MARY CAULFIELD
978-994-0252
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

1 LBS

1 OF 1

SHIP TO:
CONNECTICUT SITING COUNCIL
860-827-2935
TEN FRANKLIN SQUARE
NEW BRITAIN CT 06051-2655

CT 067 9-06

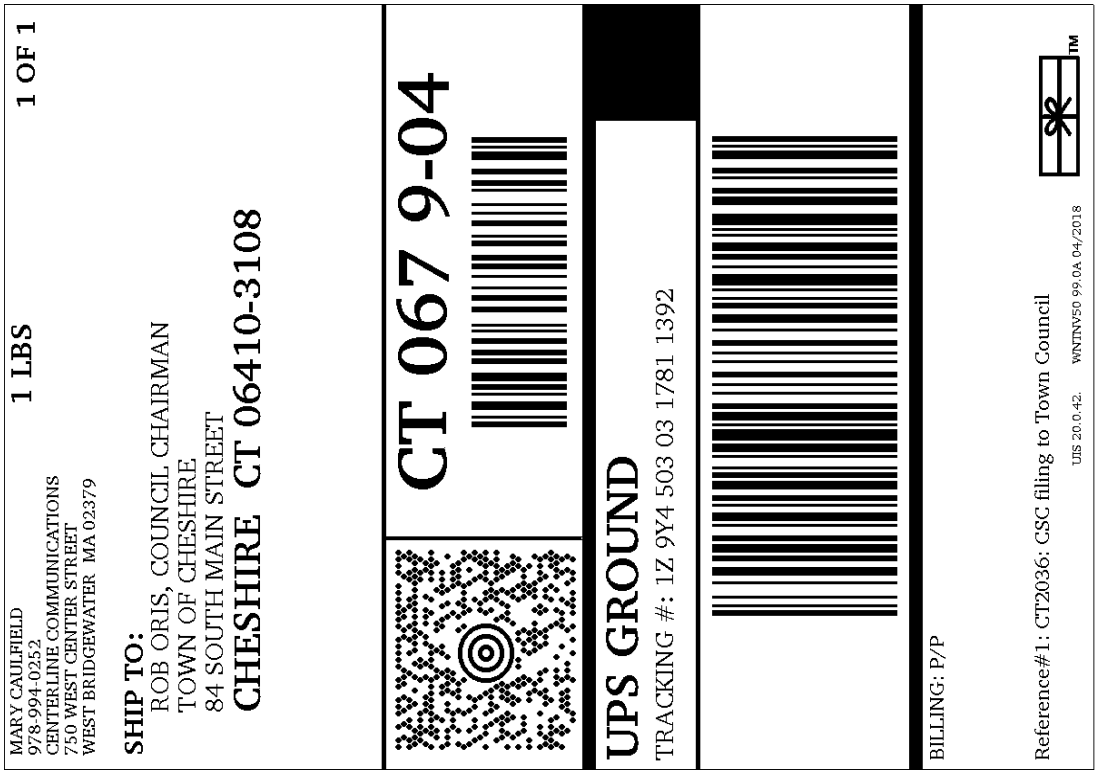
UPS GROUND

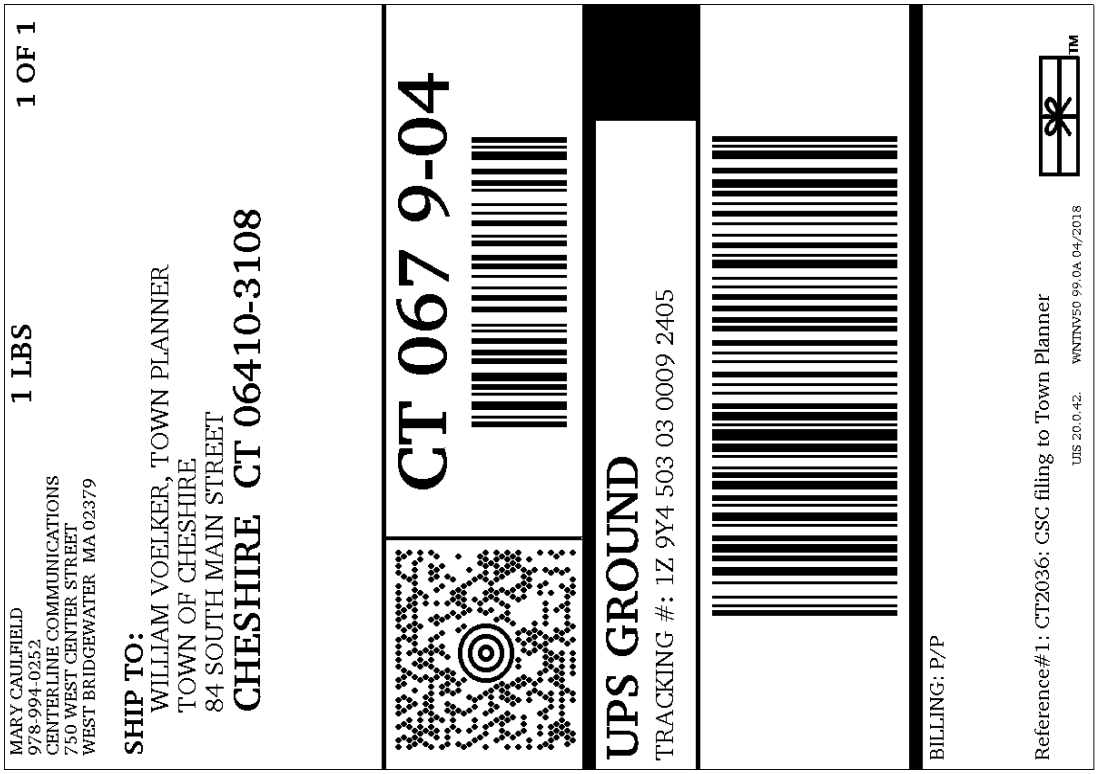
TRACKING #: 1Z 9Y4 503 03 1133 2385

BILLING: P/P

Reference#1: CT2036: CSC filings sent

UIS 20.0.42. WNTNV50 99.0A 04/2018


MARY CAULFIELD
978-994-0252
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379
1 LBS
1 OF 1
SHIP TO:
ROB ORIS, COUNCIL CHAIRMAN
TOWN OF CHESHIRE
84 SOUTH MAIN STREET
CHESHIRE CT 06410-3108
CT 067 9-04
UPS GROUND
TRACKING #: 1Z 9Y4 503 03 1781 1392
BILLING: P/P
Reference#1: CT2036: GSC filing to Town Council
UIS 20.0.42. WNTNV50 99.0A 04/2018


MARY CAULFIELD
978-994-0252
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379
1 LBS
1 OF 1
SHIP TO:
WILLIAM VOELKER, TOWN PLANNER
TOWN OF CHESHIRE
84 SOUTH MAIN STREET
CHESHIRE CT 06410-3108
CT 067 9-04
UPS GROUND
TRACKING #: 1Z 9Y4 503 03 0009 2405
BILLING: P/P
Reference#1: CT2036: GSC filing to Town Planner
UIS 20.0.42. WNTNV50 99.0A 04/2018

MARY CAULFIELD
978-994-0252
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

1 LBS

1 OF 1

SHIP TO:
JEREMY COYLE
AT&T CORPORATION, CBRE
225 WEST RANDOLPH STREET
ANTENNA SOLUTIONS GROUP
CHICAGO IL 60606-1838

IL 606 9-04

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1857 5413

BILLING: P/P

Reference#1: CT2036: CSC filing to ATT Corp

UIS 20.0.42. WNTNV50 99.0A 04/2018

Mary Caulfield, Site Acquisition Consultant
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
Mobile: (978) 994-0252
MCaulfield@centerlinecommunications.com

June 21, 2018

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

RE: Notice of Exempt Modification // Site Number: CT2036 (Name: Cheshire Higgins Road)
751 Higgins Road, Cheshire, CT 06410
N 41.4874444444444 // W -72.9293611111111

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains 6 total antennas at the 255-foot mount on the existing 250-foot Self Support Tower, located at 751 Higgins Road, Cheshire, CT. The tower and property are both owned by AT&T Corporation. AT&T now intends to add 3 new LTE (700/2300 band) antennas for its LTE upgrade. AT&T also intends to install 6 new remote radios; and certain in-cabinet upgrades at the base.

The facility was built in 1968 and approved by the Town; however, the Town's oldest Land Use Approval records for the property only date back as far as 1982.

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 Rob Oris, Jr., Town of Cheshire Council Chairman, William S. Voelker, AICP, Town Planner, and AT&T, the tower and property 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).

Attached to accommodate this filing are construction drawings dated June 20, 2018 by Hudson Design Group LLC, a structural analysis dated April 27, 2018 by GPD Group and an Emissions Analysis Report dated May 17, 2018 by Centerline Communications, LLC.

1. The proposed modifications 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 modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading, pursuant to the structural analysis by GPD Group, dated April 27, 2018.

For the foregoing reasons, AT&T 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,

_____

Mary Caulfield, Site Acquisition Consultant
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
Mobile: (978) 994-0252
MCaulfield@centerlinecommunications.com

cc: Rob Oris, Jr., Town Council Chairman, Town of Cheshire
William S. Voelker, AICP, Town Planner, Town of Cheshire
AT&T Corporation, Tower & Property Owner

Centerline Communications, LLC
95 Ryan Drive, Suite #1
Raynham, MA 02767
(508) 386-0863

GPD Engineering and Architecture
Professional Corporation

Kevin Fraleigh
520 South Main St, Suite 2531
Akron, OH 44311
(330) 572-2191
kfraleigh@gpdgroup.com

GPD# 2018703.48
April 27, 2018

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**TAG0053**	**26014**
	Site FA:	**10136365**	**10034996**
	Site Name:	**CHESHIRE**	**CHESHIRE SW**
	Client Number:	**CT2036**	

ANALYSIS CRITERIA:	**Codes:**	**TIA-222-G, 2016 Connecticut State Building Code & 2012 IBC** **125-mph Ultimate 3 second gust with 0" ice** **97-mph Nominal 3 second gust with 0" ice** **50-mph Nominal 3 second gust with 3/4" ice**
SITE DATA:		**751 Higgins Road, Cheshire, CT 06410, New Haven County** **Latitude 41° 29' 14.870" N, Longitude 72° 55' 45.595" W** **Market: NEW ENGLAND** **250' Radio Relay Towers Self Support Tower**

Mr. Tyler Ramsden,

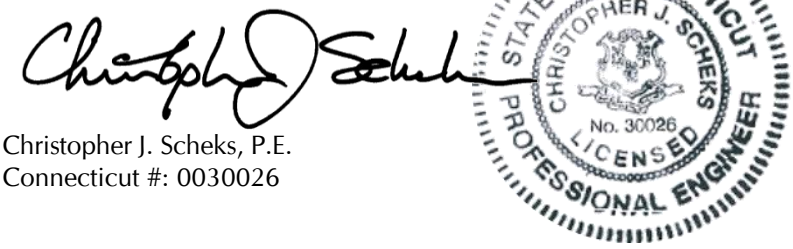
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	67.4%	Pass
Building Pedestal Ratio with Proposed Equipment:	Adequate	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and Centerline Communications, LLC. 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 AT&T Mobility to Centerline Communications. This report was commissioned by Mr. Tyler Ramsden of Centerline Communications.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

Detailed foundation and geotechnical information for the building were not available or provided for this report. Therefore, the in place capacities could not be verified. However, based on the reserve capacity of the supporting pedestals, it is our opinion that the supporting building and foundations will be adequate for the proposed loading configuration.

Modifications designed by GPD (Project #: 2012856.05, dated 7/25/2012) have been installed and were considered in this analysis.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	67.0%	Pass
Leg Bolts	67.4%	Pass
Diagonals	57.3%	Pass
Horizontals	48.5%	Pass
Redundant Members	65.6%	Pass
Internal Bracing	67.0%	Pass
Member Bolts	67.4%	Pass
Anchor Rods	34.0%	Pass
Building Pedestals	17.7%	Pass
Foundation	Adequate	Pass

ANALYSIS METHOD

RISA-3D (Version16.0.1) and TNX Tower (Version 7.0.7.0), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, 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 completed without the benefit of a recent detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Site Lease Application	Not Provided	N/A
RF Design Form	AT&T RF Design Form, dated 10/9/2017	Centerline
Construction Drawings	Dewberry #: 50093723/50096281, dated 3/8/2018	Centerline
Tower Design	AT&T Co. Drawing #: NA4J03-902 Rev 3, dated 6/5/1967	AT&T
Building Drawings	AT&T Co. L-4 Junction Building, dated 12/1/1965	AT&T
Foundation Mapping	FDH Project #: 11-12049E-N1, dated 12/20/2011	AT&T
Ground Mapping	GPD Project #: 2013723.01.TAG0053.01, dated 6/14/2013	AT&T
Geotechnical Report	Not Provided	N/A
Previous Structural Analysis	GPD Project #: 2017723.13.TAG0053.07, dated 12/6/2016	AT&T
Tower Mapping	GPD Project #: 2013723.01.TAG0053.03, 1/17/2014	AT&T
Modification Drawings	GPD Project #: 2012856.05, dated 7/25/2012	AT&T

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 to resist the original design loads indicated in the documents provided.
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 ± 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 analysis by GPD (Project #: 2017723.13.TAG0053.07, dated 12/6/2016), site photos, the provided RF Design Form and the Construction Drawings and is assumed to be accurate.
12. All proposed coax shall be installed with the existing coax on Face D for the analysis results to be valid. See Appendix C for the coax layout.
13. Detailed information for the proposed surge suppression units and power/fiber lines was incomplete within the provided RF Design Form and Construction Drawings. The proposed model numbers and diameters were assumed based on the existing loading with proposed quantities equal to the existing.
14. Face A azimuth of 105° assumed based on the tower mapping by GPD (Project #: 2013723.01.TAG0053.03, 1/17/2014).

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group 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 recent 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	CHESHIRE
Site Number	TAG0053
FA Number	10136365
Date of Analysis	4/27/2018
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)	250'	
Tower Manufacturer	Radio Relay Towers	
Tower Model	Type "J"	
Tower Design	AT&T Co. Drawing #: NA4J03-902 Rev 3	6/5/1967
Building Drawings	AT&T Co. L-4 Junction Building	12/1/1965
Geotech Report	n/a	
Tower Mapping	TEP Project #: 111343	4/8/2011
Tower Mapping	Hudson Design Group	2/4/2013
Tower Mapping	GPD Project #: 2013723.01.TAG0053.03	1/17/2014
Previous Structural Analysis	GPD Project #: 2017723.13.TAG0053.07	12/6/2016
Modification Drawings	GPD Project #: 2012856.05	7/25/2012
Ground Mapping	GPD Project #: 2013723.01.TAG0053.01	6/14/2013
Foundation Mapping	FDH Project #: 11-12049E-N1	12/20/2011

Design Parameters

Design Code Used	TIA-222-G & 2012 IBC 2016 CT Building Code
Location of Tower (County, State)	New Haven, CT
Nominal Wind Speed (mph)	97-3 Second Gust
Ice Thickness (in)	0.75
Risk Category (I, II, III)	II
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	67.4%
Anchor Rods (%)	34.0%
Foundation (%)	Adequate
Foundation Adequate?	YES

Modifications designed by GPD (Project #: 2012856.05, dated 7/25/2012) have been installed and were considered in this analysis.

Steel Yield Strength (ksi)

Legs	36
Bracing	36
Member Bolts	A307
Anchor Rods	C-1015

Note: Material grades assumed based on previous analysis.

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	252	265	1	Rod	Unknown	4' Lightning Rod		1	Unknown	Top Platform	1	Unknown	5/8"	Face A
Unknown	252	263	1	Beacon	Unknown	Flash Beacon				on the same mount				
AT&T Mobility	252	255	2	Panel	KMW	AM-X-CD-16-65-00T-RET	154/270			on the same mount	6	Unknown	1-5/8"	Face D
AT&T Mobility	252	255	1	Panel	Andrew	SBNH-1D6565C	15			on the same mount	6	DC Power	5/8"	Face D
AT&T Mobility	252	255	3	Panel	CCI	HPA-65R-BUU-H8	15/154/270			on the same mount	3	Fiber	1.34"	Face D
AT&T Mobility	252	255	3	TMA	CCI	DTMABP7819VG12A				on the same mount				
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 11				on the same mount				
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 32 B2				on the same mount				
AT&T Mobility	252	255	3	Surge	Raycap	DC6-48-60-18-8F				on the same mount				
Verizon	252	254	6	Panel	Andrew	SBNHH-1D65B	30/140/260	4	Unknown	4' Standoff on Platform	12	Unknown	1-5/8"	Face D
Verizon	252	254	4	Panel	Antel	LPA 80063/6CF	30/140/260			on the same mounts	3	Fiber	1-5/8"	Face D
Verizon	252	254	2	Panel	Antel	LPA 80080/6CF	260			on the same mounts				
Verizon	252	254	6	Diplexers	RFS	FD9R6004/2C-3L				on the same mounts				
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60AWS				on the same mounts				
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60 PCS				on the same mounts				
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60AWS LTE				on the same mounts				
Verizon	252	254	3	Surge	Raycap	DB-T1-6Z-8AB-0Z				on the same mounts				
Verizon	252	254	1	GPS	Lucen	GPS				on the same mounts				
Misc.	239.5							1	Unknown	Platform				
Sprint	225	225.5	6	Panel	Decibel	DB980H65E-M	30/130/210	8	Unknown	20' Pipe Mounts	6	Unknown	1-5/8"	Face D
Nextel	210	212	6	Panel	Decibel	DB844H90E-XY	30/255	2	Unknown	14' Sector Frames	6	Unknown	1-5/8"	Face D
T-Mobile	210	212	2	Panel	Ericsson	AIR21 B4A/B2P	60/140	2	Unknown	14' Sector Frames	2	Hybrid	7/8"	Face B
T-Mobile	210	212	2	Panel	Ericsson	KRC 118 048/1 B4A/B12P-B8P	60/140			on the same mounts				
T-Mobile	210	212	2	RRU	Ericsson	RRUS11B12				on the same mounts				
T-Mobile	210	212	2	RRU	Ericsson	RRUS11B2				on the same mounts				
Unknown	210	207	1	Panel	Unknown	26"x26"x2" FP	160			on the same mounts	1	Unknown	1/2"	Face A
Nextel	198	200	3	Panel	Decibel	DB844H90E-XY	135	1	Unknown	14' Sector Frame	3	Unknown	1-5/8"	Face D
SGI	190	196	2	Omni	Unknown	PG1-NOF-0091		2	Unknown	5' Standoffs	2	Unknown	7/8"	Face D
SGI	171	177	1	Omni	Unknown	PG1-DOF-0093		1	Unknown	5' Standoff	1	Unknown	7/8"	Face D
Misc.	139.5							1	Unknown	Platforms w/ Rails				
AT&T Internet Services	85	88	1	Yagi	Wade	WL 7-13/S		3	Unknown	Standoffs	7	Unknown	5/8"	Face D
AT&T Internet Services	85	85	1	Yagi	Wade	WL 14-69/S				on the same mounts				
AT&T Internet Services	85	84	1	Yagi	Wade	WL 14-69/S				on the same mounts				
AT&T Internet Services	85	83	1	Yagi	Wade	WL 14-69/S				on the same mounts				
AT&T Internet Services	85	81	1	Yagi	Wade	WL 14-69/S				on the same mounts				
Unknown	37	37	1	Camera	Vicon	Camera - V8300H		1	Unknown	2.5' Box Mount	1	Conduit	1"	Face A
Unknown	36.5	36.5	1	GPS	Lucent	407517689		1	Unknown	3' Side Arm	1	Unknown	1/2"	Face D
Unknown	21	21	2	Junction	Unknown	Junction Box		1	Unknown	Platform	1	Conduit	1"	Face A
Unknown	21	21	1	RRU	Unknown	28" x 15.5" x 10" RRU				on the same mount				

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
AT&T Mobility	252	255	1	Panel	Kathrein	800-10966	20			on the existing mount	6	DC Power	5/8"	Face D
AT&T Mobility	252	255	2	Panel	Kathrein	800-10965	150/265			on the same mount	3	Fiber	1.34"	Face D
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 32				on the same mount				
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 4478 B14				on the same mount				
AT&T Mobility	252	255	3	Surge	Raycap	DC6-48-60-18-8F				on the same mount				

Note: The proposed loading shall be installed in addition to the existing loading at the same elevation. All proposed coax shall be installed with the existing coax on Face D for the analysis results to be valid.

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 250.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 33.50 ft at the top and 37.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
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*
Climbing Ladder (Af)	C	No	Af (CaAa)	250.00 - 8.00	-24.0000	0.44	1	1	3.8400	3.8400		4.81
Safety Line 3/8	C	No	Ar (CaAa)	250.00 - 8.00	-24.0000	0.44	1	1	0.3750	0.3750		0.22
5/8" Power Cable	C	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.35	1	1	0.6300	0.5000		0.15
2-1/4" Conduit	C	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.35	1	1	2.2500	2.2500		0.32
Feedline Ladder Af	D	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	1	1	2.5000	2.5000		7.00
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	18	6	1.9800	1.9800		0.82
1.34" Fiber Cable	D	No	Ar (CaAa)	250.00 - 8.00	5.0000	0.02	6	3	1.3400	1.3400		0.82
5/8" DC cable	D	No	Ar (CaAa)	250.00 - 8.00	5.0000	0.02	12	6	0.6250	0.6250		0.30
1-5/8" Fiber Cable	D	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	3	3	1.9800	1.6250		0.82
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	225.00 - 8.00	0.0000	0.05	3	1	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	225.00 - 8.00	0.0000	-0.05	3	1	1.9800	1.9800		0.82
Feedline Ladder Af	C	No	Ar (CaAa)	212.00 - 8.00	2.0000	-0.042	1	1	2.5000	2.5000		7.00
Feedline Ladder Af	B	No	Ar (CaAa)	209.00 - 8.00	0.0000	0.45	1	1	2.5000	2.5000		7.00
Feedline Ladder Af	D	No	Ar (CaAa)	209.00 - 8.00	0.0000	0.43	1	1	2.5000	2.5000		7.00
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	198.00 - 8.00	0.0000	0.45	9	9	1.9800	1.9800		0.82

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
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	210.00 - 198.00	0.0000	0.45	6	6	1.9800	1.9800		0.82
7/8" Hybrid Cable	B	No	Ar (CaAa)	210.00 - 8.00	0.0000	0.45	2	2	0.8750	0.8750		0.28
LDF4RN-50A (1/2 FOAM)	C	No	Ar (CaAa)	210.00 - 8.00	0.0000	-0.35	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	D	No	Ar (CaAa)	190.00 - 171.00	8.0000	0	2	2	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	D	No	Ar (CaAa)	171.00 - 8.00	8.0000	0	3	3	1.0900	1.0900		0.33
LDF4.5-50 (5/8 FOAM)	D	No	Ar (CaAa)	85.00 - 8.00	6.0000	0	7	4	0.8700	0.8700		0.15
1" Rigid Conduit	C	No	Ar (CaAa)	21.00 - 8.00	0.0000	-0.3	2	2	1.0000	1.0000		0.50
1" Rigid Conduit	C	No	Ar (CaAa)	37.00 - 21.00	0.0000	-0.3	1	1	1.0000	1.0000		0.50
LDF4-50A (1/2 FOAM)	D	No	Ar (CaAa)	36.50 - 8.00	0.0000	0.055	1	1	0.6300	0.6300		0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
4' Lightning Rod	C	None		0.0000	265.00	No Ice	0.10	0.10	10.00
						1/2" Ice	0.51	0.51	11.87
						1" Ice	0.89	0.89	16.37
Flash Beacon	C	None		0.0000	263.00	No Ice	3.00	3.00	100.00
						1/2" Ice	4.50	4.50	150.00
						1" Ice	6.00	6.00	200.00
13' I-Beam Mast Mount	C	None		0.0000	256.50	No Ice	13.00	13.00	195.00
						1/2" Ice	14.14	14.14	262.31
						1" Ice	15.08	15.08	340.70
Tower Top Platform	C	None		0.0000	252.00	No Ice	85.00	85.00	4425.00
						1/2" Ice	97.00	97.00	5752.50
						1" Ice	110.00	110.00	7080.00
2' Standoff - Round (GPD)	B	From Face	4.00 -21.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.14 1.79 2.44	1.62 2.41 3.20	37.40 55.34 73.28
2' Standoff - Round (GPD)	C	From Face	4.00 -21.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.14 1.79 2.44	1.62 2.41 3.20	37.40 55.34 73.28
2' Standoff - Round (GPD)	A	From Face	4.00 -21.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.14 1.79 2.44	1.62 2.41 3.20	37.40 55.34 73.28
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	B	From Face	4.00 -22.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	8.02 8.48 8.94	6.37 7.18 8.00	83.24 148.46 222.18
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	C	From Face	4.00 -22.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	8.02 8.48 8.94	6.37 7.18 8.00	83.24 148.46 222.18
SBNH-1D6565C w/ Mount Pipe	A	From Face	4.00 -22.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.36 10.68 11.71	86.35 170.71 264.63

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft / ft / ft	°	ft		ft^2	ft^2	lb
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Face	4.00 -20.00 3.00	5.0000	252.00	No Ice 1/2" Ice 1" Ice	13.05 13.66 14.27	9.42 10.82 12.07	94.20 189.07 293.65
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Face	4.00 -20.00 3.00	45.0000	252.00	No Ice 1/2" Ice 1" Ice	13.05 13.66 14.27	9.42 10.82 12.07	94.20 189.07 293.65
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Face	4.00 -20.00 3.00	-20.0000	252.00	No Ice 1/2" Ice 1" Ice	13.05 13.66 14.27	9.42 10.82 12.07	94.20 189.07 293.65
80010966 w/ Mount Pipe	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	17.60 18.33 19.07	9.64 11.15 12.70	147.45 263.33 389.66
80010965 w/ Mount Pipe	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	14.05 14.69 15.30	7.63 8.90 9.96	125.19 221.67 327.18
80010965 w/ Mount Pipe	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	14.05 14.69 15.30	7.63 8.90 9.96	125.19 221.67 327.18
DTMABP7819VG12A	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	19.18 26.48 35.63
DTMABP7819VG12A	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	19.18 26.48 35.63
DTMABP7819VG12A	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	19.18 26.48 35.63
RRUS 11	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.70 71.50 95.33
RRUS 11	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.70 71.50 95.33
RRUS 11	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.70 71.50 95.33
RRUS 32 B2	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	52.90 73.96 98.21
RRUS 32 B2	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	52.90 73.96 98.21
RRUS 32 B2	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	52.90 73.96 98.21
RRUS 32	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	77.00 104.93 136.47
RRUS 32	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	77.00 104.93 136.47
RRUS 32	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	77.00 104.93 136.47
RRUS 4478 B14	B	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	59.90 75.78 94.29

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert (ft / ft / ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (lb)
RRUS 4478 B14	C	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	59.90 75.78 94.29
RRUS 4478 B14	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	59.90 75.78 94.29
(2) DC6-48-60-18-8F Surge Suppression Unit	A	From Face	4.00 -20.00 3.00	-15.0000	252.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	18.90 36.62 56.82
(2) DC6-48-60-18-8F Surge Suppression Unit	B	From Face	4.00 -20.00 3.00	49.0000	252.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	18.90 36.62 56.82
(2) DC6-48-60-18-8F Surge Suppression Unit	C	From Face	4.00 -20.00 3.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	18.90 36.62 56.82
GPS	A	From Face	2.00 0.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	0.11 0.21 0.28	0.11 0.21 0.28	0.87 3.85 7.85
4' Standoff	C	From Face	2.00 2.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	3.41 4.47 5.50	3.41 4.47 5.50	80.00 104.00 128.00
4' Standoff	C	From Face	2.00 10.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	3.41 4.47 5.50	3.41 4.47 5.50	80.00 104.00 128.00
4' Standoff	D	From Face	2.00 -15.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	3.41 4.47 5.50	3.41 4.47 5.50	80.00 104.00 128.00
4' Standoff	D	From Face	2.00 8.00 2.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice	3.41 4.47 5.50	3.41 4.47 5.50	80.00 104.00 128.00
SBNHH-1D65B w/ Mount Pipe	B	From Face	2.00 -2.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
SBNHH-1D65B w/ Mount Pipe	B	From Face	2.00 -8.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
SBNHH-1D65B w/ Mount Pipe	C	From Face	4.00 2.00 0.00	35.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
SBNHH-1D65B w/ Mount Pipe	C	From Face	4.00 10.00 2.00	35.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
SBNHH-1D65B w/ Mount Pipe	A	From Face	2.00 -10.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
SBNHH-1D65B w/ Mount Pipe	A	From Face	2.00 0.00 2.00	-25.0000	252.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.30 120.29 189.03
LPA-80063/6CF w/ Mount Pipe	B	From Face	2.00 10.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.83 10.40 10.93	10.22 11.38 12.27	52.22 144.64 245.54
LPA-80063/6CF w/ Mount Pipe	B	From Face	2.00 15.00 2.00	15.0000	252.00	No Ice 1/2" Ice 1" Ice	9.83 10.40 10.93	10.22 11.38 12.27	52.22 144.64 245.54
LPA-80063/6CF w/ Mount Pipe	D	From Face	4.00 -15.00 2.00	-55.0000	252.00	No Ice 1/2" Ice 1" Ice	9.83 10.40 10.93	10.22 11.38 12.27	52.22 144.64 245.54

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
LPA-80063/6CF w/ Mount Pipe	D	From Face	4.00	-55.0000	252.00	No Ice	9.83	10.22	52.22
			8.00			1/2" Ice	10.40	11.38	144.64
			2.00			1" Ice	10.93	12.27	245.54
LPA-80080/6CF w/ Mount Pipe	A	From Face	2.00	-25.0000	252.00	No Ice	4.35	10.04	42.90
			8.00			1/2" Ice	4.79	11.00	107.03
			2.00			1" Ice	5.25	11.83	178.83
LPA-80080/6CF w/ Mount Pipe	A	From Face	2.00	-25.0000	252.00	No Ice	4.35	10.04	42.90
			10.00			1/2" Ice	4.79	11.00	107.03
			2.00			1" Ice	5.25	11.83	178.83
FD9R6004/2C-3L	B	From Face	2.00	15.0000	252.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			2.00			1" Ice	0.47	0.17	8.79
FD9R6004/2C-3L	C	From Face	2.00	35.0000	252.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			2.00			1" Ice	0.47	0.17	8.79
FD9R6004/2C-3L	A	From Face	2.00	-15.0000	252.00	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.39	0.12	5.40
			2.00			1" Ice	0.47	0.17	8.79
RRH2X60-AWS	B	From Face	2.00	15.0000	252.00	No Ice	3.50	2.10	55.00
			0.00			1/2" Ice	3.76	2.34	79.31
			2.00			1" Ice	4.03	2.58	107.31
RRH2X60-AWS	C	From Face	2.00	35.0000	252.00	No Ice	3.50	2.10	55.00
			0.00			1/2" Ice	3.76	2.34	79.31
			2.00			1" Ice	4.03	2.58	107.31
RRH2X60-AWS	A	From Face	2.00	-15.0000	252.00	No Ice	3.50	2.10	55.00
			0.00			1/2" Ice	3.76	2.34	79.31
			2.00			1" Ice	4.03	2.58	107.31
RRH2X60-PCS	B	From Face	2.00	15.0000	252.00	No Ice	2.20	1.36	55.00
			0.00			1/2" Ice	2.39	1.52	72.91
			2.00			1" Ice	2.59	1.68	93.69
RRH2X60-PCS	C	From Face	2.00	35.0000	252.00	No Ice	2.20	1.36	55.00
			0.00			1/2" Ice	2.39	1.52	72.91
			2.00			1" Ice	2.59	1.68	93.69
RRH2X60-PCS	A	From Face	2.00	-15.0000	252.00	No Ice	2.20	1.36	55.00
			0.00			1/2" Ice	2.39	1.52	72.91
			2.00			1" Ice	2.59	1.68	93.69
RRH 2X60AWS LTE	B	From Face	2.00	15.0000	252.00	No Ice	1.87	1.26	44.00
			0.00			1/2" Ice	2.04	1.41	60.13
			2.00			1" Ice	2.23	1.57	78.96
RRH 2X60AWS LTE	C	From Face	2.00	35.0000	252.00	No Ice	1.87	1.26	44.00
			0.00			1/2" Ice	2.04	1.41	60.13
			2.00			1" Ice	2.23	1.57	78.96
RRH 2X60AWS LTE	A	From Face	2.00	-15.0000	252.00	No Ice	1.87	1.26	44.00
			0.00			1/2" Ice	2.04	1.41	60.13
			2.00			1" Ice	2.23	1.57	78.96
DB-T1-6Z-8AB-0Z	B	From Face	2.00	15.0000	252.00	No Ice	4.80	2.00	44.00
			0.00			1/2" Ice	5.07	2.19	80.13
			2.00			1" Ice	5.35	2.39	120.22
DB-T1-6Z-8AB-0Z	C	From Face	2.00	35.0000	252.00	No Ice	4.80	2.00	44.00
			0.00			1/2" Ice	5.07	2.19	80.13
			2.00			1" Ice	5.35	2.39	120.22
DB-T1-6Z-8AB-0Z	A	From Face	2.00	-15.0000	252.00	No Ice	4.80	2.00	44.00
			0.00			1/2" Ice	5.07	2.19	80.13
			2.00			1" Ice	5.35	2.39	120.22
Platform	C	None		0.0000	239.50	No Ice	75.38	75.38	10500.00
						1/2" Ice	94.22	94.22	13000.00
						1" Ice	113.06	113.06	15500.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
10' x 2.5" Pipe	B	From Face	1.00 -10.00 0.00	0.0000	225.60	No Ice 1/2" Ice 1" Ice	2.50 3.53 4.58	2.50 3.53 4.58	50.00 68.64 93.79
10' x 2.5" Pipe	D	From Face	1.00 -15.00 0.00	0.0000	225.60	No Ice 1/2" Ice 1" Ice	2.50 3.53 4.58	2.50 3.53 4.58	50.00 68.64 93.79
(2) DB980H65E-M w/ 20' Mount Pipe	B	From Face	1.00 15.00 0.60	0.0000	225.60	No Ice 1/2" Ice 1" Ice	8.11 10.01 11.94	7.94 10.34 12.76	124.30 199.77 291.06
(2) DB980H65E-M w/ 20' Mount Pipe	C	From Face	1.00 -15.00 0.60	0.0000	225.60	No Ice 1/2" Ice 1" Ice	8.11 10.01 11.94	7.94 10.34 12.76	124.30 199.77 291.06
(2) DB980H65E-M w/ 10' Mount Pipe	D	From Face	1.00 10.00 0.60	0.0000	225.60	No Ice 1/2" Ice 1" Ice	5.24 6.13 7.04	5.07 6.46 7.88	66.40 114.34 172.79
14' Sector Frame	A	From Leg	0.50 0.00 0.00	60.0000	210.00	No Ice 1/2" Ice 1" Ice	18.21 23.76 29.31	0.00 0.00 0.00	492.00 690.25 888.50
14' Sector Frame	D	From Leg	0.50 0.00 0.00	15.0000	210.00	No Ice 1/2" Ice 1" Ice	18.21 23.76 29.31	0.00 0.00 0.00	492.00 690.25 888.50
(3) DB844H90E-XY w/Mount Pipe	A	From Leg	1.00 0.00 2.00	60.0000	210.00	No Ice 1/2" Ice 1" Ice	3.58 4.20 4.70	5.28 6.31 7.06	35.55 79.42 129.38
(3) DB844H90E-XY w/Mount Pipe	D	From Leg	1.00 0.00 2.00	15.0000	210.00	No Ice 1/2" Ice 1" Ice	3.58 4.20 4.70	5.28 6.31 7.06	35.55 79.42 129.38
14' Sector Frame	B	From Leg	0.50 0.00 0.00	0.0000	210.00	No Ice 1/2" Ice 1" Ice	18.21 23.76 29.31	0.00 0.00 0.00	492.00 690.25 888.50
14' Sector Frame	C	From Leg	0.50 0.00 0.00	-10.0000	210.00	No Ice 1/2" Ice 1" Ice	18.21 23.76 29.31	0.00 0.00 0.00	492.00 690.25 888.50
AIR21 B4A/B2P w/ mount pipe	B	From Leg	1.00 0.00 2.00	0.0000	210.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.54 6.20 6.87	101.25 156.43 218.21
AIR21 B4A/B2P w/ mount pipe	C	From Leg	1.00 0.00 2.00	-10.0000	210.00	No Ice 1/2" Ice 1" Ice	6.13 6.52 6.92	5.54 6.20 6.87	101.25 156.43 218.21
KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	B	From Leg	1.00 0.00 2.00	0.0000	210.00	No Ice 1/2" Ice 1" Ice	11.54 12.16 12.79	10.68 12.09 13.33	154.59 246.84 348.90
KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	C	From Leg	1.00 0.00 2.00	-10.0000	210.00	No Ice 1/2" Ice 1" Ice	11.54 12.16 12.79	10.68 12.09 13.33	154.59 246.84 348.90
RRUS 11 B12	B	From Leg	1.00 0.00 2.00	0.0000	210.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	50.70 71.57 95.49
RRUS 11 B12	C	From Leg	1.00 0.00 2.00	-10.0000	210.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	50.70 71.57 95.49
RRUS 11 B2	B	From Leg	1.00 0.00 2.00	0.0000	210.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	50.70 71.57 95.49
RRUS 11 B2	C	From Leg	1.00 0.00 2.00	-10.0000	210.00	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	50.70 71.57 95.49

