



AMERICAN TOWER®
CORPORATION

Post Modification Antenna Mount Analysis Report

ATC Site Name : EAST KILLINGLY NORTH, CT
ATC Site Number : 88011
Engineering Number : 13320909_C9_08
Mount Elevation : 246 ft
Carrier : AT&T Mobility
Carrier Site Name : CTL01289
Carrier Site Number : CTL01289
Site Location : 1375 North Road
Killingly, CT 06241-1404
41.871525 , -71.82154444
County : Windham
Date : April 21, 2021
Max Usage : 90%
Result : Contingent Pass

Prepared By:
Trevor Ridilla
Structural Engineer II

Reviewed By:

COA: PEC.0001553



Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion 1

Antenna Loading..... 2

Structure Usages..... 2

Mount Layout 3

Equipment Layout 4

Standard Conditions..... 6

Calculations Attached



Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 246 ft.

Supporting Documents

| | |
|-----------------------------------|---|
| Mount Mapping | ETS Project #205063.IE.01, dated October 26, 2020 |
| Radio Frequency Data Sheet | RFDS ID #CTL01289, dated August 21, 2020 |
| Reference Photos | Site photos from 2020 |

Analysis

This antenna mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

| | |
|--------------------------------------|--|
| Basic Wind Speed: | 122 mph (3-Second Gust) |
| Basic Wind Speed w/ Ice: | 50 mph (3-Second Gust) w/ 1" radial ice concurrent |
| Codes: | ANSI/TIA-222-H |
| Exposure Category: | B |
| Risk Category: | II |
| Topographic Factor Procedure: | Method 2 |
| Feature: | Flat |
| Crest Height (H): | 0 ft |
| Crest Length (L): | 0 ft |
| Spectral Response: | Ss = 0.186, S1 = 0.055 |
| Site Class: | D - Stiff Soil |
| Live Loads: | Lm = 500 lbs, Lv = 250 lbs |

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install modification per ATC Drawing #13320909_C9_08

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



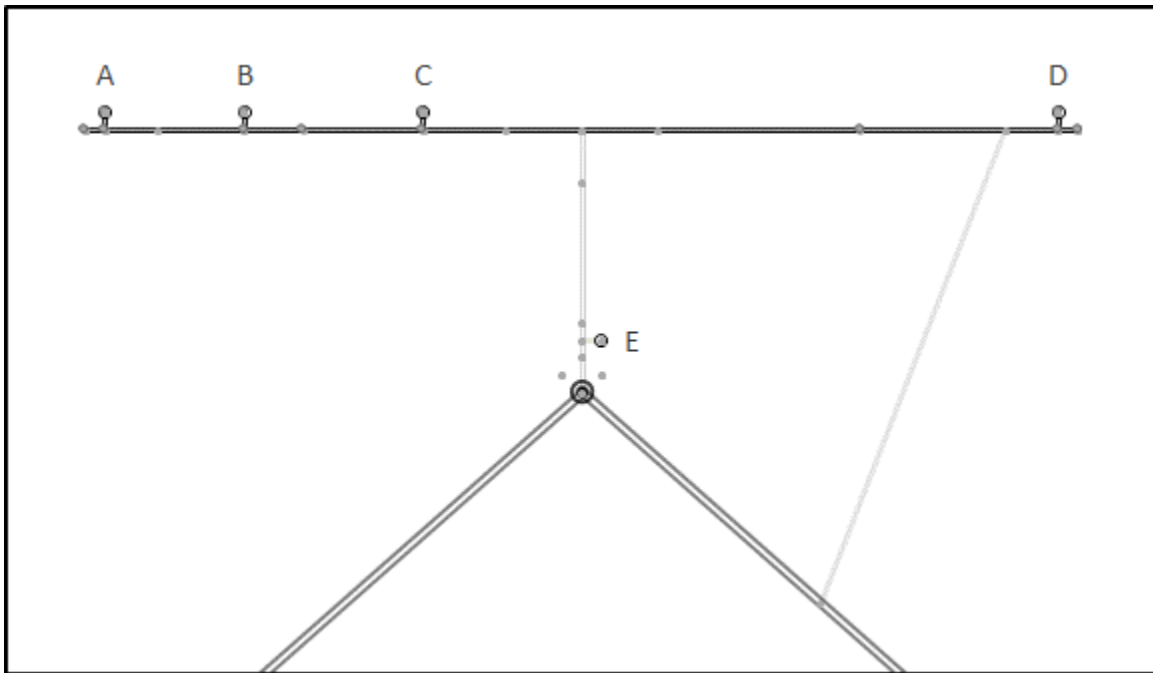
Application Loading

| Mount Centerline (ft) | Antenna Centerline (ft) | Qty | Antenna Model |
|-----------------------|-------------------------|-----|-----------------------------------|
| 246.0 | 246.0 | 3 | Powerwave Allgon P65-16-XLH-RR |
| | | 3 | CCI OPA65R-BU8D |
| | | 3 | CCI DMP65R-BU8D |
| | | 3 | Powerwave Allgon TT19-08BP111-001 |
| | | 6 | Powerwave Allgon LGP21901 |
| | | 2 | Raycap DC6-48-60-18-8F |
| | | 3 | Ericsson RRUS 4478 B14 |
| | | 3 | Ericsson RRUS 4449 B5, B12 |
| | | 3 | Ericsson RRUS 8843 B2, B66A |

