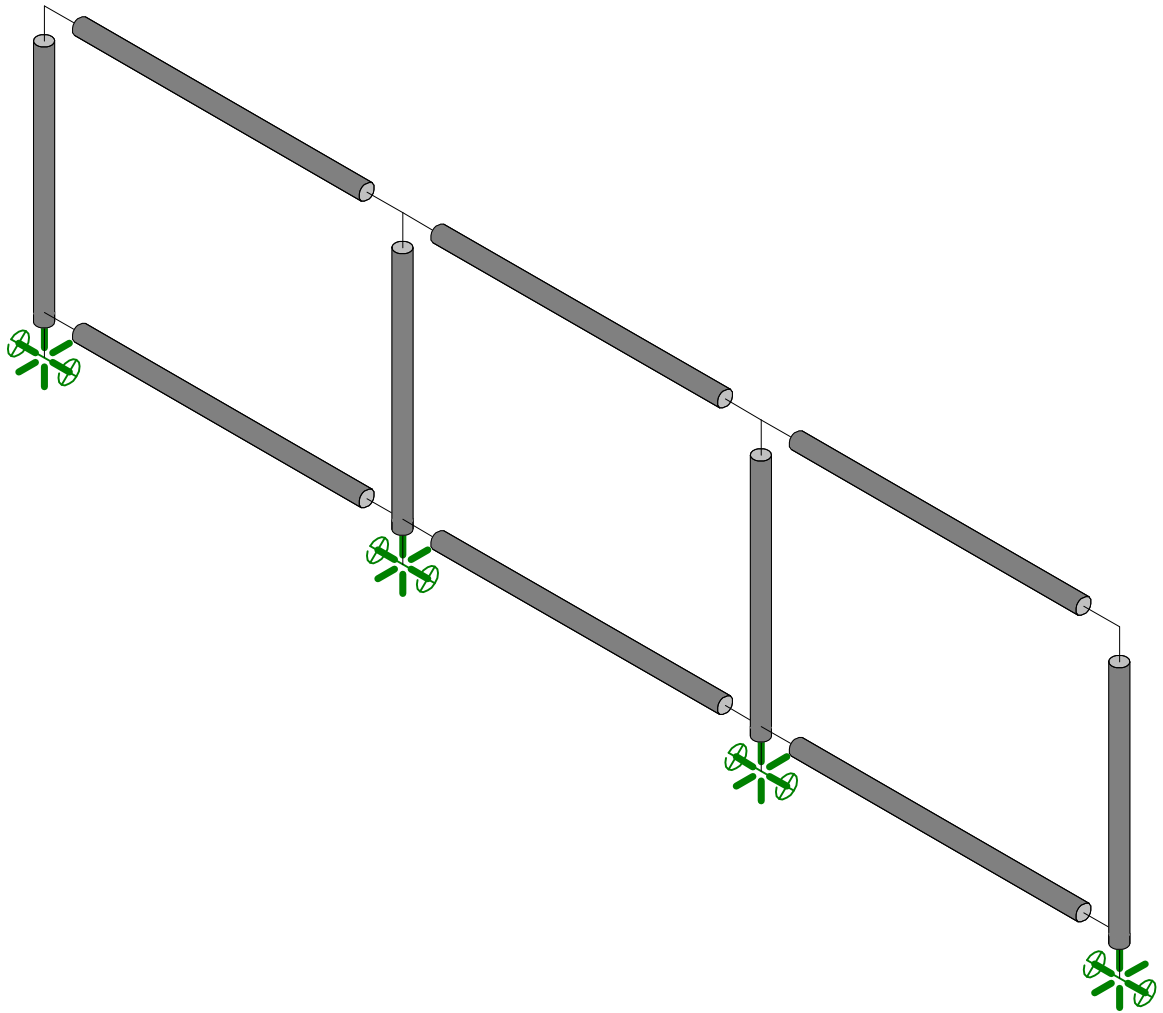
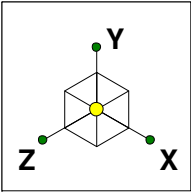


D25—1-1/4" PIPE x 36-1/2" HIGH RAIL WITH BOTTOM RAIL

| | |
|--------------------------|---|
| Building Code: | 2006 <i>International Building Code</i> 2007 <i>California Building Code</i> AISC <i>Steel Construction Manual</i>, 13th ed—ASD |
| Material: | Carbon Steel, A53, Grade B, Fy = 35 ksi or Carbon Steel, A501, Grade B, Fy = 36 ksi Stainless Steel, A312, Grade TP-304 or TP-316, Fy = 30 ksi |
| Height: | 36.5" |
| Anchor Post: | 1-1/4" XXS (1.66" OD x 0.382") Pipe |
| Intermediate Posts: | 1-1/4" SCHD 40 (1.66" OD x 0.140") Pipe |
| Top Rail at Anchor Post: | 1-1/4" XXS (1.66" OD x 0.382") Pipe |
| Top Rail Elsewhere: | 1-1/4" SCHD 40 (1.66" OD x 0.140") Pipe |
| Bottom Rail: | 1-1/4" SCHD 40 (1.66" OD x 0.140") Pipe |
| Number of Cables: | 9 |
| Cable Spacing: | 2.97" |
| Cable Prestress: | 325 lbs |



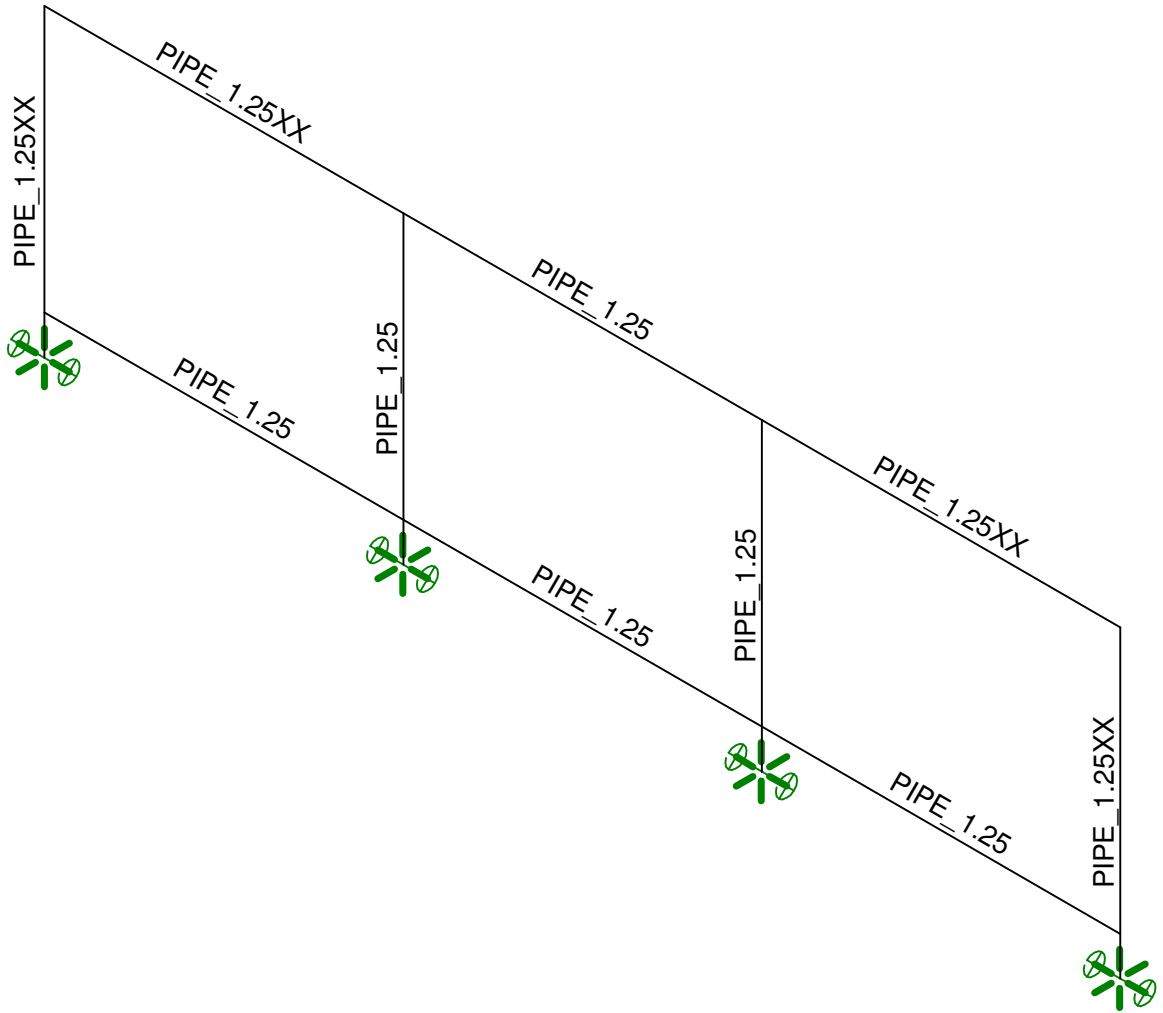
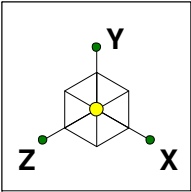
Disclaimer: Analysis and Structural Certification DOES NOT include base plates or anchorage to supporting structure. Where required by the Local Building Official, these shall be reviewed and designed by the project Structural Engineer of Record.



