



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 111 ft Self Supported Tower  
**ATC Site Name** : CromwellSW CT, CT  
**ATC Site Number** : 411261  
**Engineering Number** : OAA702243\_C3\_01  
**Proposed Carrier** : AT&T MOBILITY  
**Carrier Site Name** : Cromwell South  
**Carrier Site Number** : CT-5144/FA#10070987  
**Site Location** : 100 Berlin Road  
Cromwell, CT  
41.606210, -72.701206  
**County** : Middlesex  
**Date** : May 22, 2017  
**Max Usage** : 60%  
**Result** : Pass

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Reviewed By:

**COA: PEC.0001553**



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## **Introduction**

The purpose of this report is to summarize results of a structural analysis performed on the 111 ft self supported tower to reflect the change in loading by AT&T MOBILITY.

## **Supporting Documents**

|                            |  |
|----------------------------|--|
| <b>Tower Drawings</b>      | Mapping by ETS, Job #150929.01, dated August 21, 2015  |
| <b>Foundation Drawing</b>  | Mapping by ETS, Job #150929.01, dated August 21, 2015<br>Mapping by ETS, Job #150929.01, dated June 13, 2016 |
| <b>Geotechnical Report</b> | FDH Velocitel Project #15BWZR1600, dated August 18, 2015   |

## **Analysis**

The tower was analyzed using Risa 3D tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

|                                 |   |
|---------------------------------|---|
| <b>Basic Wind Speed:</b>        | 85 mph (Fastest Mile)   |
| <b>Basic Wind Speed w/ Ice:</b> | 74 mph (Fastest Mile)w/ 1/2" radial ice concurrent  |
| <b>Code:</b>                    | ANSI/TIA/EIA-222-F / 2012 IBC , Sec. 1609.1.1, Exception (4) & Sec. 3108.4 / 2016 Connecticut State Building Code |

\*The proposed equipment does not increase the structural usage by more than 5%, so per guidelines in TIA-222-G, Addendum 2, Sec. 15.4, this analysis may be run to TIA-222-F standards.

## **Conclusion**

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



### Existing and Reserved Equipment

| Elevation <sup>1</sup> (ft) |       | Qty | Antenna                         | Mount Type            | Lines  | Carrier       |
|-----------------------------|-------|-----|---------------------------------|-----------------------|--|---------------|
| Mount                       | RAD   |     |                                 |                       |  |               |
| 108.0                       | 108.0 | 3   | Ericsson KRY 112 71             | Low Profile Platform  | (18) 1 5/8" Coax<br>(1) 1 5/8" Fiber   | T-Mobile      |
|                             |       | 3   | Ericsson RRUS 11 B12            |                       |  |               |
|                             |       | 3   | Ericsson AIR 21 B4A B2P         |                       |  |               |
|                             |       | 3   | Ericsson AIR 21 B4A/12-B5P 2.4M |                       |  |               |
| 98.0                        | 98.0  | 3   | Ericsson RRUS 11 B2             | Platform w/ Handrails | -  | AT&T Mobility |
|                             |       | 3   | Ericsson RRUS-32                |                       |  |               |
|                             |       | 3   | Powerwave 7770.00               |                       |  |               |
|                             |       | 3   | CCI OPA-65R-LCUU-H6             |                       |  |               |
| 95.0                        | 95.0  | 2   | Raycap DC6-48-60-18-8F          | Leg/Flush             | (12) 1 5/8" Coax<br>(4) 0.78" 8 AWG 6<br>(2) 0.39" Fiber Trunk<br>(1) 1 5/8" Hybriflex | AT&T Mobility |
|                             |       | 12  | Powerwave LGP21401              | Low Profile Platform  |  |               |
| 83.0                        | 83.0  | 1   | GPS                             | Platform w/ Handrails | (18) 1 5/8" Coax<br>(1) 1 5/8" Hybriflex<br>(1) 1/2" Coax                              | Verizon       |
|                             |       | 3   | Alcatel-Lucent RRH2x40-AWS      |                       |  |               |
|                             |       | 1   | Raycap RRFDC-3315-PF-48         |                       |  |               |
|                             |       | 6   | Antel BXA-171085-12BF-EDIN-X    |                       |  |               |
|                             |       | 4   | Decibel DB846F65ZAXY            |                       |  |               |
|                             |       | 3   | Antel BXA-70063/6CF_4           |                       |  |               |
|                             |       | 2   | Antel LPA-80080/6CF_            |                       |  |               |
| 80.0                        | 80.0  | 3   | RFS APXV18-206517S-C            | -                     | (6) 1 5/8" Coax  | Metro PCS     |
| 50.0                        | 50.0  | 1   | NAIS VIC-100                    | -                     | -  | T-Mobile      |

### Equipment to be Removed

| Elevation <sup>1</sup> (ft) |      | Qty | Antenna                   | Mount Type | Lines | Carrier       |
|-----------------------------|------|-----|---------------------------|------------|-------|---------------|
| Mount                       | RAD  |     |                           |            |       |               |
| 98.0                        | 98.0 | 3   | KMW AM-X-CD-16-65-00T-RET | -          | -     | AT&T Mobility |
|                             |      | 3   | Ericsson RRUS 11 B2       |            |       |               |

### Proposed Equipment

| Elevation <sup>1</sup> (ft) |      | Qty | Antenna                         | Mount Type            | Lines | Carrier       |
|-----------------------------|------|-----|---------------------------------|-----------------------|-------|---------------|
| Mount                       | RAD  |     |                                 |                       |       |               |
| 98.0                        | 98.0 | 3   | Powerwave 7020.00 Dual Band RET | Low Profile Platform  | -     | AT&T Mobility |
|                             |      | 3   | Ericsson RRUS 32 B2             | Platform w/ Handrails |       |               |
|                             |      | 3   | Quintel QS66512-2               |                       |       |               |

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax anywhere on tower.



### **Structure Usages**

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Legs                 | 46%               | Pass      |
| Diagonals            | 60%               | Pass      |
| Horizontals          | 60%               | Pass      |

### **Foundations**

| Reaction Component | Analysis Reactions | % of Usage |
|--------------------|--------------------|------------|
| Uplift (Kips)      | 101.7              | 42%        |
| Axial (Kips)       | 58.3               | 17%        |
| Shear (Kips)       | 16.4               | 7%         |

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.



## Standard Conditions

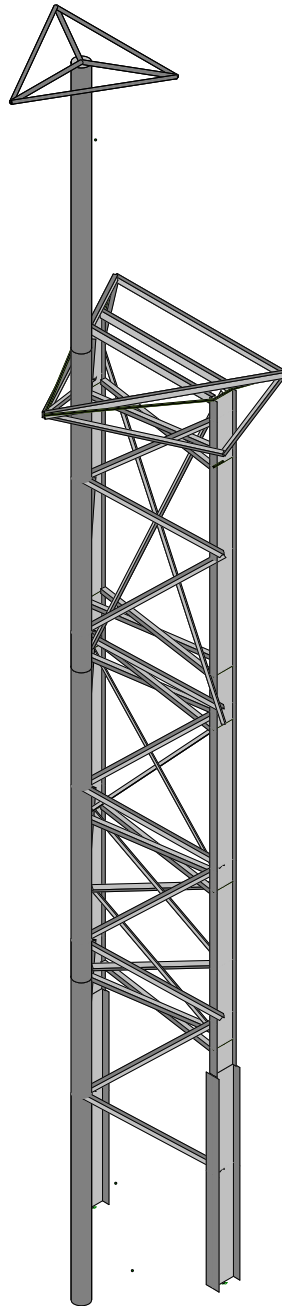
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



AT&T Mobility

DAVI

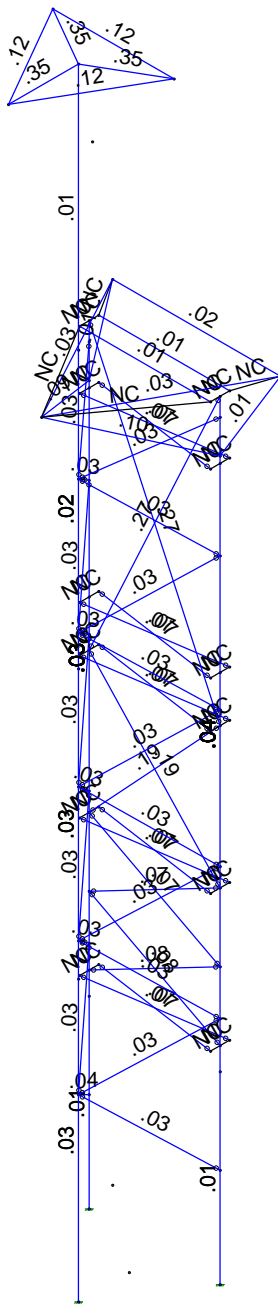
411261

Cromwell SW CT  
Structure

SK - 1

May 22, 2017 at 1:53 PM

2017.5.22 - AT&T Mobility - OAA7...



Member Code Checks Displayed  
 Results for LC 1, D

|               |                         |                                     |
|---------------|-------------------------|-------------------------------------|
| AT&T Mobility | Cromwell SW CT<br>Usage | SK - 2                              |
| DAVI          |                         | May 22, 2017 at 1:54 PM             |
| 411261        |                         | 2017.5.22 - AT&T Mobility - OAA7... |





### Hot Rolled Steel Section Sets

|    | Label         | Shape         | Type | Design List  | Material   | Design Rul... | A [in2] | Iyy [in4] | Izz [in4] | J [in4] |
|----|---------------|---------------|------|--------------|------------|---------------|---------|-----------|-----------|---------|
| 1  | W24x68 w...   | W24x68 w...   | Beam | Wide Flange  | A572 Gr.50 | Typical       | 51.845  | 753.17    | 6681.05   | 27.435  |
| 2  | L3.5x3.5x0... | L3.5x3.5x5    | Beam | Single Angle | A36 Gr.36  | Typical       | 2.1     | 2.44      | 2.44      | .073    |
| 3  | L5x5x3/8 w... | L5x5x3/8 w... | Beam | Single Angle | A36 Gr.36  | Typical       | 5.256   | 9.617     | 9.617     | 3.099   |
| 4  | L3x3x5/16     | L3x3x5        | Beam | Single Angle | A36 Gr.36  | Typical       | 1.78    | 1.5       | 1.5       | .06     |
| 5  | 18"x0.5"      | HSS18x0.5...  | Beam | Pipe         | A53 Gr.B   | Typical       | 25.6    | 985       | 985       | 1970    |
| 6  | WT6x15        | WT6x15        | Beam | W Tee        | A36 Gr.36  | Typical       | 4.4     | 10.2      | 13.5      | .228    |
| 7  | HSS6x4x1/4    | HSS6x4x4      | Beam | Tube         | A36 Gr.36  | Typical       | 4.3     | 11.1      | 20.9      | 23.6    |
| 8  | HSS8x4x1/4    | HSS8x4x4      | Beam | Tube         | A36 Gr.36  | Typical       | 5.24    | 14.4      | 42.5      | 35.3    |
| 9  | L5x5x3/4      | L5x5x12       | Beam | Single Angle | A36 Gr.36  | Typical       | 6.98    | 15.7      | 15.7      | 1.33    |
| 10 | 3.5" Pipe     | PIPE 3.0      | Beam | Pipe         | A53 Gr.B   | Typical       | 2.07    | 2.85      | 2.85      | 5.69    |
| 11 | W24x68        | W24x68        | Beam | Wide Flange  | A572 Gr.50 | Typical       | 20.1    | 70.4      | 1830      | 1.87    |
| 12 | L5x5x3/8      | L5x5x6        | Beam | Single Angle | A36 Gr.36  | Typical       | 3.65    | 8.76      | 8.76      | .183    |
| 13 | L4x4x5/16 ... | L4x4x5/16 ... | Beam | Single Angle | A36 Gr.36  | Typical       | 3.79    | 4.63      | 4.63      | 2.166   |
| 14 | HSS4x4x1/4    | HSS4x0.250    | Beam | Pipe         | A36 Gr.36  | Typical       | 2.76    | 4.91      | 4.91      | 9.82    |