Structure Usages

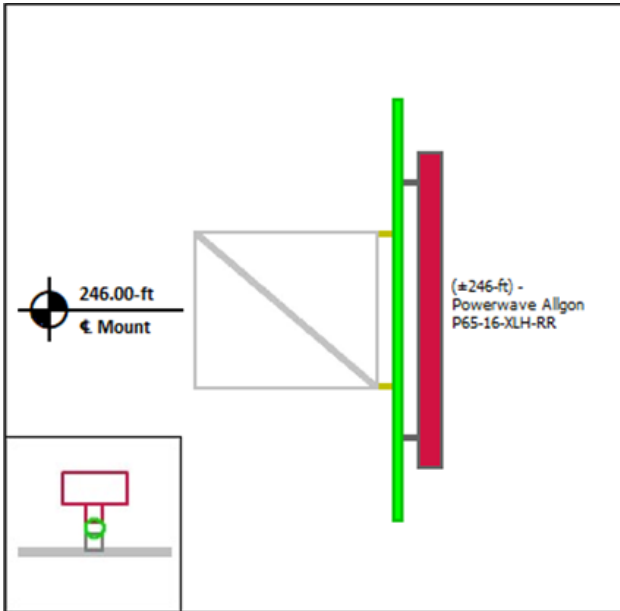
| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Horizontals | 78% | Pass |
| Verticals | 57% | Pass |
| Diagonals | 26% | Pass |
| Tie-Backs | 6% | Pass |
| Mount Pipes | 90% | Pass |
| Mod-Kit | 69% | Pass |

Mount Layout

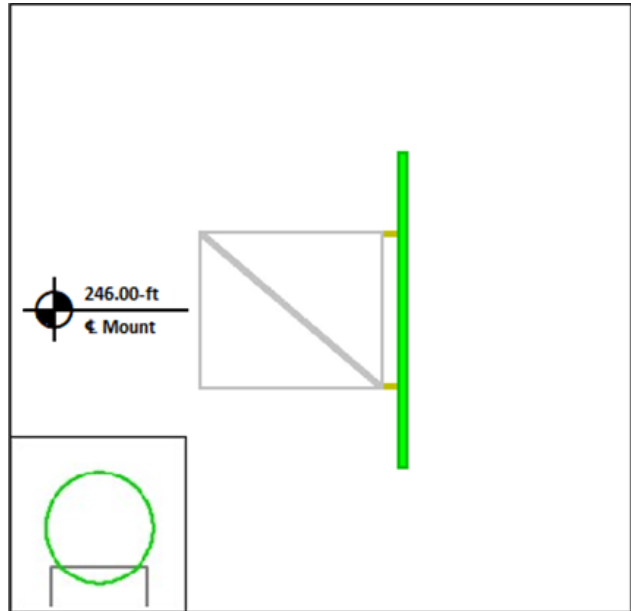


Equipment Layout

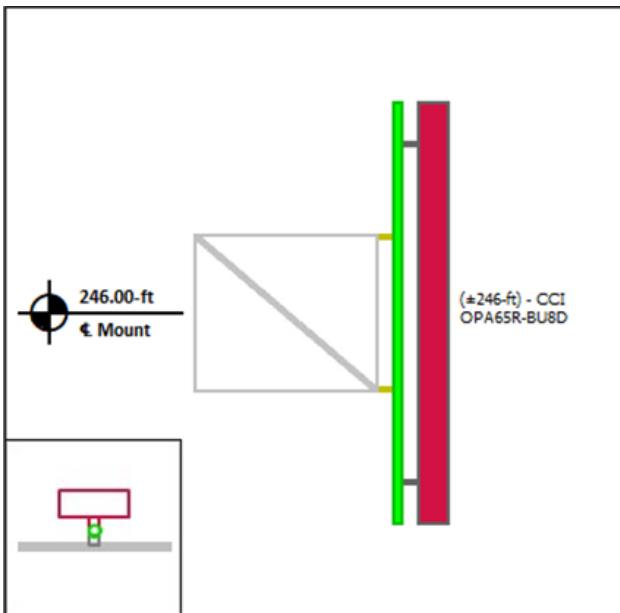
Mount Pipe A



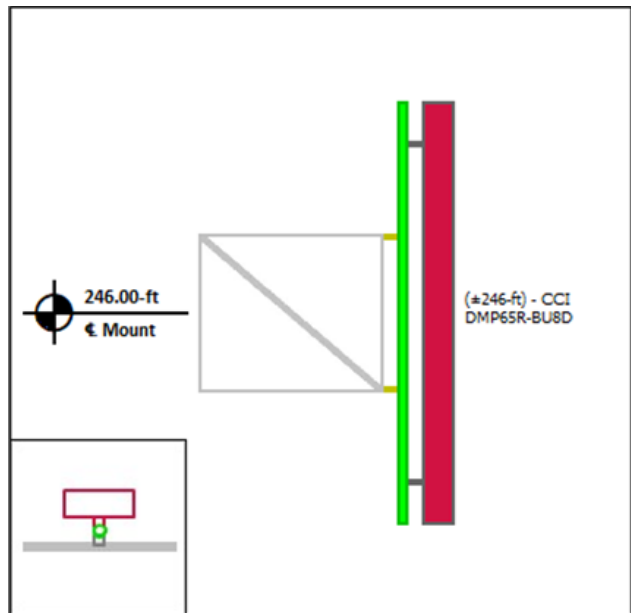
Mount Pipe B



Mount Pipe C

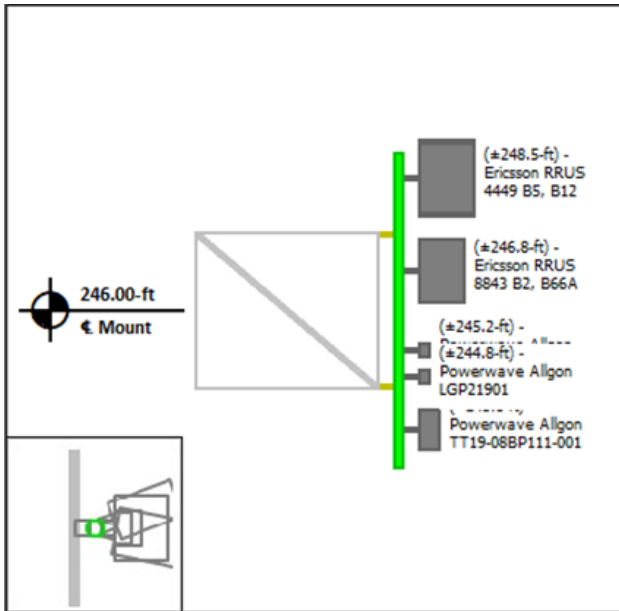


Mount Pipe D



Equipment Layout Cont'd.

