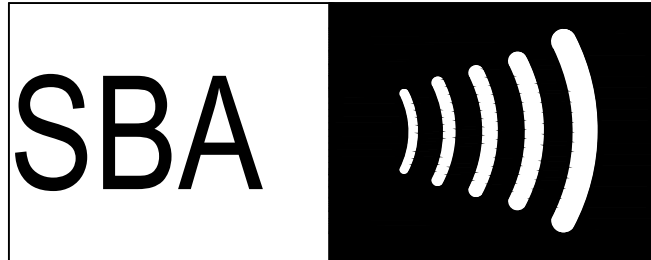


VICINITY MAP



SBA 2012 TC ASSETS, LLC  
 A DELAWARE LIMITED LIABILITY COMPANY  
 8051 CONGRESS AVENUE  
 BOCA RATON, FL 33487  
 PHONE: 1-800-487-7483

SBA SITE NAME: PIKES PEAK RACEWAY  
 SBA SITE NUMBER: CO46077-A  
 VERIZON SITE NAME: HENKEL  
 VERIZON SITE NUMBER: 5000025270  
 VERIZON FUZE ID: 16583182  
 SITE ADDRESS: 20359 INDUSTRY AVE  
 FOUNTAIN, CO 81008



LOCATION MAP



49030 Pontiac Trail, Suite 100  
 Wixom, Michigan 48393  
 PHONE: (248) 705-9212

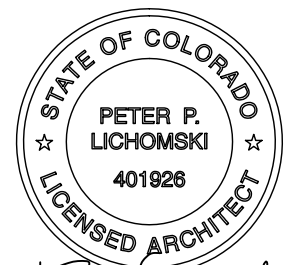
REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26
△			
△			

SBA SITE NUMBER:  
 CO46077-A  
 SBA SITE NAME:  
 PIKES PEAK RACEWAY  
 VERIZON SITE NAME:

HENKEL

SITE ADDRESS:  
 20359 INDUSTRY AVE  
 FOUNTAIN, CO 81008

SEAL:



*Peter P. Lichomski*



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

VERIZON ANTENNA AMENDMENT DRAWINGS

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. 2018 INTERNATIONAL BUILDING CODE (IBC) 2. 2017 NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 20359 INDUSTRY AVE FOUNTAIN, CO 81008  COUNTY: EL PASO CO  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 38° 32' 15.60" N LONGITUDE: 104° 38' 09.97" W GROUND ELEVATION: 5401' (AMSL)  <u>RFDS DATE:</u> 07/02/2025	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (12) ANTENNA(S)  INSTALL (9) ANTENNA(S), (3) RRU(S), (1) OVP AND (2) 1.54" HYBRID CABLES  <u>GROUND WORK:</u> REMOVE (3) RRH(S), (1) STRING DEKA AVR 95-15S AND (2) 6630 BBU  INSTALL (1) 6672 BBU, (5) RECTIFIER(S), (2) STRINGS SAFT TLX 180S AND (1) OVP  EXISTING (1) FIF RACK TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE	BY:
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> SBA TOWERS II, LLC 8051 CONGRESS AVENUE BOCA RATON, FL 33487  <u>ARCHITECT (COORDINATING PROFESSIONAL):</u> PETER LICHOMSKI, AIA 49030 PONTIAC TRAIL, SUITE 100, WIXOM, MI 48393 PH: (248) 705-9212  <u>APPLICANT:</u> CHAD WEBER CONSTRUCTION ENGINEER M 303-345-8242 10000 PARK MEADOWS DR. LONE TREE, CO 80124  <u>PROPERTY OWNER:</u> TBD	<u>PROJECT NOTES</u>  1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).	G-001	TITLE SHEET	0	05/12/26	RC
<u>UTILITY COMPANIES</u>  POWER COMPANY: PHONE: TELEPHONE COMPANY: PHONE:			G-002	GENERAL NOTES	0	05/12/26	RC
	<u>PROJECT LOCATION DIRECTIONS</u>  COLORADO SPRINGS AIRPORT: LEAVE 0.1 MI, TURN RIGHT 0.1 MI, TURN LEFT ONTO AIRPORT 2 RD 0.1 MI, TURN RIGHT ONTO AVIATION WAY 0.2 MI, TURN LEFT ONTO E FOUNTAIN BLVD 0.3 MI, TURN LEFT ONTO S POWERS BLVD/CO-21 0.6 MI, KEEP RIGHT AT S POWERS BLVD/CO-21 1.4 MI, TURN RIGHT ONTO MILTON E PROBY PKWY 1.7 MI, TAKE THE LEFT EXIT ONTO S ACADEMY BLVD 1.9 MI, KEEP LEFT AT S ACADEMY BLVD 0.3 MI, TURN LEFT ONTO INTERSTATE HIGHWAY 25 S/I-25 S TOWARD PUEBLO 0.3 MI, TAKE THE I-25 S FREEWAY 0.1 MI, FOLLOW INTERSTATE HIGHWAY 25 S/I-25 S TOWARD RANCHO COLORADO BLVD 16.1 MI, TAKE EXIT 119 ON THE RIGHT ONTO FRONTAGE RD TOWARD RANCHO COLORADO BLVD 0.2 MI, TURN LEFT ONTO FRONTAGE RD 0.2 MI, TURN RIGHT ONTO WIGWAM RD 1.2 MI, TURN LEFT ONTO INDUSTRY AVE 0.2 MI, YOU HAVE ARRIVED AT 20359 INDUSTRY AVE, FOUNTAIN, CO 81008		C-101	OVERALL COMPOUND PLAN	0	05/12/26	RC
			C-102	DETAILED EQUIPMENT PLAN	0	05/12/26	RC
			C-201	TOWER ELEVATION	0	05/12/26	RC
			C-401	ANTENNA INFORMATION & SCHEDULE	0	05/12/26	RC
			C-401A	ANTENNA INFORMATION & SCHEDULE	0	05/12/26	RC
			C-501	CONSTRUCTION DETAILS	0	05/12/26	RC
			C-502	EQUIPMENT DETAILS	0	05/12/26	RC
			E-501	GROUNDING DETAILS	0	05/12/26	RC
			R-601 TO R-603	SUPPLEMENTAL			
				MOUNT ANALYSIS (48 PAGES)			
			<b>CONTRACTOR PMI REQUIREMENTS</b>				
			PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM			
			SMART TOOL VENDOR PROJECT NUMBER:	10337854			
			VZW LOCATION CODE (PSLC):	5000025270			
			***PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT				
			MOUNT REPLACEMENT REQUIRED:	NO			
			VZW APPROVED SMART KIT VENDORS:	TBD			

**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, VERIZON "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
  - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - B. AC/TELCO INTERFACE BOX (PPC)
  - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - D. TOWERS, MONOPOLES
  - E. TOWER LIGHTING
  - F. GENERATORS & LIQUID PROPANE TANK
  - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
  - H. ANTENNAS (INSTALLED BY OTHERS)
  - I. TRANSMISSION LINE
  - J. TRANSMISSION LINE JUMPERS
  - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - L. TRANSMISSION LINE GROUND KITS
  - M. HANGERS
  - N. HOISTING GRIPS
  - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF VERIZON TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH SBA CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH SBA AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH VERIZON AND SBA WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON REP

TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.

23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY VERIZON REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON REP. ANY WORK FOUND BY THE VERIZON REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. VERIZON FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. VERIZON OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO VERIZON OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
  - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY VERIZON UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
  - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND VERIZON SPECIFICATIONS.
  - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
  - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
  - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
  - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
  - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO SBA ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH SBA ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM SBA ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



49030 Pontiac Trail, Suite 100  
Wixom, Michigan 48393  
PHONE: (248) 705-9212

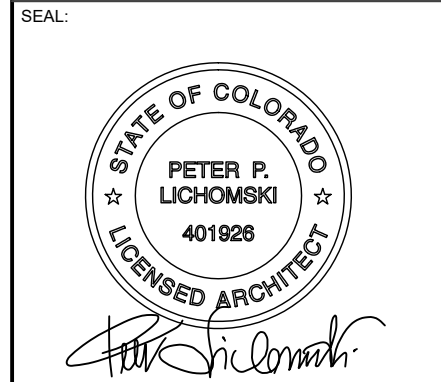
REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

SBA SITE NUMBER:  
**CO46077-A**

SBA SITE NAME:  
**PIKES PEAK RACEWAY**

VERIZON SITE NAME:  
**HENKEL**

SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

<b>GENERAL NOTES</b>	
SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>

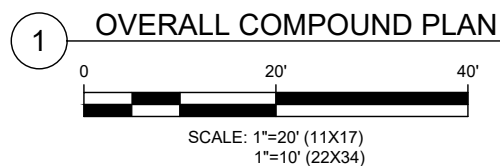
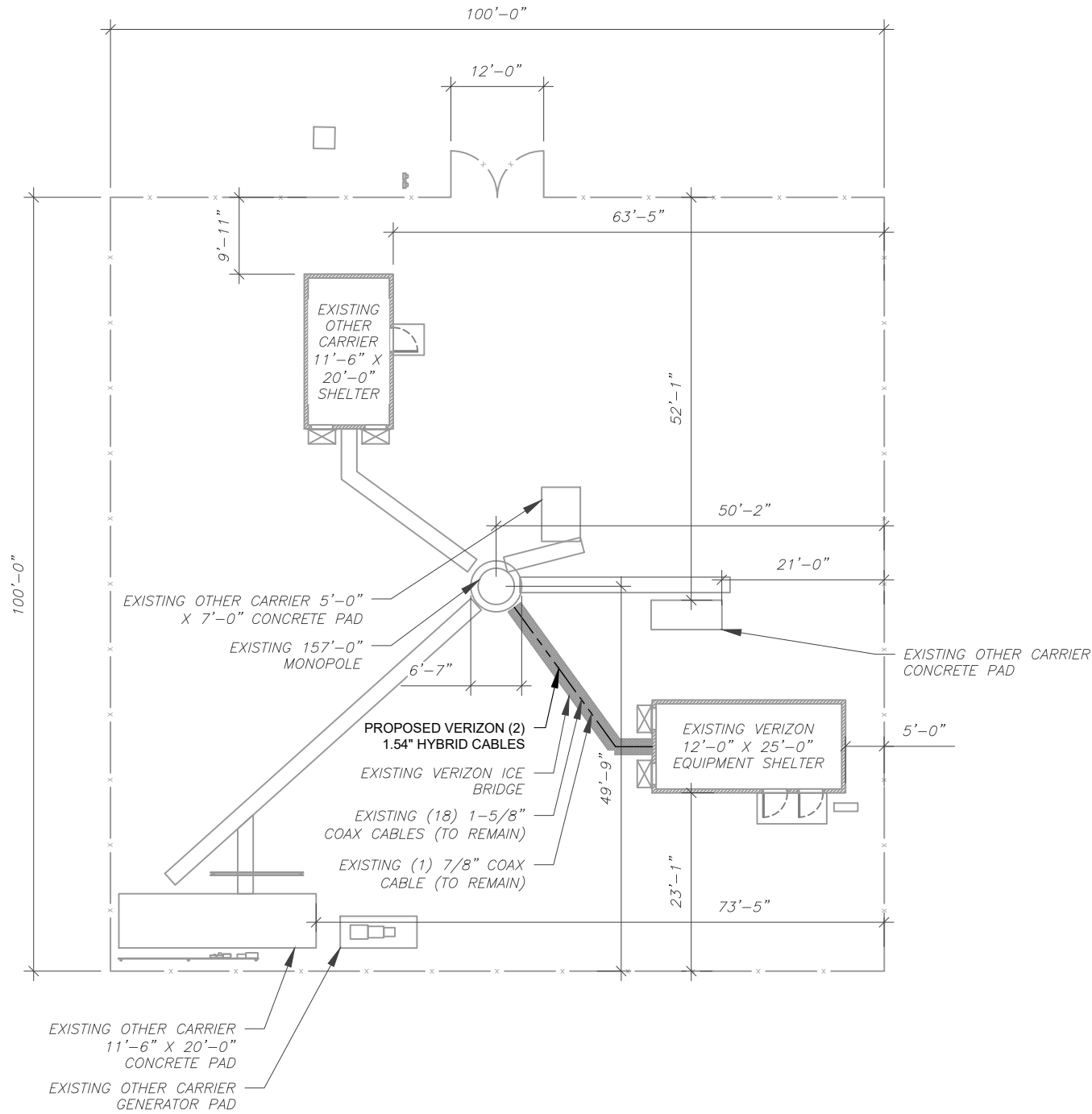
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**SITE PLAN NOTES:**

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE SBA SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
x	CHAINLINK FENCE

- PROPOSED CABLE LENGTH:**
1. ESTIMATED LENGTH OF PROPOSED CABLE IS **175'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
  2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



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SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:

*Peter P. Lichomski*



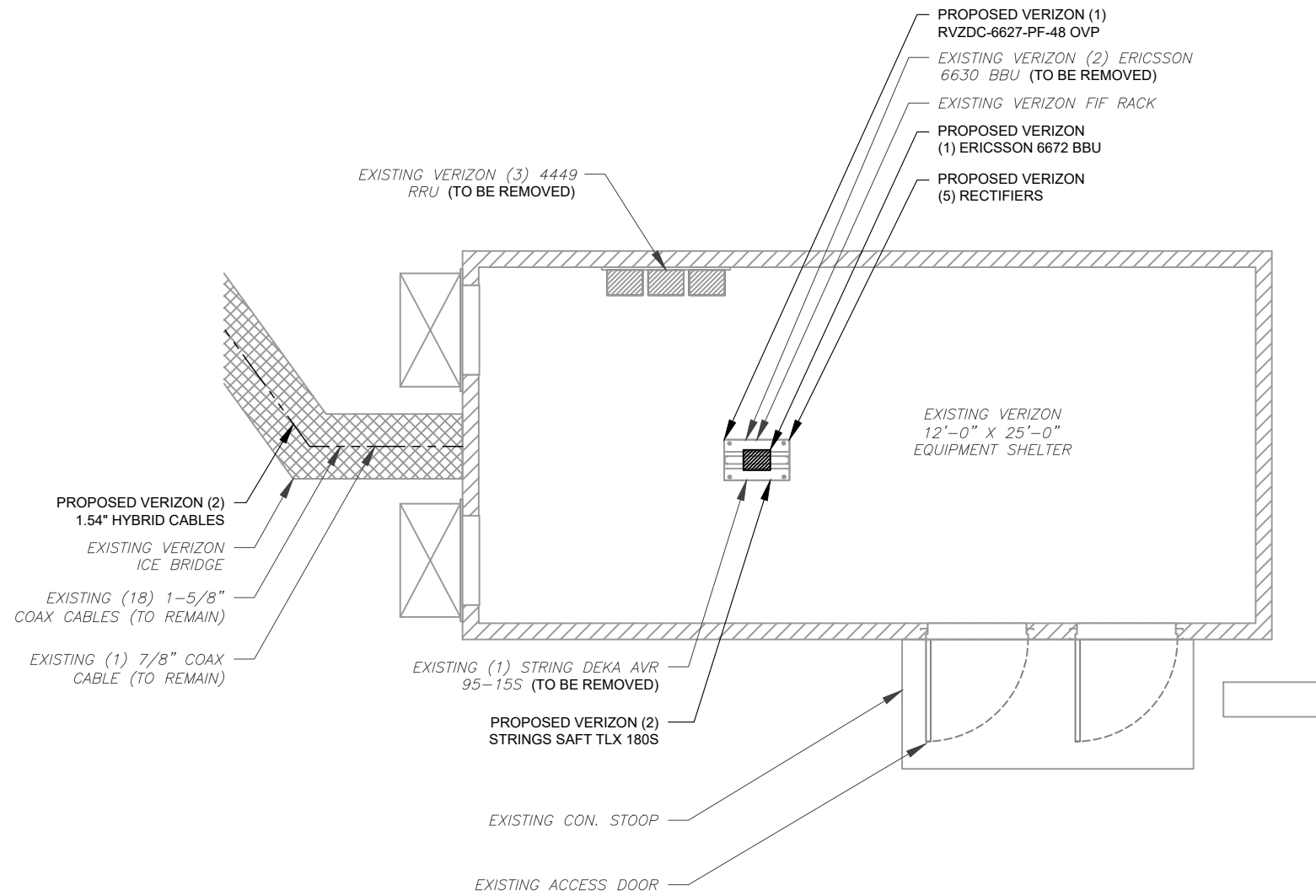
DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

**OVERALL COMPOUND PLAN**

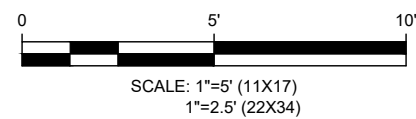
SHEET NUMBER:  
**C-101**

REVISION:  
**0**

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1 DETAILED EQUIPMENT PLAN



49030 Pontiac Trail, Suite 100  
Wixom, Michigan 48393  
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

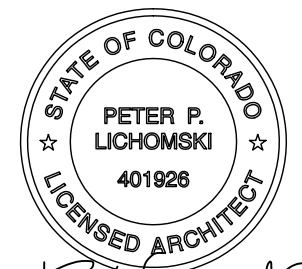
SBA SITE NUMBER:  
CO46077-A

SBA SITE NAME:  
PIKES PEAK RACEWAY

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HENKEL

SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:



*Peter P. Lichomski*



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

DETAILED EQUIPMENT  
PLAN

SHEET NUMBER: <b>C-102</b>	REVISION: <b>0</b>
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\* OVERALL TOWER HEIGHT FILED WITH FAA/ASR: 176'-0"  
REASON FOR DISCREPANCY: JURISDICTIONAL, VZW RF, ETC.