### Joint Coordinates and Temperatures

|    | Label | X [ft] | Y [ft]    | Z [ft]   | Temp [F] | Detach From Dia... |
|----|-------|--------|-----------|----------|----------|--------------------|
| 1  | N1    | 0      | 1         | 0        | 0        |                    |
| 2  | N2    | 13.5   | 1         | 0        | 0        |                    |
| 3  | N3    | 6.75   | 0         | 7.854167 | 0        |                    |
| 4  | N4    | 0      | 11.208333 | 0        | 0        |                    |
| 5  | N5    | 13.5   | 11.208333 | 0        | 0        |                    |
| 6  | N8    | 0      | 22.333333 | 0        | 0        |                    |
| 7  | N9    | 13.5   | 22.333333 | 0        | 0        |                    |
| 8  | N10   | 0      | 24.75     | 0        | 0        |                    |
| 9  | N11   | 13.5   | 24.75     | 0        | 0        |                    |
| 10 | N6    | 0      | 20        | 0        | 0        |                    |
| 11 | N7    | 13.5   | 20        | 0        | 0        |                    |
| 12 | N12   | 0      | 29.375    | 0        | 0        |                    |
| 13 | N13   | 13.5   | 29.375    | 0        | 0        |                    |
| 14 | N14   | 0      | 36.416666 | 0        | 0        |                    |
| 15 | N15   | 13.5   | 36.416666 | 0        | 0        |                    |
| 16 | N16   | 0      | 38.333333 | 0        | 0        |                    |
| 17 | N17   | 13.5   | 38.333333 | 0        | 0        |                    |
| 18 | N18   | 0      | 50.916666 | 0        | 0        |                    |
| 19 | N19   | 13.5   | 50.916666 | 0        | 0        |                    |
| 20 | N20   | 0      | 52.333333 | 0        | 0        |                    |
| 21 | N21   | 13.5   | 52.333333 | 0        | 0        |                    |
| 22 | N22   | 0      | 55.666666 | 0        | 0        |                    |
| 23 | N23   | 13.5   | 55.666666 | 0        | 0        |                    |
| 24 | N24   | 0      | 66.083333 | 0        | 0        |                    |
| 25 | N25   | 13.5   | 66.083333 | 0        | 0        |                    |
| 26 | N26   | 0      | 74.336666 | 0        | 0        |                    |
| 27 | N27   | 13.5   | 74.336666 | 0        | 0        |                    |
| 28 | N28   | 0      | 78.458333 | 0        | 0        |                    |
| 29 | N29   | 13.5   | 78.458333 | 0        | 0        |                    |
| 30 | N30   | 0      | 80.336666 | 0        | 0        |                    |
| 31 | N31   | 13.5   | 80.336666 | 0        | 0        |                    |
| 32 | N32   | 6.75   | 18.5      | 7.854167 | 0        |                    |
| 33 | N33   | 6.75   | 28.833333 | 7.854167 | 0        |                    |
| 34 | N34   | 6.75   | 32.25     | 7.854167 | 0        |                    |
| 35 | N35   | 6.75   | 46        | 7.854167 | 0        |                    |
| 36 | N36   | 6.75   | 56.541667 | 7.854167 | 0        |                    |
| 37 | N37   | 6.75   | 59.75     | 7.854167 | 0        |                    |



**Joint Coordinates and Temperatures (Continued)**

|    | Label | X [ft]  | Y [ft]    | Z [ft]    | Temp [F] | Detach From Dia... |
|----|-------|---------|-----------|-----------|----------|--------------------|
| 38 | N38   | 6.75    | 73.5      | 7.854167  | 0        |                    |
| 39 | N39   | 6.75    | 85.020833 | 7.854167  | 0        |                    |
| 40 | N40   | 6.75    | 110.5625  | 7.854167  | 0        |                    |
| 41 | N41   | 0       | 22.333333 | -0.9875   | 0        |                    |
| 42 | N42   | 13.5    | 22.333333 | -0.9875   | 0        |                    |
| 43 | N43   | 0       | 22.333333 | 0.9875    | 0        |                    |
| 44 | N44   | 13.5    | 22.333333 | 0.9875    | 0        |                    |
| 45 | N45   | 0       | 36.416666 | -0.9875   | 0        |                    |
| 46 | N46   | 13.5    | 36.416666 | -0.9875   | 0        |                    |
| 47 | N47   | 0       | 36.416666 | 0.9875    | 0        |                    |
| 48 | N48   | 13.5    | 36.416666 | 0.9875    | 0        |                    |
| 49 | N49   | 0       | 50.916666 | -0.9875   | 0        |                    |
| 50 | N50   | 13.5    | 50.916666 | -0.9875   | 0        |                    |
| 51 | N51   | 0       | 50.916666 | 0.9875    | 0        |                    |
| 52 | N52   | 13.5    | 50.916666 | 0.9875    | 0        |                    |
| 53 | N53   | 0       | 55.666666 | -0.9875   | 0        |                    |
| 54 | N54   | 13.5    | 55.666666 | -0.9875   | 0        |                    |
| 55 | N55   | 0       | 55.666666 | 0.9875    | 0        |                    |
| 56 | N56   | 13.5    | 55.666666 | 0.9875    | 0        |                    |
| 57 | N57   | 0       | 74.336666 | -0.9875   | 0        |                    |
| 58 | N58   | 13.5    | 74.336666 | -0.9875   | 0        |                    |
| 59 | N59   | 0       | 74.336666 | 0.9875    | 0        |                    |
| 60 | N60   | 13.5    | 74.336666 | 0.9875    | 0        |                    |
| 61 | N61   | 0       | 80.336666 | -0.9875   | 0        |                    |
| 62 | N62   | 13.5    | 80.336666 | -0.9875   | 0        |                    |
| 63 | N63   | 0       | 80.336666 | 0.9875    | 0        |                    |
| 64 | N64   | 13.5    | 80.336666 | 0.9875    | 0        |                    |
| 65 | N67   | -1.9103 | 80.92     | -4.320833 | 0        |                    |
| 66 | N68   | 15.4103 | 80.92     | -4.320833 | 0        |                    |
| 67 | N69   | 6.75    | 80.92     | 11.666667 | 0        |                    |
| 68 | N68A  | 0       | 75.003333 | 0         | 0        |                    |
| 69 | N69A  | 13.5    | 75.003333 | 0         | 0        |                    |
| 70 | N93   | .5      | 110.5625  | 4.2457    | 0        |                    |
| 71 | N94   | 13      | 110.5625  | 4.2457    | 0        |                    |
| 72 | N95   | 6.75    | 110.5625  | 15.071    | 0        |                    |
| 73 | N75   | -1.9103 | 1         | 15.071    | 0        |                    |
| 74 | N76   | 15.4103 | 1         | 15.071    | 0        |                    |
| 75 | N75A  | -1.9103 | 111.5625  | 15.071    | 0        |                    |
| 76 | N76A  | 15.4103 | 111.5625  | 15.071    | 0        |                    |
| 77 | N77   | -1.9103 | -0.       | -4.320833 | 0        |                    |
| 78 | N78   | -1.9103 | 110.5625  | -4.320833 | 0        |                    |
| 79 | N79   | 6.75    | 0         | 2.6181    | 0        |                    |

**Basic Load Cases**

|   | BLC Description      | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distribut... | Area(Me... | Surface(Plate/Wall) |
|---|----------------------|----------|-----------|-----------|-----------|-------|-------|--------------|------------|---------------------|
| 1 | Self Weight          | DL       |           | -1        |           | 8     |       |              |            |                     |
| 2 | Wind Z               | WLZ      |           |           |           | 6     |       | 64           |            |                     |
| 3 | Wind X               | WLX      |           |           |           | 6     |       | 85           |            |                     |
| 4 | Appurtenance Ice ... | OL1      |           | -1        |           | 8     |       |              |            |                     |
| 5 | Wind Ice Z           | OL2      |           |           |           | 6     |       | 64           |            |                     |
| 6 | Wind Ice X           | OL3      |           |           |           | 6     |       | 85           |            |                     |



**Load Combinations**

|   | Description    | Solve P... | SR... | BLCFa... | BLC | Fa... | BLCFa... | BLCFa... | BLCFa... | BLCFa... | BLCFa... | BLCFa... | BLCFa... | BLCFa... |
|---|----------------|------------|-------|----------|-----|-------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | D              | Yes        | Y     | DL       | 1   |       |          |          |          |          |          |          |          |          |
| 2 | D + W (Z)      | Yes        | Y     | DL       | 1   | WLZ   | 1        |          |          |          |          |          |          |          |
| 3 | D + W (-Z)     | Yes        | Y     | DL       | 1   | WLZ   | -1       |          |          |          |          |          |          |          |
| 4 | D + W (X)      | Yes        | Y     | DL       | 1   | WLX   | 1        |          |          |          |          |          |          |          |
| 5 | D + W (-X)     | Yes        | Y     | DL       | 1   | WLX   | -1       |          |          |          |          |          |          |          |
| 6 | D + W Ice (Z)  | Yes        | Y     | OL1      | 1   | OL2   | .75      |          |          |          |          |          |          |          |
| 7 | D + W Ice (-Z) | Yes        | Y     | OL1      | 1   | OL2   | -.75     |          |          |          |          |          |          |          |
| 8 | D + W Ice (X)  | Yes        | Y     | OL1      | 1   | OL3   | .75      |          |          |          |          |          |          |          |
| 9 | D + W Ice (-X) | Yes        | Y     | OL1      | 1   | OL3   | -.75     |          |          |          |          |          |          |          |

**Joint Loads and Enforced Displacements (BLC 1 : Self Weight)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N40         | L     | Y         | -2592.66   |
| 2 | N93         | L     | Y         | -274.9   |
| 3 | N94         | L     | Y         | -274.9   |
| 4 | N95         | L     | Y         | -274.9   |
| 5 | N31         | L     | Y         | -3032.93   |
| 6 | N67         | L     | Y         | -647.833   |
| 7 | N68         | L     | Y         | -647.833   |
| 8 | N69         | L     | Y         | -647.833   |

**Joint Loads and Enforced Displacements (BLC 2 : Wind Z)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N95         | L     | Z         | -229.7   |
| 2 | N94         | L     | Z         | -187   |
| 3 | N93         | L     | Z         | -187   |
| 4 | N67         | L     | Z         | -705.1   |
| 5 | N68         | L     | Z         | -595.8   |
| 6 | N69         | L     | Z         | -595.8   |

**Joint Loads and Enforced Displacements (BLC 3 : Wind X)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N95         | L     | X         | -176.9   |
| 2 | N94         | L     | X         | -220   |
| 3 | N93         | L     | X         | -220   |
| 4 | N67         | L     | X         | -600.8   |
| 5 | N68         | L     | X         | -698.7   |
| 6 | N69         | L     | X         | -698.7   |

**Joint Loads and Enforced Displacements (BLC 4 : Appurtenance Ice Dead)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N40         | L     | Y         | -2042.86   |
| 2 | N95         | L     | Y         | -545.3   |
| 3 | N94         | L     | Y         | -545.3   |
| 4 | N93         | L     | Y         | -545.3   |
| 5 | N31         | L     | Y         | -3032.93   |
| 6 | N67         | L     | Y         | -2087.3  |
| 7 | N68         | L     | Y         | -2087.3  |
| 8 | N69         | L     | Y         | 2087.3   |

**Joint Loads and Enforced Displacements (BLC 5 : Wind Ice Z)**

|  | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|--|-------------|-------|-----------|--|
|--|-------------|-------|-----------|--|



**Joint Loads and Enforced Displacements (BLC 5 : Wind Ice Z) (Continued)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N95         | L     | Z         | -79.4  |
| 2 | N94         | L     | Z         | -91.7  |
| 3 | N93         | L     | Z         | -91.7  |
| 4 | N67         | L     | Z         | -236.1   |
| 5 | N68         | L     | Z         | -290.4   |
| 6 | N69         | L     | Z         | -290.4   |

**Joint Loads and Enforced Displacements (BLC 6 : Wind Ice X)**

|   | Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)] |
|---|-------------|-------|-----------|--|
| 1 | N95         | L     | X         | -98.8  |
| 2 | N94         | L     | X         | -86.1  |
| 3 | N93         | L     | X         | -86.1  |
| 4 | N67         | L     | X         | -336.4   |
| 5 | N68         | L     | X         | -265.4   |
| 6 | N69         | L     | X         | -265.4   |

**Member Area Loads**

| Joint A              | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|----------------------|---------|---------|---------|-----------|--------------|----------------|
| No Data to Print ... |         |         |         |           |              |                |

