L2x2 1/2...	.093	0	7	.004	5.37	z	15	5.873	17.44	.315	1.079	1	H2-1
398	M113	L2x2 1/2...	.092	0	3	.004	5.37	z	12	5.873	17.44	.315	1.079	1	H2-1
399	M116	L2x2 1/2...	.089	0	5	.004	5.37	z	14	5.873	17.44	.315	1.079	1	H2-1
400	M125	L2x2 1/2...	.057	0	9	.004	0	z	18	7.058	17.44	.315	1.122	1	H2-1
401	M128	L2x2 1/2...	.057	0	3	.004	0	z	12	7.058	17.44	.315	1.122	1	H2-1
402	M132	L2x2 1/2...	.057	0	7	.003	0	z	17	7.058	17.44	.315	1.122	1	H2-1
403	M135	L2x2 1/2...	.062	0	9	.003	0	z	17	7.058	17.44	.315	1.122	1	H2-1
404	M139	L2x2 1/2...	.062	0	5	.003	0	z	15	7.058	17.44	.315	1.122	1	H2-1
405	M142	L2x2 1/2...	.061	0	7	.003	0	z	15	7.058	17.44	.315	1.122	1	H2-1
406	M146	L2x2 1/2...	.061	0	3	.004	0	z	12	7.058	17.44	.315	1.122	1	H2-1
407	M149	L2x2 1/2...	.057	0	5	.004	0	z	14	7.058	17.44	.315	1.122	1	H2-1
408	M162	L2x2 1/2...	.165	0	9	.004	0	z	18	4.22	17.44	.315	.999	1	H2-1
409	M165	L2x2 1/2...	.161	0	3	.004	0	z	12	4.22	17.44	.315	.999	1	H2-1
410	M169	L2x2 1/2...	.159	0	7	.004	0	z	17	4.22	17.44	.315	.999	1	H2-1
411	M172	L2x2 1/2...	.160	0	9	.004	0	z	18	4.22	17.44	.315	.999	1	H2-1
412	M176	L2x2 1/2...	.161	0	5	.004	0	z	14	4.22	17.44	.315	.999	1	H2-1
413	M179	L2x2 1/2...	.163	0	7	.004	0	z	15	4.22	17.44	.315	.999	1	H2-1
414	M183	L2x2 1/2...	.163	0	3	.004	0	z	12	4.22	17.44	.315	.999	1	H2-1
415	M186	L2x2 1/2...	.164	0	5	.004	0	z	14	4.22	17.44	.315	.999	1	H2-1
416	M195	L2x2 1/2...	.123	0	9	.004	0	z	11	4.945	17.44	.315	1.038	1	H2-1
417	M198	L2x2 1/2...	.120	0	3	.004	0	z	11	4.945	17.44	.315	1.038	1	H2-1
418	M202	L2x2 1/2...	.119	0	7	.004	0	z	17	4.945	17.44	.315	1.038	1	H2-1
419	M205	L2x2 1/2...	.122	0	9	.004	0	z	17	4.945	17.44	.315	1.038	1	H2-1
420	M209	L2x2 1/2...	.123	0	5	.004	0	z	15	4.945	17.44	.315	1.038	1	H2-1

Envelope AISC 13th(360-05): ASD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc...	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om...	Mnzz/om [.....	Eqn
421	M212	L2x2 1/2...	.124	0	7	.004	0	z	15	4.945	17.44	.315	1.038	1 H2-1
422	M216	L2x2 1/2...	.123	0	3	.004	0	z	13	4.945	17.44	.315	1.038	1 H2-1
423	M219	L2x2 1/2...	.122	0	5	.004	0	z	13	4.945	17.44	.315	1.038	1 H2-1
424	M232	L2 1/2x2 ...	.186	0	9	.004	0	z	11	7.001	25.653	.295	1.401	1 H2-1
425	M235	L2 1/2x2 ...	.181	0	3	.004	0	z	11	7.001	25.653	.295	1.401	1 H2-1
426	M239	L2 1/2x2 ...	.180	0	7	.004	0	z	17	7.001	25.653	.295	1.401	1 H2-1
427	M242	L2 1/2x2 ...	.175	0	9	.004	0	z	17	7.001	25.653	.295	1.401	1 H2-1
428	M246	L2 1/2x2 ...	.176	0	5	.004	0	z	15	7.001	25.653	.295	1.401	1 H2-1
429	M249	L2 1/2x2 ...	.179	0	7	.004	0	z	15	7.001	25.653	.295	1.401	1 H2-1
430	M253	L2 1/2x2 ...	.179	0	3	.004	0	z	13	7.001	25.653	.295	1.401	1 H2-1
431	M256	L2 1/2x2 ...	.186	0	5	.004	0	z	13	7.001	25.653	.295	1.401	1 H2-1
432	M269	L2x2 1/2...	.075	0	2	.004	0	z	18	7.549	17.44	.315	1.139	1 H2-1
433	M274	L2x2 1/2...	.075	0	2	.004	0	z	12	7.549	17.44	.315	1.139	1 H2-1
434	M280	L2x2 1/2...	.073	0	8	.004	0	z	16	7.549	17.44	.315	1.139	1 H2-1
435	M285	L2x2 1/2...	.073	0	8	.004	0	z	18	7.549	17.44	.315	1.139	1 H2-1
436	M295	L2x2 1/2...	.074	0	6	.004	0	z	14	7.549	17.44	.315	1.139	1 H2-1
437	M300	L2x2 1/2...	.074	0	6	.004	0	z	16	7.549	17.44	.315	1.139	1 H2-1
438	M310	L2x2 1/2...	.073	0	4	.004	0	z	12	7.549	17.44	.315	1.139	1 H2-1
439	M315	L2x2 1/2...	.073	0	4	.004	0	z	14	7.549	17.44	.315	1.139	1 H2-1
440	M338	L2 1/2x2 ...	.050	0	3	.003	0	z	18	8.266	19.444	.233	1.062	1 H2-1
441	M343	L2 1/2x2 ...	.051	0	9	.003	0	z	16	8.266	19.444	.233	1.062	1 H2-1
442	M354	L2 1/2x2 ...	.047	0	9	.003	0	z	15	8.266	19.444	.233	1.062	1 H2-1
443	M359	L2 1/2x2 ...	.049	0	7	.003	0	z	18	8.266	19.444	.233	1.062	1 H2-1
444	M373	L2 1/2x2 ...	.048	0	7	.003	0	z	18	8.266	19.444	.233	1.062	1 H2-1
445	M378	L2 1/2x2 ...	.047	0	5	.003	0	z	17	8.266	19.444	.233	1.062	1 H2-1
446	M392	L2 1/2x2 ...	.050	0	5	.003	0	z	16	8.266	19.444	.233	1.062	1 H2-1
447	M397	L2 1/2x2 ...	.048	0	3	.003	0	z	15	8.266	19.444	.233	1.062	1 H2-1
448	M347	LL2.5x3....	.308	6.0...	6	.004	6.0...	y	16	38.492	62.515	7.366	1.471	1 H1-1a
449	M363	LL2.5x3....	.303	6.0...	4	.004	6.0...	y	14	38.492	62.515	7.366	1.471	1 H1-1a
450	M382	LL2.5x3....	.310	6.0...	2	.004	6.0...	y	18	38.492	62.515	7.366	1.471	1 H1-1a
451	M401	LL2.5x3....	.306	6.0...	8	.004	6.0...	y	16	38.492	62.515	7.366	1.471	1 H1-1a
452	M484	L2.5x2.5x3	.013	3.0...	11	.000	6.7...	y	5	4.859	19.423	.581	.969	1 H2-1
453	M488	L2.5x2.5x3	.013	3.0...	17	.000	0	y	3	4.859	19.423	.581	.969	1 H2-1
454	M492	L2.5x2.5x3	.013	3.0...	15	.000	0	y	17	4.859	19.423	.581	.969	1 H2-1
455	M496	L2.5x2.5x3	.013	3.0...	13	.000	6.7...	y	6	4.859	19.423	.581	.969	1 H2-1
456	M485	L2.5x2.5x3	.020	2.98	11	.000	6.6...	y	5	4.918	19.423	.581	.972	1 H2-1
457	M489	L2.5x2.5x3	.020	2.98	17	.000	6.6...	y	3	4.918	19.423	.581	.972	1 H2-1
458	M493	L2.5x2.5x3	.020	2.98	15	.000	0	y	9	4.918	19.423	.581	.972	1 H2-1
459	M497	L2.5x2.5x3	.020	2.98	13	.000	0	y	8	4.918	19.423	.581	.972	1 H2-1
460	M486	L2.5x2.5x3	.012	2.9...	11	.000	6.61	y	5	5.001	19.423	.581	.975	1 H2-1
461	M490	L2.5x2.5x3	.012	2.9...	17	.000	6.61	y	2	5.001	19.423	.581	.975	1 H2-1
462	M494	L2.5x2.5x3	.012	2.9...	15	.000	0	y	9	5.001	19.423	.581	.975	1 H2-1
463	M498	L2.5x2.5x3	.012	2.9...	13	.000	0	y	7	5.001	19.423	.581	.975	1 H2-1
464	M420	L3x3x1/4	.035	0	3	.001	0	y	3	7.098	31.042	.447	1.882	1 H2-1
465	M421	L3x3x1/4	.035	0	9	.001	8.6...	y	9	7.098	31.042	.447	1.882	1 H2-1
466	M422	L3x3x1/4	.035	0	9	.001	0	y	9	7.098	31.042	.447	1.882	1 H2-1
467	M423	L3x3x1/4	.035	0	7	.001	8.6...	y	7	7.098	31.042	.447	1.882	1 H2-1
468	M424	L3x3x1/4	.034	0	3	.001	8.6...	y	3	7.098	31.042	.447	1.882	1 H2-1
469	M425	L3x3x1/4	.034	0	5	.001	8.6...	y	5	7.098	31.042	.447	1.882	1 H2-1
470	M426	L3x3x1/4	.035	0	5	.001	8.6...	y	5	7.098	31.042	.447	1.882	1 H2-1
471	M427	L3x3x1/4	.035	0	7	.001	0	y	7	7.098	31.042	.447	1.882	1 H2-1
472	M420A	L3x3x1/4	.005	0	17	.000	0	y	2	7.544	31.042	.447	1.902	1 H2-1
473	M421A	L3x3x1/4	.005	0	15	.000	8.3...	y	8	7.544	31.042	.447	1.902	1 H2-1
474	M422A	L3x3x1/4	.005	0	13	.000	0	y	2	7.544	31.042	.447	1.902	1 H2-1
475	M423A	L3x3x1/4	.005	0	11	.000	0	y	8	7.544	31.042	.447	1.902	1 H2-1