TOP OF EXISTING  
HIGHEST APPURTENANCE  
ELE: 176'-0"

TOP OF EXISTING TOWER  
ELE: 157'-0"

EXISTING LIGHTNING ROD

EXISTING 157'-0"  
HIGH MONOPOLE

PROPOSED VERIZON  
RAD CENTER @ 123'

1 2  
C-401 C-401  
EXISTING/PROPOSED  
VERIZON EQUIPMENT

PROPOSED VERIZON (2)  
1.54" HYBRID CABLES

EXISTING (18) 1-5/8"  
COAX CABLES (TO REMAIN)

EXISTING VERIZON  
RAD CENTER @ 70'

EXISTING VERIZON RFS  
SUX4-107A MW DISH

EXISTING (1) 7/8" COAX  
CABLE (TO REMAIN)

EXISTING TOP  
OF BASE PLATE

1 TOWER ELEVATION  
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COLLIERS  
ENGINEERING & DESIGN, DATED 01/29/26, THE  
EXISTING MOUNT CAN ADEQUATELY SUPPORT  
THE PROPOSED LOADING.

HYBRID CABLE INFO	
QUANTITY FROM COAX PORT	2 NEW
LENGTH FROM SHELTER SURGE PROTECTOR TO ENTRY PORT	27'-0" ±
LENGTH FROM ENTRY PANEL TO TOWER	25'-0"
LENGTH FROM T.O.C. TO TOWER SURGE PROTECTOR C/L	123' ±
TOTAL HYBRID CABLE LENGTH	175' ±

**NOTES:**  
THIS DRAWING IS FOR EXHIBIT AND  
LAYOUT PURPOSES ONLY.

PLEASE REFER TO STRUCTURAL  
DOCUMENTS (PREPARED BY  
OTHERS) FOR PROJECT  
STRUCTURAL CALCULATION AND  
RESULTS.

NO WORK IS TO BE DONE WITHOUT  
AN APPROVED STRUCTURAL  
ANALYSIS PROVIDED BY OTHERS.

**SPECIAL NOTES:**

- GC TO VERIFY ALL HEIGHTS AND AZIMUTHS  
IN FIELD PRIOR TO CONSTRUCTION. GC  
SHALL NOTIFY P.M. AND  
ARCHITECT/ENGINEER OF ANY  
DISCREPANCIES IMMEDIATELY.
- STRUCTURAL/ DESIGN & ANALYSIS SHALL  
BE PERFORMED & APPROVED BY TOWER  
OWNER AND MANUFACTURER  
(STRUCTURAL ANALYSIS BY OTHERS)
- STRUCTURAL ANALYSIS PERFORMED BY  
OTHERS. CONTRACTOR TO THOROUGHLY  
REVIEW THE TOWER STRUCTURAL  
ANALYSIS FOR INFORMATION PERTAINING  
TO TOWER UPGRADES, MOUNTING TYPES,  
ANTENNA HEIGHTS, AND CABLE ROUTING,  
ANY OTHER DISCREPANCIES BETWEEN  
THE DRAWINGS, STRUCTURAL ANALYSIS,  
AND TOWER PLANS SHOULD BE BROUGHT  
TO THE ATTENTION OF THE PROJECT  
MANAGER PRIOR TO BIDDING AND  
INSTALLATION.

**TOWER NOTE:**

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO  
CONFIRM WITH THE PROJECT MANAGER THAT  
THEY HAVE THE MOST RECENT VERSION OF THE  
STRUCTURAL ANALYSIS BEFORE COMMENCING  
WORK. EXISTING AND PROPOSED TOWER  
APPURTENANCES, MOUNTS, AND ANTENNAS ARE  
SHOWN BASED ON THE STRUCTURAL ANALYSIS.  
EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE  
PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT  
IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR  
OTHER LOCAL REQUIREMENTS.
- WHERE APPLICABLE, ALL NEW ANTENNAS,  
EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE  
PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT  
IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR  
OTHER LOCAL REQUIREMENTS.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS  
EXISTING CABLES AND IN ACCORDANCE WITH  
STRUCTURAL ANALYSIS. IF ADEQUATE SPACE  
EXISTS, ROUTE CABLES THROUGH ENTRY PORT  
HOLE, UP INSIDE OF MONOPOLE, AND THROUGH  
EXIT PORT HOLE. IF ROUTING OUTSIDE THE  
MONOPOLE, ATTACH CABLES USING STAND-OFF  
ADAPTERS MOUNTED TO TOWER USING STAINLESS  
STEEL BANDING. ADEQUATELY SECURE CABLES  
USING EITHER APPROPRIATELY SIZED STAINLESS  
STEEL SNAP-INS OR MOUNTING HARDWARE AND  
BRACKETS AS SPECIFIED BY CABLE  
MANUFACTURER.
- TOWER ELEVATIONS ARE MEASURED FROM TOP  
OF BASE PLATE TO MATCH STRUCTURAL  
ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE  
ABOVE GROUND LEVEL (A.G.L.)



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Wixom, Michigan 48393  
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

SBA SITE NUMBER:

CO46077-A

SBA SITE NAME:

PIKES PEAK RACEWAY

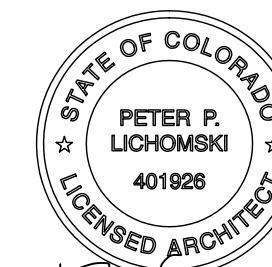
VERIZON SITE NAME:

HENKEL

SITE ADDRESS:

20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

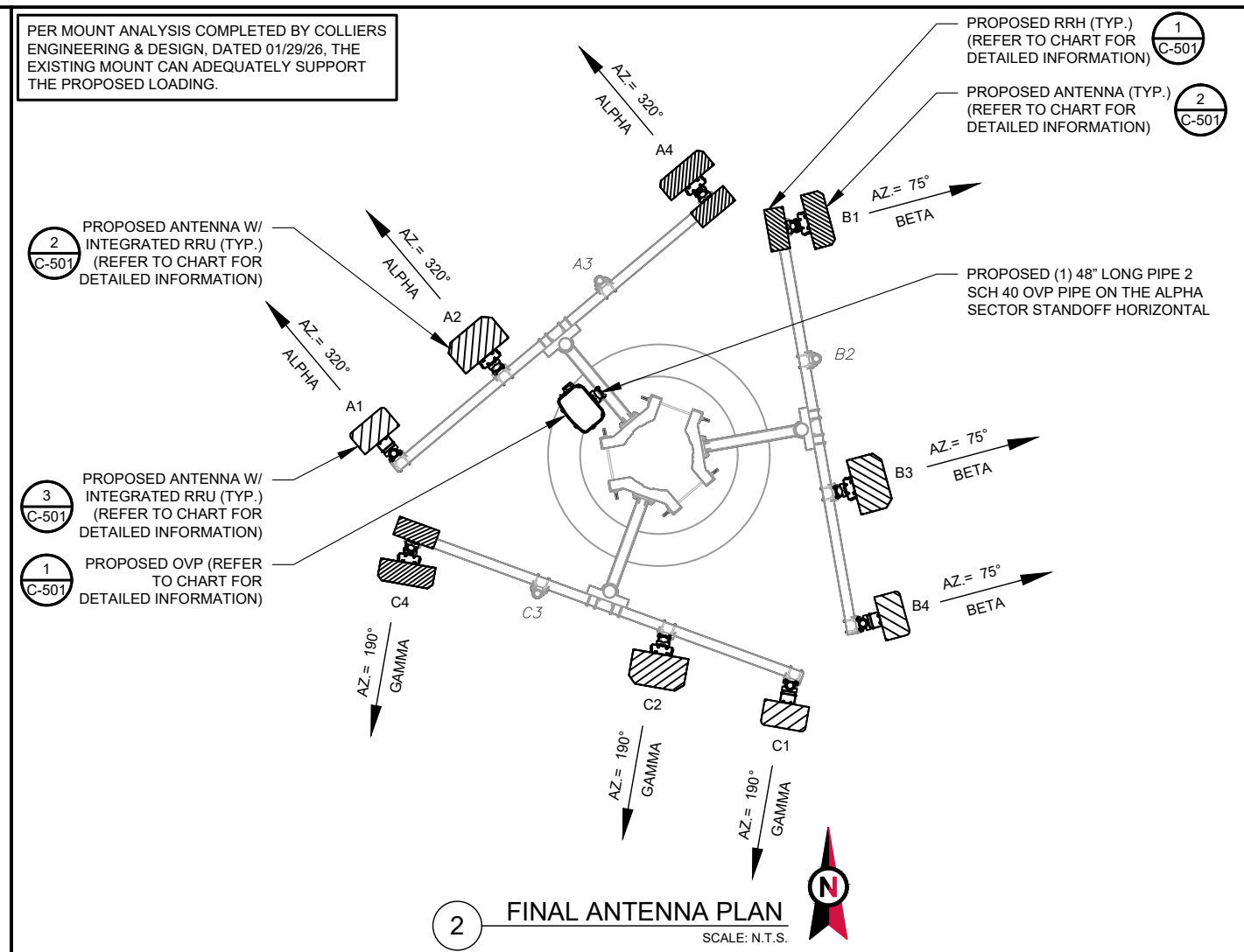
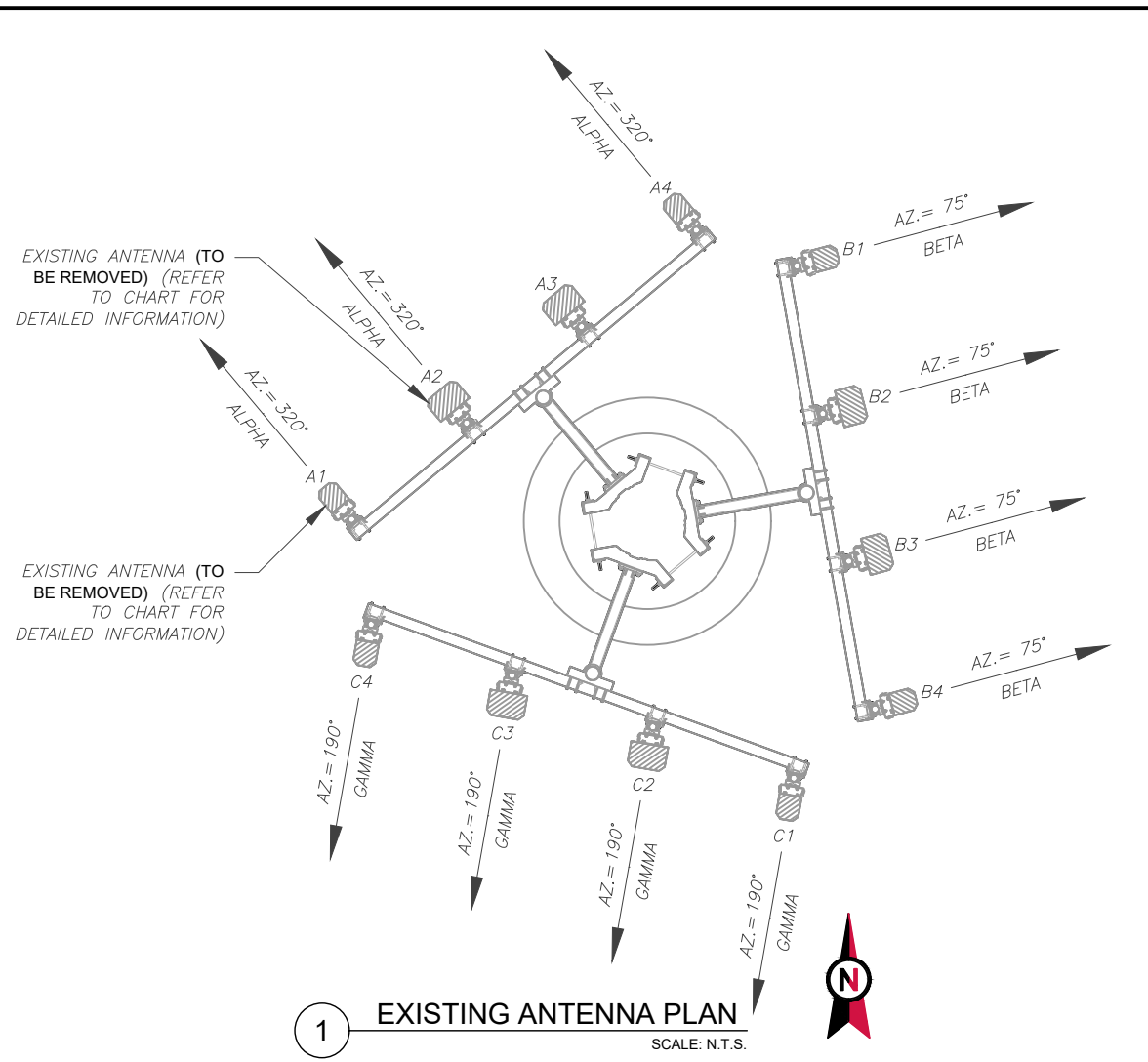
TOWER ELEVATION

SHEET NUMBER:

C-201

REVISION:

0



PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED 01/29/26, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/EL EC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	123'	320°	A1	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-
			A2	AMPHENOL BXA-70080-6CF-EDIN-X	LTE 700/LTE PCS	4/0	RMV	-	-
			A3	AMPHENOL BXA-185085-12CF-EDIN	LTE 700/LTE AWS	4/0	RMV	-	-
			A4	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-
BETA	123'	75°	B1	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-
			B2	AMPHENOL BXA-70080-6CF-EDIN-X	LTE 700/LTE PCS	4/0	RMV	-	-
			B3	AMPHENOL BXA-185085-12CF-EDIN	LTE 700/LTE AWS	4/0	RMV	-	-
			B4	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-
GAMMA	123'	190°	C1	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-
			C2	AMPHENOL BXA-70080-6CF-EDIN-X	LTE 700/LTE PCS	4/0	RMV	-	-
			C3	AMPHENOL BXA-185085-12CF-EDIN	LTE 700/LTE AWS	4/0	RMV	-	-
			C4	AMPHENOL LPA-80080-4CF	LTE 850	4/0	RMV	-	-