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

| LC | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om ... | Mnyy/o... | Mnzz/o... | Cb        | Eqn   |        |
|----|--------|-------|--------------|---------|-----------|---------|--------|-----------|------------|-----------|-----------|-----------|-------|--------|
| 1  | 1      | M1    | W24x68 w...  | .013    | 0         | .000    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1400.4... | 1.058 | H1-1b* |
| 2  | 1      | M2    | W24x68 w...  | .011    | 0         | .000    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.078 | H1-1b* |
| 3  | 1      | M3    | W24x68       | .036    | 0         | .001    | 59.08  | y         | 328006...  | 601796... | 61.128    | 337.623   | 1     | H1-1b* |
| 4  | 1      | M4    | W24x68       | .026    | 0         | .001    | 59.08  | y         | 328006...  | 601796... | 61.128    | 337.623   | 1     | H1-1b* |
| 5  | 1      | M5    | HSS18x0...   | .034    | 0         | .000    | 18.622 |           | 457542...  | 536526... | 249.75    | 249.75    | 1.958 | H1-1b* |
| 6  | 1      | M6    | HSS18x0...   | .028    | 0         | .000    | 0      |           | 463151...  | 536526... | 249.75    | 249.75    | 1.111 | H1-1b* |
| 7  | 1      | M7    | HSS18x0...   | .022    | 0         | .000    | 3.263  |           | 459324...  | 536526... | 249.75    | 249.75    | 2.092 | H1-1b* |
| 8  | 1      | M8    | HSS18x0...   | .013    | 0         | .000    | 0      |           | 473500...  | 536526... | 249.75    | 249.75    | 1.667 | H1-1b* |
| 9  | 1      | M29   | L5x5x6       | .067    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 10 | 1      | M30   | L5x5x6       | .067    | 6.822     | .003    | 0      | z         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 11 | 1      | M31   | L5x5x6       | .068    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 12 | 1      | M32   | L5x5x6       | .068    | 6.822     | .003    | 0      | z         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 13 | 1      | M33   | L5x5x6       | .070    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 14 | 1      | M34   | L5x5x6       | .070    | 6.822     | .003    | 0      | z         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 15 | 1      | M35   | L5x5x6       | .068    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 16 | 1      | M36   | L5x5x6       | .068    | 6.822     | .003    | 0      | z         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 17 | 1      | M37   | L5x5x6       | .067    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 18 | 1      | M38   | L5x5x6       | .067    | 6.822     | .004    | 0      | z         | 19897...   | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 19 | 1      | M39   | L5x5x6       | .076    | 7.613     | .003    | 0      | y         | 49600.6    | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 20 | 1      | M40   | L5x5x6       | .076    | 7.613     | .003    | 0      | y         | 49600.6    | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 21 | 1      | M41   | L5x5x6       | .075    | 7.613     | .003    | 0      | y         | 15976...   | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 22 | 1      | M42   | L5x5x6       | .075    | 7.613     | .003    | 0      | y         | 49600.6    | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 23 | 1      | M43   | L3.5x3.5x5   | .186    | 9.699     | .003    | 0      | y         | 10481...   | 45269...  | 1.918     | 2.577     | 1.136 | H2-1   |
| 24 | 1      | M44   | L3.5x3.5x5   | .186    | 9.699     | .003    | 0      | y         | 10481...   | 45269...  | 1.918     | 2.577     | 1.136 | H2-1   |
| 25 | 1      | M45   | L5x5x3/8 ... | .272    | 15.848    | .005    | 32.37  | y         | 20518...   | 113307... | 7.087     | 5.185     | 1.136 | H2-1   |
| 26 | 1      | M46   | L5x5x3/8 ... | .272    | 15.848    | .005    | 32.37  | y         | 20518...   | 113307... | 7.087     | 5.185     | 1.136 | H2-1   |
| 27 | 1      | M47   | WT6x15       | .032    | 6.333     | .004    | 12.666 | y         | 51096...   | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 28 | 1      | M48   | WT6x15       | .039    | 0         | .004    | 0      | y         | 51096...   | 94850...  | 8.587     | 4.949     | 2.56  | H1-1b  |
| 29 | 1      | M49   | WT6x15       | .030    | 6.048     | .004    | 12.096 | y         | 53179...   | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 30 | 1      | M50   | WT6x15       | .030    | 6.048     | .004    | 12.096 | y         | 53179...   | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 31 | 1      | M51   | WT6x15       | .032    | 6.393     | .004    | 12.787 | y         | 50651...   | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |



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

| LC | Member | Shape | UC Max       | Loc(ft) | Shear  | Loc(ft) | Dir    | Pnc/om | Pnt/om    | Mnvy/o    | Mnzz/o  | Cb        | Eqn   |        |
|----|--------|-------|--------------|---------|--------|---------|--------|--------|-----------|-----------|---------|-----------|-------|--------|
| 32 | 1      | M52   | WT6x15       | .032    | 6.393  | .004    | 12.787 | y      | 50651...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 33 | 1      | M53   | WT6x15       | .030    | 6.005  | .004    | 0      | y      | 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 34 | 1      | M54   | WT6x15       | .030    | 6.005  | .004    | 12.011 | y      | 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 35 | 1      | M55   | WT6x15       | .032    | 6.443  | .004    | 0      | y      | 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 36 | 1      | M56   | WT6x15       | .032    | 6.443  | .004    | 0      | y      | 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 37 | 1      | M57   | WT6x15       | .030    | 6.07   | .004    | 12.139 | y      | 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 38 | 1      | M58   | WT6x15       | .030    | 6.07   | .004    | 0      | y      | 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 39 | 1      | M59   | WT6x15       | .032    | 6.369  | .004    | 12.738 | y      | 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 40 | 1      | M60   | WT6x15       | .032    | 6.369  | .004    | 0      | y      | 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 41 | 1      | M61   | WT6x15       | .031    | 6.07   | .004    | 12.139 | y      | 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 42 | 1      | M62   | WT6x15       | .031    | 6.07   | .004    | 0      | y      | 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 43 | 1      | M63   | WT6x15       | .032    | 6.369  | .004    | 12.738 | y      | 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 44 | 1      | M64   | WT6x15       | .032    | 6.369  | .004    | 12.738 | y      | 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 45 | 1      | M65   | WT6x15       | .030    | 5.741  | .004    | 11.482 | y      | 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 46 | 1      | M66   | WT6x15       | .030    | 5.741  | .004    | 0      | y      | 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 47 | 1      | M71   | HSS8x4x4     | .011    | 13.5   | .003    | 13.5   | y      | 68324...  | 112958... | 14.731  | 23.892    | 2.381 | H1-1b  |
| 48 | 1      | M72   | HSS8x4x4     | .011    | 0      | .003    | 0      | y      | 68324...  | 112958... | 14.731  | 23.892    | 2.381 | H1-1b  |
| 49 | 1      | M75   | HSS6x4x4     | .026    | 0      | .004    | 0      | y      | 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 50 | 1      | M76   | HSS6x4x4     | .026    | 18.182 | .004    | 18.182 | y      | 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 51 | 1      | M77   | HSS6x4x4     | .024    | 17.321 | .004    | 17.321 | y      | 38408...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 52 | 1      | M76A  | L4x4x5/16... | .014    | 7.571  | .001    | 7.571  | y      | 39908...  | 81697...  | 3.706   | 6.632     | 1.979 | H2-1   |
| 53 | 1      | M77A  | L4x4x5/16... | .014    | 0      | .001    | 7.571  | y      | 39908...  | 81697...  | 3.706   | 6.632     | 2.156 | H2-1   |
| 54 | 1      | M78   | L4x4x5/16... | .099    | 14.72  | .003    | 14.72  | y      | 11074...  | 81697...  | 3.706   | 6.632     | 2.448 | H2-1   |
| 55 | 1      | M79   | L4x4x5/16... | .089    | 14.72  | .003    | 14.72  | y      | 11074...  | 81697...  | 3.706   | 6.632     | 2.459 | H2-1   |
| 56 | 1      | M84   | PIPE 3.0     | .117    | 12.5   | .003    | 12.5   |        | 18796...  | 43383...  | 3.825   | 3.825     | 1.264 | H1-1b  |
| 57 | 1      | M85   | PIPE 3.0     | .117    | 0      | .003    | 0      |        | 18796...  | 43383...  | 3.825   | 3.825     | 1.264 | H1-1b  |
| 58 | 1      | M86   | PIPE 3.0     | .117    | 0      | .003    | 0      |        | 18796...  | 43383...  | 3.825   | 3.825     | 1.264 | H1-1b  |
| 59 | 1      | M87   | HSS4x0.2...  | .351    | 0      | .024    | 0      |        | 47654...  | 59497...  | 5.946   | 5.946     | 2.194 | H1-1b  |
| 60 | 1      | M88   | HSS4x0.2...  | .351    | 0      | .024    | 0      |        | 47654...  | 59497...  | 5.946   | 5.946     | 2.194 | H1-1b  |
| 61 | 1      | M89   | HSS4x0.2...  | .351    | 0      | .024    | 0      |        | 47654...  | 59497...  | 5.946   | 5.946     | 2.194 | H1-1b  |
| 62 | 2      | M1    | W24x68 w...  | .142    | 0      | .039    | 0      | y      | 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.952 | H1-1b  |
| 63 | 2      | M2    | W24x68 w...  | .143    | 0      | .040    | 3.958  | y      | 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.947 | H1-1b  |
| 64 | 2      | M3    | W24x68       | .173    | 0      | .011    | 0      | y      | 328006... | 601796... | 61.128  | 139.723   | 2.798 | H1-1b  |
| 65 | 2      | M4    | W24x68       | .167    | 0      | .012    | 0      | y      | 328006... | 601796... | 61.128  | 141.439   | 2.833 | H1-1b  |
| 66 | 2      | M5    | HSS18x0...   | .136    | 0      | .008    | 0      |        | 457542... | 536526... | 249.75  | 249.75    | 1.456 | H1-1b  |
| 67 | 2      | M6    | HSS18x0...   | .070    | 3.175  | .008    | 17.318 |        | 463151... | 536526... | 249.75  | 249.75    | 1.045 | H1-1b  |
| 68 | 2      | M7    | HSS18x0...   | .238    | 17.206 | .032    | 16.91  |        | 459324... | 536526... | 249.75  | 249.75    | 2.114 | H1-1b  |
| 69 | 2      | M8    | HSS18x0...   | .146    | 0      | .011    | 0      |        | 473500... | 536526... | 249.75  | 249.75    | 1.668 | H1-1b  |
| 70 | 2      | M29   | L5x5x6       | .094    | 6.822  | .004    | 0      | y      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 71 | 2      | M30   | L5x5x6       | .094    | 6.822  | .004    | 0      | z      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 72 | 2      | M31   | L5x5x6       | .082    | 6.822  | .004    | 0      | y      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 73 | 2      | M32   | L5x5x6       | .082    | 6.822  | .004    | 0      | z      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 74 | 2      | M33   | L5x5x6       | .085    | 6.822  | .003    | 0      | y      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 75 | 2      | M34   | L5x5x6       | .085    | 6.822  | .004    | 0      | z      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 76 | 2      | M35   | L5x5x6       | .086    | 6.822  | .004    | 0      | y      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 77 | 2      | M36   | L5x5x6       | .086    | 6.822  | .004    | 0      | z      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 78 | 2      | M37   | L5x5x6       | .087    | 6.822  | .004    | 0      | y      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 79 | 2      | M38   | L5x5x6       | .087    | 6.822  | .004    | 0      | z      | 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 80 | 2      | M39   | L5x5x6       | .092    | 7.613  | .004    | 15.226 | y      | 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 81 | 2      | M40   | L5x5x6       | .060    | 7.613  | .004    | 0      | y      | 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 82 | 2      | M41   | L5x5x6       | .090    | 7.454  | .004    | 15.226 | y      | 15976...  | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 83 | 2      | M42   | L5x5x6       | .063    | 7.613  | .004    | 0      | y      | 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 84 | 2      | M43   | L3.5x3.5x5   | .330    | 9.699  | .005    | 0      | z      | 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1   |
| 85 | 2      | M44   | L3.5x3.5x5   | .359    | 9.699  | .005    | 0      | z      | 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1   |
| 86 | 2      | M45   | L5x5x3/8 ... | .443    | 15.848 | .007    | 0      | z      | 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1   |
| 87 | 2      | M46   | L5x5x3/8 ... | .361    | 15.848 | .007    | 0      | z      | 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1   |
| 88 | 2      | M47   | WT6x15       | .158    | 0      | .003    | 0      | y      | 51096...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b* |