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
26"x 26" Flat Panel	C	From Leg	1.00	0.0000	210.00	No Ice	5.60	0.52	15.00
			0.00			1/2" Ice	5.92	0.67	38.43
			-3.00			1" Ice	6.24	0.83	65.30
14' Sector Frame	C	From Leg	0.50	-15.0000	198.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
(3) DB844H90E-XY w/Mount Pipe	C	From Leg	1.00	-15.0000	198.00	No Ice	3.58	5.28	35.55
			0.00			1/2" Ice	4.20	6.31	79.42
			2.00			1" Ice	4.70	7.06	129.38
5' Standoff	A	From Leg	1.75	-45.0000	190.00	No Ice	2.72	12.93	145.70
			-1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-NOF-0091	A	From Leg	3.50	-45.0000	190.00	No Ice	1.40	1.40	7.50
			-3.50			1/2" Ice	2.23	2.23	18.71
			6.00			1" Ice	3.07	3.07	35.15
5' Standoff	B	From Leg	1.75	45.0000	190.00	No Ice	2.72	12.93	145.70
			1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-NOF-0091	B	From Leg	3.50	45.0000	190.00	No Ice	1.40	1.40	7.50
			3.50			1/2" Ice	2.23	2.23	18.71
			6.00			1" Ice	3.07	3.07	35.15
5' Standoff	B	From Leg	1.75	45.0000	171.00	No Ice	2.72	12.93	145.70
			1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-DOF-0093	B	From Leg	3.50	45.0000	171.00	No Ice	1.40	1.40	7.50
			3.50			1/2" Ice	2.23	2.23	18.71
			0.00			1" Ice	3.07	3.07	35.15
Catwalk	B	From Face	0.00	0.0000	139.50	No Ice	75.38	4.08	1250.00
			0.00			1/2" Ice	94.22	5.09	1600.00
			0.00			1" Ice	113.06	6.11	1950.00
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-4.00			1" Ice	4.61	4.61	8.45
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			0.00			1" Ice	4.61	4.61	8.45
WL14-69/S	C	From Leg	1.00	-39.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-2.00			1" Ice	4.61	4.61	8.45
WL14-69/S	D	From Leg	1.00	-32.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-1.00			1" Ice	4.61	4.61	8.45
WL7-13	D	From Leg	1.00	-32.0000	85.00	No Ice	2.88	2.88	25.00
			0.00			1/2" Ice	3.73	3.73	32.50
			3.00			1" Ice	4.59	4.59	40.00
2.5' Box Mount	B	From Leg	1.50	0.0000	37.00	No Ice	1.36	1.36	20.00
			0.00			1/2" Ice	2.45	2.45	40.00
			0.00			1" Ice	3.50	3.50	64.00
Camera	B	From Leg	1.50	0.0000	37.00	No Ice	0.11	0.05	2.00
			0.00			1/2" Ice	0.16	0.08	3.30
			0.00			1" Ice	0.21	0.12	5.42
3' Side Arm	D	From Face	1.50	0.0000	36.50	No Ice	0.93	0.93	44.94
			0.00			1/2" Ice	1.13	1.13	54.87
			0.00			1" Ice	1.37	1.37	67.25
GPS	D	From Face	3.00	0.0000	36.50	No Ice	0.13	0.13	0.87
			0.00			1/2" Ice	0.21	0.21	3.85
			0.00			1" Ice	0.28	0.28	7.85

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Platform	B	From Face	0.00	0.0000	21.00	No Ice	5.61	2.70	100.00
			10.00			1/2" Ice	7.01	3.38	125.00
			0.00			1" Ice	8.42	4.05	150.00
(2) Junction Box (40"x14"x9")	B	From Face	0.00	0.0000	21.00	No Ice	3.88	2.50	50.00
			10.00			1/2" Ice	3.88	2.50	50.00
			0.00			1" Ice	3.88	2.50	50.00
RRU (28" x 15.5" x 10")	B	From Face	0.00	0.0000	21.00	No Ice	3.62	2.36	65.00
			10.00			1/2" Ice	3.86	2.57	94.93
			0.00			1" Ice	4.11	2.78	128.52

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	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_LEG_OUTER_T1	2L2 1/2x2 1/2x1/4x3/8	Column	Single Angle	A36	Typical	2.38	3.347	1.41	.049
3	TWR_TOP_GIRT_T1	2L3x4x5/16x3/8	Beam	Wide Flange	A36	Typical	4.18	15.508	3.29	.136
4	TWR_DIAG_T1	2L3x4x5/16x3/8	Column	None	A36	Typical	4.18	15.508	3.29	.136
5	TWR_DIAG_OUTER_T1	2L3 1/2x4x5/16x3/8	Column	None	A36	Typical	4.49	15.551	5.1	.146
6	TWR_RED_HORZ_T1	L2 1/2x2 1/2x3/16	Beam	None	A36	Typical	.902	.547	.547	.011
7	TWR_RED_HORZ_2_T1	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
8	TWR_HORZ_OUTER_T1	W12x26	Beam	None	A36	Typical	7.65	17.3	204	.3
9	TWR_RED_HORZ_3_T1	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
10	TWR_RED_HORZ_4_T1	L2 1/2x2 1/2x3/16	Beam	None	A36	Typical	.902	.547	.547	.011
11	TWR_RED_DIAG_T1	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
12	TWR_LEG_T2	W6x20	Column	Wide Flange	A36	Typical	5.87	13.3	41.4	.24
13	TWR_DIAG_T2	2L3x2 1/2x3/8x3/8	Column	None	A36	Typical	3.84	5.153	3.31	.18
14	TWR_RED_HORZ_T2	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
15	TWR_RED_HORZ_2_T2	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
16	TWR_RED_DIAG_T2	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
17	TWR_RED_HORZ_3_T2	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
18	TWR_RED_DIAG_2_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
19	TWR_RED_DIAG_3_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
20	TWR_RED_HIP_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
21	TWR_RED_HIP_2_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
22	TWR_RED_HIPDIA_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
23	TWR_RED_HIPDIA_2_T2	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
24	TWR_INNER_SUPP_T2	W10x30	Beam	Wide Flange	A36	Typical	8.84	16.7	170	.622
25	TWR_INNER_SQ_T2	W8x13	Beam	Wide Flange	A36	Typical	3.84	2.73	39.6	.087
26	TWR_INNER_CORNER_T2	W8x13	Beam	Wide Flange	A36	Typical	3.84	2.73	39.6	.087
27	TWR_LEG_T3	W6x20	Column	Wide Flange	A36	Typical	5.87	13.3	41.4	.24
28	TWR_HORZ_T3	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
29	TWR_DIAG_T3	2L3x2 1/2x3/8x3/8	Column	None	A36	Typical	3.84	5.153	3.31	.18
30	TWR_RED_HORZ_T3	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
31	TWR_RED_HORZ_2_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
32	TWR_RED_DIAG_T3	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
33	TWR_RED_HORZ_3_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
34	TWR_RED_DIAG_2_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
35	TWR_RED_DIAG_3_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
36	TWR_RED_HIP_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
37	TWR_RED_HIP_2_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
38	TWR_RED_HIPDIA_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
39	TWR_RED_HIPDIA_2_T3	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
40	TWR_INNER_SUPP_T3	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
41	TWR_INNER_SQ_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
42	TWR_INNER_CORNER_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
43	TWR_INNER_TRI_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
44	TWR_INNER_BRACE_T3	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
45	TWR_INNER_LADDER_T3	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
46	TWR_LEG_T4	W6x25	Column	Wide Flange	A36	Typical	7.34	17.1	53.4	.461
47	TWR_HORZ_T4	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
48	TWR_DIAG_T4	2L3x2-1/2x1/2x3/8	Column	None	A36	Typical	5	6.999	4.167	.417
49	TWR_RED_HORZ_T4	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
50	TWR_RED_HORZ_2_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
51	TWR_RED_DIAG_T4	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
52	TWR_RED_HORZ_3_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
53	TWR_RED_DIAG_2_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
54	TWR_RED_DIAG_3_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
55	TWR_RED_HIP_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
56	TWR_RED_HIP_2_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
57	TWR_RED_HIPDIA_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
58	TWR_RED_HIPDIA_2_T4	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
59	TWR_INNER_SUPP_T4	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
60	TWR_INNER_SQ_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
61	TWR_INNER_CORNER_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
62	TWR_INNER_TRI_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
63	TWR_INNER_BRACE_T4	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
64	TWR_INNER_LADDER_T4	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
65	TWR_LEG_T5	W8x31	Column	Wide Flange	A36	Typical	9.13	37.1	110	.536
66	TWR_HORZ_T5	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
67	TWR_DIAG_T5	2L3x2-1/2x1/2x3/8	Column	None	A36	Typical	5	6.999	4.167	.417
68	TWR_RED_HORZ_T5	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
69	TWR_RED_HORZ_2_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
70	TWR_RED_DIAG_T5	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
71	TWR_RED_HORZ_3_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
72	TWR_RED_DIAG_2_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
73	TWR_RED_DIAG_3_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
74	TWR_RED_HIP_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
75	TWR_RED_HIP_2_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
76	TWR_RED_HIPDIA_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
77	TWR_RED_HIPDIA_2_T5	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
78	TWR_INNER_SUPP_T5	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
79	TWR_INNER_SQ_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
80	TWR_INNER_CORNER_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
81	TWR_INNER_TRI_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
82	TWR_INNER_BRACE_T5	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
83	TWR_INNER_LADDER_T5	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
84	TWR_LEG_T6	W8x40	Column	Wide Flange	A36	Typical	11.7	49.1	146	1.12
85	TWR_HORZ_T6	2L3x2 1/2x5/16x3/8	Beam	None	A36	Typical	3.242	4.255	2.845	.106
86	TWR_DIAG_T6	2L4x3x3/8x3/8	Column	None	A36	Typical	4.97	8.508	7.93	.233
87	TWR_RED_HORZ_T6	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
88	TWR_RED_HORZ_2_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
89	TWR_RED_DIAG_T6	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
90	TWR_RED_HORZ_3_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
91	TWR_RED_DIAG_2_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
92	TWR_RED_DIAG_3_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
93	TWR_RED_HIP_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
94	TWR_RED_HIP_2_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
95	TWR_RED_HIPDIA_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
96	TWR_RED_HIPDIA_2_T6	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
97	TWR_INNER_SUPP_T6	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
98	TWR_INNER_SQ_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
99	TWR_INNER_CORNER_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
100	TWR_INNER_TRI_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
101	TWR_INNER_BRACE_T6	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
102	TWR_INNER_LADDER_T6	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
103	TWR_LEG_T7	W10x54	Column	Wide Flange	A36	Typical	15.8	103	303	1.82
104	TWR_HORZ_T7	2L3x2 1/2x3/8x3/8	Beam	None	A36	Typical	3.84	5.153	3.31	.18
105	TWR_DIAG_T7	2L4x3x3/8x3/8	Column	None	A36	Typical	4.97	8.508	7.93	.233
106	TWR_RED_HORZ_T7	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
107	TWR_RED_HORZ_2_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
108	TWR_RED_DIAG_T7	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
109	TWR_RED_HORZ_3_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
110	TWR_RED_DIAG_2_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
111	TWR_RED_DIAG_3_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
112	TWR_RED_HIP_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
113	TWR_RED_HIP_2_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
114	TWR_RED_HIPDIA_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
115	TWR_RED_HIPDIA_2_T7	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
116	TWR_INNER_SUPP_T7	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
117	TWR_INNER_SQ_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
118	TWR_INNER_CORNER_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
119	TWR_INNER_TRI_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
120	TWR_INNER_BRACE_T7	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
121	TWR_INNER_LADDER_T7	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
122	TWR_LEG_T8	W10x60	Column	Wide Flange	A36	Typical	17.7	116	341	2.48
123	TWR_HORZ_T8	2L3x2 1/2x3/8x3/8	Beam	None	A36	Typical	3.84	5.153	3.31	.18
124	TWR_DIAG_T8	2L4x3x1/2x3/8	Column	None	A36	Typical	6.5	11.536	10.1	.542
125	TWR_RED_HORZ_T8	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
126	TWR_RED_HORZ_2_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
127	TWR_RED_DIAG_T8	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
128	TWR_RED_HORZ_3_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
129	TWR_RED_DIAG_2_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
130	TWR_RED_DIAG_3_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
131	TWR_RED_HIP_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
132	TWR_RED_HIP_2_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
133	TWR_RED_HIPDIA_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
134	TWR_RED_HIPDIA_2_T8	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
135	TWR_INNER_SUPP_T8	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
136	TWR_INNER_SQ_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
137	TWR_INNER_CORNER_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
138	TWR_INNER_TRI_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
139	TWR_INNER_BRACE_T8	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
140	TWR_INNER_LADDER_T8	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
141	TWR_LEG_T9	W10x68	Column	Wide Flange	A36	Typical	19.9	134	394	3.56
142	TWR_HORZ_T9	2L3x2 1/2x3/8x3/8	Beam	None	A36	Typical	3.84	5.153	3.31	.18
143	TWR_DIAG_T9	2L4x3x1/2x3/8	Column	None	A36	Typical	6.5	11.536	10.1	.542
144	TWR_RED_HORZ_T9	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
145	TWR_RED_HORZ_2_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
146	TWR_RED_DIAG_T9	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
147	TWR_RED_HORZ_3_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
148	TWR_RED_DIAG_2_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
149	TWR_RED_DIAG_3_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
150	TWR_RED_HIP_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
151	TWR_RED_HIP_2_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
152	TWR_RED_HIPDIA_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021
153	TWR_REDHIPDIA_2_T9	2L2 1/2x2 1/2x3/16x3/8	Column	None	A36	Typical	1.8	2.499	1.09	.021

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
154	TWR_INNER_SUPP_T9	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
155	TWR_INNER_SQ_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
156	TWR_INNER_CORNER_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
157	TWR_INNER_TRI_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
158	TWR_INNER_BRACE_T9	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
159	TWR_INNER_LADDER_T9	2L3x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
160	TWR_LEG_T10	W12x79	Column	Wide Flange	A36	Typical	23.2	216	662	3.84
161	TWR_HORZ_T10	2L4x3x1/2x3/8	Beam	None	A36	Typical	6.5	11.536	10.1	.542
162	TWR_DIAG_T10	2L4x4x1/2x3/8	Column	None	A36	Typical	7.5	25.217	11.1	.625
163	TWR_RED_HORZ_T10	L3x3x3/16	Beam	None	A36	Typical	1.09	.96	.96	.014
164	TWR_RED_HORZ_2_T10	2L2 1/2x2 1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
165	TWR_RED_DIAG_T10	L3x3x3/16	Column	None	A36	Typical	1.09	.96	.96	.014
166	TWR_RED_HORZ_3_T10	2L2 1/2x2 1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
167	TWR_RED_DIAG_2_T10	2L2 1/2x2 1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
168	TWR_RED_HORZ_4_T10	2L3x3x1/4x3/8	Beam	None	A36	Typical	2.88	5.535	2.49	.06
169	TWR_RED_DIAG_3_T10	2L2 1/2x2 1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
170	TWR_RED_DIAG_4_T10	2L2 1/2x2 1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
171	TWR_RED_DIAG_0_T10	L2.5x2.5x8	Column	None	A36	Typical	2.26	1.22	1.22	.188
172	TWR_RED_HORZ_0_T10	L2.5x2.5x3	Column	None	A36	Typical	.901	.535	.535	.011
173	TWR_RED_HIP_1_T10	LL4x4x8x3	Column	None	A36	Typical	7.5	25.1	11	.644
174	TWR_RED_HIP_3_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
175	TWR_RED_HIPDIA_1_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
176	TWR_RED_HIPDIA_3_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
177	TWR_INNER_GIRT_T10	C4x7.2	Column	None	A36	Typical	2.13	.425	4.58	.082

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_INNER_SUPP_T1	2C12x20.7x0.375_GMA	Beam	A36_Gen	12.18	17.311	258	.74
2	TWR_HORZ_T2	2C10x20x0.375_GMA	Beam	A36_Gen	11.76	13.025	157.8	.74
3	TWR_INNER_SUPP_T2	2C12x20.7x0.375_GMA	Beam	A36_Gen	12.18	17.311	258	.74
4	TWR_INNER_SUPP_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16
5	TWR_INNER_SQ_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16
6	TWR_INNER_CORNER_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16
7	TWR_INNER_LADDER_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16
8	TWR_INNER_TRI_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16
9	TWR_INNER_BRACE_T10	2C4x7.25x0.375_GMA	Beam	A36_Gen	4.26	2.647	9.18	.16

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Plate/Wall)
1	Dead	None		-1		40	418	40		
2	No Ice Wind 0 deg	None				40	1172	112		
3	No Ice Wind 45 deg	None				80	1148	160		
4	No Ice Wind 90 deg	None				40	1178	120		
5	No Ice Wind 135 deg	None				80	1138	160		
6	No Ice Wind 180 deg	None				40	1172	112		
7	No Ice Wind 225 deg	None				80	1148	160		
8	No Ice Wind 270 deg	None				40	1178	120		
9	No Ice Wind 315 deg	None				80	1138	160		
10	Ice	None				40	424	822		
11	Temperature Drop	None						782		
12	Ice Wind 0 deg	None				40	1166	64		
13	Ice Wind 45 deg	None				80	1102	160		
14	Ice Wind 90 deg	None				40	1178	120		
15	Ice Wind 135 deg	None				80	1090	160		
16	Ice Wind 180 deg	None				40	1166	64		
17	Ice Wind 225 deg	None				80	1102	160		
18	Ice Wind 270 deg	None				40	1178	120		
19	Ice Wind 315 deg	None				80	1090	160		
20	Service Wind 0 deg	None				40	1154	88		
21	Service Wind 45 deg	None				80	1096	160		
22	Service Wind 90 deg	None				40	1156	120		
23	Service Wind 135 deg	None				80	1076	160		
24	Service Wind 180 deg	None				40	1154	88		
25	Service Wind 225 deg	None				80	1096	160		
26	Service Wind 270 deg	None				40	1156	120		
27	Service Wind 315 deg	None				80	1076	160		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Dead Only	Yes			1	1	28	1	29	1														
2	1.2 Dead+1.6 Wind 0 deg - No Ice	Yes			1	1.2	2	1.6	28	1.2	29	1												
3	0.9 Dead+1.6 Wind 0 deg - No Ice	Yes			1	.9	2	1.6	28	.9	29	1												
4	1.2 Dead+1.6 Wind 45 deg - No Ice	Yes			1	1.2	3	1.6	28	1.2	29	1												
5	0.9 Dead+1.6 Wind 45 deg - No Ice	Yes			1	.9	3	1.6	28	.9	29	1												
6	1.2 Dead+1.6 Wind 90 deg - No Ice	Yes			1	1.2	4	1.6	28	1.2	29	1												
7	0.9 Dead+1.6 Wind 90 deg - No Ice	Yes			1	.9	4	1.6	28	.9	29	1												

Load Combinations (Continued)

	Description	Sol...	PD...	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
8	1.2 Dead+1.6 Wind 135 deg - No Ice	Yes			1	1.2	5	1.6	28	1.2	29	1													
9	0.9 Dead+1.6 Wind 135 deg - No Ice	Yes			1	.9	5	1.6	28	.9	29	1													
10	1.2 Dead+1.6 Wind 180 deg - No Ice	Yes			1	1.2	6	1.6	28	1.2	29	1													
11	0.9 Dead+1.6 Wind 180 deg - No Ice	Yes			1	.9	6	1.6	28	.9	29	1													
12	1.2 Dead+1.6 Wind 225 deg - No Ice	Yes			1	1.2	7	1.6	28	1.2	29	1													
13	0.9 Dead+1.6 Wind 225 deg - No Ice	Yes			1	.9	7	1.6	28	.9	29	1													
14	1.2 Dead+1.6 Wind 270 deg - No Ice	Yes			1	1.2	8	1.6	28	1.2	29	1													
15	0.9 Dead+1.6 Wind 270 deg - No Ice	Yes			1	.9	8	1.6	28	.9	29	1													
16	1.2 Dead+1.6 Wind 315 deg - No Ice	Yes			1	1.2	9	1.6	28	1.2	29	1													
17	0.9 Dead+1.6 Wind 315 deg - No Ice	Yes			1	.9	9	1.6	28	.9	29	1													
18	1.2 Dead+1.0 Ice+1.0 Temp	Yes			1	1.2	10	1	11	1	28	1.2	29	1											
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+...	Yes			1	1.2	12	1	10	1	11	1	28	1.2	29	1									
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice...	Yes			1	1.2	13	1	10	1	11	1	28	1.2	29	1									
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice...	Yes			1	1.2	14	1	10	1	11	1	28	1.2	29	1									
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ic...	Yes			1	1.2	15	1	10	1	11	1	28	1.2	29	1									
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ic...	Yes			1	1.2	16	1	10	1	11	1	28	1.2	29	1									
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ic...	Yes			1	1.2	17	1	10	1	11	1	28	1.2	29	1									
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ic...	Yes			1	1.2	18	1	10	1	11	1	28	1.2	29	1									
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ic...	Yes			1	1.2	19	1	10	1	11	1	28	1.2	29	1									
27	Dead+Wind 0 deg - Service	Yes			1	1	20	1	28	1	29	1													
28	Dead+Wind 45 deg - Service	Yes			1	1	21	1	28	1	29	1													
29	Dead+Wind 90 deg - Service	Yes			1	1	22	1	28	1	29	1													
30	Dead+Wind 135 deg - Service	Yes			1	1	23	1	28	1	29	1													
31	Dead+Wind 180 deg - Service	Yes			1	1	24	1	28	1	29	1													
32	Dead+Wind 225 deg - Service	Yes			1	1	25	1	28	1	29	1													
33	Dead+Wind 270 deg - Service	Yes			1	1	26	1	28	1	29	1													
34	Dead+Wind 315 deg - Service	Yes			1	1	27	1	28	1	29	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	N441	max	41.471	14	485.47	12	34.785	3	0	1	.436	16	0	1
2		min	-34.203	7	-357.841	5	-39.199	10	0	1	-.387	9	0	1
3	N442	max	34.278	15	489.076	8	34.822	3	0	1	.385	13	0	1
4		min	-41.547	6	-358.575	17	-39.309	10	0	1	-.435	4	0	1
5	N443	max	31.687	13	480.901	4	39.274	2	0	1	.316	8	0	1
6		min	-38.526	4	-360.119	13	-34.788	11	0	1	-.271	17	0	1
7	N444	max	38.617	16	481.361	16	39.234	2	0	1	.273	5	0	1
8		min	-31.777	9	-363.604	9	-34.818	11	0	1	-.318	12	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
9	Totals:	max	143.423	15	597.494	23	146.843	2						
10		min	-143.423	7	212.724	3	-146.843	11						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1	M1274	2L3 1/2x4x5/16x3/8	.072	0	21	.002	9.019	y	4	24.588	145.476	16.043	8.582	1	H1-1b*
2	M1275	2L3 1/2x4x5/16x3/8	.079	18.039	23	.002	9.019	y	14	24.588	145.476	16.043	8.582	1	H1-1b*
3	M1276	2L3 1/2x4x5/16x3/8	.070	0	25	.002	9.019	y	16	24.588	145.476	16.043	8.582	1	H1-1b*
4	M1277	2L3 1/2x4x5/16x3/8	.079	18.039	23	.002	9.019	y	6	24.588	145.476	16.043	8.582	1	H1-1b*
5	M1278	2L3 1/2x4x5/16x3/8	.076	0	19	.002	9.019	y	4	24.588	145.476	16.043	8.582	1	H1-1b*
6	M1279	2L3 1/2x4x5/16x3/8	.073	18.039	25	.002	9.019	y	10	24.588	145.476	16.043	8.582	1	H1-1b*
7	M1280	2L3 1/2x4x5/16x3/8	.074	0	21	.002	9.019	y	10	24.588	145.476	16.043	8.582	1	H1-1b*
8	M1281	2L3 1/2x4x5/16x3/8	.076	18.039	19	.002	9.019	y	16	24.588	145.476	16.043	8.582	1	H1-1b*
9	M1282	2L3 1/2x4x5/16x3/8	.064	0	10	.002	7.784	y	25	33.009	145.476	16.043	8.582	1	H1-1b*
10	M1283	2L3 1/2x4x5/16x3/8	.064	15.569	2	.002	7.784	y	25	33.009	145.476	16.043	8.582	1	H1-1b*
11	M1284	2L3 1/2x4x5/16x3/8	.062	0	14	.002	7.784	y	19	33.009	145.476	16.043	8.582	1	H1-1b*
12	M1285	2L3 1/2x4x5/16x3/8	.062	15.569	6	.002	7.784	y	19	33.009	145.476	16.043	8.582	1	H1-1b*
13	M1286	2L3 1/2x4x5/16x3/8	.064	0	2	.002	7.784	y	21	33.009	145.476	16.043	8.582	1	H1-1b*
14	M1287	2L3 1/2x4x5/16x3/8	.064	15.569	10	.002	7.784	y	21	33.009	145.476	16.043	8.582	1	H1-1b*
15	M1288	2L3 1/2x4x5/16x3/8	.062	0	6	.002	7.784	y	23	33.009	145.476	16.043	8.582	1	H1-1b*
16	M1289	2L3 1/2x4x5/16x3/8	.062	15.569	14	.002	7.784	y	23	33.009	145.476	16.043	8.582	1	H1-1b*
17	M15	2L3x4x5/16x3/8	.418	9.149	8	.004	9.149	y	22	15.416	135.432	15.999	3.964	1	H1-1a
18	M18	2L3x4x5/16x3/8	.411	9.149	14	.004	9.149	y	24	15.416	135.432	15.999	3.964	1	H1-1a
19	M22	2L3x4x5/16x3/8	.405	9.149	2	.003	9.149	y	20	15.416	135.432	15.999	3.964	1	H1-1a
20	M25	2L3x4x5/16x3/8	.412	9.149	8	.004	9.149	y	22	15.416	135.432	15.999	3.964	1	H1-1a
21	M29	2L3x4x5/16x3/8	.446	9.149	14	.004	9.149	y	26	15.416	135.432	15.999	3.964	1	H1-1a
22	M32	2L3x4x5/16x3/8	.449	9.149	6	.004	9.149	y	20	15.416	135.432	15.999	3.964	1	H1-1a
23	M36	2L3x4x5/16x3/8	.437	9.149	10	.004	9.149	y	24	15.416	135.432	15.999	3.964	1	H1-1a
24	M39	2L3x4x5/16x3/8	.435	9.149	2	.004	9.149	y	26	15.416	135.432	15.999	3.964	1	H1-1a
25	M51	2L3x2 1/2x3/8x3/8	.268	15.046	14	.003	22.569	y	25	61.942	124.416	8.283	4.374	1	H1-1a
26	M59	2L3x2 1/2x3/8x3/8	.267	15.046	6	.003	22.569	y	21	61.942	124.416	8.283	4.374	1	H1-1a
27	M67	2L3x2 1/2x3/8x3/8	.270	15.046	10	.003	22.569	y	23	61.942	124.416	8.283	4.374	1	H1-1a
28	M75	2L3x2 1/2x3/8x3/8	.270	15.046	2	.003	22.569	y	19	61.942	124.416	8.283	4.374	1	H1-1a
29	M83	2L3x2 1/2x3/8x3/8	.270	15.046	6	.003	22.569	y	21	61.942	124.416	8.283	4.374	1	H1-1a
30	M91	2L3x2 1/2x3/8x3/8	.270	15.046	14	.003	22.569	y	25	61.942	124.416	8.283	4.374	1	H1-1a
31	M99	2L3x2 1/2x3/8x3/8	.273	15.046	2	.003	22.569	y	19	61.942	124.416	8.283	4.374	1	H1-1a
32	M107	2L3x2 1/2x3/8x3/8	.273	15.046	10	.003	22.569	y	23	61.942	124.416	8.283	4.374	1	H1-1a
33	M124	2L3x2 1/2x3/8x3/8	.381	0	14	.003	22.569	y	26	61.942	124.416	8.283	4.374	1	H1-1a

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
34	M132	2L3x2 1/2x3/8x3/8	.383	0	6	.004	22.569	y	22	61.942	124.416	8.283	4.374	1	H1-1a
35	M141	2L3x2 1/2x3/8x3/8	.381	0	10	.004	22.569	y	22	61.942	124.416	8.283	4.374	1	H1-1a
36	M149	2L3x2 1/2x3/8x3/8	.378	0	2	.003	22.569	y	26	61.942	124.416	8.283	4.374	1	H1-1a
37	M158	2L3x2 1/2x3/8x3/8	.366	0	6	.003	22.569	y	22	61.942	124.416	8.283	4.374	1	H1-1a
38	M166	2L3x2 1/2x3/8x3/8	.365	0	14	.004	22.569	y	26	61.942	124.416	8.283	4.374	1	H1-1a
39	M175	2L3x2 1/2x3/8x3/8	.377	0	2	.004	22.569	y	26	61.942	124.416	8.283	4.374	1	H1-1a
40	M183	2L3x2 1/2x3/8x3/8	.379	0	10	.003	22.569	y	22	61.942	124.416	8.283	4.374	1	H1-1a
41	M205	2L3x2-1/2x1/2x3/8	.391	0	14	.003	22.569	y	25	82.809	162	11.25	5.625	1	H1-1a
42	M213	2L3x2-1/2x1/2x3/8	.394	0	6	.003	22.569	y	22	82.809	162	11.25	5.625	1	H1-1a
43	M222	2L3x2-1/2x1/2x3/8	.392	0	10	.003	22.569	y	22	82.809	162	11.25	5.625	1	H1-1a
44	M230	2L3x2-1/2x1/2x3/8	.388	0	2	.003	22.569	y	19	82.809	162	11.25	5.625	1	H1-1a
45	M239	2L3x2-1/2x1/2x3/8	.372	0	6	.003	22.569	y	21	82.809	162	11.25	5.625	1	H1-1a
46	M247	2L3x2-1/2x1/2x3/8	.370	0	14	.003	22.569	y	26	82.809	162	11.25	5.625	1	H1-1a
47	M256	2L3x2-1/2x1/2x3/8	.384	0	2	.003	22.569	y	26	82.809	162	11.25	5.625	1	H1-1a
48	M264	2L3x2-1/2x1/2x3/8	.387	0	10	.003	22.569	y	23	82.809	162	11.25	5.625	1	H1-1a
49	M286	2L3x2-1/2x1/2x3/8	.471	0	14	.003	22.569	y	25	82.809	162	11.25	5.625	1	H1-1a
50	M294	2L3x2-1/2x1/2x3/8	.474	0	6	.003	22.569	y	22	82.809	162	11.25	5.625	1	H1-1a
51	M303	2L3x2-1/2x1/2x3/8	.474	0	10	.003	22.569	y	23	82.809	162	11.25	5.625	1	H1-1a
52	M311	2L3x2-1/2x1/2x3/8	.469	0	2	.003	22.569	y	19	82.809	162	11.25	5.625	1	H1-1a
53	M320	2L3x2-1/2x1/2x3/8	.444	0	6	.003	22.569	y	21	82.809	162	11.25	5.625	1	H1-1a
54	M328	2L3x2-1/2x1/2x3/8	.443	0	14	.003	22.569	y	26	82.809	162	11.25	5.625	1	H1-1a
55	M337	2L3x2-1/2x1/2x3/8	.466	0	2	.003	22.569	y	26	82.809	162	11.25	5.625	1	H1-1a
56	M345	2L3x2-1/2x1/2x3/8	.469	0	10	.003	22.569	y	23	82.809	162	11.25	5.625	1	H1-1a
57	M367	2L4x3x3/8x3/8	.509	0	14	.004	0	y	23	90.688	161.028	11.531	7.876	1	H1-1a
58	M375	2L4x3x3/8x3/8	.513	0	6	.004	0	y	23	90.688	161.028	11.531	7.876	1	H1-1a
59	M384	2L4x3x3/8x3/8	.515	0	10	.004	0	y	21	90.688	161.028	11.531	7.876	1	H1-1a
60	M392	2L4x3x3/8x3/8	.510	0	2	.003	0	y	21	90.688	161.028	11.531	7.876	1	H1-1a
61	M401	2L4x3x3/8x3/8	.479	0	6	.003	0	y	19	90.688	161.028	11.531	7.876	1	H1-1a
62	M409	2L4x3x3/8x3/8	.478	0	14	.003	0	y	19	90.688	161.028	11.531	7.876	1	H1-1a
63	M418	2L4x3x3/8x3/8	.507	0	2	.003	0	y	25	90.688	161.028	11.531	7.876	1	H1-1a
64	M426	2L4x3x3/8x3/8	.510	0	10	.004	0	y	25	90.688	161.028	11.531	7.876	1	H1-1a
65	M448	2L4x3x3/8x3/8	.569	0	14	.003	0	y	23	90.688	161.028	11.531	7.876	1	H1-1a
66	M456	2L4x3x3/8x3/8	.573	0	6	.003	22.569	y	21	90.688	161.028	11.531	7.876	1	H1-1a
67	M465	2L4x3x3/8x3/8	.571	0	10	.003	22.569	y	23	90.688	161.028	11.531	7.876	1	H1-1a
68	M473	2L4x3x3/8x3/8	.566	0	2	.003	0	y	21	90.688	161.028	11.531	7.876	1	H1-1a
69	M482	2L4x3x3/8x3/8	.532	0	6	.003	0	y	19	90.688	161.028	11.531	7.876	1	H1-1a
70	M490	2L4x3x3/8x3/8	.531	0	14	.003	22.569	y	25	90.688	161.028	11.531	7.876	1	H1-1a
71	M499	2L4x3x3/8x3/8	.565	0	2	.003	22.569	y	19	90.688	161.028	11.531	7.876	1	H1-1a
72	M507	2L4x3x3/8x3/8	.567	0	10	.003	0	y	25	90.688	161.028	11.531	7.876	1	H1-1a
73	M529	2L4x3x1/2x3/8	.506	0	14	.003	0	y	24	123.934	210.6	15.634	10.202	1	H1-1a