**NOTES**

- CONFIRM WITH VERIZON REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

**STATUS ABBREVIATIONS**

RMV: TO BE REMOVED  
RMN: TO REMAIN  
REL: TO BE RELOCATED  
ADD: TO BE ADDED

**CABLE LENGTHS FOR JUMPERS**  
JUNCTION BOX TO RRU: 15'  
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE										
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY			
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/EL EC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	123'	320°	A1	ERICSSON AIR6419	5G CBAND	0/2	ADD	-	-	
			A2	ERICSSON AIR3283	LTE PCS/LTE AWS/LTE AWS3	0/2	ADD	-	-	
			A3	-	-	-	-	-	-	-
			A4	COMMSCOPE NNSS-65C-HG-R2B	LTE 700/LTE 850	0/0	ADD	RRUS 4490	ADD	
BETA	123'	75°	B1	COMMSCOPE NNSS-65C-HG-R2B	LTE 700/LTE 850	0/0	ADD	RRUS 4490	ADD	
			B2	-	-	-	-	-	-	
			B3	ERICSSON AIR3283	LTE PCS/LTE AWS/LTE AWS3	0/2	ADD	-	-	
			B4	ERICSSON AIR6419	5G CBAND	0/2	ADD	-	-	
GAMMA	123'	190°	C1	ERICSSON AIR6419	5G CBAND	0/2	ADD	-	-	
			C2	ERICSSON AIR3283	LTE PCS/LTE AWS/LTE AWS3	0/2	ADD	-	-	
			C3	-	-	-	-	-	-	
			C4	COMMSCOPE NNSS-65C-HG-R2B	LTE 700/LTE 850	0/0	ADD	RRUS 4490	ADD	

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(18) 1-5/8" & (1) 7/8"	-	RMN

**3 EQUIPMENT SCHEDULES**

FINAL FIBER DISTRIBUTION/OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
RVZDC-6627-PF-48	ADD	-	(2) 1.54"	ADD
-	-	(18) 1-5/8" & (1) 7/8"	-	RMN

**SBA**

**LAB**

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Wixom, Michigan 48393  
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

SBA SITE NUMBER: CO46077-A  
SBA SITE NAME: PIKES PEAK RACEWAY  
VERIZON SITE NAME: HENKEL  
SITE ADDRESS: 20359 INDUSTRY AVE FOUNTAIN, CO 81008

SEAL:

**verizon**

DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

**ANTENNA INFORMATION & SCHEDULE**

SHEET NUMBER:	REVISION:
<b>C-401</b>	<b>0</b>

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REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

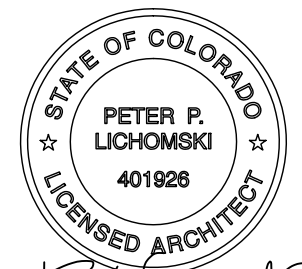
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CO46077-A

SBA SITE NAME:  
PIKES PEAK RACEWAY

VERIZON SITE NAME:  
HENKEL

SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:



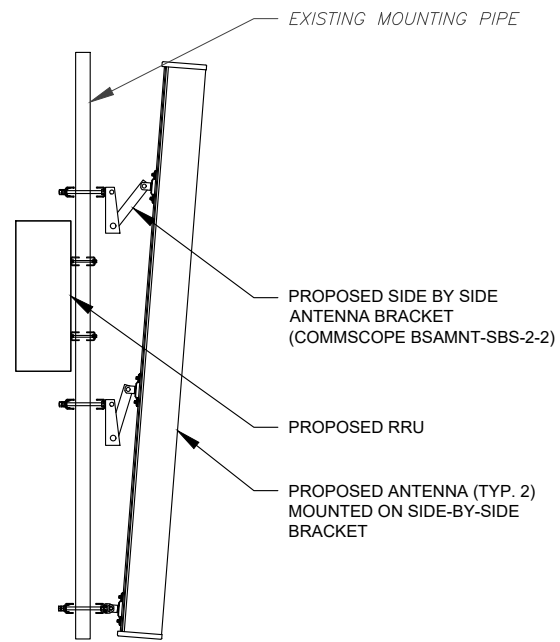
*Peter P. Lichomski*



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

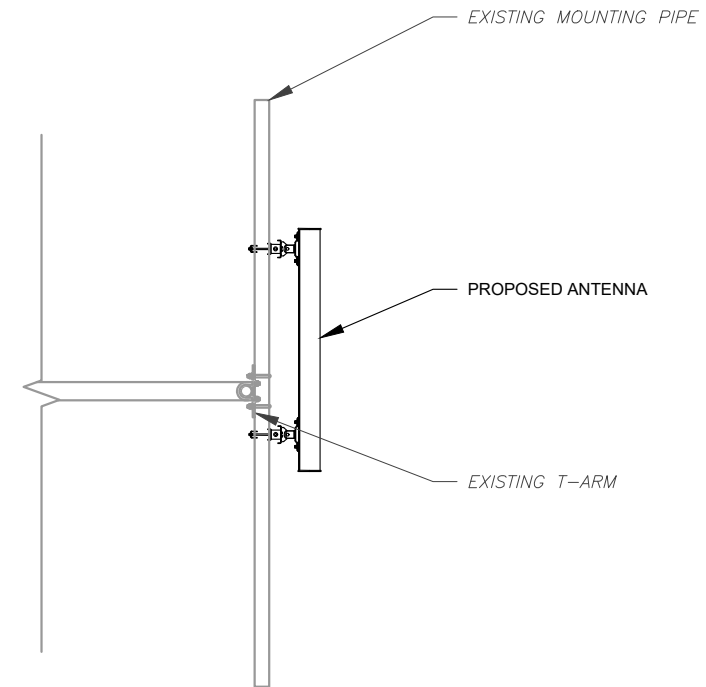
CONSTRUCTION  
DETAILS

SHEET NUMBER:	REVISION:
C-501	0

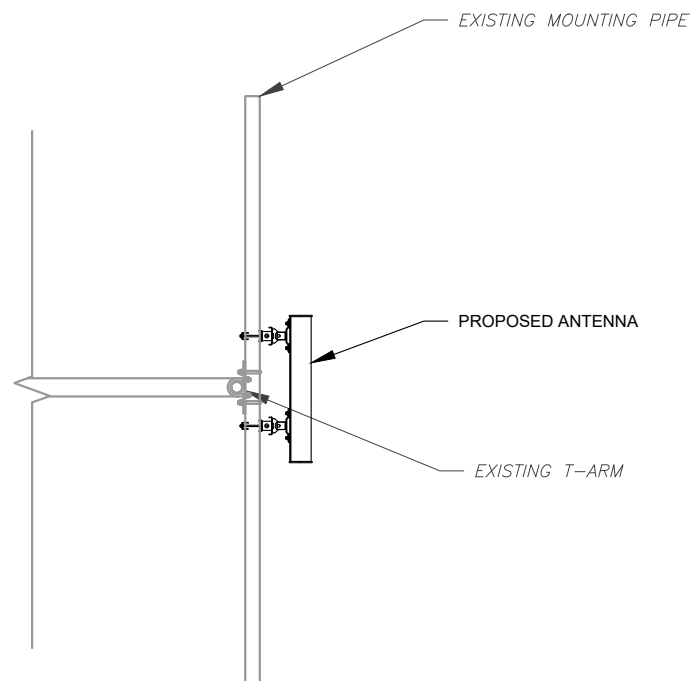


PROFILE VIEW

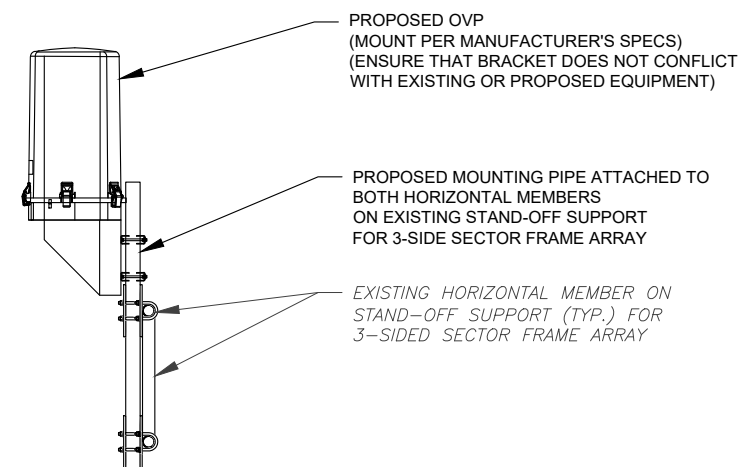
1 RRU MOUNTING DETAIL - TYPICAL  
SCALE: NOT TO SCALE



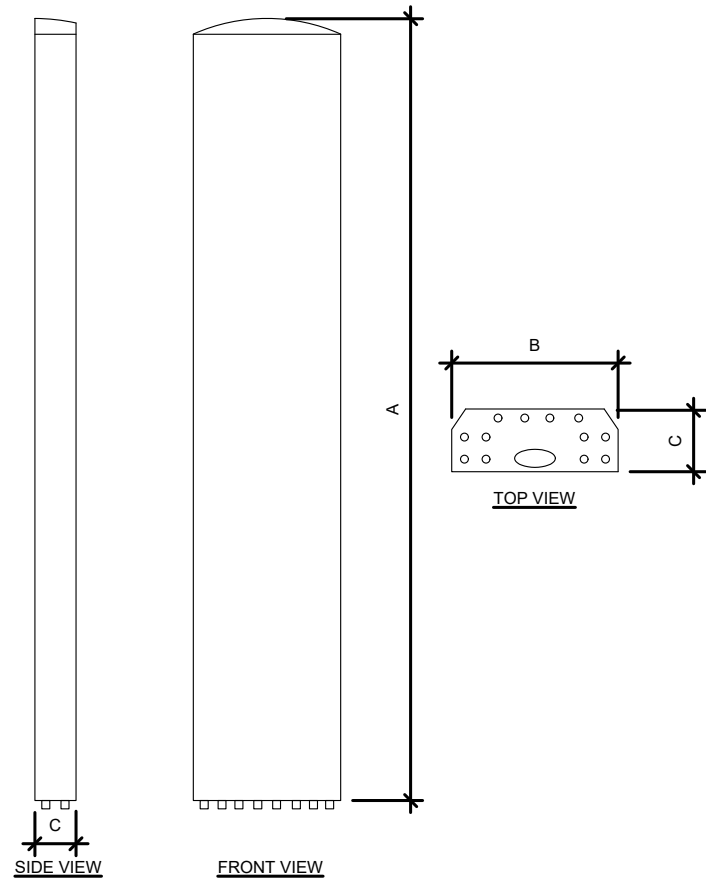
2 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



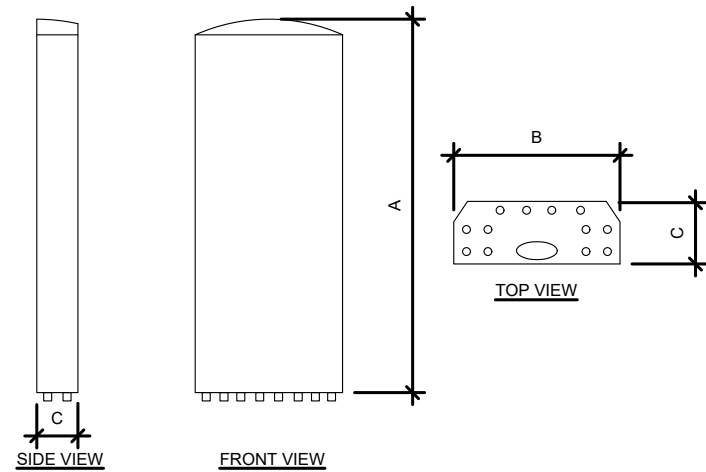
3 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



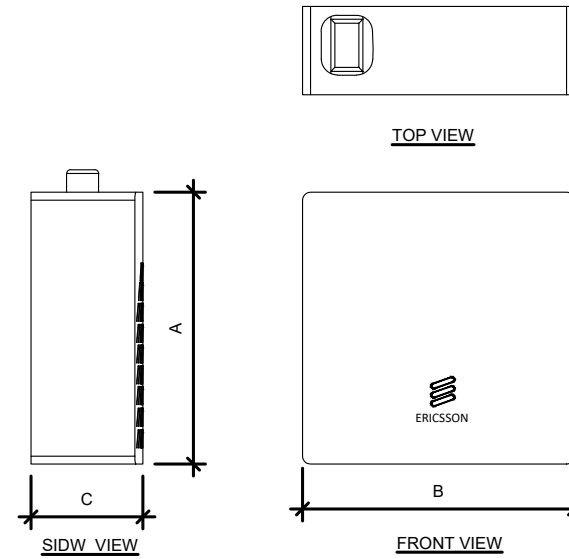
4 PROPOSED OVP MOUNTING  
SCALE: N.T.S.



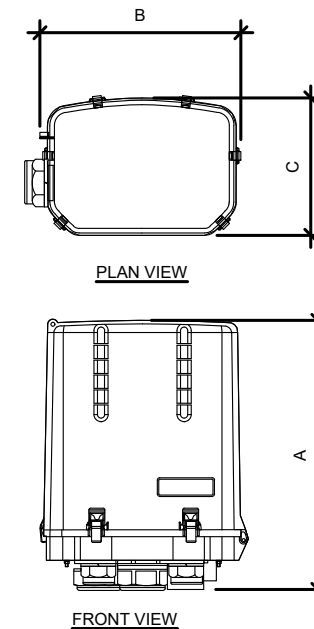
ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
NNSS-65C-HG-R2B	96"	19.6"	7.8"	83.8



ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
ERICSSON AIR6419	31.22"	16.06"	9.06"	63.05
ERICSSON AIR3283	47.2"	20"	12"	110



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
ERICSSON 4490	20.6"	17.5"	7"	68.4



RAYCAP SPECIFICATIONS				
RAYCAP MODEL	A	B	C	WEIGHT (LBS)
RVZDC-6627-PF-48	29.5"	16.5"	12.6"	32



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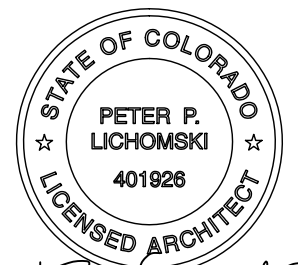
REV.	DESCRIPTION	BY	DATE
A	90% CD	RC	03/27/26
B	REVISED 90% CD	RC	04/23/26
0	FINAL 100% CD	RC	05/12/26

SBA SITE NUMBER:  
**CO46077-A**  
SBA SITE NAME:  
**PIKES PEAK RACEWAY**  
VERIZON SITE NAME:

**HENKEL**

SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:



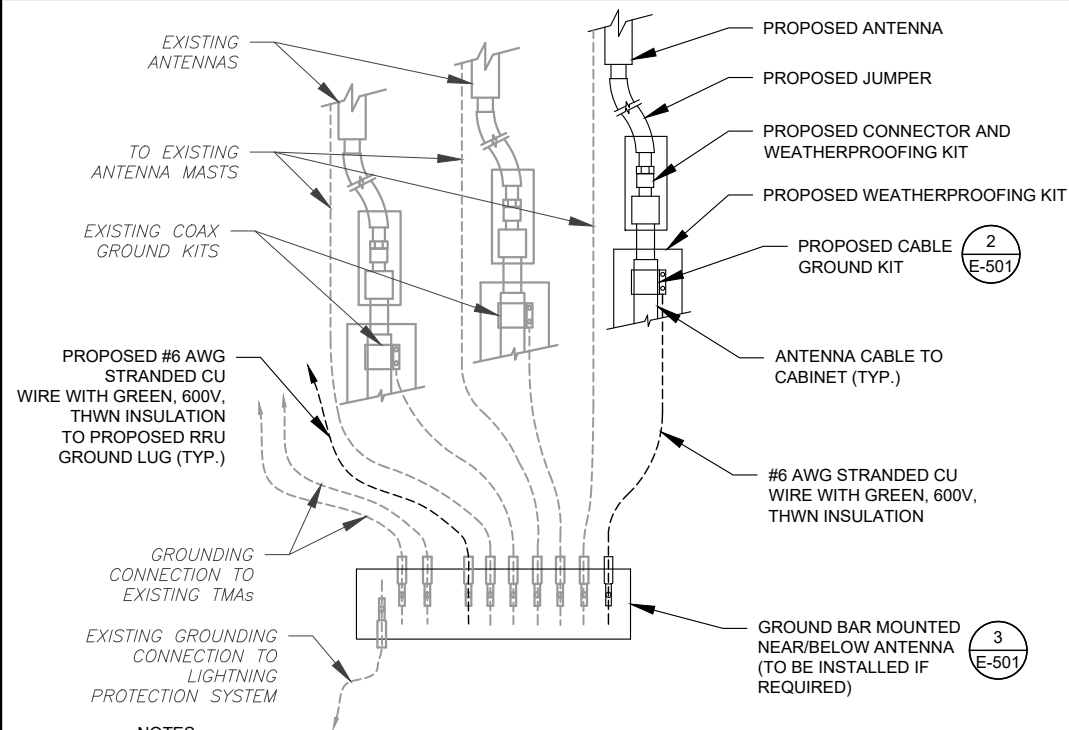
*Peter P. Lichomski*



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

**EQUIPMENT DETAILS**

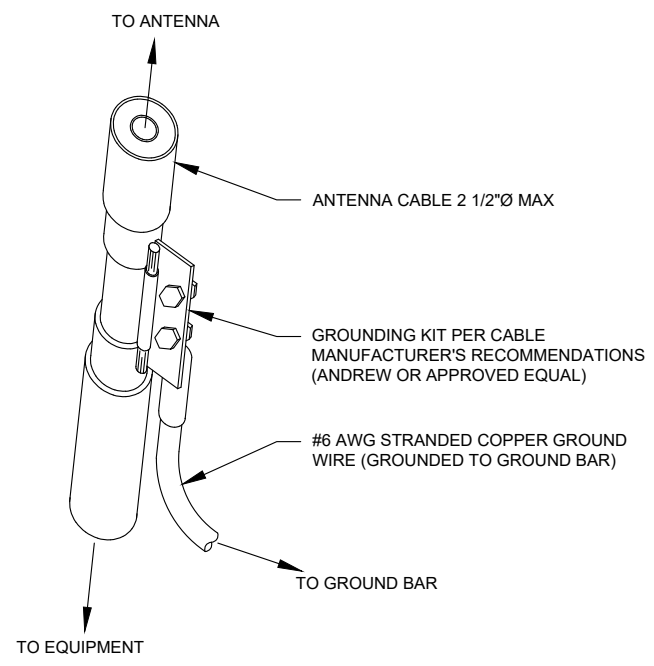
SHEET NUMBER:	REVISION:
<b>C-502</b>	<b>0</b>