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N189	max	27.831	7	198.197	7	21.267	3	0	1	.006	6	0	1
2		min	-21.421	3	-143.027	3	-27.873	7	0	1	-.008	2	0	1
3	N190	max	21.956	9	197.755	5	21.075	9	0	1	.021	2	0	1
4		min	-28.366	5	-145.177	9	-27.413	5	0	1	-.022	6	0	1
5	N191	max	21.192	7	197.39	3	27.905	3	0	1	.032	9	0	1
6		min	-27.727	3	-143.835	7	-21.568	7	0	1	-.029	5	0	1
7	N192	max	27.402	9	199.54	9	28.574	9	0	1	.025	8	0	1
8		min	-20.867	5	-143.393	5	-21.967	5	0	1	-.024	4	0	1
9	Totals:	max	82.023	8	184.427	11	83.524	2						
10		min	-82.023	4	108.721	9	-83.524	6						

BUILT-UP MEMBERS

E6.1 (AISC 13th Edition pg 16.1-37)

Modified Member: X-X Axis

Existing Member								Modification						Built-Up Member											Member Analysis				
Section	Member	Member Type	Area (in^2)	I_x (in^4)	r_x (in)	r_z (in)	Ka/r_x	Mod Type	Area (in^2)	I_x (in^4)	r_x (in)	r_z (in)	Ka/r_x	Connection Type	I_{x-x} (in^4)	L_b (in)	a (in)	h (in)	Area (in^2)	r_{x-x} (in)	$(KL/r)_o$	r_i (in)	r_{ib} (in)	α	$(KL/r)_m$	$0.75(KL/r)_o$	a/r_i	Design met?	$(Ka/r)_{max}$	(KL/r)
T4	Diag	L3x4x1/4	1.69	0.734	0.660	0.716	36.39	L2x3x3/8	1.73	0.543	0.559	0.320	42.91	1	3.1453	138.24	24	1.27	1.6875	1.365	101.26	0.320	0.559	1.13	125.95	75.94	74.91	Yes	247.18	125.95

1=bolted, 2=welded

Modified Member: Y-Y Axis

Existing Member								Modification					Built-Up Member											Member Analysis				
Section	Member	Member Type	Area (in^2)	I_y (in^4)	r_y (in)	r_z (in)	Ka/r_y	Mod Type	Area (in^2)	I_y (in^4)	r_y (in)	r_z (in)	Ka/r_y	Connection Type	I_{y-y} (in^4)	L_b (in)	a (in)	h (in)	Area (in^2)	r_{y-y} (in)	$(KL/r)_o$	r_i (in)	r_{ib} (in)	α	$(KL/r)_m$	$0.75(KL/r)_o$	a/r_i	Design met?	$(Ka/r)_{max}$	(KL/r)
T4	Diag	L3x4x1/4	1.69	2.769	1.281	0.716	18.74	L2x3x3/8	1.73	1.532	0.940	0.320	25.54	1	4.4770	138.24	24	0.23	1.6875	1.629	84.87	0.320	0.940	0.12	113.20	63.65	74.91	No	147.10	147.10

1=bolted, 2=welded

Note: Modifications are considered for stiffness only.

Project #: 2016723.01.SNET025.08

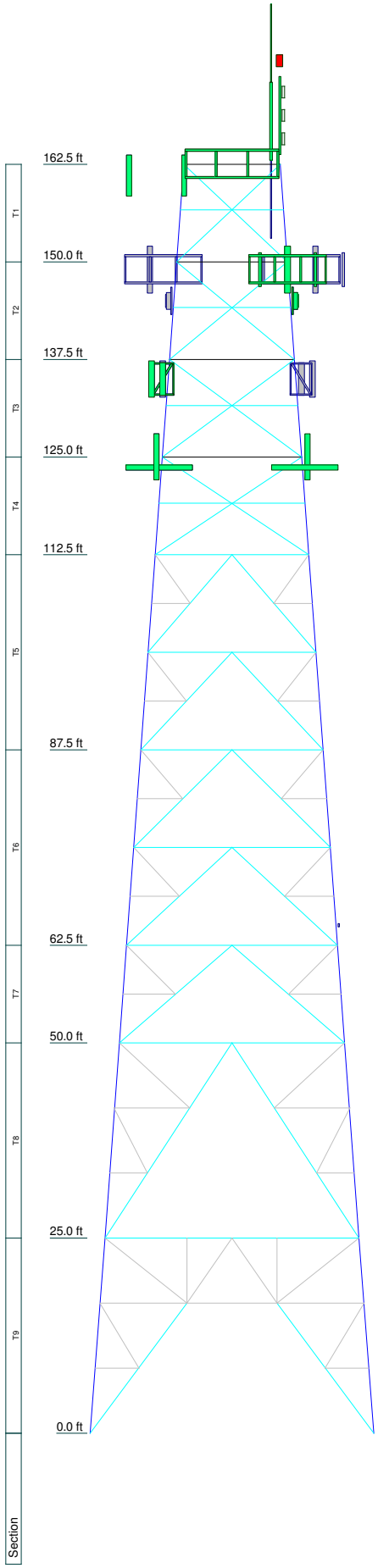
Bolt Checks

Date: 8/23/2016

Section #	Elevation	Component Type	Bolt Grade	Bolt Size (in)	# of Bolts	Maximum Load (k)	Maximum Load per Bolt (k)	Allowable Load per Bolt (k)	Ratio	Allowable Ratio	% Capacity	Criteria
T1	162.5	Diagonal	A307	0.75	5	4.22	0.844	4.418	0.191	1.333	14.3%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.103	0.052	4.418	0.012	1.333	0.9%	Bolt Shear
T2	150	Leg	A307	0.75	16	18.259	2.282	8.836	0.258	1.333	19.4%	Bolt DS
		Diagonal	A307	0.75	4	7.535	1.884	4.418	0.426	1.333	32.0%	Bolt Shear
		Secondary Horizontal	A307	0.75	3	1.296	0.432	4.418	0.098	1.333	7.3%	Bolt Shear
T3	137.5	Diagonal	A307	0.75	5	8.243	1.649	4.418	0.373	1.333	28.0%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.346	0.173	8.836	0.020	1.333	1.5%	Bolt Shear
T4	125	Leg	A307	0.75	16	48.489	6.061	8.836	0.686	1.333	51.5%	Bolt DS
		Top Girt	A307	0.75	2	2.51	1.255	8.836	0.142	1.333	10.7%	Bolt Shear
		Diagonal	A307	0.75	4	10.395	2.599	4.418	0.588	1.333	44.1%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.409	0.204	8.836	0.023	1.333	1.7%	Bolt Shear
T5	112.5	Leg	A307	0.75	20	74.992	7.499	8.836	0.849	1.333	63.7%	Bolt DS
		Horizontal	A307	0.75	2	8.809	4.404	8.836	0.498	1.333	37.4%	Bolt Shear
		Diagonal	A307	0.75	2	13.253	6.626	8.836	0.750	1.333	56.3%	Bolt Shear
		Inner Kicker	A307	0.75	2	1.826	0.913	4.418	0.207	1.333	15.5%	Bolt Shear
T6	87.5	Leg	A307	0.75	28	108.237	7.731	8.836	0.875	1.333	65.6%	Bolt DS
		Horizontal	A307	0.75	2	9.938	4.969	8.836	0.562	1.333	42.2%	Bolt Shear
		Diagonal	A307	0.75	2	13.986	6.993	8.836	0.791	1.333	59.4%	Bolt Shear
		Inner Kicker	A307	0.75	2	1.778	0.889	4.418	0.201	1.333	15.1%	Bolt Shear
T7	62.5	Leg	A307	0.75	28	124.504	8.893	8.836	1.006	1.333	75.5%	Bolt DS
		Horizontal	A307	0.75	2	10.443	5.222	8.836	0.591	1.333	44.3%	Bolt Shear
		Diagonal	A307	0.75	3	14.328	4.776	8.836	0.541	1.333	40.6%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	1.447	0.724	4.418	0.164	1.333	12.3%	Bolt Shear
		Inner Kicker	A307	0.75	2	1.95	0.975	4.418	0.221	1.333	16.6%	Bolt Shear
T8	50	Leg	A307	0.75	32	139.984	8.749	8.836	0.990	1.333	74.3%	Bolt DS
		Diagonal	A325N	0.75	3	21.352	7.117	18.555	0.384	1.333	28.8%	Bolt Shear
		Horizontal	A307	0.75	3	11.285	3.762	8.836	0.426	1.333	31.9%	Bolt Shear
		Inner Kicker	A307	0.75	2	1.798	0.899	4.418	0.203	1.333	15.3%	Bolt Shear
T9	25	Leg	A307	0.75	36	162.602	9.033	8.836	1.022	1.333	76.7%	Bolt DS
		Horizontal	A307	0.75	3	13.27	4.423	8.836	0.501	1.333	37.6%	Bolt Shear
		Diagonal	A307	0.75	5	24.267	4.853	8.836	0.549	1.333	41.2%	Bolt Shear
		Redundant Diagonal 2	A307	0.75	2	8.25	4.125	8.836	0.467	1.333	35.0%	Bolt Shear
		Redundant Subhorizontal	A307	0.75	2	10.501	5.25	8.836	0.594	1.333	44.6%	Bolt Shear
		Inner Kicker	A307	0.75	2	3.054	1.527	4.418	0.346	1.333	25.9%	Bolt Shear
		Inner Square	A307	0.75	2	2.652	1.326	8.836	0.150	1.333	11.3%	Bolt Shear
		Anchor Rods	C1015	2.25	4	162.602	40.65	73.478	0.553	1.333	41.5%	Bolt Tension
										Maximum Capacity	76.7%	