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
74	M537	2L4x3x1/2x3/8	.510	0	6	.003	0	y	23	123.934	210.6	15.634	10.202	1	H1-1a
75	M546	2L4x3x1/2x3/8	.506	0	10	.003	0	y	21	123.934	210.6	15.634	10.202	1	H1-1a
76	M554	2L4x3x1/2x3/8	.501	0	2	.003	0	y	20	123.934	210.6	15.634	10.202	1	H1-1a
77	M563	2L4x3x1/2x3/8	.471	0	6	.003	0	y	4	123.934	210.6	15.634	10.202	1	H1-1a
78	M571	2L4x3x1/2x3/8	.470	0	14	.003	22.569	y	25	123.934	210.6	15.634	10.202	1	H1-1a
79	M580	2L4x3x1/2x3/8	.499	0	2	.003	22.569	y	19	123.934	210.6	15.634	10.202	1	H1-1a
80	M588	2L4x3x1/2x3/8	.502	0	10	.003	0	y	24	123.934	210.6	15.634	10.202	1	H1-1a
81	M610	2L4x3x1/2x3/8	.552	0	14	.004	0	y	10	123.934	210.6	15.634	10.202	1	H1-1a
82	M618	2L4x3x1/2x3/8	.553	0	6	.004	0	y	10	123.934	210.6	15.634	10.202	1	H1-1a
83	M627	2L4x3x1/2x3/8	.553	0	10	.004	0	y	6	123.934	210.6	15.634	10.202	1	H1-1a
84	M635	2L4x3x1/2x3/8	.549	0	2	.003	0	y	6	123.934	210.6	15.634	10.202	1	H1-1a
85	M644	2L4x3x1/2x3/8	.514	0	6	.004	0	y	2	123.934	210.6	15.634	10.202	1	H1-1a
86	M652	2L4x3x1/2x3/8	.514	0	14	.004	0	y	2	123.934	210.6	15.634	10.202	1	H1-1a
87	M661	2L4x3x1/2x3/8	.548	0	2	.003	0	y	14	123.934	210.6	15.634	10.202	1	H1-1a
88	M669	2L4x3x1/2x3/8	.550	0	10	.004	22.569	y	8	123.934	210.6	15.634	10.202	1	H1-1a
89	M691	2L4x4x1/2x3/8	.519	0	14	.006	0	y	24	150.524	243	26.015	10.64	1	H1-1a
90	M701	2L4x4x1/2x3/8	.519	0	6	.005	0	y	22	150.524	243	26.015	10.64	1	H1-1a
91	M712	2L4x4x1/2x3/8	.565	0	10	.005	0	y	22	151.596	243	26.015	10.64	1	H1-1a
92	M722	2L4x4x1/2x3/8	.566	0	2	.006	0	y	4	151.596	243	26.015	10.64	1	H1-1a
93	M733	2L4x4x1/2x3/8	.464	0	6	.007	0	y	4	150.524	243	26.015	10.64	1	H1-1a
94	M743	2L4x4x1/2x3/8	.465	0	14	.007	0	y	16	150.524	243	26.015	10.64	1	H1-1a
95	M754	2L4x4x1/2x3/8	.565	0	2	.006	0	y	16	151.596	243	26.015	10.64	1	H1-1a
96	M764	2L4x4x1/2x3/8	.564	0	10	.006	0	y	12	151.596	243	26.015	10.64	1	H1-1a
97	M1270	W12x26	.301	20.75	22	.006	0	y	6	190.321	247.86	22.059	52.598	1	H1-1a
98	M1271	W12x26	.301	20.75	22	.006	41.5	y	10	190.321	247.86	22.059	52.598	1	H1-1a
99	M1272	W12x26	.301	20.75	24	.006	41.5	y	14	190.321	247.86	22.059	52.598	1	H1-1a
100	M1273	W12x26	.301	20.75	20	.006	0	y	2	190.321	247.86	22.059	52.598	1	H1-1a
101	M123	2L3x2 1/2x1/4x3/8	.196	8.375	7	.007	25.125	y	22	46.996	85.212	5.423	3.034	1	H1-1b*
102	M140	2L3x2 1/2x1/4x3/8	.193	17.099	11	.007	8.375	y	22	46.996	85.212	5.423	3.034	1	H1-1b*
103	M157	2L3x2 1/2x1/4x3/8	.188	17.099	7	.005	8.375	y	20	46.996	85.212	5.423	3.034	1	H1-1b*
104	M174	2L3x2 1/2x1/4x3/8	.194	8.375	11	.005	25.125	y	24	46.996	85.212	5.423	3.034	1	H1-1b*
105	M204	2L3x2 1/2x1/4x3/8	.324	25.125	14	.007	25.125	y	23	46.996	85.212	5.423	3.034	1	H1-1a
106	M221	2L3x2 1/2x1/4x3/8	.321	8.375	2	.007	8.375	y	21	46.996	85.212	5.423	3.034	1	H1-1a
107	M238	2L3x2 1/2x1/4x3/8	.313	16.75	14	.005	8.375	y	19	46.996	85.212	5.423	3.034	1	H1-1a
108	M255	2L3x2 1/2x1/4x3/8	.326	16.75	10	.005	25.125	y	25	46.996	85.212	5.423	3.034	1	H1-1a
109	M285	2L3x2 1/2x1/4x3/8	.393	16.75	6	.007	25.125	y	23	46.996	85.212	5.423	3.034	1	H1-1a
110	M302	2L3x2 1/2x1/4x3/8	.389	16.75	10	.007	8.375	y	21	46.996	85.212	5.423	3.034	1	H1-1a
111	M319	2L3x2 1/2x1/4x3/8	.379	16.75	6	.005	8.375	z	25	46.996	85.212	5.423	3.034	1	H1-1a
112	M336	2L3x2 1/2x1/4x3/8	.397	16.75	10	.005	25.125	y	25	46.996	85.212	5.423	3.034	1	H1-1a
113	M366	2L3x2 1/2x5/16x3/8	.388	16.75	6	.006	25.125	y	23	57.309	105.047	6.839	3.717	1	H1-1a

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
114	M383	2L3x2 1/2x5/16x3/8	.391	5.932	2	.006	8.375	y	21	57.309	105.047	6.839	5.947	1	H1-1a
115	M400	2L3x2 1/2x5/16x3/8	.368	16.75	14	.005	8.375	z	25	57.309	105.047	6.839	3.717	1	H1-1a
116	M417	2L3x2 1/2x5/16x3/8	.396	16.75	2	.005	25.125	z	19	57.309	105.047	6.839	3.717	1	H1-1a
117	M447	2L3x2 1/2x3/8x3/8	.387	27.568	14	.005	25.125	y	23	67.139	124.416	8.283	6.998	1	H1-1a
118	M464	2L3x2 1/2x3/8x3/8	.386	5.932	2	.005	8.375	y	21	67.139	124.416	8.283	6.998	1	H1-1a
119	M481	2L3x2 1/2x3/8x3/8	.363	16.75	14	.005	8.375	z	25	67.139	124.416	8.283	4.374	1	H1-1a
120	M498	2L3x2 1/2x3/8x3/8	.389	16.75	2	.005	25.125	z	19	67.139	124.416	8.283	4.374	1	H1-1a
121	M528	2L3x2 1/2x3/8x3/8	.444	27.568	14	.006	25.125	y	23	67.139	124.416	8.283	6.998	1	H1-1a
122	M545	2L3x2 1/2x3/8x3/8	.439	5.932	2	.006	8.375	y	21	67.139	124.416	8.283	6.998	1	H1-1a
123	M562	2L3x2 1/2x3/8x3/8	.415	16.75	6	.005	8.375	z	25	67.139	124.416	8.283	4.374	1	H1-1a
124	M579	2L3x2 1/2x3/8x3/8	.445	16.75	10	.005	25.125	z	19	67.139	124.416	8.283	4.374	1	H1-1a
125	M609	2L3x2 1/2x3/8x3/8	.485	27.568	14	.005	25.125	y	23	67.139	124.416	8.283	6.998	1	H1-1a
126	M626	2L3x2 1/2x3/8x3/8	.477	16.75	10	.005	8.375	y	21	67.139	124.416	8.283	4.374	1	H1-1a
127	M643	2L3x2 1/2x3/8x3/8	.451	16.75	6	.005	8.375	z	25	67.139	124.416	8.283	4.374	1	H1-1a
128	M660	2L3x2 1/2x3/8x3/8	.485	16.75	10	.005	25.125	z	19	67.139	124.416	8.283	4.374	1	H1-1a
129	M690	2L4x3x1/2x3/8	.269	16.75	8	.010	27.568	z	19	139.924	210.6	15.634	10.202	1	H1-1a
130	M711	2L4x3x1/2x3/8	.252	16.75	10	.010	5.932	z	26	139.924	210.6	15.634	10.202	1	H1-1a
131	M732	2L4x3x1/2x3/8	.193	0	16	.005	8.724	z	22	139.924	210.6	15.634	16.323	1	H1-1b*
132	M753	2L4x3x1/2x3/8	.250	16.75	2	.005	25.125	z	24	139.924	210.6	15.634	10.202	1	H1-1a
133	M1221	2L2 1/2x2 1/2x3/16...	.029	4.188	19	.002	8.375	y	24	24.183	58.32	4.017	2.611	1	H1-1b
134	M1222	2L2 1/2x2 1/2x3/16...	.029	4.188	20	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
135	M1223	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	8.375	y	26	24.183	58.32	4.017	2.611	1	H1-1b
136	M1224	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	0	y	26	24.183	58.32	4.017	2.611	1	H1-1b
137	M1225	2L2 1/2x2 1/2x3/16...	.029	4.188	24	.002	8.375	y	20	24.183	58.32	4.017	2.611	1	H1-1b
138	M1226	2L2 1/2x2 1/2x3/16...	.029	4.188	25	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
139	M1169	2L2 1/2x2 1/2x3/16...	.029	4.188	19	.002	8.375	y	23	24.183	58.32	4.017	2.611	1	H1-1b
140	M1170	2L2 1/2x2 1/2x3/16...	.029	4.188	20	.002	0	y	25	24.183	58.32	4.017	2.611	1	H1-1b
141	M1171	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	0	y	25	24.183	58.32	4.017	2.611	1	H1-1b
142	M1172	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	0	y	19	24.183	58.32	4.017	2.611	1	H1-1b
143	M1173	2L2 1/2x2 1/2x3/16...	.029	4.188	25	.002	8.375	y	21	24.183	58.32	4.017	2.611	1	H1-1b
144	M1174	2L2 1/2x2 1/2x3/16...	.029	4.188	24	.002	0	y	19	24.183	58.32	4.017	2.611	1	H1-1b
145	M1117	2L2 1/2x2 1/2x3/16...	.029	4.188	19	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
146	M1118	2L2 1/2x2 1/2x3/16...	.029	4.188	20	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
147	M1119	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	8.375	y	16	24.183	58.32	4.017	2.611	1	H1-1b
148	M1120	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
149	M1121	2L2 1/2x2 1/2x3/16...	.029	4.188	24	.002	8.375	y	20	24.183	58.32	4.017	2.611	1	H1-1b
150	M1122	2L2 1/2x2 1/2x3/16...	.029	4.188	25	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
151	M1065	2L2 1/2x2 1/2x3/16...	.030	4.188	19	.002	8.375	y	24	24.183	58.32	4.017	2.611	1	H1-1b
152	M1066	2L2 1/2x2 1/2x3/16...	.030	4.188	20	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
153	M1067	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	8.375	y	16	24.183	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
154	M1068	2L2 1/2x2 1/2x3/16...	.027	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
155	M1069	2L2 1/2x2 1/2x3/16...	.030	4.188	24	.002	8.375	y	4	24.183	58.32	4.017	2.611	1	H1-1b
156	M1070	2L2 1/2x2 1/2x3/16...	.030	4.188	25	.002	0	y	4	24.183	58.32	4.017	2.611	1	H1-1b
157	M1013	2L2 1/2x2 1/2x3/16...	.032	4.188	19	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
158	M1014	2L2 1/2x2 1/2x3/16...	.031	4.188	20	.002	0	y	12	24.183	58.32	4.017	2.611	1	H1-1b
159	M1015	2L2 1/2x2 1/2x3/16...	.028	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
160	M1016	2L2 1/2x2 1/2x3/16...	.028	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
161	M1017	2L2 1/2x2 1/2x3/16...	.031	4.188	24	.002	8.375	y	4	24.183	58.32	4.017	2.611	1	H1-1b
162	M1018	2L2 1/2x2 1/2x3/16...	.031	4.188	25	.002	0	y	4	24.183	58.32	4.017	2.611	1	H1-1b
163	M961	2L2 1/2x2 1/2x3/16...	.032	4.188	19	.002	8.375	y	12	24.183	58.32	4.017	2.611	1	H1-1b
164	M962	2L2 1/2x2 1/2x3/16...	.032	4.188	20	.002	0	y	12	24.183	58.32	4.017	2.611	1	H1-1b
165	M963	2L2 1/2x2 1/2x3/16...	.028	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
166	M964	2L2 1/2x2 1/2x3/16...	.028	4.188	22	.002	0	y	16	24.183	58.32	4.017	2.611	1	H1-1b
167	M965	2L2 1/2x2 1/2x3/16...	.032	4.188	24	.002	8.375	y	4	24.183	58.32	4.017	2.611	1	H1-1b
168	M966	2L2 1/2x2 1/2x3/16...	.032	4.188	25	.002	0	y	4	24.183	58.32	4.017	2.611	1	H1-1b
169	M909	2L2 1/2x2 1/2x3/16...	.032	4.188	19	.003	8.375	y	19	24.183	58.32	4.017	2.611	1	H1-1b
170	M910	2L2 1/2x2 1/2x3/16...	.032	4.188	20	.003	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
171	M911	2L2 1/2x2 1/2x3/16...	.028	4.188	22	.002	0	y	8	24.183	58.32	4.017	2.611	1	H1-1b
172	M912	2L2 1/2x2 1/2x3/16...	.028	4.188	23	.002	8.375	y	8	24.183	58.32	4.017	2.611	1	H1-1b
173	M913	2L2 1/2x2 1/2x3/16...	.032	4.188	24	.003	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
174	M914	2L2 1/2x2 1/2x3/16...	.032	4.188	25	.003	0	y	25	24.183	58.32	4.017	2.611	1	H1-1b
175	M1258	W8x13	.005	0	12	.002	0	y	16	30.531	124.416	5.805	20.868	1....	H1-1b*
176	M1259	W8x13	.005	0	16	.002	0	y	12	30.531	124.416	5.805	20.868	1....	H1-1b*
177	M1260	W8x13	.005	0	4	.002	0	y	8	30.531	124.416	5.805	20.868	1....	H1-1b*
178	M1261	W8x13	.005	0	8	.002	0	y	4	30.531	124.416	5.805	20.868	1....	H1-1b*
179	M1206	2L2 1/2x2 1/2x3/16...	.062	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
180	M1207	2L2 1/2x2 1/2x3/16...	.064	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
181	M1208	2L2 1/2x2 1/2x3/16...	.062	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
182	M1154	2L2 1/2x2 1/2x3/16...	.057	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
183	M1155	2L2 1/2x2 1/2x3/16...	.061	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
184	M1156	2L2 1/2x2 1/2x3/16...	.057	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
185	M1102	2L2 1/2x2 1/2x3/16...	.069	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
186	M1103	2L2 1/2x2 1/2x3/16...	.075	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
187	M1104	2L2 1/2x2 1/2x3/16...	.070	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
188	M1050	2L2 1/2x2 1/2x3/16...	.071	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
189	M1051	2L2 1/2x2 1/2x3/16...	.075	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
190	M1052	2L2 1/2x2 1/2x3/16...	.071	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
191	M998	2L2 1/2x2 1/2x3/16...	.072	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
192	M999	2L2 1/2x2 1/2x3/16...	.075	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
193	M1000	2L2 1/2x2 1/2x3/16...	.072	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
194	M946	2L2 1/2x2 1/2x3/16...	.081	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
195	M947	2L2 1/2x2 1/2x3/16...	.086	0	16	.003	0	y	12	12.19	58.32	4.017	2.611	1	H1-1b*
196	M948	2L2 1/2x2 1/2x3/16...	.081	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
197	M894	2L2 1/2x2 1/2x3/16...	.089	0	4	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
198	M895	2L2 1/2x2 1/2x3/16...	.093	0	16	.003	0	y	4	12.19	58.32	4.017	2.611	1	H1-1b*
199	M896	2L2 1/2x2 1/2x3/16...	.088	0	12	.003	0	y	8	12.19	58.32	4.017	2.611	1	H1-1b*
200	M845	C4x7.2	.004	2.094	23	.003	0	y	12	35.442	69.012	1.456	7.09	1	H1-1b
201	M847	C4x7.2	.004	2.094	20	.003	0	y	8	35.442	69.012	1.456	7.09	1	H1-1b
202	M849	C4x7.2	.004	2.094	19	.003	0	y	4	35.442	69.012	1.456	7.09	1	H1-1b
203	M851	C4x7.2	.043	0	26	.002	0	y	16	23.079	69.012	1.456	6.795	1	H1-1b*
204	M852	C4x7.2	.043	0	26	.003	5.375	y	16	23.079	69.012	1.456	6.795	1	H1-1b*
205	M860	C4x7.2	.004	2.094	23	.003	4.188	y	8	35.442	69.012	1.456	7.09	1	H1-1b
206	M862	C4x7.2	.004	2.094	22	.003	4.188	y	4	35.442	69.012	1.456	7.09	1	H1-1b
207	M863	C4x7.2	.004	2.094	26	.003	4.188	y	12	35.442	69.012	1.456	7.09	1	H1-1b
208	M865	C4x7.2	.029	0	26	.002	4.243	y	4	34.823	69.012	1.456	7.076	1	H1-1b*
209	M1227	2L3x2 1/2x1/4x3/8	.050	0	8	.002	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
210	M1228	2L3x2 1/2x1/4x3/8	.031	4.353	8	.002	0	y	23	44.802	85.212	5.423	4.855	1	H1-1b
211	M1229	2L3x2 1/2x1/4x3/8	.031	4.353	8	.002	0	y	21	44.802	85.212	5.423	4.855	1	H1-1b
212	M1175	2L3x2 1/2x1/4x3/8	.037	4.353	16	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b
213	M1176	2L3x2 1/2x1/4x3/8	.037	4.353	16	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b
214	M1177	2L3x2 1/2x1/4x3/8	.047	0	10	.002	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
215	M1123	2L3x2 1/2x1/4x3/8	.057	0	10	.002	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
216	M1124	2L3x2 1/2x1/4x3/8	.042	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
217	M1125	2L3x2 1/2x1/4x3/8	.042	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
218	M1071	2L3x2 1/2x1/4x3/8	.042	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
219	M1072	2L3x2 1/2x1/4x3/8	.042	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
220	M1073	2L3x2 1/2x1/4x3/8	.059	0	10	.002	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
221	M1019	2L3x2 1/2x1/4x3/8	.059	0	10	.002	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
222	M1020	2L3x2 1/2x1/4x3/8	.042	0	17	.002	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
223	M1021	2L3x2 1/2x1/4x3/8	.042	0	17	.002	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
224	M967	2L3x2 1/2x1/4x3/8	.066	0	10	.003	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
225	M968	2L3x2 1/2x1/4x3/8	.049	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
226	M969	2L3x2 1/2x1/4x3/8	.049	0	17	.003	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
227	M915	2L3x2 1/2x1/4x3/8	.072	0	10	.003	0	y	12	46.263	85.212	5.423	4.855	1	H1-1b*
228	M916	2L3x2 1/2x1/4x3/8	.054	0	17	.002	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
229	M917	2L3x2 1/2x1/4x3/8	.053	0	17	.002	0	y	22	44.802	85.212	5.423	4.855	1	H1-1b*
230	M1254	W8x13	.054	8.375	23	.003	16.75	y	8	58.893	124.416	5.805	11.712	1	H1-1b
231	M1255	W8x13	.054	8.375	25	.003	0	y	19	58.893	124.416	5.805	11.712	1	H1-1b
232	M1256	W8x13	.054	8.375	19	.003	16.75	y	25	58.893	124.416	5.805	11.712	1	H1-1b
233	M1257	W8x13	.054	8.375	21	.003	16.75	y	19	58.893	124.416	5.805	11.712	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
234	M1202	2L2 1/2x2 1/2x3/16...	.378	8.375	2	.005	0	y	22	6.095	58.32	4.017	2.611	1	H1-1a
235	M1203	2L2 1/2x2 1/2x3/16...	.377	8.375	14	.005	16.75	y	22	6.095	58.32	4.017	2.611	1	H1-1a
236	M1204	2L2 1/2x2 1/2x3/16...	.269	8.375	10	.005	0	y	26	6.095	58.32	4.017	2.611	1	H1-1b
237	M1205	2L2 1/2x2 1/2x3/16...	.269	8.375	6	.005	16.75	y	26	6.095	58.32	4.017	2.611	1	H1-1b
238	M1150	2L2 1/2x2 1/2x3/16...	.267	8.375	6	.005	0	y	26	6.095	58.32	4.017	2.611	1	H1-1b
239	M1151	2L2 1/2x2 1/2x3/16...	.269	8.375	10	.005	16.75	y	26	6.095	58.32	4.017	2.611	1	H1-1b
240	M1152	2L2 1/2x2 1/2x3/16...	.474	8.375	16	.005	0	y	22	6.095	58.32	4.017	2.611	1	H1-1a
241	M1153	2L2 1/2x2 1/2x3/16...	.481	8.375	16	.005	16.75	y	22	6.095	58.32	4.017	2.611	1	H1-1a
242	M1098	2L2 1/2x2 1/2x3/16...	.556	8.375	16	.005	16.75	y	21	6.095	58.32	4.017	2.611	1	H1-1a
243	M1099	2L2 1/2x2 1/2x3/16...	.382	8.375	6	.005	16.75	y	23	6.095	58.32	4.017	2.611	1	H1-1a
244	M1100	2L2 1/2x2 1/2x3/16...	.385	8.375	10	.005	16.75	y	25	6.095	58.32	4.017	2.611	1	H1-1a
245	M1101	2L2 1/2x2 1/2x3/16...	.547	8.375	16	.005	0	y	23	6.095	58.32	4.017	2.611	1	H1-1a
246	M1046	2L2 1/2x2 1/2x3/16...	.384	8.375	6	.005	0	y	19	6.095	58.32	4.017	2.611	1	H1-1a
247	M1047	2L2 1/2x2 1/2x3/16...	.392	8.375	10	.005	16.75	y	25	6.095	58.32	4.017	2.611	1	H1-1a
248	M1048	2L2 1/2x2 1/2x3/16...	.549	8.375	16	.005	0	y	23	6.095	58.32	4.017	2.611	1	H1-1a
249	M1049	2L2 1/2x2 1/2x3/16...	.569	8.375	16	.005	16.75	y	21	6.095	58.32	4.017	2.611	1	H1-1a
250	M994	2L2 1/2x2 1/2x3/16...	.569	8.375	16	.005	16.75	y	21	6.095	58.32	4.017	2.611	1	H1-1a
251	M995	2L2 1/2x2 1/2x3/16...	.386	8.375	6	.005	0	y	19	6.095	58.32	4.017	2.611	1	H1-1a
252	M996	2L2 1/2x2 1/2x3/16...	.393	8.375	10	.005	16.75	y	25	6.095	58.32	4.017	2.611	1	H1-1a
253	M997	2L2 1/2x2 1/2x3/16...	.552	8.375	16	.005	0	y	23	6.095	58.32	4.017	2.611	1	H1-1a
254	M942	2L2 1/2x2 1/2x3/16...	.413	8.375	6	.005	0	y	19	6.095	58.32	4.017	2.611	1	H1-1a
255	M943	2L2 1/2x2 1/2x3/16...	.420	8.375	10	.005	16.75	y	25	6.095	58.32	4.017	2.611	1	H1-1a
256	M944	2L2 1/2x2 1/2x3/16...	.611	8.375	16	.005	0	y	23	6.095	58.32	4.017	2.611	1	H1-1a
257	M945	2L2 1/2x2 1/2x3/16...	.628	8.375	16	.005	16.75	y	21	6.095	58.32	4.017	2.611	1	H1-1a
258	M890	2L2 1/2x2 1/2x3/16...	.652	8.375	16	.005	0	y	26	6.095	58.32	4.017	2.611	1	H1-1a
259	M891	2L2 1/2x2 1/2x3/16...	.441	8.375	10	.005	16.75	y	20	6.095	58.32	4.017	2.611	1	H1-1a
260	M892	2L2 1/2x2 1/2x3/16...	.434	8.375	6	.005	0	y	24	6.095	58.32	4.017	2.611	1	H1-1a
261	M893	2L2 1/2x2 1/2x3/16...	.670	8.375	16	.005	16.75	y	26	6.095	58.32	4.017	2.611	1	H1-1a
262	M42	W10x30	.062	11.844	22	.013	11.844	y	22	248.816	286.416	23.868	83.699	1	H1-1b
263	M43	W10x30	.062	11.844	20	.013	11.844	y	20	248.816	286.416	23.868	83.699	1	H1-1b
264	M44	W10x30	.062	11.844	26	.013	11.844	y	26	248.816	286.416	23.868	83.699	1	H1-1b
265	M45	W10x30	.062	11.844	24	.013	11.844	y	24	248.816	286.416	23.868	83.699	1	H1-1b
266	M191	2L3x2 1/2x1/4x3/8	.214	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
267	M192	2L3x2 1/2x1/4x3/8	.273	11.844	26	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
268	M193	2L3x2 1/2x1/4x3/8	.217	11.844	26	.009	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
269	M194	2L3x2 1/2x1/4x3/8	.273	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
270	M272	2L3x2 1/2x1/4x3/8	.217	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
271	M273	2L3x2 1/2x1/4x3/8	.277	11.844	26	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
272	M274	2L3x2 1/2x1/4x3/8	.219	11.844	26	.009	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
273	M275	2L3x2 1/2x1/4x3/8	.277	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
274	M353	2L3x2 1/2x1/4x3/8	.212	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
275	M354	2L3x2 1/2x1/4x3/8	.272	11.844	26	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
276	M355	2L3x2 1/2x1/4x3/8	.214	11.844	26	.009	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
277	M356	2L3x2 1/2x1/4x3/8	.272	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
278	M434	2L3x2 1/2x1/4x3/8	.212	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
279	M435	2L3x2 1/2x1/4x3/8	.272	11.844	19	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
280	M436	2L3x2 1/2x1/4x3/8	.215	11.844	26	.009	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
281	M437	2L3x2 1/2x1/4x3/8	.272	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
282	M515	2L3x2 1/2x1/4x3/8	.206	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
283	M516	2L3x2 1/2x1/4x3/8	.267	11.844	19	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
284	M517	2L3x2 1/2x1/4x3/8	.210	11.844	26	.008	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
285	M518	2L3x2 1/2x1/4x3/8	.266	11.844	25	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
286	M596	2L3x2 1/2x1/4x3/8	.207	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
287	M597	2L3x2 1/2x1/4x3/8	.267	11.844	26	.009	11.844	y	21	26.281	85.212	5.423	3.034	1	H1-1b
288	M598	2L3x2 1/2x1/4x3/8	.210	11.844	26	.008	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
289	M599	2L3x2 1/2x1/4x3/8	.267	11.844	26	.009	11.844	y	23	26.281	85.212	5.423	3.034	1	H1-1b
290	M677	2L3x2 1/2x1/4x3/8	.201	11.844	25	.009	11.844	y	22	26.281	85.212	5.423	3.034	1	H1-1b
291	M678	2L3x2 1/2x1/4x3/8	.263	11.844	26	.010	11.844	y	19	26.281	85.212	5.423	3.034	1	H1-1b
292	M679	2L3x2 1/2x1/4x3/8	.204	11.844	26	.009	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
293	M680	2L3x2 1/2x1/4x3/8	.262	11.844	26	.010	11.844	y	25	26.281	85.212	5.423	3.034	1	H1-1b
294	M1209	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	26	24.183	58.32	4.017	2.611	1	H1-1b
295	M1210	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
296	M1211	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
297	M1212	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	26	24.183	58.32	4.017	2.611	1	H1-1b
298	M1213	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	21	37.234	58.32	4.017	2.611	1	H1-1b
299	M1214	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	20	37.234	58.32	4.017	2.611	1	H1-1b
300	M1215	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	23	37.234	58.32	4.017	2.611	1	H1-1b
301	M1216	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	24	37.234	58.32	4.017	2.611	1	H1-1b
302	M1217	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
303	M1218	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	25	37.234	58.32	4.017	2.611	1	H1-1b
304	M1219	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	19	37.234	58.32	4.017	2.611	1	H1-1b
305	M1220	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
306	M1157	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	26	24.183	58.32	4.017	2.611	1	H1-1b
307	M1158	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
308	M1159	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
309	M1160	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	10	24.183	58.32	4.017	2.611	1	H1-1b
310	M1161	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
311	M1162	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	20	37.234	58.32	4.017	2.611	1	H1-1b
312	M1163	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
313	M1164	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	24	37.234	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
314	M1165	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
315	M1166	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	25	37.234	58.32	4.017	2.611	1	H1-1b
316	M1167	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	19	37.234	58.32	4.017	2.611	1	H1-1b
317	M1168	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
318	M1105	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	6	24.183	58.32	4.017	2.611	1	H1-1b
319	M1106	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	8.375	y	10	24.183	58.32	4.017	2.611	1	H1-1b
320	M1107	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
321	M1108	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
322	M1109	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
323	M1110	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	25	37.234	58.32	4.017	2.611	1	H1-1b
324	M1111	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	19	37.234	58.32	4.017	2.611	1	H1-1b
325	M1112	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
326	M1113	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	20	37.234	58.32	4.017	2.611	1	H1-1b
327	M1114	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	22	37.234	58.32	4.017	2.611	1	H1-1b
328	M1115	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
329	M1116	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	24	37.234	58.32	4.017	2.611	1	H1-1b
330	M1053	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	8.375	y	6	24.183	58.32	4.017	2.611	1	H1-1b
331	M1054	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	8.375	y	10	24.183	58.32	4.017	2.611	1	H1-1b
332	M1055	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	6	24.183	58.32	4.017	2.611	1	H1-1b
333	M1056	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	10	24.183	58.32	4.017	2.611	1	H1-1b
334	M1057	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
335	M1058	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	20	37.234	58.32	4.017	2.611	1	H1-1b
336	M1059	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
337	M1060	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	24	37.234	58.32	4.017	2.611	1	H1-1b
338	M1061	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
339	M1062	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	26	37.234	58.32	4.017	2.611	1	H1-1b
340	M1063	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	19	37.234	58.32	4.017	2.611	1	H1-1b
341	M1064	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
342	M1001	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	6	24.183	58.32	4.017	2.611	1	H1-1b
343	M1002	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	0	y	10	24.183	58.32	4.017	2.611	1	H1-1b
344	M1003	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	6	24.183	58.32	4.017	2.611	1	H1-1b
345	M1004	2L2 1/2x2 1/2x3/16...	.025	4.188	22	.002	0	y	10	24.183	58.32	4.017	2.611	1	H1-1b
346	M1005	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
347	M1006	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	20	37.234	58.32	4.017	2.611	1	H1-1b
348	M1007	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	23	37.234	58.32	4.017	2.611	1	H1-1b
349	M1008	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	24	37.234	58.32	4.017	2.611	1	H1-1b
350	M1009	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
351	M1010	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	25	37.234	58.32	4.017	2.611	1	H1-1b
352	M1011	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	19	37.234	58.32	4.017	2.611	1	H1-1b
353	M1012	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
354	M949	2L2 1/2x2 1/2x3/16...	.025	4.188	16	.002	8.375	y	6	24.183	58.32	4.017	2.611	1	H1-1b
355	M950	2L2 1/2x2 1/2x3/16...	.025	4.188	25	.002	8.375	y	10	24.183	58.32	4.017	2.611	1	H1-1b
356	M951	2L2 1/2x2 1/2x3/16...	.025	4.188	19	.002	0	y	6	24.183	58.32	4.017	2.611	1	H1-1b
357	M952	2L2 1/2x2 1/2x3/16...	.025	4.188	16	.002	0	y	10	24.183	58.32	4.017	2.611	1	H1-1b
358	M953	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
359	M954	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
360	M955	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	22	37.234	58.32	4.017	2.611	1	H1-1b
361	M956	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	25	37.234	58.32	4.017	2.611	1	H1-1b
362	M957	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	25	37.234	58.32	4.017	2.611	1	H1-1b
363	M958	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	26	37.234	58.32	4.017	2.611	1	H1-1b
364	M959	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	0	y	26	37.234	58.32	4.017	2.611	1	H1-1b
365	M960	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.002	5.922	y	19	37.234	58.32	4.017	2.611	1	H1-1b
366	M897	2L2 1/2x2 1/2x3/16...	.025	4.188	16	.002	0	y	25	24.183	58.32	4.017	2.611	1	H1-1b
367	M898	2L2 1/2x2 1/2x3/16...	.025	4.188	20	.002	0	y	24	24.183	58.32	4.017	2.611	1	H1-1b
368	M899	2L2 1/2x2 1/2x3/16...	.025	4.188	24	.002	0	y	20	24.183	58.32	4.017	2.611	1	H1-1b
369	M900	2L2 1/2x2 1/2x3/16...	.025	4.188	16	.002	0	y	19	24.183	58.32	4.017	2.611	1	H1-1b
370	M901	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	0	y	4	37.234	58.32	4.017	2.611	1	H1-1b
371	M902	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	5.922	y	26	37.234	58.32	4.017	2.611	1	H1-1b
372	M903	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	0	y	23	37.234	58.32	4.017	2.611	1	H1-1b
373	M904	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	5.922	y	2	37.234	58.32	4.017	2.611	1	H1-1b
374	M905	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	0	y	14	37.234	58.32	4.017	2.611	1	H1-1b
375	M906	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	5.922	y	21	37.234	58.32	4.017	2.611	1	H1-1b
376	M907	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	0	y	10	37.234	58.32	4.017	2.611	1	H1-1b
377	M908	2L2 1/2x2 1/2x3/16...	.013	2.961	26	.001	5.922	y	12	37.234	58.32	4.017	2.611	1	H1-1b
378	M1266	2L2 1/2x2 1/2x1/4x...	.221	6.86	12	.001	0	y	26	11.751	77.112	5.381	2.133	1	H1-1a
379	M1267	2L2 1/2x2 1/2x1/4x...	.227	6.86	8	.001	0	y	20	11.751	77.112	5.381	2.133	1	H1-1a
380	M1268	2L2 1/2x2 1/2x1/4x...	.222	6.86	4	.001	0	y	22	11.751	77.112	5.381	2.133	1	H1-1a
381	M1269	2L2 1/2x2 1/2x1/4x...	.223	6.86	16	.001	0	y	24	11.751	77.112	5.381	2.133	1	H1-1a
382	M1	L6x6x1/2	.261	1.143	23	.059	13.72	y	4	66.727	186.3	5.312	24.449	1	H2-1
383	M2	L6x6x1/2	.252	1.143	23	.057	13.72	z	16	66.727	186.3	5.312	24.449	1	H2-1
384	M3	L6x6x1/2	.270	1	20	.059	13.72	y	12	66.727	186.3	5.312	24.449	1	H2-1
385	M4	L6x6x1/2	.288	1	26	.063	13.72	z	8	66.727	186.3	5.312	24.449	1	H2-1
386	M47	W6x20	.153	0	24	.014	0	y	20	166.887	190.188	18.144	40.5	1	H1-1b*
387	M48	W6x20	.155	0	22	.014	0	y	26	166.887	190.188	18.144	40.5	1	H1-1b*
388	M49	W6x20	.139	12.5	20	.013	0	y	24	166.887	190.188	18.144	40.5	1	H1-1b*
389	M50	W6x20	.138	12.5	26	.013	0	y	22	166.887	190.188	18.144	40.5	1	H1-1b*
390	M119	W6x20	.372	0	24	.027	6.25	y	24	166.887	190.188	18.144	40.5	1	H1-1a
391	M120	W6x20	.385	0	22	.027	6.25	y	22	166.887	190.188	18.144	40.5	1	H1-1a
392	M121	W6x20	.328	0	20	.024	0	y	24	166.887	190.188	18.144	40.5	1	H1-1a
393	M122	W6x20	.314	0	26	.023	6.25	y	26	166.887	190.188	18.144	40.5	1	H1-1a

