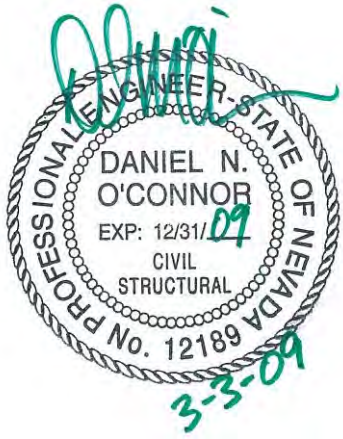
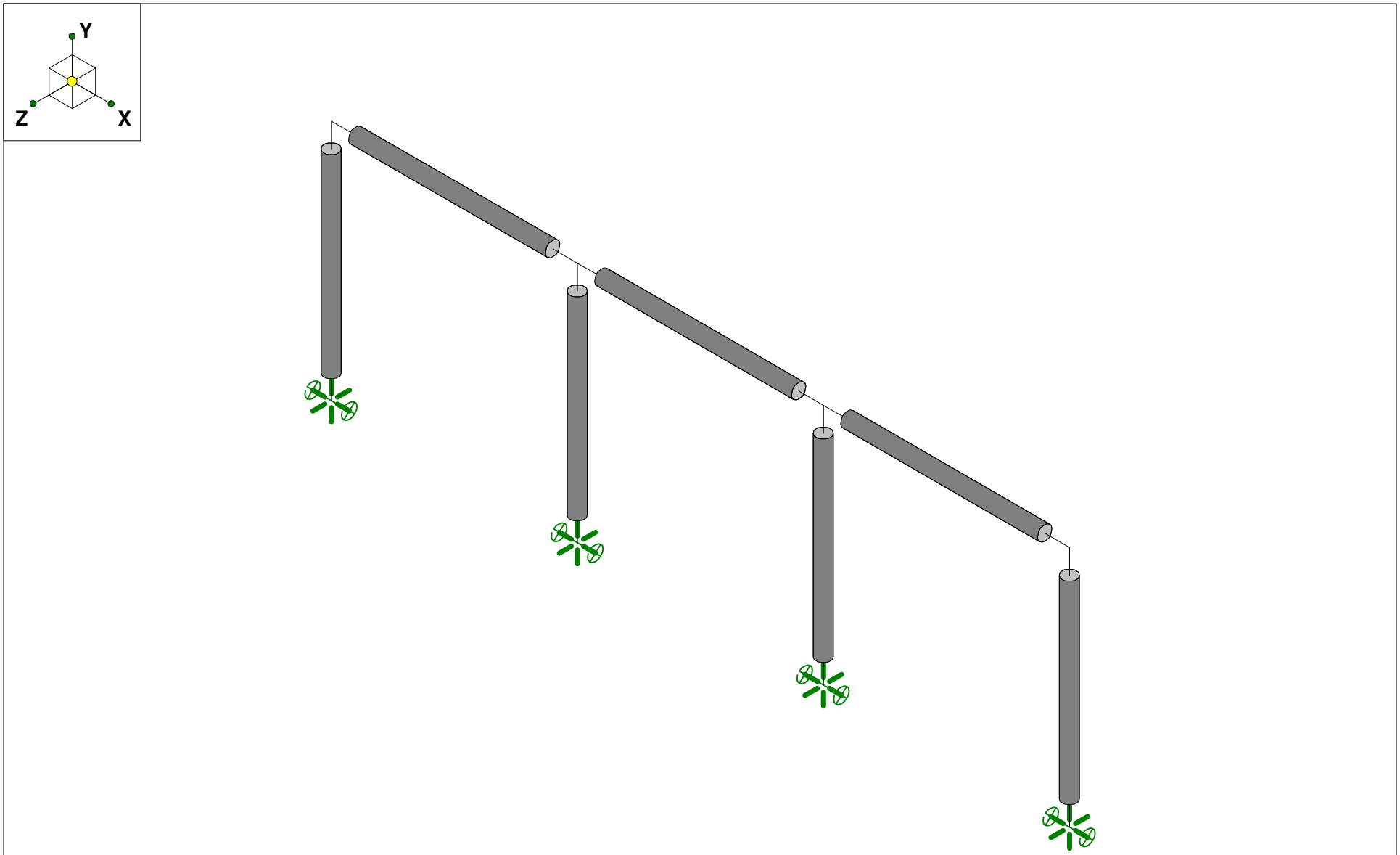
# D20—2" PIPE x 42-1/2" HIGH RAIL WITHOUT BOTTOM RAIL