APPENDIX C

Tower Elevation Drawing



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Top Platform w/ Hand Rail	162.5	(2) 2.5" x 3.5' Mount Pipe	145
Flash Beacon Lighting	162.5	(2) 2.5" x 3.5' Mount Pipe	145
W5 x 13' Mount	162.5	30' x 30' Cross Catwalk w/ Handrails	144
10' Dipole	162.5	2' Standoff - Round (GPD)	135
10' Dipole	162.5	2' Standoff - Round (GPD)	135
5' Omni	162.5	2' Standoff - Round (GPD)	135
10' P4x.237 Mount Pipe	162.5	AIR21 B4A/B2P w/ mount pipe	135
2' Standoff	162.5	AIR21 B4A/B2P w/ mount pipe	135
2' Standoff	162.5	AIR21 B4A/B2P w/ mount pipe	135
10' Omni	162.5	DBXNH-6565A-A2M w/ mount pipe	135
W8 x 19' Beams	162.5	DBXNH-6565A-A2M w/ mount pipe	135
W8 x 19' Beams	162.5	DBXNH-6565A-A2M w/ mount pipe	135
(2) RA21.7770.00 w/Mount Pipe	162.5	RRUS 11 B2	135
(2) RA21.7770.00 w/Mount Pipe	162.5	RRUS 11 B2	135
(2) RA21.7770.00 w/Mount Pipe	162.5	RRUS 11 B2	135
(2) LGP21401	162.5	RRUS 11 B12	135
(2) LGP21401	162.5	RRUS 11 B12	135
(2) LGP21401	162.5	RRUS 11 B12	135
P65-16-XLH-RR w/ Mount Pipe	162.5	KRY 112 144/1	135
P65-16-XLH-RR w/ Mount Pipe	162.5	KRY 112 144/1	135
P65-16-XLH-RR w/ Mount Pipe	162.5	KRY 112 144/1	135
(2) RBS 6000	162.5	Sabre 12' T-Boom (1)	124
(2) RBS 6000	162.5	Sabre 12' T-Boom (1)	124
(2) RBS 6000	162.5	Sabre 12' T-Boom (1)	124
DC6-48-60-18-8F Surge Suppression Unit	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
		(2) DB846F65ZAXY w/Mount Pipe	124
DC6-48-60-18-8F Surge Suppression Unit	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
		BXA-70063-6CF-EDIN-4 w/ Mount Pipe	124
DC6-48-60-18-8F Surge Suppression Unit	162.5		
		BXA-70063-6CF-EDIN-4 w/ Mount Pipe	124
Sabre 14' T-Boom (1)	149		
Sabre 14' T-Boom (1)	149	BXA-70063-6CF-EDIN-4 w/ Mount Pipe	124
Sabre 14' T-Boom (1)	149		
(2) 7182.07 w/ Mount Pipe	149	BXA-171063/8CF w/Mount Pipe	124
(2) 7184.05 w/ Mount Pipe	149	BXA-171063/8CF w/Mount Pipe	124
(2) 7184.05 w/ Mount Pipe	149	BXA-171063/8CF w/Mount Pipe	124
APXVSPP18-C-A20 w/ Mount Pipe	149	BXA-185085/12CF w/ Mount Pipe	124
APXVSPP18-C-A20 w/ Mount Pipe	149	BXA-185063/12CF w/ mount pipe	124
APXVSPP18-C-A20 w/ Mount Pipe	149	BXA-185063/12CF w/ mount pipe	124
800MHZ 2X50W RRH	145	RRH2x40-AWS	124
800MHZ 2X50W RRH	145	RRH2x40-AWS	124
800MHZ 2X50W RRH	145	RRH2x40-AWS	124
800 External Notch Filter	145	DB-T1-6Z-8AB-0Z	124
800 External Notch Filter	145	4.25' x 7' Catwalk	112.5
800 External Notch Filter	145	23' x 3' Catwalk	87.5
1900MHz 4X40W RRH	145	23' x 3' Catwalk	87.5
1900MHz 4X40W RRH	145	GPS-TMG-HR-26N	65
1900MHz 4X40W RRH	145	13' x 4.25' Catwalk	62.5
(2) 2.5" x 3.5' Mount Pipe	145	13' x 4.25' Catwalk	25

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

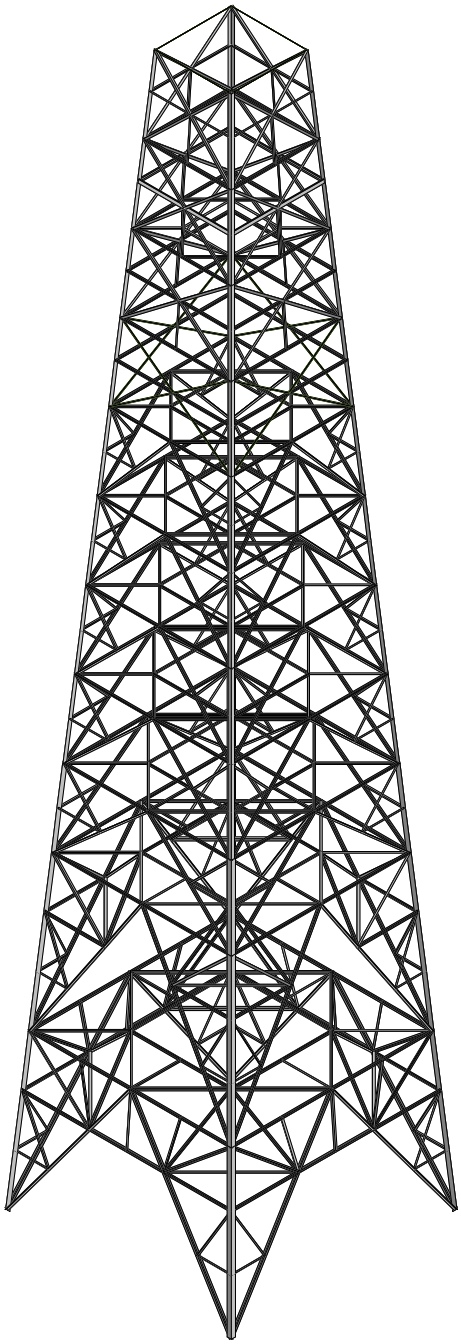
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

GPD

520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

GPD Group

Job: **SNET025 SHELTON**			
Project: **2016723.01.SNET025.08**			
Client: AT&T Towers	Drawn by: tclark		App'd:
Code: TIA/EIA-222-F	Date: 08/23/16		Scale: NTS
Path: T:\ATandT\SNET025\14 2016723.01.SNET025.08 AT&T SA\Software Analysis Files\TNX\SNET025 Modified.eri			Dwg No. E-1



Envelope Only Solution

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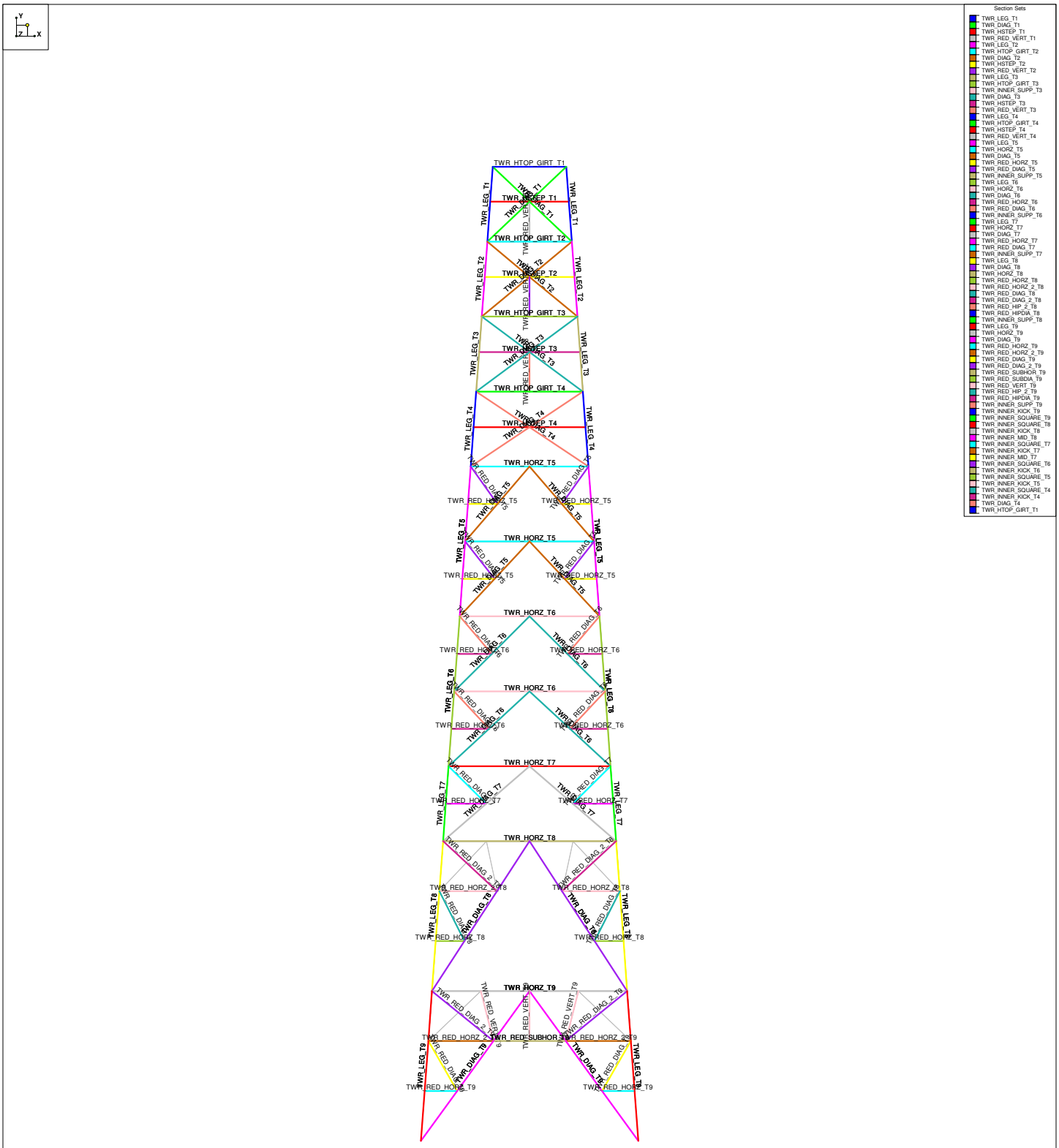
tclark		Aug 23, 2016 at 2:27 PM
2016723.01.SNET025.08		SNET025 - Modified - angle replac...



Envelope Only Solution

GPD	SNET025 SHELTON	SK - 2
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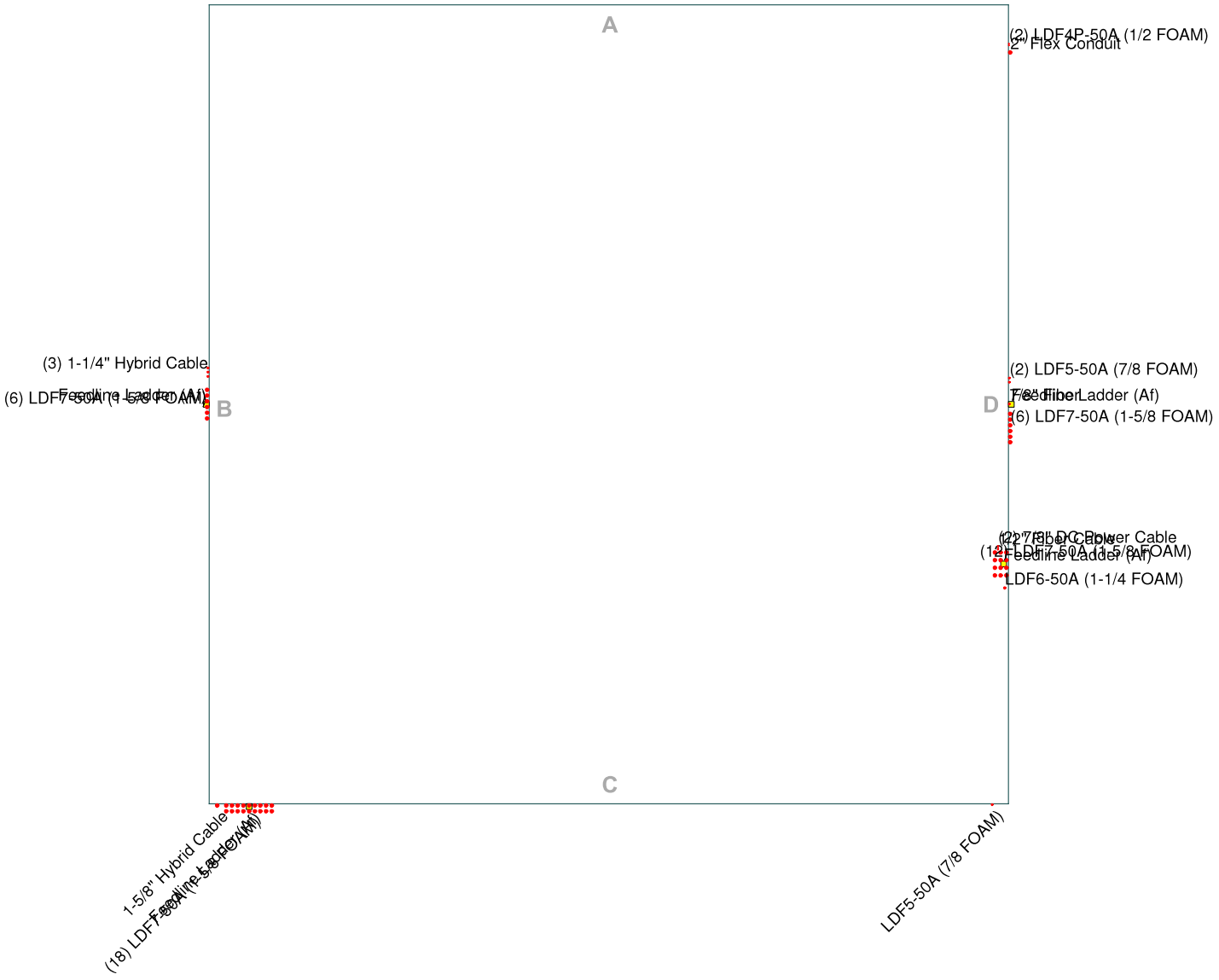
2016723.01.SNET025.08		SNET025 - Modified - angle replac...