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
394	M200	W6x25	.419	0	24	.032	6.25	y	24	209.43	237.816	23.112	51.03	1	H1-1a
395	M201	W6x25	.432	0	22	.033	6.25	y	22	209.43	237.816	23.112	51.03	1	H1-1a
396	M202	W6x25	.362	0	4	.028	6.25	y	20	209.43	237.816	23.112	51.03	1	H1-1a
397	M203	W6x25	.359	0	16	.027	6.25	y	26	209.43	237.816	23.112	51.03	1	H1-1a
398	M281	W8x31	.417	0	12	.044	6.25	y	24	275.022	295.812	38.07	82.08	1	H1-1a
399	M282	W8x31	.427	0	8	.045	6.25	y	22	275.022	295.812	38.07	82.08	1	H1-1a
400	M283	W8x31	.418	0	4	.038	6.25	y	20	275.022	295.812	38.07	82.08	1	H1-1a
401	M284	W8x31	.416	0	16	.037	6.25	y	26	275.022	295.812	38.07	82.08	1	H1-1a
402	M362	W8x40	.460	0	12	.041	6.25	y	24	353.253	379.08	49.95	107.46	1	H1-1a
403	M363	W8x40	.469	0	8	.042	6.25	y	22	353.253	379.08	49.95	107.46	1	H1-1a
404	M364	W8x40	.458	0	4	.035	6.25	y	20	353.253	379.08	49.95	107.46	1	H1-1a
405	M365	W8x40	.456	0	16	.034	6.25	y	16	353.253	379.08	49.95	107.46	1	H1-1a
406	M443	W10x54	.439	25	12	.040	6.25	y	24	489.186	511.92	84.51	179.82	1	H1-1a
407	M444	W10x54	.447	25	8	.041	6.25	y	22	489.186	511.92	84.51	179.82	1	H1-1a
408	M445	W10x54	.437	25	4	.033	6.25	y	20	489.186	511.92	84.51	179.82	1	H1-1a
409	M446	W10x54	.436	25	16	.033	6.25	y	16	489.186	511.92	84.51	179.82	1	H1-1a
410	M524	W10x60	.515	0	12	.047	6.25	y	12	548.144	573.48	94.5	201.42	1	H1-1a
411	M525	W10x60	.523	0	8	.048	6.25	y	8	548.144	573.48	94.5	201.42	1	H1-1a
412	M526	W10x60	.511	0	4	.046	6.25	y	4	548.144	573.48	94.5	201.42	1	H1-1a
413	M527	W10x60	.511	0	16	.046	6.25	y	16	548.144	573.48	94.5	201.42	1	H1-1a
414	M605	W10x68	.579	25	12	.050	6.25	y	12	617.02	644.76	108.27	230.31	1	H1-1a
415	M606	W10x68	.588	25	8	.051	6.25	y	8	617.02	644.76	108.27	230.31	1	H1-1a
416	M607	W10x68	.577	0	4	.050	6.25	y	4	617.02	644.76	108.27	230.31	1	H1-1a
417	M608	W10x68	.577	0	16	.050	6.25	y	16	617.02	644.76	108.27	230.31	1	H1-1a
418	M686	W12x79	.664	6.258	12	.050	6.258	y	12	728.091	751.68	146.61	321.3	1....	H1-1a
419	M687	W12x79	.670	6.258	8	.050	6.258	y	8	728.091	751.68	146.61	321.3	1....	H1-1a
420	M688	W12x79	.653	6.258	4	.050	6.258	y	4	728.091	751.68	146.61	321.3	1....	H1-1a
421	M689	W12x79	.653	6.258	16	.050	6.258	y	16	728.091	751.68	146.61	321.3	1....	H1-1a
422	M882	2L2 1/2x2 1/2x3/16...	.071	12.14	16	.003	12.14	y	19	11.603	58.32	4.017	1.632	1	H1-1b
423	M883	2L2 1/2x2 1/2x3/16...	.069	12.14	25	.002	0	y	20	11.603	58.32	4.017	1.632	1	H1-1b
424	M884	2L2 1/2x2 1/2x3/16...	.072	12.14	24	.002	12.14	y	8	11.603	58.32	4.017	1.632	1	H1-1b
425	M885	2L2 1/2x2 1/2x3/16...	.071	0	20	.002	0	y	8	11.603	58.32	4.017	1.632	1	H1-1b
426	M886	2L2 1/2x2 1/2x3/16...	.070	12.14	16	.003	12.14	y	25	11.603	58.32	4.017	1.632	1	H1-1b
427	M887	2L2 1/2x2 1/2x3/16...	.069	12.14	19	.002	0	y	24	11.603	58.32	4.017	1.632	1	H1-1b
428	M888	2L2 1/2x2 1/2x3/16...	.071	12.14	20	.002	12.14	y	4	11.603	58.32	4.017	1.632	1	H1-1b
429	M889	2L2 1/2x2 1/2x3/16...	.071	0	24	.002	0	y	14	11.603	58.32	4.017	1.632	1	H1-1b
430	M791	L2.5x2.5x8	.534	0	22	.002	0	y	21	17.766	73.224	1.865	4.283	1	H2-1
431	M792	L2.5x2.5x8	.656	6.738	22	.002	6.738	y	6	18.068	73.224	1.865	4.289	1	H2-1
432	M793	L2.5x2.5x8	.502	0	4	.004	0	y	4	17.766	73.224	1.865	4.283	1	H2-1
433	M794	L2.5x2.5x8	.649	6.738	4	.004	6.738	y	4	18.068	73.224	1.865	4.289	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
434	M795	L2.5x2.5x8	.648	0	16	.004	0	y	16	18.068	73.224	1.865	4.289	1	H2-1
435	M796	L2.5x2.5x8	.502	6.795	16	.004	6.795	y	16	17.766	73.224	1.865	4.283	1	H2-1
436	M797	L2.5x2.5x8	.538	0	24	.004	0	y	12	17.766	73.224	1.865	4.283	1	H2-1
437	M798	L2.5x2.5x8	.654	6.738	24	.004	6.738	y	12	18.068	73.224	1.865	4.289	1	H2-1
438	M56	2L2 1/2x2 1/2x3/16...	.102	5.225	21	.006	0	y	25	16.664	58.32	4.017	2.611	1	H1-1b
439	M64	2L2 1/2x2 1/2x3/16...	.102	5.225	25	.006	10.45	y	22	16.664	58.32	4.017	2.611	1	H1-1b
440	M72	2L2 1/2x2 1/2x3/16...	.102	5.225	19	.005	10.45	y	22	16.664	58.32	4.017	2.611	1	H1-1b
441	M80	2L2 1/2x2 1/2x3/16...	.102	5.225	23	.005	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
442	M88	2L2 1/2x2 1/2x3/16...	.102	5.225	25	.006	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
443	M96	2L2 1/2x2 1/2x3/16...	.102	5.225	21	.006	0	y	25	16.664	58.32	4.017	2.611	1	H1-1b
444	M104	2L2 1/2x2 1/2x3/16...	.102	5.225	23	.005	10.45	y	26	16.664	58.32	4.017	2.611	1	H1-1b
445	M112	2L2 1/2x2 1/2x3/16...	.102	5.225	19	.005	10.45	y	23	16.664	58.32	4.017	2.611	1	H1-1b
446	M129	2L2 1/2x2 1/2x3/16...	.101	5.225	21	.005	10.45	y	19	16.664	58.32	4.017	2.611	1	H1-1b
447	M137	2L2 1/2x2 1/2x3/16...	.101	5.225	25	.005	10.45	y	21	16.664	58.32	4.017	2.611	1	H1-1b
448	M146	2L2 1/2x2 1/2x3/16...	.101	5.225	19	.005	10.45	y	25	16.664	58.32	4.017	2.611	1	H1-1b
449	M154	2L2 1/2x2 1/2x3/16...	.101	5.225	23	.005	10.45	y	24	16.664	58.32	4.017	2.611	1	H1-1b
450	M163	2L2 1/2x2 1/2x3/16...	.101	5.225	26	.005	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
451	M171	2L2 1/2x2 1/2x3/16...	.101	5.225	22	.005	0	y	24	16.664	58.32	4.017	2.611	1	H1-1b
452	M180	2L2 1/2x2 1/2x3/16...	.101	5.225	22	.005	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
453	M188	2L2 1/2x2 1/2x3/16...	.101	5.225	26	.005	0	y	22	16.664	58.32	4.017	2.611	1	H1-1b
454	M210	2L2 1/2x2 1/2x3/16...	.096	5.225	20	.005	10.45	y	22	16.697	58.32	4.017	2.611	1	H1-1b
455	M218	2L2 1/2x2 1/2x3/16...	.096	5.225	25	.005	0	y	24	16.697	58.32	4.017	2.611	1	H1-1b
456	M227	2L2 1/2x2 1/2x3/16...	.097	5.225	19	.005	10.45	y	20	16.697	58.32	4.017	2.611	1	H1-1b
457	M235	2L2 1/2x2 1/2x3/16...	.097	5.225	23	.005	0	y	22	16.697	58.32	4.017	2.611	1	H1-1b
458	M244	2L2 1/2x2 1/2x3/16...	.096	5.225	26	.005	10.45	y	26	16.697	58.32	4.017	2.611	1	H1-1b
459	M252	2L2 1/2x2 1/2x3/16...	.097	5.225	22	.005	0	y	20	16.697	58.32	4.017	2.611	1	H1-1b
460	M261	2L2 1/2x2 1/2x3/16...	.097	5.225	23	.005	0	y	24	16.697	58.32	4.017	2.611	1	H1-1b
461	M269	2L2 1/2x2 1/2x3/16...	.096	5.225	19	.005	0	y	26	16.697	58.32	4.017	2.611	1	H1-1b
462	M291	2L2 1/2x2 1/2x3/16...	.095	5.225	20	.005	0	y	22	16.998	58.32	4.017	2.611	1	H1-1b
463	M299	2L2 1/2x2 1/2x3/16...	.095	5.225	26	.005	10.45	y	24	16.998	58.32	4.017	2.611	1	H1-1b
464	M308	2L2 1/2x2 1/2x3/16...	.095	5.225	26	.005	10.45	y	20	16.998	58.32	4.017	2.611	1	H1-1b
465	M316	2L2 1/2x2 1/2x3/16...	.095	5.225	24	.005	0	y	22	16.998	58.32	4.017	2.611	1	H1-1b
466	M325	2L2 1/2x2 1/2x3/16...	.095	5.225	24	.005	10.45	y	26	16.998	58.32	4.017	2.611	1	H1-1b
467	M333	2L2 1/2x2 1/2x3/16...	.095	5.225	22	.005	10.45	y	20	16.998	58.32	4.017	2.611	1	H1-1b
468	M342	2L2 1/2x2 1/2x3/16...	.095	5.225	22	.005	10.45	y	24	16.998	58.32	4.017	2.611	1	H1-1b
469	M350	2L2 1/2x2 1/2x3/16...	.095	5.225	19	.005	0	y	26	16.998	58.32	4.017	2.611	1	H1-1b
470	M372	2L2 1/2x2 1/2x3/16...	.097	5.116	24	.005	0	y	22	17.032	58.32	4.017	2.611	1	H1-1b
471	M380	2L2 1/2x2 1/2x3/16...	.097	5.116	22	.005	0	y	24	17.032	58.32	4.017	2.611	1	H1-1b
472	M389	2L2 1/2x2 1/2x3/16...	.097	5.116	22	.005	10.45	y	20	17.032	58.32	4.017	2.611	1	H1-1b
473	M397	2L2 1/2x2 1/2x3/16...	.095	5.225	24	.005	0	y	22	17.032	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
474	M406	2L2 1/2x2 1/2x3/16...	.095	5.225	24	.005	10.45	y	26	17.032	58.32	4.017	2.611	1	H1-1b
475	M414	2L2 1/2x2 1/2x3/16...	.095	5.225	22	.005	10.45	y	20	17.032	58.32	4.017	2.611	1	H1-1b
476	M423	2L2 1/2x2 1/2x3/16...	.095	5.225	22	.005	10.45	y	24	17.032	58.32	4.017	2.611	1	H1-1b
477	M431	2L2 1/2x2 1/2x3/16...	.097	5.116	24	.005	0	y	26	17.032	58.32	4.017	2.611	1	H1-1b
478	M453	2L2 1/2x2 1/2x3/16...	.103	5.116	23	.005	10.45	y	22	17.342	58.32	4.017	2.611	1	H1-1b
479	M461	2L2 1/2x2 1/2x3/16...	.103	5.116	23	.005	10.45	y	24	17.342	58.32	4.017	2.611	1	H1-1b
480	M470	2L2 1/2x2 1/2x3/16...	.103	5.116	21	.005	0	y	20	17.342	58.32	4.017	2.611	1	H1-1b
481	M478	2L2 1/2x2 1/2x3/16...	.099	5.116	21	.005	10.45	y	22	17.342	58.32	4.017	2.611	1	H1-1b
482	M487	2L2 1/2x2 1/2x3/16...	.098	5.116	19	.005	0	y	19	17.342	58.32	4.017	2.611	1	H1-1b
483	M495	2L2 1/2x2 1/2x3/16...	.098	5.116	19	.005	10.45	y	19	17.342	58.32	4.017	2.611	1	H1-1b
484	M504	2L2 1/2x2 1/2x3/16...	.098	5.116	25	.005	10.45	y	24	17.342	58.32	4.017	2.611	1	H1-1b
485	M512	2L2 1/2x2 1/2x3/16...	.103	5.116	25	.005	10.45	y	25	17.342	58.32	4.017	2.611	1	H1-1b
486	M534	2L2 1/2x2 1/2x3/16...	.110	5.116	24	.005	10.45	y	22	17.377	58.32	4.017	2.611	1	H1-1b
487	M542	2L2 1/2x2 1/2x3/16...	.110	5.116	22	.005	10.45	y	24	17.377	58.32	4.017	2.611	1	H1-1b
488	M551	2L2 1/2x2 1/2x3/16...	.110	5.116	22	.005	0	y	20	17.377	58.32	4.017	2.611	1	H1-1b
489	M559	2L2 1/2x2 1/2x3/16...	.104	5.116	20	.005	0	y	22	17.377	58.32	4.017	2.611	1	H1-1b
490	M568	2L2 1/2x2 1/2x3/16...	.104	5.116	20	.005	0	y	26	17.377	58.32	4.017	2.611	1	H1-1b
491	M576	2L2 1/2x2 1/2x3/16...	.103	5.116	26	.005	0	y	20	17.377	58.32	4.017	2.611	1	H1-1b
492	M585	2L2 1/2x2 1/2x3/16...	.104	5.116	26	.005	10.45	y	24	17.377	58.32	4.017	2.611	1	H1-1b
493	M593	2L2 1/2x2 1/2x3/16...	.109	5.116	24	.005	10.45	y	26	17.377	58.32	4.017	2.611	1	H1-1b
494	M615	2L2 1/2x2 1/2x3/16...	.113	5.116	23	.005	10.45	y	22	17.412	58.32	4.017	2.611	1	H1-1b
495	M623	2L2 1/2x2 1/2x3/16...	.113	5.116	23	.005	0	y	24	17.412	58.32	4.017	2.611	1	H1-1b
496	M632	2L2 1/2x2 1/2x3/16...	.110	5.116	21	.005	0	y	20	17.412	58.32	4.017	2.611	1	H1-1b
497	M640	2L2 1/2x2 1/2x3/16...	.103	5.116	21	.005	10.45	y	22	17.412	58.32	4.017	2.611	1	H1-1b
498	M649	2L2 1/2x2 1/2x3/16...	.104	5.116	19	.005	0	y	26	17.412	58.32	4.017	2.611	1	H1-1b
499	M657	2L2 1/2x2 1/2x3/16...	.104	5.116	19	.005	10.45	y	20	17.412	58.32	4.017	2.611	1	H1-1b
500	M666	2L2 1/2x2 1/2x3/16...	.102	5.116	25	.005	0	y	24	17.412	58.32	4.017	2.611	1	H1-1b
501	M674	2L2 1/2x2 1/2x3/16...	.109	5.116	25	.005	0	y	26	17.412	58.32	4.017	2.611	1	H1-1b
502	M696	2L2 1/2x2 1/2x1/4x...	.072	5.115	20	.004	10.23	y	21	24.823	77.112	5.381	3.414	1	H1-1b
503	M706	2L2 1/2x2 1/2x1/4x...	.072	5.115	26	.004	0	y	24	24.823	77.112	5.381	3.414	1	H1-1b
504	M717	2L2 1/2x2 1/2x1/4x...	.073	5.171	26	.004	0	y	20	24.239	77.112	5.381	3.414	1	H1-1b
505	M727	2L2 1/2x2 1/2x1/4x...	.074	5.171	24	.004	10.343	y	22	24.239	77.112	5.381	3.414	1	H1-1b
506	M738	2L2 1/2x2 1/2x1/4x...	.072	5.115	24	.004	0	y	26	24.823	77.112	5.381	3.414	1	H1-1b
507	M748	2L2 1/2x2 1/2x1/4x...	.072	5.115	22	.004	0	y	20	24.823	77.112	5.381	3.414	1	H1-1b
508	M759	2L2 1/2x2 1/2x1/4x...	.074	5.171	22	.004	10.343	y	24	24.239	77.112	5.381	3.414	1	H1-1b
509	M769	2L2 1/2x2 1/2x1/4x...	.073	5.171	20	.004	0	y	26	24.239	77.112	5.381	3.414	1	H1-1b
510	M57	2L2 1/2x2 1/2x3/16...	.172	5.116	22	.006	10.45	y	26	16.664	58.32	4.017	2.611	1	H1-1b
511	M58	2L2 1/2x2 1/2x3/16...	.058	3.683	24	.003	7.523	y	23	30.275	58.32	4.017	2.611	1	H1-1b
512	M65	2L2 1/2x2 1/2x3/16...	.173	5.116	24	.006	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
513	M66	2L2 1/2x2 1/2x3/16...	.057	3.683	21	.003	7.523	y	23	30.275	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
514	M73	2L2 1/2x2 1/2x3/16...	.176	5.116	20	.006	10.45	y	24	16.664	58.32	4.017	2.611	1	H1-1b
515	M74	2L2 1/2x2 1/2x3/16...	.059	3.683	23	.003	0	y	21	30.275	58.32	4.017	2.611	1	H1-1b
516	M81	2L2 1/2x2 1/2x3/16...	.175	5.116	22	.006	0	y	26	16.664	58.32	4.017	2.611	1	H1-1b
517	M82	2L2 1/2x2 1/2x3/16...	.059	3.683	19	.003	0	y	21	30.275	58.32	4.017	2.611	1	H1-1b
518	M89	2L2 1/2x2 1/2x3/16...	.172	5.116	19	.006	10.45	y	22	16.664	58.32	4.017	2.611	1	H1-1b
519	M90	2L2 1/2x2 1/2x3/16...	.057	3.683	21	.003	0	y	19	30.275	58.32	4.017	2.611	1	H1-1b
520	M97	2L2 1/2x2 1/2x3/16...	.171	5.116	19	.006	10.45	y	24	16.664	58.32	4.017	2.611	1	H1-1b
521	M98	2L2 1/2x2 1/2x3/16...	.057	3.683	26	.003	7.523	y	19	30.275	58.32	4.017	2.611	1	H1-1b
522	M105	2L2 1/2x2 1/2x3/16...	.175	5.116	25	.006	0	y	21	16.664	58.32	4.017	2.611	1	H1-1b
523	M106	2L2 1/2x2 1/2x3/16...	.059	3.683	26	.003	7.523	y	25	30.275	58.32	4.017	2.611	1	H1-1b
524	M113	2L2 1/2x2 1/2x3/16...	.176	5.116	25	.006	0	y	22	16.664	58.32	4.017	2.611	1	H1-1b
525	M114	2L2 1/2x2 1/2x3/16...	.059	3.683	23	.003	7.523	y	25	30.275	58.32	4.017	2.611	1	H1-1b
526	M130	2L2 1/2x2 1/2x3/16...	.119	5.116	21	.006	0	y	22	16.664	58.32	4.017	2.611	1	H1-1b
527	M131	2L2 1/2x2 1/2x3/16...	.040	3.683	25	.003	0	y	23	30.275	58.32	4.017	2.611	1	H1-1b
528	M138	2L2 1/2x2 1/2x3/16...	.120	5.116	25	.005	10.45	y	24	16.664	58.32	4.017	2.611	1	H1-1b
529	M139	2L2 1/2x2 1/2x3/16...	.040	3.683	21	.003	0	y	24	30.275	58.32	4.017	2.611	1	H1-1b
530	M147	2L2 1/2x2 1/2x3/16...	.120	5.116	19	.005	0	y	20	16.664	58.32	4.017	2.611	1	H1-1b
531	M148	2L2 1/2x2 1/2x3/16...	.040	3.683	23	.003	0	y	20	30.275	58.32	4.017	2.611	1	H1-1b
532	M155	2L2 1/2x2 1/2x3/16...	.119	5.116	23	.006	0	y	21	16.664	58.32	4.017	2.611	1	H1-1b
533	M156	2L2 1/2x2 1/2x3/16...	.039	3.683	19	.003	0	y	21	30.275	58.32	4.017	2.611	1	H1-1b
534	M164	2L2 1/2x2 1/2x3/16...	.118	5.116	25	.006	0	y	26	16.664	58.32	4.017	2.611	1	H1-1b
535	M165	2L2 1/2x2 1/2x3/16...	.039	3.683	21	.003	0	y	20	30.275	58.32	4.017	2.611	1	H1-1b
536	M172	2L2 1/2x2 1/2x3/16...	.119	5.116	21	.006	10.45	y	20	16.664	58.32	4.017	2.611	1	H1-1b
537	M173	2L2 1/2x2 1/2x3/16...	.038	3.683	25	.003	7.523	y	19	30.275	58.32	4.017	2.611	1	H1-1b
538	M181	2L2 1/2x2 1/2x3/16...	.119	5.116	23	.006	0	y	24	16.664	58.32	4.017	2.611	1	H1-1b
539	M182	2L2 1/2x2 1/2x3/16...	.039	3.683	19	.003	0	y	25	30.275	58.32	4.017	2.611	1	H1-1b
540	M189	2L2 1/2x2 1/2x3/16...	.118	5.116	19	.006	0	y	26	16.664	58.32	4.017	2.611	1	H1-1b
541	M190	2L2 1/2x2 1/2x3/16...	.039	3.683	23	.003	0	y	25	30.275	58.32	4.017	2.611	1	H1-1b
542	M211	2L2 1/2x2 1/2x3/16...	.109	5.116	20	.006	10.45	y	26	16.697	58.32	4.017	2.611	1	H1-1b
543	M212	2L2 1/2x2 1/2x3/16...	.039	3.683	24	.003	7.523	y	23	30.329	58.32	4.017	2.611	1	H1-1b
544	M219	2L2 1/2x2 1/2x3/16...	.109	5.116	25	.005	10.45	y	25	16.697	58.32	4.017	2.611	1	H1-1b
545	M220	2L2 1/2x2 1/2x3/16...	.039	3.683	22	.003	0	y	24	30.329	58.32	4.017	2.611	1	H1-1b
546	M228	2L2 1/2x2 1/2x3/16...	.109	5.116	19	.005	0	y	20	16.697	58.32	4.017	2.611	1	H1-1b
547	M229	2L2 1/2x2 1/2x3/16...	.039	3.683	22	.003	0	y	21	30.329	58.32	4.017	2.611	1	H1-1b
548	M236	2L2 1/2x2 1/2x3/16...	.110	5.116	24	.006	0	y	26	16.697	58.32	4.017	2.611	1	H1-1b
549	M237	2L2 1/2x2 1/2x3/16...	.039	3.683	20	.003	7.523	y	21	30.329	58.32	4.017	2.611	1	H1-1b
550	M245	2L2 1/2x2 1/2x3/16...	.109	5.116	24	.006	10.45	y	23	16.697	58.32	4.017	2.611	1	H1-1b
551	M246	2L2 1/2x2 1/2x3/16...	.038	3.683	20	.003	7.523	y	20	30.329	58.32	4.017	2.611	1	H1-1b
552	M253	2L2 1/2x2 1/2x3/16...	.111	5.116	22	.005	10.45	y	23	16.697	58.32	4.017	2.611	1	H1-1b
553	M254	2L2 1/2x2 1/2x3/16...	.038	3.683	26	.003	0	y	26	30.329	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
554	M262	2L2 1/2x2 1/2x3/16...	.111	5.116	22	.005	10.45	y	21	16.697	58.32	4.017	2.611	1	H1-1b
555	M263	2L2 1/2x2 1/2x3/16...	.038	3.683	26	.003	0	y	26	30.329	58.32	4.017	2.611	1	H1-1b
556	M270	2L2 1/2x2 1/2x3/16...	.108	5.116	19	.006	10.45	y	22	16.697	58.32	4.017	2.611	1	H1-1b
557	M271	2L2 1/2x2 1/2x3/16...	.039	3.683	23	.003	7.523	y	24	30.329	58.32	4.017	2.611	1	H1-1b
558	M292	2L2 1/2x2 1/2x3/16...	.104	5.116	20	.005	10.45	y	26	16.998	58.32	4.017	2.611	1	H1-1b
559	M293	2L2 1/2x2 1/2x3/16...	.042	3.683	24	.003	7.523	y	23	30.813	58.32	4.017	2.611	1	H1-1b
560	M300	2L2 1/2x2 1/2x3/16...	.105	5.116	26	.005	10.45	y	23	16.998	58.32	4.017	2.611	1	H1-1b
561	M301	2L2 1/2x2 1/2x3/16...	.042	3.683	22	.003	7.523	y	23	30.813	58.32	4.017	2.611	1	H1-1b
562	M309	2L2 1/2x2 1/2x3/16...	.105	5.116	26	.005	10.45	y	21	16.998	58.32	4.017	2.611	1	H1-1b
563	M310	2L2 1/2x2 1/2x3/16...	.042	3.683	22	.003	7.523	y	21	30.813	58.32	4.017	2.611	1	H1-1b
564	M317	2L2 1/2x2 1/2x3/16...	.106	5.116	24	.005	0	y	26	16.998	58.32	4.017	2.611	1	H1-1b
565	M318	2L2 1/2x2 1/2x3/16...	.041	3.683	20	.003	7.523	y	25	30.813	58.32	4.017	2.611	1	H1-1b
566	M326	2L2 1/2x2 1/2x3/16...	.106	5.116	24	.005	10.45	y	22	16.998	58.32	4.017	2.611	1	H1-1b
567	M327	2L2 1/2x2 1/2x3/16...	.040	3.683	20	.003	7.523	y	20	30.813	58.32	4.017	2.611	1	H1-1b
568	M334	2L2 1/2x2 1/2x3/16...	.107	5.116	22	.005	10.45	y	24	16.998	58.32	4.017	2.611	1	H1-1b
569	M335	2L2 1/2x2 1/2x3/16...	.040	3.683	26	.003	7.523	y	26	30.813	58.32	4.017	2.611	1	H1-1b
570	M343	2L2 1/2x2 1/2x3/16...	.107	5.116	22	.005	0	y	20	16.998	58.32	4.017	2.611	1	H1-1b
571	M344	2L2 1/2x2 1/2x3/16...	.040	3.683	26	.003	7.523	y	26	30.813	58.32	4.017	2.611	1	H1-1b
572	M351	2L2 1/2x2 1/2x3/16...	.104	5.116	20	.005	10.45	y	22	16.998	58.32	4.017	2.611	1	H1-1b
573	M352	2L2 1/2x2 1/2x3/16...	.042	3.683	24	.003	7.523	y	24	30.813	58.32	4.017	2.611	1	H1-1b
574	M373	2L2 1/2x2 1/2x3/16...	.099	5.116	20	.006	10.45	y	26	17.032	58.32	4.017	2.611	1	H1-1b
575	M374	2L2 1/2x2 1/2x3/16...	.045	3.683	24	.003	0	y	24	30.866	58.32	4.017	2.611	1	H1-1b
576	M381	2L2 1/2x2 1/2x3/16...	.100	5.116	26	.005	10.45	y	22	17.032	58.32	4.017	2.611	1	H1-1b
577	M382	2L2 1/2x2 1/2x3/16...	.045	3.683	22	.003	7.523	y	22	30.866	58.32	4.017	2.611	1	H1-1b
578	M390	2L2 1/2x2 1/2x3/16...	.100	5.116	26	.005	0	y	22	17.032	58.32	4.017	2.611	1	H1-1b
579	M391	2L2 1/2x2 1/2x3/16...	.045	3.683	22	.003	0	y	22	30.866	58.32	4.017	2.611	1	H1-1b
580	M398	2L2 1/2x2 1/2x3/16...	.103	5.116	24	.006	10.45	y	26	17.032	58.32	4.017	2.611	1	H1-1b
581	M399	2L2 1/2x2 1/2x3/16...	.043	3.683	20	.003	7.523	y	24	30.866	58.32	4.017	2.611	1	H1-1b
582	M407	2L2 1/2x2 1/2x3/16...	.103	5.116	24	.005	10.45	y	22	17.032	58.32	4.017	2.611	1	H1-1b
583	M408	2L2 1/2x2 1/2x3/16...	.043	3.683	20	.003	7.523	y	20	30.866	58.32	4.017	2.611	1	H1-1b
584	M415	2L2 1/2x2 1/2x3/16...	.104	5.116	22	.005	10.45	y	24	17.032	58.32	4.017	2.611	1	H1-1b
585	M416	2L2 1/2x2 1/2x3/16...	.042	3.683	26	.003	7.523	y	26	30.866	58.32	4.017	2.611	1	H1-1b
586	M424	2L2 1/2x2 1/2x3/16...	.104	5.116	22	.005	0	y	20	17.032	58.32	4.017	2.611	1	H1-1b
587	M425	2L2 1/2x2 1/2x3/16...	.043	3.683	26	.003	0	y	26	30.866	58.32	4.017	2.611	1	H1-1b
588	M432	2L2 1/2x2 1/2x3/16...	.099	5.116	20	.006	10.45	y	23	17.032	58.32	4.017	2.611	1	H1-1b
589	M433	2L2 1/2x2 1/2x3/16...	.044	3.683	24	.003	0	y	24	30.866	58.32	4.017	2.611	1	H1-1b
590	M454	2L2 1/2x2 1/2x3/16...	.092	5.225	23	.005	10.45	y	26	17.342	58.32	4.017	2.611	1	H1-1b
591	M455	2L2 1/2x2 1/2x3/16...	.046	3.683	23	.003	7.523	y	20	31.352	58.32	4.017	2.611	1	H1-1b
592	M462	2L2 1/2x2 1/2x3/16...	.092	5.225	23	.005	0	y	21	17.342	58.32	4.017	2.611	1	H1-1b
593	M463	2L2 1/2x2 1/2x3/16...	.046	3.683	23	.003	7.523	y	22	31.352	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
594	M471	2L2 1/2x2 1/2x3/16...	.092	5.116	25	.005	10.45	y	23	17.342	58.32	4.017	2.611	1	H1-1b
595	M472	2L2 1/2x2 1/2x3/16...	.046	3.683	21	.003	0	y	22	31.352	58.32	4.017	2.611	1	H1-1b
596	M479	2L2 1/2x2 1/2x3/16...	.096	5.116	25	.005	10.45	y	26	17.342	58.32	4.017	2.611	1	H1-1b
597	M480	2L2 1/2x2 1/2x3/16...	.044	3.683	21	.003	7.523	y	24	31.352	58.32	4.017	2.611	1	H1-1b
598	M488	2L2 1/2x2 1/2x3/16...	.096	5.116	23	.005	10.45	y	22	17.342	58.32	4.017	2.611	1	H1-1b
599	M489	2L2 1/2x2 1/2x3/16...	.043	3.683	19	.003	7.523	y	24	31.352	58.32	4.017	2.611	1	H1-1b
600	M496	2L2 1/2x2 1/2x3/16...	.097	5.116	23	.005	0	y	24	17.342	58.32	4.017	2.611	1	H1-1b
601	M497	2L2 1/2x2 1/2x3/16...	.043	3.683	19	.003	0	y	26	31.352	58.32	4.017	2.611	1	H1-1b
602	M505	2L2 1/2x2 1/2x3/16...	.097	5.116	21	.005	0	y	20	17.342	58.32	4.017	2.611	1	H1-1b
603	M506	2L2 1/2x2 1/2x3/16...	.043	3.683	25	.003	0	y	26	31.352	58.32	4.017	2.611	1	H1-1b
604	M513	2L2 1/2x2 1/2x3/16...	.092	5.225	25	.005	10.45	y	22	17.342	58.32	4.017	2.611	1	H1-1b
605	M514	2L2 1/2x2 1/2x3/16...	.045	3.683	25	.003	7.523	y	24	31.352	58.32	4.017	2.611	1	H1-1b
606	M535	2L2 1/2x2 1/2x3/16...	.094	5.225	23	.005	10.45	y	26	17.377	58.32	4.017	2.611	1	H1-1b
607	M536	2L2 1/2x2 1/2x3/16...	.048	3.683	23	.003	7.523	y	24	31.406	58.32	4.017	2.611	1	H1-1b
608	M543	2L2 1/2x2 1/2x3/16...	.094	5.225	23	.005	10.45	y	21	17.377	58.32	4.017	2.611	1	H1-1b
609	M544	2L2 1/2x2 1/2x3/16...	.049	3.683	23	.003	7.523	y	22	31.406	58.32	4.017	2.611	1	H1-1b
610	M552	2L2 1/2x2 1/2x3/16...	.093	5.225	21	.005	10.45	y	23	17.377	58.32	4.017	2.611	1	H1-1b
611	M553	2L2 1/2x2 1/2x3/16...	.048	3.683	21	.003	7.523	y	22	31.406	58.32	4.017	2.611	1	H1-1b
612	M560	2L2 1/2x2 1/2x3/16...	.095	5.116	25	.005	10.45	y	26	17.377	58.32	4.017	2.611	1	H1-1b
613	M561	2L2 1/2x2 1/2x3/16...	.046	3.683	21	.003	0	y	24	31.406	58.32	4.017	2.611	1	H1-1b
614	M569	2L2 1/2x2 1/2x3/16...	.096	5.116	23	.005	0	y	22	17.377	58.32	4.017	2.611	1	H1-1b
615	M570	2L2 1/2x2 1/2x3/16...	.046	3.683	19	.003	7.523	y	24	31.406	58.32	4.017	2.611	1	H1-1b
616	M577	2L2 1/2x2 1/2x3/16...	.097	5.116	23	.005	0	y	24	17.377	58.32	4.017	2.611	1	H1-1b
617	M578	2L2 1/2x2 1/2x3/16...	.045	3.683	19	.003	0	y	26	31.406	58.32	4.017	2.611	1	H1-1b
618	M586	2L2 1/2x2 1/2x3/16...	.096	5.116	21	.005	10.45	y	20	17.377	58.32	4.017	2.611	1	H1-1b
619	M587	2L2 1/2x2 1/2x3/16...	.045	3.683	25	.003	0	y	26	31.406	58.32	4.017	2.611	1	H1-1b
620	M594	2L2 1/2x2 1/2x3/16...	.094	5.225	25	.005	0	y	22	17.377	58.32	4.017	2.611	1	H1-1b
621	M595	2L2 1/2x2 1/2x3/16...	.048	3.683	25	.003	7.523	y	24	31.406	58.32	4.017	2.611	1	H1-1b
622	M616	2L2 1/2x2 1/2x3/16...	.093	5.225	23	.005	0	y	26	17.412	58.32	4.017	2.611	1	H1-1b
623	M617	2L2 1/2x2 1/2x3/16...	.050	3.683	23	.002	0	y	20	31.46	58.32	4.017	2.611	1	H1-1b
624	M624	2L2 1/2x2 1/2x3/16...	.093	5.225	23	.005	10.45	y	21	17.412	58.32	4.017	2.611	1	H1-1b
625	M625	2L2 1/2x2 1/2x3/16...	.051	3.683	23	.003	7.523	y	21	31.46	58.32	4.017	2.611	1	H1-1b
626	M633	2L2 1/2x2 1/2x3/16...	.092	5.225	21	.005	0	y	23	17.412	58.32	4.017	2.611	1	H1-1b
627	M634	2L2 1/2x2 1/2x3/16...	.049	3.683	21	.003	7.523	y	23	31.46	58.32	4.017	2.611	1	H1-1b
628	M641	2L2 1/2x2 1/2x3/16...	.090	5.225	21	.005	10.45	y	26	17.412	58.32	4.017	2.611	1	H1-1b
629	M642	2L2 1/2x2 1/2x3/16...	.047	3.683	21	.002	7.523	y	24	31.46	58.32	4.017	2.611	1	H1-1b
630	M650	2L2 1/2x2 1/2x3/16...	.091	5.116	23	.005	0	y	21	17.412	58.32	4.017	2.611	1	H1-1b
631	M651	2L2 1/2x2 1/2x3/16...	.047	3.683	19	.002	7.523	y	25	31.46	58.32	4.017	2.611	1	H1-1b
632	M658	2L2 1/2x2 1/2x3/16...	.092	5.116	23	.005	10.45	y	24	17.412	58.32	4.017	2.611	1	H1-1b
633	M659	2L2 1/2x2 1/2x3/16...	.046	3.683	19	.003	7.523	y	26	31.46	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
634	M667	2L2 1/2x2 1/2x3/16...	.091	5.116	21	.005	0	y	20	17.412	58.32	4.017	2.611	1	H1-1b
635	M668	2L2 1/2x2 1/2x3/16...	.046	3.683	25	.003	7.523	y	26	31.46	58.32	4.017	2.611	1	H1-1b
636	M675	2L2 1/2x2 1/2x3/16...	.092	5.225	25	.005	0	y	23	17.412	58.32	4.017	2.611	1	H1-1b
637	M676	2L2 1/2x2 1/2x3/16...	.049	3.683	25	.002	0	y	19	31.46	58.32	4.017	2.611	1	H1-1b
638	M698	2L2 1/2x2 1/2x1/4x...	.116	6.278	20	.005	12.556	y	26	15.631	77.112	5.381	3.414	1	H1-1b
639	M708	2L2 1/2x2 1/2x1/4x...	.116	6.278	26	.005	0	y	20	15.631	77.112	5.381	3.414	1	H1-1b
640	M719	2L2 1/2x2 1/2x1/4x...	.120	6.339	19	.005	12.679	y	24	15.313	77.112	5.381	3.414	1	H1-1b
641	M729	2L2 1/2x2 1/2x1/4x...	.120	6.339	23	.005	12.679	y	26	15.313	77.112	5.381	3.414	1	H1-1b
642	M740	2L2 1/2x2 1/2x1/4x...	.116	6.278	24	.005	12.556	y	22	15.631	77.112	5.381	3.414	1	H1-1b
643	M750	2L2 1/2x2 1/2x1/4x...	.116	6.278	22	.005	12.556	y	24	15.631	77.112	5.381	3.414	1	H1-1b
644	M761	2L2 1/2x2 1/2x1/4x...	.120	6.339	23	.005	12.679	y	20	14.702	77.112	5.381	3.414	1	H1-1b
645	M771	2L2 1/2x2 1/2x1/4x...	.119	6.339	19	.005	0	y	22	15.313	77.112	5.381	3.414	1	H1-1b
646	M699	2L2 1/2x2 1/2x1/4x...	.093	5.337	19	.004	0	y	25	22.143	77.112	5.381	3.414	1	H1-1b
647	M700	2L2 1/2x2 1/2x1/4x...	.049	4.014	23	.003	0	y	21	37.406	77.112	5.381	3.414	1	H1-1b
648	M709	2L2 1/2x2 1/2x1/4x...	.092	5.337	19	.004	0	y	25	22.143	77.112	5.381	3.414	1	H1-1b
649	M710	2L2 1/2x2 1/2x1/4x...	.049	4.014	23	.003	8.199	y	21	37.406	77.112	5.381	3.414	1	H1-1b
650	M720	2L2 1/2x2 1/2x1/4x...	.089	5.283	25	.004	0	y	23	22.638	77.112	5.381	3.414	1	H1-1b
651	M721	2L2 1/2x2 1/2x1/4x...	.052	4.06	21	.003	0	y	23	36.731	77.112	5.381	3.414	1	H1-1b
652	M730	2L2 1/2x2 1/2x1/4x...	.092	5.283	25	.004	0	y	19	22.638	77.112	5.381	3.414	1	H1-1b
653	M731	2L2 1/2x2 1/2x1/4x...	.050	4.06	21	.003	0	y	23	36.731	77.112	5.381	3.414	1	H1-1b
654	M741	2L2 1/2x2 1/2x1/4x...	.097	5.337	23	.004	10.675	y	21	22.143	77.112	5.381	3.414	1	H1-1b
655	M742	2L2 1/2x2 1/2x1/4x...	.046	4.014	19	.003	0	y	25	37.406	77.112	5.381	3.414	1	H1-1b
656	M751	2L2 1/2x2 1/2x1/4x...	.097	5.337	23	.004	10.675	y	25	22.143	77.112	5.381	3.414	1	H1-1b
657	M752	2L2 1/2x2 1/2x1/4x...	.046	4.014	19	.003	0	y	21	37.406	77.112	5.381	3.414	1	H1-1b
658	M762	2L2 1/2x2 1/2x1/4x...	.092	5.283	21	.004	10.565	y	19	22.638	77.112	5.381	3.414	1	H1-1b
659	M763	2L2 1/2x2 1/2x1/4x...	.050	4.06	25	.003	0	y	23	36.731	77.112	5.381	3.414	1	H1-1b
660	M772	2L2 1/2x2 1/2x1/4x...	.089	5.283	21	.004	0	y	23	22.638	77.112	5.381	3.414	1	H1-1b