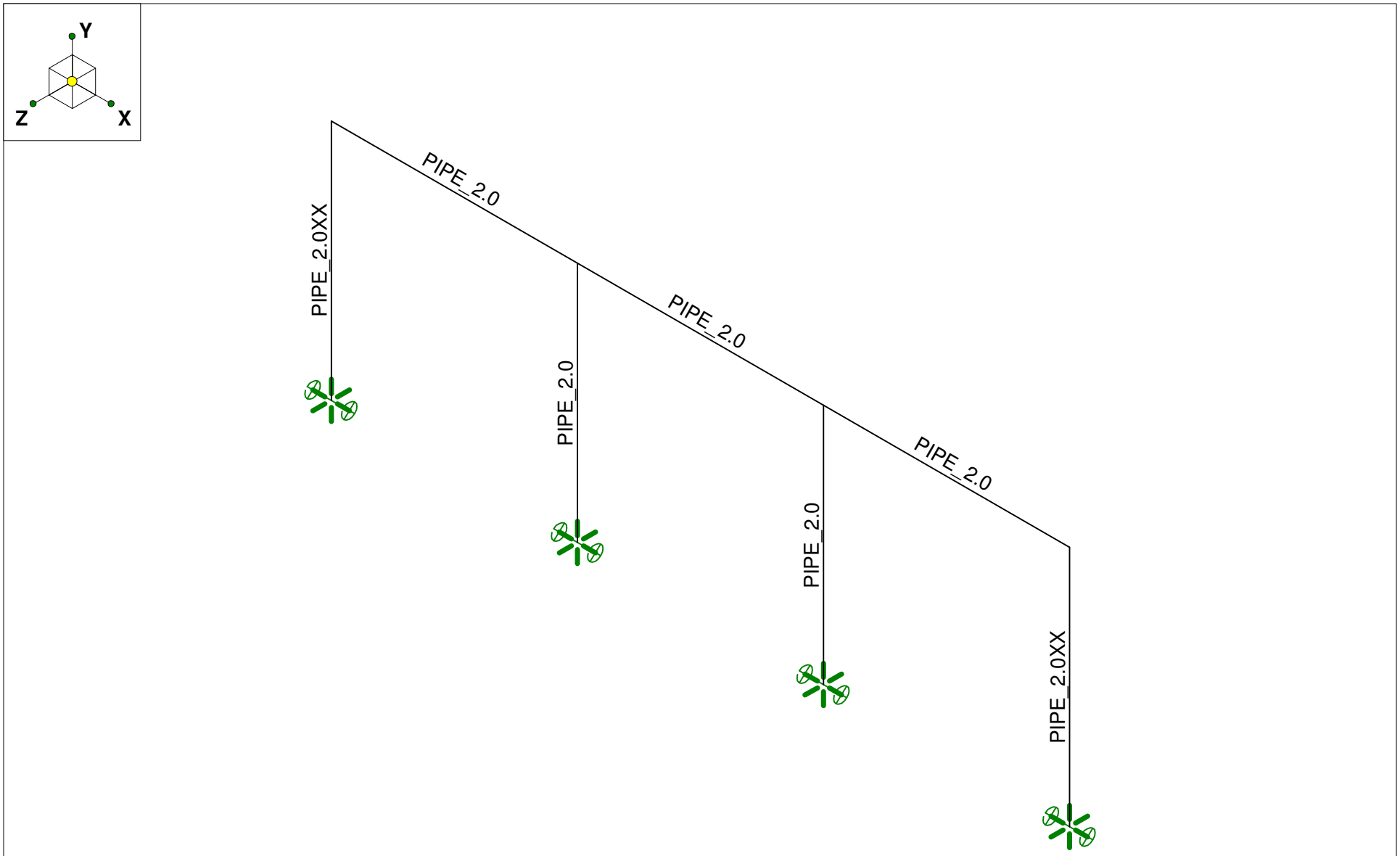
| | |
|---|---|
| Building Code: | **2006 *International Building Code***<br>**2007 *California Building Code***<br>**AISC *Steel Construction Manual*, 13th ed—ASD** |
| Material: | **Carbon Steel, A53, Grade B, Fy = 35 ksi**<br>**or Carbon Steel, A501, Grade B, Fy = 36 ksi**<br>**Stainless Steel, A312, Grade TP-304 or TP-316, Fy = 30 ksi** |
| Height: | **42.5"** |
| Anchor Post: | **2" XXS (2.375" OD x 0.436") Pipe** |
| Intermediate Posts: | **2" SCHD 40 (2.375" OD x 0.154") Pipe** |
| Top Rail: | **2" SCHD 40 (2.375" OD x 0.154") Pipe** |
| Bottom Rail: | **None** |
| Number of Cables: | **12** |
| Cable Spacing: | **3.09"** |
| Cable Prestress: | **325 lbs** |



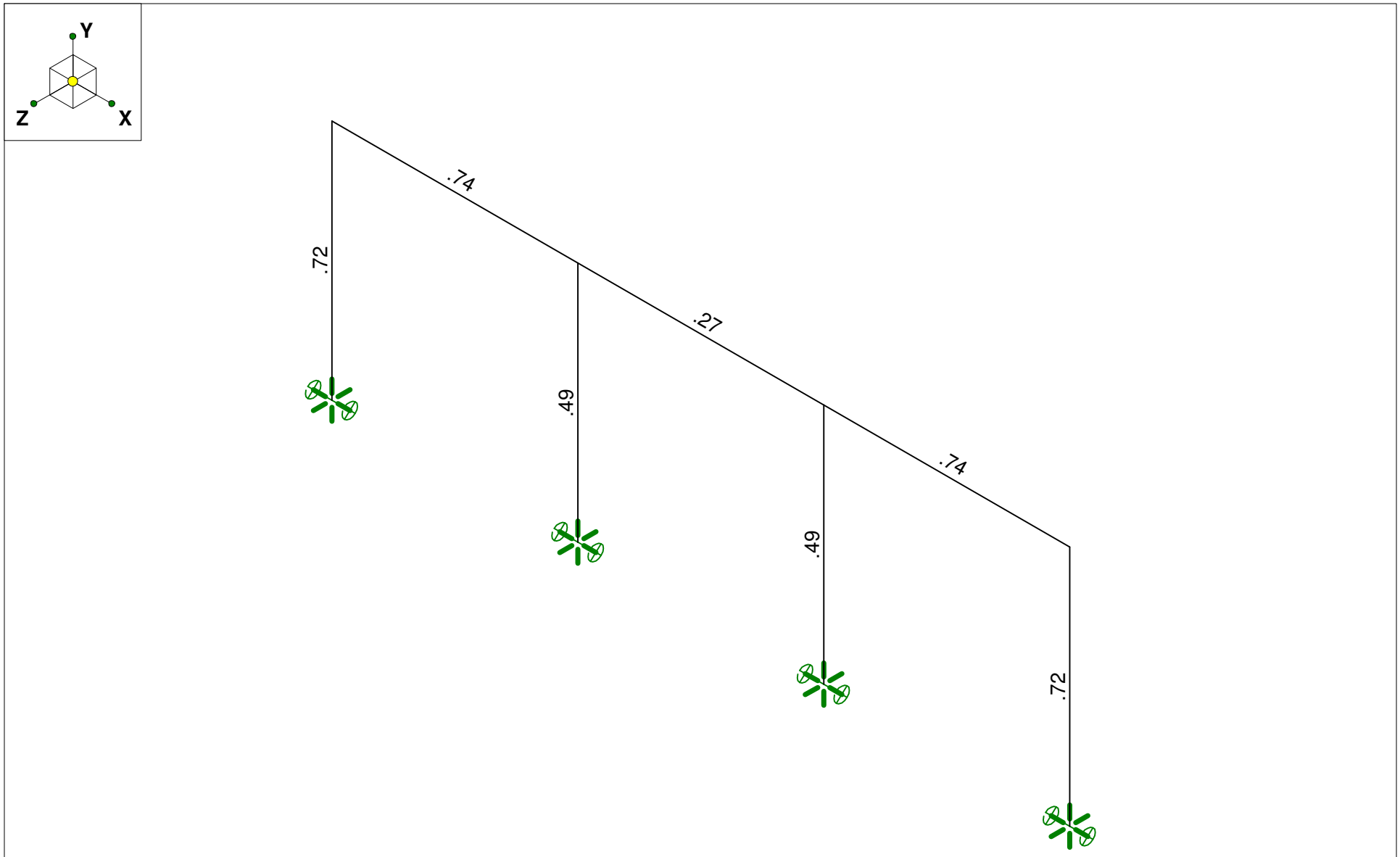

**Disclaimer:** Analysis and Structural Certification DOES NOT include base plates or anchorage to supporting structure. Where required by the Local Building Official, these shall be reviewed and designed by the project Structural Engineer of Record.




| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:13 PM |
| 08196 | | D20.r3d |

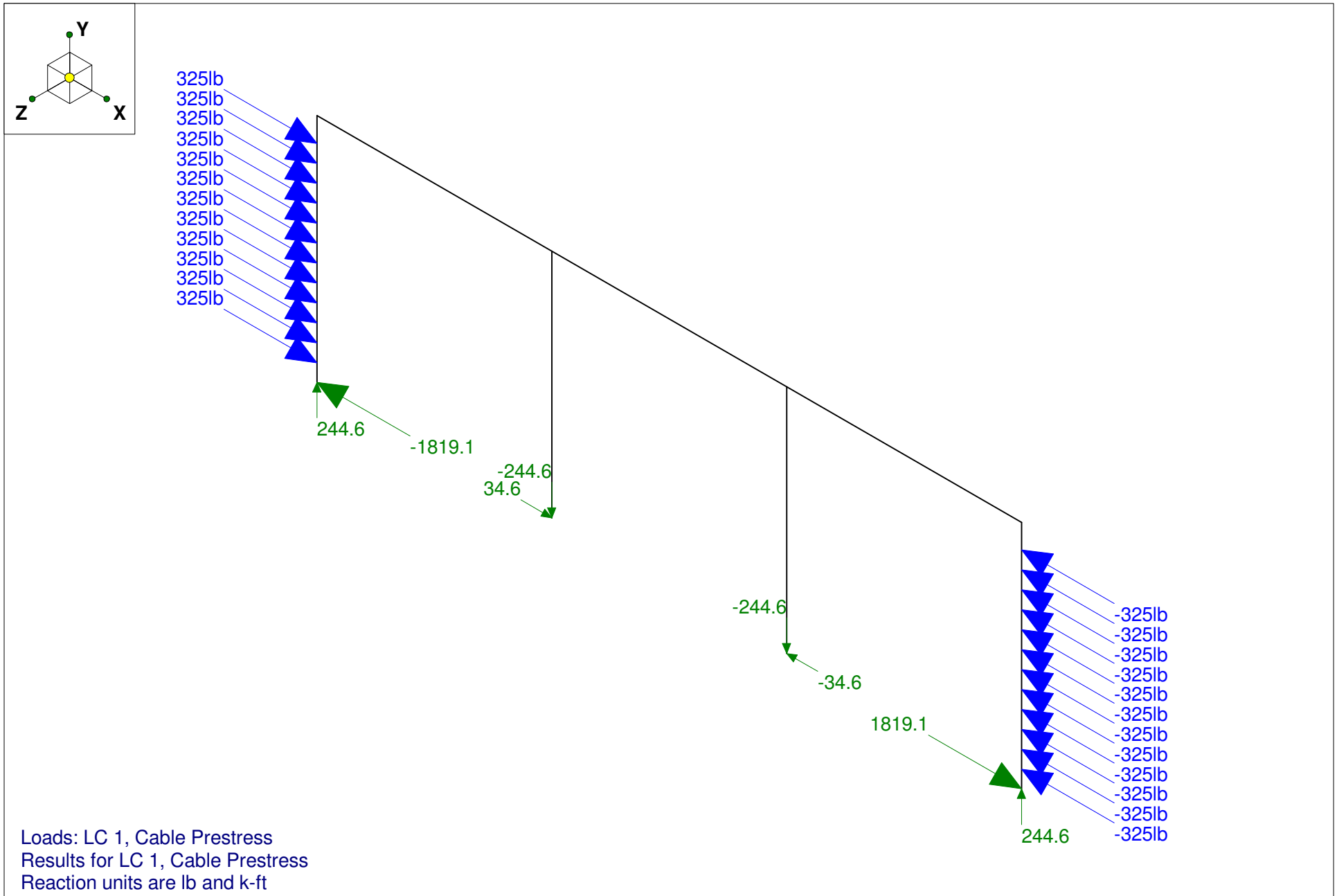



| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:14 PM |
| 08196 | | D20.r3d |