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Dan O'Connor
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D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL

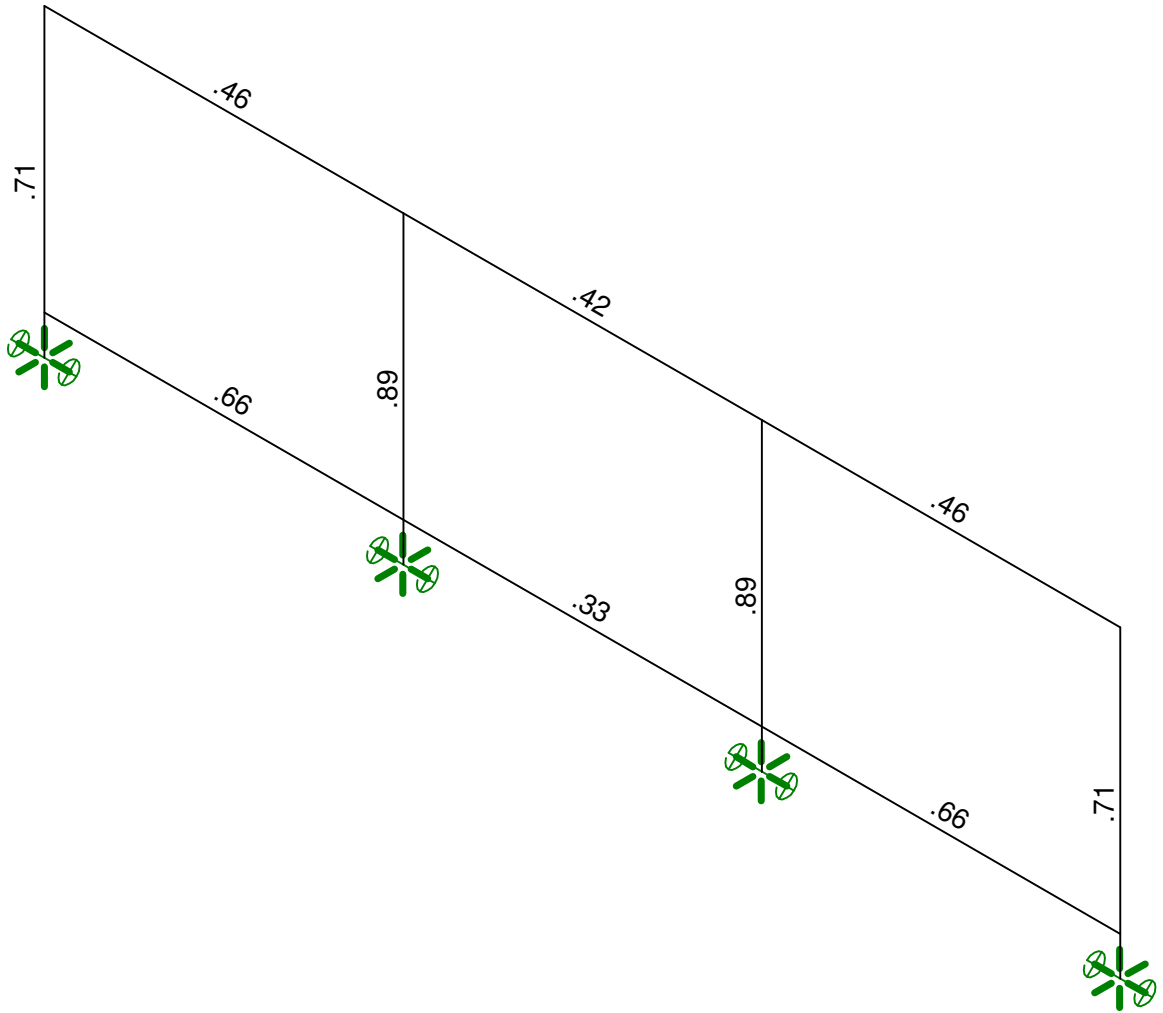
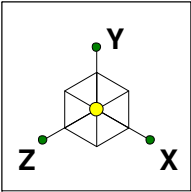
Mar 3, 2009 at 11:31 AM
D25.r3d



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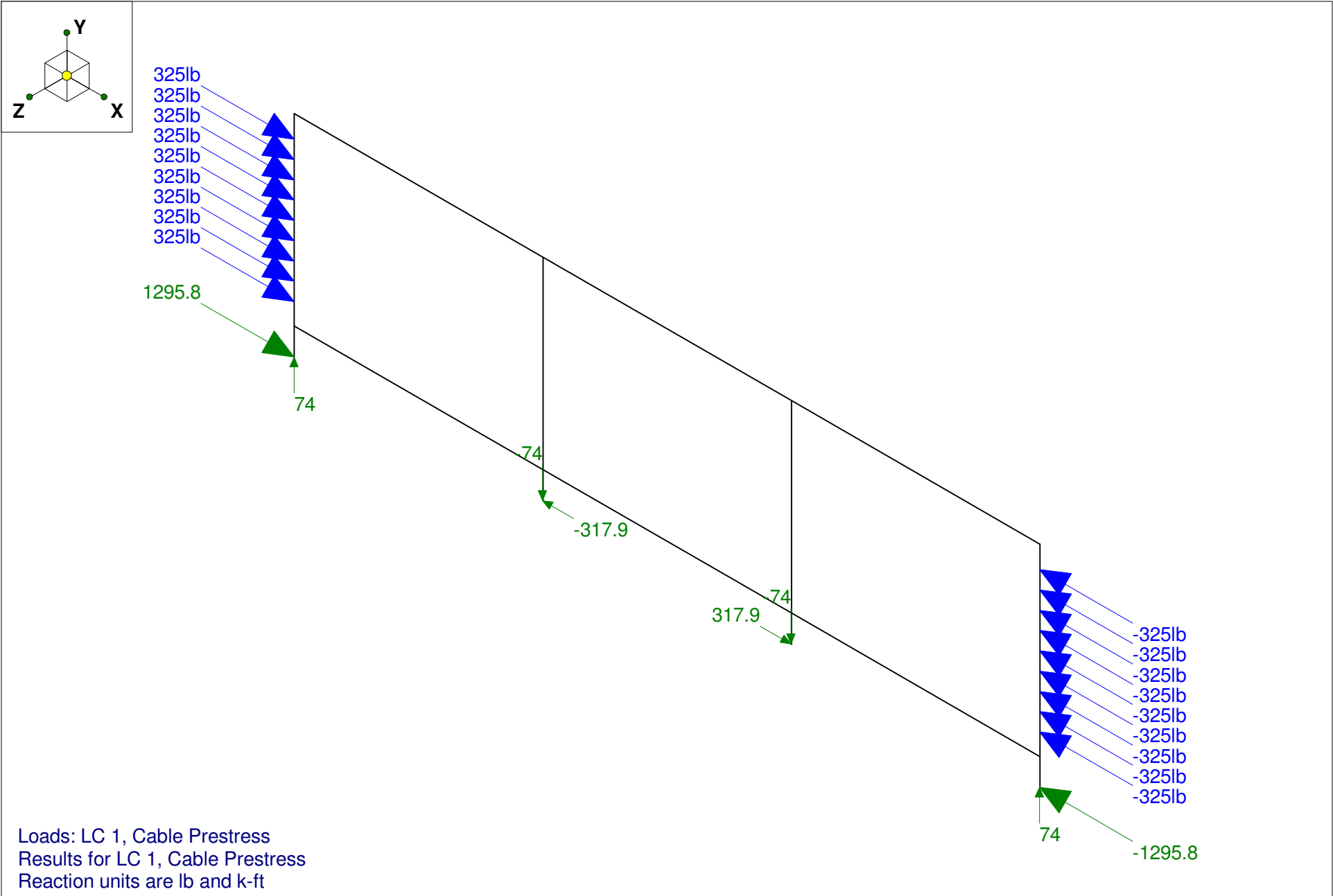
D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL

Mar 3, 2009 at 11:32 AM
D25.r3d



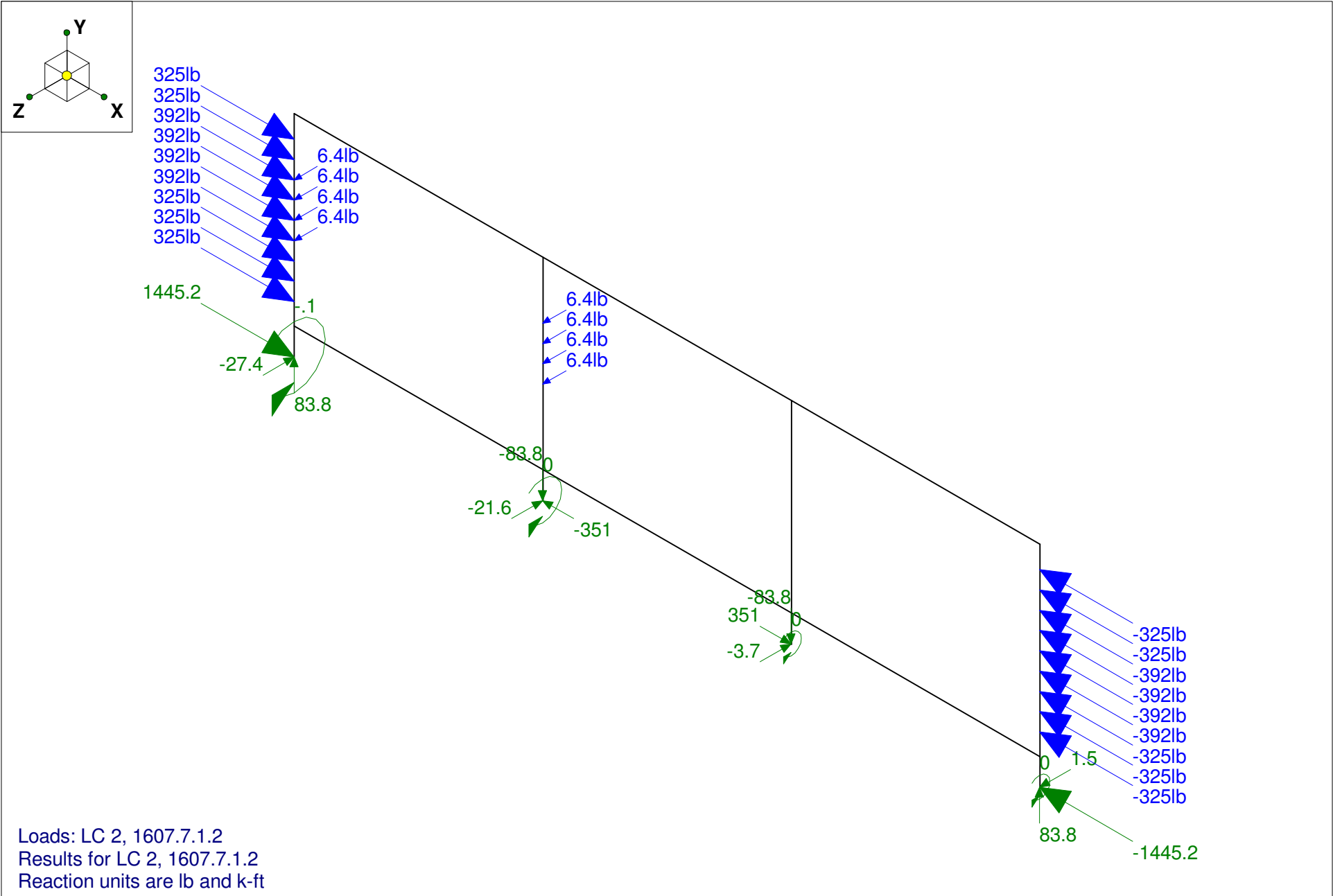
Member Code Checks Displayed
Solution: Envelope

| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:35 AM |
| 08196 | | D25.r3d |



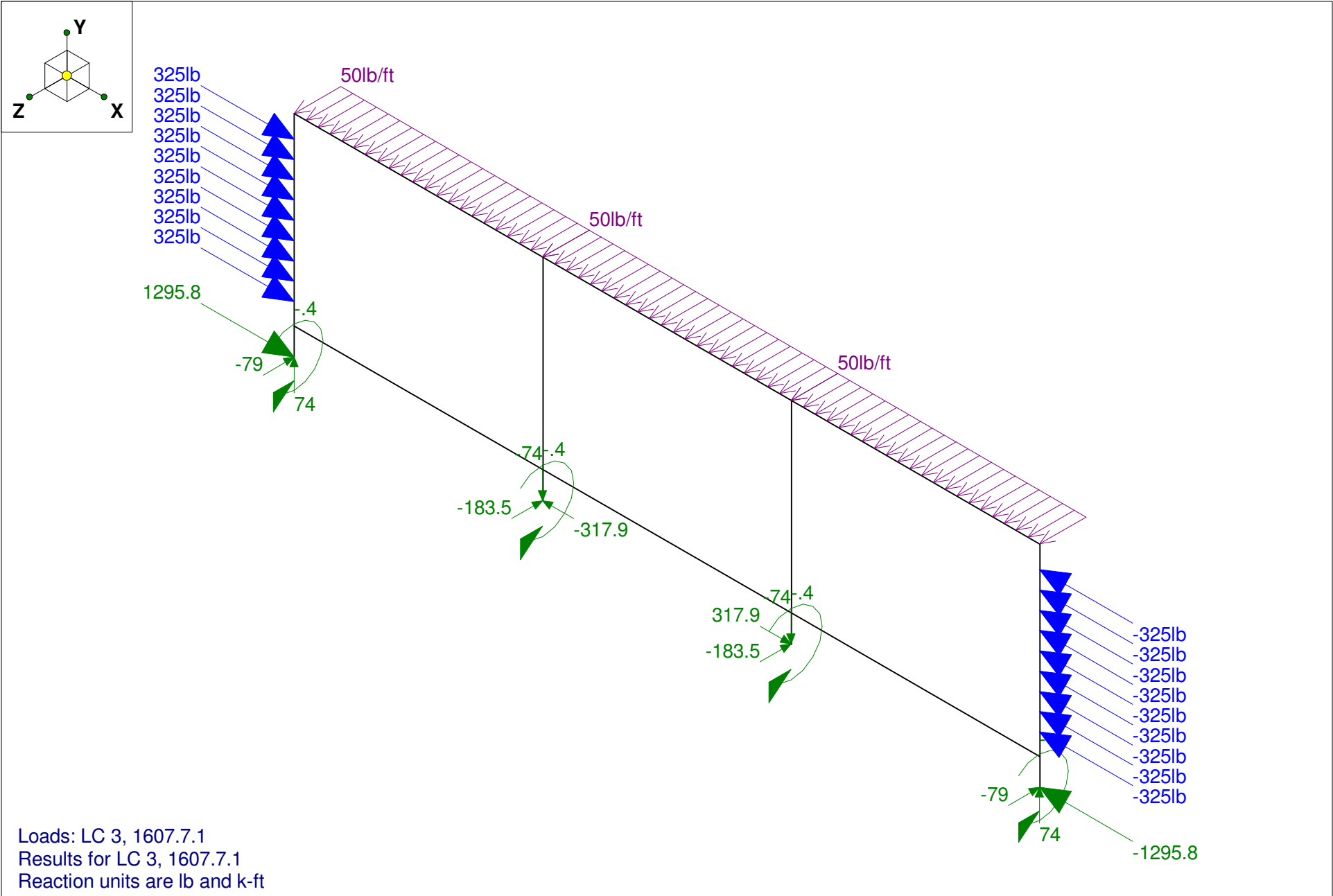
Loads: LC 1, Cable Prestress
 Results for LC 1, Cable Prestress
 Reaction units are lb and k-ft

| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:33 AM |
| 08196 | | D25.r3d |

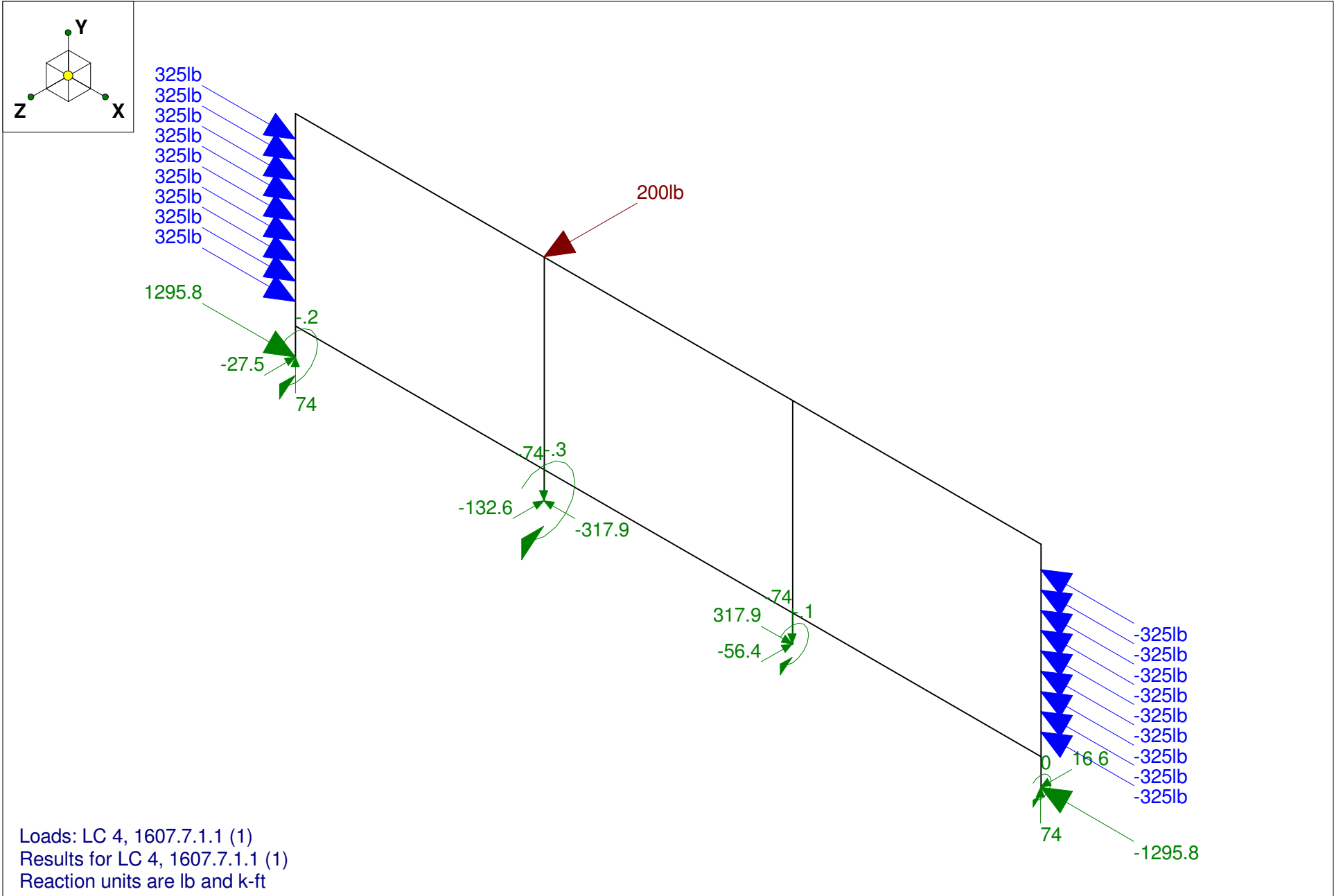


Loads: LC 2, 1607.7.1.2
 Results for LC 2, 1607.7.1.2
 Reaction units are lb and k-ft

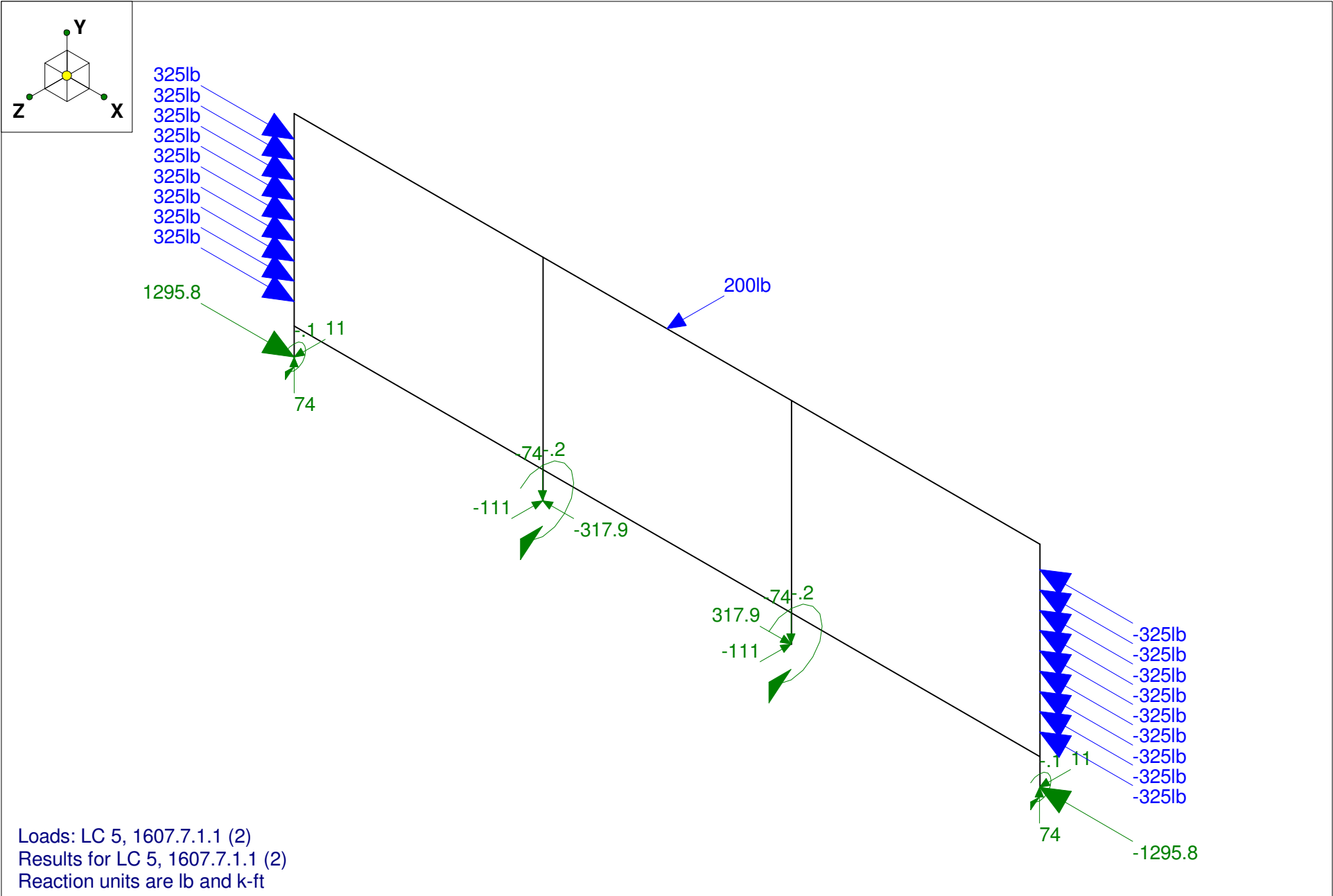
| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:34 AM |
| 08196 | | D25.r3d |



| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:34 AM |
| 08196 | | D25.r3d |



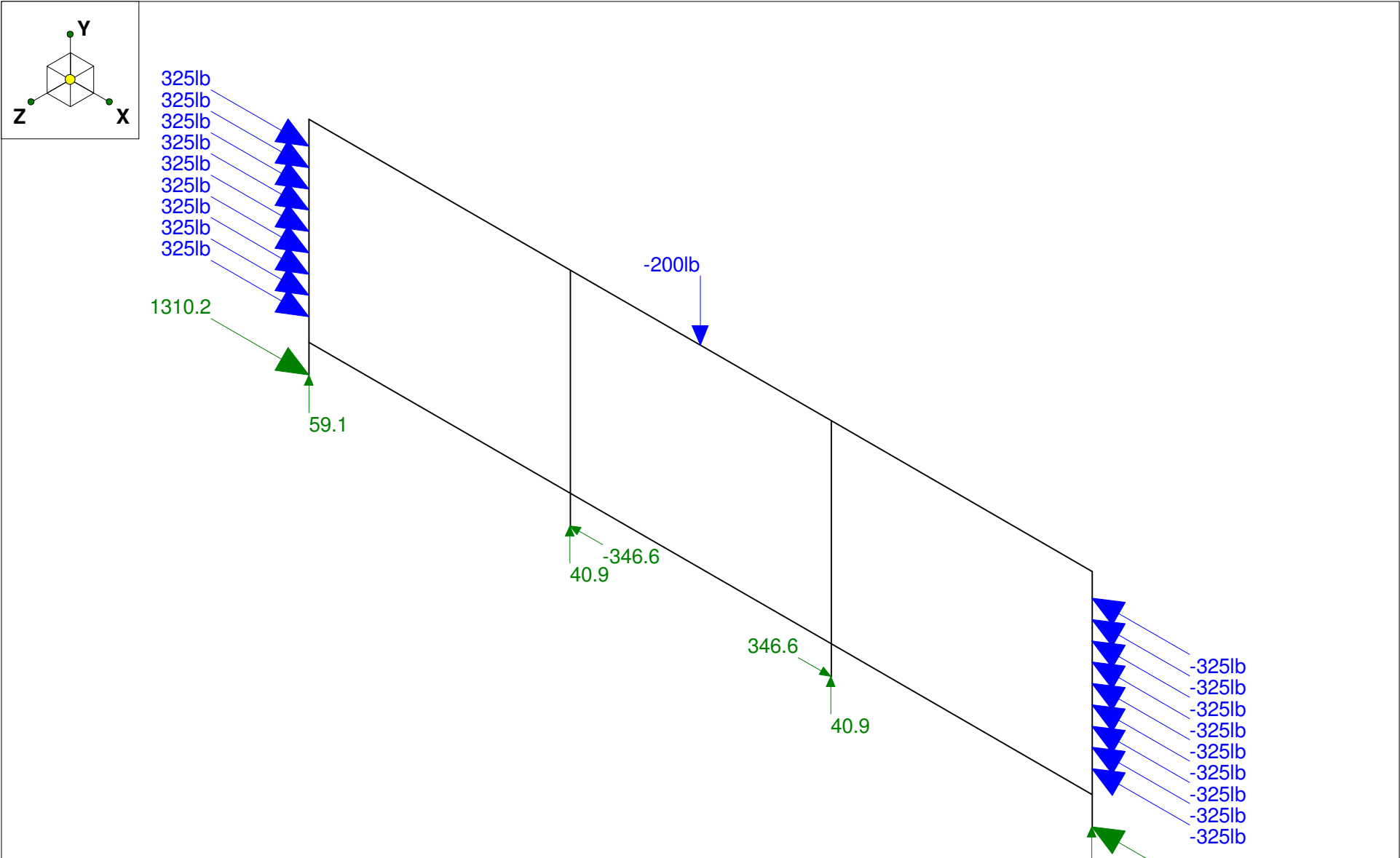
| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:35 AM |
| 08196 | | D25.r3d |



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Dan O'Connor
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D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL

Mar 3, 2009 at 11:35 AM
D25.r3d



Loads: LC 6, 1607.7.1.1 (3)
 Results for LC 6, 1607.7.1.1 (3)
 Reaction units are lb and k-ft

| | | |
|------------------------------|--|-------------------------|
| Ferrari Shields & Associates | D25 - 1.25" PIPE x 36.5" HIGH RAIL W/ BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 11:35 AM |
| 08196 | | D25.r3d |

Global

| | |
|--|-------|
| Display Sections for Member Calcs | 5 |
| Max Internal Sections for Member Calcs | 97 |
| Include Shear Deformation | Yes |
| Include Warping | Yes |
| Area Load Mesh (in^2) | 144 |
| Merge Tolerance (in) | .12 |
| P-Delta Analysis Tolerance | 0.50% |
| Vertical Axis | Y |

| | |
|------------------------|--------------------|
| Hot Rolled Steel Code | AISC : ASD 13th |
| Cold Formed Steel Code | AISI 01: ASD |
| Wood Code | NDS 2005: ASD |
| Wood Temperature | < 100F |
| Concrete Code | ACI 2005 |
| Masonry Code | MSJC 05/IBC 06 ASD |

| | |
|-------------------------------|------------------|
| Number of Shear Regions | 4 |
| Region Spacing Increment (in) | 4 |
| Biaxial Column Method | PCA Load Contour |
| Parame Beta Factor (PCA) | .65 |
| Concrete Stress Block | Rectangular |
| Use Cracked Sections | Yes |
| Bad Framing Warnings | No |
| Unused Force Warnings | Yes |

Hot Rolled Steel Properties

| | Label | E [ksi] | G [ksi] | Nu | Therm (1E5 F) | Density[k/ft^3] | Yield[ksi] |
|---|-------------------|---------|---------|----|---------------|-----------------|------------|
| 1 | A53GrB/A501/SS316 | 29000 | 11154 | .3 | .65 | .49 | 30 |

Hot Rolled Steel Section Sets

| | Label | Shape | Type | Design List | Material | Design Rules | A [in2] | Iyy [in4] | Izz [in4] | J [in4] |
|---|-------|-------------|--------|-------------|------------------|--------------|---------|-----------|-----------|---------|
| 1 | RAIL | PIPE 1.25 | Beam | Pipe | A53GrB/A501/S... | Typical | .62 | .184 | .184 | .368 |
| 2 | ERAIL | PIPE 1.25XX | Beam | Pipe | A53GrB/A501/S... | Typical | 1.534 | .341 | .341 | .682 |
| 3 | IPOST | PIPE 1.25 | Column | Pipe | A53GrB/A501/S... | Typical | .62 | .184 | .184 | .368 |
| 4 | EPOST | PIPE 1.25XX | Column | Pipe | A53GrB/A501/S... | Typical | 1.534 | .341 | .341 | .682 |

Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area (Mem... | Surface (Pl... |
|---|-----------------|----------|-----------|-----------|-----------|-------|-------|-------------|--------------|----------------|
| 1 | Cable Prestress | None | | | | | 18 | | | |
| 2 | 1607.7.1.2 | None | | | | | 16 | | | |
| 3 | 1607.7.1 | None | | | | | | 3 | | |
| 4 | 1607.7.1.1 (1) | None | | | | 1 | | | | |
| 5 | 1607.7.1.1 (2) | None | | | | | 1 | | | |
| 6 | 1607.7.1.1 (3) | None | | | | | 1 | | | |

Load Combinations

| | Description | Solve | PDelta | SR... | BLC Factor | BLC Factor | BLC Factor | BLC Factor | BLC Factor | BLC Factor | BLC Factor | BLC Factor | BLC Factor |
|---|-----------------|-------|--------|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1 | Cable Prestress | Yes | C | | 1 | 1 | | | | | | | |
| 2 | 1607.7.1.2 | Yes | C | | 1 | 1 | 2 | 1 | | | | | |
| 3 | 1607.7.1 | Yes | C | | 1 | 1 | 3 | 1 | | | | | |
| 4 | 1607.7.1.1 (1) | Yes | C | | 1 | 1 | 4 | 1 | | | | | |
| 5 | 1607.7.1.1 (2) | Yes | C | | 1 | 1 | 5 | 1 | | | | | |
| 6 | 1607.7.1.1 (3) | Yes | C | | 1 | 1 | 6 | 1 | | | | | |

Member Primary Data

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|----|-------|---------|---------|---------|-------------|---------------|--------|-------------|-------------|--------------|
| 1 | M1 | N1 | N2 | | | EPOST | Column | Pipe | A53GrB/A... | Typical |
| 2 | M2 | N3 | N4 | | | IPOST | Column | Pipe | A53GrB/A... | Typical |
| 3 | M3 | N2 | N4 | | | ERAIL | Beam | Pipe | A53GrB/A... | Typical |
| 4 | M4 | N4 | N8 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |
| 5 | M5 | N5 | N6 | | | EPOST | Column | Pipe | A53GrB/A... | Typical |
| 6 | M6 | N7 | N8 | | | IPOST | Column | Pipe | A53GrB/A... | Typical |
| 7 | M7 | N8 | N6 | | | ERAIL | Beam | Pipe | A53GrB/A... | Typical |
| 8 | M8 | N9 | N10 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |
| 9 | M9 | N10 | N12 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |
| 10 | M10 | N12 | N11 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |

Envelope Joint Reactions

| | Joint | | X [lb] | LC | Y [lb] | LC | Z [lb] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|----|---------|-----|-----------|----|---------|----|----------|----|-----------|----|-----------|----|-----------|----|
| 1 | N1 | max | 1445.17 | 2 | 83.827 | 2 | 10.951 | 5 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2 | | min | 1295.815 | 1 | 59.112 | 6 | -79.003 | 3 | -.378 | 3 | 0 | 1 | 0 | 1 |
| 3 | N3 | max | -317.909 | 1 | 40.888 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 4 | | min | -350.983 | 2 | -83.822 | 2 | -183.497 | 3 | -.406 | 3 | 0 | 1 | 0 | 1 |
| 5 | N5 | max | -1295.815 | 1 | 83.815 | 2 | 16.563 | 4 | 0 | 1 | 0 | 1 | 0 | 1 |
| 6 | | min | -1445.183 | 2 | 59.112 | 6 | -79.003 | 3 | -.378 | 3 | 0 | 1 | 0 | 1 |
| 7 | N7 | max | 350.997 | 2 | 40.888 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 8 | | min | 317.909 | 1 | -83.819 | 2 | -183.497 | 3 | -.406 | 3 | 0 | 1 | 0 | 1 |
| 9 | Totals: | max | 0 | 2 | 200 | 6 | 0 | 1 | | | | | | |
| 10 | | min | 0 | 1 | 0 | 2 | -525 | 3 | | | | | | |

Envelope Member Section Forces

| | Member | Sec | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[k-ft] | LC | y-y Moment[...] | LC | z-z Moment[...] | LC |
|----|--------|-----|-----|-----------|----|-------------|----|-------------|----|--------------|----|-----------------|----|-----------------|----|
| 1 | M1 | 1 | max | 83.827 | 2 | -1295.565 | 4 | 10.924 | 5 | 0 | 1 | .378 | 3 | 0 | 1 |
| 2 | | | min | 59.112 | 6 | -1444.859 | 2 | -79.125 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | | 2 | max | 148.95 | 2 | 1382.874 | 2 | 0 | 1 | .055 | 3 | .296 | 3 | .101 | 2 |
| 4 | | | min | 117.52 | 6 | 1250.122 | 4 | -103.553 | 3 | 0 | 1 | 0 | 1 | .078 | 4 |
| 5 | | 3 | max | 148.95 | 2 | 340.874 | 2 | 0 | 1 | .055 | 3 | .219 | 3 | -.546 | 1 |
| 6 | | | min | 117.52 | 6 | 275.122 | 4 | -103.553 | 3 | 0 | 1 | 0 | 1 | -.617 | 2 |
| 7 | | 4 | max | 148.95 | 2 | -693.031 | 6 | 0 | 1 | .055 | 3 | .142 | 3 | -.444 | 1 |
| 8 | | | min | 117.52 | 6 | -835.126 | 2 | -103.553 | 3 | 0 | 1 | 0 | 2 | -.502 | 2 |
| 9 | | 5 | max | 148.95 | 2 | -1343.031 | 6 | 0 | 1 | .055 | 3 | .065 | 3 | .404 | 2 |
| 10 | | | min | 117.52 | 6 | -1485.126 | 2 | -103.553 | 3 | 0 | 1 | -.002 | 2 | .348 | 6 |
| 11 | M2 | 1 | max | 40.888 | 6 | 350.983 | 2 | 0 | 1 | 0 | 1 | .406 | 3 | 0 | 1 |
| 12 | | | min | -83.822 | 2 | 317.909 | 1 | -183.497 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |

Envelope Member Section Forces (Continued)