661	M773	2L2 1/2x2 1/2x1/4x...	.051	4.06	25	.003	8.293	y	19	36.731	77.112	5.381	3.414	1	H1-1b
662	M17	L2 1/2x2 1/2x3/16	.212	9.149	6	.006	9.149	z	23	4.438	29.225	.351	1.309	1	H2-1
663	M20	L2 1/2x2 1/2x3/16	.211	9.149	14	.006	0	z	23	4.438	29.225	.351	1.309	1	H2-1
664	M24	L2 1/2x2 1/2x3/16	.170	9.149	2	.006	0	z	21	4.438	29.225	.351	1.309	1	H2-1
665	M27	L2 1/2x2 1/2x3/16	.165	9.149	10	.006	0	z	21	4.438	29.225	.351	1.309	1	H2-1
666	M31	L2 1/2x2 1/2x3/16	.221	9.149	14	.006	0	z	19	4.438	29.225	.351	1.309	1	H2-1
667	M34	L2 1/2x2 1/2x3/16	.222	9.149	6	.006	0	z	19	4.438	29.225	.351	1.309	1	H2-1
668	M38	L2 1/2x2 1/2x3/16	.171	9.149	10	.006	0	z	25	4.438	29.225	.351	1.309	1	H2-1
669	M41	L2 1/2x2 1/2x3/16	.176	9.149	2	.006	0	z	25	4.438	29.225	.351	1.309	1	H2-1
670	M54	L3x3x3/16	.022	0	24	.004	0	y	24	12.187	35.316	.509	2.096	1	H2-1
671	M62	L3x3x3/16	.022	0	20	.004	7.523	y	22	12.187	35.316	.509	2.096	1	H2-1
672	M70	L3x3x3/16	.022	0	26	.004	0	y	26	12.187	35.316	.509	2.096	1	H2-1
673	M78	L3x3x3/16	.020	0	21	.004	0	y	24	12.187	35.316	.509	2.096	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
674	M86	L3x3x3/16	.020	0	25	.004	7.523	y	20	12.187	35.316	.509	2.096	1	H2-1
675	M94	L3x3x3/16	.020	0	21	.004	7.523	y	26	12.187	35.316	.509	2.096	1	H2-1
676	M102	L3x3x3/16	.019	0	24	.004	7.523	y	22	12.187	35.316	.509	2.096	1	H2-1
677	M110	L3x3x3/16	.022	0	20	.004	0	y	20	12.187	35.316	.509	2.096	1	H2-1
678	M127	L3x3x3/16	.066	0	24	.004	0	y	26	12.187	35.316	.509	2.096	1	H2-1
679	M135	L3x3x3/16	.068	0	22	.004	7.523	y	20	12.187	35.316	.509	2.096	1	H2-1
680	M144	L3x3x3/16	.068	0	22	.004	0	y	24	12.187	35.316	.509	2.096	1	H2-1
681	M152	L3x3x3/16	.058	0	20	.004	0	y	26	12.187	35.316	.509	2.096	1	H2-1
682	M161	L3x3x3/16	.055	0	20	.004	7.523	y	22	12.187	35.316	.509	2.096	1	H2-1
683	M169	L3x3x3/16	.054	0	26	.004	7.523	y	24	12.187	35.316	.509	2.096	1	H2-1
684	M178	L3x3x3/16	.056	0	26	.004	7.523	y	20	12.187	35.316	.509	2.096	1	H2-1
685	M186	L3x3x3/16	.065	0	23	.004	7.523	y	22	12.187	35.316	.509	2.096	1	H2-1
686	M208	L3x3x3/16	.102	0	24	.005	7.523	y	26	12.221	35.316	.509	2.098	1	H2-1
687	M216	L3x3x3/16	.103	0	22	.004	0	y	20	12.221	35.316	.509	2.098	1	H2-1
688	M225	L3x3x3/16	.105	0	22	.004	0	y	23	12.221	35.316	.509	2.098	1	H2-1
689	M233	L3x3x3/16	.088	0	20	.004	0	y	19	12.221	35.316	.509	2.098	1	H2-1
690	M242	L3x3x3/16	.083	0	20	.004	7.523	y	22	12.221	35.316	.509	2.098	1	H2-1
691	M250	L3x3x3/16	.082	0	26	.004	0	y	24	12.221	35.316	.509	2.098	1	H2-1
692	M259	L3x3x3/16	.082	0	26	.004	0	y	19	12.221	35.316	.509	2.098	1	H2-1
693	M267	L3x3x3/16	.099	0	24	.005	7.523	y	23	12.221	35.316	.509	2.098	1	H2-1
694	M289	L3x3x3/16	.147	0	24	.004	0	y	25	12.682	35.316	.509	2.113	1	H2-1
695	M297	L3x3x3/16	.151	0	22	.004	0	y	21	12.682	35.316	.509	2.113	1	H2-1
696	M306	L3x3x3/16	.152	0	22	.004	7.523	y	23	12.682	35.316	.509	2.113	1	H2-1
697	M314	L3x3x3/16	.137	0	4	.004	0	y	19	12.682	35.316	.509	2.113	1	H2-1
698	M323	L3x3x3/16	.127	0	4	.004	7.523	y	21	12.682	35.316	.509	2.113	1	H2-1
699	M331	L3x3x3/16	.125	0	16	.004	7.523	y	25	12.682	35.316	.509	2.113	1	H2-1
700	M340	L3x3x3/16	.136	0	16	.004	7.523	y	19	12.682	35.316	.509	2.113	1	H2-1
701	M348	L3x3x3/16	.147	0	24	.004	0	y	23	12.682	35.316	.509	2.113	1	H2-1
702	M370	L3x3x3/16	.180	0	23	.004	7.523	y	25	12.716	35.316	.509	2.114	1	H2-1
703	M378	L3x3x3/16	.185	0	23	.004	0	y	21	12.716	35.316	.509	2.114	1	H2-1
704	M387	L3x3x3/16	.182	0	21	.004	7.523	y	23	12.716	35.316	.509	2.114	1	H2-1
705	M395	L3x3x3/16	.170	0	6	.004	7.523	y	19	12.716	35.316	.509	2.114	1	H2-1
706	M404	L3x3x3/16	.171	0	2	.004	7.523	y	21	12.716	35.316	.509	2.114	1	H2-1
707	M412	L3x3x3/16	.168	0	2	.004	7.523	y	25	12.716	35.316	.509	2.114	1	H2-1
708	M421	L3x3x3/16	.167	0	14	.004	7.523	y	19	12.716	35.316	.509	2.114	1	H2-1
709	M429	L3x3x3/16	.178	0	25	.004	0	y	23	12.716	35.316	.509	2.114	1	H2-1
710	M451	L3x3x3/16	.218	0	10	.004	7.523	y	26	13.199	35.316	.509	2.131	1	H2-1
711	M459	L3x3x3/16	.224	0	10	.004	7.523	y	20	13.199	35.316	.509	2.131	1	H2-1
712	M468	L3x3x3/16	.222	0	6	.004	0	y	24	13.199	35.316	.509	2.131	1	H2-1
713	M476	L3x3x3/16	.210	0	6	.004	0	y	26	13.199	35.316	.509	2.131	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
714	M485	L3x3x3/16	.216	0	2	.004	7.523	y	22	13.199	35.316	.509	2.131	1	H2-1
715	M493	L3x3x3/16	.213	0	2	.004	0	y	20	13.199	35.316	.509	2.131	1	H2-1
716	M502	L3x3x3/16	.208	0	14	.004	7.523	y	24	13.199	35.316	.509	2.131	1	H2-1
717	M510	L3x3x3/16	.218	0	14	.004	0	y	22	13.199	35.316	.509	2.131	1	H2-1
718	M532	L3x3x3/16	.292	0	12	.004	7.523	y	25	13.233	35.316	.509	2.132	1	H2-1
719	M540	L3x3x3/16	.300	0	8	.004	7.523	y	21	13.233	35.316	.509	2.132	1	H2-1
720	M549	L3x3x3/16	.300	0	8	.004	0	y	23	13.233	35.316	.509	2.132	1	H2-1
721	M557	L3x3x3/16	.284	0	4	.004	7.523	y	19	13.233	35.316	.509	2.132	1	H2-1
722	M566	L3x3x3/16	.291	0	4	.004	7.523	y	21	13.233	35.316	.509	2.132	1	H2-1
723	M574	L3x3x3/16	.291	0	16	.004	7.523	y	21	13.233	35.316	.509	2.132	1	H2-1
724	M583	L3x3x3/16	.284	0	16	.004	7.523	y	23	13.233	35.316	.509	2.132	1	H2-1
725	M591	L3x3x3/16	.291	0	12	.004	7.523	y	23	13.233	35.316	.509	2.132	1	H2-1
726	M613	L3x3x3/16	.389	0	10	.004	0	y	25	13.303	35.316	.509	2.134	1	H2-1
727	M621	L3x3x3/16	.391	0	10	.004	0	y	25	13.303	35.316	.509	2.134	1	H2-1
728	M630	L3x3x3/16	.366	0	6	.004	0	y	19	13.303	35.316	.509	2.134	1	H2-1
729	M638	L3x3x3/16	.349	0	6	.004	7.523	y	19	13.303	35.316	.509	2.134	1	H2-1
730	M647	L3x3x3/16	.382	0	2	.004	0	y	21	13.303	35.316	.509	2.134	1	H2-1
731	M655	L3x3x3/16	.381	0	2	.004	7.523	y	21	13.303	35.316	.509	2.134	1	H2-1
732	M664	L3x3x3/16	.348	0	14	.004	7.523	y	23	13.303	35.316	.509	2.134	1	H2-1
733	M672	L3x3x3/16	.362	0	14	.004	0	y	23	13.303	35.316	.509	2.134	1	H2-1
734	M694	L3x3x3/16	.117	0	12	.004	0	y	25	13.063	35.316	.509	2.126	1	H2-1
735	M704	L3x3x3/16	.119	0	8	.004	8.199	y	24	13.063	35.316	.509	2.126	1	H2-1
736	M715	L3x3x3/16	.064	0	9	.005	8.293	y	20	12.74	35.316	.509	2.115	1	H2-1
737	M725	L3x3x3/16	.065	0	5	.004	8.293	y	23	12.74	35.316	.509	2.115	1	H2-1
738	M736	L3x3x3/16	.118	0	4	.004	8.199	y	25	13.063	35.316	.509	2.126	1	H2-1
739	M746	L3x3x3/16	.117	0	16	.004	0	y	21	13.063	35.316	.509	2.126	1	H2-1
740	M757	L3x3x3/16	.066	0	17	.005	0	y	23	12.74	35.316	.509	2.115	1	H2-1
741	M767	L3x3x3/16	.065	0	13	.004	8.293	y	19	12.74	35.316	.509	2.115	1	H2-1
742	M807	LL3x3x3x3	.032	6.674	12	.002	0	y	23	15.364	70.632	5.543	3.751	1	H1-1b
743	M808	LL3x3x3x3	.030	7.196	6	.002	13.817	y	21	15.614	70.632	5.543	3.751	1	H1-1b
744	M809	LL3x3x3x3	.030	6.621	14	.002	0	y	10	15.614	70.632	5.543	3.751	1	H1-1b
745	M810	LL3x3x3x3	.032	7.255	8	.002	0	y	14	15.364	70.632	5.543	3.751	1	H1-1b
746	M811	LL3x3x3x3	.032	6.674	4	.002	0	y	14	15.364	70.632	5.543	3.751	1	H1-1b
747	M812	LL3x3x3x3	.029	7.196	12	.002	0	y	2	15.614	70.632	5.543	3.751	1	H1-1b
748	M813	LL3x3x3x3	.029	6.621	8	.002	13.817	y	2	15.614	70.632	5.543	3.751	1	H1-1b
749	M814	LL3x3x3x3	.031	7.255	16	.002	0	y	6	15.364	70.632	5.543	3.751	1	H1-1b
750	M1246	2L2 1/2x2 1/2x3/16...	.145	0	24	.002	12.14	y	25	11.603	58.32	4.017	2.611	1	H1-1b*
751	M1247	2L2 1/2x2 1/2x3/16...	.145	12.14	24	.002	12.14	y	23	11.603	58.32	4.017	2.611	1	H1-1b*
752	M1248	2L2 1/2x2 1/2x3/16...	.145	0	22	.002	12.14	y	21	11.603	58.32	4.017	2.611	1	H1-1b*
753	M1249	2L2 1/2x2 1/2x3/16...	.145	12.14	22	.002	0	y	23	11.603	58.32	4.017	2.611	1	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
754	M1250	2L2 1/2x2 1/2x3/16...	.145	0	20	.002	0	y	19	11.603	58.32	4.017	2.611	1	H1-1b*
755	M1251	2L2 1/2x2 1/2x3/16...	.145	12.14	20	.002	12.14	y	21	11.603	58.32	4.017	2.611	1	H1-1b*
756	M1252	2L2 1/2x2 1/2x3/16...	.145	0	26	.002	0	y	25	11.603	58.32	4.017	2.611	1	H1-1b*
757	M1253	2L2 1/2x2 1/2x3/16...	.145	12.14	26	.002	0	y	19	11.603	58.32	4.017	2.611	1	H1-1b*
758	M1194	2L2 1/2x2 1/2x3/16...	.065	5.944	24	.002	0	y	24	11.603	58.32	4.017	2.611	1	H1-1b
759	M1195	2L2 1/2x2 1/2x3/16...	.065	6.196	25	.002	0	y	23	11.603	58.32	4.017	2.611	1	H1-1b
760	M1196	2L2 1/2x2 1/2x3/16...	.064	5.944	22	.002	0	y	21	11.603	58.32	4.017	2.611	1	H1-1b
761	M1197	2L2 1/2x2 1/2x3/16...	.064	6.196	22	.002	12.14	y	23	11.603	58.32	4.017	2.611	1	H1-1b
762	M1198	2L2 1/2x2 1/2x3/16...	.065	5.944	20	.002	0	y	20	11.603	58.32	4.017	2.611	1	H1-1b
763	M1199	2L2 1/2x2 1/2x3/16...	.065	6.196	19	.002	12.14	y	21	11.603	58.32	4.017	2.611	1	H1-1b
764	M1200	2L2 1/2x2 1/2x3/16...	.065	5.944	19	.002	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
765	M1201	2L2 1/2x2 1/2x3/16...	.065	6.196	26	.002	12.14	y	26	11.603	58.32	4.017	2.611	1	H1-1b
766	M1142	2L2 1/2x2 1/2x3/16...	.065	5.944	24	.002	0	y	24	11.603	58.32	4.017	2.611	1	H1-1b
767	M1143	2L2 1/2x2 1/2x3/16...	.065	6.196	25	.002	12.14	y	24	11.603	58.32	4.017	2.611	1	H1-1b
768	M1144	2L2 1/2x2 1/2x3/16...	.065	5.944	25	.002	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
769	M1145	2L2 1/2x2 1/2x3/16...	.065	6.196	20	.002	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
770	M1146	2L2 1/2x2 1/2x3/16...	.065	5.944	20	.002	12.14	y	20	11.603	58.32	4.017	2.611	1	H1-1b
771	M1147	2L2 1/2x2 1/2x3/16...	.065	6.196	19	.002	12.14	y	20	11.603	58.32	4.017	2.611	1	H1-1b
772	M1148	2L2 1/2x2 1/2x3/16...	.064	5.944	22	.002	12.14	y	22	11.603	58.32	4.017	2.611	1	H1-1b
773	M1149	2L2 1/2x2 1/2x3/16...	.064	6.196	22	.002	12.14	y	22	11.603	58.32	4.017	2.611	1	H1-1b
774	M1090	2L2 1/2x2 1/2x3/16...	.065	5.944	24	.002	12.14	y	12	11.603	58.32	4.017	2.611	1	H1-1b
775	M1091	2L2 1/2x2 1/2x3/16...	.065	6.196	25	.002	0	y	24	11.603	58.32	4.017	2.611	1	H1-1b
776	M1092	2L2 1/2x2 1/2x3/16...	.064	5.944	22	.002	0	y	21	11.603	58.32	4.017	2.611	1	H1-1b
777	M1093	2L2 1/2x2 1/2x3/16...	.064	6.196	22	.002	12.14	y	23	11.603	58.32	4.017	2.611	1	H1-1b
778	M1094	2L2 1/2x2 1/2x3/16...	.064	5.944	25	.002	12.14	y	26	11.603	58.32	4.017	2.611	1	H1-1b
779	M1095	2L2 1/2x2 1/2x3/16...	.064	6.196	20	.002	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
780	M1096	2L2 1/2x2 1/2x3/16...	.065	5.944	20	.002	0	y	4	11.603	58.32	4.017	2.611	1	H1-1b
781	M1097	2L2 1/2x2 1/2x3/16...	.065	6.196	19	.002	12.14	y	4	11.603	58.32	4.017	2.611	1	H1-1b
782	M1038	2L2 1/2x2 1/2x3/16...	.064	5.944	23	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b
783	M1039	2L2 1/2x2 1/2x3/16...	.064	6.196	21	.002	0	y	16	11.603	58.32	4.017	2.611	1	H1-1b
784	M1040	2L2 1/2x2 1/2x3/16...	.065	5.944	21	.002	0	y	4	11.603	58.32	4.017	2.611	1	H1-1b
785	M1041	2L2 1/2x2 1/2x3/16...	.065	6.196	26	.002	12.14	y	4	11.603	58.32	4.017	2.611	1	H1-1b
786	M1042	2L2 1/2x2 1/2x3/16...	.064	5.944	20	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b
787	M1043	2L2 1/2x2 1/2x3/16...	.064	6.196	24	.002	12.14	y	26	11.603	58.32	4.017	2.611	1	H1-1b
788	M1044	2L2 1/2x2 1/2x3/16...	.065	5.944	23	.002	0	y	12	11.603	58.32	4.017	2.611	1	H1-1b
789	M1045	2L2 1/2x2 1/2x3/16...	.065	6.196	26	.002	0	y	12	11.603	58.32	4.017	2.611	1	H1-1b
790	M986	2L2 1/2x2 1/2x3/16...	.064	5.944	23	.002	12.14	y	12	11.603	58.32	4.017	2.611	1	H1-1b
791	M987	2L2 1/2x2 1/2x3/16...	.064	6.196	26	.002	12.14	y	12	11.603	58.32	4.017	2.611	1	H1-1b
792	M988	2L2 1/2x2 1/2x3/16...	.064	5.944	23	.002	0	y	16	11.603	58.32	4.017	2.611	1	H1-1b
793	M989	2L2 1/2x2 1/2x3/16...	.064	6.196	21	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
794	M990	2L2 1/2x2 1/2x3/16...	.064	5.944	21	.002	12.14	y	4	11.603	58.32	4.017	2.611	1	H1-1b
795	M991	2L2 1/2x2 1/2x3/16...	.064	6.196	26	.002	12.14	y	12	11.603	58.32	4.017	2.611	1	H1-1b
796	M992	2L2 1/2x2 1/2x3/16...	.064	5.944	20	.002	0	y	16	11.603	58.32	4.017	2.611	1	H1-1b
797	M993	2L2 1/2x2 1/2x3/16...	.064	6.196	24	.002	0	y	16	11.603	58.32	4.017	2.611	1	H1-1b
798	M934	2L2 1/2x2 1/2x3/16...	.064	5.944	23	.002	12.14	y	12	11.603	58.32	4.017	2.611	1	H1-1b
799	M935	2L2 1/2x2 1/2x3/16...	.064	6.196	26	.002	12.14	y	4	11.603	58.32	4.017	2.611	1	H1-1b
800	M936	2L2 1/2x2 1/2x3/16...	.064	5.944	23	.002	0	y	16	11.603	58.32	4.017	2.611	1	H1-1b
801	M937	2L2 1/2x2 1/2x3/16...	.063	6.196	21	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b
802	M938	2L2 1/2x2 1/2x3/16...	.064	5.944	21	.002	12.14	y	4	11.603	58.32	4.017	2.611	1	H1-1b
803	M939	2L2 1/2x2 1/2x3/16...	.064	6.196	26	.002	0	y	12	11.603	58.32	4.017	2.611	1	H1-1b
804	M940	2L2 1/2x2 1/2x3/16...	.064	5.944	20	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b
805	M941	2L2 1/2x2 1/2x3/16...	.064	6.196	24	.002	12.14	y	16	11.603	58.32	4.017	2.611	1	H1-1b
806	M815	LL3x3x3x3	.083	0	20	.002	15.567	y	10	12.3	70.632	5.543	3.751	1	H1-1b*
807	M816	LL3x3x3x3	.076	7.843	23	.002	0	y	6	12.624	70.632	5.543	3.751	1	H1-1b
808	M817	LL3x3x3x3	.075	7.523	23	.002	0	y	6	12.624	70.632	5.543	3.751	1	H1-1b
809	M818	LL3x3x3x3	.081	7.946	26	.002	15.567	y	2	12.3	70.632	5.543	3.751	1	H1-1b
810	M819	LL3x3x3x3	.082	0	24	.002	0	y	10	12.3	70.632	5.543	3.751	1	H1-1b*
811	M820	LL3x3x3x3	.074	7.843	20	.002	0	y	6	12.624	70.632	5.543	3.751	1	H1-1b
812	M821	LL3x3x3x3	.074	7.523	26	.002	15.366	y	14	12.624	70.632	5.543	3.751	1	H1-1b
813	M822	LL3x3x3x3	.082	15.567	22	.002	15.567	y	10	12.3	70.632	5.543	3.751	1	H1-1b*
814	M1238	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	0	y	4	16.995	58.32	4.017	2.611	1	H1-1b
815	M1239	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	10.031	y	4	16.995	58.32	4.017	2.611	1	H1-1b
816	M1240	2L2 1/2x2 1/2x3/16...	.023	4.911	12	.001	10.031	y	14	16.995	58.32	4.017	2.611	1	H1-1b
817	M1241	2L2 1/2x2 1/2x3/16...	.023	5.12	4	.001	0	y	16	16.995	58.32	4.017	2.611	1	H1-1b
818	M1242	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	0	y	10	16.995	58.32	4.017	2.611	1	H1-1b
819	M1243	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	14	16.995	58.32	4.017	2.611	1	H1-1b
820	M1244	2L2 1/2x2 1/2x3/16...	.023	4.911	4	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
821	M1245	2L2 1/2x2 1/2x3/16...	.023	5.12	12	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
822	M1186	2L2 1/2x2 1/2x3/16...	.023	4.911	12	.001	10.031	y	14	16.995	58.32	4.017	2.611	1	H1-1b
823	M1187	2L2 1/2x2 1/2x3/16...	.023	5.12	4	.001	0	y	2	16.995	58.32	4.017	2.611	1	H1-1b
824	M1188	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	10.031	y	10	16.995	58.32	4.017	2.611	1	H1-1b
825	M1189	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	14	16.995	58.32	4.017	2.611	1	H1-1b
826	M1190	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	0	y	6	16.995	58.32	4.017	2.611	1	H1-1b
827	M1191	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	4	16.995	58.32	4.017	2.611	1	H1-1b
828	M1192	2L2 1/2x2 1/2x3/16...	.023	4.911	12	.001	10.031	y	10	16.995	58.32	4.017	2.611	1	H1-1b
829	M1193	2L2 1/2x2 1/2x3/16...	.023	5.12	4	.001	10.031	y	6	16.995	58.32	4.017	2.611	1	H1-1b
830	M1134	2L2 1/2x2 1/2x3/16...	.023	4.911	12	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
831	M1135	2L2 1/2x2 1/2x3/16...	.023	5.12	4	.001	10.031	y	6	16.995	58.32	4.017	2.611	1	H1-1b
832	M1136	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
833	M1137	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
834	M1138	2L2 1/2x2 1/2x3/16...	.023	4.911	12	.001	10.031	y	16	16.995	58.32	4.017	2.611	1	H1-1b
835	M1139	2L2 1/2x2 1/2x3/16...	.023	5.12	4	.001	10.031	y	16	16.995	58.32	4.017	2.611	1	H1-1b
836	M1140	2L2 1/2x2 1/2x3/16...	.023	4.911	8	.001	10.031	y	26	16.995	58.32	4.017	2.611	1	H1-1b
837	M1141	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
838	M1082	2L2 1/2x2 1/2x3/16...	.024	4.911	8	.001	10.031	y	12	16.995	58.32	4.017	2.611	1	H1-1b
839	M1083	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
840	M1084	2L2 1/2x2 1/2x3/16...	.024	4.911	12	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
841	M1085	2L2 1/2x2 1/2x3/16...	.024	5.12	4	.001	10.031	y	6	16.995	58.32	4.017	2.611	1	H1-1b
842	M1086	2L2 1/2x2 1/2x3/16...	.024	4.911	8	.001	0	y	4	16.995	58.32	4.017	2.611	1	H1-1b
843	M1087	2L2 1/2x2 1/2x3/16...	.023	5.12	16	.001	0	y	2	16.995	58.32	4.017	2.611	1	H1-1b
844	M1088	2L2 1/2x2 1/2x3/16...	.024	4.911	4	.001	0	y	16	16.995	58.32	4.017	2.611	1	H1-1b
845	M1089	2L2 1/2x2 1/2x3/16...	.024	5.12	12	.001	0	y	16	16.995	58.32	4.017	2.611	1	H1-1b
846	M1030	2L2 1/2x2 1/2x3/16...	.025	4.911	8	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
847	M1031	2L2 1/2x2 1/2x3/16...	.024	5.12	16	.001	10.031	y	10	16.995	58.32	4.017	2.611	1	H1-1b
848	M1032	2L2 1/2x2 1/2x3/16...	.025	4.911	12	.001	0	y	8	16.995	58.32	4.017	2.611	1	H1-1b
849	M1033	2L2 1/2x2 1/2x3/16...	.025	5.12	4	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
850	M1034	2L2 1/2x2 1/2x3/16...	.025	4.911	8	.001	10.031	y	4	16.995	58.32	4.017	2.611	1	H1-1b
851	M1035	2L2 1/2x2 1/2x3/16...	.024	5.12	16	.001	10.031	y	6	16.995	58.32	4.017	2.611	1	H1-1b
852	M1036	2L2 1/2x2 1/2x3/16...	.024	4.911	4	.001	10.031	y	14	16.995	58.32	4.017	2.611	1	H1-1b
853	M1037	2L2 1/2x2 1/2x3/16...	.024	5.12	12	.001	0	y	16	16.995	58.32	4.017	2.611	1	H1-1b
854	M978	2L2 1/2x2 1/2x3/16...	.025	4.911	8	.001	0	y	19	16.995	58.32	4.017	2.611	1	H1-1b
855	M979	2L2 1/2x2 1/2x3/16...	.025	5.12	16	.001	10.031	y	4	16.995	58.32	4.017	2.611	1	H1-1b
856	M980	2L2 1/2x2 1/2x3/16...	.025	4.911	12	.001	0	y	19	16.995	58.32	4.017	2.611	1	H1-1b
857	M981	2L2 1/2x2 1/2x3/16...	.025	5.12	4	.001	10.031	y	25	16.995	58.32	4.017	2.611	1	H1-1b
858	M982	2L2 1/2x2 1/2x3/16...	.025	4.911	12	.001	10.031	y	26	16.995	58.32	4.017	2.611	1	H1-1b
859	M983	2L2 1/2x2 1/2x3/16...	.025	5.12	4	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
860	M984	2L2 1/2x2 1/2x3/16...	.025	4.911	8	.001	10.031	y	12	16.995	58.32	4.017	2.611	1	H1-1b
861	M985	2L2 1/2x2 1/2x3/16...	.025	5.12	16	.001	0	y	12	16.995	58.32	4.017	2.611	1	H1-1b
862	M926	2L2 1/2x2 1/2x3/16...	.026	4.911	8	.001	0	y	12	16.995	58.32	4.017	2.611	1	H1-1b
863	M927	2L2 1/2x2 1/2x3/16...	.025	5.12	16	.001	10.031	y	12	16.995	58.32	4.017	2.611	1	H1-1b
864	M928	2L2 1/2x2 1/2x3/16...	.026	4.911	12	.001	0	y	8	16.995	58.32	4.017	2.611	1	H1-1b
865	M929	2L2 1/2x2 1/2x3/16...	.026	5.12	4	.001	10.031	y	8	16.995	58.32	4.017	2.611	1	H1-1b
866	M930	2L2 1/2x2 1/2x3/16...	.025	4.911	8	.001	0	y	4	16.995	58.32	4.017	2.611	1	H1-1b
867	M931	2L2 1/2x2 1/2x3/16...	.025	5.12	16	.001	0	y	4	16.995	58.32	4.017	2.611	1	H1-1b
868	M932	2L2 1/2x2 1/2x3/16...	.025	4.911	4	.001	10.031	y	16	16.995	58.32	4.017	2.611	1	H1-1b
869	M933	2L2 1/2x2 1/2x3/16...	.025	5.12	12	.001	0	y	16	16.995	58.32	4.017	2.611	1	H1-1b
870	M874	2L2 1/2x2 1/2x3/16...	.028	4.911	8	.001	0	y	6	16.995	58.32	4.017	2.611	1	H1-1b
871	M875	2L2 1/2x2 1/2x3/16...	.028	5.12	16	.001	10.031	y	2	16.995	58.32	4.017	2.611	1	H1-1b
872	M876	2L2 1/2x2 1/2x3/16...	.028	4.911	12	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
873	M877	2L2 1/2x2 1/2x3/16...	.028	5.12	4	.001	10.031	y	26	16.995	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
874	M878	2L2 1/2x2 1/2x3/16...	.028	4.911	8	.001	0	y	10	16.995	58.32	4.017	2.611	1	H1-1b
875	M879	2L2 1/2x2 1/2x3/16...	.028	5.12	16	.001	10.031	y	10	16.995	58.32	4.017	2.611	1	H1-1b
876	M880	2L2 1/2x2 1/2x3/16...	.028	4.911	12	.001	10.031	y	26	16.995	58.32	4.017	2.611	1	H1-1b
877	M881	2L2 1/2x2 1/2x3/16...	.028	5.12	4	.001	0	y	26	16.995	58.32	4.017	2.611	1	H1-1b
878	M799	LL4x4x8x3	.014	3.948	4	.002	0	y	8	176.057	243	25.894	16.851	1	H1-1b
879	M800	LL4x4x8x3	.014	3.948	8	.002	0	y	4	176.057	243	25.894	16.851	1	H1-1b
880	M801	LL4x4x8x3	.014	3.948	16	.002	7.896	y	12	176.057	243	25.894	16.851	1	H1-1b
881	M806	LL4x4x8x3	.014	3.948	12	.002	0	y	16	176.057	243	25.894	16.851	1	H1-1b
882	M1234	2L2 1/2x2 1/2x3/16...	.113	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
883	M1235	2L2 1/2x2 1/2x3/16...	.113	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
884	M1236	2L2 1/2x2 1/2x3/16...	.113	7.896	20	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
885	M1237	2L2 1/2x2 1/2x3/16...	.113	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
886	M1182	2L2 1/2x2 1/2x3/16...	.102	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
887	M1183	2L2 1/2x2 1/2x3/16...	.102	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
888	M1184	2L2 1/2x2 1/2x3/16...	.102	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
889	M1185	2L2 1/2x2 1/2x3/16...	.102	7.896	20	.002	7.896	y	21	6.857	58.32	4.017	1.632	1	H1-1b
890	M1130	2L2 1/2x2 1/2x3/16...	.102	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
891	M1131	2L2 1/2x2 1/2x3/16...	.101	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
892	M1132	2L2 1/2x2 1/2x3/16...	.101	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
893	M1133	2L2 1/2x2 1/2x3/16...	.102	7.896	20	.002	7.896	y	21	6.857	58.32	4.017	1.632	1	H1-1b
894	M1078	2L2 1/2x2 1/2x3/16...	.103	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
895	M1079	2L2 1/2x2 1/2x3/16...	.102	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
896	M1080	2L2 1/2x2 1/2x3/16...	.103	7.896	20	.002	7.896	y	21	6.857	58.32	4.017	1.632	1	H1-1b
897	M1081	2L2 1/2x2 1/2x3/16...	.102	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
898	M1026	2L2 1/2x2 1/2x3/16...	.103	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
899	M1027	2L2 1/2x2 1/2x3/16...	.103	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
900	M1028	2L2 1/2x2 1/2x3/16...	.103	7.896	20	.002	7.896	y	20	6.857	58.32	4.017	1.632	1	H1-1b
901	M1029	2L2 1/2x2 1/2x3/16...	.103	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
902	M974	2L2 1/2x2 1/2x3/16...	.104	7.896	24	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
903	M975	2L2 1/2x2 1/2x3/16...	.104	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
904	M976	2L2 1/2x2 1/2x3/16...	.104	7.896	20	.002	7.896	y	20	6.857	58.32	4.017	1.632	1	H1-1b
905	M977	2L2 1/2x2 1/2x3/16...	.103	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
906	M922	2L2 1/2x2 1/2x3/16...	.103	7.896	24	.002	7.896	y	24	6.857	58.32	4.017	1.632	1	H1-1b
907	M923	2L2 1/2x2 1/2x3/16...	.102	7.896	26	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
908	M924	2L2 1/2x2 1/2x3/16...	.103	7.896	20	.002	7.896	y	20	6.857	58.32	4.017	1.632	1	H1-1b
909	M925	2L2 1/2x2 1/2x3/16...	.102	7.896	22	.002	7.896	y	23	6.857	58.32	4.017	1.632	1	H1-1b
910	M870	2L2 1/2x2 1/2x3/16...	.103	7.896	22	.002	7.896	y	21	6.857	58.32	4.017	1.632	1	H1-1b
911	M871	2L2 1/2x2 1/2x3/16...	.104	7.896	24	.002	7.896	y	25	6.857	58.32	4.017	1.632	1	H1-1b
912	M872	2L2 1/2x2 1/2x3/16...	.103	7.896	20	.002	7.896	y	19	6.857	58.32	4.017	1.632	1	H1-1b
913	M873	2L2 1/2x2 1/2x3/16...	.103	7.896	26	.002	7.896	y	26	6.857	58.32	4.017	1.632	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
914	M802	LL3x3x3x3	.116	7.896	20	.002	7.896	y	20	11.952	70.632	5.543	2.345	1	H1-1b
915	M803	LL3x3x3x3	.115	7.896	22	.002	7.896	y	22	11.952	70.632	5.543	2.345	1	H1-1b
916	M804	LL3x3x3x3	.116	7.896	26	.002	7.896	y	19	11.952	70.632	5.543	2.345	1	H1-1b
917	M805	LL3x3x3x3	.115	7.896	24	.002	7.896	y	24	11.952	70.632	5.543	2.345	1	H1-1b
918	M1230	2L2 1/2x2 1/2x3/16...	.023	3.948	20	.002	7.896	y	8	26.617	58.32	4.017	2.611	1	H1-1b
919	M1231	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	12	26.617	58.32	4.017	2.611	1	H1-1b
920	M1232	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	8	26.617	58.32	4.017	2.611	1	H1-1b
921	M1233	2L2 1/2x2 1/2x3/16...	.023	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
922	M1178	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	8	26.617	58.32	4.017	2.611	1	H1-1b
923	M1179	2L2 1/2x2 1/2x3/16...	.023	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
924	M1180	2L2 1/2x2 1/2x3/16...	.023	3.948	20	.002	7.896	y	8	26.617	58.32	4.017	2.611	1	H1-1b
925	M1181	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
926	M1126	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
927	M1127	2L2 1/2x2 1/2x3/16...	.023	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
928	M1128	2L2 1/2x2 1/2x3/16...	.023	3.948	20	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
929	M1129	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
930	M1074	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
931	M1075	2L2 1/2x2 1/2x3/16...	.023	3.948	22	.002	7.896	y	12	26.617	58.32	4.017	2.611	1	H1-1b
932	M1076	2L2 1/2x2 1/2x3/16...	.023	3.948	20	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
933	M1077	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	12	26.617	58.32	4.017	2.611	1	H1-1b
934	M1022	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
935	M1023	2L2 1/2x2 1/2x3/16...	.024	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
936	M1024	2L2 1/2x2 1/2x3/16...	.023	3.948	20	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
937	M1025	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
938	M970	2L2 1/2x2 1/2x3/16...	.023	3.948	24	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