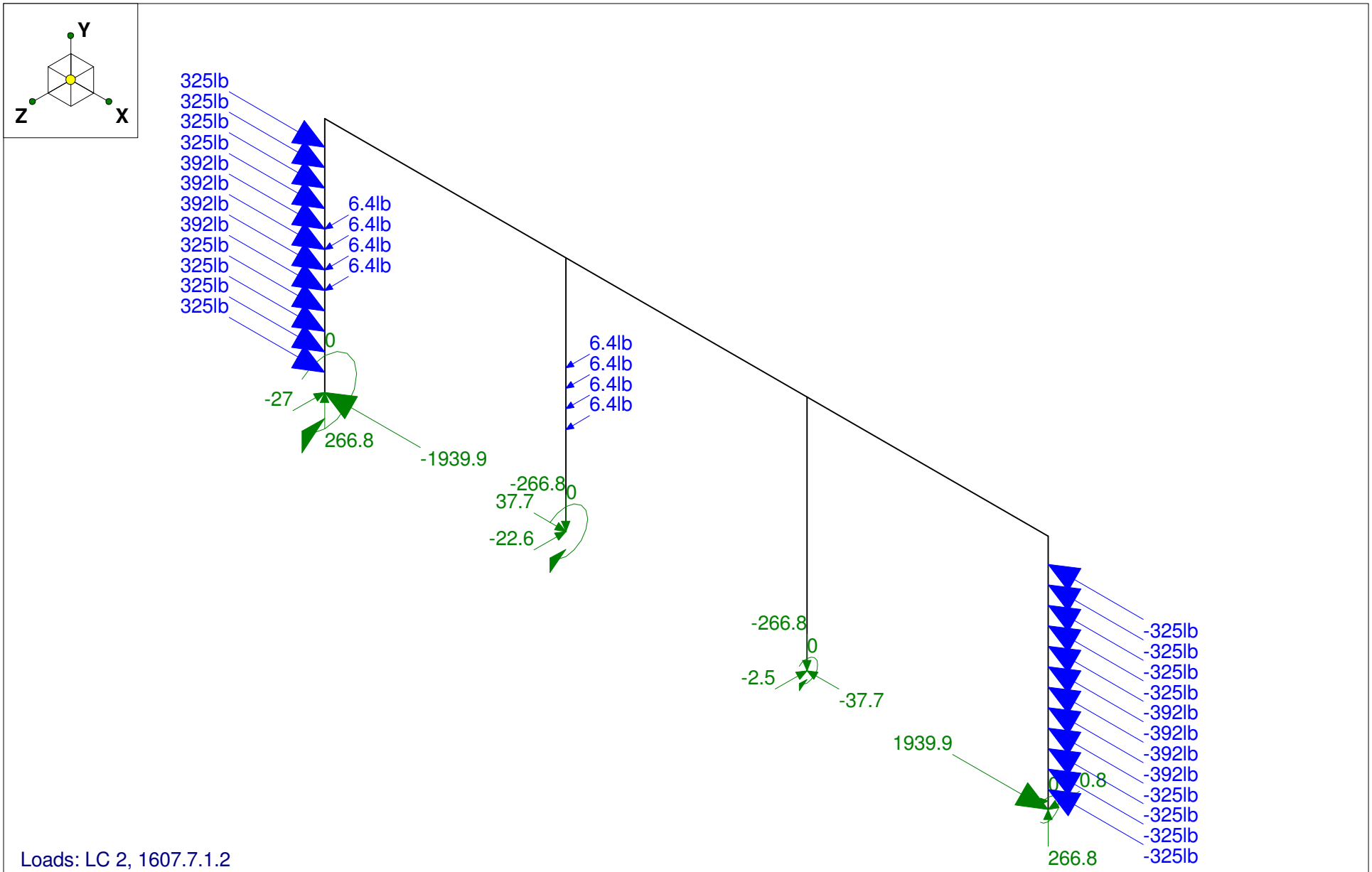

Member Code Checks Displayed
Solution: Envelope
Reaction units are lb and k-ft

| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:20 PM |
| 08196 | | D20.r3d |



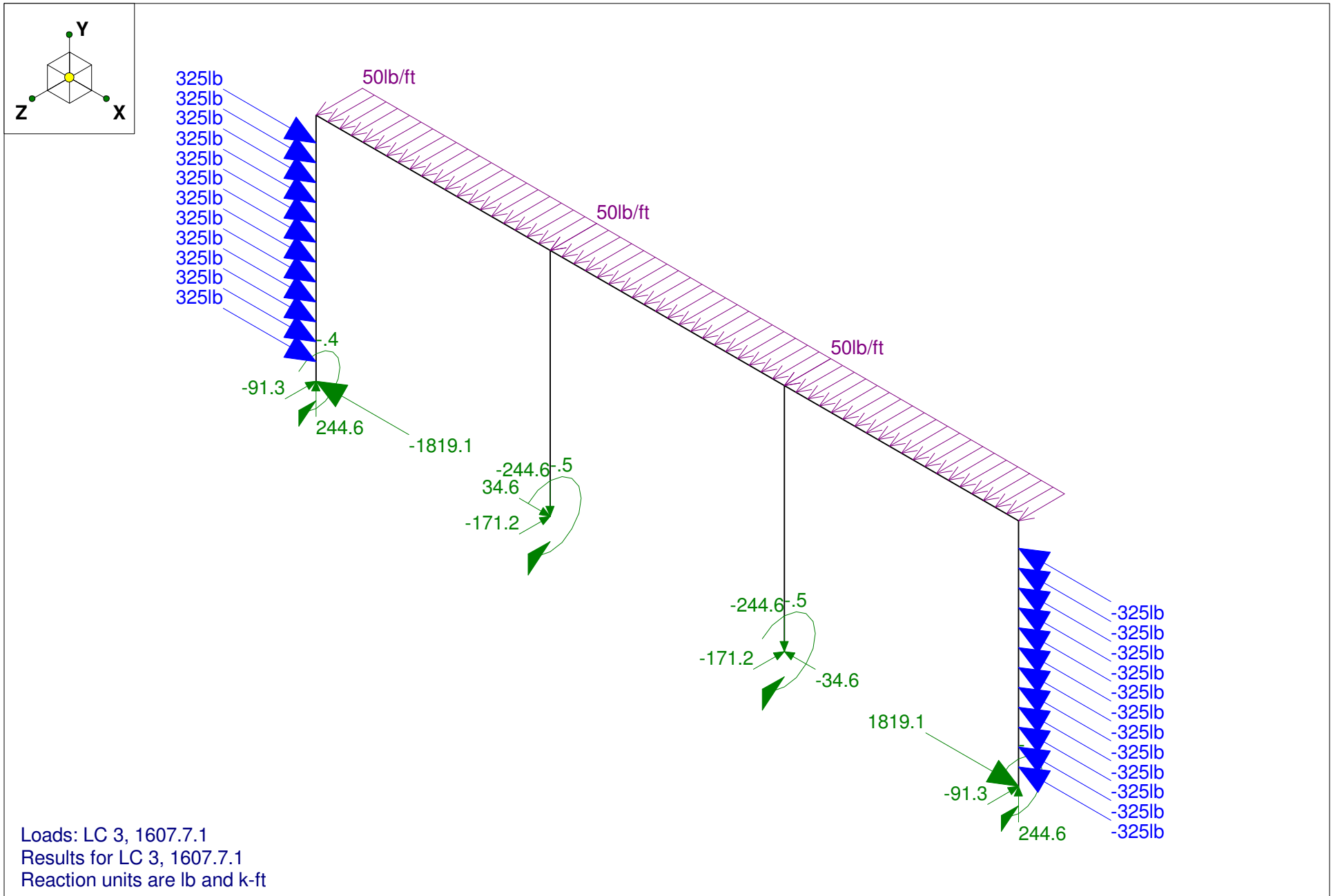

Loads: LC 1, Cable Prestress
Results for LC 1, Cable Prestress
Reaction units are lb and k-ft

| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:19 PM |
| 08196 | | D20.r3d |