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

| LC  | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om... | Mnyy/o... | Mnzz/o... | Cb        | Eqn          |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|-----------|-----------|-----------|-----------|--------------|
| 89  | 2      | M48   | WT6x15       | .168    | 0         | .005    | 0      | y         | 51096...  | 94850...  | 8.587     | 4.949     | 2.308 H1-1b  |
| 90  | 2      | M49   | WT6x15       | .096    | 6.048     | .005    | 12.096 | y         | 53179...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 91  | 2      | M50   | WT6x15       | .096    | 6.048     | .005    | 12.096 | y         | 53179...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 92  | 2      | M51   | WT6x15       | .239    | 6.26      | .003    | 0      | y         | 50651...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1a  |
| 93  | 2      | M52   | WT6x15       | .244    | 6.26      | .002    | 12.787 | y         | 50651...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1a  |
| 94  | 2      | M53   | WT6x15       | .099    | 6.005     | .005    | 12.011 | y         | 53489...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 95  | 2      | M54   | WT6x15       | .101    | 6.005     | .005    | 12.011 | y         | 53489...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 96  | 2      | M55   | WT6x15       | .172    | 0         | .002    | 12.885 | y         | 50288...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 97  | 2      | M56   | WT6x15       | .176    | 0         | .002    | 12.885 | y         | 50288...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 98  | 2      | M57   | WT6x15       | .089    | 6.07      | .005    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 99  | 2      | M58   | WT6x15       | .090    | 6.07      | .005    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 100 | 2      | M59   | WT6x15       | .105    | 0         | .002    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 101 | 2      | M60   | WT6x15       | .109    | 0         | .003    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 102 | 2      | M61   | WT6x15       | .102    | 6.07      | .005    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 103 | 2      | M62   | WT6x15       | .103    | 6.07      | .005    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 104 | 2      | M63   | WT6x15       | .186    | 0         | .004    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 105 | 2      | M64   | WT6x15       | .189    | 0         | .004    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b* |
| 106 | 2      | M65   | WT6x15       | .062    | 5.741     | .006    | 0      | y         | 55390...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 107 | 2      | M66   | WT6x15       | .063    | 5.741     | .006    | 0      | y         | 55390...  | 94850...  | 8.587     | 7.919     | 1.136 H1-1b  |
| 108 | 2      | M71   | HSS8x4x4     | .027    | 13.5      | .005    | 0      | z         | 68324...  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 109 | 2      | M72   | HSS8x4x4     | .027    | 0         | .005    | 13.5   | z         | 68324...  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 110 | 2      | M75   | HSS6x4x4     | .033    | 0         | .004    | 0      | y         | 35045...  | 92694...  | 11.587    | 15.323    | 2.381 H1-1b  |
| 111 | 2      | M76   | HSS6x4x4     | .033    | 18.182    | .004    | 18.182 | y         | 35045...  | 92694...  | 11.587    | 15.323    | 2.381 H1-1b  |
| 112 | 2      | M77   | HSS6x4x4     | .049    | 17.321    | .005    | 0      | z         | 38408...  | 92694...  | 11.587    | 15.323    | 2.381 H1-1b  |
| 113 | 2      | M76A  | L4x4x5/16... | .022    | 0         | .002    | 0      | y         | 39908...  | 81697...  | 3.706     | 6.632     | 3 H2-1       |
| 114 | 2      | M77A  | L4x4x5/16... | .034    | 0         | .002    | 0      | y         | 39908...  | 81697...  | 3.706     | 6.632     | 2.727 H2-1   |
| 115 | 2      | M78   | L4x4x5/16... | .084    | 14.72     | .002    | 14.72  | y         | 11074...  | 81697...  | 3.706     | 6.632     | 2.75 H2-1    |
| 116 | 2      | M79   | L4x4x5/16... | .061    | 14.72     | .002    | 0      | y         | 11074...  | 81697...  | 3.706     | 6.632     | 2.286 H2-1   |
| 117 | 2      | M84   | PIPE 3.0     | .119    | 12.5      | .004    | 12.5   |           | 18796...  | 43383...  | 3.825     | 3.825     | 1.267 H1-1b  |
| 118 | 2      | M85   | PIPE 3.0     | .119    | 0         | .004    | 0      |           | 18796...  | 43383...  | 3.825     | 3.825     | 1.267 H1-1b  |
| 119 | 2      | M86   | PIPE 3.0     | .125    | 12.5      | .005    | 12.5   |           | 18796...  | 43383...  | 3.825     | 3.825     | 1.267 H1-1b  |
| 120 | 2      | M87   | HSS4x0.2...  | .349    | 0         | .024    | 0      |           | 47654...  | 59497...  | 5.946     | 5.946     | 2.195 H1-1b  |
| 121 | 2      | M88   | HSS4x0.2...  | .357    | 0         | .024    | 0      |           | 47654...  | 59497...  | 5.946     | 5.946     | 2.194 H1-1b  |
| 122 | 2      | M89   | HSS4x0.2...  | .349    | 0         | .024    | 0      |           | 47654...  | 59497...  | 5.946     | 5.946     | 2.195 H1-1b  |
| 123 | 3      | M1    | W24x68 w...  | .126    | 0         | .039    | 0      | y         | 1.1562... | 1.5522... | 375.833   | 1420.0... | 1.905 H1-1b  |
| 124 | 3      | M2    | W24x68 w...  | .129    | 0         | .040    | 3.76   | y         | 1.1562... | 1.5522... | 375.833   | 1420.0... | 1.901 H1-1b  |
| 125 | 3      | M3    | W24x68       | .083    | 2.514     | .012    | 0      | y         | 328006... | 601796... | 61.128    | 337.623   | 1 H1-1b      |
| 126 | 3      | M4    | W24x68       | .087    | 2.514     | .013    | 0      | y         | 328006... | 601796... | 61.128    | 337.623   | 1 H1-1b      |
| 127 | 3      | M5    | HSS18x0...   | .287    | 0         | .008    | 0      |           | 457542... | 536526... | 249.75    | 249.75    | 2.105 H1-1a  |
| 128 | 3      | M6    | HSS18x0...   | .177    | 0         | .008    | 17.318 |           | 463151... | 536526... | 249.75    | 249.75    | 1.405 H1-1b* |
| 129 | 3      | M7    | HSS18x0...   | .255    | 16.91     | .032    | 16.91  |           | 459324... | 536526... | 249.75    | 249.75    | 2.069 H1-1b  |
| 130 | 3      | M8    | HSS18x0...   | .146    | 0         | .011    | 0      |           | 473500... | 536526... | 249.75    | 249.75    | 1.665 H1-1b  |
| 131 | 3      | M29   | L5x5x6       | .111    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 132 | 3      | M30   | L5x5x6       | .111    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 133 | 3      | M31   | L5x5x6       | .054    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 134 | 3      | M32   | L5x5x6       | .054    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 135 | 3      | M33   | L5x5x6       | .054    | 6.822     | .003    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 136 | 3      | M34   | L5x5x6       | .054    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 137 | 3      | M35   | L5x5x6       | .055    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 138 | 3      | M36   | L5x5x6       | .055    | 6.822     | .003    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 139 | 3      | M37   | L5x5x6       | .057    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 140 | 3      | M38   | L5x5x6       | .058    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 H2-1   |
| 141 | 3      | M39   | L5x5x6       | .066    | 7.613     | .004    | 0      | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 H2-1   |
| 142 | 3      | M40   | L5x5x6       | .093    | 7.613     | .004    | 0      | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 H2-1   |
| 143 | 3      | M41   | L5x5x6       | .060    | 7.613     | .004    | 15.226 | y         | 15976...  | 78682...  | 4.935     | 7.829     | 1.136 H2-1   |
| 144 | 3      | M42   | L5x5x6       | .092    | 7.613     | .004    | 15.226 | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 H2-1   |
| 145 | 3      | M43   | L3.5x3.5x5   | .254    | 9.906     | .005    | 0      | z         | 10481...  | 45269...  | 1.918     | 2.577     | 1.136 H2-1   |



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

| LC  | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om ... | Mnyv/o... | Mnzz/o... | Cb        | Eqn          |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|------------|-----------|-----------|-----------|--------------|
| 146 | 3      | M44   | L3.5x3.5x5   | .205    | 9.906     | .005    | 0      | z         | 10481....  | 45269.... | 1.918     | 2.577     | 1.136 H2-1   |
| 147 | 3      | M45   | L5x5x3/8 ... | .269    | 16.185    | .007    | 0      | z         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 148 | 3      | M46   | L5x5x3/8 ... | .339    | 16.185    | .007    | 0      | z         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 149 | 3      | M47   | WT6x15       | .099    | 6.333     | .006    | 12.666 | y         | 51096....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 150 | 3      | M48   | WT6x15       | .139    | 12.666    | .008    | 12.666 | y         | 51096....  | 94850.... | 8.587     | 4.949     | 2.592 H1-1b  |
| 151 | 3      | M49   | WT6x15       | .149    | 0         | .003    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 152 | 3      | M50   | WT6x15       | .150    | 0         | .003    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 153 | 3      | M51   | WT6x15       | .115    | 6.393     | .005    | 0      | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 154 | 3      | M52   | WT6x15       | .116    | 6.393     | .005    | 0      | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 155 | 3      | M53   | WT6x15       | .167    | 0         | .003    | 12.011 | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 156 | 3      | M54   | WT6x15       | .172    | 0         | .003    | 0      | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 157 | 3      | M55   | WT6x15       | .106    | 6.443     | .005    | 0      | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 158 | 3      | M56   | WT6x15       | .107    | 6.443     | .005    | 0      | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 159 | 3      | M57   | WT6x15       | .127    | 0         | .003    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 160 | 3      | M58   | WT6x15       | .131    | 0         | .003    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 161 | 3      | M59   | WT6x15       | .089    | 6.369     | .005    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 162 | 3      | M60   | WT6x15       | .090    | 6.369     | .005    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 163 | 3      | M61   | WT6x15       | .177    | 0         | .003    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 164 | 3      | M62   | WT6x15       | .181    | 0         | .003    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 165 | 3      | M63   | WT6x15       | .111    | 6.369     | .007    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 166 | 3      | M64   | WT6x15       | .112    | 6.369     | .007    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 167 | 3      | M65   | WT6x15       | .062    | 5.741     | .004    | 11.482 | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 168 | 3      | M66   | WT6x15       | .064    | 5.741     | .005    | 0      | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 169 | 3      | M71   | HSS8x4x4     | .027    | 0         | .005    | 0      | z         | 68324....  | 112958..  | 14.731    | 23.892    | 2.381 H1-1b  |
| 170 | 3      | M72   | HSS8x4x4     | .027    | 13.5      | .005    | 13.5   | z         | 68324....  | 112958..  | 14.731    | 23.892    | 2.381 H1-1b  |
| 171 | 3      | M75   | HSS6x4x4     | .033    | 18.182    | .004    | 0      | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 172 | 3      | M76   | HSS6x4x4     | .033    | 0         | .004    | 18.182 | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 173 | 3      | M77   | HSS6x4x4     | .049    | 0         | .005    | 0      | z         | 38408....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 174 | 3      | M76A  | L4x4x5/16... | .014    | 7.571     | .001    | 7.571  | y         | 39908....  | 81697.... | 3.706     | 6.632     | 1.693 H2-1   |
| 175 | 3      | M77A  | L4x4x5/16... | .007    | 7.571     | .001    | 7.571  | z         | 39908....  | 81697.... | 3.706     | 6.632     | 2.067 H2-1   |
| 176 | 3      | M78   | L4x4x5/16... | .114    | 14.72     | .003    | 14.72  | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.377 H2-1   |
| 177 | 3      | M79   | L4x4x5/16... | .117    | 14.72     | .003    | 14.72  | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.889 H2-1   |
| 178 | 3      | M84   | PIPE 3.0     | .121    | 12.5      | .004    | 12.5   |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.269 H1-1b  |
| 179 | 3      | M85   | PIPE 3.0     | .121    | 0         | .004    | 0      |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.269 H1-1b  |
| 180 | 3      | M86   | PIPE 3.0     | .122    | 0         | .005    | 0      |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.265 H1-1b  |
| 181 | 3      | M87   | HSS4x0.2...  | .353    | 0         | .025    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.194 H1-1b  |
| 182 | 3      | M88   | HSS4x0.2...  | .349    | 0         | .024    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.196 H1-1b  |
| 183 | 3      | M89   | HSS4x0.2...  | .353    | 0         | .025    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.194 H1-1b  |
| 184 | 4      | M1    | W24x68 w...  | .151    | 0         | .021    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.172 H1-1b  |
| 185 | 4      | M2    | W24x68 w...  | .136    | 0         | .020    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.185 H1-1b  |
| 186 | 4      | M3    | W24x68       | .183    | 5.028     | .025    | 1.886  | y         | 328006..   | 601796..  | 61.128    | 149.801   | 3 H1-1b      |
| 187 | 4      | M4    | W24x68       | .111    | 0         | .024    | 1.886  | y         | 328006..   | 601796..  | 61.128    | 148.603   | 2.976 H1-1b  |
| 188 | 4      | M5    | HSS18x0....  | .110    | 0         | .015    | 0      |           | 457542..   | 536526..  | 249.75    | 249.75    | 2.289 H1-1b  |
| 189 | 4      | M6    | HSS18x0....  | .028    | 0         | .010    | 3.175  |           | 463151..   | 536526..  | 249.75    | 249.75    | 2.192 H1-1b* |
| 190 | 4      | M7    | HSS18x0....  | .039    | 16.91     | .008    | 16.91  |           | 459324..   | 536526..  | 249.75    | 249.75    | 1.698 H1-1b  |
| 191 | 4      | M8    | HSS18x0....  | .014    | 12.771    | .005    | 0      |           | 473500..   | 536526..  | 249.75    | 249.75    | 1.164 H1-1b  |
| 192 | 4      | M29   | L5x5x6       | .067    | 6.822     | .005    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 193 | 4      | M30   | L5x5x6       | .068    | 6.822     | .005    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 194 | 4      | M31   | L5x5x6       | .068    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 195 | 4      | M32   | L5x5x6       | .068    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 196 | 4      | M33   | L5x5x6       | .070    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 197 | 4      | M34   | L5x5x6       | .070    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 198 | 4      | M35   | L5x5x6       | .068    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 199 | 4      | M36   | L5x5x6       | .068    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 200 | 4      | M37   | L5x5x6       | .067    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 201 | 4      | M38   | L5x5x6       | .068    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 202 | 4      | M39   | L5x5x6       | .122    | 7.613     | .005    | 0      | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |



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

| LC  | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om ... | Mny/o...  | Mnzz/o... | Cb        | Eqn          |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|------------|-----------|-----------|-----------|--------------|
| 203 | 4      | M40   | L5x5x6       | .120    | 7.454     | .003    | 15.226 | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 204 | 4      | M41   | L5x5x6       | .138    | 7.613     | .004    | 0      | y         | 15976....  | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 205 | 4      | M42   | L5x5x6       | .142    | 7.454     | .003    | 15.226 | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 206 | 4      | M43   | L3.5x3.5x5   | .323    | 9.08      | .001    | 19.812 | y         | 10481....  | 45269.... | 1.918     | 2.577     | 1.136 H2-1   |
| 207 | 4      | M44   | L3.5x3.5x5   | .306    | 9.906     | .006    | 19.812 | y         | 10481....  | 45269.... | 1.918     | 2.577     | 1.136 H2-1   |
| 208 | 4      | M45   | L5x5x3/8 ... | .096    | 0         | .000    | 32.37  | y         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 209 | 4      | M46   | L5x5x3/8 ... | .457    | 15.848    | .010    | 32.37  | y         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 210 | 4      | M47   | WT6x15       | .168    | 0         | .004    | 0      | y         | 51096....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 211 | 4      | M48   | WT6x15       | .211    | 12.666    | .010    | 12.666 | y         | 51096....  | 94850.... | 8.587     | 4.949     | 2.152 H1-1b  |
| 212 | 4      | M49   | WT6x15       | .106    | 6.048     | .006    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 213 | 4      | M50   | WT6x15       | .181    | 0         | .004    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 214 | 4      | M51   | WT6x15       | .062    | 6.26      | .004    | 0      | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 215 | 4      | M52   | WT6x15       | .071    | 6.393     | .006    | 0      | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 216 | 4      | M53   | WT6x15       | .057    | 6.005     | .005    | 12.011 | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 217 | 4      | M54   | WT6x15       | .043    | 6.005     | .004    | 12.011 | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 218 | 4      | M55   | WT6x15       | .064    | 6.308     | .004    | 12.885 | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 219 | 4      | M56   | WT6x15       | .073    | 6.443     | .007    | 0      | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 220 | 4      | M57   | WT6x15       | .062    | 6.07      | .006    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 221 | 4      | M58   | WT6x15       | .051    | 6.07      | .004    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 222 | 4      | M59   | WT6x15       | .059    | 6.236     | .004    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 223 | 4      | M60   | WT6x15       | .071    | 6.369     | .007    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 224 | 4      | M61   | WT6x15       | .065    | 6.07      | .006    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 225 | 4      | M62   | WT6x15       | .059    | 6.07      | .004    | 12.139 | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 226 | 4      | M63   | WT6x15       | .047    | 6.236     | .004    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 227 | 4      | M64   | WT6x15       | .066    | 6.369     | .006    | 0      | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 228 | 4      | M65   | WT6x15       | .057    | 5.741     | .006    | 0      | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 229 | 4      | M66   | WT6x15       | .040    | 5.741     | .005    | 11.482 | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 230 | 4      | M71   | HSS8x4x4     | .011    | 0         | .003    | 0      | y         | 68324....  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 231 | 4      | M72   | HSS8x4x4     | .011    | 13.5      | .003    | 13.5   | y         | 68324....  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 232 | 4      | M75   | HSS6x4x4     | .046    | 0         | .004    | 18.182 | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 233 | 4      | M76   | HSS6x4x4     | .046    | 0         | .004    | 18.182 | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 234 | 4      | M77   | HSS6x4x4     | .024    | 0         | .004    | 0      | y         | 38408....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 235 | 4      | M76A  | L4x4x5/16... | .017    | 7.571     | .001    | 7.571  | z         | 39908....  | 81697.... | 3.706     | 6.632     | 3 H2-1       |
| 236 | 4      | M77A  | L4x4x5/16... | .018    | 7.571     | .001    | 7.571  | y         | 39908....  | 81697.... | 3.706     | 6.632     | 3 H2-1       |
| 237 | 4      | M78   | L4x4x5/16... | .048    | 0         | .003    | 0      | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.415 H2-1   |
| 238 | 4      | M79   | L4x4x5/16... | .124    | 14.72     | .003    | 0      | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.452 H2-1   |
| 239 | 4      | M84   | PIPE 3.0     | .122    | 12.5      | .004    | 12.5   |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.265 H1-1b  |
| 240 | 4      | M85   | PIPE 3.0     | .120    | 0         | .004    | 0      |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.264 H1-1b  |
| 241 | 4      | M86   | PIPE 3.0     | .118    | 0         | .004    | 0      |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.265 H1-1b  |
| 242 | 4      | M87   | HSS4x0.2...  | .357    | 0         | .024    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.194 H1-1b  |
| 243 | 4      | M88   | HSS4x0.2...  | .354    | 0         | .025    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.194 H1-1b  |
| 244 | 4      | M89   | HSS4x0.2...  | .353    | 0         | .024    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.195 H1-1b  |
| 245 | 5      | M1    | W24x68 w...  | .133    | 0         | .020    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.184 H1-1b  |
| 246 | 5      | M2    | W24x68 w...  | .152    | 0         | .021    | 19     | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.174 H1-1b  |
| 247 | 5      | M3    | W24x68       | .110    | 0         | .024    | 1.886  | y         | 328006...  | 601796... | 61.128    | 148.62    | 2.976 H1-1b  |
| 248 | 5      | M4    | W24x68       | .178    | 5.028     | .025    | 1.886  | y         | 328006...  | 601796... | 61.128    | 149.801   | 3 H1-1b      |
| 249 | 5      | M5    | HSS18x0....  | .109    | 0         | .015    | 0      |           | 457542...  | 536526... | 249.75    | 249.75    | 2.277 H1-1b  |
| 250 | 5      | M6    | HSS18x0....  | .028    | 0         | .010    | 3.175  |           | 463151...  | 536526... | 249.75    | 249.75    | 2.478 H1-1b* |
| 251 | 5      | M7    | HSS18x0....  | .039    | 16.91     | .008    | 16.91  |           | 459324...  | 536526... | 249.75    | 249.75    | 1.715 H1-1b  |
| 252 | 5      | M8    | HSS18x0....  | .014    | 12.771    | .005    | 0      |           | 473500...  | 536526... | 249.75    | 249.75    | 1.163 H1-1b  |
| 253 | 5      | M29   | L5x5x6       | .067    | 6.822     | .005    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 254 | 5      | M30   | L5x5x6       | .066    | 6.822     | .005    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 255 | 5      | M31   | L5x5x6       | .068    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 256 | 5      | M32   | L5x5x6       | .068    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 257 | 5      | M33   | L5x5x6       | .070    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 258 | 5      | M34   | L5x5x6       | .070    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 259 | 5      | M35   | L5x5x6       | .068    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |





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

| LC  | Member | Shape | UC Max       | Loc(ft) | Shear ... | Loc(ft) | Dir    | Pnc/om... | Pnt/om... | Mnvy/o... | Mnzz/o... | Cb        | Eqn   |        |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|-----------|-----------|-----------|-----------|-------|--------|
| 260 | 5      | M36   | L5x5x6       | .068    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 261 | 5      | M37   | L5x5x6       | .068    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 262 | 5      | M38   | L5x5x6       | .067    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 263 | 5      | M39   | L5x5x6       | .120    | 7.454     | .004    | 15.226 | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 264 | 5      | M40   | L5x5x6       | .122    | 7.613     | .004    | 0      | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 265 | 5      | M41   | L5x5x6       | .311    | 7.296     | .003    | 15.226 | y         | 15976...  | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 266 | 5      | M42   | L5x5x6       | .138    | 7.613     | .004    | 0      | y         | 49600.6   | 78682...  | 4.935     | 7.829     | 1.136 | H2-1   |
| 267 | 5      | M43   | L3.5x3.5x5   | .305    | 9.906     | .006    | 19.812 | y         | 10481...  | 45269...  | 1.918     | 2.577     | 1.136 | H2-1   |
| 268 | 5      | M44   | L3.5x3.5x5   | .322    | 9.08      | .001    | 0      | y         | 10481...  | 45269...  | 1.918     | 2.577     | 1.136 | H2-1   |
| 269 | 5      | M45   | L5x5x3/8 ... | .457    | 15.848    | .010    | 0      | y         | 20518...  | 113307... | 7.087     | 5.185     | 1.136 | H2-1   |
| 270 | 5      | M46   | L5x5x3/8 ... | .096    | 0         | .000    | 0      | y         | 20518...  | 113307... | 7.087     | 5.185     | 1.136 | H2-1   |
| 271 | 5      | M47   | WT6x15       | .103    | 6.333     | .006    | 0      | y         | 51096...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 272 | 5      | M48   | WT6x15       | .235    | 0         | .008    | 0      | y         | 51096...  | 94850...  | 8.587     | 4.949     | 2.622 | H1-1b  |
| 273 | 5      | M49   | WT6x15       | .181    | 0         | .004    | 0      | y         | 53179...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b* |
| 274 | 5      | M50   | WT6x15       | .106    | 6.048     | .006    | 0      | y         | 53179...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 275 | 5      | M51   | WT6x15       | .072    | 6.393     | .006    | 12.787 | y         | 50651...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 276 | 5      | M52   | WT6x15       | .062    | 6.26      | .004    | 0      | y         | 50651...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 277 | 5      | M53   | WT6x15       | .043    | 6.005     | .004    | 0      | y         | 53489...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 278 | 5      | M54   | WT6x15       | .057    | 6.005     | .006    | 12.011 | y         | 53489...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 279 | 5      | M55   | WT6x15       | .073    | 6.443     | .007    | 0      | y         | 50288...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 280 | 5      | M56   | WT6x15       | .064    | 6.308     | .004    | 12.885 | y         | 50288...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 281 | 5      | M57   | WT6x15       | .051    | 6.07      | .004    | 12.139 | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 282 | 5      | M58   | WT6x15       | .062    | 6.07      | .006    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 283 | 5      | M59   | WT6x15       | .071    | 6.369     | .007    | 0      | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 284 | 5      | M60   | WT6x15       | .059    | 6.236     | .004    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 285 | 5      | M61   | WT6x15       | .059    | 6.07      | .004    | 12.139 | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 286 | 5      | M62   | WT6x15       | .065    | 6.07      | .006    | 0      | y         | 53022...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 287 | 5      | M63   | WT6x15       | .066    | 6.369     | .006    | 0      | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 288 | 5      | M64   | WT6x15       | .047    | 6.236     | .004    | 12.738 | y         | 50830...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 289 | 5      | M65   | WT6x15       | .040    | 5.741     | .005    | 11.482 | y         | 55390...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 290 | 5      | M66   | WT6x15       | .057    | 5.741     | .006    | 0      | y         | 55390...  | 94850...  | 8.587     | 7.919     | 1.136 | H1-1b  |
| 291 | 5      | M71   | HSS8x4x4     | .011    | 13.5      | .003    | 13.5   | y         | 68324...  | 112958... | 14.731    | 23.892    | 2.381 | H1-1b  |
| 292 | 5      | M72   | HSS8x4x4     | .011    | 0         | .003    | 0      | y         | 68324...  | 112958... | 14.731    | 23.892    | 2.381 | H1-1b  |
| 293 | 5      | M75   | HSS6x4x4     | .046    | 18.182    | .004    | 0      | y         | 35045...  | 92694...  | 11.587    | 15.323    | 2.381 | H1-1b  |
| 294 | 5      | M76   | HSS6x4x4     | .046    | 18.182    | .004    | 0      | y         | 35045...  | 92694...  | 11.587    | 15.323    | 2.381 | H1-1b  |
| 295 | 5      | M77   | HSS6x4x4     | .024    | 17.321    | .004    | 17.321 | y         | 38408...  | 92694...  | 11.587    | 15.323    | 2.381 | H1-1b  |
| 296 | 5      | M76A  | L4x4x5/16... | .022    | 7.571     | .001    | 7.571  | y         | 39908...  | 81697...  | 3.706     | 6.632     | 1.078 | H2-1   |
| 297 | 5      | M77A  | L4x4x5/16... | .020    | 0         | .001    | 0      | z         | 39908...  | 81697...  | 3.706     | 6.632     | 1.249 | H2-1   |
| 298 | 5      | M78   | L4x4x5/16... | .156    | 14.72     | .003    | 14.72  | y         | 11074...  | 81697...  | 3.706     | 6.632     | 2.811 | H2-1   |
| 299 | 5      | M79   | L4x4x5/16... | .069    | 14.72     | .003    | 14.72  | y         | 11074...  | 81697...  | 3.706     | 6.632     | 2.722 | H2-1   |
| 300 | 5      | M84   | PIPE 3.0     | .120    | 12.5      | .004    | 12.5   | y         | 18796...  | 43383...  | 3.825     | 3.825     | 1.264 | H1-1b  |
| 301 | 5      | M85   | PIPE 3.0     | .122    | 0         | .004    | 0      | y         | 18796...  | 43383...  | 3.825     | 3.825     | 1.265 | H1-1b  |
| 302 | 5      | M86   | PIPE 3.0     | .118    | 12.5      | .004    | 12.5   | y         | 18796...  | 43383...  | 3.825     | 3.825     | 1.265 | H1-1b  |
| 303 | 5      | M87   | HSS4x0.2...  | .353    | 0         | .024    | 0      | y         | 47654...  | 59497...  | 5.946     | 5.946     | 2.195 | H1-1b  |
| 304 | 5      | M88   | HSS4x0.2...  | .354    | 0         | .025    | 0      | y         | 47654...  | 59497...  | 5.946     | 5.946     | 2.194 | H1-1b  |
| 305 | 5      | M89   | HSS4x0.2...  | .357    | 0         | .024    | 0      | y         | 47654...  | 59497...  | 5.946     | 5.946     | 2.194 | H1-1b  |
| 306 | 6      | M1    | W24x68 w...  | .052    | 0         | .013    | 0      | y         | 1.1562... | 1.5522... | 375.833   | 1420.0... | 1.935 | H1-1b  |
| 307 | 6      | M2    | W24x68 w...  | .050    | 0         | .012    | 4.354  | y         | 1.1562... | 1.5522... | 375.833   | 1420.0... | 1.942 | H1-1b  |
| 308 | 6      | M3    | W24x68       | .136    | 55.309    | .016    | 59.08  | y         | 328006... | 601796... | 61.128    | 149.801   | 3     | H1-1b  |
| 309 | 6      | M4    | W24x68       | .132    | 55.309    | .015    | 59.08  | y         | 328006... | 601796... | 61.128    | 149.801   | 3     | H1-1b  |
| 310 | 6      | M5    | HSS18x0...   | .038    | 0         | .002    | 0      | y         | 457542... | 536526... | 249.75    | 249.75    | 1.545 | H1-1b  |
| 311 | 6      | M6    | HSS18x0...   | .020    | 3.175     | .002    | 17.318 | y         | 463151... | 536526... | 249.75    | 249.75    | 1.094 | H1-1b  |
| 312 | 6      | M7    | HSS18x0...   | .082    | 17.206    | .010    | 16.91  | y         | 459324... | 536526... | 249.75    | 249.75    | 2.073 | H1-1b  |
| 313 | 6      | M8    | HSS18x0...   | .052    | 0         | .004    | 0      | y         | 473500... | 536526... | 249.75    | 249.75    | 1.667 | H1-1b  |
| 314 | 6      | M29   | L5x5x6       | .075    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 315 | 6      | M30   | L5x5x6       | .075    | 6.822     | .004    | 0      | z         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |
| 316 | 6      | M31   | L5x5x6       | .072    | 6.822     | .004    | 0      | y         | 19897...  | 78682...  | 4.935     | 8.139     | 1.136 | H2-1   |