939	M971	2L2 1/2x2 1/2x3/16...	.023	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
940	M972	2L2 1/2x2 1/2x3/16...	.023	3.948	4	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
941	M973	2L2 1/2x2 1/2x3/16...	.023	3.948	26	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
942	M918	2L2 1/2x2 1/2x3/16...	.024	3.948	12	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
943	M919	2L2 1/2x2 1/2x3/16...	.024	3.948	22	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
944	M920	2L2 1/2x2 1/2x3/16...	.024	3.948	4	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
945	M921	2L2 1/2x2 1/2x3/16...	.024	3.948	16	.002	7.896	y	12	26.617	58.32	4.017	2.611	1	H1-1b
946	M866	2L2 1/2x2 1/2x3/16...	.024	3.948	12	.002	7.896	y	16	26.617	58.32	4.017	2.611	1	H1-1b
947	M867	2L2 1/2x2 1/2x3/16...	.024	3.948	16	.002	7.896	y	12	26.617	58.32	4.017	2.611	1	H1-1b
948	M868	2L2 1/2x2 1/2x3/16...	.024	3.948	4	.002	7.896	y	8	26.617	58.32	4.017	2.611	1	H1-1b
949	M869	2L2 1/2x2 1/2x3/16...	.024	3.948	8	.002	7.896	y	4	26.617	58.32	4.017	2.611	1	H1-1b
950	M783	L2.5x2.5x3	.298	1.396	4	.002	0	y	4	22.347	29.192	.873	1.836	1	H2-1
951	M784	L2.5x2.5x3	.219	1.396	4	.001	0	y	4	22.347	29.192	.873	1.836	1	H2-1
952	M785	L2.5x2.5x3	.298	1.396	16	.002	2.792	y	16	22.347	29.192	.873	1.836	1	H2-1
953	M786	L2.5x2.5x3	.219	1.396	16	.001	0	y	16	22.347	29.192	.873	1.836	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
954	M787	L2.5x2.5x3	.234	1.396	24	.001	2.792	y	24	22.347	29.192	.873	1.836	1	H2-1
955	M788	L2.5x2.5x3	.300	1.396	24	.002	0	y	12	22.347	29.192	.873	1.836	1	H2-1
956	M789	L2.5x2.5x3	.236	1.396	22	.001	2.792	y	6	22.347	29.192	.873	1.836	1	H2-1
957	M790	L2.5x2.5x3	.302	1.396	22	.001	0	y	10	22.347	29.192	.873	1.836	1	H2-1
958	M1262	2L2 1/2x2 1/2x3/16...	.069	6.375	2	.003	12.75	y	14	10.519	58.32	4.017	2.611	1	H1-1b
959	M1263	2L2 1/2x2 1/2x3/16...	.062	6.375	25	.003	0	y	10	10.519	58.32	4.017	2.611	1	H1-1b
960	M1264	2L2 1/2x2 1/2x3/16...	.070	6.375	10	.003	0	y	14	10.519	58.32	4.017	2.611	1	H1-1b
961	M1265	2L2 1/2x2 1/2x3/16...	.062	6.375	21	.003	12.75	y	10	10.519	58.32	4.017	2.611	1	H1-1b
962	M53	2L2 1/2x2 1/2x3/16...	.082	4.188	21	.005	0	y	21	25.468	58.32	4.017	2.611	1	H1-1b
963	M61	2L2 1/2x2 1/2x3/16...	.082	4.188	25	.005	0	y	25	25.468	58.32	4.017	2.611	1	H1-1b
964	M69	2L2 1/2x2 1/2x3/16...	.082	4.188	19	.005	0	y	19	25.468	58.32	4.017	2.611	1	H1-1b
965	M77	2L2 1/2x2 1/2x3/16...	.082	4.188	23	.005	0	y	24	25.468	58.32	4.017	2.611	1	H1-1b
966	M85	2L2 1/2x2 1/2x3/16...	.082	4.188	25	.005	0	y	25	25.468	58.32	4.017	2.611	1	H1-1b
967	M93	2L2 1/2x2 1/2x3/16...	.082	4.188	21	.005	0	y	21	25.468	58.32	4.017	2.611	1	H1-1b
968	M101	2L2 1/2x2 1/2x3/16...	.081	4.188	23	.005	0	y	23	25.468	58.32	4.017	2.611	1	H1-1b
969	M109	2L2 1/2x2 1/2x3/16...	.081	4.188	19	.005	0	y	19	25.468	58.32	4.017	2.611	1	H1-1b
970	M126	2L2 1/2x2 1/2x3/16...	.080	4.188	21	.006	0	y	22	25.468	58.32	4.017	2.611	1	H1-1b
971	M134	2L2 1/2x2 1/2x3/16...	.080	4.188	25	.005	0	y	20	25.468	58.32	4.017	2.611	1	H1-1b
972	M143	2L2 1/2x2 1/2x3/16...	.080	4.188	19	.005	0	y	25	25.468	58.32	4.017	2.611	1	H1-1b
973	M151	2L2 1/2x2 1/2x3/16...	.080	4.188	23	.006	0	y	22	25.468	58.32	4.017	2.611	1	H1-1b
974	M160	2L2 1/2x2 1/2x3/16...	.079	4.188	26	.006	0	y	26	25.468	58.32	4.017	2.611	1	H1-1b
975	M168	2L2 1/2x2 1/2x3/16...	.080	4.188	22	.005	0	y	24	25.468	58.32	4.017	2.611	1	H1-1b
976	M177	2L2 1/2x2 1/2x3/16...	.080	4.188	22	.005	0	y	20	25.468	58.32	4.017	2.611	1	H1-1b
977	M185	2L2 1/2x2 1/2x3/16...	.080	4.188	26	.006	0	y	26	25.468	58.32	4.017	2.611	1	H1-1b
978	M207	2L2 1/2x2 1/2x3/16...	.077	4.188	24	.005	0	y	19	25.519	58.32	4.017	2.611	1	H1-1b
979	M215	2L2 1/2x2 1/2x3/16...	.077	4.188	21	.005	0	y	19	25.519	58.32	4.017	2.611	1	H1-1b
980	M224	2L2 1/2x2 1/2x3/16...	.077	4.188	23	.005	0	y	24	25.519	58.32	4.017	2.611	1	H1-1b
981	M232	2L2 1/2x2 1/2x3/16...	.077	4.188	19	.005	0	y	23	25.519	58.32	4.017	2.611	1	H1-1b
982	M241	2L2 1/2x2 1/2x3/16...	.076	4.188	21	.005	0	y	26	25.519	58.32	4.017	2.611	1	H1-1b
983	M249	2L2 1/2x2 1/2x3/16...	.076	4.188	26	.005	0	y	25	25.519	58.32	4.017	2.611	1	H1-1b
984	M258	2L2 1/2x2 1/2x3/16...	.076	4.188	26	.005	0	y	19	25.519	58.32	4.017	2.611	1	H1-1b
985	M266	2L2 1/2x2 1/2x3/16...	.076	4.188	23	.005	0	y	26	25.519	58.32	4.017	2.611	1	H1-1b
986	M288	2L2 1/2x2 1/2x3/16...	.079	4.188	24	.005	0	y	19	25.876	58.32	4.017	2.611	1	H1-1b
987	M296	2L2 1/2x2 1/2x3/16...	.079	4.188	22	.005	0	y	19	25.876	58.32	4.017	2.611	1	H1-1b
988	M305	2L2 1/2x2 1/2x3/16...	.079	4.188	22	.005	0	y	24	25.876	58.32	4.017	2.611	1	H1-1b
989	M313	2L2 1/2x2 1/2x3/16...	.078	4.188	20	.005	0	y	25	25.876	58.32	4.017	2.611	1	H1-1b
990	M322	2L2 1/2x2 1/2x3/16...	.078	4.188	20	.005	0	y	26	25.876	58.32	4.017	2.611	1	H1-1b
991	M330	2L2 1/2x2 1/2x3/16...	.078	4.188	26	.005	0	y	26	25.876	58.32	4.017	2.611	1	H1-1b
992	M339	2L2 1/2x2 1/2x3/16...	.078	4.188	26	.005	0	y	26	25.876	58.32	4.017	2.611	1	H1-1b
993	M347	2L2 1/2x2 1/2x3/16...	.078	4.188	24	.005	0	y	19	25.876	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
994	M369	2L2 1/2x2 1/2x3/16...	.080	4.188	24	.005	0	y	19	25.927	58.32	4.017	2.611	1	H1-1b
995	M377	2L2 1/2x2 1/2x3/16...	.080	4.188	22	.005	0	y	24	25.927	58.32	4.017	2.611	1	H1-1b
996	M386	2L2 1/2x2 1/2x3/16...	.080	4.188	22	.005	0	y	20	25.927	58.32	4.017	2.611	1	H1-1b
997	M394	2L2 1/2x2 1/2x3/16...	.079	4.188	20	.005	0	y	26	25.927	58.32	4.017	2.611	1	H1-1b
998	M403	2L2 1/2x2 1/2x3/16...	.079	4.188	20	.005	0	y	24	25.927	58.32	4.017	2.611	1	H1-1b
999	M411	2L2 1/2x2 1/2x3/16...	.079	4.188	26	.005	0	y	22	25.927	58.32	4.017	2.611	1	H1-1b
1000	M420	2L2 1/2x2 1/2x3/16...	.079	4.188	26	.005	0	y	22	25.927	58.32	4.017	2.611	1	H1-1b
1001	M428	2L2 1/2x2 1/2x3/16...	.080	4.188	24	.005	0	y	20	25.927	58.32	4.017	2.611	1	H1-1b
1002	M450	2L2 1/2x2 1/2x3/16...	.080	4.188	23	.005	0	y	26	26.338	58.32	4.017	2.611	1	H1-1b
1003	M458	2L2 1/2x2 1/2x3/16...	.081	4.188	23	.005	0	y	24	26.338	58.32	4.017	2.611	1	H1-1b
1004	M467	2L2 1/2x2 1/2x3/16...	.080	4.188	21	.005	0	y	20	26.338	58.32	4.017	2.611	1	H1-1b
1005	M475	2L2 1/2x2 1/2x3/16...	.079	4.188	21	.005	0	y	26	26.338	58.32	4.017	2.611	1	H1-1b
1006	M484	2L2 1/2x2 1/2x3/16...	.079	4.188	19	.005	0	y	24	26.338	58.32	4.017	2.611	1	H1-1b
1007	M492	2L2 1/2x2 1/2x3/16...	.079	4.188	19	.005	0	y	23	26.338	58.32	4.017	2.611	1	H1-1b
1008	M501	2L2 1/2x2 1/2x3/16...	.079	4.188	25	.005	0	y	21	26.338	58.32	4.017	2.611	1	H1-1b
1009	M509	2L2 1/2x2 1/2x3/16...	.080	4.188	25	.005	0	y	20	26.338	58.32	4.017	2.611	1	H1-1b
1010	M531	2L2 1/2x2 1/2x3/16...	.083	4.188	24	.005	0	y	26	26.338	58.32	4.017	2.611	1	H1-1b
1011	M539	2L2 1/2x2 1/2x3/16...	.083	4.188	22	.005	0	y	25	26.338	58.32	4.017	2.611	1	H1-1b
1012	M548	2L2 1/2x2 1/2x3/16...	.083	4.188	22	.005	0	y	20	26.338	58.32	4.017	2.611	1	H1-1b
1013	M556	2L2 1/2x2 1/2x3/16...	.081	4.188	20	.005	0	y	26	26.338	58.32	4.017	2.611	1	H1-1b
1014	M565	2L2 1/2x2 1/2x3/16...	.081	4.188	20	.005	0	y	24	26.338	58.32	4.017	2.611	1	H1-1b
1015	M573	2L2 1/2x2 1/2x3/16...	.081	4.188	26	.005	0	y	23	26.338	58.32	4.017	2.611	1	H1-1b
1016	M582	2L2 1/2x2 1/2x3/16...	.081	4.188	26	.005	0	y	21	26.338	58.32	4.017	2.611	1	H1-1b
1017	M590	2L2 1/2x2 1/2x3/16...	.083	4.188	24	.005	0	y	20	26.338	58.32	4.017	2.611	1	H1-1b
1018	M612	2L2 1/2x2 1/2x3/16...	.082	4.188	23	.005	0	y	26	26.39	58.32	4.017	2.611	1	H1-1b
1019	M620	2L2 1/2x2 1/2x3/16...	.083	4.188	23	.005	0	y	25	26.39	58.32	4.017	2.611	1	H1-1b
1020	M629	2L2 1/2x2 1/2x3/16...	.081	4.188	21	.005	0	y	19	26.39	58.32	4.017	2.611	1	H1-1b
1021	M637	2L2 1/2x2 1/2x3/16...	.079	4.188	21	.005	0	y	26	26.39	58.32	4.017	2.611	1	H1-1b
1022	M646	2L2 1/2x2 1/2x3/16...	.079	4.188	19	.005	0	y	25	26.39	58.32	4.017	2.611	1	H1-1b
1023	M654	2L2 1/2x2 1/2x3/16...	.079	4.188	19	.005	0	y	26	26.39	58.32	4.017	2.611	1	H1-1b
1024	M663	2L2 1/2x2 1/2x3/16...	.079	4.188	25	.005	0	y	25	26.39	58.32	4.017	2.611	1	H1-1b
1025	M671	2L2 1/2x2 1/2x3/16...	.081	4.188	25	.005	0	y	19	26.39	58.32	4.017	2.611	1	H1-1b
1026	M693	2L2 1/2x2 1/2x3/16...	.073	4.187	20	.005	0	y	22	26.83	58.32	4.017	2.611	1	H1-1b
1027	M703	2L2 1/2x2 1/2x3/16...	.073	4.187	26	.005	0	y	21	26.83	58.32	4.017	2.611	1	H1-1b
1028	M714	2L2 1/2x2 1/2x3/16...	.072	4.188	26	.005	0	y	23	26.83	58.32	4.017	2.611	1	H1-1b
1029	M724	2L2 1/2x2 1/2x3/16...	.073	4.187	24	.005	0	y	21	26.83	58.32	4.017	2.611	1	H1-1b
1030	M735	2L2 1/2x2 1/2x3/16...	.074	4.187	24	.005	0	y	26	26.83	58.32	4.017	2.611	1	H1-1b
1031	M745	2L2 1/2x2 1/2x3/16...	.074	4.187	22	.005	0	y	20	26.83	58.32	4.017	2.611	1	H1-1b
1032	M756	2L2 1/2x2 1/2x3/16...	.074	4.187	22	.005	0	y	25	26.83	58.32	4.017	2.611	1	H1-1b
1033	M766	2L2 1/2x2 1/2x3/16...	.072	4.187	20	.005	0	y	25	26.83	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1034	M1290	2L2 1/2x2 1/2x3/16...	.040	5.188	6	.003	10.375	y	22	15.886	58.32	4.017	2.611	1	H1-1b
1035	M1291	2L2 1/2x2 1/2x3/16...	.040	5.188	6	.003	0	y	20	15.886	58.32	4.017	2.611	1	H1-1b
1036	M1292	2L2 1/2x2 1/2x3/16...	.040	5.188	10	.003	0	y	22	15.886	58.32	4.017	2.611	1	H1-1b
1037	M1293	2L2 1/2x2 1/2x3/16...	.040	5.188	10	.003	0	y	24	15.886	58.32	4.017	2.611	1	H1-1b
1038	M1294	2L2 1/2x2 1/2x3/16...	.040	5.188	14	.003	10.375	y	24	15.886	58.32	4.017	2.611	1	H1-1b
1039	M1295	2L2 1/2x2 1/2x3/16...	.040	5.188	14	.003	0	y	26	15.886	58.32	4.017	2.611	1	H1-1b
1040	M1296	2L2 1/2x2 1/2x3/16...	.040	5.188	2	.003	0	y	26	15.886	58.32	4.017	2.611	1	H1-1b
1041	M1297	2L2 1/2x2 1/2x3/16...	.040	5.188	2	.003	0	y	20	15.886	58.32	4.017	2.611	1	H1-1b
1042	M55	2L2 1/2x2 1/2x3/16...	.193	6.281	24	.008	12.563	y	25	11.303	58.32	4.017	2.611	1	H1-1b
1043	M63	2L2 1/2x2 1/2x3/16...	.193	6.281	21	.008	12.563	y	20	11.303	58.32	4.017	2.611	1	H1-1b
1044	M71	2L2 1/2x2 1/2x3/16...	.194	6.281	23	.008	12.563	y	23	11.303	58.32	4.017	2.611	1	H1-1b
1045	M79	2L2 1/2x2 1/2x3/16...	.193	6.281	19	.008	12.563	y	19	11.303	58.32	4.017	2.611	1	H1-1b
1046	M87	2L2 1/2x2 1/2x3/16...	.192	6.281	21	.008	12.563	y	22	11.303	58.32	4.017	2.611	1	H1-1b
1047	M95	2L2 1/2x2 1/2x3/16...	.192	6.281	26	.008	12.563	y	25	11.303	58.32	4.017	2.611	1	H1-1b
1048	M103	2L2 1/2x2 1/2x3/16...	.193	6.281	26	.008	12.563	y	20	11.303	58.32	4.017	2.611	1	H1-1b
1049	M111	2L2 1/2x2 1/2x3/16...	.194	6.281	23	.008	12.563	y	22	11.303	58.32	4.017	2.611	1	H1-1b
1050	M128	2L2 1/2x2 1/2x3/16...	.182	6.281	25	.008	12.563	y	23	11.303	58.32	4.017	2.611	1	H1-1b
1051	M136	2L2 1/2x2 1/2x3/16...	.183	6.281	21	.008	12.563	y	23	11.303	58.32	4.017	2.611	1	H1-1b
1052	M145	2L2 1/2x2 1/2x3/16...	.183	6.281	23	.008	12.563	y	21	11.303	58.32	4.017	2.611	1	H1-1b
1053	M153	2L2 1/2x2 1/2x3/16...	.182	6.281	19	.008	12.563	y	21	11.303	58.32	4.017	2.611	1	H1-1b
1054	M162	2L2 1/2x2 1/2x3/16...	.182	6.281	21	.008	12.563	y	20	11.303	58.32	4.017	2.611	1	H1-1b
1055	M170	2L2 1/2x2 1/2x3/16...	.182	6.281	25	.008	12.563	y	19	11.303	58.32	4.017	2.611	1	H1-1b
1056	M179	2L2 1/2x2 1/2x3/16...	.182	6.281	19	.008	12.563	y	25	11.303	58.32	4.017	2.611	1	H1-1b
1057	M187	2L2 1/2x2 1/2x3/16...	.182	6.281	23	.008	12.563	y	24	11.303	58.32	4.017	2.611	1	H1-1b
1058	M209	2L2 1/2x2 1/2x3/16...	.176	6.281	24	.008	0	y	24	11.303	58.32	4.017	2.611	1	H1-1b
1059	M217	2L2 1/2x2 1/2x3/16...	.176	6.281	21	.008	0	y	21	11.303	58.32	4.017	2.611	1	H1-1b
1060	M226	2L2 1/2x2 1/2x3/16...	.176	6.281	23	.008	0	y	23	11.303	58.32	4.017	2.611	1	H1-1b
1061	M234	2L2 1/2x2 1/2x3/16...	.175	6.281	20	.008	0	y	20	11.303	58.32	4.017	2.611	1	H1-1b
1062	M243	2L2 1/2x2 1/2x3/16...	.175	6.281	20	.008	0	y	21	11.303	58.32	4.017	2.611	1	H1-1b
1063	M251	2L2 1/2x2 1/2x3/16...	.175	6.281	26	.008	0	y	26	11.303	58.32	4.017	2.611	1	H1-1b
1064	M260	2L2 1/2x2 1/2x3/16...	.175	6.281	26	.008	0	y	26	11.303	58.32	4.017	2.611	1	H1-1b
1065	M268	2L2 1/2x2 1/2x3/16...	.175	6.281	23	.008	0	y	23	11.303	58.32	4.017	2.611	1	H1-1b
1066	M290	2L2 1/2x2 1/2x3/16...	.177	6.281	24	.008	0	y	24	11.433	58.32	4.017	2.611	1	H1-1b
1067	M298	2L2 1/2x2 1/2x3/16...	.178	6.281	22	.008	0	y	22	11.433	58.32	4.017	2.611	1	H1-1b
1068	M307	2L2 1/2x2 1/2x3/16...	.178	6.281	22	.008	0	y	22	11.433	58.32	4.017	2.611	1	H1-1b
1069	M315	2L2 1/2x2 1/2x3/16...	.177	6.281	20	.008	0	y	20	11.433	58.32	4.017	2.611	1	H1-1b
1070	M324	2L2 1/2x2 1/2x3/16...	.176	6.281	20	.008	0	y	21	11.433	58.32	4.017	2.611	1	H1-1b
1071	M332	2L2 1/2x2 1/2x3/16...	.176	6.281	26	.008	0	y	26	11.433	58.32	4.017	2.611	1	H1-1b
1072	M341	2L2 1/2x2 1/2x3/16...	.177	6.281	26	.008	0	y	26	11.433	58.32	4.017	2.611	1	H1-1b
1073	M349	2L2 1/2x2 1/2x3/16...	.177	6.281	24	.008	0	y	23	11.433	58.32	4.017	2.611	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1074	M371	2L2 1/2x2 1/2x3/16...	.179	6.281	24	.008	0	y	24	11.451	58.32	4.017	2.611	1	H1-1b
1075	M379	2L2 1/2x2 1/2x3/16...	.180	6.281	22	.008	0	y	22	11.451	58.32	4.017	2.611	1	H1-1b
1076	M388	2L2 1/2x2 1/2x3/16...	.179	6.281	22	.008	0	y	22	11.451	58.32	4.017	2.611	1	H1-1b
1077	M396	2L2 1/2x2 1/2x3/16...	.178	6.281	20	.008	0	y	20	11.451	58.32	4.017	2.611	1	H1-1b
1078	M405	2L2 1/2x2 1/2x3/16...	.178	6.281	20	.008	0	y	21	11.451	58.32	4.017	2.611	1	H1-1b
1079	M413	2L2 1/2x2 1/2x3/16...	.178	6.281	26	.008	0	y	26	11.451	58.32	4.017	2.611	1	H1-1b
1080	M422	2L2 1/2x2 1/2x3/16...	.178	6.281	26	.008	0	y	26	11.451	58.32	4.017	2.611	1	H1-1b
1081	M430	2L2 1/2x2 1/2x3/16...	.179	6.281	24	.008	0	y	23	11.451	58.32	4.017	2.611	1	H1-1b
1082	M452	2L2 1/2x2 1/2x3/16...	.173	6.281	24	.007	0	y	24	11.603	58.32	4.017	2.611	1	H1-1b
1083	M460	2L2 1/2x2 1/2x3/16...	.173	6.281	22	.008	0	y	22	11.603	58.32	4.017	2.611	1	H1-1b
1084	M469	2L2 1/2x2 1/2x3/16...	.173	6.281	22	.008	0	y	22	11.603	58.32	4.017	2.611	1	H1-1b
1085	M477	2L2 1/2x2 1/2x3/16...	.172	6.281	20	.007	0	y	20	11.603	58.32	4.017	2.611	1	H1-1b
1086	M486	2L2 1/2x2 1/2x3/16...	.171	6.281	20	.007	0	y	21	11.603	58.32	4.017	2.611	1	H1-1b
1087	M494	2L2 1/2x2 1/2x3/16...	.171	6.281	26	.008	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
1088	M503	2L2 1/2x2 1/2x3/16...	.172	6.281	26	.008	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
1089	M511	2L2 1/2x2 1/2x3/16...	.173	6.281	24	.008	0	y	23	11.603	58.32	4.017	2.611	1	H1-1b
1090	M533	2L2 1/2x2 1/2x3/16...	.175	6.281	24	.008	0	y	24	11.603	58.32	4.017	2.611	1	H1-1b
1091	M541	2L2 1/2x2 1/2x3/16...	.175	6.281	22	.008	0	y	22	11.603	58.32	4.017	2.611	1	H1-1b
1092	M550	2L2 1/2x2 1/2x3/16...	.175	6.281	22	.008	0	y	22	11.603	58.32	4.017	2.611	1	H1-1b
1093	M558	2L2 1/2x2 1/2x3/16...	.173	6.281	21	.007	0	y	20	11.603	58.32	4.017	2.611	1	H1-1b
1094	M567	2L2 1/2x2 1/2x3/16...	.173	6.281	20	.008	0	y	21	11.603	58.32	4.017	2.611	1	H1-1b
1095	M575	2L2 1/2x2 1/2x3/16...	.173	6.281	19	.008	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
1096	M584	2L2 1/2x2 1/2x3/16...	.173	6.281	26	.008	0	y	26	11.603	58.32	4.017	2.611	1	H1-1b
1097	M592	2L2 1/2x2 1/2x3/16...	.174	6.281	24	.008	0	y	23	11.603	58.32	4.017	2.611	1	H1-1b
1098	M614	2L2 1/2x2 1/2x3/16...	.169	6.281	24	.007	0	y	24	11.622	58.32	4.017	2.611	1	H1-1b
1099	M622	2L2 1/2x2 1/2x3/16...	.169	6.281	22	.007	0	y	22	11.622	58.32	4.017	2.611	1	H1-1b
1100	M631	2L2 1/2x2 1/2x3/16...	.169	6.281	22	.007	0	y	22	11.622	58.32	4.017	2.611	1	H1-1b
1101	M639	2L2 1/2x2 1/2x3/16...	.167	6.281	20	.007	0	y	20	11.622	58.32	4.017	2.611	1	H1-1b
1102	M648	2L2 1/2x2 1/2x3/16...	.167	6.281	20	.007	0	y	21	11.622	58.32	4.017	2.611	1	H1-1b
1103	M656	2L2 1/2x2 1/2x3/16...	.167	6.281	26	.008	0	y	26	11.622	58.32	4.017	2.611	1	H1-1b
1104	M665	2L2 1/2x2 1/2x3/16...	.167	6.281	26	.008	0	y	26	11.622	58.32	4.017	2.611	1	H1-1b
1105	M673	2L2 1/2x2 1/2x3/16...	.168	6.281	24	.007	0	y	23	11.622	58.32	4.017	2.611	1	H1-1b
1106	M695	2L2 1/2x2 1/2x1/4x...	.105	5.583	24	.005	11.167	y	26	19.514	77.112	5.381	3.414	1	H1-1b
1107	M705	2L2 1/2x2 1/2x1/4x...	.105	5.583	22	.005	11.167	y	21	19.514	77.112	5.381	3.414	1	H1-1b
1108	M716	2L2 1/2x2 1/2x1/4x...	.107	5.583	19	.005	11.167	y	23	19.514	77.112	5.381	3.414	1	H1-1b
1109	M726	2L2 1/2x2 1/2x1/4x...	.109	5.583	24	.005	11.167	y	26	19.514	77.112	5.381	3.414	1	H1-1b
1110	M737	2L2 1/2x2 1/2x1/4x...	.105	5.583	24	.005	11.167	y	22	19.514	77.112	5.381	3.414	1	H1-1b
1111	M747	2L2 1/2x2 1/2x1/4x...	.105	5.583	22	.005	11.167	y	24	19.514	77.112	5.381	3.414	1	H1-1b
1112	M758	2L2 1/2x2 1/2x1/4x...	.109	5.583	22	.005	11.167	y	20	19.514	77.112	5.381	3.414	1	H1-1b
1113	M768	2L2 1/2x2 1/2x1/4x...	.107	5.583	20	.005	11.167	y	22	19.514	77.112	5.381	3.414	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1114	M1298	L2 1/2x2 1/2x3/16	.001	0	6	.001	4.188	y	10	16.851	29.225	.351	1.699	1	H2-1
1115	M1299	L2 1/2x2 1/2x3/16	.001	0	2	.001	0	y	14	16.851	29.225	.351	1.699	1	H2-1
1116	M1300	L2 1/2x2 1/2x3/16	.001	0	2	.001	4.188	y	6	16.851	29.225	.351	1.699	1	H2-1
1117	M1301	L2 1/2x2 1/2x3/16	.001	0	14	.001	0	y	10	16.851	29.225	.351	1.699	1	H2-1
1118	M1302	L2 1/2x2 1/2x3/16	.001	0	6	.001	4.188	y	2	16.851	29.225	.351	1.699	1	H2-1
1119	M1303	L2 1/2x2 1/2x3/16	.001	0	10	.001	0	y	14	16.851	29.225	.351	1.699	1	H2-1
1120	M1304	L2 1/2x2 1/2x3/16	.001	0	10	.001	4.188	y	6	16.851	29.225	.351	1.699	1	H2-1
1121	M1305	L2 1/2x2 1/2x3/16	.001	0	14	.001	0	y	2	16.851	29.225	.351	1.699	1	H2-1
1122	M1306	L2 1/2x2 1/2x3/16	.004	0	10	.002	0	y	14	4.943	29.225	.351	1.342	1	H2-1
1123	M1307	L2 1/2x2 1/2x3/16	.004	0	6	.002	0	y	2	4.943	29.225	.351	1.342	1	H2-1
1124	M1308	L2 1/2x2 1/2x3/16	.004	0	2	.002	0	y	14	4.943	29.225	.351	1.342	1	H2-1
1125	M1309	L2 1/2x2 1/2x3/16	.004	0	14	.002	8.375	y	2	4.943	29.225	.351	1.342	1	H2-1
1126	M697	2L3x3x1/4x3/8	.131	6.979	23	.006	0	y	25	21.633	93.312	7.501	4.982	1	H1-1b
1127	M707	2L3x3x1/4x3/8	.131	6.979	23	.006	0	y	21	21.633	93.312	7.501	4.982	1	H1-1b
1128	M718	2L3x3x1/4x3/8	.131	6.979	21	.006	0	y	23	21.633	93.312	7.501	4.982	1	H1-1b
1129	M728	2L3x3x1/4x3/8	.130	6.979	21	.006	0	y	19	21.633	93.312	7.501	4.982	1	H1-1b
1130	M739	2L3x3x1/4x3/8	.130	6.979	19	.006	0	y	21	21.633	93.312	7.501	4.982	1	H1-1b
1131	M749	2L3x3x1/4x3/8	.130	6.979	19	.006	0	y	25	21.633	93.312	7.501	4.982	1	H1-1b
1132	M760	2L3x3x1/4x3/8	.130	6.979	25	.006	0	y	19	21.633	93.312	7.501	4.982	1	H1-1b
1133	M770	2L3x3x1/4x3/8	.131	6.979	25	.006	0	y	23	21.633	93.312	7.501	4.982	1	H1-1b
1134	M16	L2 1/2x2 1/2x3/16	.283	0	8	.010	0	y	22	5.246	29.225	.351	1.36	1	H2-1
1135	M19	L2 1/2x2 1/2x3/16	.264	0	12	.010	0	y	24	5.246	29.225	.351	1.36	1	H2-1
1136	M23	L2 1/2x2 1/2x3/16	.195	0	19	.010	0	y	20	5.246	29.225	.351	1.36	1	H2-1
1137	M26	L2 1/2x2 1/2x3/16	.189	0	10	.010	0	y	22	5.246	29.225	.351	1.36	1	H2-1
1138	M30	L2 1/2x2 1/2x3/16	.271	0	16	.010	0	y	26	5.246	29.225	.351	1.36	1	H2-1
1139	M33	L2 1/2x2 1/2x3/16	.279	0	4	.010	0	y	20	5.246	29.225	.351	1.36	1	H2-1
1140	M37	L2 1/2x2 1/2x3/16	.197	0	10	.010	0	y	24	5.246	29.225	.351	1.36	1	H2-1
1141	M40	L2 1/2x2 1/2x3/16	.205	0	2	.010	0	y	26	5.246	29.225	.351	1.36	1	H2-1
1142	M52	L3x3x3/16	.012	0	24	.004	0	y	19	23.838	35.316	.509	2.515	1	H2-1
1143	M60	L3x3x3/16	.013	0	20	.004	0	y	19	23.838	35.316	.509	2.515	1	H2-1
1144	M68	L3x3x3/16	.013	0	25	.004	0	y	25	23.838	35.316	.509	2.515	1	H2-1
1145	M76	L3x3x3/16	.012	0	21	.004	4.188	y	25	23.838	35.316	.509	2.515	1	H2-1
1146	M84	L3x3x3/16	.012	0	25	.004	0	y	23	23.838	35.316	.509	2.515	1	H2-1
1147	M92	L3x3x3/16	.012	0	21	.004	4.188	y	23	23.838	35.316	.509	2.515	1	H2-1
1148	M100	L3x3x3/16	.012	0	24	.004	0	y	21	23.838	35.316	.509	2.515	1	H2-1
1149	M108	L3x3x3/16	.013	0	20	.004	4.188	y	21	23.838	35.316	.509	2.515	1	H2-1
1150	M125	L3x3x3/16	.028	0	24	.004	0	y	25	23.838	35.316	.509	2.515	1	H2-1
1151	M133	L3x3x3/16	.028	0	22	.004	0	y	21	23.838	35.316	.509	2.515	1	H2-1
1152	M142	L3x3x3/16	.029	0	23	.004	0	y	25	23.838	35.316	.509	2.515	1	H2-1
1153	M150	L3x3x3/16	.025	0	20	.004	4.188	y	26	23.838	35.316	.509	2.515	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1154	M159	L3x3x3/16	.024	0	20	.004	0	y	24	23.838	35.316	.509	2.515	1	H2-1
1155	M167	L3x3x3/16	.023	0	26	.004	4.188	y	21	23.838	35.316	.509	2.515	1	H2-1
1156	M176	L3x3x3/16	.024	0	26	.004	0	y	22	23.838	35.316	.509	2.515	1	H2-1
1157	M184	L3x3x3/16	.027	0	23	.004	4.188	y	21	23.838	35.316	.509	2.515	1	H2-1
1158	M206	L3x3x3/16	.041	0	24	.005	0	y	26	23.874	35.316	.509	2.517	1	H2-1
1159	M214	L3x3x3/16	.041	0	22	.004	4.188	y	20	23.874	35.316	.509	2.517	1	H2-1
1160	M223	L3x3x3/16	.042	0	22	.004	0	y	24	23.874	35.316	.509	2.517	1	H2-1
1161	M231	L3x3x3/16	.036	0	20	.005	4.188	y	26	23.874	35.316	.509	2.517	1	H2-1
1162	M240	L3x3x3/16	.034	0	20	.005	0	y	23	23.874	35.316	.509	2.517	1	H2-1
1163	M248	L3x3x3/16	.034	0	26	.004	4.188	y	23	23.874	35.316	.509	2.517	1	H2-1
1164	M257	L3x3x3/16	.034	0	26	.004	0	y	21	23.874	35.316	.509	2.517	1	H2-1
1165	M265	L3x3x3/16	.040	0	24	.005	4.188	y	21	23.874	35.316	.509	2.517	1	H2-1
1166	M287	L3x3x3/16	.061	0	24	.004	0	y	26	24.128	35.316	.509	2.528	1	H2-1
1167	M295	L3x3x3/16	.062	0	22	.004	4.188	y	20	24.128	35.316	.509	2.528	1	H2-1
1168	M304	L3x3x3/16	.062	0	22	.004	0	y	25	24.128	35.316	.509	2.528	1	H2-1
1169	M312	L3x3x3/16	.055	0	4	.005	4.188	y	26	24.128	35.316	.509	2.528	1	H2-1
1170	M321	L3x3x3/16	.051	0	4	.004	0	y	23	24.128	35.316	.509	2.528	1	H2-1
1171	M329	L3x3x3/16	.050	0	16	.004	4.188	y	23	24.128	35.316	.509	2.528	1	H2-1
1172	M338	L3x3x3/16	.055	0	16	.004	0	y	21	24.128	35.316	.509	2.528	1	H2-1
1173	M346	L3x3x3/16	.061	0	24	.004	4.188	y	21	24.128	35.316	.509	2.528	1	H2-1
1174	M368	L3x3x3/16	.072	0	23	.004	0	y	26	24.164	35.316	.509	2.529	1	H2-1
1175	M376	L3x3x3/16	.073	0	23	.004	4.188	y	20	24.164	35.316	.509	2.529	1	H2-1
1176	M385	L3x3x3/16	.072	0	21	.004	0	y	24	24.164	35.316	.509	2.529	1	H2-1
1177	M393	L3x3x3/16	.065	0	6	.004	4.188	y	26	24.164	35.316	.509	2.529	1	H2-1
1178	M402	L3x3x3/16	.066	0	2	.004	0	y	23	24.164	35.316	.509	2.529	1	H2-1
1179	M410	L3x3x3/16	.065	0	2	.004	4.188	y	23	24.164	35.316	.509	2.529	1	H2-1
1180	M419	L3x3x3/16	.065	0	14	.004	0	y	21	24.164	35.316	.509	2.529	1	H2-1
1181	M427	L3x3x3/16	.071	0	25	.004	4.188	y	21	24.164	35.316	.509	2.529	1	H2-1
1182	M449	L3x3x3/16	.089	0	10	.004	0	y	19	24.416	35.316	.509	2.541	1	H2-1
1183	M457	L3x3x3/16	.091	0	10	.004	4.188	y	20	24.416	35.316	.509	2.541	1	H2-1
1184	M466	L3x3x3/16	.091	0	6	.004	0	y	25	24.416	35.316	.509	2.541	1	H2-1
1185	M474	L3x3x3/16	.086	0	6	.004	4.188	y	26	24.416	35.316	.509	2.541	1	H2-1
1186	M483	L3x3x3/16	.088	0	2	.004	0	y	23	24.416	35.316	.509	2.541	1	H2-1
1187	M491	L3x3x3/16	.087	0	2	.004	4.188	y	23	24.416	35.316	.509	2.541	1	H2-1
1188	M500	L3x3x3/16	.085	0	14	.004	0	y	21	24.416	35.316	.509	2.541	1	H2-1
1189	M508	L3x3x3/16	.089	0	14	.004	4.188	y	21	24.416	35.316	.509	2.541	1	H2-1
1190	M530	L3x3x3/16	.118	0	12	.004	0	y	19	24.452	35.316	.509	2.542	1	H2-1
1191	M538	L3x3x3/16	.121	0	8	.004	4.188	y	19	24.452	35.316	.509	2.542	1	H2-1
1192	M547	L3x3x3/16	.120	0	8	.004	0	y	25	24.452	35.316	.509	2.542	1	H2-1
1193	M555	L3x3x3/16	.115	0	4	.004	4.188	y	25	24.452	35.316	.509	2.542	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1194	M564	L3x3x3/16	.117	0	4	.004	0	y	23	24.452	35.316	.509	2.542	1	H2-1
1195	M572	L3x3x3/16	.117	0	16	.004	4.188	y	23	24.452	35.316	.509	2.542	1	H2-1
1196	M581	L3x3x3/16	.114	0	16	.004	0	y	21	24.452	35.316	.509	2.542	1	H2-1
1197	M589	L3x3x3/16	.117	0	12	.004	4.188	y	21	24.452	35.316	.509	2.542	1	H2-1
1198	M611	L3x3x3/16	.158	0	10	.004	0	y	19	24.488	35.316	.509	2.544	1	H2-1
1199	M619	L3x3x3/16	.159	0	10	.004	4.188	y	19	24.488	35.316	.509	2.544	1	H2-1
1200	M628	L3x3x3/16	.149	0	6	.004	0	y	25	24.488	35.316	.509	2.544	1	H2-1
1201	M636	L3x3x3/16	.143	0	6	.004	4.188	y	25	24.488	35.316	.509	2.544	1	H2-1
1202	M645	L3x3x3/16	.156	0	2	.004	0	y	24	24.488	35.316	.509	2.544	1	H2-1
1203	M653	L3x3x3/16	.155	0	2	.004	4.188	y	22	24.488	35.316	.509	2.544	1	H2-1
1204	M662	L3x3x3/16	.142	0	14	.004	0	y	22	24.488	35.316	.509	2.544	1	H2-1
1205	M670	L3x3x3/16	.148	0	14	.004	4.188	y	20	24.488	35.316	.509	2.544	1	H2-1
1206	M692	L3x3x3/16	.066	0	5	.005	5.583	y	22	19.552	35.316	.509	2.349	1	H2-1
1207	M702	L3x3x3/16	.067	0	17	.005	5.583	y	22	19.552	35.316	.509	2.349	1	H2-1
1208	M713	L3x3x3/16	.039	0	17	.005	0	y	22	19.552	35.316	.509	2.349	1	H2-1
1209	M723	L3x3x3/16	.042	0	13	.005	5.583	y	22	19.552	35.316	.509	2.349	1	H2-1
1210	M734	L3x3x3/16	.068	0	13	.005	5.583	y	26	19.552	35.316	.509	2.349	1	H2-1
1211	M744	L3x3x3/16	.068	0	9	.005	5.583	y	20	19.552	35.316	.509	2.349	1	H2-1
1212	M755	L3x3x3/16	.043	0	9	.005	5.583	y	24	19.552	35.316	.509	2.349	1	H2-1
1213	M765	L3x3x3/16	.040	0	5	.005	5.583	y	26	19.552	35.316	.509	2.349	1	H2-1
1214	M5	2L3x4x5/16x3/8	.283	12.75	21	.008	12.75	y	25	33.033	135.432	15.999	3.964	1	H1-1b
1215	M6	2L3x4x5/16x3/8	.282	12.75	26	.008	12.75	y	23	33.033	135.432	15.999	3.964	1	H1-1b
1216	M7	2L3x4x5/16x3/8	.282	12.75	25	.008	12.75	y	25	33.033	135.432	15.999	3.964	1	H1-1b
1217	M8	2L3x4x5/16x3/8	.282	12.75	20	.008	12.75	y	23	33.033	135.432	15.999	3.964	1	H1-1b