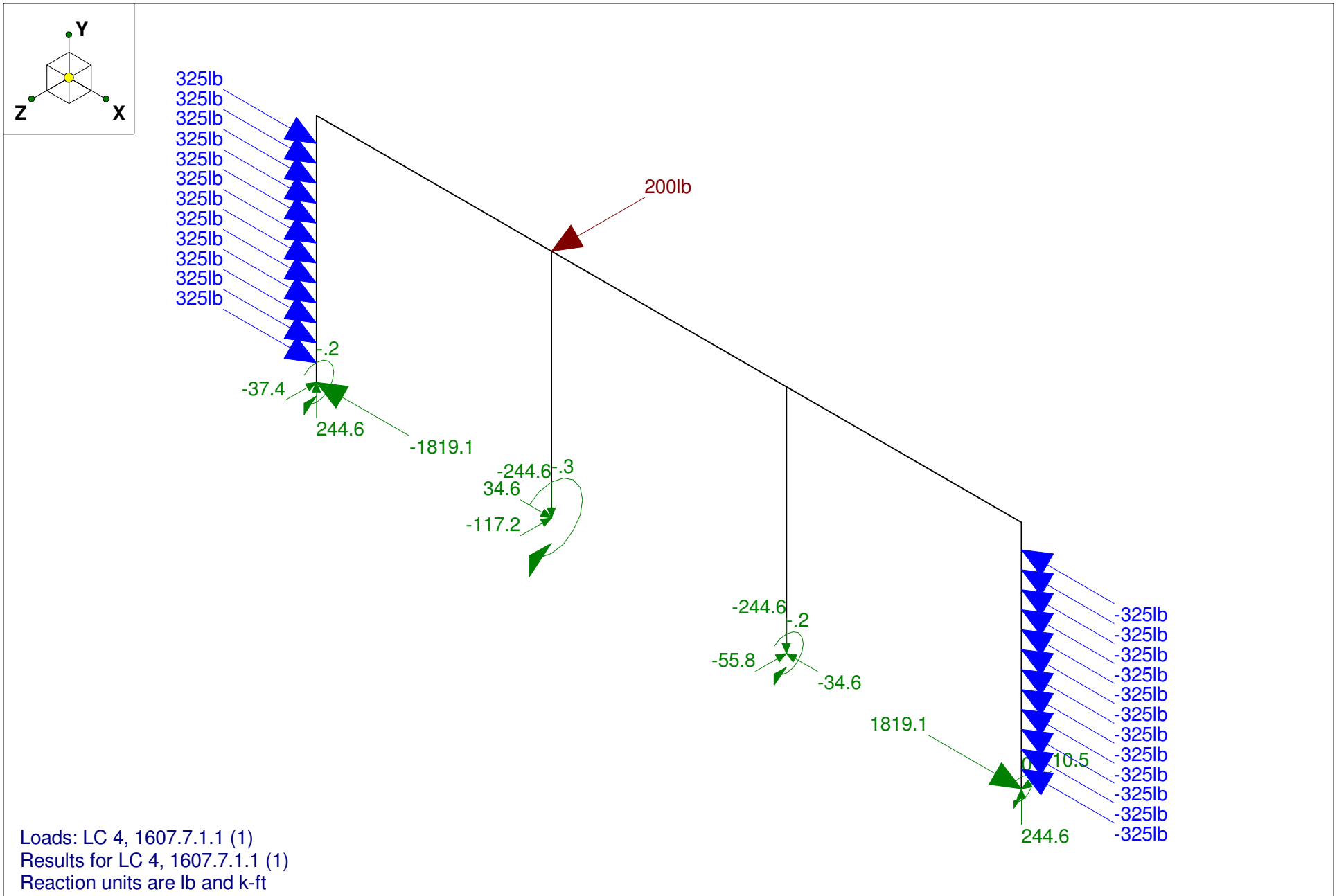



Loads: LC 2, 1607.7.1.2
Results for LC 2, 1607.7.1.2
Reaction units are lb and k-ft

| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:19 PM |
| 08196 | | D20.r3d |

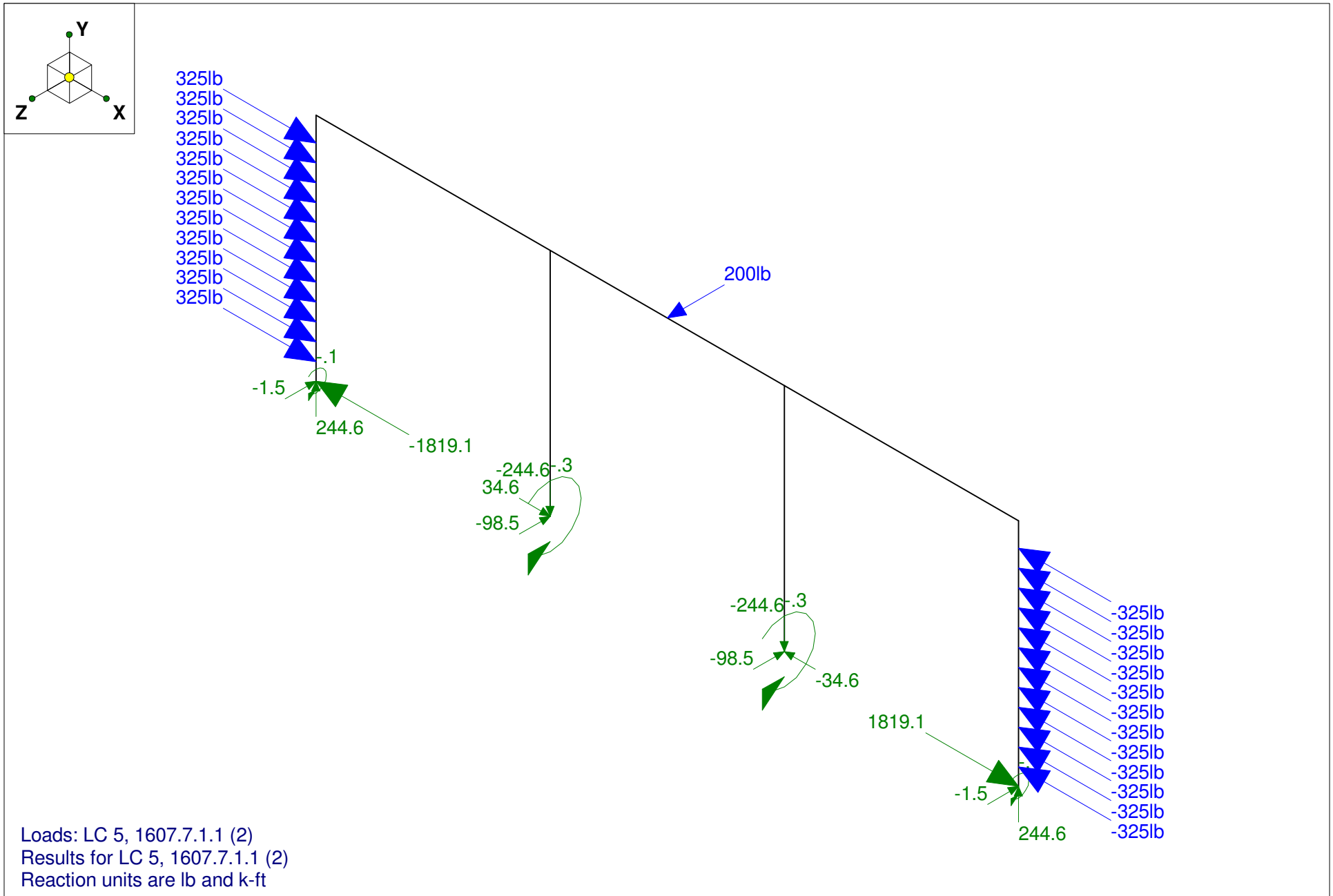



| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:19 PM |
| 08196 | | D20.r3d |