Feed Line Plan

Round Flat App In Face App Out Face



GPD Group

GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: ***SNET025 SHELTON***			
Project: ***2016723.01.SNET025.08***			
Client: AT&T Towers	Drawn by: tclark	App'd:	
Code: TIA/EIA-222-F	Date: 08/22/16	Scale: NTS	
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APPENDIX D

Foundation Analysis

Mat Foundation Analysis
SNET025 SHELTON
2016723.01.SNET025.08

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1.05

Tower Reactions		
Moment, M		k-ft
Axial, P	199.54	k
Shear, V	39.59	k

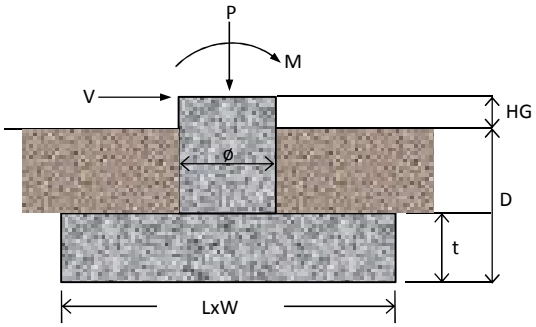
Pad & Pier Geometry		
Pier Width, ø	5.07464156	ft
Pad Length, L	16	ft
Pad Width, W	16	ft
Pad Thickness, t	2	ft
Depth, D	8	ft
Height Above Grade, HG	1	ft

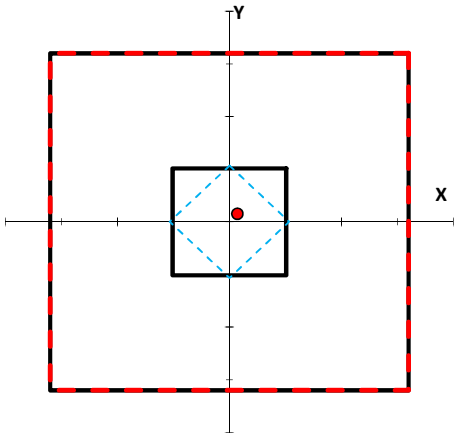
Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover	3	in
Reinforced Top & Bottom?		
Pad Reinforcing Size		
Pad Quantity Per Layer		
Pier Rebar Size		
Pier Quantity of Rebar		

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	34	°
Bearing Type	Net	
Ultimate Bearing	12	ksf
Water Table Depth	8	ft
Frost Depth	3	ft

Bearing Summary			Load Case
Qxmax	1.84	ksf	1D+1W
Qymax	1.84	ksf	1D+1W
Qmax @ 45°	2.33	ksf	1D+1W
$Q_{(all)\ Gross}$	6.48	ksf	
Controlling Capacity	**36.0%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	851.08	≥1.5	1D+1W
FS(ot)y	851.08	≥1.5	1D+1W
Controlling Capacity	**0.2%**	**Pass**	





GPD GROUP

Base Foundation Reinforcement Check
SNET025 SHELTON
2016723.01.SNET025.08

Code
TIA/EIA-222-F

Tower Reactions		
Moment	0	k-ft
Axial	199.54	k
Shear	39.59	k

Pad & Pier Geometry		
Height	8	ft
Height above Grade	1	ft
Pad Length, L	16	ft
Pad Width, W	16	ft
Pad Thickness	2	ft
Pier Shape	Square	
Square Pier Width	3.5	ft

Pad & Pier Reinforcing		
Reinforcing Known	No	
f_c'	3	ksi
Clear Cover	3	in
Rebar Fy	60	ksi
Reinforced Top & Bottom?	Yes	
Pad Rebar Size	# 6	
Pad Rebar Quantity	10	
Pier Rebar Size	# 8	
Pier Rebar Quantity	12	

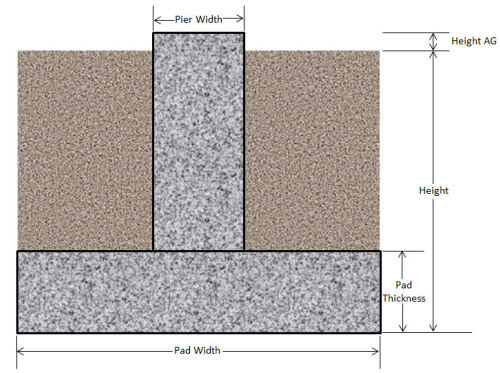
Unit Weights		
Concrete Unit Weight	150	pcf
Soil Unit Weight	120	pcf

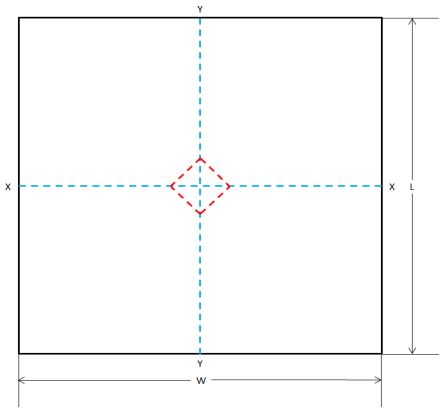
Orthogonal Bearing		
Q_{max}	1.84	ksf
Q_{min}	1.83	ksf

Pad Moment Capacity		
M_u=	9.99	k-ft
ϕM_n=	24.26	k-ft
Moment Capacity	41.2%	**OK**
One-Way (Wide-Beam) Shear		
V_u=	37.58	kips
ϕV_n=	313.52	kips
Shear Capacity	12.0%	**OK**
Two-Way (Punching) Shear		
V_u=	314.20	kips
ϕV_n=	808.28	kips
Shear Capacity	38.9%	**OK**
Pier Compression		
P_u=	259.40	kips
ϕP_n=	2622.27	kips
Compression Capacity	9.9%	**OK**

Overall Capacities		
Reinforcement Capacity	41.2%	**OK**
As Min Met?	Yes	
Controlling Capacity	**41.2%**	**OK**

<--- Reinforcement unknown; minimums assumed



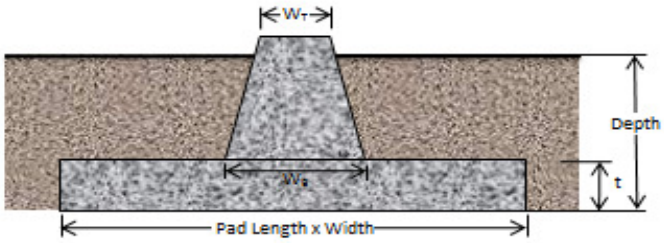


Individual Pad and Frustum Uplift Check
SNET025 SHELTON
2016723.01.SNET025.08

Tower Reactions		
Uplift	145.177	k

Uplift Summary		
Capacity	**71.1%**	**OK**

General Info	
Code	TIA/EIA-222-F
Max Capacity	1.05



Pad & Pier Geometry		
Pier Top Width W_T	3.5	ft
Pier Bottom Widthm W_B	6.5	ft
Pad Length, L	16	ft
Pad Width, W	16	ft
Pad Thickness, t	2	ft
Depth, D	8	ft
Height Above Grade, HG	1	ft

Soil Capacity Calculations		
W_s	242.14	k
W_c	103.84	k
Uplift Resistance	204.14	k

Soil Properties					
Ignored Depth	3	ft	Water Table	8	ft
Layer	C, psf	ϕ, degrees	γ_{soil}, pcf	$\gamma_{concrete}$, pcf	d, ft
1	0	0	120	150	3
2	0	34	120	150	5
3	0	36	182.4	150	7

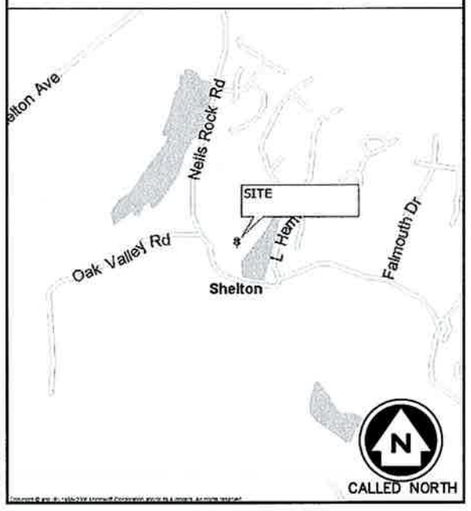
T-MOBILE NORTHEAST LLC

CT11199A
CT11199A_SHELTON_BUDDINGTONRD

219 NELLS ROCK ROAD
SHELTON, CT 06484

(701D_WU21 CONFIGURATION)

VICINITY MAP



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL:
"CALL BEFORE YOU DIG"
WWW.CBYD.COM
CALL 811, OR 1-800-922-4455
CALL THREE WORKING DAYS PRIOR TO DIGGING
SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC	– RED	SEWER	– GREEN
GAS/OIL	– YELLOW	SURVEY	– PINK
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES. RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T–MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T–MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T–MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.