| Member | Sec | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[k-ft] | LC | y-y Moment[...] | LC | z-z Moment[...] | LC | |
|--------|-----|-----|-----------|----------|-------------|----------|-------------|--------|--------------|----|-----------------|------|-----------------|----|---|
| 13 | 2 | max | -17.52 | 6 | -48.149 | 1 | 0 | 1 | .031 | 5 | .293 | 3 | -.029 | 1 | |
| 14 | | min | -148.949 | 2 | -66.197 | 6 | -160.359 | 3 | 0 | 2 | 0 | 1 | -.036 | 6 | |
| 15 | 3 | max | -17.52 | 6 | -48.149 | 1 | 0 | 1 | .031 | 5 | .174 | 3 | .013 | 6 | |
| 16 | | min | -148.949 | 2 | -66.197 | 6 | -160.359 | 3 | 0 | 2 | 0 | 1 | .007 | 4 | |
| 17 | 4 | max | -17.52 | 6 | -48.149 | 1 | 4.375 | 2 | .031 | 5 | .054 | 3 | .062 | 6 | |
| 18 | | min | -148.949 | 2 | -66.197 | 6 | -160.359 | 3 | 0 | 2 | -.004 | 2 | .043 | 1 | |
| 19 | 5 | max | -17.52 | 6 | -48.149 | 1 | 4.375 | 2 | .031 | 5 | 0 | 1 | .111 | 6 | |
| 20 | | min | -148.949 | 2 | -66.197 | 6 | -160.359 | 3 | 0 | 2 | -.069 | 4 | .078 | 1 | |
| 21 | M3 | 1 | max | 1485.069 | 2 | 148.923 | 2 | 0 | .002 | 2 | .055 | 3 | .404 | 2 | |
| 22 | | min | 1342.99 | 6 | 117.513 | 6 | -109.789 | 3 | -.065 | 3 | 0 | 1 | .348 | 6 | |
| 23 | 2 | max | 1485.069 | 2 | 148.923 | 2 | 0 | 1 | .002 | 2 | .024 | 5 | .274 | 2 | |
| 24 | | min | 1342.99 | 6 | 117.513 | 6 | -66.039 | 3 | -.065 | 3 | -.022 | 3 | .244 | 1 | |
| 25 | 3 | max | 1485.069 | 2 | 148.923 | 2 | 0 | 1 | .002 | 2 | .012 | 5 | .143 | 2 | |
| 26 | | min | 1342.99 | 6 | 117.513 | 6 | -49.308 | 4 | -.065 | 3 | -.061 | 3 | .128 | 1 | |
| 27 | 4 | max | 1485.069 | 2 | 148.923 | 2 | 21.461 | 3 | .002 | 2 | 0 | 5 | .04 | 6 | |
| 28 | | min | 1342.99 | 6 | 117.513 | 6 | -49.308 | 4 | -.065 | 3 | -.089 | 4 | .011 | 4 | |
| 29 | 5 | max | 1485.069 | 2 | 148.923 | 2 | 65.211 | 3 | .002 | 2 | 0 | 1 | -.063 | 6 | |
| 30 | | min | 1342.99 | 6 | 117.513 | 6 | -49.308 | 4 | -.065 | 3 | -.132 | 4 | -.117 | 2 | |
| 31 | M4 | 1 | max | 1538.75 | 2 | 100 | 6 | 49.557 | .026 | 4 | .021 | 5 | .048 | 6 | |
| 32 | | min | 1397.98 | 4 | 0 | 1 | -100 | 5 | 0 | 1 | -.123 | 4 | -.03 | 2 | |
| 33 | 2 | max | 1538.75 | 2 | 100 | 6 | 49.557 | 4 | .026 | 4 | 0 | 1 | -.027 | 1 | |
| 34 | | min | 1397.98 | 4 | 0 | 1 | -100 | 5 | 0 | 1 | -.08 | 4 | -.04 | 6 | |
| 35 | 3 | max | 1538.75 | 2 | .002 | 2 | 100 | 5 | .026 | 4 | 0 | 1 | -.027 | 1 | |
| 36 | | min | 1397.98 | 4 | -100 | 6 | 0 | 1 | 0 | 1 | -.154 | 5 | -.127 | 6 | |
| 37 | 4 | max | 1538.75 | 2 | .002 | 2 | 100 | 5 | .026 | 4 | .007 | 4 | -.027 | 1 | |
| 38 | | min | 1397.98 | 4 | -100 | 6 | 0 | 1 | 0 | 1 | -.067 | 5 | -.04 | 6 | |
| 39 | 5 | max | 1538.75 | 2 | .002 | 2 | 100 | 5 | .026 | 4 | .05 | 4 | .048 | 6 | |
| 40 | | min | 1397.98 | 4 | -100 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | -.03 | 2 | |
| 41 | M5 | 1 | max | 83.815 | 2 | 1444.873 | 2 | 16.552 | 4 | 0 | 1 | .378 | 3 | 0 | 1 |
| 42 | | min | 59.112 | 6 | 1295.565 | 4 | -79.125 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | |
| 43 | 2 | max | 148.945 | 2 | -1250.122 | 4 | 4.915 | 4 | 0 | 1 | .296 | 3 | -.078 | 4 | |
| 44 | | min | 117.52 | 6 | -1382.863 | 2 | -103.553 | 3 | -.055 | 3 | 0 | 1 | -.101 | 2 | |
| 45 | 3 | max | 148.945 | 2 | -275.122 | 4 | 4.915 | 4 | 0 | 1 | .219 | 3 | .617 | 2 | |
| 46 | | min | 117.52 | 6 | -340.863 | 2 | -103.553 | 3 | -.055 | 3 | 0 | 1 | .546 | 1 | |
| 47 | 4 | max | 148.945 | 2 | 835.137 | 2 | 4.915 | 4 | 0 | 1 | .142 | 3 | .502 | 2 | |
| 48 | | min | 117.52 | 6 | 693.031 | 6 | -103.553 | 3 | -.055 | 3 | 0 | 1 | .444 | 1 | |
| 49 | 5 | max | 148.945 | 2 | 1485.137 | 2 | 4.915 | 4 | 0 | 1 | .065 | 3 | -.348 | 6 | |
| 50 | | min | 117.52 | 6 | 1343.031 | 6 | -103.553 | 3 | -.055 | 3 | 0 | 1 | -.404 | 2 | |
| 51 | M6 | 1 | max | 40.888 | 6 | -317.909 | 1 | 0 | 1 | 0 | 1 | .406 | 3 | 0 | 1 |
| 52 | | min | -83.819 | 2 | -350.997 | 2 | -183.497 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | |
| 53 | 2 | max | -17.52 | 6 | 66.197 | 6 | 0 | 1 | 0 | 1 | .293 | 3 | .036 | 6 | |
| 54 | | min | -148.946 | 2 | 48.149 | 1 | -160.359 | 3 | -.031 | 5 | 0 | 1 | .029 | 1 | |
| 55 | 3 | max | -17.52 | 6 | 66.197 | 6 | 0 | 1 | 0 | 1 | .174 | 3 | -.007 | 4 | |
| 56 | | min | -148.946 | 2 | 48.149 | 1 | -160.359 | 3 | -.031 | 5 | 0 | 1 | -.013 | 6 | |
| 57 | 4 | max | -17.52 | 6 | 66.197 | 6 | 0 | 1 | 0 | 1 | .054 | 3 | -.043 | 1 | |
| 58 | | min | -148.946 | 2 | 48.149 | 1 | -160.359 | 3 | -.031 | 5 | 0 | 1 | -.062 | 6 | |
| 59 | 5 | max | -17.52 | 6 | 66.197 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | -.078 | 1 | |
| 60 | | min | -148.946 | 2 | 48.149 | 1 | -160.359 | 3 | -.031 | 5 | -.065 | 3 | -.111 | 6 | |
| 61 | M7 | 1 | max | 1485.081 | 2 | -117.513 | 6 | 13.122 | .065 | 3 | .024 | 4 | -.063 | 6 | |
| 62 | | min | 1342.99 | 6 | -148.917 | 2 | -65.211 | 3 | 0 | 1 | -.023 | 3 | -.117 | 2 | |
| 63 | 2 | max | 1485.081 | 2 | -117.513 | 6 | 13.122 | 5 | .065 | 3 | .023 | 4 | .04 | 6 | |
| 64 | | min | 1342.99 | 6 | -148.917 | 2 | -21.461 | 3 | 0 | 1 | -.061 | 3 | .011 | 4 | |
| 65 | 3 | max | 1485.081 | 2 | -117.513 | 6 | 22.289 | 3 | .065 | 3 | .023 | 4 | .143 | 2 | |