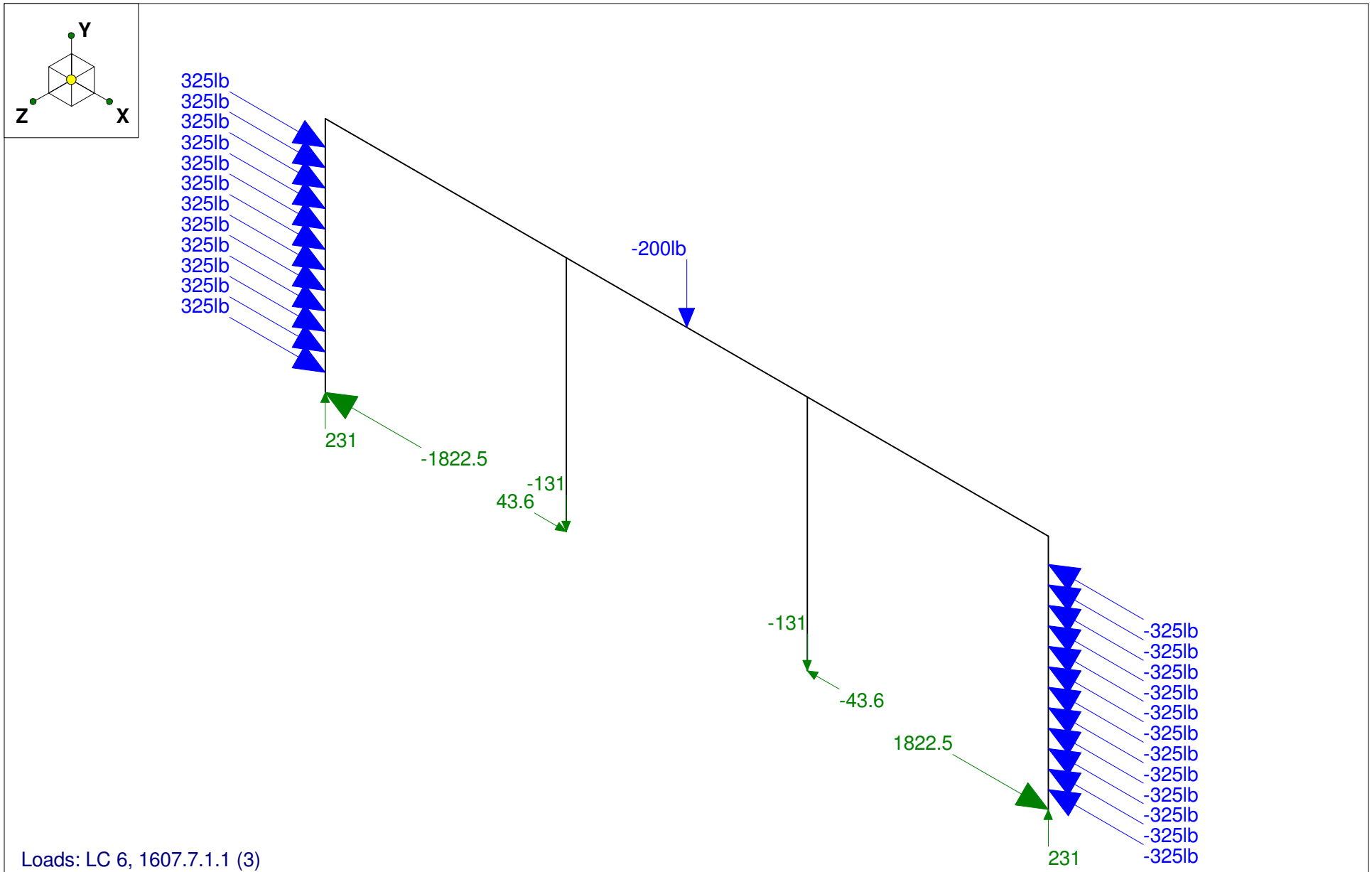

Loads: LC 4, 1607.7.1.1 (1)
Results for LC 4, 1607.7.1.1 (1)
Reaction units are lb and k-ft

| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:19 PM |
| 08196 | | D20.r3d |




Loads: LC 5, 1607.7.1.1 (2)
Results for LC 5, 1607.7.1.1 (2)
Reaction units are lb and k-ft

| | | |
|---|---|---|
| Ferrari Shields & Associates | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:19 PM |
| 08196 | | D20.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 | D20 - 2" PIPE x 42.5" HIGH TOP RAIL W/O BTM RAIL | |
| Dan O'Connor | | Mar 3, 2009 at 2:20 PM |
| 08196 | | D20.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 |
| Parme 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 2.0 | Beam | Pipe | A53GrB/A501/S... | Typical | 1 | .627 | .627 | 1.25 |
| 2 | IPOST | PIPE 2.0 | Column | Pipe | A53GrB/A501/S... | Typical | 1 | .627 | .627 | 1.25 |
| 3 | EPOST | PIPE 2.0XX | Column | Pipe | A53GrB/A501/S... | Typical | 2.51 | 1.27 | 1.27 | 2.54 |

## Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area (Mem... | Surface (Pl... |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cable Prestress | None | | | | | 24 | | | |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cable Prestress | Yes | C | | 1 | 1 | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | Solve | PDelta | SR... | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |
| 3 | M3 | N2 | N4 | | | RAIL | 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 | | | RAIL | Beam | Pipe | A53GrB/A... | Typical |
| 7 | M7 | N8 | N6 | | | 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 | -1819.112 | 4 | 266.785 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2 | | min | -1939.916 | 2 | 230.997 | 6 | -91.299 | 3 | -.394 | 3 | 0 | 1 | 0 | 1 |
| 3 | N3 | max | 43.623 | 6 | -130.997 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 4 | | min | 34.588 | 4 | -266.785 | 2 | -171.201 | 3 | -.513 | 3 | 0 | 1 | 0 | 1 |
| 5 | N5 | max | 1939.916 | 2 | 266.785 | 2 | 10.473 | 4 | 0 | 2 | 0 | 1 | 0 | 1 |
| 6 | | min | 1819.112 | 4 | 230.997 | 6 | -91.299 | 3 | -.394 | 3 | 0 | 1 | 0 | 1 |
| 7 | N7 | max | -34.588 | 4 | -130.997 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 8 | | min | -43.623 | 6 | -266.785 | 2 | -171.201 | 3 | -.513 | 3 | 0 | 1 | 0 | 1 |
| 9 | Totals: | max | 0 | 4 | 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 | 266.785 | 2 | 1939.966 | 2 | 0 | 1 | 0 | 1 | .394 | 3 | 0 | 1 |
| 2 | | | min | 230.997 | 6 | 1819.155 | 1 | -92.061 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | | 2 | max | 266.785 | 2 | 964.966 | 2 | 0 | 1 | 0 | 1 | .314 | 3 | -1.224 | 1 |
| 4 | | | min | 230.997 | 6 | 844.155 | 1 | -92.061 | 3 | 0 | 1 | 0 | 1 | -1.328 | 2 |
| 5 | | 3 | max | 266.785 | 2 | -127.476 | 6 | 0 | 1 | 0 | 1 | .235 | 3 | -1.522 | 1 |
| 6 | | | min | 230.997 | 6 | -144.034 | 2 | -92.061 | 3 | 0 | 1 | 0 | 1 | -1.689 | 2 |
| 7 | | 4 | max | 266.785 | 2 | -1427.476 | 6 | 0 | 1 | 0 | 1 | .156 | 3 | -.892 | 1 |
| 8 | | | min | 230.997 | 6 | -1578.034 | 2 | -92.061 | 3 | 0 | 1 | 0 | 1 | -.959 | 2 |
| 9 | | 5 | max | 266.785 | 2 | -2077.476 | 6 | 0 | 1 | 0 | 1 | .077 | 3 | .715 | 2 |
| 10 | | | min | 230.997 | 6 | -2228.034 | 2 | -92.061 | 3 | 0 | 1 | 0 | 2 | .644 | 6 |
| 11 | M2 | 1 | max | -130.997 | 6 | -34.588 | 4 | 0 | 1 | 0 | 1 | .513 | 3 | 0 | 1 |
| 12 | | | min | -266.785 | 2 | -43.623 | 6 | -171.201 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 13 | | 2 | max | -130.997 | 6 | -34.588 | 4 | 0 | 1 | 0 | 1 | .365 | 3 | .038 | 6 |
| 14 | | | min | -266.785 | 2 | -43.623 | 6 | -171.201 | 3 | 0 | 1 | 0 | 1 | .03 | 4 |
| 15 | | 3 | max | -130.997 | 6 | -34.588 | 4 | 0 | 1 | 0 | 1 | .218 | 3 | .075 | 6 |
| 16 | | | min | -266.785 | 2 | -43.623 | 6 | -171.201 | 3 | 0 | 1 | -.003 | 2 | .06 | 4 |
| 17 | | 4 | max | -130.997 | 6 | -34.588 | 4 | 3.031 | 2 | 0 | 1 | .071 | 3 | .113 | 6 |