Mount Pipe E





Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.



Site Number: 88011
Project Number: 13320909_C9_08
Carrier: AT&T Mobility
Mount Elevation: 246 ft
Date: 4/21/2021

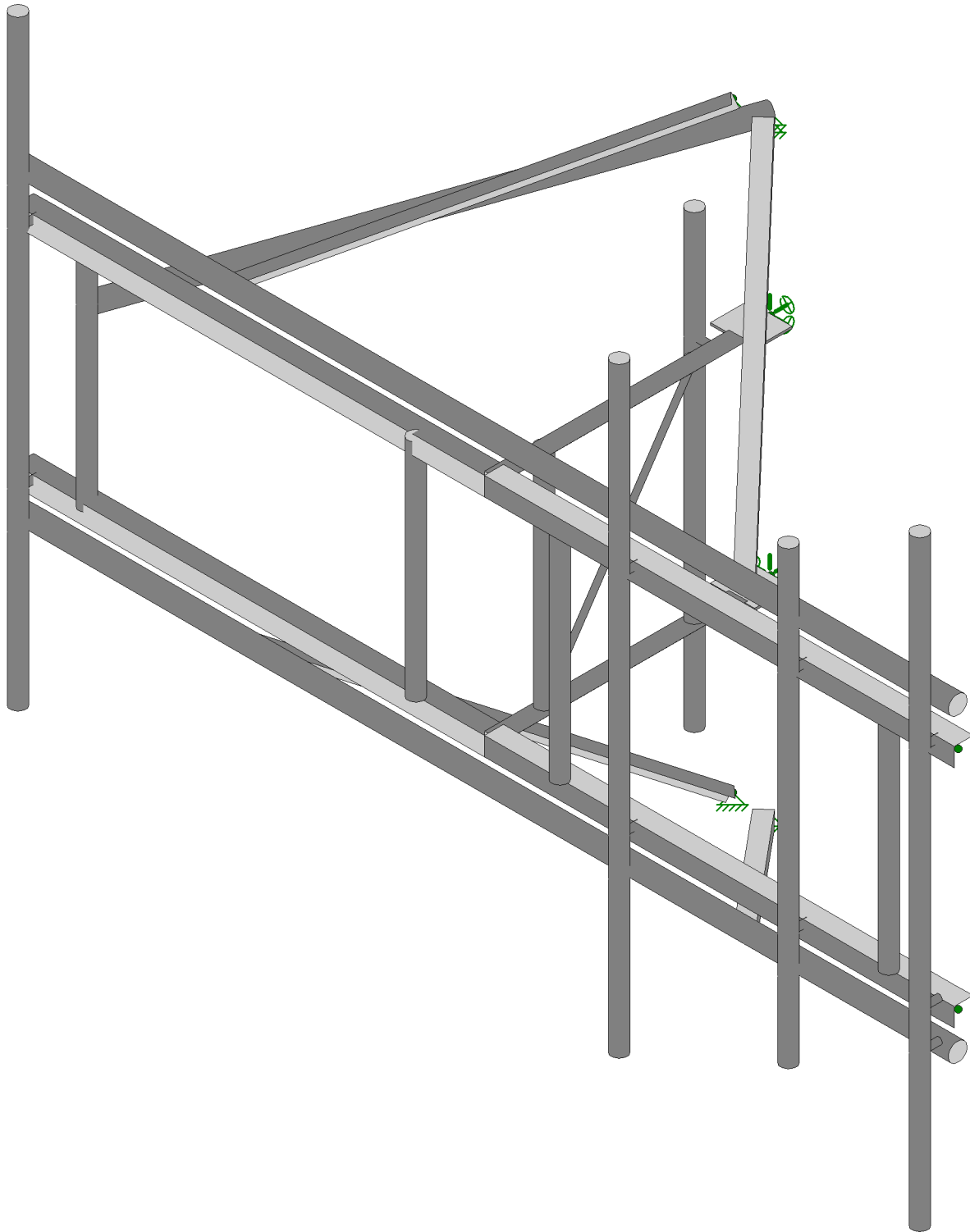
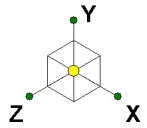
Mount Analysis Force Calculations

| Wind & Ice Load Calculations | | | |
|-----------------------------------|----------|------|-----|
| Velocity Pressure Coefficient | K_z | 1.28 | |
| Topographic Factor | K_{zt} | 1.00 | |
| Rooftop Wind Speed-up Factor | K_s | 1.00 | |
| Shielding Factor | K_a | 0.90 | |
| Ground Elevation Factor | K_e | 0.97 | |
| Wind Direction Probability Factor | K_d | 0.95 | |
| Basic Wind Speed | V | 122 | mph |
| Velocity Pressure | q_z | 45.0 | psf |
| Height Escalation Factor | K_{iz} | 1.22 | |
| Thickness of Radial Glaze Ice | T_{iz} | 1.22 | in |