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

| LC  | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om ... | Mny/o...  | Mnzz/o... | Cb        | Eqn          |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|------------|-----------|-----------|-----------|--------------|
| 317 | 6      | M32   | L5x5x6       | .072    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 318 | 6      | M33   | L5x5x6       | .078    | 6.822     | .003    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 319 | 6      | M34   | L5x5x6       | .078    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 320 | 6      | M35   | L5x5x6       | .074    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 321 | 6      | M36   | L5x5x6       | .074    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 322 | 6      | M37   | L5x5x6       | .093    | 6.822     | .004    | 0      | y         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 323 | 6      | M38   | L5x5x6       | .094    | 6.822     | .004    | 0      | z         | 19897....  | 78682.... | 4.935     | 8.139     | 1.136 H2-1   |
| 324 | 6      | M39   | L5x5x6       | .079    | 7.613     | .004    | 0      | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 325 | 6      | M40   | L5x5x6       | .071    | 7.613     | .004    | 0      | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 326 | 6      | M41   | L5x5x6       | .082    | 7.454     | .004    | 0      | y         | 15976....  | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 327 | 6      | M42   | L5x5x6       | .070    | 7.613     | .004    | 0      | y         | 49600.6    | 78682.... | 4.935     | 7.829     | 1.136 H2-1   |
| 328 | 6      | M43   | L3.5x3.5x5   | .217    | 9.699     | .003    | 0      | y         | 10481....  | 45269.... | 1.918     | 2.577     | 1.136 H2-1   |
| 329 | 6      | M44   | L3.5x3.5x5   | .243    | 9.699     | .003    | 0      | y         | 10481....  | 45269.... | 1.918     | 2.577     | 1.136 H2-1   |
| 330 | 6      | M45   | L5x5x3/8 ... | .315    | 15.848    | .005    | 0      | y         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 331 | 6      | M46   | L5x5x3/8 ... | .291    | 15.848    | .005    | 32.37  | y         | 20518....  | 113307... | 7.087     | 5.185     | 1.136 H2-1   |
| 332 | 6      | M47   | WT6x15       | .058    | 6.333     | .003    | 12.666 | y         | 51096....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 333 | 6      | M48   | WT6x15       | .078    | 0         | .004    | 0      | y         | 51096....  | 94850.... | 8.587     | 4.949     | 2.508 H1-1b  |
| 334 | 6      | M49   | WT6x15       | .051    | 6.048     | .004    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 335 | 6      | M50   | WT6x15       | .051    | 6.048     | .004    | 12.096 | y         | 53179....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 336 | 6      | M51   | WT6x15       | .069    | 0         | .003    | 12.787 | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 337 | 6      | M52   | WT6x15       | .067    | 0         | .003    | 0      | y         | 50651....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 338 | 6      | M53   | WT6x15       | .052    | 6.005     | .004    | 0      | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 339 | 6      | M54   | WT6x15       | .052    | 6.005     | .004    | 0      | y         | 53489....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 340 | 6      | M55   | WT6x15       | .057    | 6.308     | .003    | 12.885 | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 341 | 6      | M56   | WT6x15       | .056    | 6.308     | .003    | 12.885 | y         | 50288....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 342 | 6      | M57   | WT6x15       | .047    | 6.07      | .004    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 343 | 6      | M58   | WT6x15       | .047    | 6.07      | .004    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 344 | 6      | M59   | WT6x15       | .060    | 6.369     | .003    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 345 | 6      | M60   | WT6x15       | .059    | 6.369     | .003    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 346 | 6      | M61   | WT6x15       | .058    | 6.07      | .004    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 347 | 6      | M62   | WT6x15       | .058    | 6.07      | .004    | 0      | y         | 53022....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 348 | 6      | M63   | WT6x15       | .098    | 0         | .004    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 349 | 6      | M64   | WT6x15       | .096    | 0         | .004    | 12.738 | y         | 50830....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b* |
| 350 | 6      | M65   | WT6x15       | .048    | 5.741     | .004    | 0      | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 351 | 6      | M66   | WT6x15       | .048    | 5.741     | .004    | 11.482 | y         | 55390....  | 94850.... | 8.587     | 7.919     | 1.136 H1-1b  |
| 352 | 6      | M71   | HSS8x4x4     | .016    | 0         | .003    | 0      | y         | 68324....  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 353 | 6      | M72   | HSS8x4x4     | .016    | 13.5      | .003    | 13.5   | y         | 68324....  | 112958... | 14.731    | 23.892    | 2.381 H1-1b  |
| 354 | 6      | M75   | HSS6x4x4     | .028    | 0         | .004    | 0      | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 355 | 6      | M76   | HSS6x4x4     | .028    | 18.182    | .004    | 18.182 | y         | 35045....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 356 | 6      | M77   | HSS6x4x4     | .032    | 0         | .004    | 0      | y         | 38408....  | 92694.... | 11.587    | 15.323    | 2.381 H1-1b  |
| 357 | 6      | M76A  | L4x4x5/16... | .093    | 0         | .002    | 0      | y         | 39908....  | 81697.... | 3.706     | 6.632     | 2.892 H2-1   |
| 358 | 6      | M77A  | L4x4x5/16... | .104    | 0         | .002    | 0      | y         | 39908....  | 81697.... | 3.706     | 6.632     | 2.71 H2-1    |
| 359 | 6      | M78   | L4x4x5/16... | .084    | 0         | .003    | 0      | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.202 H2-1   |
| 360 | 6      | M79   | L4x4x5/16... | .084    | 0         | .003    | 0      | y         | 11074....  | 81697.... | 3.706     | 6.632     | 2.25 H2-1    |
| 361 | 6      | M84   | PIPE 3.0     | .192    | 12.5      | .004    | 12.5   |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.148 H1-1b  |
| 362 | 6      | M85   | PIPE 3.0     | .192    | 0         | .004    | 0      |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.148 H1-1b  |
| 363 | 6      | M86   | PIPE 3.0     | .193    | 12.5      | .004    | 12.5   |           | 18796....  | 43383.... | 3.825     | 3.825     | 1.147 H1-1b  |
| 364 | 6      | M87   | HSS4x0.2...  | .596    | 0         | .039    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.173 H1-1b  |
| 365 | 6      | M88   | HSS4x0.2...  | .601    | 0         | .039    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.173 H1-1b  |
| 366 | 6      | M89   | HSS4x0.2...  | .596    | 0         | .039    | 0      |           | 47654....  | 59497.... | 5.946     | 5.946     | 2.173 H1-1b  |
| 367 | 7      | M1    | W24x68 w...  | .039    | 0         | .013    | 0      | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.909 H1-1b  |
| 368 | 7      | M2    | W24x68 w...  | .038    | 0         | .012    | 4.552  | y         | 1.1562...  | 1.5522... | 375.833   | 1420.0... | 1.912 H1-1b  |
| 369 | 7      | M3    | W24x68       | .135    | 54.68     | .010    | 59.08  | y         | 328006..   | 601796..  | 61.128    | 139.116   | 2.786 H1-1b  |
| 370 | 7      | M4    | W24x68       | .128    | 54.68     | .010    | 59.08  | y         | 328006..   | 601796..  | 61.128    | 138.952   | 2.783 H1-1b  |
| 371 | 7      | M5    | HSS18x0....  | .083    | 0         | .003    | 0      |           | 457542..   | 536526..  | 249.75    | 249.75    | 1.967 H1-1b* |
| 372 | 7      | M6    | HSS18x0....  | .064    | 0         | .003    | 17.318 |           | 463151..   | 536526..  | 249.75    | 249.75    | 1.128 H1-1b* |
| 373 | 7      | M7    | HSS18x0....  | .083    | 16.91     | .011    | 16.91  |           | 459324..   | 536526..  | 249.75    | 249.75    | 2.093 H1-1b  |