Envelope Member Section Forces (Continued)

| Member | Sec | | Axial[lb] | LC | y Shear[lb] | LC | z Shear[lb] | LC | Torque[k-ft] | LC | y-y Moment[...] | LC | z-z Moment[...] | LC | |
|--------|-----|-----|-----------|----------|-------------|---------|-------------|--------|--------------|----|-----------------|----|-----------------|-------|---|
| 66 | | min | 1342.99 | 6 | -148.917 | 2 | -.547 | 4 | 0 | 1 | -.061 | 3 | .128 | 1 | |
| 67 | 4 | max | 1485.081 | 2 | -117.513 | 6 | 66.039 | 3 | .065 | 3 | .024 | 5 | .274 | 2 | |
| 68 | | min | 1342.99 | 6 | -148.917 | 2 | -.547 | 4 | 0 | 1 | -.022 | 3 | .244 | 1 | |
| 69 | 5 | max | 1485.081 | 2 | -117.513 | 6 | 109.789 | 3 | .065 | 3 | .055 | 3 | .404 | 2 | |
| 70 | | min | 1342.99 | 6 | -148.917 | 2 | -.547 | 4 | 0 | 1 | 0 | 1 | .348 | 6 | |
| 71 | M8 | 1 | max | 3153.101 | 2 | -58.407 | 6 | 22.647 | 3 | 0 | 1 | 0 | 1 | -.135 | 6 |
| 72 | | min | 2870.983 | 1 | -65.128 | 2 | -.057 | 2 | -.015 | 3 | -.055 | 3 | -.149 | 2 | |
| 73 | 2 | max | 3153.101 | 2 | -58.407 | 6 | 22.647 | 3 | 0 | 1 | 0 | 1 | -.084 | 1 | |
| 74 | | min | 2870.983 | 1 | -65.128 | 2 | -.057 | 2 | -.015 | 3 | -.035 | 3 | -.092 | 2 | |
| 75 | 3 | max | 3153.101 | 2 | -58.407 | 6 | 22.647 | 3 | 0 | 1 | 0 | 1 | -.032 | 1 | |
| 76 | | min | 2870.983 | 1 | -65.128 | 2 | -.057 | 2 | -.015 | 3 | -.015 | 3 | -.035 | 2 | |
| 77 | 4 | max | 3153.101 | 2 | -58.407 | 6 | 22.647 | 3 | 0 | 1 | .01 | 5 | .022 | 2 | |
| 78 | | min | 2870.983 | 1 | -65.128 | 2 | -.057 | 2 | -.015 | 3 | 0 | 2 | .019 | 6 | |
| 79 | 5 | max | 3153.101 | 2 | -58.407 | 6 | 22.647 | 3 | 0 | 1 | .025 | 3 | .079 | 2 | |
| 80 | | min | 2870.983 | 1 | -65.128 | 2 | -.057 | 2 | -.015 | 3 | 0 | 2 | .07 | 6 | |
| 81 | M9 | 1 | max | 2748.437 | 2 | .003 | 2 | 0 | .009 | 4 | .005 | 4 | -.002 | 6 | |
| 82 | | min | 2479.389 | 6 | 0 | 1 | -4.167 | 4 | 0 | 1 | -.007 | 5 | -.003 | 2 | |
| 83 | 2 | max | 2748.437 | 2 | .003 | 2 | 0 | 1 | .009 | 4 | .002 | 4 | -.002 | 6 | |
| 84 | | min | 2479.389 | 6 | 0 | 1 | -4.167 | 4 | 0 | 1 | -.007 | 5 | -.003 | 2 | |
| 85 | 3 | max | 2748.437 | 2 | .003 | 2 | 0 | 1 | .009 | 4 | 0 | 1 | -.002 | 6 | |
| 86 | | min | 2479.389 | 6 | 0 | 1 | -4.167 | 4 | 0 | 1 | -.007 | 5 | -.003 | 2 | |
| 87 | 4 | max | 2748.437 | 2 | .003 | 2 | 0 | 1 | .009 | 4 | 0 | 1 | -.002 | 6 | |
| 88 | | min | 2479.389 | 6 | 0 | 1 | -4.167 | 4 | 0 | 1 | -.007 | 5 | -.003 | 2 | |
| 89 | 5 | max | 2748.437 | 2 | .003 | 2 | 0 | 1 | .009 | 4 | 0 | 1 | -.002 | 6 | |
| 90 | | min | 2479.389 | 6 | 0 | 1 | -4.167 | 4 | 0 | 1 | -.009 | 4 | -.003 | 2 | |
| 91 | M10 | 1 | max | 3153.103 | 2 | 65.134 | 2 | 0 | .015 | 3 | .025 | 3 | .079 | 2 | |
| 92 | | min | 2870.983 | 1 | 58.407 | 6 | -22.647 | 3 | 0 | 1 | 0 | 1 | .07 | 6 | |
| 93 | 2 | max | 3153.103 | 2 | 65.134 | 2 | 0 | 1 | .015 | 3 | .01 | 5 | .022 | 2 | |
| 94 | | min | 2870.983 | 1 | 58.407 | 6 | -22.647 | 3 | 0 | 1 | 0 | 1 | .019 | 6 | |
| 95 | 3 | max | 3153.103 | 2 | 65.134 | 2 | 0 | 1 | .015 | 3 | 0 | 1 | -.032 | 1 | |
| 96 | | min | 2870.983 | 1 | 58.407 | 6 | -22.647 | 3 | 0 | 1 | -.015 | 3 | -.035 | 2 | |
| 97 | 4 | max | 3153.103 | 2 | 65.134 | 2 | 0 | 1 | .015 | 3 | 0 | 1 | -.084 | 1 | |
| 98 | | min | 2870.983 | 1 | 58.407 | 6 | -22.647 | 3 | 0 | 1 | -.035 | 3 | -.092 | 2 | |
| 99 | 5 | max | 3153.103 | 2 | 65.134 | 2 | 0 | 1 | .015 | 3 | 0 | 1 | -.135 | 6 | |
| 100 | | min | 2870.983 | 1 | 58.407 | 6 | -22.647 | 3 | 0 | 1 | -.055 | 3 | -.149 | 2 | |

Envelope AISC 13th ASD Steel Code Checks

| Member | Shape | Code Check | Loc[in] | LC | Shear ... | Loc[in] | Dir | LC | Pnc/om [lb] | Pnt/om [lb] | Mnyy/om [k-ft] | Mnzz/om... Cb | Eqn |
|--------|-------|-------------|---------|-------|-----------|---------|-------|----|-------------|-------------|----------------|---------------|------------|
| 1 | M1 | PIPE_1.25XX | .710 | 4.831 | 3 | .265 | 4.831 | 3 | 21435.517 | 27551.73 | .962 | .962 | 1... H1-1b |
| 2 | M2 | PIPE 1.25 | .893 | 0 | 3 | .113 | 4.831 | 3 | 9227.866 | 11137.725 | .457 | .457 | 2... H1-1b |
| 3 | M3 | PIPE_1.25XX | .458 | 0 | 2 | .109 | 0 | 3 | 19454.965 | 27551.73 | .962 | .962 | 2... H1-1b |
| 4 | M4 | PIPE 1.25 | .425 | 21 | 5 | .080 | 0 | 4 | 8581.222 | 11137.725 | .457 | .457 | 1 H1-1b |
| 5 | M5 | PIPE_1.25XX | .710 | 4.831 | 3 | .265 | 4.831 | 3 | 21435.517 | 27551.73 | .962 | .962 | 1... H1-1b |
| 6 | M6 | PIPE 1.25 | .893 | 0 | 3 | .113 | 4.831 | 3 | 9227.866 | 11137.725 | .457 | .457 | 2... H1-1b |
| 7 | M7 | PIPE_1.25XX | .458 | 42 | 2 | .109 | 42 | 3 | 19454.965 | 27551.73 | .962 | .962 | 2... H1-1b |
| 8 | M8 | PIPE 1.25 | .658 | 0 | 2 | .056 | 0 | 3 | 8581.222 | 11137.725 | .457 | .457 | 2... H1-1a |
| 9 | M9 | PIPE 1.25 | .327 | 42 | 2 | .023 | 0 | 4 | 8581.222 | 11137.725 | .457 | .457 | 1... H1-1a |
| 10 | M10 | PIPE 1.25 | .658 | 42 | 2 | .056 | 0 | 3 | 8581.222 | 11137.725 | .457 | .457 | 2... H1-1a |

*** End of Calculations ***