| Seismic Load Calculations | | | |
|-----------------------------------|----------|--------|-----|
| Short Period DSRAP | S_{D5} | 0.198 | |
| 1 Second DSRAP | S_{D1} | 0.088 | |
| Importance Factor | I | 1.0 | |
| Response Modification Coefficient | R | 2.0 | |
| Seismic Response Coefficient | C_s | 0.099 | |
| Amplification Factor | A | 1.0 | |
| Total Weight | W | 1163.1 | lbs |
| Total Shear Force | V_s | 115.4 | lbs |
| Horizontal Seismic Load | E_h | 115.4 | lbs |
| Vertical Seismic Load | E_v | 46.2 | lbs |

| Antenna Calculations (Elevations per Application/RFDS)* | | | | | | | | | |
|---|--------|-------|-------|--------|---------|---------|------------|------------|--|
| Equipment | Height | Width | Depth | Weight | EPA_N | EPA_T | EPA_{Ni} | EPA_{Ti} | |
| Model # | in | in | in | lbs | sqft | sqft | sqft | sqft | |
| Powerwave Allgon P65-16-XLH-RR | 72.0 | 12.0 | 6.0 | 53.0 | 8.13 | 1.95 | 10.12 | 2.84 | |
| CCI OPA65R-BU8D | 96.0 | 21.0 | 7.8 | 76.5 | 18.09 | 3.12 | 20.71 | 4.20 | |
| CCI DMP65R-BU8D | 96.0 | 20.7 | 7.7 | 95.7 | 17.87 | 3.08 | 20.49 | 4.16 | |
| Powerwave Allgon TT19-08BP111-001 | 9.9 | 6.7 | 5.4 | 16.0 | 0.55 | 0.45 | 0.94 | 0.81 | |
| Powerwave Allgon LGP21901 | 4.0 | 6.0 | 3.0 | 5.5 | 0.20 | 0.10 | 0.45 | 0.29 | |
| Raycap DC6-48-60-18-8F | 23.5 | 9.7 | 9.7 | 20.0 | 1.90 | 1.90 | 2.63 | 2.63 | |
| Ericsson RRUS 4478 B14 | 16.5 | 13.4 | 7.7 | 59.9 | 1.84 | 1.06 | 2.50 | 1.60 | |
| Ericsson RRUS 4449 B5, B12 | 17.9 | 13.2 | 9.4 | 71.0 | 1.97 | 1.40 | 2.65 | 2.01 | |
| Ericsson RRUS 8843 B2, B66A | 14.9 | 13.2 | 10.9 | 72.0 | 1.64 | 1.35 | 2.26 | 1.93 | |

* Equipment with EPA values N/A were not considered in the mount analysis



American Tower Corp.

Trevor.Ridilla

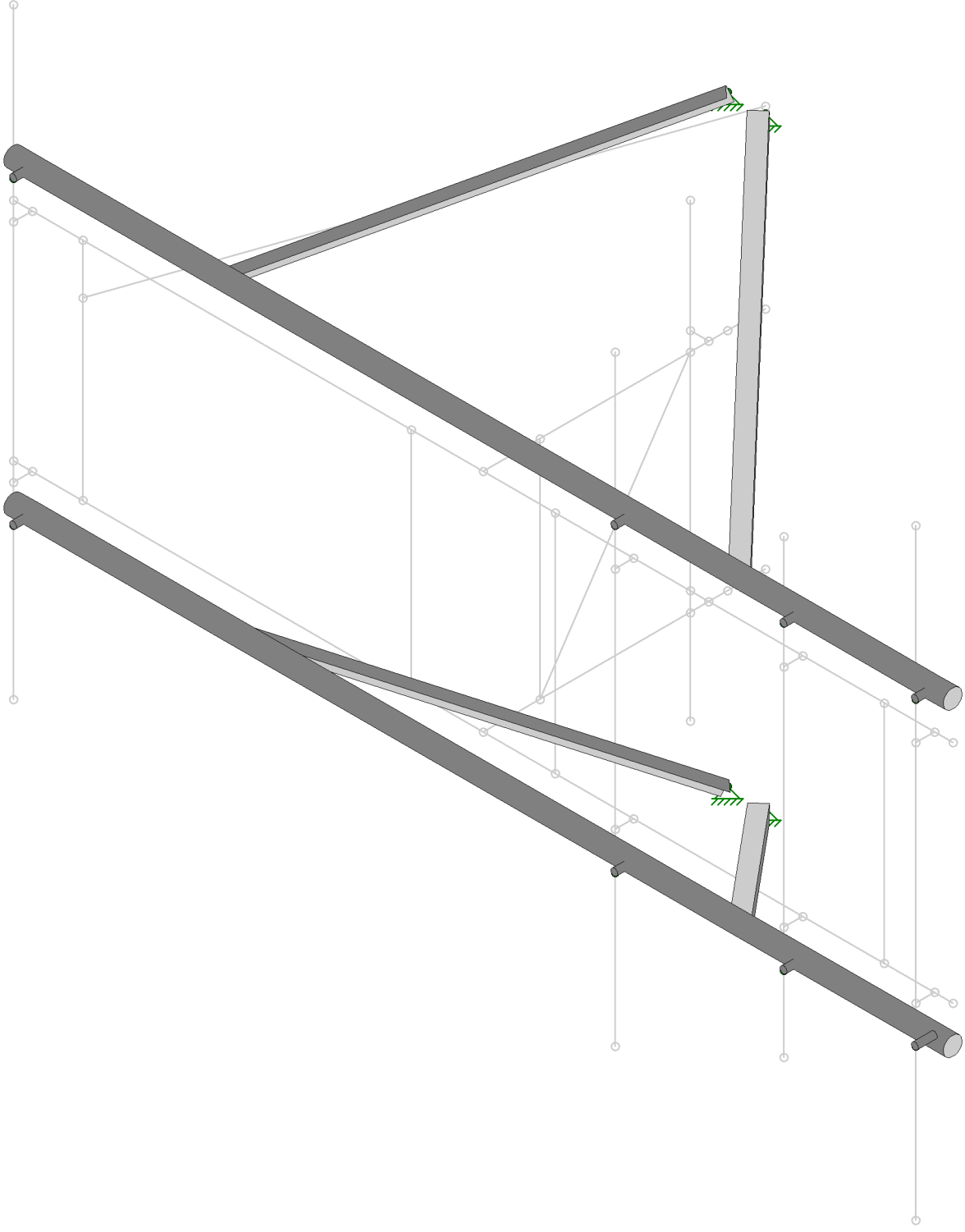
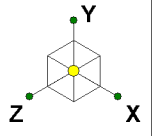
13320909_C9_08