**NOTES:**

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH VERIZON GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

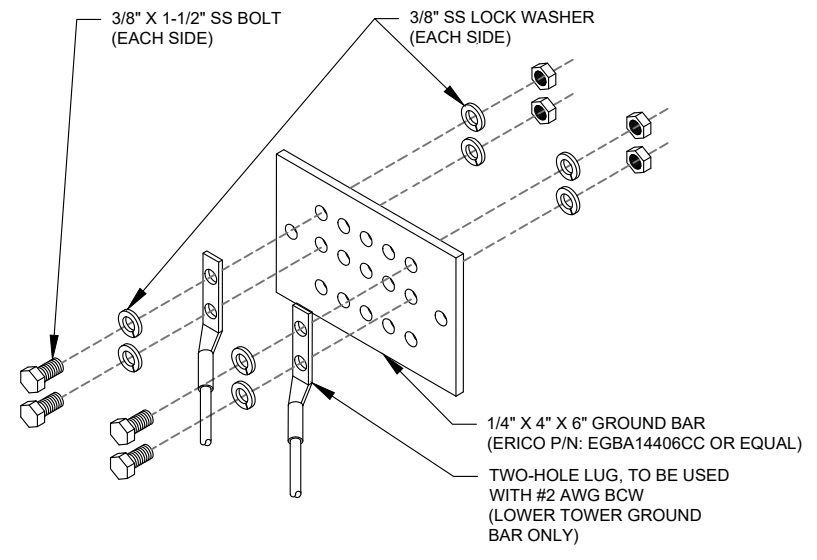
**1** TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: N.T.S.



**GROUND KIT NOTES:**

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

**2** CABLE GROUND KIT CONNECTION DETAIL  
SCALE: N.T.S.



**GROUND BAR NOTES:**

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

**3** TOWER GROUND BAR DETAIL  
SCALE: N.T.S.



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REV.	DESCRIPTION	BY	DATE
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0	FINAL 100% CD	RC	05/12/26

SBA SITE NUMBER:  
**CO46077-A**

SBA SITE NAME:  
**PIKES PEAK RACEWAY**

VERIZON SITE NAME:  
**HENKEL**

SITE ADDRESS:  
20359 INDUSTRY AVE  
FOUNTAIN, CO 81008

SEAL:



DATE DRAWN:	03/27/26
SBA JOB NO:	312435
CUSTOMER ID:	HENKEL
CUSTOMER #:	5000025270

**GROUNDING DETAILS**

SHEET NUMBER:	REVISION:
<b>E-501</b>	<b>0</b>

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WEST > Desert Mountain Plains > Mountain Plains > Aurora-2 > HENKEL

Eicens, Bryan - bryan.eicens@verizonwireless.com - 20250702\_180819

Project Details		Location Information	
Carrier Aggregation	N	Site Id	394272
Ecip	N	Search Ring#	
Project Name	5G L-SUB6 - CARRIER ADD	E-NodeB ID#	016377 316377
Project Alt Name	C-BAND ONETOUCH	PSLC#	220287
Project Id	16583182	Switch Name	Aurora-2
Designed Sector Carrier 4G	15	Tower Type	
Designed Sector Carrier 5G	3	Site Type	MACRO
Additional Sector Carrier 4G	0	Street Address	0 Industry Ave
Additional Sector Carrier 5G	0	City	Pueblo
Suffix		State	CO
FP Solution Type & Tech Type	MODIFICATION;4G_AWS3;5G_L-Sub6;4G_Radio Swap	Zip Code	81008
		County	El Paso
		Latitude	38.537667/ 38° 32' 15.601"
		Longitude	-104.636103/ 104° 38' 9.971"

Project Scope
<p>7/2/2026 Updated Antenna Model to remove incorrect TD from model name, no other changes (Bryan Eicens)            12/13/2024 Design changed to FD-MIMO (Bryan Eicens)            1/23/2024 RFDS updated. Changed Antennas, Removed MDT, ADDED 4490, updated BBU (Bryan Eicens)</p> <p>Modification of exiting site.            Remove all existing antennas and radios            Install (3) Eight Foot Antennas, For 4G-LB            Install (3) AIR3283, For 4G-FD-MIMO            Install (3) AIR6419, For 5G            Install (3) 4490 RRH, For 4G-LB            (2) 6 x12 hybrid cables + (2) OVP12 will be needed for the site            Use ConcealFab low-PIM antenna and cable mounting hardware.</p>

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE VERIZON CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

SUPPLEMENTAL	
SHEET NUMBER: <b>R-601</b>	REVISION: <b>0</b>

Antenna Summary												
Added Antenna												
700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit
		LTE	LTE	LTE		Ericsson	AIR3283	123	125	320(A),75(B),190(C)	PHYSICAL	3
					5G	Ericsson	AIR6419	123	124.2	320(A),75(B),190(C)	PHYSICAL	3
LTE	LTE					CommScope	NNSS-65C-HG-R2B	123	127	320(A),75(B),190(C)	PHYSICAL	3

Removed Antenna												
700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit
		LTE	LTE			AMPHENOL	BXA-185090-8CF	123	125.1	320(A),75(B),190(C)	PHYSICAL	6
LTE						AMPHENOL	BXA-70080-4CF	123	125	320(A),75(B),190(C)	PHYSICAL	3
	LTE					ANTEL	LPA-80080-4CF	123	125	320(A),75(B),190(C)	PHYSICAL	3
						ANTEL	LPA-80080/4CF	123	125	75(),190(),320()	SPARE	1

Retained Antenna												
700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit

Added: 9      Removed: 13      Retained: 0

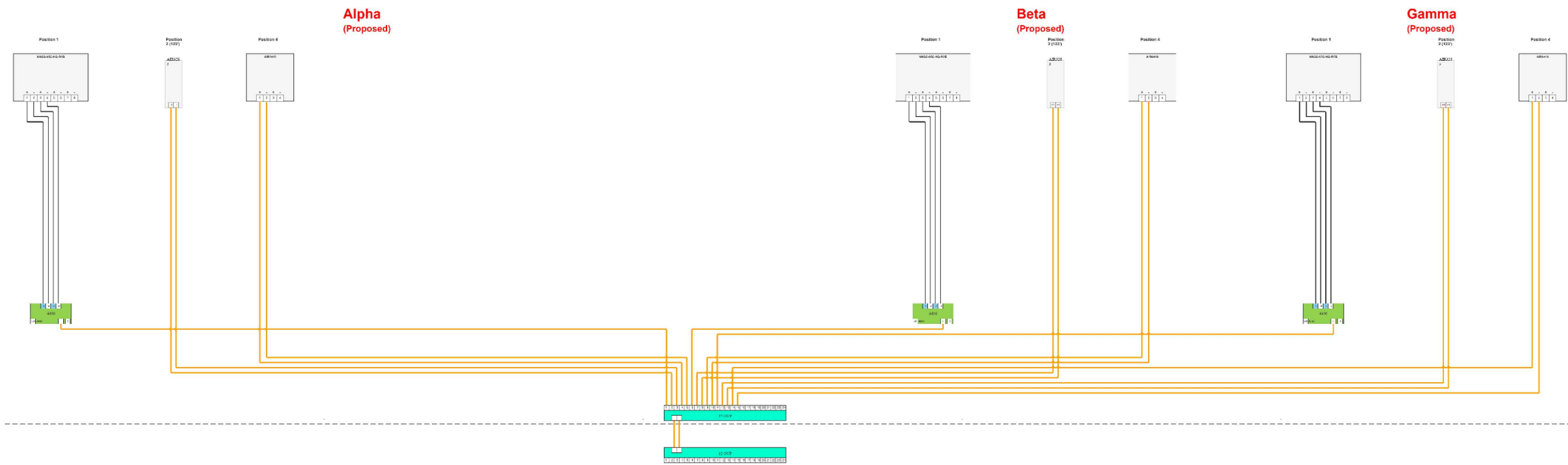
Non Antenna Summary												
Added Non Antenna												
Equipment Type	Locatio	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Install Type	Quantity	
OVP	Tower	LTE	LTE	LTE	LTE	LTE	5G		12 OVP	PHYSICAL	1	
OVP	Shelter	LTE	LTE	LTE	LTE	LTE	5G		12 OVP	PHYSICAL	1	
RRU	Tower	LTE	LTE					Ericsson	4490	PHYSICAL	3	
BBU	Shelter	LTE	LTE	LTE	LTE	LTE	5G	Ericsson	6651	PHYSICAL	1	
Hybrid Cable	Tower	LTE	LTE	LTE	LTE	LTE	5G	N/A	6x12 Hybriflex	PHYSICAL	2	
RRU	Tower			LTE	LTE	LTE		Ericsson	AIR3283 B25+B66	PHYSICAL	0	
RRU	Tower						5G	Ericsson	AIR6419 B77D	PHYSICAL	0	

Removed Non Antenna												
Equipment Type	Locatio	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Install Type	Quantity	
RRU	Shelter	LTE	LTE					Ericsson	4449	PHYSICAL	3	
BBU	Shelter							Ericsson	6630	PHYSICAL	2	
RRU	Tower			LTE				Alcatel-Lucent	UHFA B25 RRH 4x30	PHYSICAL	3	
RRU	Tower				LTE			Alcatel-Lucent	UHIC B4 RRH 2x60-4R	PHYSICAL	3	

Retained Non Antenna												
Equipment Type	Locatio	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Install Type	Quantity	

Added: 8      Removed: 11      Retained: 0

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE VERIZON CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.



1 RFDS PLUMBING DIAGRAM

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE VERIZON CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

SUPPLEMENTAL

SHEET NUMBER: <b>R-603</b>	REVISION: <b>0</b>
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Colliers Engineering & Design  
5141 Virginia Way Suite 420  
Brentwood, TN 37027  
615.686.2575  
ashley.sustek@collierseng.com

## Antenna Mount Analysis Report with Hardware Upgrades and PMI Requirements

### Mount Analysis

SMART Tool Project #: 10337854  
Colliers Engineering & Design Project #: 26995025

January 29, 2026

#### Site Information

Site ID: 5000025270-VZW / HENKEL  
Site Name: HENKEL  
Carrier Name: Verizon Wireless  
Address: 0 Industry Ave  
Pueblo, Colorado 81008  
El Paso County  
Latitude: 38.537667°  
Longitude: -104.636103°

#### Structure Information

Tower Type: 176-Ft Monopole  
Mount Type: 12.50-Ft T-Arm

FUZE ID # 16583182

#### Analysis Results

T-Arm: 65.5% **Pass w/ Hardware Upgrades\***

**\* Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

#### \*\*\*Contractor PMI Requirements:

*Included at the end of this MA report*

*Available & Submitted via portal at <https://pmi.vzwsmart.com>*

*For additional questions and support, please reach out to:  
[pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)*

Report Prepared By: Chris Lemkan



**Executive Summary:**

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

**Sources of Information:**

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 394272, dated: July 2, 2025
Mount Mapping Report	VIKOR, Site ID: 5000025270, dated: December 19, 2025

**Analysis Criteria:**

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$ : 106 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 0.25 in Risk Category: II Exposure Category: C Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, $K_e$ : 0.828
Seismic Parameters:	$S_s$ : 0.176 g $S_1$ : 0.056 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, $L_v$ : 250 lbs. Maintenance Load, $L_m$ : 250 lbs.*
	*Reduced as allowed per ANSI/TIA-222-H 16.9
Analysis Software:	RISA-3D (V22)

**Final Loading Configuration:**

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
122.50	123.00	3	Ericsson	AIR3283	Added
		3	Ericsson	AIR6419	
		3	Commscope	NNSS-65C-HG-R2B	
		3	Ericsson	4490	
		1	Raycap	12 OVP	

Any proposed antennas not currently installed should be mounted such that the centerline of the antennas does not exceed 6 inches vertically from the center of the antenna mount(s).

**It is acceptable to install up to three (3) OVPs with dimensions not to exceed 30" x 17" x 13" and 40 lbs. at any location, other than the mount face, without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required unless replacing an existing OVP.**

**Standard Conditions:**

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
- o Channel, Solid Round, Angle, Plate      ASTM A36 (Gr. 36)
  - o HSS (Rectangular)                            ASTM 500 (Gr. B-46)
  - o Pipe    ASTM A53 (Gr. B-35)
  - o Threaded Rod                                  F1554 (Gr. 36)
  - o Bolts    ASTM A325

**Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.**

**Analysis Results:**

Component	Utilization %	Pass/Fail
Standoff Arm	33.3 %	Pass
Face Horizontal	65.5 %	Pass
Antenna Pipe	27.6 %	Pass
Mount Connection	45.9 %	Pass

<b>Structure Rating – (Controlling Utilization of all Components)</b>	<b>65.5%</b>
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\* Results valid after hardware upgrades noted in the PMI Requirements are installed.

\* The mount has been found structurally adequate for all steel and external connection capacities. Serviceability in accordance with TIA-222-H Section 4.9.11.3 has not been considered.

**Mount Connection Envelope Reactions:**

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A Standoff	122.5	N1	763	1002	2.976	2.721	951	304	3.295	0.808

Notes:

- Axial loads act along the axis of the tower
- Lateral reactions act perpendicular to the tower
- Moment loads introduce bending moment to the tower
- Torsion loads introduce twisting moment to the tower
- Batch solutions by individual load cases are included at the end of this document

**Considered Equipment Dimensions, Weight, and EPA:**

Manufacturer	Model	Height (In)	Width (In)	Depth (In)	Weight (Lbs)	(EPA)n (Sq. Ft.)	(EPA)t (Sq. Ft.)
Ericsson	*AIR3283	47.2	20.0	12.9	110.0	7.44	3.53
Ericsson	*AIR6419	28.3	16.1	8.0	71.0	3.52	1.76
Commscope	*NNSS-65C-HG-R2B	96.0	19.6	7.8	107.4	10.48	2.70
Ericsson	*4490	20.6	15.7	7.0	68.4	2.39	1.09
Raycap	*12 OVP	29.5	16.5	12.6	32.0	3.17	2.41

\*Appurtenance equivalent projected area has been established through data provided by the specific manufacturer, consistent with direction per ANSI/TIA-222 Section 2.6.11.2.

**Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:**

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	7.6	2.9	15.6	10.9
0.5	10.0	4.0	21.4	15.4
1	12.3	4.9	27.0	19.6

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector(s).
- Ka factors included in (EPA)a calculations

**Requirements:**

The existing mounts will be **SUFFICIENT** for the final loading configuration shown in attachment 2 **upon the completion of the requirements listed below.**

Contractor shall install proposed OVP on a new 48" long PIPE 2 SCH 40 OVP pipe on the Alpha sector standoff horizontal.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

**Attachments:**

1. Contractor Required Post Installation Inspection (PMI) Report Deliverables
2. Antenna Placement Diagrams
3. Mount Photos
4. Analysis Calculations

# Mount Desktop – Post Modification Inspection (PMI) Report Requirements

## Documents & Photos Required from Contractor – **Passing Mount Analysis**

Passing Mount Analysis requires a PMI due to a modification in loading.

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>.

For additional questions and support, please reach out to [pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)

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MDG #: 5000025270

SMART Project #: 10337854

Fuze Project ID: 16583182

**Purpose** – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

### **Base Requirements:**

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

### **Photo Requirements:**

- Photos taken at ground level
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- Photos taken at Mount Elevation
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation. Each entire sector shall be in one photo to show the interconnection of members.
  - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.

**Antenna & equipment placement and Geometry Confirmation:**

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
  - The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

**Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:**

**Issue:**

Contractor shall install proposed OVP on a new 48" long PIPE 2 SCH 40 OVP pipe on the Alpha sector standoff horizontal.

**Response:**

**Special Instruction Confirmation:**

- The contractor has read and acknowledges the above special instructions.
- All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.
- The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) and included in the material certification folder is a packing list or invoice for these materials.

OR

The material utilized was approved by a SMART Tool engineering vendor as an “equivalent” and this approval is included as part of the contractor submission.

**Comments:**

**Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:**

Yes       No

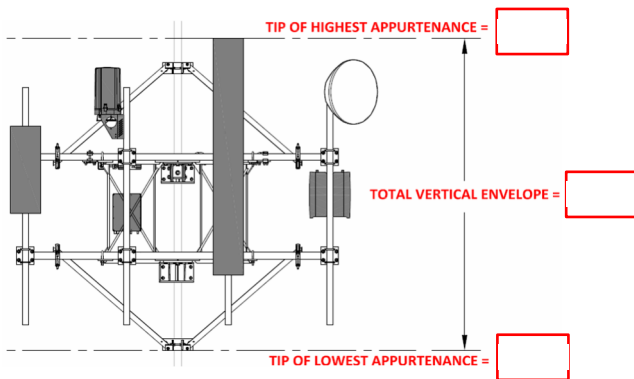
**Contractor certifies no new damage created during the current installation:**

Yes       No

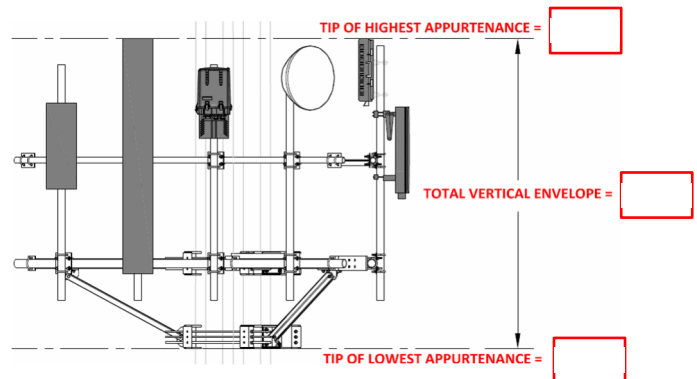
**Contractor to certify the condition of the safety climb and verify no damage when leaving the site:**

Safety Climb in Good Condition       Safety Climb Damaged

**Contractor to provide measurement from top of the highest equipment/steel to the bottom of the lowest equipment/steel by documenting it using the most appropriate illustration below along with supporting photos (highest and lowest measurement across all sectors):**



**Illustration #1**

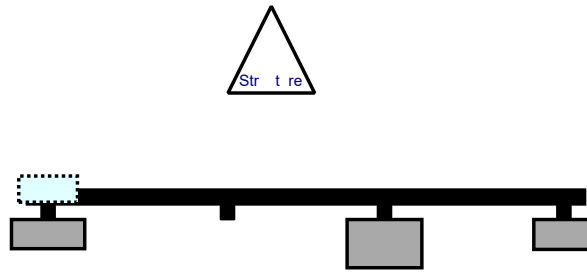


**Illustration #2**

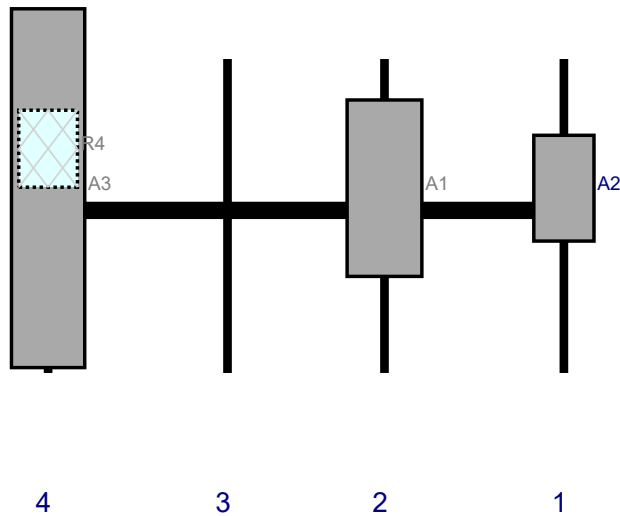
**Certifying Individual:**

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

Plan View



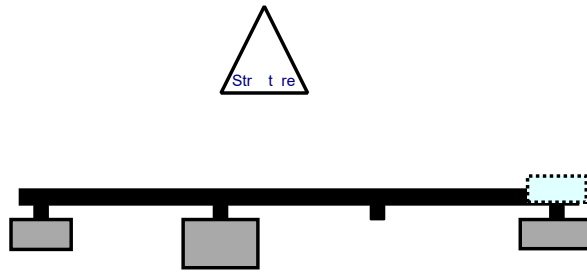
Front View - Looking at Structure



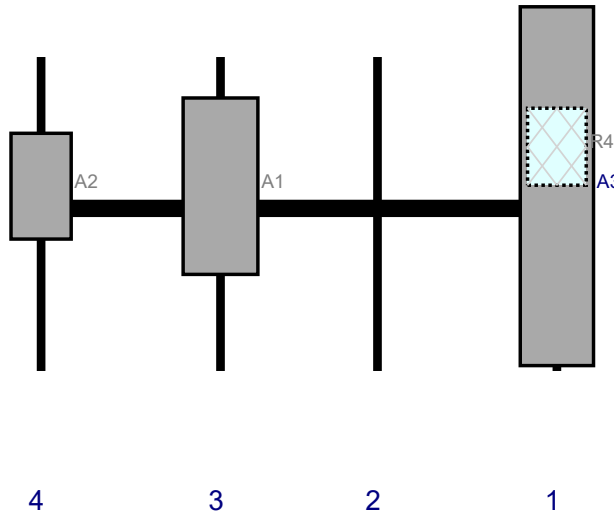
Re #	Model	Height (i)	Width (i)	H Dist Fr L.	Pipe #	Pipe Pos V	A t Pos	C. A t Fr T.	A t H O	St t s	V lid tio
OVP	12 OVP	29.5	16.5		Me er					Added	
A2	AIR6419	28.3	16.1	144	1		Fro t	34.56	0	Added	
A1	AIR3283	47.2	20	96	2		Fro t	34.56	0	Added	
A3	NNSS-65C-HG-R2B	96	19.6	6	4		Fro t	34.56	0	Added	
R4	4490	20.6	15.7	6	4		Behi d	24	0	Added	

\*The Nominal Mount Azimuth provided on this document is intended for guidance and planning purposes only and may deviate from the Actual Mount Azimuth due to several real-world factors, including but not limited to Magnetic vs. True North.

Plan View



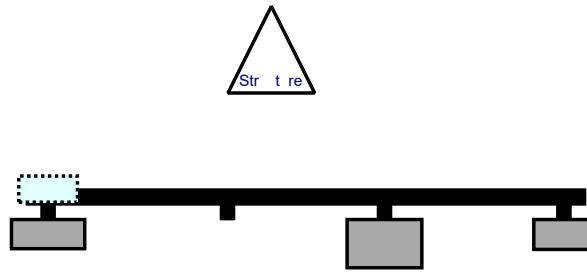
Front View - Looking at Structure



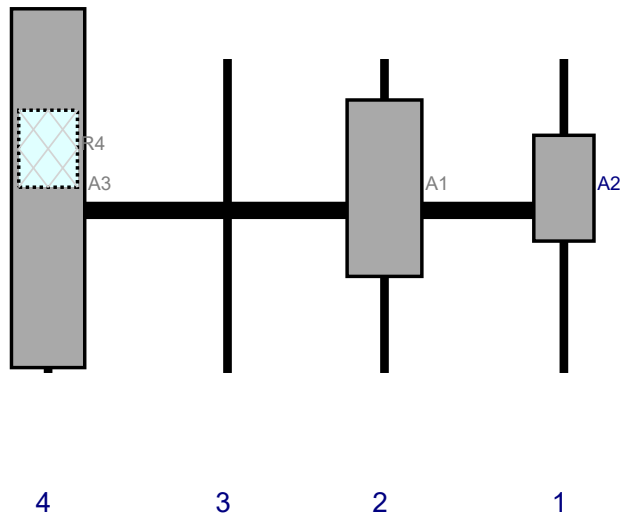
Re #	Model	Height (i )	Width (i )	H Dist Fr L.	Pipe #	Pipe Pos V	A t Pos	C. A t Fr T.	A t H O	St t s	V lid tio
A3	NNSS-65C-HG-R2B	96	19.6	144	1		Fro t	34.56	0	Added	
R4	4490	20.6	15.7	144	1		Behi d	24	0	Added	
A1	AIR3283	47.2	20	54	3		Fro t	34.56	0	Added	
A2	AIR6419	28.3	16.1	6	4		Fro t	34.56	0	Added	

\*The Nominal Mount Azimuth provided on this document is intended for guidance and planning purposes only and may deviate from the Actual Mount Azimuth due to several real-world factors, including but not limited to Magnetic vs. True North.

Plan View

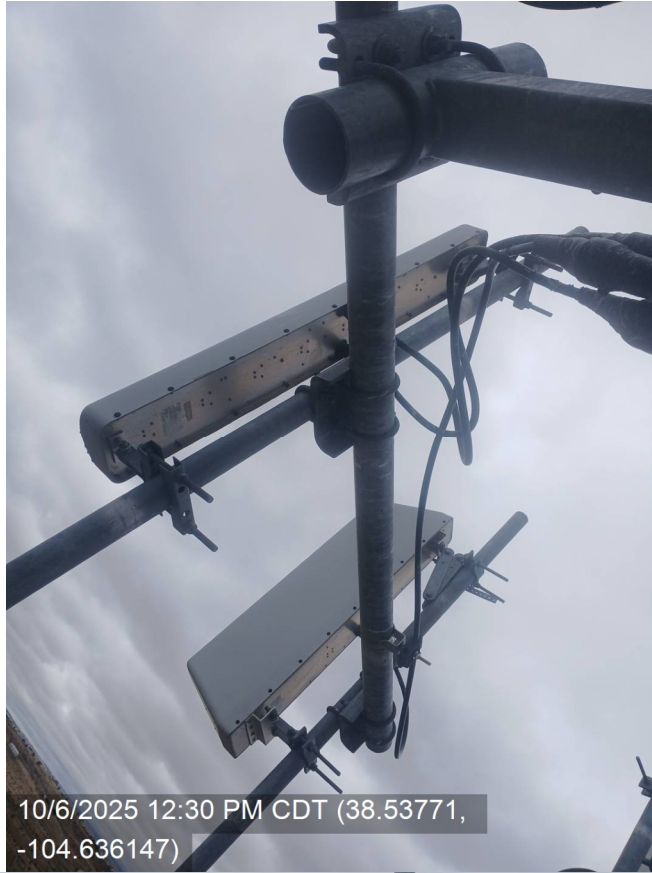


Front View - Looking at Structure



Re #	Model	Height (i )	Width (i )	H Dist Fr L.	Pipe #	Pipe Pos V	A t Pos	C. A t Fr T.	A t H O	St t s	V lid tio
A2	AIR6419	28.3	16.1	144	1		Fro t	34.56	0	Added	
A1	AIR3283	47.2	20	96	2		Fro t	34.56	0	Added	
A3	NNSS-65C-HG-R2B	96	19.6	6	4		Fro t	34.56	0	Added	
R4	4490	20.6	15.7	6	4		Behi d	24	0	Added	

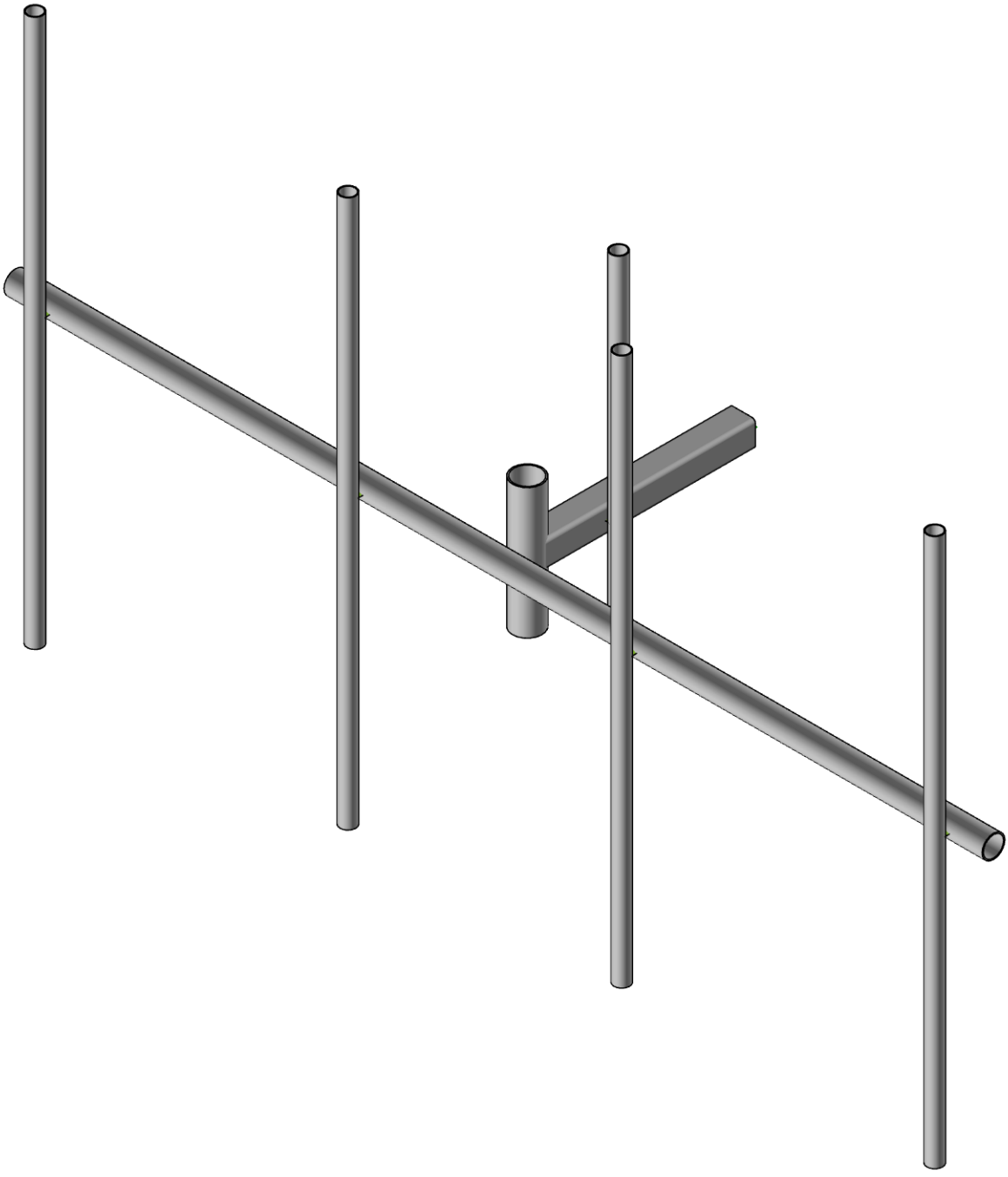
\*The Nominal Mount Azimuth provided on this document is intended for guidance and planning purposes only and may deviate from the Actual Mount Azimuth due to several real-world factors, including but not limited to Magnetic vs. True North.