PROJECT SUMMARY

SITE NUMBER:	CT11199A	APPLICANT:	T–MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088
SITE NAME:	CT11199A_SHELTON_BUDDINGTONRD		
SITE ADDRESS:	219 NELLS ROCK ROAD SHELTON, CT 06484	PROJECT MANAGER:	TRANSCEND WIRELESS 10 INDUSTRIAL AVE, SUITE 3 MAHWAH, NJ 07430
PROPERTY OWNER:	NEW CINGULAR WIRELESS PCS LLC		
PARCEL:	90.–2	CONTACT:	JAMIE MARCHINI (973) 885–0660
ZONING:	R–1		
JURISDICTION:	TOWN OF SHELTON	ARCHITECT/ENGINEER:	INFINIGY ENGINEERING 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205
LAT./LONG.:	N 41.304025° / W –73.118183°		
CONSTRUCTION TYPE:	L700 UPGRADE	CONTACT:	ALEX WELLER 518–690–0790

PROJECT DESCRIPTION

☐ EXISTING MONOPOLE	☒ EXISTING CABINET(S)	☐ OUTDOOR
☒ EXISTING LATTICE TOWER	☐ EXISTING RBS 6201	☒ INDOOR
☐ EXISTING TRANSMISSION TOWER	☒ EXISTING RBS 3206	☐ EXISTING CONCRETE PAD
☐ EXISTING BILLBOARD	☒ EXISTING S8000	☐ EXISTING STEEL PLATFORM
☐ EXISTING ROOFTOP	☐ SITE SUPPORT KIT	☐ EXISTING PPC
☐ EXISTING FLAGPOLE	☐ SITE SUPPORT CABINET	☐ PANELBOARD
☐ EXISTING FORT WORTH	☒ GPS	

T–MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN UNMANNED WIRELESS BROADBAND FACILITY. ADDITION OF PROPOSED LTE PANEL ANTENNAS, RRU'S AND FIBER CABLE. REUSE, GPS AND EQUIPMENT CABINTES LOCATED IN EQUIPMENT ROOM. REMOVE EXISTING S8000 EQUIPMENT CABINET.

SHEET INDEX

SHEET	DESCRIPTION	REVISION
T–1	TITLE SHEET	B
C–1	SITE PLAN	B
C–2	COMPOUND PLAN & ELEVATION	B
C–3	ANTENNA DETAIL & RF SCHEDULE	B
C–4	EQUIPMENT SPECIFICATIONS	B
E–1	GROUNDING AND POWER DIAGRAMS	B
E–2	COAX/FIBER PLUMBING DIAGRAM	B
N–1	GENERAL AND ELECTRICAL NOTES	B

T-Mobile
T-MOBILE NORTHEAST LLC
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LIVERPOOL, NY 13088

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

SUBMITTALS

DATE	DESCRIPTION	REVISION
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7/27/15	REVISED FOR REVIEW	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11199A

SITE NAME:
CT11199A_SHELTON_BUDDINGTONRD

219 NELLS ROCK ROAD
SHELTON, CT 06484

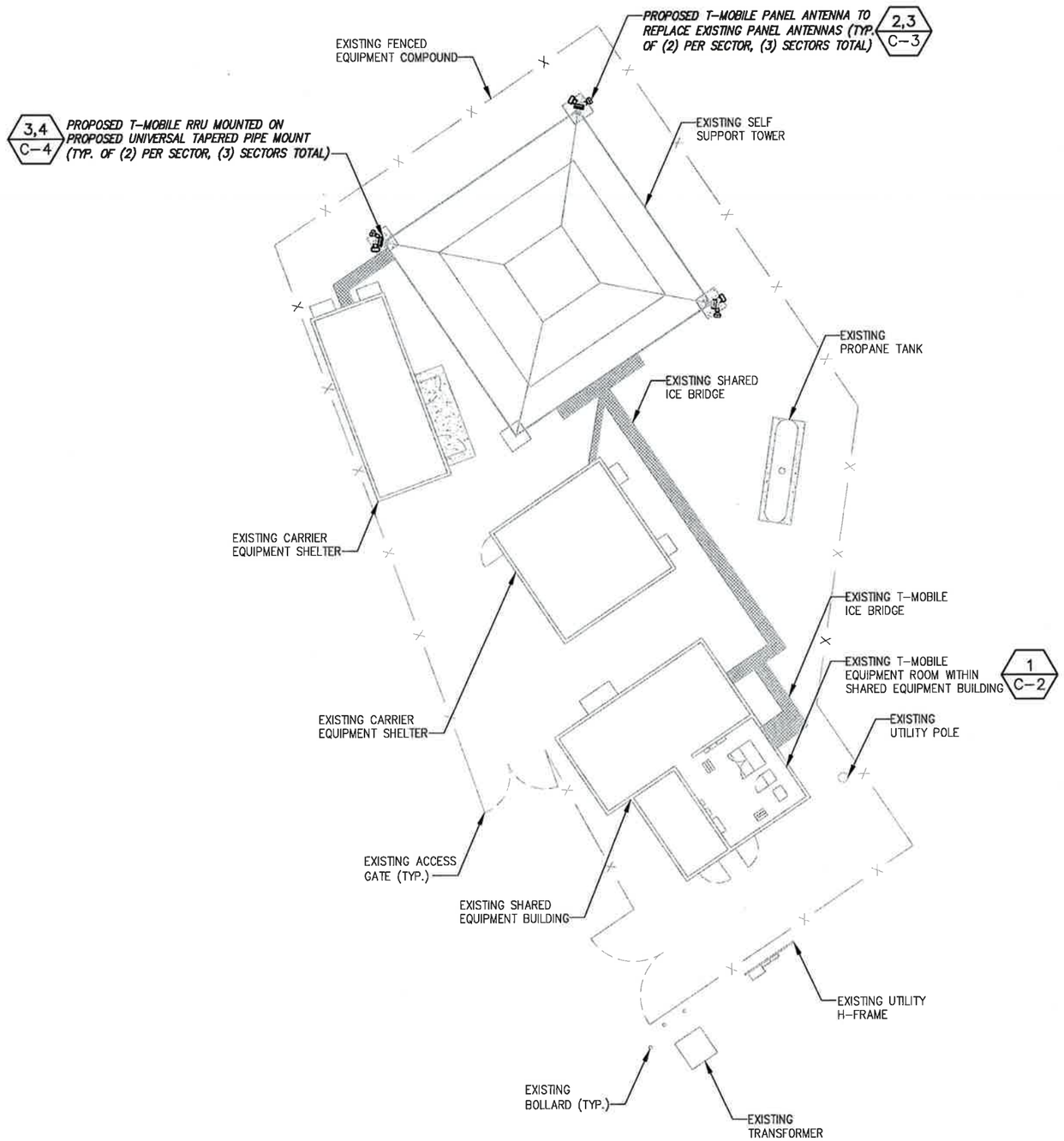
SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

SHEET 1 OF **8** SHEETS



GENERAL SITE NOTES:

1. A COMPLETE BOUNDARY SURVEY OF THE HOST PARCEL HAS NOT BEEN PERFORMED BY INFINIGY. BOUNDARY INFORMATION IF SHOWN WAS OBTAINED FROM INFORMATION PROVIDED BY OTHERS. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
2. BASEMAPPING INFORMATION BASED ON PROVIDED INFORMATION.
3. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
5. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
6. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
8. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT MISS UTILITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
9. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- TREES/SHRUBS
- TREE LINE
- UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE

GRAPHIC SCALE

20' 10' 0 10' 20'

SCALE (11x17): 1" = 20'-0"
SCALE (22x34): 1" = 10'-0"

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SUBMITTALS

DATE	DESCRIPTION	REVISION
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7/27/16	REVISED FOR REVIEW	B

DEPT.	DATE	APP'D	REVISIONS
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RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

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SITE NAME:
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219 NELLS ROCK ROAD
SHELTON, CT 06484

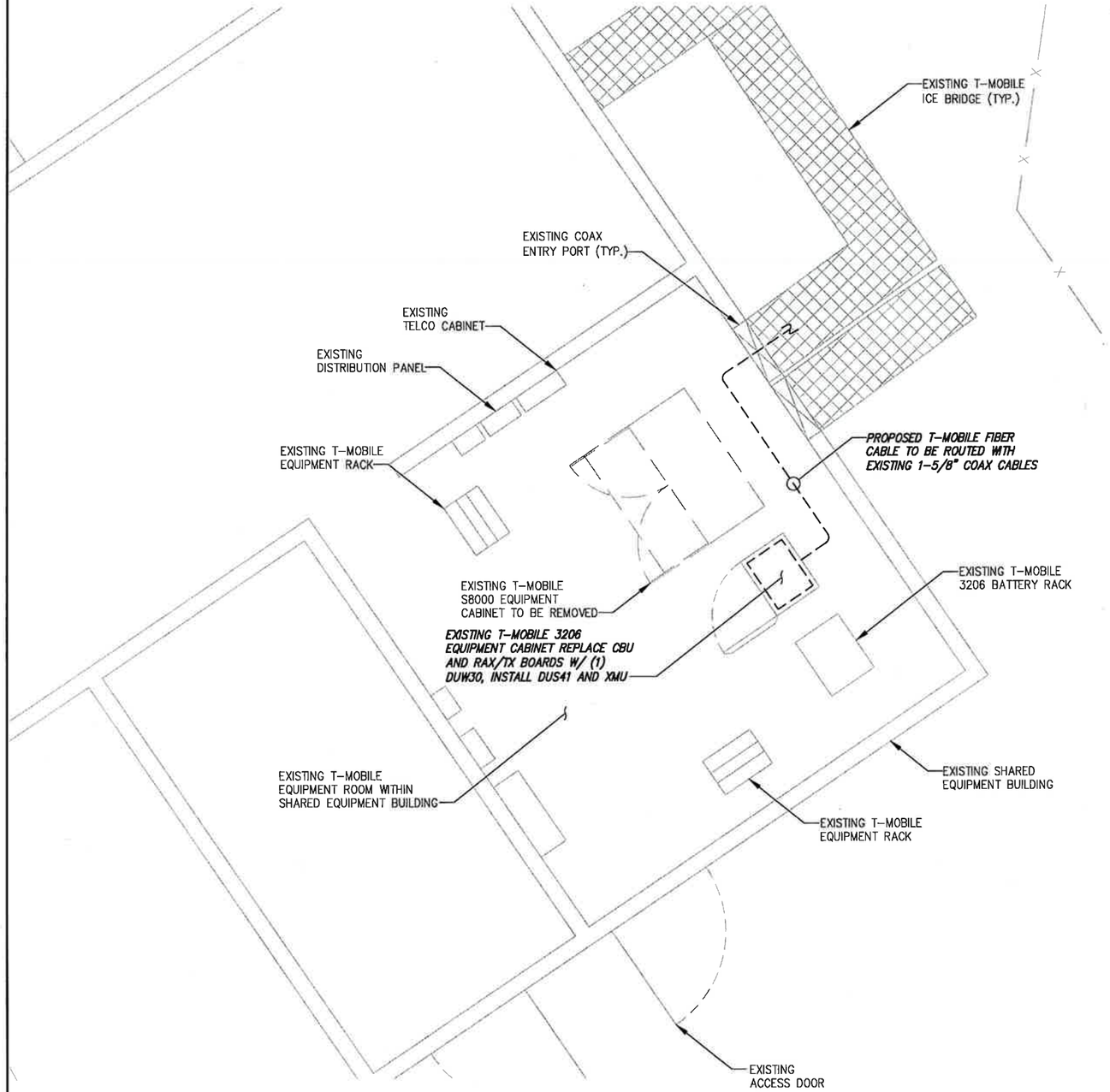
SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1