## *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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | | | min | -266.785 | 2 | -43.623 | 6 | -171.201 | 3 | 0 | 1 | -.003 | 2 | .089 | 4 |
| 19 | | 5 | max | -130.997 | 6 | -34.588 | 4 | 3.031 | 2 | 0 | 1 | 0 | 1 | .15 | 6 |
| 20 | | | min | -266.785 | 2 | -43.623 | 6 | -171.201 | 3 | 0 | 1 | -.081 | 4 | .119 | 4 |
| 21 | M3 | 1 | max | 2228.084 | 2 | 266.737 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | .715 | 2 |
| 22 | | | min | 2077.517 | 6 | 230.969 | 6 | -99.105 | 3 | -.077 | 3 | 0 | 1 | .644 | 6 |
| 23 | | 2 | max | 2228.084 | 2 | 266.737 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | .482 | 2 |
| 24 | | | min | 2077.517 | 6 | 230.969 | 6 | -55.355 | 3 | -.077 | 3 | -.068 | 3 | .442 | 4 |
| 25 | | 3 | max | 2228.084 | 2 | 266.737 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | .248 | 2 |
| 26 | | | min | 2077.517 | 6 | 230.969 | 6 | -42.879 | 4 | -.077 | 3 | -.097 | 3 | .228 | 4 |
| 27 | | 4 | max | 2228.084 | 2 | 266.737 | 2 | 32.145 | 3 | 0 | 2 | 0 | 1 | .038 | 6 |
| 28 | | | min | 2077.517 | 6 | 230.969 | 6 | -42.879 | 4 | -.077 | 3 | -.113 | 4 | .014 | 1 |
| 29 | | 5 | max | 2228.084 | 2 | 266.737 | 2 | 75.895 | 3 | 0 | 2 | 0 | 1 | -.164 | 6 |
| 30 | | | min | 2077.517 | 6 | 230.969 | 6 | -42.879 | 4 | -.077 | 3 | -.15 | 4 | -.218 | 2 |
| 31 | M4 | 1 | max | 2265.825 | 2 | 100 | 6 | 48.892 | 4 | .032 | 4 | 0 | 1 | -.014 | 6 |
| 32 | | | min | 2115.475 | 1 | 0 | 1 | -100 | 5 | 0 | 1 | -.15 | 4 | -.089 | 2 |
| 33 | | 2 | max | 2265.825 | 2 | 100 | 6 | 48.892 | 4 | .032 | 4 | 0 | 1 | -.081 | 4 |
| 34 | | | min | 2115.475 | 1 | 0 | 1 | -100 | 5 | 0 | 1 | -.114 | 5 | -.102 | 6 |
| 35 | | 3 | max | 2265.825 | 2 | 0 | 1 | 100 | 5 | .032 | 4 | 0 | 1 | -.081 | 4 |
| 36 | | | min | 2115.475 | 1 | -100 | 6 | 0 | 1 | 0 | 1 | -.202 | 5 | -.189 | 6 |
| 37 | | 4 | max | 2265.825 | 2 | 0 | 1 | 100 | 5 | .032 | 4 | 0 | 2 | -.081 | 4 |
| 38 | | | min | 2115.475 | 1 | -100 | 6 | 0 | 1 | 0 | 1 | -.114 | 5 | -.102 | 6 |
| 39 | | 5 | max | 2265.825 | 2 | 0 | 1 | 100 | 5 | .032 | 4 | .021 | 4 | -.014 | 6 |
| 40 | | | min | 2115.475 | 1 | -100 | 6 | 0 | 1 | 0 | 1 | -.041 | 3 | -.089 | 2 |
| 41 | M5 | 1 | max | 266.785 | 2 | -1819.155 | 1 | 10.409 | 4 | 0 | 1 | .394 | 3 | 0 | 1 |
| 42 | | | min | 230.997 | 6 | -1939.966 | 2 | -92.061 | 3 | 0 | 1 | 0 | 2 | 0 | 1 |
| 43 | | 2 | max | 266.785 | 2 | -844.155 | 1 | 10.409 | 4 | 0 | 1 | .314 | 3 | 1.328 | 2 |
| 44 | | | min | 230.997 | 6 | -964.966 | 2 | -92.061 | 3 | 0 | 1 | 0 | 1 | 1.224 | 1 |
| 45 | | 3 | max | 266.785 | 2 | 144.034 | 2 | 10.409 | 4 | 0 | 1 | .235 | 3 | 1.689 | 2 |
| 46 | | | min | 230.997 | 6 | 127.476 | 6 | -92.061 | 3 | 0 | 1 | 0 | 1 | 1.522 | 1 |
| 47 | | 4 | max | 266.785 | 2 | 1578.034 | 2 | 10.409 | 4 | 0 | 1 | .156 | 3 | .959 | 2 |
| 48 | | | min | 230.997 | 6 | 1427.476 | 6 | -92.061 | 3 | 0 | 1 | 0 | 1 | .892 | 1 |
| 49 | | 5 | max | 266.785 | 2 | 2228.034 | 2 | 10.409 | 4 | 0 | 1 | .077 | 3 | -.644 | 6 |
| 50 | | | min | 230.997 | 6 | 2077.476 | 6 | -92.061 | 3 | 0 | 1 | 0 | 1 | -.715 | 2 |
| 51 | M6 | 1 | max | -130.997 | 6 | 43.623 | 6 | 0 | 1 | 0 | 1 | .513 | 3 | 0 | 1 |
| 52 | | | min | -266.785 | 2 | 34.588 | 4 | -171.201 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
| 53 | | 2 | max | -130.997 | 6 | 43.623 | 6 | 0 | 1 | 0 | 1 | .365 | 3 | -.03 | 4 |
| 54 | | | min | -266.785 | 2 | 34.588 | 4 | -171.201 | 3 | 0 | 1 | 0 | 1 | -.038 | 6 |
| 55 | | 3 | max | -130.997 | 6 | 43.623 | 6 | 0 | 1 | 0 | 1 | .218 | 3 | -.06 | 4 |
| 56 | | | min | -266.785 | 2 | 34.588 | 4 | -171.201 | 3 | 0 | 1 | 0 | 1 | -.075 | 6 |
| 57 | | 4 | max | -130.997 | 6 | 43.623 | 6 | 0 | 1 | 0 | 1 | .071 | 3 | -.089 | 4 |
| 58 | | | min | -266.785 | 2 | 34.588 | 4 | -171.201 | 3 | 0 | 1 | 0 | 1 | -.113 | 6 |
| 59 | | 5 | max | -130.997 | 6 | 43.623 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | -.119 | 4 |
| 60 | | | min | -266.785 | 2 | 34.588 | 4 | -171.201 | 3 | 0 | 1 | -.077 | 3 | -.15 | 6 |
| 61 | M7 | 1 | max | 2228.084 | 2 | -230.969 | 6 | 7.591 | 5 | .077 | 3 | .021 | 4 | -.164 | 6 |
| 62 | | | min | 2077.517 | 6 | -266.737 | 2 | -75.895 | 3 | 0 | 1 | -.041 | 3 | -.218 | 2 |
| 63 | | 2 | max | 2228.084 | 2 | -230.969 | 6 | 7.591 | 5 | .077 | 3 | .016 | 4 | .038 | 6 |
| 64 | | | min | 2077.517 | 6 | -266.737 | 2 | -32.145 | 3 | 0 | 1 | -.088 | 3 | .014 | 1 |
| 65 | | 3 | max | 2228.084 | 2 | -230.969 | 6 | 11.605 | 3 | .077 | 3 | .011 | 4 | .248 | 2 |
| 66 | | | min | 2077.517 | 6 | -266.737 | 2 | -6.013 | 4 | 0 | 1 | -.097 | 3 | .228 | 4 |
| 67 | | 4 | max | 2228.084 | 2 | -230.969 | 6 | 55.355 | 3 | .077 | 3 | .005 | 4 | .482 | 2 |
| 68 | | | min | 2077.517 | 6 | -266.737 | 2 | -6.013 | 4 | 0 | 1 | -.068 | 3 | .442 | 4 |
| 69 | | 5 | max | 2228.084 | 2 | -230.969 | 6 | 99.105 | 3 | .077 | 3 | 0 | 1 | .715 | 2 |
| 70 | | | min | 2077.517 | 6 | -266.737 | 2 | -6.013 | 4 | 0 | 1 | 0 | 1 | .644 | 6 |

## *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 2.0XX | .719 | 18.505 | 2 | .165 | 37.439 | | 2 | 38887.627 | 45089.82 | 2.395 | 2.395 | 1.... | H1-1b |
| 2 | M2 | PIPE 2.0 | .487 | 0 | 3 | .032 | 0 | | 3 | 15941.992 | 17964.072 | 1.067 | 1.067 | 1.... | H1-1b |
| 3 | M3 | PIPE 2.0 | .740 | 0 | 2 | .130 | 0 | | 3 | 15878.23 | 17964.072 | 1.067 | 1.067 | 2.... | H1-1b |
| 4 | M4 | PIPE 2.0 | .270 | 21 | 5 | .042 | 0 | | 4 | 15878.23 | 17964.072 | 1.067 | 1.067 | 1 | H1-1b |
| 5 | M5 | PIPE 2.0XX | .719 | 18.505 | 2 | .165 | 37.439 | | 2 | 38887.627 | 45089.82 | 2.395 | 2.395 | 1.... | H1-1b |
| 6 | M6 | PIPE 2.0 | .487 | 0 | 3 | .032 | 0 | | 3 | 15941.992 | 17964.072 | 1.067 | 1.067 | 1.... | H1-1b |
| 7 | M7 | PIPE 2.0 | .740 | 42 | 2 | .130 | 42 | | 3 | 15878.23 | 17964.072 | 1.067 | 1.067 | 2.... | H1-1b |

***** End of Calculations *****