88011, EAST KILLINGLY NORTH
3D Rendering (Final Configuration)

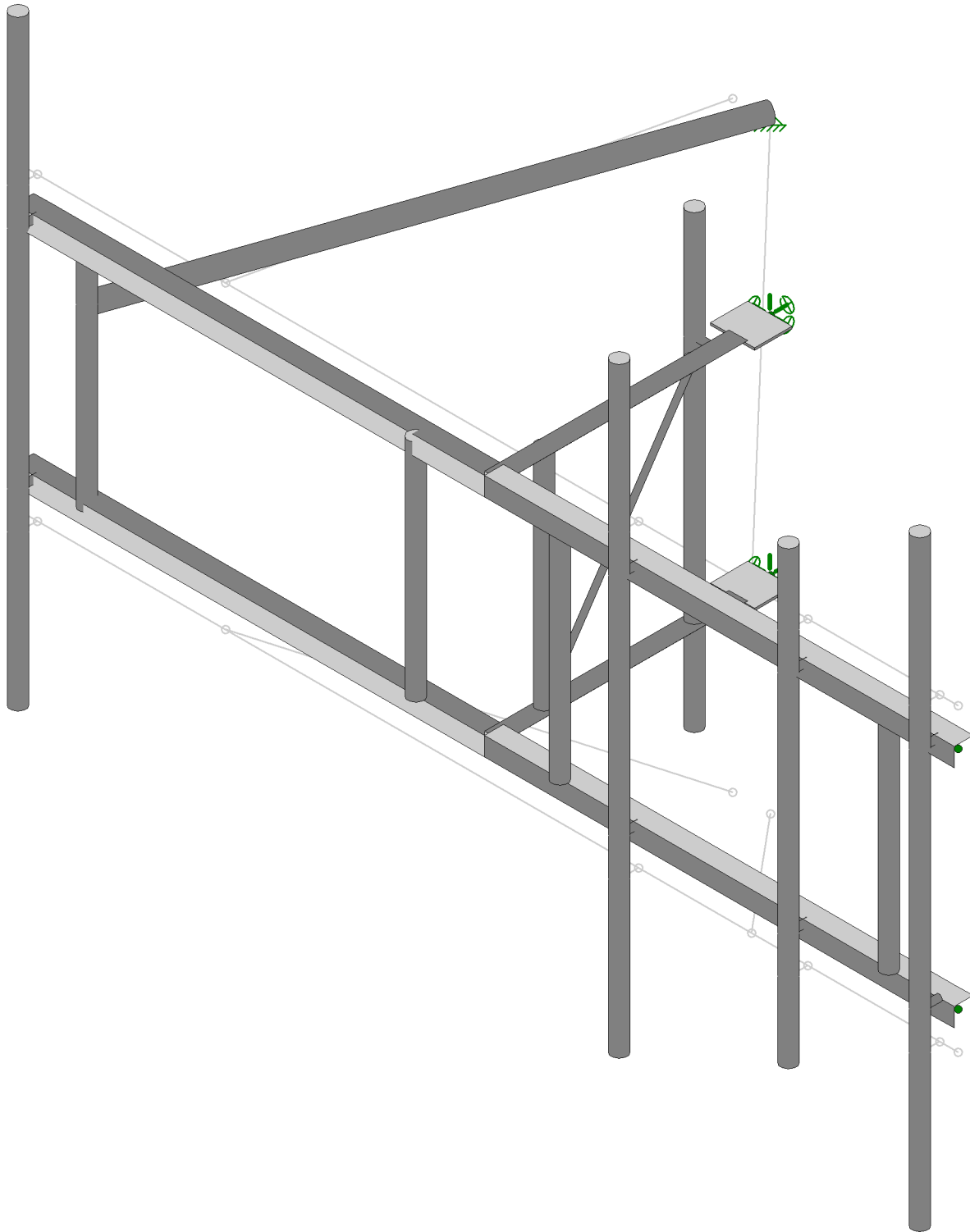
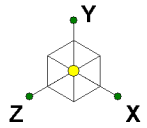
SK - 1

Apr 21, 2021 at 11:08 AM

R3D. AT&T MOBILITY @ 88011, E...



| | | |
|----------------------|--|----------------------------------|
| American Tower Corp. | 88011, EAST KILLINGLY NORTH 3D Rendering (Proposed Configuration) | SK - 2 |
| Trevor.Ridilla | | Apr 21, 2021 at 11:08 AM |
| 13320909_C9_08 | | R3D. AT&T MOBILITY @ 88011, E... |



American Tower Corp.