SHEET 2 OF **8** SHEETS



CALLED NORTH

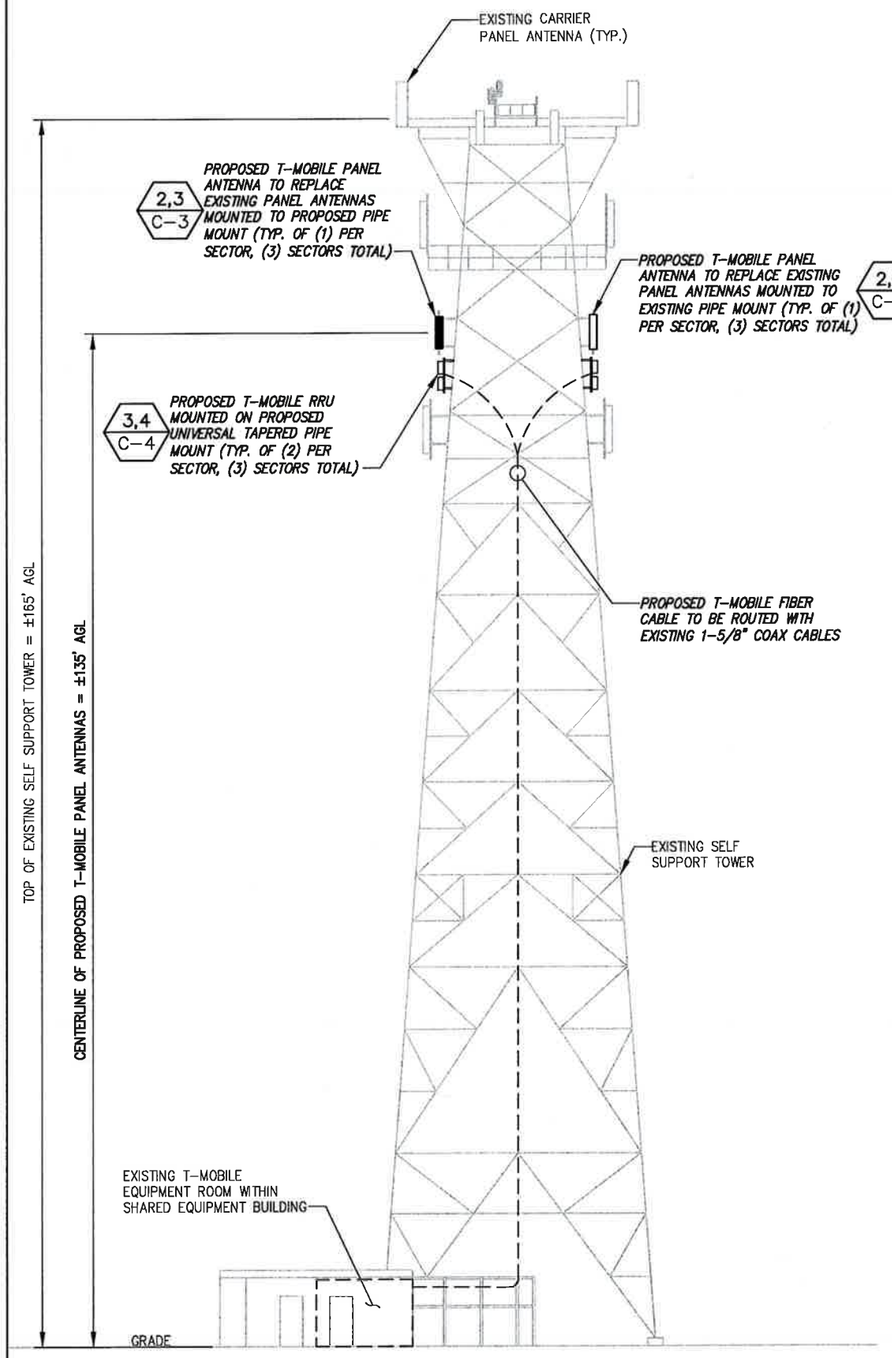
1 — PLATFORM PLAN
SCALE: AS NOTED

GRAPHIC SCALE

4' 2' 0 2' 4'

SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR 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.



2 — BUILDING ELEVATION
NOT TO SCALE

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SHEET TITLE

COMPOUND PLAN & ELEVATION

SHEET NUMBER

C-2

SHEET 3 OF **8** SHEETS

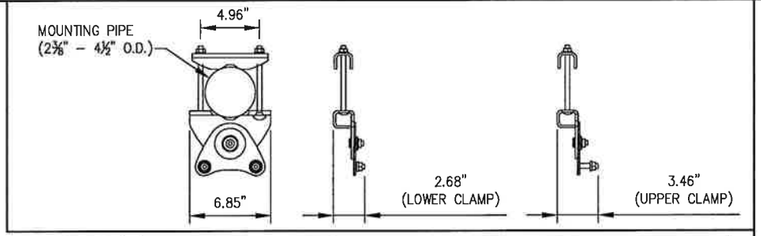
RF SYSTEM SCHEDULE (701D_WU21 CONFIGURATION)

SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE QTY.	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	L2100	P1	B4A	AIR21 B4A/B2P	ERICSSON	1	1	60°	0°	4°	135'-0"	–	–	–	–	± 280'*	–	–	HYBRID	MASTERLINE EXTREME HYBRID (9/18)	ERICSSON	FIBER 1	0	FIBER	--	–
	U1900	P2	B2P						0°	2°		–	–	(PROPOSED) RRUS 11 B2	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
	U2100	P3	B4P	DBXNH-6565A-A2M	COMMSCOPE	1	1	60°	0°	2°	135'-0"	dd B4	EXISTING	–	–	± 280'	1-5/8"	2	COAX	–	–	–	–	COAX	--	–
	L700	P4	B12P						0°	2°		–	–	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
B	L2100	P1	B4A	AIR21 B4A/B2P	ERICSSON	1	1	180°	0°	4°	135'-0"	–	–	–	–	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
	U1900	P2	B2P						0°	2°		–	–	(PROPOSED) RRUS 11 B2	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
	U2100	P3	B4P	DBXNH-6565A-A2M	COMMSCOPE	1	1	180°	0°	2°	135'-0"	dd B4	EXISTING	–	–	± 290'	1-5/8"	2	COAX	–	–	–	–	COAX	--	–
	L700	P4	B12P						0°	2°		–	–	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
C	L2100	P1	B4A	AIR21 B4A/B2P	ERICSSON	1	1	300°	0°	4°	135'-0"	–	–	–	–	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
	U1900	P2	B2P						0°	2°		–	–	(PROPOSED) RRUS 11 B2	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–
	U2100	P3	B4P	DBXNH-6565A-A2M	COMMSCOPE	1	1	300°	0°	2°	135'-0"	dd B4	EXISTING	–	–	± 310'	1-5/8"	2	COAX	–	–	–	–	COAX	--	–
	L700	P4	B12P						0°	2°		–	–	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)								FIBER	--	–

* CONTRACTOR TO VERIFY PROPOSED HYBRID CABLE LENGTH PRIOR TO ORDERING

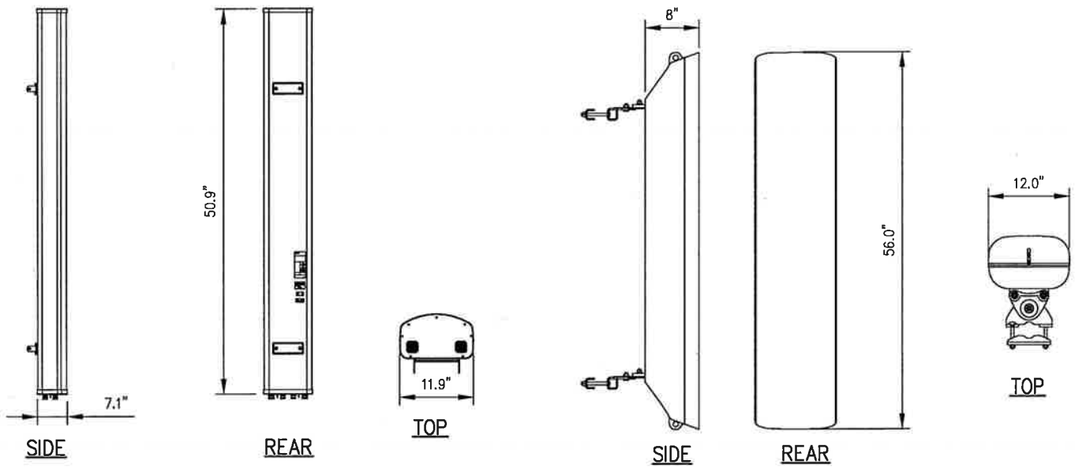
KEY	
EXISTING	R – RED – GSM
PROPOSED	G – GREEN – UMTS 1900
FIBER CONNECTION	B – BLUE – UMTS AWS
	Y – YELLOW – LTE
	O – ORANGE – FIBER CABLE

1 RF SCHEDULE
NOT TO SCALE

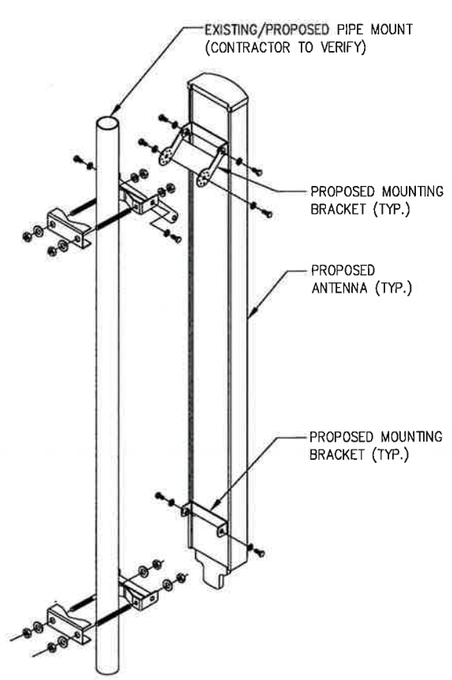


COMMSCOPE MODEL NO.:	DBXNH-6565A-A2M
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	50.9"x11.9"x7.1" (1293 x 301 x 181 mm)
WEIGHT, W/ PRE-MOUNTED BRACKETS:	34.2 LBS (15.5 kg)
CONNECTOR:	(4) 7-16 DIN FEMALE

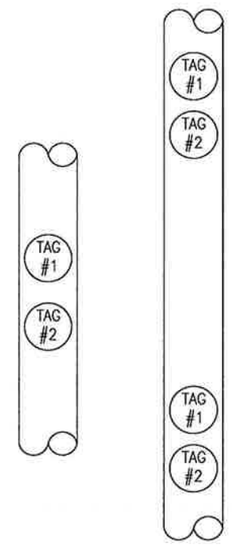
ERICSSON MODEL NO.:	AIR21 B4A/B2P
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HXWXD:	54"X12"X8"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	90 LBS
CONNECTOR:	(2) 7-16 DIN FEMALE



2 ANTENNA DETAIL
NOT TO SCALE



3 MOUNTING DETAIL
NOT TO SCALE



METALLIC TAG NOTES:

1. TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
2. CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
3. TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
4. STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMODATE ALL CONFIGURATIONS.