Built-Up Double Channels

E6.1 (AISC 13th Edition pg 16.1-37)
2018703.48

Code	TIA-222-G
Number of Sections	9
Max Capacity	105%

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_u (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_i/r_i	Design met?	$(KL/r_{ib})_{max}$	(KL/r)
T1	Inner Supp	C12x20.7	6.08	3.860	0.797	0.797	30.12	C12x20.7	6.08	3.860	0.797	0.797	30.12	bolted	17.25	216.37	24	1.771	12.160	1.191	181.64	0.797	0.797	1.11	184.12	136.23	30.12	Yes	271.56	184.12
T2	Horz	C10x20	5.87	2.800	0.691	0.691	34.75	C10x20	5.87	2.800	0.691	0.691	34.75	bolted	12.99	201	24	1.587	11.740	1.052	191.07	0.691	0.691	1.15	194.20	143.30	34.75	Yes	291.03	194.20
T2	Inner Supp	C12x20.7	6.08	3.860	0.797	0.797	30.12	C12x20.7	6.08	3.860	0.797	0.797	30.12	bolted	17.25	142.13	24	1.771	12.160	1.191	119.31	0.797	0.797	1.11	123.06	89.49	30.12	Yes	178.38	123.06
T10	Inner Supp	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	71.06	24	1.293	4.260	0.786	90.43	0.447	0.447	1.45	105.19	67.83	53.73	Yes	159.09	105.19
T10	Inner Sq	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	100.5	24	1.293	4.260	0.786	127.89	0.447	0.447	1.45	138.72	95.92	53.73	Yes	224.99	138.72
T10	Inner Corner	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	71.06	24	1.293	4.260	0.786	90.43	0.447	0.447	1.45	105.19	67.83	53.73	Yes	159.09	105.19
T10	Inner Ladder	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	52.23	24	1.293	4.260	0.786	66.47	0.447	0.447	1.45	85.47	49.85	53.73	No	116.93	116.93
T10	Inner Tri	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	100.5	24	1.293	4.260	0.786	127.89	0.447	0.447	1.45	138.72	95.92	53.73	Yes	224.99	138.72
T10	Inner Brace	C4x7.2	2.13	0.425	0.447	0.447	53.73	C4x7.2	2.13	0.425	0.447	0.447	53.73	bolted	2.63	50.25	24	1.293	4.260	0.786	63.95	0.447	0.447	1.45	83.52	47.96	53.73	No	112.49	112.49

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_u (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_i/r_i	Design met?	$(KL/r_{ib})_{max}$	(KL/r)
T1	Inner Supp	C12x20.7	6.080	129.000	4.606	0.797	5.21	C12x20.7	6.08	129.000	4.606	0.797	5.21	bolted	258.00	216.37	24	0.000	12.1600	4.606	46.97	0.797	4.606	0.00	55.80	35.23	30.12	Yes	46.97	55.80
T2	Horz	C10x20	5.870	78.900	3.666	0.691	6.55	C10x20	5.87	78.900	3.666	0.691	6.55	bolted	157.80	100.5	24	0.000	11.7400	3.666	27.41	0.691	3.666	0.00	44.26	20.56	34.75	No	27.41	27.41
T2	Inner Supp	C12x20.7	6.080	129.000	4.606	0.797	5.21	C12x20.7	6.08	129.000	4.606	0.797	5.21	bolted	258.00	142.13	24	0.000	12.1600	4.606	30.86	0.797	4.606	0.00	43.12	23.14	30.12	No	30.86	30.86
T10	Inner Supp	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	142.13	24	0.000	4.2600	1.466	96.93	0.447	1.466	0.00	110.82	72.69	53.73	Yes	96.93	110.82
T10	Inner Sq	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	201	24	0.000	4.2600	1.466	137.07	0.447	1.466	0.00	147.23	102.81	53.73	Yes	137.07	147.23
T10	Inner Corner	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	142.13	24	0.000	4.2600	1.466	96.93	0.447	1.466	0.00	110.82	72.69	53.73	Yes	96.93	110.82
T10	Inner Ladder	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	104.46	24	0.000	4.2600	1.466	71.24	0.447	1.466	0.00	89.23	53.43	53.73	No	71.24	71.24
T10	Inner Tri	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	100.5	24	0.000	4.2600	1.466	68.54	0.447	1.466	0.00	87.09	51.40	53.73	No	68.54	68.54
T10	Inner Brace	C4x7.2	2.130	4.580	1.466	0.447	16.37	C4x7.2	2.13	4.580	1.466	0.447	16.37	bolted	9.16	100.5	24	0.000	4.2600	1.466	68.54	0.447	1.466	0.00	87.09	51.40	53.73	No	68.54	68.54

Member Summary				Compression Analysis				Tension Analysis					
Section	Member	Original Member	Modification	k	P_u (k)	ϕPn (k)	Rating	P_u (k)	A_n (in^2)	U	A_e (in^2)	ϕPn (k)	Rating
T1	Inner Supp	C12x20.7	C12x20.7	1.19	2.55	81.03	3.1%	62.24	22.69	1.00	22.69	787.97	7.9%
T2	Horz	C10x20	C10x20	1.02	3.05	17.58	17.3%	4.63	11.03	1.00	11.03	380.38	1.2%
T2	Inner Supp	C12x20.7	C12x20.7	1.03	0.29	44.38	0.7%	1.25	11.35	1.00	11.35	393.98	0.3%
T10	Inner Supp	C4x7.2	C4x7.2	1.16	0.13	72.30	0.2%	0.69	7.56	1.00	7.56	138.02	0.5%
T10	Inner Sq	C4x7.2	C4x7.2	1.08	1.05	44.40	2.4%	0.00	7.56	1.00	7.56	138.02	0.0%
T10	Inner Corner	C4x7.2	C4x7.2	1.16	0.00	72.30	0.0%	0.00	7.56	1.00	7.56	138.02	0.0%
T10	Inner Ladder	C4x7.2	C4x7.2	1.76	0.89	16.80	5.3%	0.10	3.78	1.00	3.78	138.02	0.1%
T10	Inner Tri	C4x7.2	C4x7.2	1.08	0.00	12.50	0.0%	0.32	3.78	1.00	3.78	138.02	0.2%
T10	Inner Brace	C4x7.2	C4x7.2	1.76	0.60	17.72	3.4%	0.07	3.78	1.00	3.78	138.02	0.1%

Project #: 2018703.48

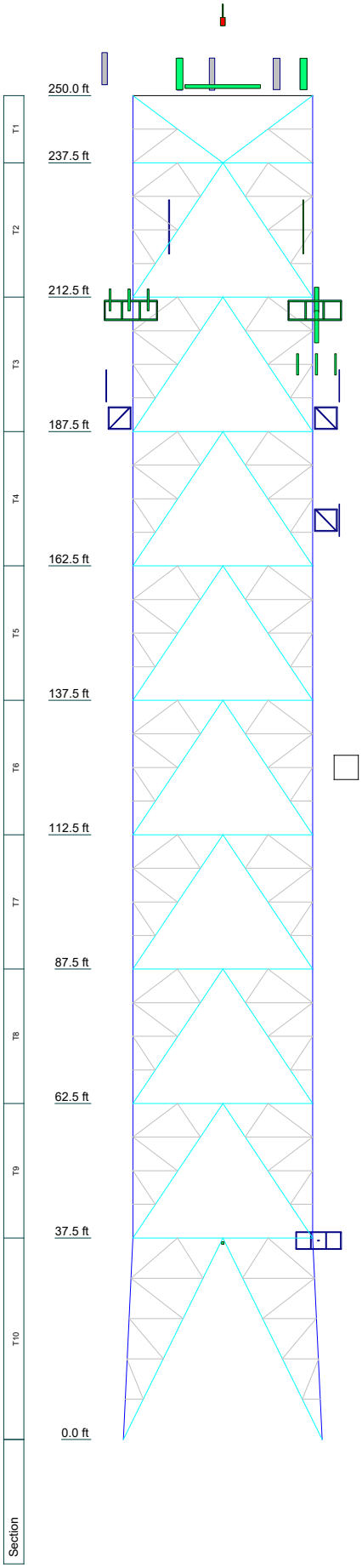
Bolt Checks

Date: 4/27/2018

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	250	Leg	A307	0.75	12	19.215	1.601	14.91	0.107	1.000	10.7%	Bolt Tension
		Leg Outer	A307	0.75	3	2.612	0.871	8.836	0.099	1.000	9.9%	Bolt Shear
		Top Girt	A307	0.75	2	13.518	6.759	17.892	0.378	1.000	37.8%	Bolt Shear
		Diagonal	A307	0.75	2	6.326	3.163	17.892	0.177	1.000	17.7%	Bolt Shear
		Diagonal Outer	A307	0.75	2	2.126	1.063	17.892	0.059	1.000	5.9%	Bolt Shear
		Horizontal Outer	A307	0.75	6	42.892	7.149	17.892	0.400	1.000	40.0%	Bolt DS
		Inner Supp	A307	0.75	6	62.237	10.373	17.892	0.580	1.000	58.0%	Bolt DS
T2	237.5	Leg	A307	0.75	16	25.901	3.238	17.892	0.181	1.000	18.1%	Bolt DS
		Diagonal	A307	0.75	4	15.978	3.994	17.892	0.223	1.000	22.3%	Bolt Shear
		Horizontal	A307	0.75	4	4.627	1.157	17.892	0.065	1.000	6.5%	Bolt DS
T3	212.5	Leg	A307	0.75	16	52.509	6.564	17.892	0.367	1.000	36.7%	Bolt DS
		Horizontal	A307	0.75	3	12.104	4.035	17.892	0.225	1.000	22.5%	Bolt Shear
		Diagonal	A307	0.75	4	21.791	5.448	17.892	0.304	1.000	30.4%	Bolt Shear
		Inner Corner	A307	0.75	2	3.744	1.872	16.114	0.116	1.000	11.6%	Member Block Shear
T4	187.5	Leg	A307	0.75	22	71.324	6.484	17.892	0.362	1.000	36.2%	Bolt DS
		Horizontal	A307	0.75	3	14.401	4.8	17.892	0.268	1.000	26.8%	Bolt Shear
		Diagonal	A307	0.75	5	28.69	5.738	17.892	0.321	1.000	32.1%	Bolt Shear
		Inner Corner	A307	0.75	2	3.579	1.79	16.114	0.111	1.000	11.1%	Member Block Shear
T5	162.5	Leg	A307	1	22	103.03	9.366	30.963	0.303	1.000	30.3%	Bolt DS
		Horizontal	A307	0.75	3	17.692	5.897	17.892	0.330	1.000	33.0%	Bolt Shear
		Diagonal	A307	0.75	5	35.563	7.113	17.892	0.398	1.000	39.8%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	2.199	1.1	8.567	0.128	1.000	12.8%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	1.925	0.962	8.567	0.112	1.000	11.2%	Member Block Shear
		Inner Square	A307	0.75	2	3.792	1.896	16.114	0.118	1.000	11.8%	Member Block Shear
		Inner Corner	A307	0.75	2	4.346	2.173	16.114	0.135	1.000	13.5%	Member Block Shear
T6	137.5	Leg	A307	1	24	146.592	12.216	31.809	0.384	1.000	38.4%	Bolt DS
		Horizontal	A307	0.75	3	21.299	7.1	17.892	0.397	1.000	39.7%	Bolt Shear
		Diagonal	A307	0.75	4	42.053	10.513	17.892	0.588	1.000	58.8%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	2.588	1.294	8.567	0.151	1.000	15.1%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	2.346	1.173	8.567	0.137	1.000	13.7%	Member Block Shear
		Inner Square	A307	0.75	2	3.919	1.96	16.114	0.122	1.000	12.2%	Member Block Shear
		Inner Corner	A307	0.75	2	4.401	2.2	16.114	0.137	1.000	13.7%	Member Block Shear
T7	112.5	Leg	A307	1	24	198.238	16.52	31.809	0.519	1.000	51.9%	Bolt DS
		Horizontal	A307	0.75	4	24.542	6.136	17.892	0.343	1.000	34.3%	Bolt Shear
		Diagonal	A307	0.75	4	48.206	12.052	17.892	0.674	1.000	67.4%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	3.23	1.615	8.567	0.189	1.000	18.9%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	2.953	1.476	8.567	0.172	1.000	17.2%	Member Block Shear
		Inner Square	A307	0.75	2	3.93	1.965	16.114	0.122	1.000	12.2%	Member Block Shear
		Inner Corner	A307	0.75	2	4.402	2.201	16.114	0.137	1.000	13.7%	Member Block Shear
T8	87.5	Leg	A307	1	24	257.43	21.452	31.809	0.674	1.000	67.4%	Bolt DS
		Horizontal	A307	0.75	4	28.185	7.046	17.892	0.394	1.000	39.4%	Bolt Shear
		Diagonal	A307	0.75	5	56.178	11.236	17.892	0.628	1.000	62.8%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	4.267	2.134	8.567	0.249	1.000	24.9%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	3.973	1.986	8.567	0.232	1.000	23.2%	Member Block Shear
		Inner Square	A307	0.75	2	4.471	2.236	16.114	0.139	1.000	13.9%	Member Block Shear
		Inner Corner	A307	0.75	2	4.993	2.496	16.114	0.155	1.000	15.5%	Member Block Shear
T9	62.5	Leg	A307	1	32	324.786	20.299	31.809	0.638	1.000	63.8%	Bolt DS
		Horizontal	A307	0.75	4	30.971	7.743	17.892	0.433	1.000	43.3%	Bolt Shear
		Diagonal	A307	0.75	6	61.397	10.233	17.892	0.572	1.000	57.2%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	5.624	2.812	8.567	0.328	1.000	32.8%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	5.206	2.603	8.567	0.304	1.000	30.4%	Member Block Shear
		Inner Square	A307	0.75	2	4.873	2.436	16.114	0.151	1.000	15.1%	Member Block Shear
		Inner Corner	A307	0.75	2	5.441	2.72	16.114	0.169	1.000	16.9%	Member Block Shear
T10	37.5	Leg	A307	1	40	398.639	19.932	31.809	0.627	1.000	62.7%	Bolt DS
		Horizontal	A307	0.75	4	30.086	7.522	17.892	0.420	1.000	42.0%	Bolt Shear
		Diagonal	A307	0.75	8	77.785	9.723	17.892	0.543	1.000	54.3%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	1.912	0.956	8.567	0.112	1.000	11.2%	Member Block Shear
		Redundant Diagonal 0	A307	0.75	2	10.901	5.45	8.946	0.609	1.000	60.9%	Bolt Shear
		Redundant Horizontal 0	A307	0.75	2	8.701	4.35	8.057	0.540	1.000	54.0%	Member Block Shear
										Maximum Capacity	67.4%	

APPENDIX C

Tower Elevation Drawing



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	265	FD9R6004/2C-3L	252
Flash Beacon	263	RRH2X60-AWS	252
13' I-Beam Mast Mount	256.5	RRH2X60-AWS	252
Tower Top Platform	252	RRH2X60-AWS	252
2' Standoff - Round (GPD)	252	RRH2X60-PCS	252
2' Standoff - Round (GPD)	252	RRH2X60-PCS	252
2' Standoff - Round (GPD)	252	RRH2X60-PCS	252
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	252	RRH 2X60AWS LTE	252
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	252	RRH 2X60AWS LTE	252
SBNH-1D6565C w/ Mount Pipe	252	RRH 2X60AWS LTE	252
HPA-65R-BUU-H8 w/ Mount Pipe	252	DB-T1-6Z-8AB-0Z	252
HPA-65R-BUU-H8 w/ Mount Pipe	252	DB-T1-6Z-8AB-0Z	252
HPA-65R-BUU-H8 w/ Mount Pipe	252	DB-T1-6Z-8AB-0Z	252
80010966 w/ Mount Pipe	252	Platform	239.5
80010965 w/ Mount Pipe	252	10' x 2.5" Pipe	225.6
80010965 w/ Mount Pipe	252	10' x 2.5" Pipe	225.6
DTMABP7819VG12A	252	(2) DB980H65E-M w/ 20' Mount Pipe	225.6
DTMABP7819VG12A	252	(2) DB980H65E-M w/ 20' Mount Pipe	225.6
DTMABP7819VG12A	252	(2) DB980H65E-M w/ 10' Mount Pipe	225.6
RRUS 11	252	14' Sector Frame	210
RRUS 11	252	14' Sector Frame	210
RRUS 11	252	(3) DB844H90E-XY w/Mount Pipe	210
RRUS 32 B2	252	(3) DB844H90E-XY w/Mount Pipe	210
RRUS 32 B2	252	14' Sector Frame	210
RRUS 32 B2	252	14' Sector Frame	210
RRUS 32	252	AIR21 B4A/B2P w/ mount pipe	210
RRUS 32	252	AIR21 B4A/B2P w/ mount pipe	210
RRUS 32	252	KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	210
RRUS 4478 B14	252	KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	210
RRUS 4478 B14	252	RRUS 11 B12	210
RRUS 4478 B14	252	RRUS 11 B12	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	RRUS 11 B2	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	RRUS 11 B2	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	26"x 26" Flat Panel	210
GPS	252	14' Sector Frame	198
4' Standoff	252	(3) DB844H90E-XY w/Mount Pipe	198
4' Standoff	252	5' Standoff	190
4' Standoff	252	PG1-NOF-0091	190
4' Standoff	252	5' Standoff	190
SBNHH-1D65B w/ Mount Pipe	252	PG1-NOF-0091	190
SBNHH-1D65B w/ Mount Pipe	252	5' Standoff	171
SBNHH-1D65B w/ Mount Pipe	252	PG1-DOF-0093	171
SBNHH-1D65B w/ Mount Pipe	252	Catwalk	139.5
SBNHH-1D65B w/ Mount Pipe	252	WL14-69/S	85
SBNHH-1D65B w/ Mount Pipe	252	WL14-69/S	85
LPA-80063/6CF w/ Mount Pipe	252	WL14-69/S	85
LPA-80063/6CF w/ Mount Pipe	252	WL14-69/S	85
LPA-80063/6CF w/ Mount Pipe	252	WL7-13	85
LPA-80063/6CF w/ Mount Pipe	252	2.5' Box Mount	37
LPA-80080/6CF w/ Mount Pipe	252	Camera	37
LPA-80080/6CF w/ Mount Pipe	252	3' Side Arm	36.5
FD9R6004/2C-3L	252	GPS	36.5
FD9R6004/2C-3L	252	Platform	21
		(2) Junction Box (40"x14"x9")	21
		RRU (28" x 15.5" x 10")	21

MATERIAL STRENGTH

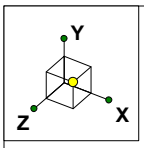
GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

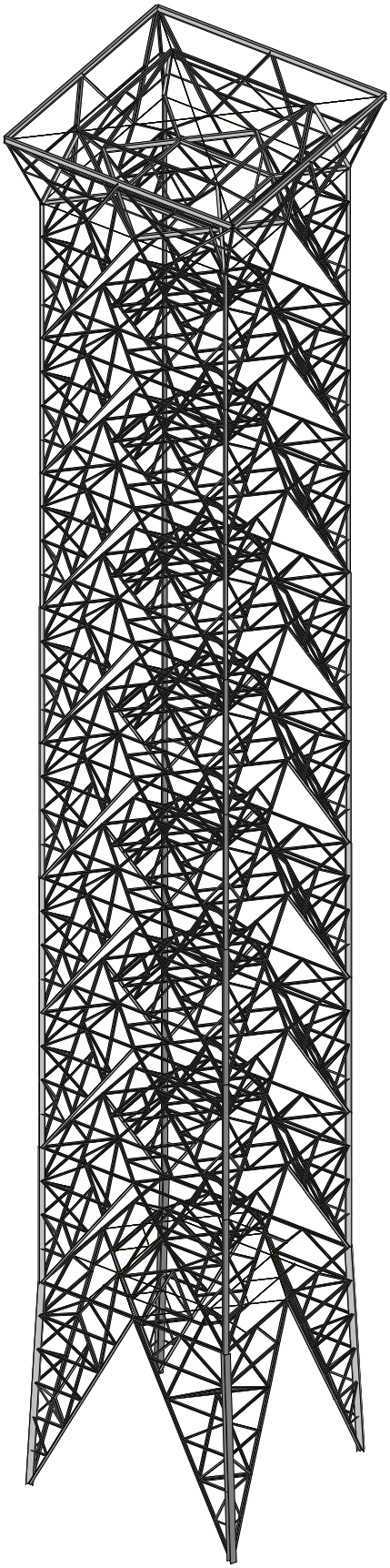
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft

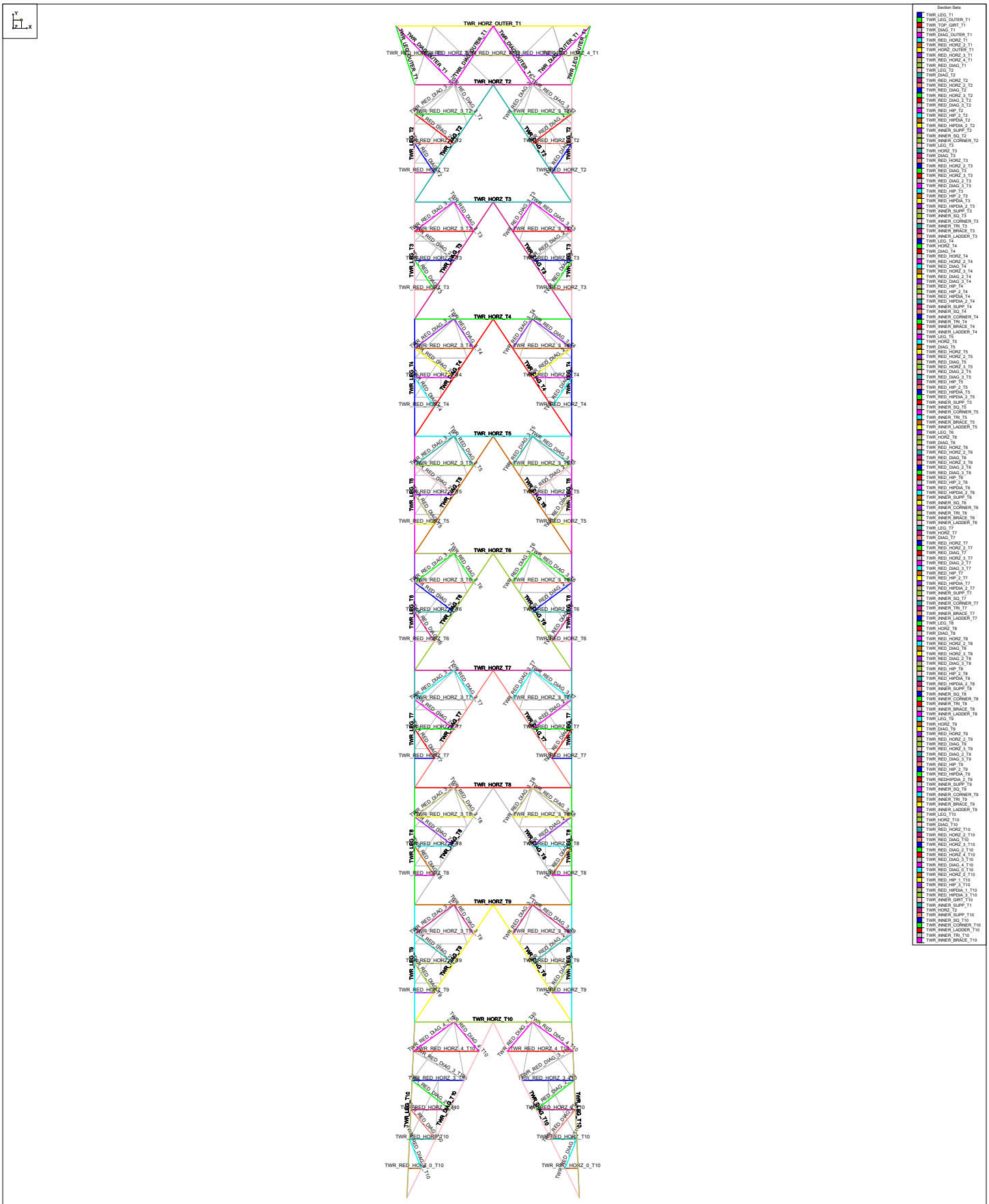
GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: TAG0053 CHESHIRE			
Project: 2018703.48			
Client: Centerline Communications	Drawn by: lrife		App'd:
Code: TIA-222-G	Date: 04/27/18		Scale: NTS
Path: T:\ATandT\TAG0053 and 26014\17 2018703 48 Centerline SA\Software Models\TNX\TAG0053.eri			Dwg No. E-1





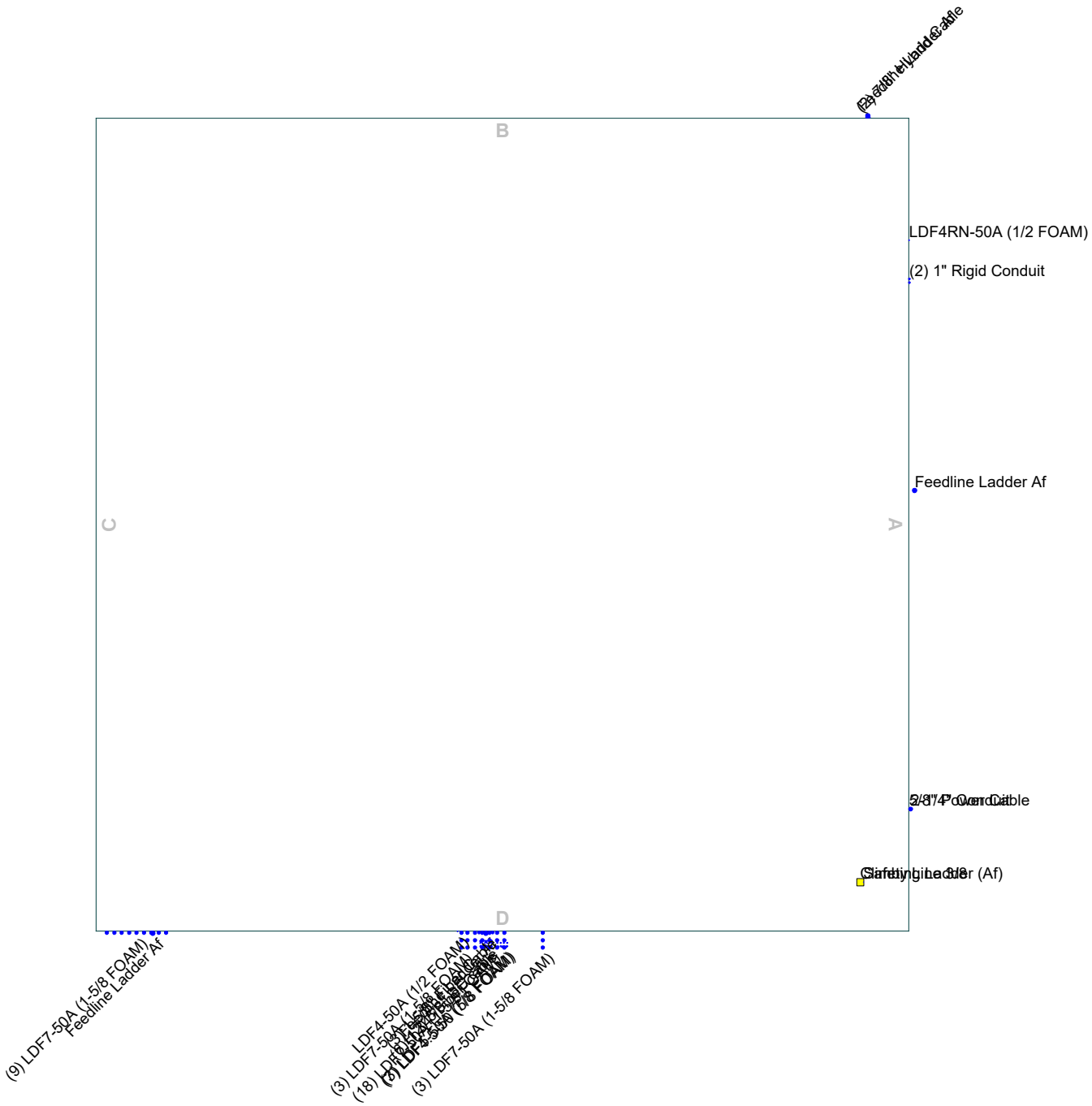
GPD	TAG0053 CHESHIRE	
Irife		
2018703.48		TAG0053.r3d



GPD	TAG0053 CHESHIRE	
Irife		
2018703.48		TAG0053.r3d

Feed Line Plan

Round Flat App In Face App Out Face



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

Job:	***TAG0053 CHESHIRE***		
Project:	***2018703.48***		
Client: Centerline Communications		Drawn by: Irife	App'd:
Code: TIA-222-G		Date: 04/27/18	Scale: NTS
Path: T:\ATandT\TAG0053 and 26014\17 2018703.48 Centerline SA\Software Models\TNX\TAG0053.eri			Dwg No. E-7

APPENDIX D

Anchor Rod Analysis

Self-Support Anchor Rod Analysis
TAG0053 CHESHIRE
2018703.48

General Info	
Code	TIA-222-G
Modified Anchor Rods	No
Clear Distance > d_b	No
Leg Eccentricity	No
Max Capacity	1.05

Tower Reactions		
Detail Type =	d	
Eta Factor, η =	0.50	
Down Load, P_u =	489.08	kips
Down Load Shear, V_u =	52.87	kips
Uplift, P_u =	363.60	kips
Uplift Shear, V_u =	44.29	kips

Anchor Rods		
Number of Anchor Rods, N =	12	
Anchor Rod Grade =	C-1015	
Anchor Rod Diameter, d_d =	2.25	in
Tensile, F_{ub} =	56	ksi

Anchor Rod Results		
$(P_u + V_u/\eta)$	49.6	kips
$\phi*R_{nt} = \phi*F_{ub}*A_n$ =	145.6	kips
Anchor Rod Stress Ratio =	34.0%	OK

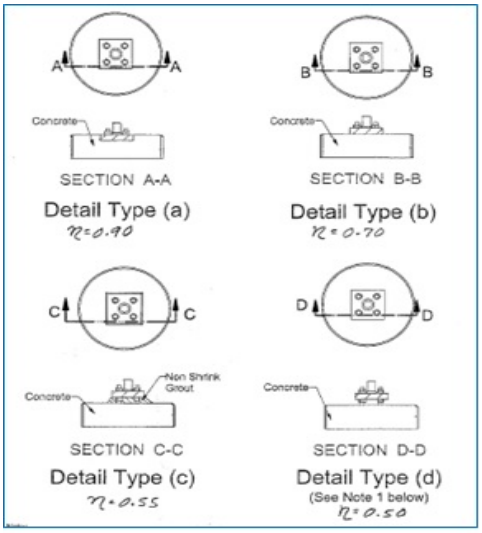


Figure 4-4 of TIA-222-G

APPENDIX E

Foundation Pedestal Analysis

Project Title: TAG0053 CHESHIRE
Engineer: Irife
Project Descr: Pedestal Analysis
Project ID: 2018703.48

Concrete Column

File = T:\ATandT\TAG005~4\172018~1\SAREPO~1\BUILDI~1.EC6
ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver:10.17.12.10

Lic. # : KW-06004426 **Licensee : GPD ASSOCIATES**

Description : Pedestal Analysis

Code References

Calculations per ACI 318-11, IBC 2012, CBC 2013, ASCE 7-10
Load Combinations Used : IBC 2012

General Information

f'c : Concrete 28 day strength	=	3.0 ksi
E =	=	3,122.0 ksi
Density	=	150.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
E - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	1.0 %
Max. Reinf.	=	8.0 %

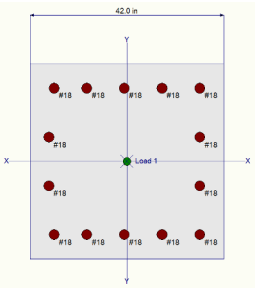
Overall Column Height = 6.20 ft
End Fixity: Top Free, Bottom Fixed

Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Unbraced Length for X-X Axis buckling = 6.20 ft, K = 2.10
Y-Y (depth) axis :
Unbraced Length for X-X Axis buckling = 6.20 ft, K = 2.10

Column Cross Section

Column Dimensions : 42.0in Square Column, Column Edge to Rebar Edge Cover = 4.125in

Column Reinforcing : 4 - #18 bars @ corners,, 3.0 - #18 bars top & bottom between corner bars, 2.0 - #18 bars left & right between corner bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included : 11,392.5 lbs * Dead Load Factor
AXIAL LOADS . . .
LC8 - Node 442: Axial Load at 6.20 ft above base, D = 62.136, W = 414.513 k
BENDING LOADS . . .
LC8 - Node 442: Lat. Point Load at 6.20 ft creating Mx-x, W = 52.871 k
Lat. Point Load at 6.20 ft creating My-y, W = 30.965 k

DESIGN SUMMARY

Load Combination +1.20D+0.50Lr+0.50L+W+1.60H
Location of max.above base 6.158 ft

Maximum Stress Ratio **0.177 : 1**
Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	502.75 k	φ * Pn =	2,832.12 k
Mu-x =	-327.80 k-ft	φ * Mn-x =	-1,913.88 k-ft
Mu-y =	-191.983 k-ft	φ * Mn-y =	965.85 k-ft
Mu Angle =	30.0 deg		
Mu at Angle =	379.882 k-ft	φMn at Angle =	2,151.95 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities . . .

Pnmax : Nominal Max. Compressive Axial Capacity	7,715.40 k
Pnmin : Nominal Min. Tension Axial Capacity	k
φ Pn, max : Usable Compressive Axial Capacity	4,012.01 k
φ Pn, min : Usable Tension Axial Capacity	k

Maximum SERVICE Load Reactions . .

Top along Y-Y	0.0 k	Bottom along Y-Y	30.965 k
Top along X-X	0.0 k	Bottom along X-X	52.871 k

Maximum SERVICE Load Deflections . . .

Along Y-Y 0.008923 in at 6.20 ft above base
for load combination : W Only

Along X-X 0.005226 in at 6.20 ft above base
for load combination : W Only

General Section Information . φ = 0.650 β = 0.850 θ = 0.80

ρ : % Reinforcing	3.175 %	Rebar % Ok
Reinforcing Area	56.0 in^2	
Concrete Area	1,764.0 in^2	

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2036

FA#: 10034996

Cheshire SW
751 Higgins Road
Cheshire, CT 06410

May 17, 2018

Centerline Communications Project Number: 950012-104

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**3.30 %**

May 17, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2036 – Cheshire SW**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **751 Higgins Road, Cheshire, CT**, for the purpose of determining whether the emissions from the Proposed AT&T 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 population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 performed for the proposed AT&T Wireless antenna facility located at **751 Higgins Road, Cheshire, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	700 MHz (Band 14)	4	40
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz	2	40
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	KMW AM-X-CD-16-65-00T-RET	255
A	2	Kathrein 800-10966	255
A	3	CCI HPA-65R-BUU-H8	255
B	1	KMW AM-X-CD-16-65-00T-RET	255
B	2	Kathrein 800-10965	255
B	3	CCI HPA-65R-BUU-H6	255
C	1	Commscope SBNH-1D6565C	255
C	2	Kathrein 800-10965	255
C	3	CCI HPA-65R-BUU-H6	255

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	KMW AM-X-CD-16-65-00T-RET	850 MHz	13.85	2	60	1,455.97	0.15
Antenna A2	Kathrein 800-10966	700 MHz (Band 14) / 2300 MHz (WCS)	13.55 / 15.95	8	280	8,346.03	0.72
Antenna A3	CCI HPA-65R-BUU-H8	700 MHz / 1900 MHz (PCS)	13.15 / 14.95	6	240	6,654.03	0.50
						Sector A Composite MPE%	**1.37**
Antenna B1	KMW AM-X-CD-16-65-00T-RET	850 MHz	13.85	2	60	1,455.97	0.15
Antenna B2	Kathrein 800-10965	700 MHz (Band 14) / 2300 MHz (WCS)	12.65 / 15.85	8	280	7,560.34	0.63
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	240	6,030.01	0.43
						Sector B Composite MPE%	**1.21**
Antenna C1	Commscope SBNH-1D6565C	850 MHz	14.45	2	60	1,671.67	0.17
Antenna C2	Kathrein 800-10965	700 MHz (Band 14) / 2300 MHz (WCS)	12.65 / 15.85	8	280	7,560.34	0.63
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	240	6,030.01	0.43
						Sector C Composite MPE%	**1.24**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is Sector A. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Sector A (Max Value)	**1.37 %**
T-Mobile	0.92 %
Nextel	0.13 %
Verizon Wireless	0.66 %
VoiceStream	0.01 %
Sprint	0.21 %
Site Total MPE %:	**3.30 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	1.37 %
AT&T Sector B Total:	1.21 %
AT&T Sector C Total:	1.24 %
Site Total:	3.30 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sector with the largest calculated MPE% is Sector A.

AT&T _ Frequency Band / Technology Max Power Values (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	727.98	255	0.84	850 MHz	567	0.15%
AT&T 700 MHz LTE (Band 14) – Antenna 2	4	905.86	255	2.10	700 MHz	467	0.45%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	1,180.65	255	2.74	2300 MHz (WCS)	1000	0.27%
AT&T 700 MHz LTE – Antenna 3	2	826.15	255	0.96	700 MHz	467	0.21%
AT&T 1900 MHz (PCS) LTE – Antenna 3	4	1,250.43	255	2.90	1900 MHz (PCS)	1000	0.29%
						Total:	**1.37%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	1.37 %
Sector B:	1.21 %
Sector C:	1.24 %
AT&T Maximum Total (Sector A):	1.37 %
Site Total:	3.30 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **3.30 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.

Town of Cheshire

The bedding plant capital of Connecticut

Information on the Property Records for the Municipality of Cheshire was last updated on 6/16/2018.

Parcel Information

Location:	751 HIGGINS RD	Property Use:	Industrial	Primary Use:	Light Industrial
Unique ID:	00712600	Map Block Lot:	69 53	Acres:	19.80
Zone:	R-40	Volume / Page:	0148/0566	Developers Map / Lot:	285128
Census:	3434				

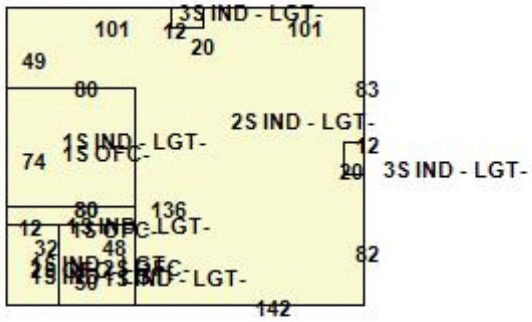
Value Information

	Appraised Value	Assessed Value
Land	434,893	304,430
Buildings	2,489,370	1,742,560
Detached Outbuildings	29,959	20,970
Total	2,954,222	2,067,960

Owner's Information

Owner's Data
AMER TEL & TEL CO AT&T PROPERTY TAX UNIT P O BOX 7207 BEDMINSTER, NJ 07921

Building 1



Category:	Industrial	Use:	Light Industrial	Stories:	2.00
Above Grade:	88,238	Below Grade:	0	Below Grade Finish:	0
Construction:	Average	Year Built:	1968	Heating:	
Fuel:		Cooling Percent:	100%	Siding:	Pre-Cast Concrete/B. V. Solid
Roof Material:	Asphalt	Beds/Units:	0		

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Fencing	1968			2,400
Fencing	1968			600
Fencing	1968			1,560
Paving	1968			43,000

Information Published With Permission From The Assessor

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.

Town of Cheshire

The bedding plant capital of Connecticut

Information on the Property Records for the Municipality of Cheshire was last updated on 6/16/2018.

Property Summary Information

Parcel Data And Values | Building | Outbuildings | Google Map

Google Map

Unique Id:	00712600
Location:	751 HIGGINS RD
MBL:	69 53
Primary Use:	Light Industrial
Zone:	R-40
Acres:	19.80
Appraised Value:	$2,954,222
Assessed Value:	$2,067,960

PROJECT INFORMATION

SCOPE OF WORK:	TOWER: ADD (3) 8–PORT ANTENNAS, INSTALLED IN POSITION 3 ON EACH SECTOR. ADD (3) RRUS–32 WCS AND (3) RRUS–4478 B14 SHELTER: UPGRADE DUS TO 5216.
SITE ADDRESS:	751 HIGGINS ROAD CHESHIRE, CT 06410
LATITUDE:	41° 29' 14.78" N (NAD 83)*
LONGITUDE:	72° 55' 45.55" W (NAD 83)* *PER EXISTING AT&T PLANS
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NAME OF APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE SUITE 3A ROCKY HILL, CT 06067

at&t Mobility

SITE NAME: CHESHIRE 3C/4C
SITE NUMBER: CT2036
PACE NO.: MRCTB025501 (3C) / MRCTB026664 (4C)

DRAWING INDEX

		REV
T01	TITLE SHEET	B
G01	GENERAL NOTES	B
C01	PROPOSED SITE PLAN & SHELTER PLAN	B
C02	PROPOSED ELEVATION & CONSTRUCTION DETAILS	B
C03	EQUIPMENT PLUMBING DIAGRAM	B
E01	GROUNDING DETAILS	B

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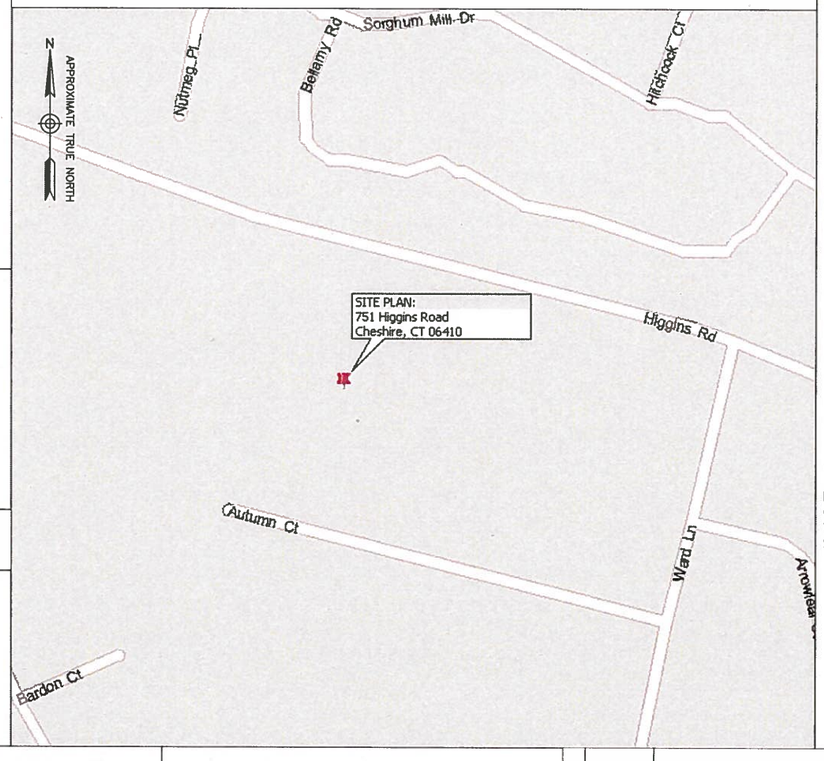
CONTACT INFORMATION

CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	BENJAMIN REVETTE, P.E.	DEWBERRY ENGINEERS INC.	(617) 531–0800
SAC:	MEREDITH PAYNTER	CENTERLINE COMMUNICATIONS	(508) 673–9116

VICINITY MAP

DIRECTIONS: GET ON I–90 W/MASSACHUSETTS TURNPIKE. TAKE EXIT 9 FOR I–84 S. TAKE EXIST 26 FOR CT–70. TURN LEFT ON CT–70. TURN RIGHT ONTO MOUNTAIN RD. TURN LEFT ONTO HIGGINS RD. THE SITE WILL BE ON THE RIGHT.



APPLICABLE BUILDING CODES & STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS & DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES & DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, & LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES & STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
INTERNATIONAL BUILDING CODE (IBC)

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC)

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222–G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER & ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING & BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, & EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING & GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" & "HIGH SYSTEM EXPOSURE")

TELCORDIA GR–1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES & STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT & A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

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SCALE: AS SHOWN | DESIGNED BY: CDH | DRAWN BY: JIM

AT&T MOBILITY
FRAMINGHAM, MA 01701

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096281	T01	0

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – CENTERLINE COMMUNICATIONS
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS & TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED & INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, & ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES & COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, & LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL & UTILITY COMPANY SPECIFICATIONS & LOCAL JURISDICTIONAL CODES, ORDINANCES & APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED & ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, & LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT & MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER & T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING & TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING & STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY & PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES & OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE & DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, & PROCEDURES & FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF & WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS & CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS & RECOMMENDATIONS & SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE & PPM & CONSTRUCTION DEVICES SUCH AS WELDING & FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, & OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, & WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS & PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL & OTHER REFUSE SHALL BE REMOVED FROM THE SITE & DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT & TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED & BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK & NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, & STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION & SEDIMENT CONTROL.

CONCRETE & REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 & THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" & ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 & LARGER .....2 IN.
   #5 & SMALLER & WWF .....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB & WALL .....3/4 IN.
   BEAMS & COLUMNS .....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY & THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION & BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES & WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS & SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE & PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION & WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATIVE TO INSPECTION & WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
5. AS AN ALTERNATIVE TO ITEMS 2 & 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED & REPLACED WITH A WELL–GRADED GRANULAR FILL, & COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION & ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK & PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH & INSTALL CABLE LADDER RACK, CABLE TRAY, & CONDUIT AS REQUIRED TO SUPPORT CABLES TO ANY NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC & ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF & TRANSPORT CABLING TO NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY & SUPPORT METHODS & MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC & TELCORDIA.
5. ALL CIRCUITS SHALL BE SEGREGATED & MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC & TELCORDIA.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, & T1 CONDUCTOR & CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, & MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, & BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD & CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) & INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, & EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA & MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER & CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER & POWER GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS & WIRENUTS BY THOMAS & BETTS (OR EQUAL). LUGS & WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY & CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS & OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT & TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE & APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, & WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
26. CABINETS, BOXES, & WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY–COATED (GRAY) & INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, & PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, & DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A & NEMA OS 1; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, & DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY & OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES & DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES & STANDARDS TO SAFEGUARD AGAINST LIFE & PROPERTY.

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SCALE: AS SHOWN | DESIGNED BY: CDH | DRAWN BY: JIM

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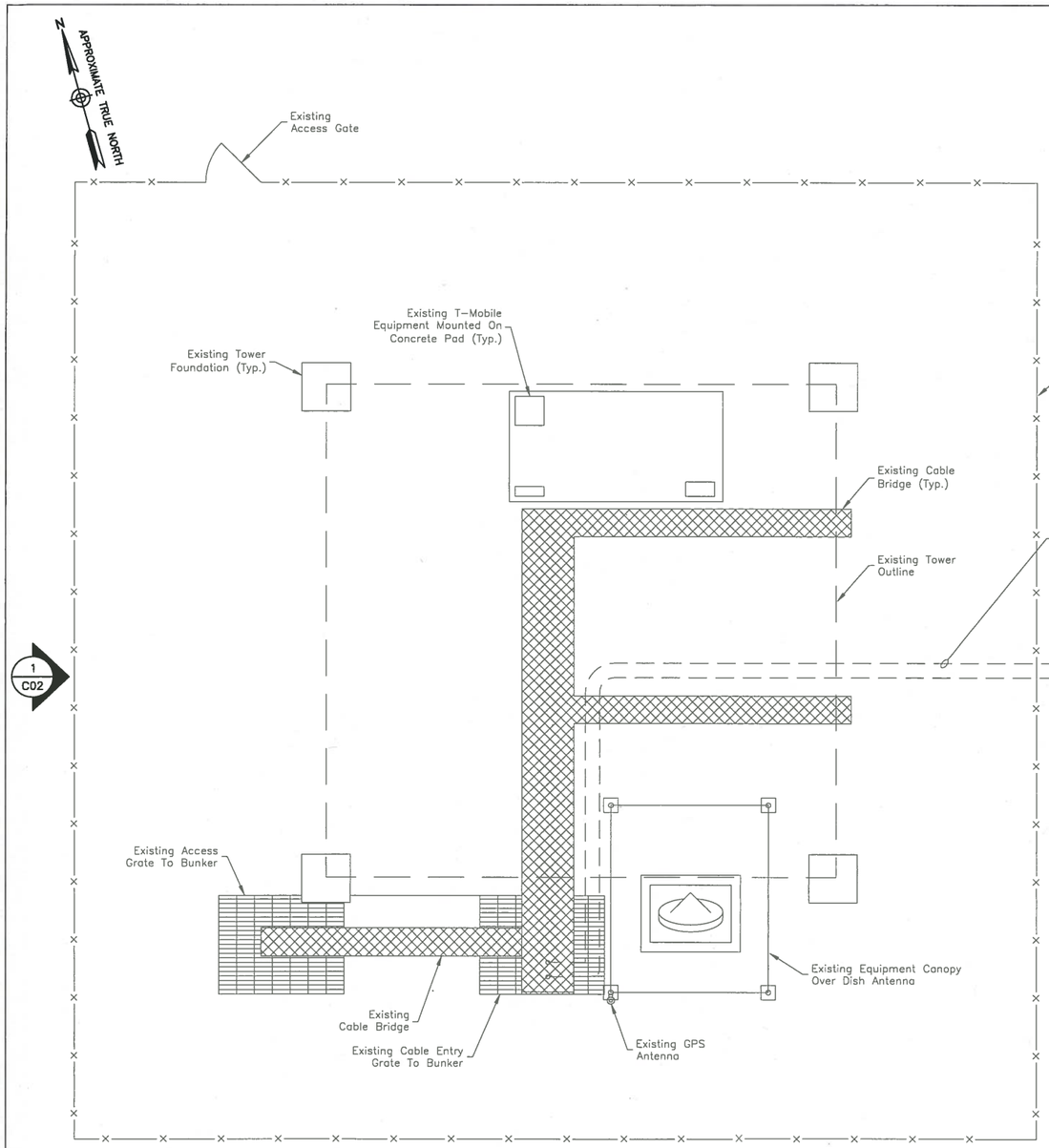
FRAMINGHAM, MA 01701

GENERAL NOTES

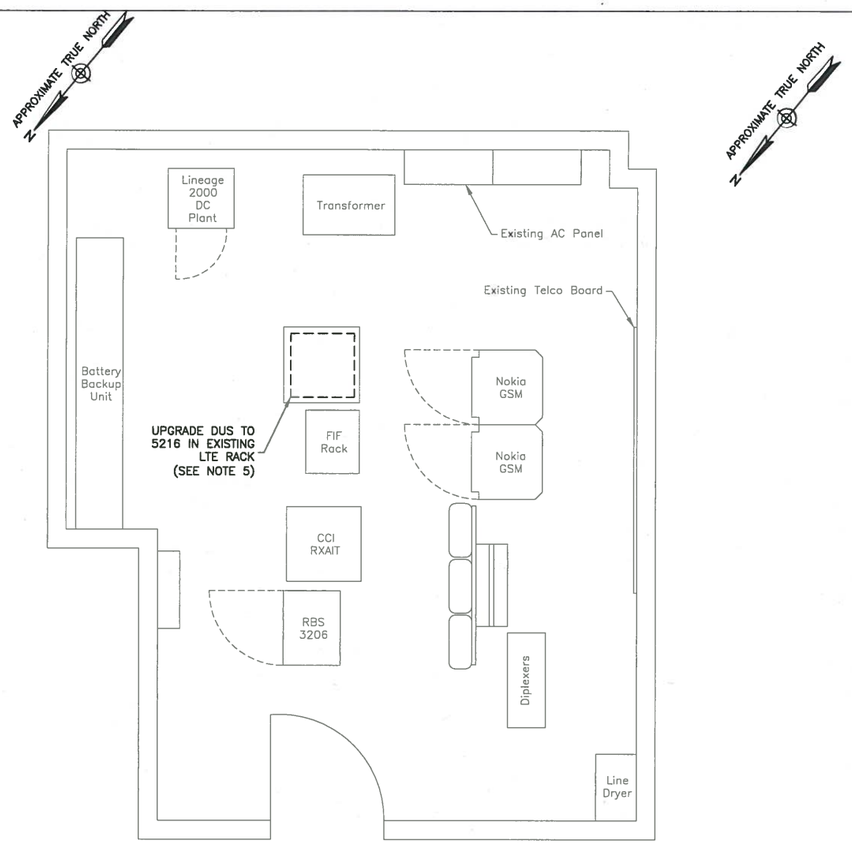
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096281	G01	0



PROPOSED SITE PLAN 1

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

0' 5' 10'



PROPOSED SHELTER PLAN 2

SCALE: 1"=4' FOR 11"x17"
1"=2' FOR 22"x34"

0' 2' 4'

NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE MOUNT ANALYSIS REPORT, TO BE COMPLETED BY OTHERS PRIOR TO THE START OF CONSTRUCTION.
3. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS WAS PERFORMED BY GPD GROUP. REFER TO REPORT TITLED "CHESHIRE" DATED 04/27/18 FOR DETAILS.
4. NOT ALL EXISTING/PROPOSED INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

   TOWER: ADD (3) 8-PORT ANTENNAS, INSTALLED IN POSITION 3 ON EACH SECTOR. ADD (3) RRUS-32 WCS AND (3) RRUS-4478 B14

   SHELTER: UPGRADE DUS TO 5216.
6. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:
   - 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS

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CHESHIRE 3C/4C
SITE NO. CT2036

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CHESHIRE, CT 06410

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	06/20/18	ISSUED FOR CSC APPROVAL	JIM	CDH	DAS
A	03/08/18	ISSUED FOR REVIEW	JIM	KB	DAS

SCALE: AS SHOWN | DESIGNED BY: CDH | DRAWN BY: JIM

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BENJAMIN A. DAS
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PROFESSIONAL ENGINEER

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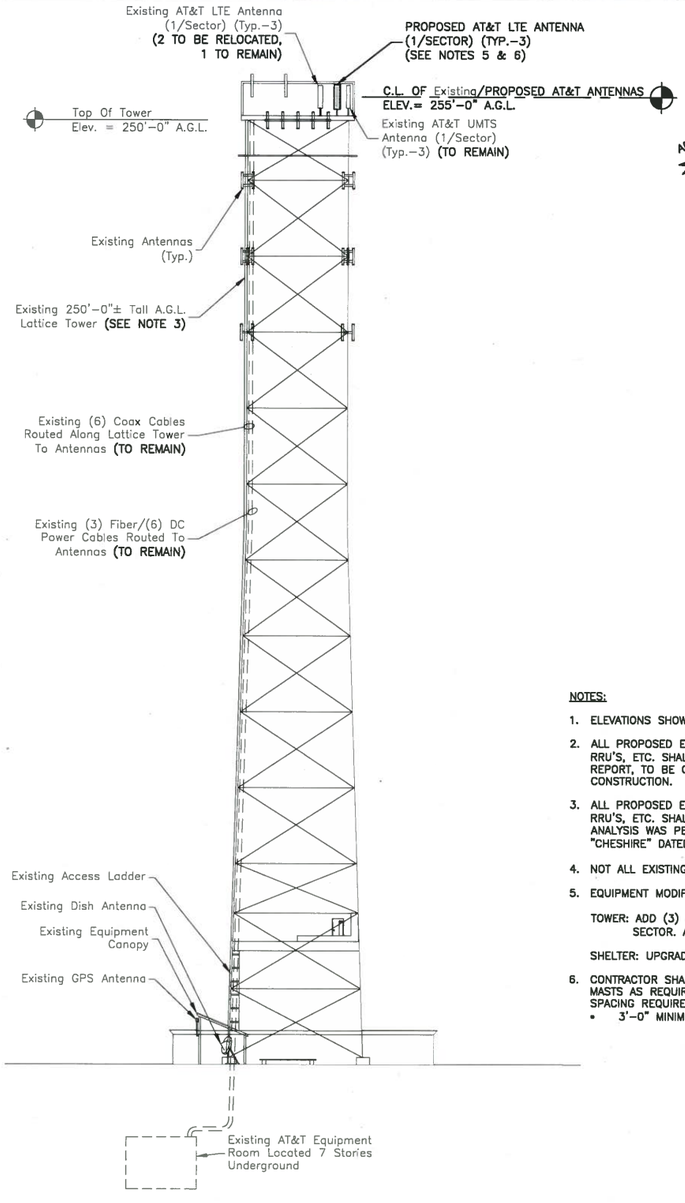
FRAMINGHAM, MA 01701

PROPOSED SITE PLAN & SHELTER PLAN

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096281	C01	0

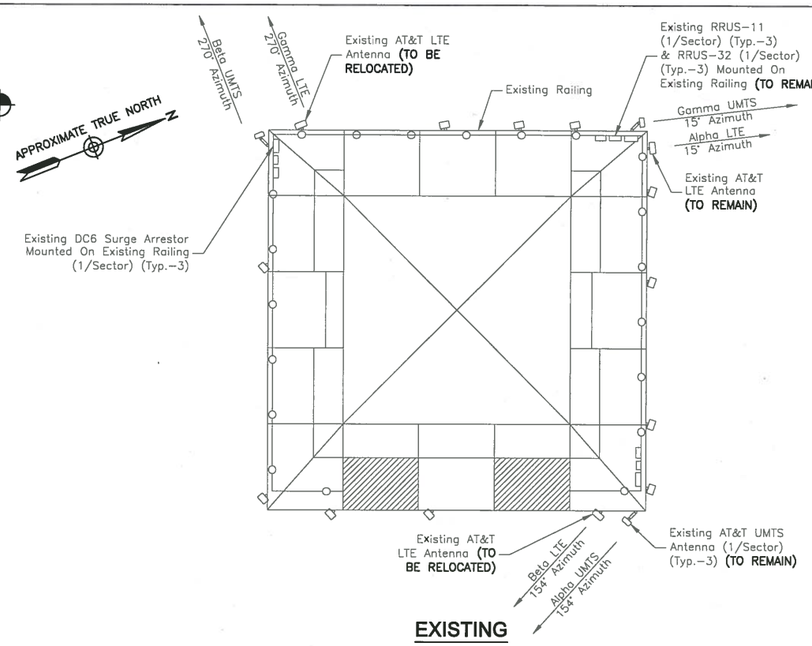


TOWER ELEVATION

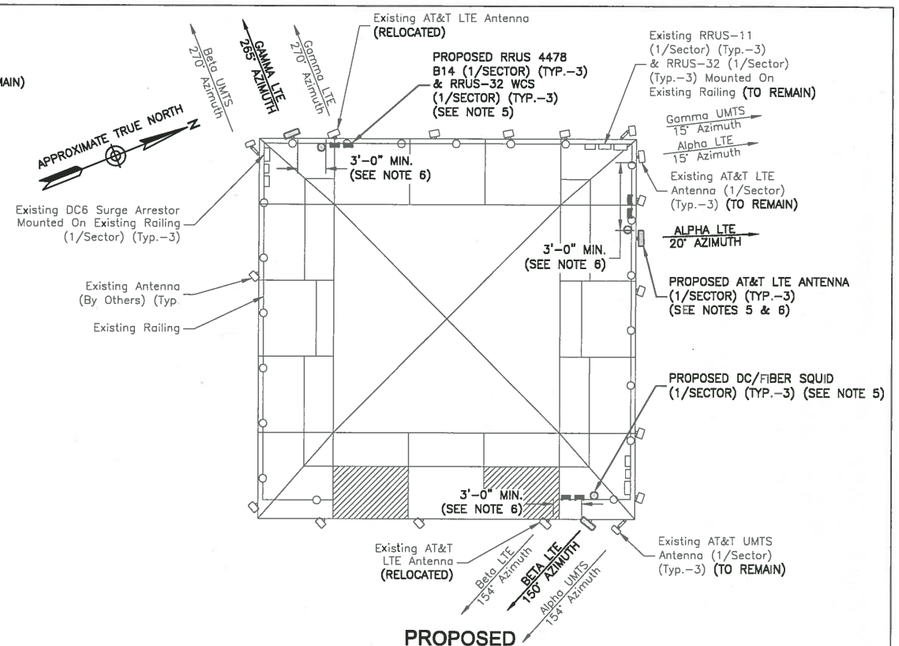
SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

0' 20' 40'

1



EXISTING



PROPOSED

ANTENNA ORIENTATION PLAN

SCALE: N.T.S.

2

NOTES:

1. ELEVATIONS SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE MOUNT ANALYSIS REPORT, TO BE COMPLETED BY OTHERS PRIOR TO THE START OF CONSTRUCTION.
3. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS WAS PERFORMED BY GPD GROUP. REFER TO REPORT TITLED "CHESHIRE" DATED 04/27/18 FOR DETAILS.
4. NOT ALL EXISTING/PROPOSED INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

   TOWER: ADD (3) 8–PORT ANTENNAS, INSTALLED IN POSITION 3 ON EACH SECTOR. ADD (3) RRUS–32 WCS AND (3) RRUS–4478 B14.

   SHELTER: UPGRADE DUS TO 5216.
6. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:
   - 3'–0" MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (LxWxD)	COAX JUMPERS	FIBER JUMPERS
ALPHA	UMTS 850	(E) AM–X–CD–16–65–00T–RET	72.0 x 11.8 x 5.9	255'±	154°	(E) DTMABP7819VG12A TWIN PCS W/ 700–850BP	–	–	(E) 2	–
	–	–	–	–	–	–	–	–	–	–
	LTE B14/WCS	(P) 800–10966	96.0 x 20.0 x 6.9	255'±	20°	–	(P) RRUS 4478 B14 (P) RRUS 32 WCS	15.0 x 13.2 x 7.4 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700/PCS	(E) HPA–65R–BUU–H8	92.4 x 14.8 x 7.4	255'±	15°	–	(E) RRUS–11 700 (E) RRUS–32 B2 1900	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2
BETA	UMTS 850	(E) AM–X–CD–16–65–00T–RET	72.0 x 11.8 x 5.9	255'±	270°	(E) DTMABP7819VG12A TWIN PCS W/ 700–850BP	–	–	(E) 2	–
	–	–	–	–	–	–	–	–	–	–
	LTE B14/WCS	(P) 800–10965	78.7 x 20.0 x 6.9	255'±	150°	–	(P) RRUS 4478 B14 (P) RRUS 32 WCS	15.0 x 13.2 x 7.4 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700/PCS	(E) HPA–65R–BUU–H6	72.0 x 14.8 x 7.4	255'±	154°	–	(E) RRUS–11 700 (E) RRUS–32 B2 1900	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2
GAMMA	UMTS 850	(E) SBNH–1D6565C	96.4 x 11.9 x 7.1	255'±	15°	(E) DTMABP7819VG12A TWIN PCS W/ 700–850BP	–	–	(E) 2	–
	–	–	–	–	–	–	–	–	–	–
	LTE B14/WCS	(P) 800–10965	78.7 x 20.0 x 6.9	255'±	265°	–	(P) RRUS 4478 B14 (P) RRUS 32 WCS	15.0 x 13.2 x 7.4 27.2 x 12.1 x 7.0	–	(E) 2
	LTE 700/PCS	(E) HPA–65R–BUU–H6	72.0 x 14.8 x 7.4	255'±	270°	–	(E) RRUS–11 700 (E) RRUS–32 B2 1900	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	(E) 2

FINAL EQUIPMENT CONFIGURATION

SCALE: N.T.S.

3

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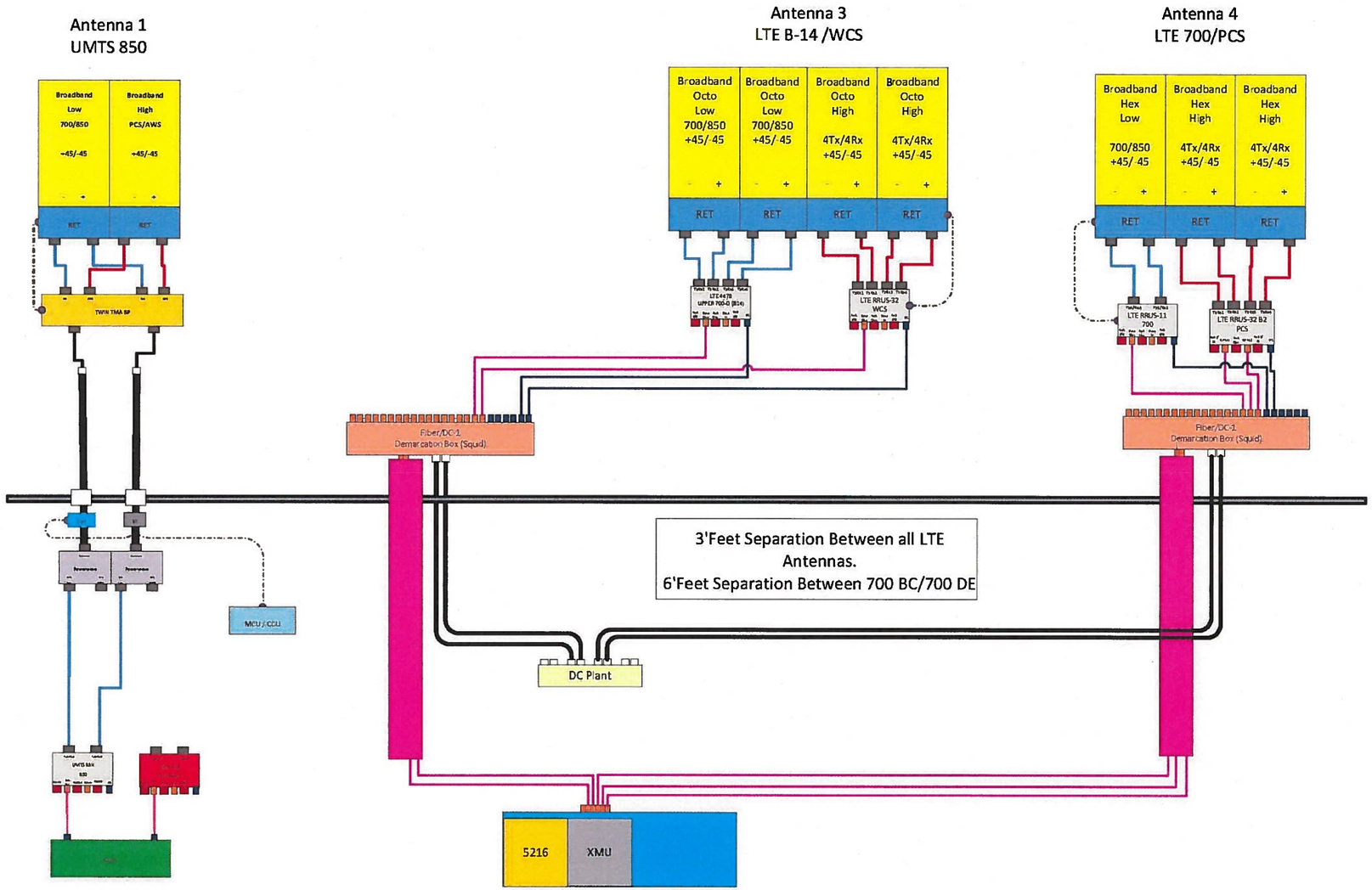
PROPOSED ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096281	C02	0

Diagram - Sector	A	Diagram File Name - CT2036_A_B_C_3C_4C_Rev1.vsd					
Atoll Site Name -	CTV2036	Location Name -	CHESHIRE SW	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)



EQUIPMENT PLUMBING DIAGRAM (1)

SCALE: N.T.S.

NOTES:

1. EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1 DATED 10/09/17.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION & SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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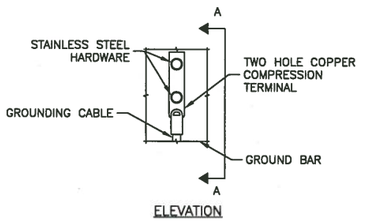
EQUIPMENT PLUMBING DIAGRAM

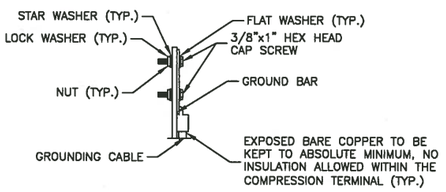
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096281	C03	0

GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW & INSPECT THE EXISTING FACILITY GROUNDING SYSTEM & LIGHTNING PROTECTION SYSTEM (AS DESIGNED & INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, & GENERAL COMPLIANCE WITH TELCORDIA & TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, & AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH & INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES & 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE & ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING & UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT & TRAY SHALL BE GROUNDED & MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE & UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED & INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS & THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM CENTERLINE COMMUNICATIONS COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT & STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE & THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS & STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION & BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL & NON-ELECTRICAL METAL BOXES, FRAMES & SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND & LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



ELEVATION

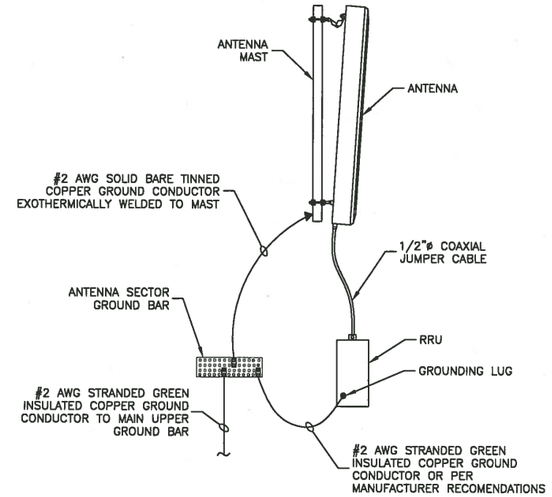


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL 1

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA/RRU GROUNDING DETAIL 2

SCALE: N.T.S

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GROUNDING DETAILS

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