Trevor.Ridilla

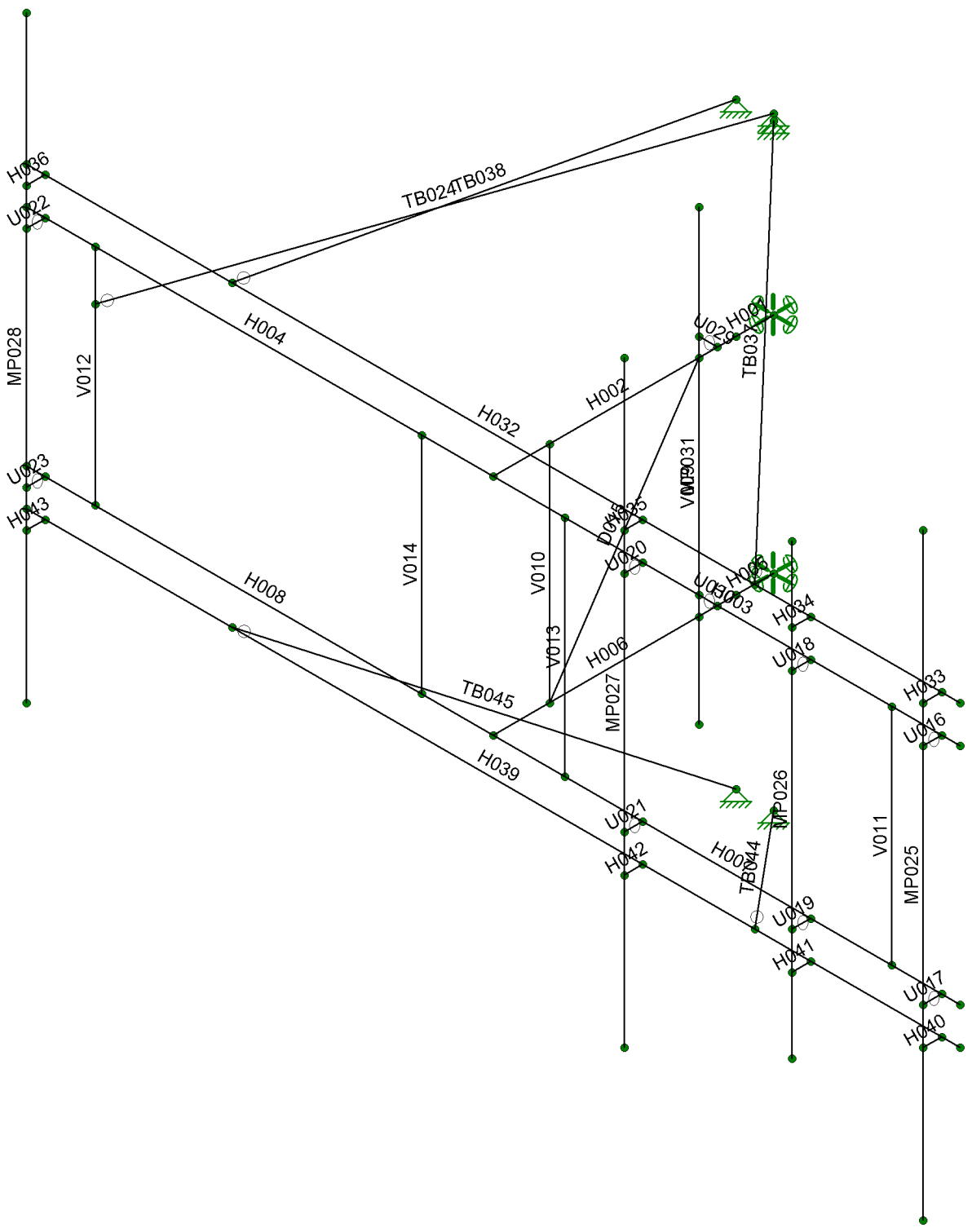
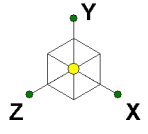
13320909_C9_08

88011, EAST KILLINGLY NORTH
3D Rendering (Current Configuration)

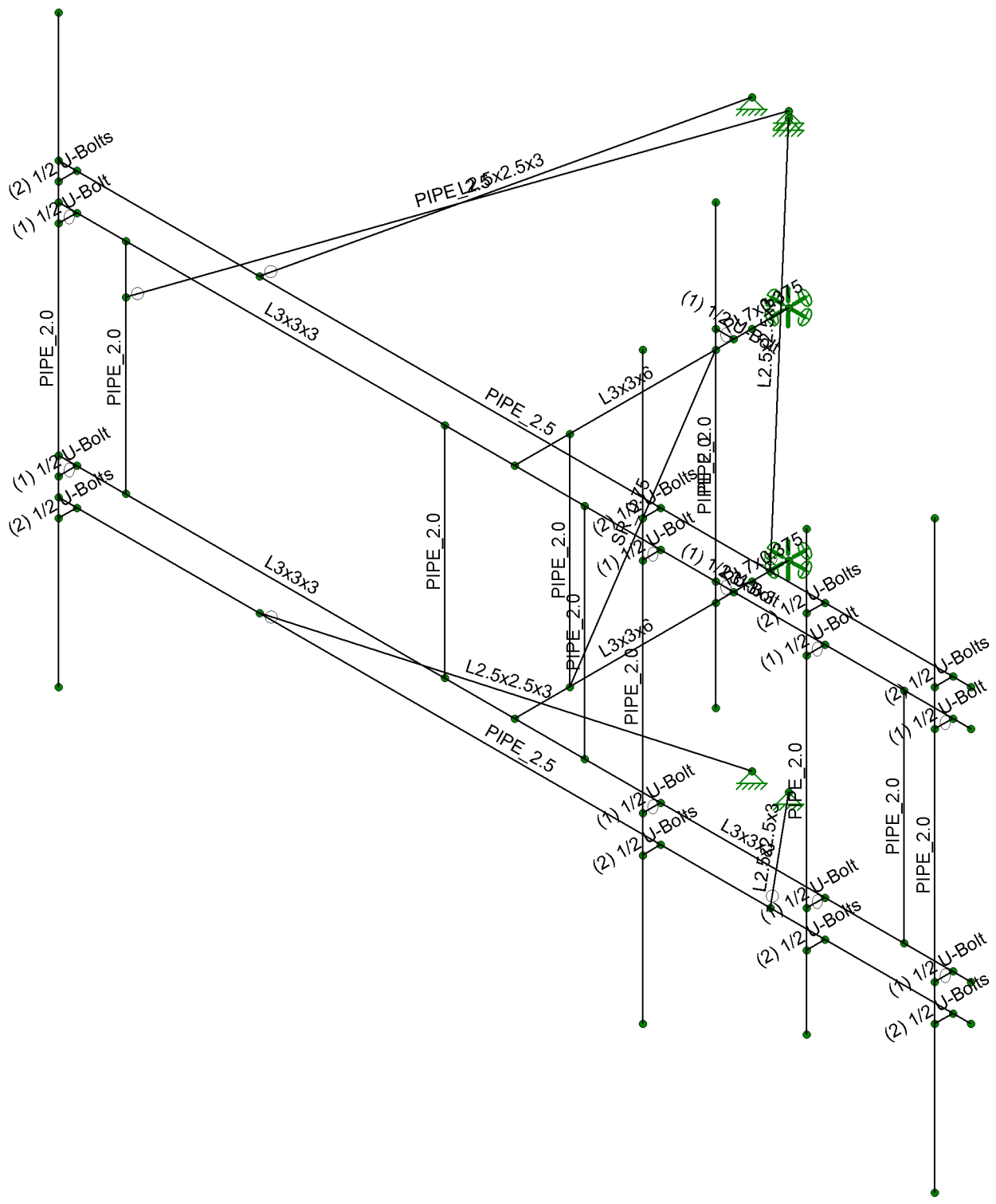
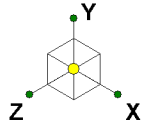
SK - 3