4 METALLIC TAG DETAIL
NOT TO SCALE

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ZONING			
OPS.			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
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CHECKED BY:	ASW

STATE OF CONNECTICUT
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CT11199A_SHELTON_BUDDINGTONRD

219 NELLS ROCK ROAD
SHELTON, CT 06484

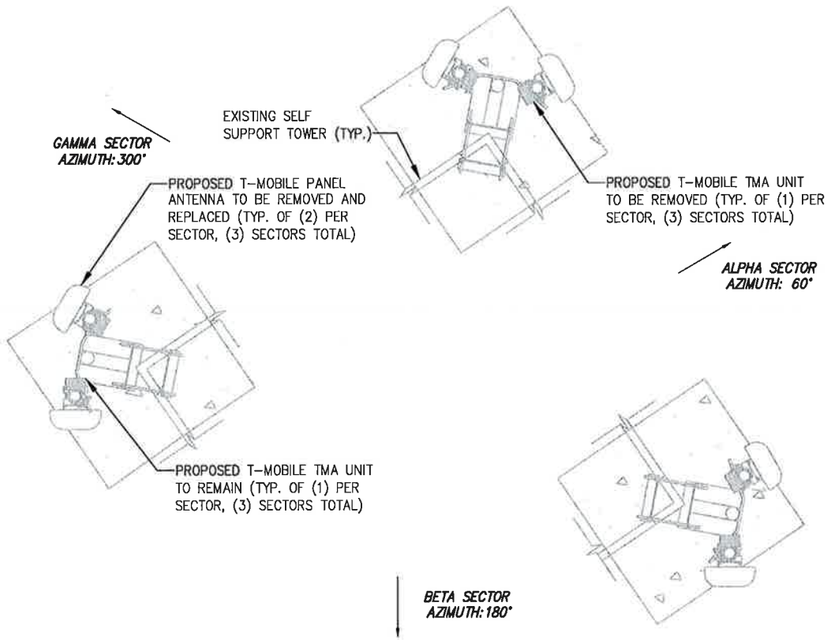
SHEET TITLE

ANTENNA DETAIL & RF SCHEDULE

SHEET NUMBER

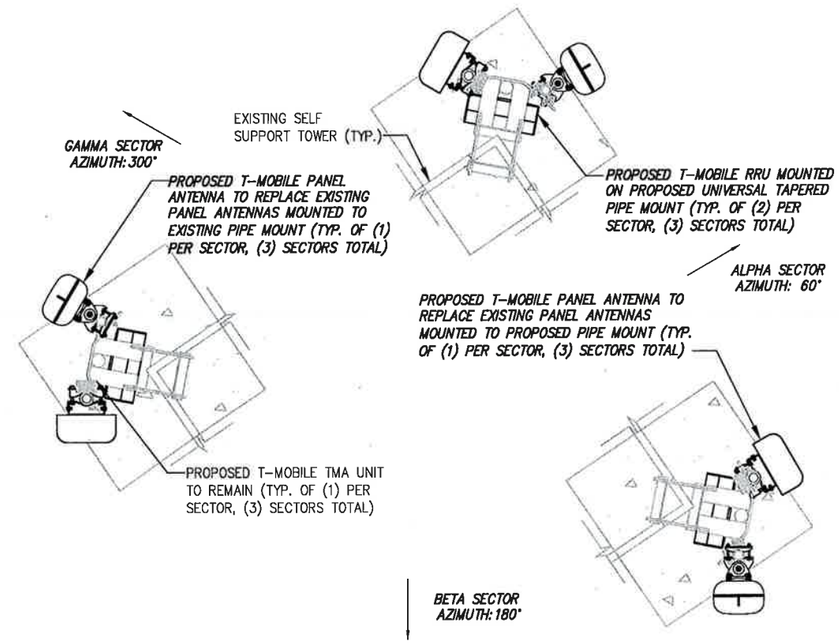
C-3

SHEET 4 OF 8 SHEETS



CALLED NORTH

1 EQUIPMENT PAD LAYOUT PLAN
NOT TO SCALE



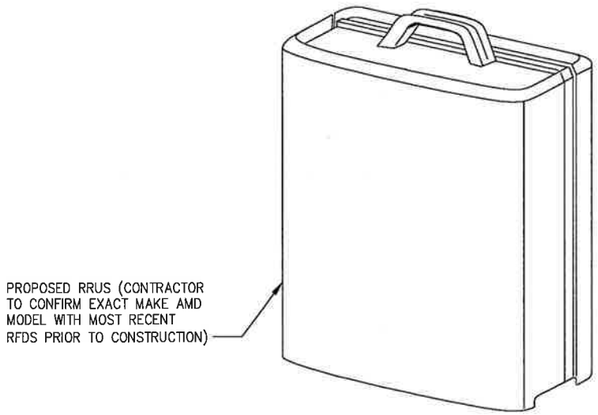
CALLED NORTH

2 ANTENNA ORIENTATION PLAN
NOT TO SCALE

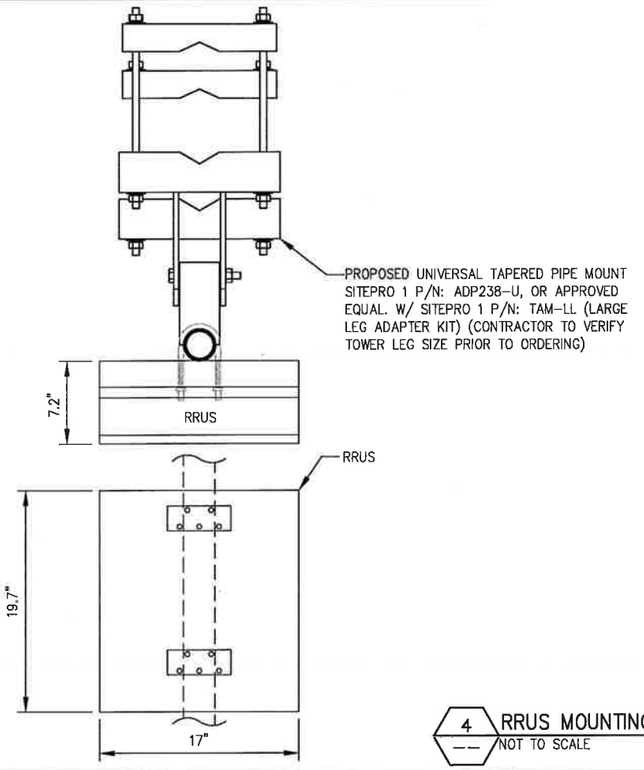
STRUCTURAL NOTES:

1. SPECIFICATIONS / CODES:
   - –CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE ACI CODE.
   - –STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 9TH EDITION.
   - –WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1–92 "STRUCTURAL WELDING" CODE–STEEL.
   - –REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE."
2. MATERIALS:
   - –CONCRETE: fc' – 3000psi. (MIN. U.N.O.)
   - –REINFORCING STEEL: ASTM A615, GRADE 60.
   - –WIRE MESH: ASTM A185.
   - –STRUCTURAL STEEL: ASTM A36.
   - –ELECTRODES FOR WELDING: E 70xx.
   - –GALVANIZING: ASTM A153 (BOLTS) OR ASTM A123 (SHAPES, PLATES).
   - –EXPANSION BOLTS: HILTI KWIK BOLT II, STAINLESS STEEL, 3/4"øx43/4" EMBEDMENT OR AN APPROVED EQUAL.

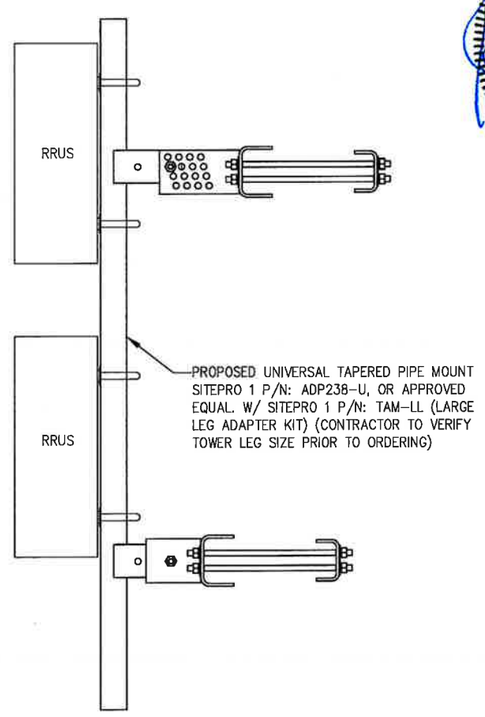
ERICSSON MODEL #:	RRUS11
COLOR:	GRAY
DIMENSIONS, HxWxD:	19.7"x17"x7.2" (500 x 431 x 182 mm)
WEIGHT:	50.71 LBS (23 kg)



3 RRUS11 DETAIL
NOT TO SCALE



4 RRUS MOUNTING DETAIL
NOT TO SCALE



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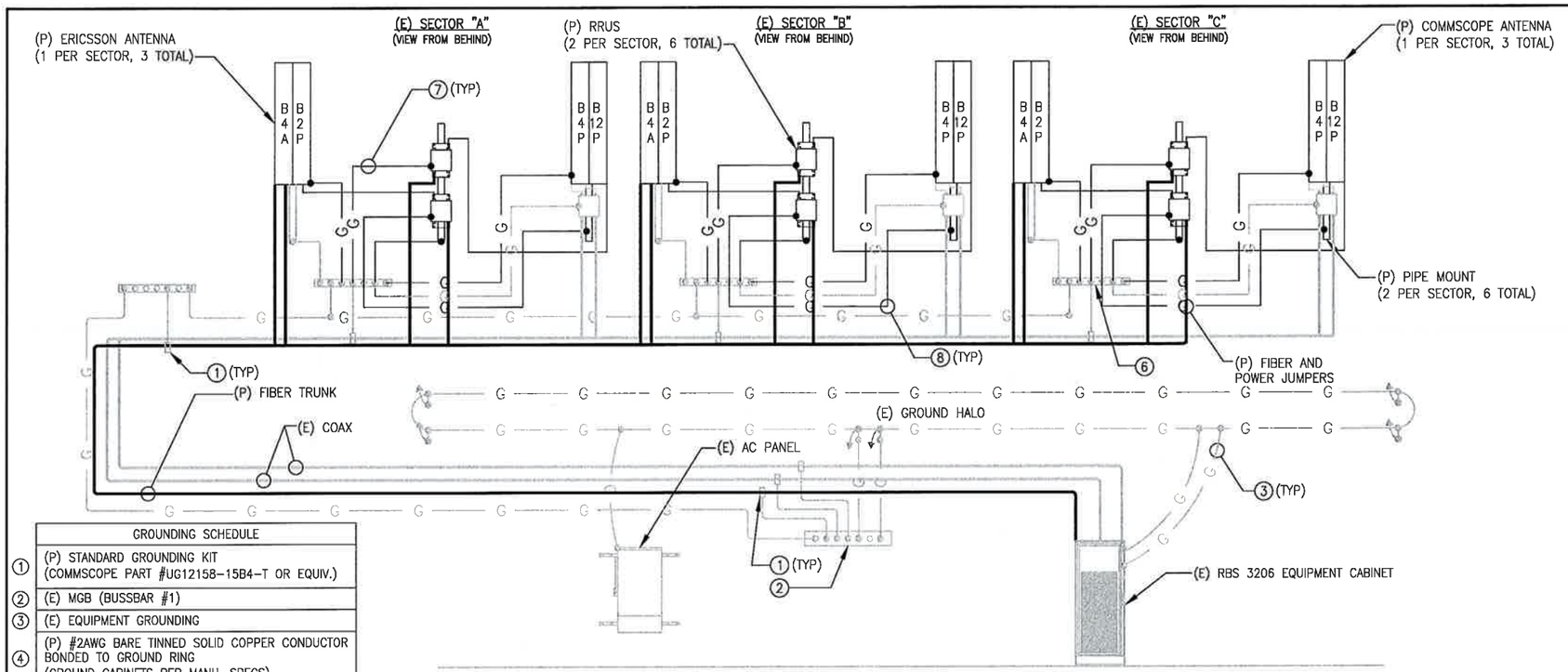
SHEET TITLE