10/6/2025 12:30 PM CDT (38.53771, -104.636147)



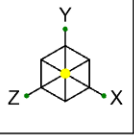
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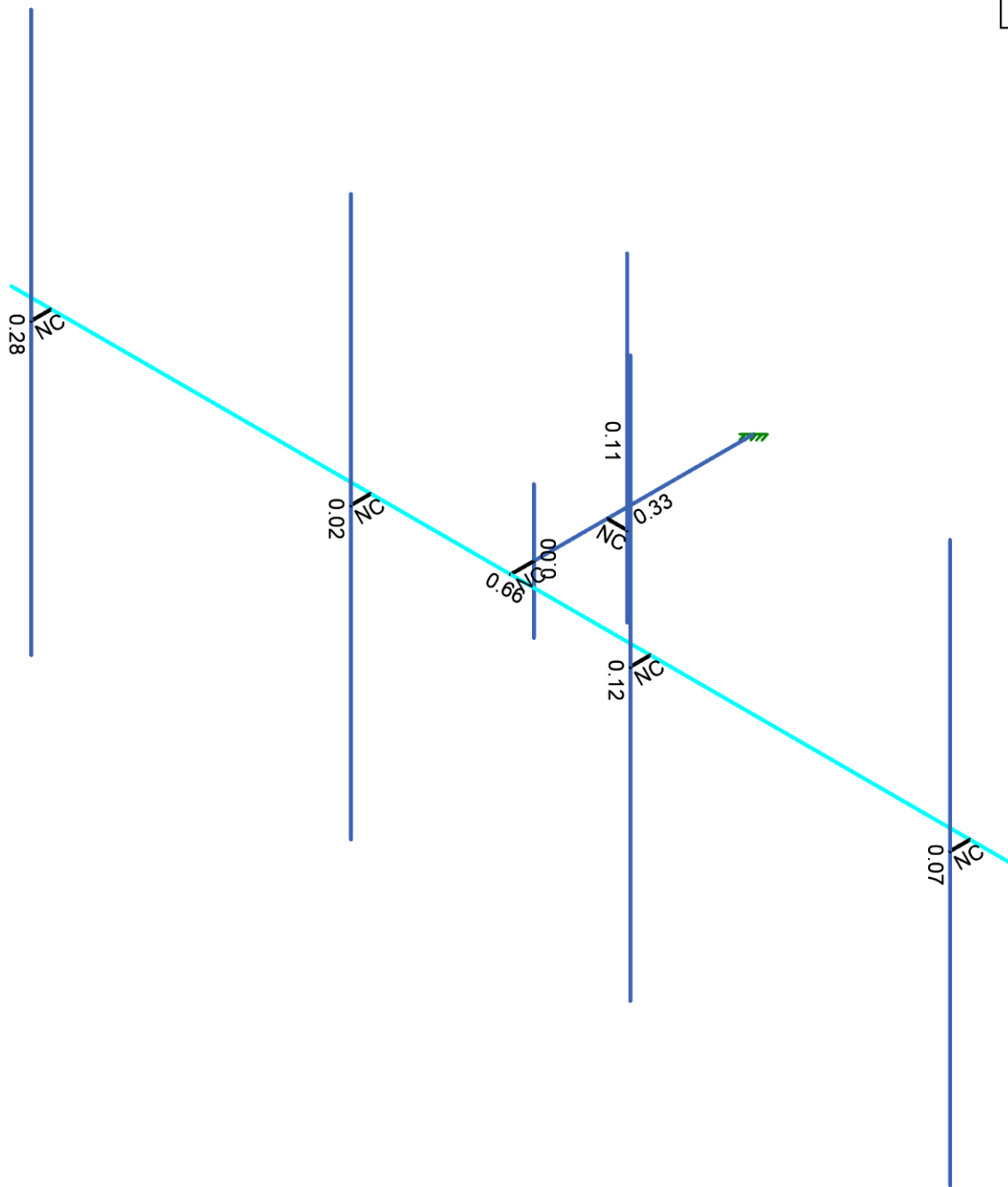
Envelope Only Solution



SK-3  
Jan 28, 2026 at 12:06 PM  
5000025270-VZW\_MT\_LOT...



Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



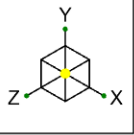
Member Code Checks Displayed (Enveloped)  
Envelope Only Solution



SK-1

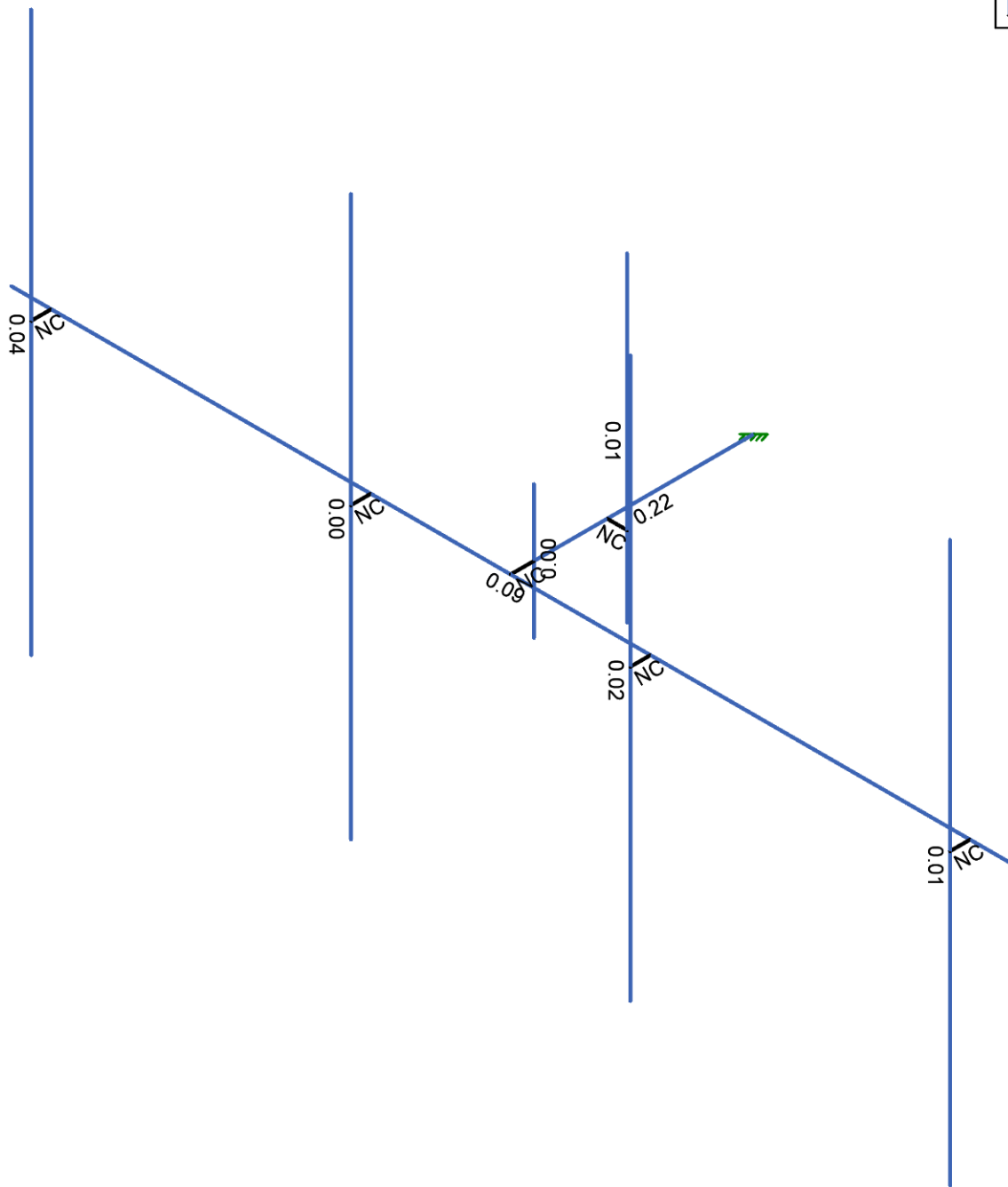
Jan 28, 2026 at 12:06 PM

5000025270-VZW\_MT\_LOT...



Shear Check (Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution



SK-2

Jan 28, 2026 at 12:06 PM

5000025270-VZW\_MT\_LOT...



Company :  
 Designer :  
 Job Number :  
 Model Name :

1/28/2026  
 12:07:33 PM  
 Checked By : \_\_\_\_\_

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed
1	Antenna D	None				24	
2	Antenna Di	None				24	
3	Antenna Wo (0 Deg)	None				24	
4	Antenna Wo (30 Deg)	None				24	
5	Antenna Wo (60 Deg)	None				24	
6	Antenna Wo (90 Deg)	None				24	
7	Antenna Wo (120 Deg)	None				24	
8	Antenna Wo (150 Deg)	None				24	
9	Antenna Wo (180 Deg)	None				24	
10	Antenna Wo (210 Deg)	None				24	
11	Antenna Wo (240 Deg)	None				24	
12	Antenna Wo (270 Deg)	None				24	
13	Antenna Wo (300 Deg)	None				24	
14	Antenna Wo (330 Deg)	None				24	
15	Antenna Wi (0 Deg)	None				24	
16	Antenna Wi (30 Deg)	None				24	
17	Antenna Wi (60 Deg)	None				24	
18	Antenna Wi (90 Deg)	None				24	
19	Antenna Wi (120 Deg)	None				24	
20	Antenna Wi (150 Deg)	None				24	
21	Antenna Wi (180 Deg)	None				24	
22	Antenna Wi (210 Deg)	None				24	
23	Antenna Wi (240 Deg)	None				24	
24	Antenna Wi (270 Deg)	None				24	
25	Antenna Wi (300 Deg)	None				24	
26	Antenna Wi (330 Deg)	None				24	
27	Antenna Wm (0 Deg)	None				24	
28	Antenna Wm (30 Deg)	None				24	
29	Antenna Wm (60 Deg)	None				24	
30	Antenna Wm (90 Deg)	None				24	
31	Antenna Wm (120 Deg)	None				24	
32	Antenna Wm (150 Deg)	None				24	
33	Antenna Wm (180 Deg)	None				24	
34	Antenna Wm (210 Deg)	None				24	
35	Antenna Wm (240 Deg)	None				24	
36	Antenna Wm (270 Deg)	None				24	
37	Antenna Wm (300 Deg)	None				24	
38	Antenna Wm (330 Deg)	None				24	
39	Structure D	None		-1			
40	Structure Di	None					8
41	Structure Wo (0 Deg)	None					16
42	Structure Wo (30 Deg)	None					16
43	Structure Wo (60 Deg)	None					16
44	Structure Wo (90 Deg)	None					16
45	Structure Wo (120 Deg)	None					16
46	Structure Wo (150 Deg)	None					16
47	Structure Wo (180 Deg)	None					16
48	Structure Wo (210 Deg)	None					16
49	Structure Wo (240 Deg)	None					16
50	Structure Wo (270 Deg)	None					16
51	Structure Wo (300 Deg)	None					16
52	Structure Wo (330 Deg)	None					16
53	Structure Wi (0 Deg)	None					16
54	Structure Wi (30 Deg)	None					16
55	Structure Wi (60 Deg)	None					16

**Basic Load Cases (Continued)**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed
56	Structure Wi (90 Deg)	None					16
57	Structure Wi (120 Deg)	None					16
58	Structure Wi (150 Deg)	None					16
59	Structure Wi (180 Deg)	None					16
60	Structure Wi (210 Deg)	None					16
61	Structure Wi (240 Deg)	None					16
62	Structure Wi (270 Deg)	None					16
63	Structure Wi (300 Deg)	None					16
64	Structure Wi (330 Deg)	None					16
65	Structure Wm (0 Deg)	None					16
66	Structure Wm (30 Deg)	None					16
67	Structure Wm (60 Deg)	None					16
68	Structure Wm (90 Deg)	None					16
69	Structure Wm (120 Deg)	None					16
70	Structure Wm (150 Deg)	None					16
71	Structure Wm (180 Deg)	None					16
72	Structure Wm (210 Deg)	None					16
73	Structure Wm (240 Deg)	None					16
74	Structure Wm (270 Deg)	None					16
75	Structure Wm (300 Deg)	None					16
76	Structure Wm (330 Deg)	None					16
77	Lm1	None				1	
78	Lm2	None				1	
79	Lv1	None				1	
80	Lv2	None				1	
81	Antenna Ev	None				24	
82	Antenna Eh (0 Deg)	None				16	
83	Antenna Eh (90 Deg)	None				16	
84	Structure Ev	ELY		-0.038			
85	Structure Eh (0 Deg)	ELZ			-0.094		
86	Structure Eh (90 Deg)	ELX	0.094				

**Load Combinations**

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	
1	1.2D+1.0Wo (0 Deg)	Yes	Y	1	1.2	39	1.2	3	1	41	1										
2	1.2D+1.0Wo (30 Deg)	Yes	Y	1	1.2	39	1.2	4	1	42	1										
3	1.2D+1.0Wo (60 Deg)	Yes	Y	1	1.2	39	1.2	5	1	43	1										
4	1.2D+1.0Wo (90 Deg)	Yes	Y	1	1.2	39	1.2	6	1	44	1										
5	1.2D+1.0Wo (120 Deg)	Yes	Y	1	1.2	39	1.2	7	1	45	1										
6	1.2D+1.0Wo (150 Deg)	Yes	Y	1	1.2	39	1.2	8	1	46	1										
7	1.2D+1.0Wo (180 Deg)	Yes	Y	1	1.2	39	1.2	9	1	47	1										
8	1.2D+1.0Wo (210 Deg)	Yes	Y	1	1.2	39	1.2	10	1	48	1										
9	1.2D+1.0Wo (240 Deg)	Yes	Y	1	1.2	39	1.2	11	1	49	1										
10	1.2D+1.0Wo (270 Deg)	Yes	Y	1	1.2	39	1.2	12	1	50	1										
11	1.2D+1.0Wo (300 Deg)	Yes	Y	1	1.2	39	1.2	13	1	51	1										
12	1.2D+1.0Wo (330 Deg)	Yes	Y	1	1.2	39	1.2	14	1	52	1										
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	15	1	53	1						
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	16	1	54	1						
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	17	1	55	1						
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	18	1	56	1						
17	1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	19	1	57	1						
18	1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	20	1	58	1						
19	1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	21	1	59	1						
20	1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	22	1	60	1						
21	1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	23	1	61	1						

**Load Combinations (Continued)**

Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
22 1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	24	1	62	1				
23 1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	25	1	63	1				
24 1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	26	1	64	1				
25 1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	27	1	65	1						
26 1.2D + 1.5Lm1 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	28	1	66	1						
27 1.2D + 1.5Lm1 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	29	1	67	1						
28 1.2D + 1.5Lm1 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	30	1	68	1						
29 1.2D + 1.5Lm1 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	31	1	69	1						
30 1.2D + 1.5Lm1 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	32	1	70	1						
31 1.2D + 1.5Lm1 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	33	1	71	1						
32 1.2D + 1.5Lm1 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	34	1	72	1						
33 1.2D + 1.5Lm1 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	35	1	73	1						
34 1.2D + 1.5Lm1 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	36	1	74	1						
35 1.2D + 1.5Lm1 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	37	1	75	1						
36 1.2D + 1.5Lm1 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	38	1	76	1						
37 1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	27	1	65	1						
38 1.2D + 1.5Lm2 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	28	1	66	1						
39 1.2D + 1.5Lm2 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	29	1	67	1						
40 1.2D + 1.5Lm2 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	30	1	68	1						
41 1.2D + 1.5Lm2 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	31	1	69	1						
42 1.2D + 1.5Lm2 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	32	1	70	1						
43 1.2D + 1.5Lm2 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	33	1	71	1						
44 1.2D + 1.5Lm2 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	34	1	72	1						
45 1.2D + 1.5Lm2 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	35	1	73	1						
46 1.2D + 1.5Lm2 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	36	1	74	1						
47 1.2D + 1.5Lm2 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	37	1	75	1						
48 1.2D + 1.5Lm2 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	38	1	76	1						
49 1.2D + 1.5Lv1	Yes	Y	1	1.2	39	1.2	79	1.5										
50 1.2D + 1.5Lv2	Yes	Y	1	1.2	39	1.2	80	1.5										
51 1.4D	Yes	Y	1	1.4	39	1.4												
52 1.2D + 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX	
53 1.2D + 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
54 1.2D + 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
55 1.2D + 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1
56 1.2D + 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
57 1.2D + 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
58 1.2D + 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX	
59 1.2D + 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
60 1.2D + 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
61 1.2D + 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1
62 1.2D + 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
63 1.2D + 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5
64 0.9D - 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX	
65 0.9D - 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
66 0.9D - 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
67 0.9D - 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1
68 0.9D - 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
69 0.9D - 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
70 0.9D - 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX	
71 0.9D - 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
72 0.9D - 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
73 0.9D - 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1
74 0.9D - 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
75 0.9D - 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	Antenna Pipe	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	0.627	0.627	1.25
2	Standoff Arm	HSS4X4X4	Beam	Tube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
3	Standoff Pipe	PIPE 4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
4	Face Horizontal	PIPE 3.0	Column	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69