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

| LC  | Member | Shape | UC Max       | Loc(ft) | Shear  | Loc(ft) | Dir    | Pnc/om      | Pnt/om    | Mnvy/o  | Mnzz/o    | Cb    | Eqn   |
|-----|--------|-------|--------------|---------|--------|---------|--------|-------------|-----------|---------|-----------|-------|-------|
| 374 | 7      | M8    | HSS18x0...   | .052    | 0      | .004    | 0      | 473500.     | 536526... | 249.75  | 249.75    | 1.666 | H1-1b |
| 375 | 7      | M29   | L5x5x6       | .080    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 376 | 7      | M30   | L5x5x6       | .081    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 377 | 7      | M31   | L5x5x6       | .063    | 6.822  | .003    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 378 | 7      | M32   | L5x5x6       | .063    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 379 | 7      | M33   | L5x5x6       | .068    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 380 | 7      | M34   | L5x5x6       | .068    | 6.822  | .003    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 381 | 7      | M35   | L5x5x6       | .067    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 382 | 7      | M36   | L5x5x6       | .067    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 383 | 7      | M37   | L5x5x6       | .078    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 384 | 7      | M38   | L5x5x6       | .079    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1  |
| 385 | 7      | M39   | L5x5x6       | .071    | 7.613  | .004    | 0      | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1  |
| 386 | 7      | M40   | L5x5x6       | .082    | 7.613  | .004    | 0      | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1  |
| 387 | 7      | M41   | L5x5x6       | .071    | 7.613  | .004    | 0      | y 15976...  | 78682...  | 4.935   | 7.829     | 1.136 | H2-1  |
| 388 | 7      | M42   | L5x5x6       | .079    | 7.613  | .004    | 15.226 | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1  |
| 389 | 7      | M43   | L3.5x3.5x5   | .181    | 9.699  | .004    | 0      | y 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1  |
| 390 | 7      | M44   | L3.5x3.5x5   | .155    | 9.699  | .004    | 0      | y 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1  |
| 391 | 7      | M45   | L5x5x3/8 ... | .252    | 15.848 | .005    | 0      | y 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1  |
| 392 | 7      | M46   | L5x5x3/8 ... | .277    | 15.848 | .005    | 32.37  | y 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1  |
| 393 | 7      | M47   | WT6x15       | .052    | 6.333  | .004    | 0      | y 51096...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 394 | 7      | M48   | WT6x15       | .065    | 12.666 | .005    | 12.666 | y 51096...  | 94850...  | 8.587   | 4.949     | 2.672 | H1-1b |
| 395 | 7      | M49   | WT6x15       | .054    | 6.048  | .003    | 0      | y 53179...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 396 | 7      | M50   | WT6x15       | .054    | 6.048  | .003    | 0      | y 53179...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 397 | 7      | M51   | WT6x15       | .058    | 6.393  | .004    | 12.787 | y 50651...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 398 | 7      | M52   | WT6x15       | .058    | 6.393  | .004    | 12.787 | y 50651...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 399 | 7      | M53   | WT6x15       | .058    | 6.005  | .003    | 0      | y 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 400 | 7      | M54   | WT6x15       | .057    | 6.005  | .003    | 0      | y 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 401 | 7      | M55   | WT6x15       | .057    | 6.443  | .004    | 0      | y 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 402 | 7      | M56   | WT6x15       | .057    | 6.443  | .004    | 0      | y 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 403 | 7      | M57   | WT6x15       | .055    | 6.07   | .003    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 404 | 7      | M58   | WT6x15       | .054    | 6.07   | .003    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 405 | 7      | M59   | WT6x15       | .044    | 6.369  | .004    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 406 | 7      | M60   | WT6x15       | .044    | 6.369  | .004    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 407 | 7      | M61   | WT6x15       | .051    | 6.07   | .003    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 408 | 7      | M62   | WT6x15       | .050    | 6.07   | .004    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 409 | 7      | M63   | WT6x15       | .047    | 6.369  | .005    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 410 | 7      | M64   | WT6x15       | .047    | 6.369  | .005    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 411 | 7      | M65   | WT6x15       | .033    | 5.741  | .004    | 0      | y 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 412 | 7      | M66   | WT6x15       | .034    | 5.741  | .004    | 0      | y 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b |
| 413 | 7      | M71   | HSS8x4x4     | .016    | 13.5   | .003    | 13.5   | y 68324...  | 112958... | 14.731  | 23.892    | 2.381 | H1-1b |
| 414 | 7      | M72   | HSS8x4x4     | .016    | 0      | .003    | 0      | y 68324...  | 112958... | 14.731  | 23.892    | 2.381 | H1-1b |
| 415 | 7      | M75   | HSS6x4x4     | .028    | 18.182 | .004    | 0      | y 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b |
| 416 | 7      | M76   | HSS6x4x4     | .028    | 0      | .004    | 18.182 | y 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b |
| 417 | 7      | M77   | HSS6x4x4     | .032    | 17.321 | .004    | 17.321 | y 38408...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b |
| 418 | 7      | M76A  | L4x4x5/16... | .083    | 0      | .001    | 0      | y 39908...  | 81697...  | 3.706   | 6.632     | 2.509 | H2-1  |
| 419 | 7      | M77A  | L4x4x5/16... | .093    | 0      | .002    | 0      | y 39908...  | 81697...  | 3.706   | 6.632     | 2.657 | H2-1  |
| 420 | 7      | M78   | L4x4x5/16... | .086    | 0      | .003    | 0      | y 11074...  | 81697...  | 3.706   | 6.632     | 2.219 | H2-1  |
| 421 | 7      | M79   | L4x4x5/16... | .092    | 0      | .003    | 0      | y 11074...  | 81697...  | 3.706   | 6.632     | 2.297 | H2-1  |
| 422 | 7      | M84   | PIPE 3.0     | .192    | 12.5   | .004    | 0      | 18796...    | 43383...  | 3.825   | 3.825     | 1.148 | H1-1b |
| 423 | 7      | M85   | PIPE 3.0     | .192    | 0      | .004    | 12.5   | 18796...    | 43383...  | 3.825   | 3.825     | 1.148 | H1-1b |
| 424 | 7      | M86   | PIPE 3.0     | .193    | 0      | .004    | 0      | 18796...    | 43383...  | 3.825   | 3.825     | 1.147 | H1-1b |
| 425 | 7      | M87   | HSS4x0.2...  | .599    | 0      | .040    | 0      | 47654...    | 59497...  | 5.946   | 5.946     | 2.173 | H1-1b |
| 426 | 7      | M88   | HSS4x0.2...  | .596    | 0      | .039    | 0      | 47654...    | 59497...  | 5.946   | 5.946     | 2.173 | H1-1b |
| 427 | 7      | M89   | HSS4x0.2...  | .599    | 0      | .040    | 0      | 47654...    | 59497...  | 5.946   | 5.946     | 2.173 | H1-1b |
| 428 | 8      | M1    | W24x68 w...  | .064    | 0      | .008    | 19     | y 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.184 | H1-1b |
| 429 | 8      | M2    | W24x68 w...  | .053    | 0      | .008    | 19     | y 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.181 | H1-1b |
| 430 | 8      | M3    | W24x68       | .141    | 54.68  | .013    | 59.08  | y 328006..  | 601796..  | 61.128  | 129.85    | 2.6   | H1-1b |



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

| LC  | Member | Shape | UC Max       | Loc[ft] | Shear ... | Loc[ft] | Dir    | Pnc/om... | Pnt/om ... | Mny/o...  | Mnz/z/o... | Cb      | Eqn   |        |
|-----|--------|-------|--------------|---------|-----------|---------|--------|-----------|------------|-----------|------------|---------|-------|--------|
| 431 | 8      | M4    | W24x68       | .131    | 55.309    | .012    | 59.08  | y         | 328006...  | 601796... | 61.128     | 149.801 | 3     | H1-1b  |
| 432 | 8      | M5    | HSS18x0...   | .048    | 0         | .005    | 0      |           | 457542...  | 536526... | 249.75     | 249.75  | 2.303 | H1-1b  |
| 433 | 8      | M6    | HSS18x0...   | .017    | 0         | .003    | 3.175  |           | 463151...  | 536526... | 249.75     | 249.75  | 1.773 | H1-1b* |
| 434 | 8      | M7    | HSS18x0...   | .024    | 17.206    | .003    | 16.91  |           | 459324...  | 536526... | 249.75     | 249.75  | 1.604 | H1-1b  |
| 435 | 8      | M8    | HSS18x0...   | .013    | 0         | .001    | 0      |           | 473500...  | 536526... | 249.75     | 249.75  | 2.219 | H1-1b* |
| 436 | 8      | M29   | L5x5x6       | .067    | 6.822     | .004    | 0      | y         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 437 | 8      | M30   | L5x5x6       | .067    | 6.822     | .004    | 0      | z         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 438 | 8      | M31   | L5x5x6       | .067    | 6.822     | .003    | 0      | y         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 439 | 8      | M32   | L5x5x6       | .067    | 6.822     | .004    | 0      | z         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 440 | 8      | M33   | L5x5x6       | .073    | 6.822     | .004    | 0      | y         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 441 | 8      | M34   | L5x5x6       | .073    | 6.822     | .004    | 0      | z         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 442 | 8      | M35   | L5x5x6       | .071    | 6.822     | .004    | 0      | y         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 443 | 8      | M36   | L5x5x6       | .071    | 6.822     | .003    | 0      | z         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 444 | 8      | M37   | L5x5x6       | .086    | 6.822     | .004    | 0      | y         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 445 | 8      | M38   | L5x5x6       | .086    | 6.822     | .004    | 0      | z         | 19897...   | 78682...  | 4.935      | 8.139   | 1.136 | H2-1   |
| 446 | 8      | M39   | L5x5x6       | .093    | 7.613     | .004    | 0      | y         | 49600.6    | 78682...  | 4.935      | 7.829   | 1.136 | H2-1   |
| 447 | 8      | M40   | L5x5x6       | .092    | 7.613     | .003    | 15.226 | y         | 49600.6    | 78682...  | 4.935      | 7.829   | 1.136 | H2-1   |
| 448 | 8      | M41   | L5x5x6       | .099    | 7.613     | .004    | 0      | y         | 15976...   | 78682...  | 4.935      | 7.829   | 1.136 | H2-1   |
| 449 | 8      | M42   | L5x5x6       | .101    | 7.613     | .003    | 15.226 | y         | 49600.6    | 78682...  | 4.935      | 7.829   | 1.136 | H2-1   |
| 450 | 8      | M43   | L3.5x3.5x5   | .253    | 9.699     | .003    | 19.812 | y         | 10481...   | 45269...  | 1.918      | 2.577   | 1.136 | H2-1   |
| 451 | 8      | M44   | L3.5x3.5x5   | .204    | 9.906     | .004    | 0      | y         | 10481...   | 45269...  | 1.918      | 2.577   | 1.136 | H2-1   |
| 452 | 8      | M45   | L5x5x3/8 ... | .216    | 15.51     | .003    | 0      | y         | 20518...   | 113307... | 7.087      | 5.185   | 1.136 | H2-1   |
| 453 | 8      | M46   | L5x5x3/8 ... | .352    | 15.848    | .007    | 32.37  | y         | 20518...   | 113307... | 7.087      | 5.185   | 1.136 | H2-1   |
| 454 | 8      | M47   | WT6x15       | .068    | 0         | .004    | 12.666 | y         | 51096...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b* |
| 455 | 8      | M48   | WT6x15       | .100    | 12.666    | .006    | 12.666 | y         | 51096...   | 94850...  | 8.587      | 4.949   | 2.298 | H1-1b  |
| 456 | 8      | M49   | WT6x15       | .059    | 6.048     | .004    | 12.096 | y         | 53179...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 457 | 8      | M50   | WT6x15       | .071    | 0         | .004    | 12.096 | y         | 53179...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b* |
| 458 | 8      | M51   | WT6x15       | .044    | 6.393     | .004    | 12.787 | y         | 50651...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 459 | 8      | M52   | WT6x15       | .047    | 6.393     | .005    | 12.787 | y         | 50651...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 460 | 8      | M53   | WT6x15       | .040    | 6.005     | .004    | 0      | y         | 53489...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 461 | 8      | M54   | WT6x15       | .035    | 6.005     | .004    | 12.011 | y         | 53489...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 462 | 8      | M55   | WT6x15       | .041    | 6.443     | .004    | 12.885 | y         | 50288...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 463 | 8      | M56   | WT6x15       | .050    | 6.443     | .005    | 0      | y         | 50288...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 464 | 8      | M57   | WT6x15       | .041    | 6.07      | .004    | 0      | y         | 53022...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 465 | 8      | M58   | WT6x15       | .042    | 6.07      | .004    | 12.139 | y         | 53022...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 466 | 8      | M59   | WT6x15       | .053    | 6.369     | .004    | 12.738 | y         | 50830...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 467 | 8      | M60   | WT6x15       | .044    | 6.369     | .005    | 0      | y         | 50830...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 468 | 8      | M61   | WT6x15       | .049    | 6.07      | .005    | 0      | y         | 53022...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 469 | 8      | M62   | WT6x15       | .033    | 6.07      | .004    | 12.139 | y         | 53022...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 470 | 8      | M63   | WT6x15       | .057    | 6.369     | .004    | 12.738 | y         | 50830...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 471 | 8      | M64   | WT6x15       | .054    | 6.369     | .005    | 0      | y         | 50830...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 472 | 8      | M65   | WT6x15       | .043    | 5.741     | .005    | 0      | y         | 55390...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 473 | 8      | M66   | WT6x15       | .041    | 5.741     | .004    | 11.482 | y         | 55390...   | 94850...  | 8.587      | 7.919   | 1.136 | H1-1b  |
| 474 | 8      | M71   | HSS8x4x4     | .011    | 0         | .003    | 0      | y         | 68324...   | 112958... | 14.731     | 23.892  | 2.382 | H1-1b  |
| 475 | 8      | M72   | HSS8x4x4     | .011    | 13.5      | .003    | 13.5   | y         | 68324...   | 112958... | 14.731     | 23.892  | 2.382 | H1-1b  |
| 476 | 8      | M75   | HSS6x4x4     | .034    | 0         | .004    | 18.182 | y         | 35045...   | 92694...  | 11.587     | 15.323  | 2.381 | H1-1b  |
| 477 | 8      | M76   | HSS6x4x4     | .034    | 0         | .004    | 18.182 | y         | 35045...   | 92694...  | 11.587     | 15.323  | 2.381 | H1-1b  |
| 478 | 8      | M77   | HSS6x4x4     | .024    | 0         | .004    | 0      | y         | 38408...   | 92694...  | 11.587     | 15.323  | 2.381 | H1-1b  |
| 479 | 8      | M76A  | L4x4x5/16... | .085    | 0         | .001    | 0      | y         | 39908...   | 81697...  | 3.706      | 6.632   | 2.582 | H2-1   |
| 480 | 8      | M77A  | L4x4x5/16... | .099    | 0         | .002    | 0      | y         | 39908...   | 81697...  | 3.706      | 6.632   | 2.793 | H2-1   |
| 481 | 8      | M78   | L4x4x5/16... | .081    | 0         | .003    | 0      | y         | 11074...   | 81697...  | 3.706      | 6.632   | 2.25  | H2-1   |
| 482 | 8      | M79   | L4x4x5/16... | .086    | 0         | .003    | 0      | y         | 11074...   | 81697...  | 3.706      | 6.632   | 2.315 | H2-1   |
| 483 | 8      | M84   | PIPE 3.0     | .193    | 12.5      | .004    | 0      |           | 18796...   | 43383...  | 3.825      | 3.825   | 1.147 | H1-1b  |
| 484 | 8      | M85   | PIPE 3.0     | .192    | 0         | .004    | 12.5   |           | 18796...   | 43383...  | 3.825      | 3.825   | 1.147 | H1-1b  |
| 485 | 8      | M86   | PIPE 3.0     | .191    | 0         | .004    | 0      |           | 18796...   | 43383...  | 3.825      | 3.825   | 1.147 | H1-1b  |
| 486 | 8      | M87   | HSS4x0.2...  | .599    | 0         | .039    | 0      |           | 47654...   | 59497...  | 5.946      | 5.946   | 2.173 | H1-1b  |
| 487 | 8      | M88   | HSS4x0.2...  | .597    | 0         | .039    | 0      |           | 47654...   | 59497...  | 5.946      | 5.946   | 2.173 | H1-1b  |