EQUIPMENT SPECIFICATIONS

SHEET NUMBER

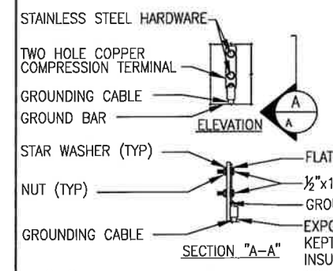
C-4

SHEET 5 OF 8 SHEETS

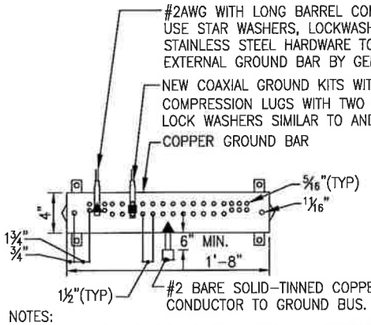


GROUNDING SCHEDULE	
①	(P) STANDARD GROUNDING KIT (COMMSCOPE PART #UG12158-15B4-T OR EQUIV.)
②	(E) MGB (BUSSBAR #1)
③	(E) EQUIPMENT GROUNDING
④	(P) #2AWG BARE TINNED SOLID COPPER CONDUCTOR BONDED TO GROUND RING (GROUND CABINETS PER MANU. SPECS)
⑤	GROUND (P) ANTENNA PER MANU. SPECS
⑥	(E) SECTOR GROUND BAR
⑦	GROUND (P) RRU PER MANU. SPECS
⑧	GROUND (P) PIPE MOUNT PER MANU. SPECS

1 GROUNDING DIAGRAM
SCALE: NOT TO SCALE



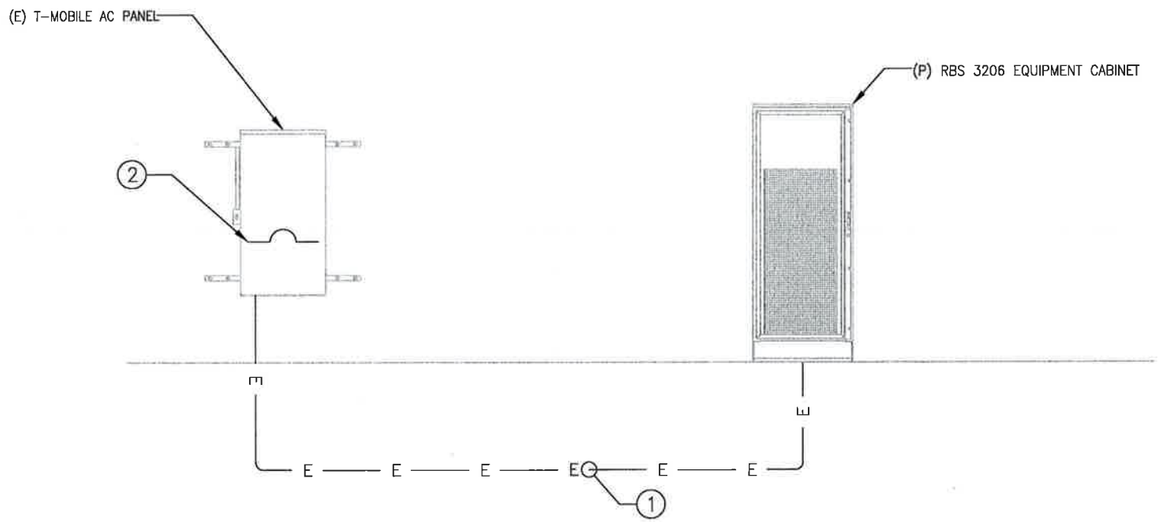
NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

2 GROUND BAR CONNECTION DETAILS
SCALE: NOT TO SCALE

CONDUIT SCHEDULE	
①	(P) POWER CONDUIT UPGRADE
②	(P) BREAKER UPGRADE



3 POWER DIAGRAM
SCALE: NOT TO SCALE

NOTE:
INFINIGY HAS NOT CONDUCTED AN ELECTRICAL LOAD STUDY FOR THIS SITE. CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL LOADING PRIOR TO CONSTRUCTION TO ENSURE EXISTING INCOMING SERVICE CAPACITY. ALL ELECTRICAL INSTALLATION IS TO COMPLY WITH NEC, ADOPTED VERSION.

CONTRACTOR NOTE:
CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSE LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

SUBMITTALS		
DATE	DESCRIPTION	REVISION
2/18/15	FOR REVIEW	A
7/27/15	REVISED FOR REVIEW	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11199A

SITE NAME:
CT11199A_SHELTON_BUDDINGTONRD

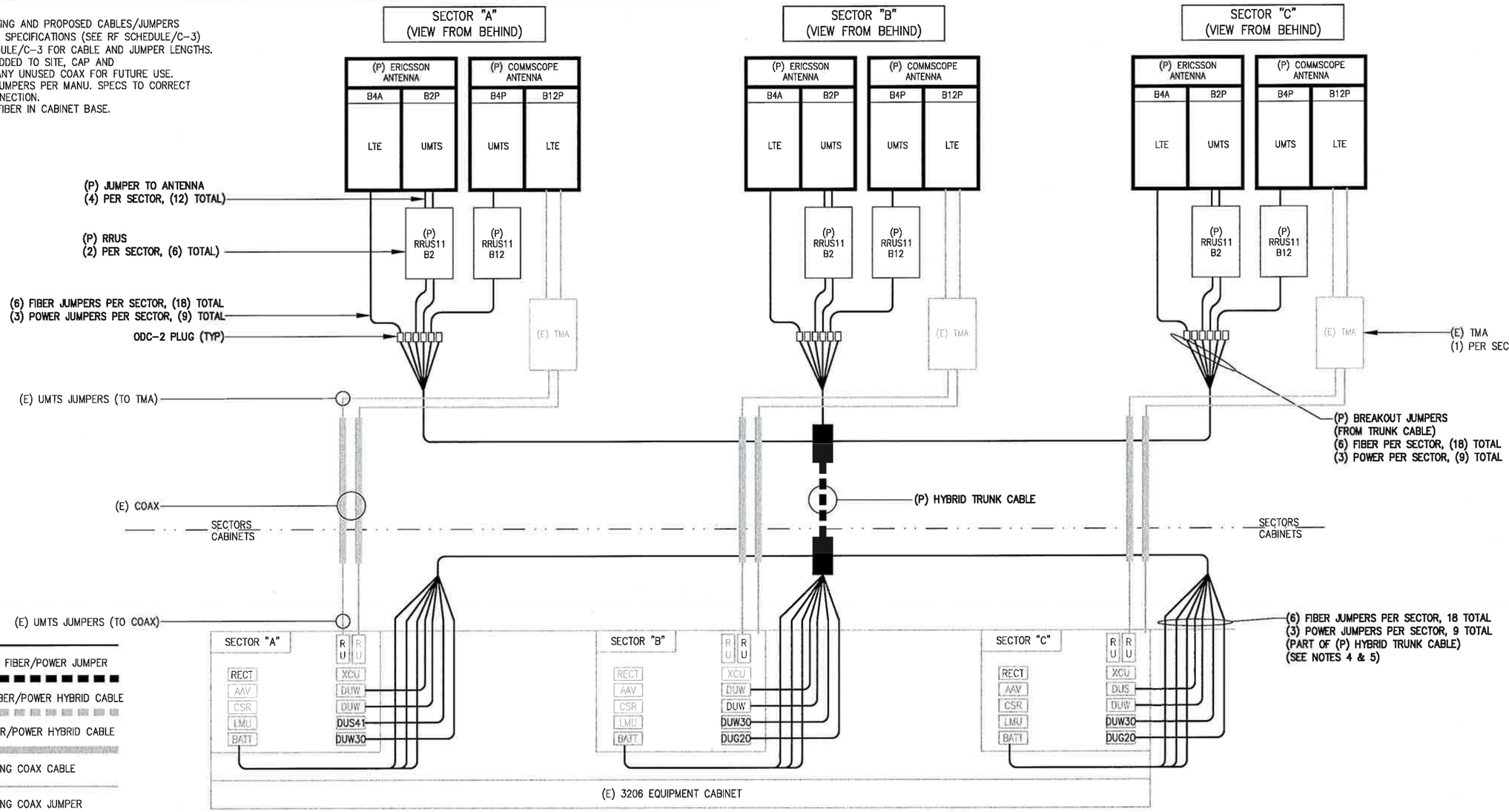
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

SHEET 6 OF **8** SHEETS

NOTES:
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER METRO PCS SPECIFICATIONS (SEE RF SCHEDULE/C-3)
2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
5. COIL EXCESS FIBER IN CABINET BASE.



1 701D_WU21 CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

SUBMITTALS

DATE	DESCRIPTION	REVISION
2/16/16	FOR REVIEW	A
7/27/16	REVISED FOR REVIEW	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11199A
SITE NAME:
CT11199A_SHELTON_BUDDINGTONRD
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET TITLE
COAX/FIBER PLUMBING DIAGRAM

SHEET NUMBER
E-2
SHEET 7 OF **8** SHEETS

ELECTRICAL NOTES:

WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

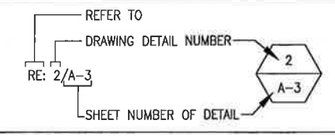
1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ABBREVIATIONS

ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

ARCHITECTURAL SYMBOLS

DETAIL REFERENCE KEY



T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

SUBMITTALS

DATE	DESCRIPTION	REVISION
2/19/16	FOR REVIEW	A
7/27/16	REVISED FOR REVIEW	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	428-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11199A

SITE NAME:
CT11199A_SHELTON_BUDDINGTONRD

219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET TITLE

GENERAL AND ELECTRICAL NOTES

SHEET NUMBER

N-1

SHEET 8 OF 8 SHEETS