**Node Coordinates**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	0	0	-1.041667	
2	N2	0	0	1.708333	
3	N5	0	0	2	
4	N21	0	-0.375	1.708333	
5	N20	-6.25	0	2	
6	N21A	6.25	0	2	
7	N21B	-1.75	0	2	
8	N22	1.75	0	2	
9	N23	5.75	0	2	
10	N14	-1.75	0	2.25	
11	N15	1.75	0	2.25	
12	N16	5.75	0	2.25	
13	N33	0	0.833333	1.708333	
14	N34	0	-0.833333	1.708333	
15	N30A	0	0	0.791667	
16	N30B	0.25	0	0.791667	
17	N31A	0.25	3	0.791667	
18	N32A	0.25	-1	0.791667	
19	N33A	-5.75	0	2	
20	N34A	-5.75	0	2.25	
21	N28	-1.75	3.375	2.25	
22	N29	1.75	3.375	2.25	
23	N30	5.75	3.375	2.25	
24	N31	-5.75	3.375	2.25	
25	N32	-1.75	-3.625	2.25	
26	N35	1.75	-3.625	2.25	
27	N36	5.75	-3.625	2.25	
28	N37	-5.75	-3.625	2.25	
29	N38	1.75	0.5	2.25	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N30A						
3	N30B						
4	N31A						
5	N32A						

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>-5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3

**Hot Rolled Steel Properties (Continued)**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr. B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
7	A500 Gr 50	29000	11154	0.3	0.65	0.49	50	1.5	58	1.2

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2		Standoff Arm	Beam	Tube	A500 Gr.46	Typical
2	M2	N34	N33	340	Standoff Pipe	Column	Pipe	A53 Gr. B	Typical
3	M10A	N2	N5		RIGID	None	None	RIGID	Typical
4	LV	N20	N21A		Face Horizontal	Column	Pipe	A53 Gr. B	Typical
5	M5	N16	N23		RIGID	None	None	RIGID	Typical
6	L2	N15	N22		RIGID	None	None	RIGID	Typical
7	M7	N14	N21B		RIGID	None	None	RIGID	Typical
8	M16A	N30A	N30B		RIGID	None	None	RIGID	Typical
9	OVP	N31A	N32A	20	Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
10	L1	N34A	N33A		RIGID	None	None	RIGID	Typical
11	MP4A	N31	N37		Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
12	MP3A	N28	N32		Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
13	MP2A	N29	N35		Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
14	MP1A	N30	N36		Antenna Pipe	Column	Pipe	A53 Gr. B	Typical

**Member Advanced Data**

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	M1		Yes	Default	None
2	M2		Yes	** NA **	None
3	M10A		Yes	** NA **	None
4	LV		Yes	** NA **	None
5	M5		Yes	** NA **	None
6	L2		Yes	** NA **	None
7	M7		Yes	** NA **	None
8	M16A		Yes	** NA **	None
9	OVP		Yes	** NA **	None
10	L1		Yes	** NA **	None
11	MP4A		Yes	** NA **	None
12	MP3A		Yes	** NA **	None
13	MP2A		Yes	** NA **	None
14	MP1A		Yes	** NA **	None

**Member Point Loads (BLC 1 : Antenna D)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	Y	-55	1.88
2	MP2A	My	-0.028	1.88
3	MP2A	Mz	0	1.88
4	MP2A	Y	-55	3.88
5	MP2A	My	-0.028	3.88
6	MP2A	Mz	0	3.88
7	MP1A	Y	-35.5	1.88
8	MP1A	My	-0.018	1.88
9	MP1A	Mz	0	1.88
10	MP1A	Y	-35.5	3.88
11	MP1A	My	-0.018	3.88
12	MP1A	Mz	0	3.88

**Member Point Loads (BLC 1 : Antenna D) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
13	MP4A	Y	-53.7	0.38
14	MP4A	My	-0.027	0.38
15	MP4A	Mz	0	0.38
16	MP4A	Y	-53.7	5.38
17	MP4A	My	-0.027	5.38
18	MP4A	Mz	0	5.38
19	MP4A	Y	-68.4	2
20	MP4A	My	0.034	2
21	MP4A	Mz	0	2
22	OVP	Y	-32	1
23	OVP	My	0	1
24	OVP	Mz	0	1

**Member Point Loads (BLC 2 : Antenna Di)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	Y	-17.061	1.88
2	MP2A	My	-0.009	1.88
3	MP2A	Mz	0	1.88
4	MP2A	Y	-17.061	3.88
5	MP2A	My	-0.009	3.88
6	MP2A	Mz	0	3.88
7	MP1A	Y	-7.708	1.88
8	MP1A	My	-0.004	1.88
9	MP1A	Mz	0	1.88
10	MP1A	Y	-7.708	3.88
11	MP1A	My	-0.004	3.88
12	MP1A	Mz	0	3.88
13	MP4A	Y	-26.222	0.38
14	MP4A	My	-0.013	0.38
15	MP4A	Mz	0	0.38
16	MP4A	Y	-26.222	5.38
17	MP4A	My	-0.013	5.38
18	MP4A	Mz	0	5.38
19	MP4A	Y	-11.031	2
20	MP4A	My	0.006	2
21	MP4A	Mz	0	2
22	OVP	Y	-20.188	1
23	OVP	My	0	1
24	OVP	Mz	0	1

**Member Point Loads (BLC 3 : Antenna Wo (0 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	-100.016	1.88
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	-100.016	3.88
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	-47.319	1.88
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	-47.319	3.88

**Member Point Loads (BLC 3 : Antenna Wo (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	-117.089	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	-117.089	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	-64.258	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	-76.786	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 4 : Antenna Wo (30 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	43.438	1.88
2	MP2A	Z	-75.236	1.88
3	MP2A	Mx	-0.022	1.88
4	MP2A	X	43.438	3.88
5	MP2A	Z	-75.236	3.88
6	MP2A	Mx	-0.022	3.88
7	MP1A	X	20.702	1.88
8	MP1A	Z	-35.857	1.88
9	MP1A	Mx	-0.01	1.88
10	MP1A	X	20.702	3.88
11	MP1A	Z	-35.857	3.88
12	MP1A	Mx	-0.01	3.88
13	MP4A	X	64.997	0.38
14	MP4A	Z	-112.578	0.38
15	MP4A	Mx	-0.032	0.38
16	MP4A	X	64.997	5.38
17	MP4A	Z	-112.578	5.38
18	MP4A	Mx	-0.032	5.38
19	MP4A	X	27.76	2
20	MP4A	Z	-48.081	2
21	MP4A	Mx	0.014	2
22	OVP	X	42.306	1
23	OVP	Z	-73.277	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 5 : Antenna Wo (60 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	52.476	1.88
2	MP2A	Z	-30.297	1.88
3	MP2A	Mx	-0.026	1.88
4	MP2A	X	52.476	3.88
5	MP2A	Z	-30.297	3.88
6	MP2A	Mx	-0.026	3.88
7	MP1A	X	25.612	1.88
8	MP1A	Z	-14.787	1.88
9	MP1A	Mx	-0.013	1.88
10	MP1A	X	25.612	3.88

**Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
11	MP1A	Z	-14.787	3.88
12	MP1A	Mx	-0.013	3.88
13	MP4A	X	69.619	0.38
14	MP4A	Z	-40.195	0.38
15	MP4A	Mx	-0.035	0.38
16	MP4A	X	69.619	5.38
17	MP4A	Z	-40.195	5.38
18	MP4A	Mx	-0.035	5.38
19	MP4A	X	32.947	2
20	MP4A	Z	-19.022	2
21	MP4A	Mx	0.016	2
22	OVP	X	71.74	1
23	OVP	Z	-41.419	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 6 : Antenna Wo (90 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	47.454	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	-0.024	1.88
4	MP2A	X	47.454	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	-0.024	3.88
7	MP1A	X	23.66	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	-0.012	1.88
10	MP1A	X	23.66	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	-0.012	3.88
13	MP4A	X	36.296	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	-0.018	0.38
16	MP4A	X	36.296	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	-0.018	5.38
19	MP4A	X	29.306	2
20	MP4A	Z	0	2
21	MP4A	Mx	0.015	2
22	OVP	X	73.238	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 7 : Antenna Wo (120 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	52.476	1.88
2	MP2A	Z	30.297	1.88
3	MP2A	Mx	-0.026	1.88
4	MP2A	X	52.476	3.88
5	MP2A	Z	30.297	3.88
6	MP2A	Mx	-0.026	3.88
7	MP1A	X	25.612	1.88
8	MP1A	Z	14.787	1.88
9	MP1A	Mx	-0.013	1.88

**Member Point Loads (BLC 7 : Antenna Wo (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
10	MP1A	X	25.612	3.88
11	MP1A	Z	14.787	3.88
12	MP1A	Mx	-0.013	3.88
13	MP4A	X	100.47	0.38
14	MP4A	Z	58.007	0.38
15	MP4A	Mx	-0.05	0.38
16	MP4A	X	100.47	5.38
17	MP4A	Z	58.007	5.38
18	MP4A	Mx	-0.05	5.38
19	MP4A	X	32.947	2
20	MP4A	Z	19.022	2
21	MP4A	Mx	0.016	2
22	OVP	X	56.648	1
23	OVP	Z	32.706	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 8 : Antenna Wo (150 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	43.438	1.88
2	MP2A	Z	75.236	1.88
3	MP2A	Mx	-0.022	1.88
4	MP2A	X	43.438	3.88
5	MP2A	Z	75.236	3.88
6	MP2A	Mx	-0.022	3.88
7	MP1A	X	20.702	1.88
8	MP1A	Z	35.857	1.88
9	MP1A	Mx	-0.01	1.88
10	MP1A	X	20.702	3.88
11	MP1A	Z	35.857	3.88
12	MP1A	Mx	-0.01	3.88
13	MP4A	X	65.535	0.38
14	MP4A	Z	113.509	0.38
15	MP4A	Mx	-0.033	0.38
16	MP4A	X	65.535	5.38
17	MP4A	Z	113.509	5.38
18	MP4A	Mx	-0.033	5.38
19	MP4A	X	27.76	2
20	MP4A	Z	48.081	2
21	MP4A	Mx	0.014	2
22	OVP	X	33.593	1
23	OVP	Z	58.184	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 9 : Antenna Wo (180 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	100.016	1.88
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	100.016	3.88
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	47.319	1.88

**Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	47.319	3.88
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	81.465	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	81.465	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	64.258	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	76.786	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 10 : Antenna Wo (210 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-43.438	1.88
2	MP2A	Z	75.236	1.88
3	MP2A	Mx	0.022	1.88
4	MP2A	X	-43.438	3.88
5	MP2A	Z	75.236	3.88
6	MP2A	Mx	0.022	3.88
7	MP1A	X	-20.702	1.88
8	MP1A	Z	35.857	1.88
9	MP1A	Mx	0.01	1.88
10	MP1A	X	-20.702	3.88
11	MP1A	Z	35.857	3.88
12	MP1A	Mx	0.01	3.88
13	MP4A	X	-65.535	0.38
14	MP4A	Z	113.509	0.38
15	MP4A	Mx	0.033	0.38
16	MP4A	X	-65.535	5.38
17	MP4A	Z	113.509	5.38
18	MP4A	Mx	0.033	5.38
19	MP4A	X	-27.76	2
20	MP4A	Z	48.081	2
21	MP4A	Mx	-0.014	2
22	OVP	X	-42.306	1
23	OVP	Z	73.277	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 11 : Antenna Wo (240 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-52.476	1.88
2	MP2A	Z	30.297	1.88
3	MP2A	Mx	0.026	1.88
4	MP2A	X	-52.476	3.88
5	MP2A	Z	30.297	3.88
6	MP2A	Mx	0.026	3.88
7	MP1A	X	-25.612	1.88

**Member Point Loads (BLC 11 : Antenna Wo (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
8	MP1A	Z	14.787	1.88
9	MP1A	Mx	0.013	1.88
10	MP1A	X	-25.612	3.88
11	MP1A	Z	14.787	3.88
12	MP1A	Mx	0.013	3.88
13	MP4A	X	-100.47	0.38
14	MP4A	Z	58.007	0.38
15	MP4A	Mx	0.05	0.38
16	MP4A	X	-100.47	5.38
17	MP4A	Z	58.007	5.38
18	MP4A	Mx	0.05	5.38
19	MP4A	X	-32.947	2
20	MP4A	Z	19.022	2
21	MP4A	Mx	-0.016	2
22	OVP	X	-71.74	1
23	OVP	Z	41.419	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 12 : Antenna Wo (270 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-47.454	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	0.024	1.88
4	MP2A	X	-47.454	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	0.024	3.88
7	MP1A	X	-23.66	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	0.012	1.88
10	MP1A	X	-23.66	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	0.012	3.88
13	MP4A	X	-36.296	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	0.018	0.38
16	MP4A	X	-36.296	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	0.018	5.38
19	MP4A	X	-29.306	2
20	MP4A	Z	0	2
21	MP4A	Mx	-0.015	2
22	OVP	X	-73.238	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 13 : Antenna Wo (300 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-52.476	1.88
2	MP2A	Z	-30.297	1.88
3	MP2A	Mx	0.026	1.88
4	MP2A	X	-52.476	3.88
5	MP2A	Z	-30.297	3.88
6	MP2A	Mx	0.026	3.88

**Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP1A	X	-25.612	1.88
8	MP1A	Z	-14.787	1.88
9	MP1A	Mx	0.013	1.88
10	MP1A	X	-25.612	3.88
11	MP1A	Z	-14.787	3.88
12	MP1A	Mx	0.013	3.88
13	MP4A	X	-69.619	0.38
14	MP4A	Z	-40.195	0.38
15	MP4A	Mx	0.035	0.38
16	MP4A	X	-69.619	5.38
17	MP4A	Z	-40.195	5.38
18	MP4A	Mx	0.035	5.38
19	MP4A	X	-32.947	2
20	MP4A	Z	-19.022	2
21	MP4A	Mx	-0.016	2
22	OVP	X	-56.648	1
23	OVP	Z	-32.706	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 14 : Antenna Wo (330 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-43.438	1.88
2	MP2A	Z	-75.236	1.88
3	MP2A	Mx	0.022	1.88
4	MP2A	X	-43.438	3.88
5	MP2A	Z	-75.236	3.88
6	MP2A	Mx	0.022	3.88
7	MP1A	X	-20.702	1.88
8	MP1A	Z	-35.857	1.88
9	MP1A	Mx	0.01	1.88
10	MP1A	X	-20.702	3.88
11	MP1A	Z	-35.857	3.88
12	MP1A	Mx	0.01	3.88
13	MP4A	X	-64.997	0.38
14	MP4A	Z	-112.578	0.38
15	MP4A	Mx	0.032	0.38
16	MP4A	X	-64.997	5.38
17	MP4A	Z	-112.578	5.38
18	MP4A	Mx	0.032	5.38
19	MP4A	X	-27.76	2
20	MP4A	Z	-48.081	2
21	MP4A	Mx	-0.014	2
22	OVP	X	-33.593	1
23	OVP	Z	-58.184	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 15 : Antenna Wi (0 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	-24.091	1.88
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	-24.091	3.88