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

| LC  | Member | Shape | UC Max       | Loc(ft) | Shear  | Loc(ft) | Dir    | Pnc/om      | Pnt/om    | Mnvy/o  | Mnzz/o    | Cb    | Eqn    |
|-----|--------|-------|--------------|---------|--------|---------|--------|-------------|-----------|---------|-----------|-------|--------|
| 488 | 8      | M89   | HSS4x0.2...  | .597    | 0      | .039    | 0      | 47654...    | 59497...  | 5.946   | 5.946     | 2.173 | H1-1b  |
| 489 | 9      | M1    | W24x68 w...  | .053    | 0      | .008    | 19     | y 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.182 | H1-1b  |
| 490 | 9      | M2    | W24x68 w...  | .063    | 0      | .008    | 19     | y 1.1562... | 1.5522... | 375.833 | 1420.0... | 1.187 | H1-1b  |
| 491 | 9      | M3    | W24x68       | .137    | 55.309 | .012    | 59.08  | y 328006... | 601796... | 61.128  | 149.801   | 3     | H1-1b  |
| 492 | 9      | M4    | W24x68       | .138    | 54.68  | .013    | 59.08  | y 328006... | 601796... | 61.128  | 129.622   | 2.596 | H1-1b  |
| 493 | 9      | M5    | HSS18x0...   | .047    | 0      | .005    | 0      | 457542...   | 536526... | 249.75  | 249.75    | 2.272 | H1-1b  |
| 494 | 9      | M6    | HSS18x0...   | .017    | 0      | .003    | 3.175  | 463151...   | 536526... | 249.75  | 249.75    | 2.423 | H1-1b* |
| 495 | 9      | M7    | HSS18x0...   | .024    | 17.206 | .003    | 16.91  | 459324...   | 536526... | 249.75  | 249.75    | 1.632 | H1-1b  |
| 496 | 9      | M8    | HSS18x0...   | .013    | 0      | .001    | 0      | 473500...   | 536526... | 249.75  | 249.75    | 2.206 | H1-1b* |
| 497 | 9      | M29   | L5x5x6       | .067    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 498 | 9      | M30   | L5x5x6       | .066    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 499 | 9      | M31   | L5x5x6       | .067    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 500 | 9      | M32   | L5x5x6       | .067    | 6.822  | .003    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 501 | 9      | M33   | L5x5x6       | .073    | 6.822  | .003    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 502 | 9      | M34   | L5x5x6       | .073    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 503 | 9      | M35   | L5x5x6       | .071    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 504 | 9      | M36   | L5x5x6       | .071    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 505 | 9      | M37   | L5x5x6       | .085    | 6.822  | .004    | 0      | y 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 506 | 9      | M38   | L5x5x6       | .087    | 6.822  | .004    | 0      | z 19897...  | 78682...  | 4.935   | 8.139     | 1.136 | H2-1   |
| 507 | 9      | M39   | L5x5x6       | .092    | 7.613  | .004    | 15.226 | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 508 | 9      | M40   | L5x5x6       | .093    | 7.613  | .004    | 0      | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 509 | 9      | M41   | L5x5x6       | .165    | 7.454  | .003    | 15.226 | y 15976...  | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 510 | 9      | M42   | L5x5x6       | .099    | 7.613  | .004    | 0      | y 49600.6   | 78682...  | 4.935   | 7.829     | 1.136 | H2-1   |
| 511 | 9      | M43   | L3.5x3.5x5   | .204    | 9.906  | .004    | 0      | y 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1   |
| 512 | 9      | M44   | L3.5x3.5x5   | .253    | 9.699  | .003    | 0      | y 10481...  | 45269...  | 1.918   | 2.577     | 1.136 | H2-1   |
| 513 | 9      | M45   | L5x5x3/8 ... | .351    | 15.848 | .007    | 32.37  | y 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1   |
| 514 | 9      | M46   | L5x5x3/8 ... | .216    | 15.51  | .003    | 0      | y 20518...  | 113307... | 7.087   | 5.185     | 1.136 | H2-1   |
| 515 | 9      | M47   | WT6x15       | .059    | 6.333  | .005    | 12.666 | y 51096...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 516 | 9      | M48   | WT6x15       | .114    | 0      | .005    | 0      | y 51096...  | 94850...  | 8.587   | 4.949     | 2.682 | H1-1b  |
| 517 | 9      | M49   | WT6x15       | .072    | 0      | .004    | 0      | y 53179...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b* |
| 518 | 9      | M50   | WT6x15       | .059    | 6.048  | .005    | 12.096 | y 53179...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 519 | 9      | M51   | WT6x15       | .047    | 6.393  | .005    | 12.787 | y 50651...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 520 | 9      | M52   | WT6x15       | .044    | 6.393  | .004    | 0      | y 50651...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 521 | 9      | M53   | WT6x15       | .035    | 6.005  | .004    | 12.011 | y 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 522 | 9      | M54   | WT6x15       | .040    | 6.005  | .004    | 0      | y 53489...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 523 | 9      | M55   | WT6x15       | .050    | 6.443  | .005    | 0      | y 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 524 | 9      | M56   | WT6x15       | .041    | 6.443  | .004    | 12.885 | y 50288...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 525 | 9      | M57   | WT6x15       | .042    | 6.07   | .004    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 526 | 9      | M58   | WT6x15       | .041    | 6.07   | .004    | 0      | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 527 | 9      | M59   | WT6x15       | .044    | 6.369  | .005    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 528 | 9      | M60   | WT6x15       | .053    | 6.369  | .004    | 12.738 | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 529 | 9      | M61   | WT6x15       | .033    | 6.07   | .004    | 12.139 | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 530 | 9      | M62   | WT6x15       | .049    | 6.07   | .005    | 0      | y 53022...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 531 | 9      | M63   | WT6x15       | .054    | 6.369  | .004    | 0      | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 532 | 9      | M64   | WT6x15       | .057    | 6.369  | .004    | 12.738 | y 50830...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 533 | 9      | M65   | WT6x15       | .041    | 5.741  | .004    | 0      | y 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 534 | 9      | M66   | WT6x15       | .043    | 5.741  | .005    | 11.482 | y 55390...  | 94850...  | 8.587   | 7.919     | 1.136 | H1-1b  |
| 535 | 9      | M71   | HSS8x4x4     | .011    | 13.5   | .003    | 13.5   | y 68324...  | 112958... | 14.731  | 23.892    | 2.382 | H1-1b  |
| 536 | 9      | M72   | HSS8x4x4     | .011    | 0      | .003    | 0      | y 68324...  | 112958... | 14.731  | 23.892    | 2.381 | H1-1b  |
| 537 | 9      | M75   | HSS6x4x4     | .034    | 18.182 | .004    | 0      | y 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 538 | 9      | M76   | HSS6x4x4     | .034    | 18.182 | .004    | 0      | y 35045...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 539 | 9      | M77   | HSS6x4x4     | .024    | 17.321 | .004    | 17.321 | y 38408...  | 92694...  | 11.587  | 15.323    | 2.381 | H1-1b  |
| 540 | 9      | M76A  | L4x4x5/16... | .090    | 0      | .001    | 0      | y 39908...  | 81697...  | 3.706   | 6.632     | 3     | H2-1   |
| 541 | 9      | M77A  | L4x4x5/16... | .098    | 0      | .002    | 0      | y 39908...  | 81697...  | 3.706   | 6.632     | 2.553 | H2-1   |
| 542 | 9      | M78   | L4x4x5/16... | .090    | 0      | .003    | 0      | y 11074...  | 81697...  | 3.706   | 6.632     | 2.155 | H2-1   |
| 543 | 9      | M79   | L4x4x5/16... | .090    | 0      | .003    | 0      | y 11074...  | 81697...  | 3.706   | 6.632     | 2.209 | H2-1   |
| 544 | 9      | M84   | PIPE 3.0     | .192    | 12.5   | .004    | 0      | 18796...    | 43383...  | 3.825   | 3.825     | 1.147 | H1-1b  |



Company : AT&T Mobility  
 Designer : DAVI  
 Job Number : 411261  
 Model Name : Cromwell SW CT

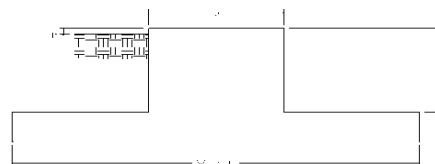
May 22, 2017  
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 Checked By: TAN

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

| LC  | Member | Shape | UC Max      | Loc[ft] | Shear ... | Loc[ft] | Dir Pnc/om... | Pnt/om ... | Mnyy/o... | Mnzz/o... | Cb    | Eqn         |
|-----|--------|-------|-------------|---------|-----------|---------|---------------|------------|-----------|-----------|-------|-------------|
| 545 | 9      | M85   | PIPE 3.0    | .193    | 0         | .004    | 12.5          | 18796....  | 43383.... | 3.825     | 3.825 | 1.147 H1-1b |
| 546 | 9      | M86   | PIPE 3.0    | .191    | 12.5      | .004    | 12.5          | 18796....  | 43383.... | 3.825     | 3.825 | 1.147 H1-1b |
| 547 | 9      | M87   | HSS4x0.2... | .597    | 0         | .039    | 0             | 47654....  | 59497.... | 5.946     | 5.946 | 2.173 H1-1b |
| 548 | 9      | M88   | HSS4x0.2... | .597    | 0         | .039    | 0             | 47654....  | 59497.... | 5.946     | 5.946 | 2.173 H1-1b |
| 549 | 9      | M89   | HSS4x0.2... | .599    | 0         | .039    | 0             | 47654....  | 59497.... | 5.946     | 5.946 | 2.173 H1-1b |

Site Name: Cromwell SW CT, CT  
 Site Number: 411261  
 Engineering Number: OAA702243\_C3\_01  
 Engineer: DAVI  
 Date: 05/22/17  
 Tower Type: SST w/3 Legs

Program Last Updated: 11/15/2012



**Design Loads (Unfactored)**

|  |                     |
|--|---------------------|
| Design / Analysis / Mapping:               | Mapping             |
| Compression/Leg:                           | 58.3 k              |
| Uplift/Leg:                                | 101.7 k             |
| Total Shear:                               | 16.4 k              |
| Moment:                                    | 909.6 k-ft          |
| Tower + Appurtenance Weight:               | 34.5 k              |
| Depth to Base of Foundation:               | 3.00 ft             |
| Diameter of Pier (d):                      | 0.75 ft             |
| Height of Pier above Ground (h):           | 0.50                |
| Width of Pad (W):                          | 26.50 ft            |
| Length of Pad (L):                         | 16.00 ft            |
| Thickness of Pad (t):                      | 3.00 ft             |
| Tower Leg Center to Center:                | 13.00 ft            |
| Number of Tower Legs:                      | 3.0 (1 if MP or GT) |
| Tower Center from Mat Center:              | 0.00 ft             |
| Depth Below Ground Surface to Water Table: | 99.00 ft            |
| Unit Weight of Concrete:                   | 150.0 pcf           |
| Unit Weight of Soil Above Water Table:     | 110.0 pcf           |
| Unit Weight of Water:                      | 62.4 pcf            |
| Unit Weight of Soil Below Water Table:     | 47.6 pcf            |
| Friction Angle of Uplift:                  | 15.00 Degrees       |
| Ultimate Coefficient of Shear Friction:    | 0.30                |
| Allowable Compressive Bearing Pressure:    | 10000.0 psf         |
| Ultimate Passive Pressure on Pad Face:     | 0.0 psf             |
| Allowable Capacity Increase:               | 1.00                |

**Overturning Factor of Safety**

|   |                 |
|---|-----------------|
| Design OTM:                                   | 966.8 k-ft      |
| OTM Resistance:                               | 4682.8 k-ft     |
| OTM Resistance / Design OTM Factor of Safety: | 4.84 Result: OK |

**Soil Bearing Pressure Usage:**

|   |                      |
|---|----------------------|
| Net Bearing Pressure:                               | 1653 psf             |
| Allowable Bearing Pressure:                         | 10000 psf            |
| Net Bearing Pressure/Allowable Bearing Pressure:    | 0.17 Result: OK      |
| Load Direction Controlling Design Bearing Pressure: | Diagonal to Pad Edge |

**Sliding Factor of Safety**

|   |                 |
|---|-----------------|
| Total Ultimate Sliding Resistance:                  | 67.6 k          |
| Sliding Resistance/Sliding Design Factor of Safety: | 4.14 Result: OK |