Apr 21, 2021 at 11:08 AM

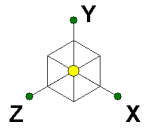
R3D. AT&T MOBILITY @ 88011, E...



| | | |
|----------------------|--|----------------------------------|
| American Tower Corp. | 88011, EAST KILLINGLY NORTH Member Labels | SK - 4 |
| Trevor.Ridilla | | Apr 21, 2021 at 11:08 AM |
| 13320909_C9_08 | | R3D. AT&T MOBILITY @ 88011, E... |

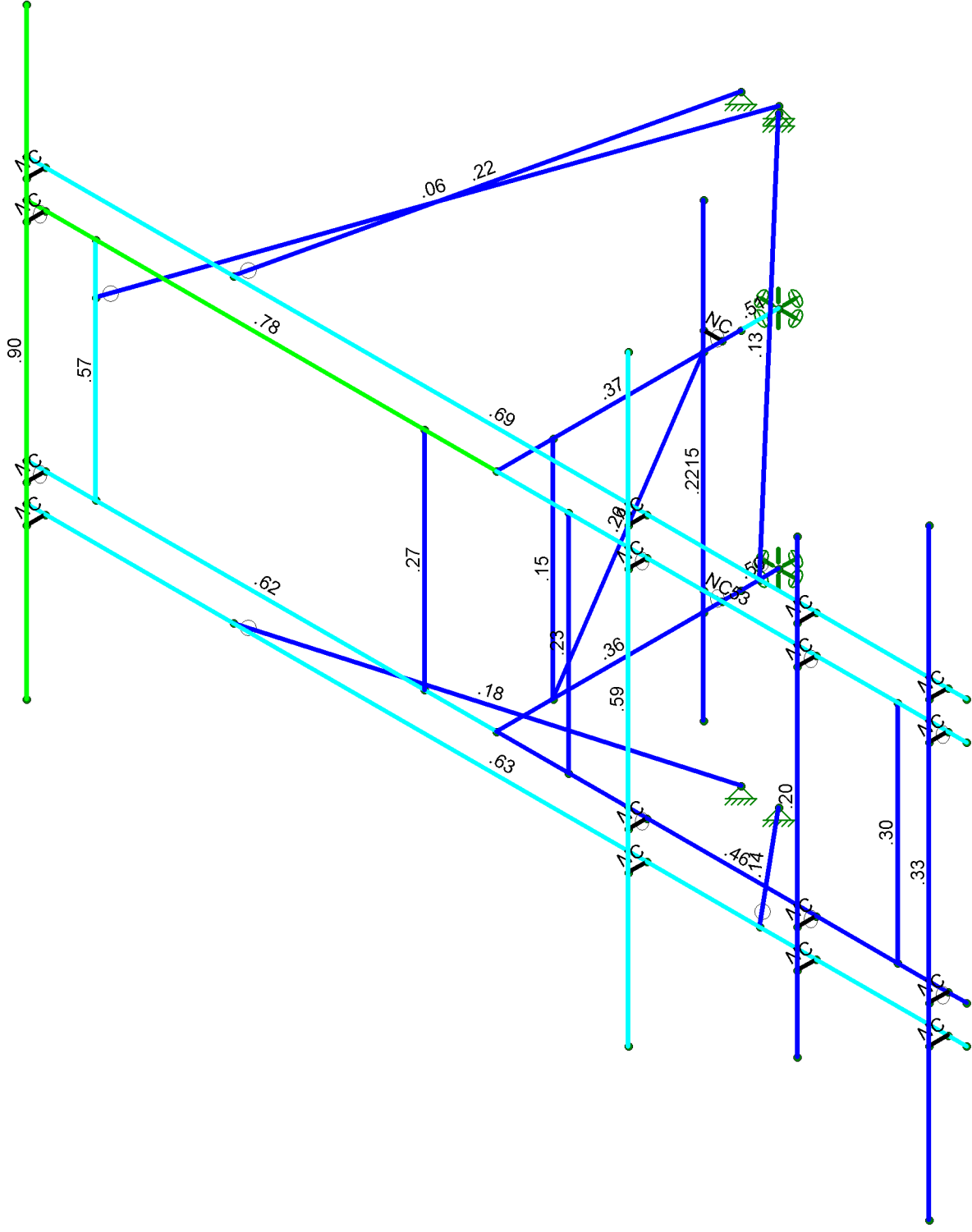


| | | |
|----------------------|-----------------------------|----------------------------------|
| American Tower Corp. | 88011, EAST KILLINGLY NORTH | SK - 5 |
| Trevor.Ridilla | | Apr 21, 2021 at 11:08 AM |
| 13320909_C9_08 | | R3D. AT&T MOBILITY @ 88011, E... |



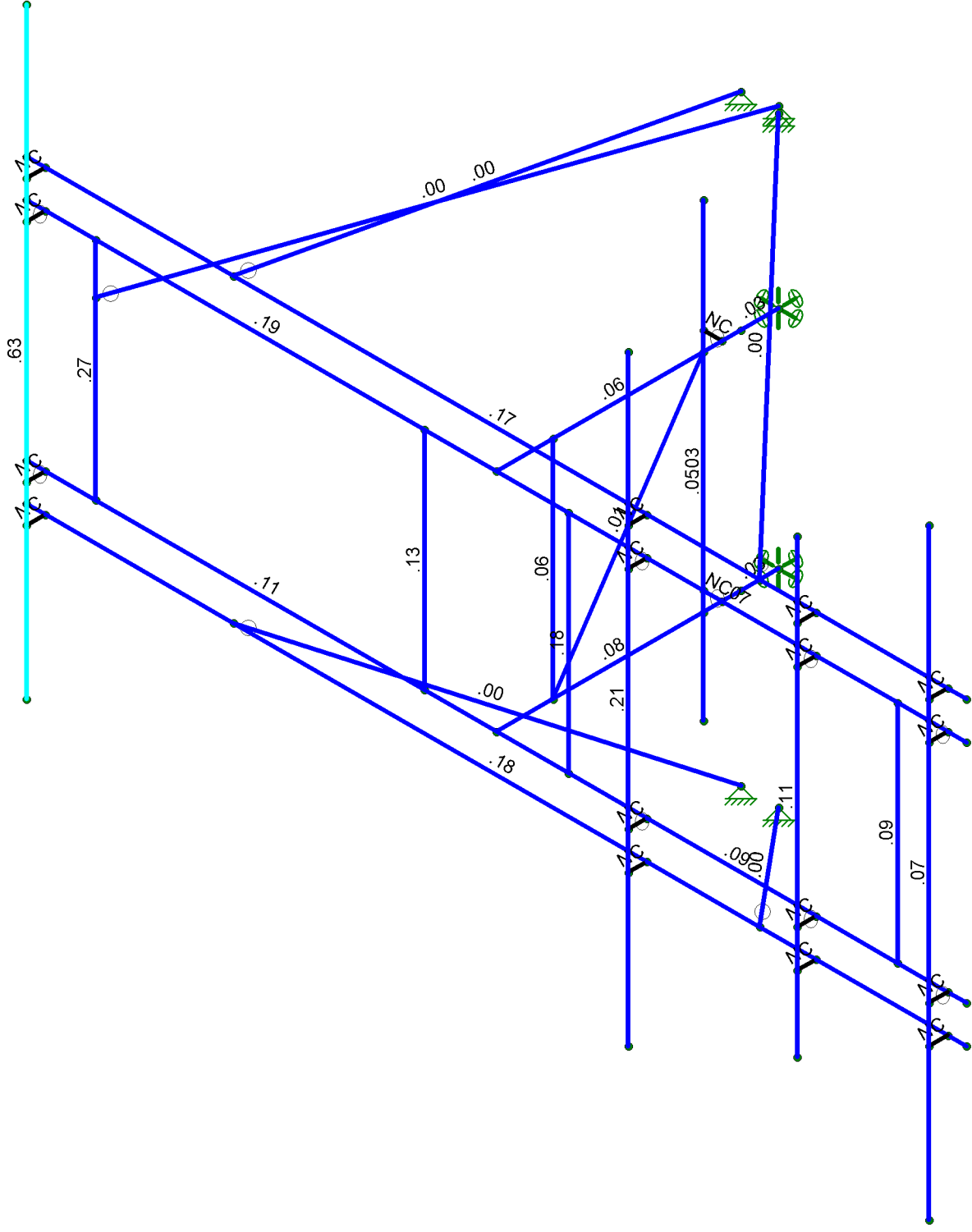
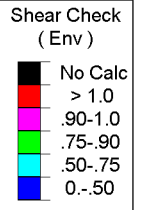
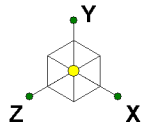
Code Check (Env)

| | |
|---------|---------|
| Black | No Calc |
| Red | > 1.0 |
| Magenta | .90-1.0 |
| Green | .75-.90 |
| Cyan | .50-.75 |
| Blue | 0-.50 |



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.4D

| | | |
|----------------------|---|----------------------------------|
| American Tower Corp. | 88011, EAST KILLINGLY NORTH Unity Bending Checks | SK - 6 |
| Trevor.Ridilla | | Apr 21, 2021 at 11:09 AM |
| 13320909_C9_08 | | R3D. AT&T MOBILITY @ 88011, E... |



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.4D

| | | |
|----------------------|-----------------------------|----------------------------------|
| American Tower Corp. | 88011, EAST KILLINGLY NORTH | SK - 7 |
| Trevor.Ridilla | | Apr 21, 2021 at 11:09 AM |
| 13320909_C9_08 | | R3D. AT&T MOBILITY @ 88011, E... |

Shear Checks