**Member Point Loads (BLC 15 : Antenna Wi (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	-11.73	1.88
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	-11.73	3.88
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	-51.907	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	-51.907	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	-16.734	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	-22.641	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 16 : Antenna Wi (30 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	11.07	1.88
2	MP2A	Z	-19.173	1.88
3	MP2A	Mx	-0.006	1.88
4	MP2A	X	11.07	3.88
5	MP2A	Z	-19.173	3.88
6	MP2A	Mx	-0.006	3.88
7	MP1A	X	5.166	1.88
8	MP1A	Z	-8.948	1.88
9	MP1A	Mx	-0.003	1.88
10	MP1A	X	5.166	3.88
11	MP1A	Z	-8.948	3.88
12	MP1A	Mx	-0.003	3.88
13	MP4A	X	22.62	0.38
14	MP4A	Z	-39.179	0.38
15	MP4A	Mx	-0.011	0.38
16	MP4A	X	22.62	5.38
17	MP4A	Z	-39.179	5.38
18	MP4A	Mx	-0.011	5.38
19	MP4A	X	7.243	2
20	MP4A	Z	-12.545	2
21	MP4A	Mx	0.004	2
22	OVP	X	12.431	1
23	OVP	Z	-21.531	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 17 : Antenna Wi (60 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	15.793	1.88
2	MP2A	Z	-9.118	1.88
3	MP2A	Mx	-0.008	1.88
4	MP2A	X	15.793	3.88

**Member Point Loads (BLC 17 : Antenna Wi (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
5	MP2A	Z	-9.118	3.88
6	MP2A	Mx	-0.008	3.88
7	MP1A	X	6.527	1.88
8	MP1A	Z	-3.768	1.88
9	MP1A	Mx	-0.003	1.88
10	MP1A	X	6.527	3.88
11	MP1A	Z	-3.768	3.88
12	MP1A	Mx	-0.003	3.88
13	MP4A	X	27.632	0.38
14	MP4A	Z	-15.954	0.38
15	MP4A	Mx	-0.014	0.38
16	MP4A	X	27.632	5.38
17	MP4A	Z	-15.954	5.38
18	MP4A	Mx	-0.014	5.38
19	MP4A	X	8.65	2
20	MP4A	Z	-4.994	2
21	MP4A	Mx	0.004	2
22	OVP	X	21.095	1
23	OVP	Z	-12.179	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 18 : Antenna Wi (90 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	16.284	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	-0.008	1.88
4	MP2A	X	16.284	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	-0.008	3.88
7	MP1A	X	6.139	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	-0.003	1.88
10	MP1A	X	6.139	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	-0.003	3.88
13	MP4A	X	25.241	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	-0.013	0.38
16	MP4A	X	25.241	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	-0.013	5.38
19	MP4A	X	7.739	2
20	MP4A	Z	0	2
21	MP4A	Mx	0.004	2
22	OVP	X	21.633	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 19 : Antenna Wi (120 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	15.793	1.88
2	MP2A	Z	9.118	1.88
3	MP2A	Mx	-0.008	1.88

**Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
4	MP2A	X	15.793	3.88
5	MP2A	Z	9.118	3.88
6	MP2A	Mx	-0.008	3.88
7	MP1A	X	6.527	1.88
8	MP1A	Z	3.768	1.88
9	MP1A	Mx	-0.003	1.88
10	MP1A	X	6.527	3.88
11	MP1A	Z	3.768	3.88
12	MP1A	Mx	-0.003	3.88
13	MP4A	X	27.632	0.38
14	MP4A	Z	15.954	0.38
15	MP4A	Mx	-0.014	0.38
16	MP4A	X	27.632	5.38
17	MP4A	Z	15.954	5.38
18	MP4A	Mx	-0.014	5.38
19	MP4A	X	8.65	2
20	MP4A	Z	4.994	2
21	MP4A	Mx	0.004	2
22	OVP	X	16.811	1
23	OVP	Z	9.706	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 20 : Antenna Wi (150 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	11.07	1.88
2	MP2A	Z	19.173	1.88
3	MP2A	Mx	-0.006	1.88
4	MP2A	X	11.07	3.88
5	MP2A	Z	19.173	3.88
6	MP2A	Mx	-0.006	3.88
7	MP1A	X	5.166	1.88
8	MP1A	Z	8.948	1.88
9	MP1A	Mx	-0.003	1.88
10	MP1A	X	5.166	3.88
11	MP1A	Z	8.948	3.88
12	MP1A	Mx	-0.003	3.88
13	MP4A	X	22.62	0.38
14	MP4A	Z	39.179	0.38
15	MP4A	Mx	-0.011	0.38
16	MP4A	X	22.62	5.38
17	MP4A	Z	39.179	5.38
18	MP4A	Mx	-0.011	5.38
19	MP4A	X	7.243	2
20	MP4A	Z	12.545	2
21	MP4A	Mx	0.004	2
22	OVP	X	9.958	1
23	OVP	Z	17.247	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 21 : Antenna Wi (180 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	24.091	1.88

**Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	24.091	3.88
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	11.73	1.88
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	11.73	3.88
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	51.907	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	51.907	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	16.734	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	22.641	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 22 : Antenna Wi (210 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-11.07	1.88
2	MP2A	Z	19.173	1.88
3	MP2A	Mx	0.006	1.88
4	MP2A	X	-11.07	3.88
5	MP2A	Z	19.173	3.88
6	MP2A	Mx	0.006	3.88
7	MP1A	X	-5.166	1.88
8	MP1A	Z	8.948	1.88
9	MP1A	Mx	0.003	1.88
10	MP1A	X	-5.166	3.88
11	MP1A	Z	8.948	3.88
12	MP1A	Mx	0.003	3.88
13	MP4A	X	-22.62	0.38
14	MP4A	Z	39.179	0.38
15	MP4A	Mx	0.011	0.38
16	MP4A	X	-22.62	5.38
17	MP4A	Z	39.179	5.38
18	MP4A	Mx	0.011	5.38
19	MP4A	X	-7.243	2
20	MP4A	Z	12.545	2
21	MP4A	Mx	-0.004	2
22	OVP	X	-12.431	1
23	OVP	Z	21.531	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 23 : Antenna Wi (240 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-15.793	1.88
2	MP2A	Z	9.118	1.88
3	MP2A	Mx	0.008	1.88
4	MP2A	X	-15.793	3.88
5	MP2A	Z	9.118	3.88
6	MP2A	Mx	0.008	3.88
7	MP1A	X	-6.527	1.88
8	MP1A	Z	3.768	1.88
9	MP1A	Mx	0.003	1.88
10	MP1A	X	-6.527	3.88
11	MP1A	Z	3.768	3.88
12	MP1A	Mx	0.003	3.88
13	MP4A	X	-27.632	0.38
14	MP4A	Z	15.954	0.38
15	MP4A	Mx	0.014	0.38
16	MP4A	X	-27.632	5.38
17	MP4A	Z	15.954	5.38
18	MP4A	Mx	0.014	5.38
19	MP4A	X	-8.65	2
20	MP4A	Z	4.994	2
21	MP4A	Mx	-0.004	2
22	OVP	X	-21.095	1
23	OVP	Z	12.179	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 24 : Antenna Wi (270 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-16.284	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	0.008	1.88
4	MP2A	X	-16.284	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	0.008	3.88
7	MP1A	X	-6.139	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	0.003	1.88
10	MP1A	X	-6.139	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	0.003	3.88
13	MP4A	X	-25.241	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	0.013	0.38
16	MP4A	X	-25.241	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	0.013	5.38
19	MP4A	X	-7.739	2
20	MP4A	Z	0	2
21	MP4A	Mx	-0.004	2
22	OVP	X	-21.633	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 25 : Antenna Wi (300 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-15.793	1.88
2	MP2A	Z	-9.118	1.88
3	MP2A	Mx	0.008	1.88
4	MP2A	X	-15.793	3.88
5	MP2A	Z	-9.118	3.88
6	MP2A	Mx	0.008	3.88
7	MP1A	X	-6.527	1.88
8	MP1A	Z	-3.768	1.88
9	MP1A	Mx	0.003	1.88
10	MP1A	X	-6.527	3.88
11	MP1A	Z	-3.768	3.88
12	MP1A	Mx	0.003	3.88
13	MP4A	X	-27.632	0.38
14	MP4A	Z	-15.954	0.38
15	MP4A	Mx	0.014	0.38
16	MP4A	X	-27.632	5.38
17	MP4A	Z	-15.954	5.38
18	MP4A	Mx	0.014	5.38
19	MP4A	X	-8.65	2
20	MP4A	Z	-4.994	2
21	MP4A	Mx	-0.004	2
22	OVP	X	-16.811	1
23	OVP	Z	-9.706	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 26 : Antenna Wi (330 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-11.07	1.88
2	MP2A	Z	-19.173	1.88
3	MP2A	Mx	0.006	1.88
4	MP2A	X	-11.07	3.88
5	MP2A	Z	-19.173	3.88
6	MP2A	Mx	0.006	3.88
7	MP1A	X	-5.166	1.88
8	MP1A	Z	-8.948	1.88
9	MP1A	Mx	0.003	1.88
10	MP1A	X	-5.166	3.88
11	MP1A	Z	-8.948	3.88
12	MP1A	Mx	0.003	3.88
13	MP4A	X	-22.62	0.38
14	MP4A	Z	-39.179	0.38
15	MP4A	Mx	0.011	0.38
16	MP4A	X	-22.62	5.38
17	MP4A	Z	-39.179	5.38
18	MP4A	Mx	0.011	5.38
19	MP4A	X	-7.243	2
20	MP4A	Z	-12.545	2
21	MP4A	Mx	-0.004	2
22	OVP	X	-9.958	1
23	OVP	Z	-17.247	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 27 : Antenna Wm (0 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	-8.011	1.88
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	-8.011	3.88
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	-3.79	1.88
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	-3.79	3.88
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	-9.379	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	-9.379	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	-5.147	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	-6.151	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 28 : Antenna Wm (30 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	3.479	1.88
2	MP2A	Z	-6.026	1.88
3	MP2A	Mx	-0.002	1.88
4	MP2A	X	3.479	3.88
5	MP2A	Z	-6.026	3.88
6	MP2A	Mx	-0.002	3.88
7	MP1A	X	1.658	1.88
8	MP1A	Z	-2.872	1.88
9	MP1A	Mx	-0.000829	1.88
10	MP1A	X	1.658	3.88
11	MP1A	Z	-2.872	3.88
12	MP1A	Mx	-0.000829	3.88
13	MP4A	X	3.88	0.38
14	MP4A	Z	-6.721	0.38
15	MP4A	Mx	-0.002	0.38
16	MP4A	X	3.88	5.38
17	MP4A	Z	-6.721	5.38
18	MP4A	Mx	-0.002	5.38
19	MP4A	X	2.224	2
20	MP4A	Z	-3.851	2
21	MP4A	Mx	0.001	2
22	OVP	X	3.389	1
23	OVP	Z	-5.869	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 29 : Antenna Wm (60 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	4.203	1.88
2	MP2A	Z	-2.427	1.88
3	MP2A	Mx	-0.002	1.88
4	MP2A	X	4.203	3.88
5	MP2A	Z	-2.427	3.88
6	MP2A	Mx	-0.002	3.88
7	MP1A	X	2.052	1.88
8	MP1A	Z	-1.184	1.88
9	MP1A	Mx	-0.001	1.88
10	MP1A	X	2.052	3.88
11	MP1A	Z	-1.184	3.88
12	MP1A	Mx	-0.001	3.88
13	MP4A	X	3.919	0.38
14	MP4A	Z	-2.263	0.38
15	MP4A	Mx	-0.002	0.38
16	MP4A	X	3.919	5.38
17	MP4A	Z	-2.263	5.38
18	MP4A	Mx	-0.002	5.38
19	MP4A	X	2.639	2
20	MP4A	Z	-1.524	2
21	MP4A	Mx	0.001	2
22	OVP	X	5.746	1
23	OVP	Z	-3.318	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 30 : Antenna Wm (90 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	3.801	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	-0.002	1.88
4	MP2A	X	3.801	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	-0.002	3.88
7	MP1A	X	1.895	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	-0.000948	1.88
10	MP1A	X	1.895	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	-0.000948	3.88
13	MP4A	X	2.907	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	-0.001	0.38
16	MP4A	X	2.907	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	-0.001	5.38
19	MP4A	X	2.347	2
20	MP4A	Z	0	2
21	MP4A	Mx	0.001	2
22	OVP	X	5.866	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 31 : Antenna Wm (120 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	4.203	1.88
2	MP2A	Z	2.427	1.88
3	MP2A	Mx	-0.002	1.88
4	MP2A	X	4.203	3.88
5	MP2A	Z	2.427	3.88
6	MP2A	Mx	-0.002	3.88
7	MP1A	X	2.052	1.88
8	MP1A	Z	1.184	1.88
9	MP1A	Mx	-0.001	1.88
10	MP1A	X	2.052	3.88
11	MP1A	Z	1.184	3.88
12	MP1A	Mx	-0.001	3.88
13	MP4A	X	3.919	0.38
14	MP4A	Z	2.263	0.38
15	MP4A	Mx	-0.002	0.38
16	MP4A	X	3.919	5.38
17	MP4A	Z	2.263	5.38
18	MP4A	Mx	-0.002	5.38
19	MP4A	X	2.639	2
20	MP4A	Z	1.524	2
21	MP4A	Mx	0.001	2
22	OVP	X	4.537	1
23	OVP	Z	2.62	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 32 : Antenna Wm (150 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	3.479	1.88
2	MP2A	Z	6.026	1.88
3	MP2A	Mx	-0.002	1.88
4	MP2A	X	3.479	3.88
5	MP2A	Z	6.026	3.88
6	MP2A	Mx	-0.002	3.88
7	MP1A	X	1.658	1.88
8	MP1A	Z	2.872	1.88
9	MP1A	Mx	-0.000829	1.88
10	MP1A	X	1.658	3.88
11	MP1A	Z	2.872	3.88
12	MP1A	Mx	-0.000829	3.88
13	MP4A	X	3.88	0.38
14	MP4A	Z	6.721	0.38
15	MP4A	Mx	-0.002	0.38
16	MP4A	X	3.88	5.38
17	MP4A	Z	6.721	5.38
18	MP4A	Mx	-0.002	5.38
19	MP4A	X	2.224	2
20	MP4A	Z	3.851	2
21	MP4A	Mx	0.001	2
22	OVP	X	2.691	1
23	OVP	Z	4.661	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 33 : Antenna Wm (180 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	0	1.88
2	MP2A	Z	8.011	1.88
3	MP2A	Mx	0	1.88
4	MP2A	X	0	3.88
5	MP2A	Z	8.011	3.88
6	MP2A	Mx	0	3.88
7	MP1A	X	0	1.88
8	MP1A	Z	3.79	1.88
9	MP1A	Mx	0	1.88
10	MP1A	X	0	3.88
11	MP1A	Z	3.79	3.88
12	MP1A	Mx	0	3.88
13	MP4A	X	0	0.38
14	MP4A	Z	9.379	0.38
15	MP4A	Mx	0	0.38
16	MP4A	X	0	5.38
17	MP4A	Z	9.379	5.38
18	MP4A	Mx	0	5.38
19	MP4A	X	0	2
20	MP4A	Z	5.147	2
21	MP4A	Mx	0	2
22	OVP	X	0	1
23	OVP	Z	6.151	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 34 : Antenna Wm (210 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-3.479	1.88
2	MP2A	Z	6.026	1.88
3	MP2A	Mx	0.002	1.88
4	MP2A	X	-3.479	3.88
5	MP2A	Z	6.026	3.88
6	MP2A	Mx	0.002	3.88
7	MP1A	X	-1.658	1.88
8	MP1A	Z	2.872	1.88
9	MP1A	Mx	0.000829	1.88
10	MP1A	X	-1.658	3.88
11	MP1A	Z	2.872	3.88
12	MP1A	Mx	0.000829	3.88
13	MP4A	X	-3.88	0.38
14	MP4A	Z	6.721	0.38
15	MP4A	Mx	0.002	0.38
16	MP4A	X	-3.88	5.38
17	MP4A	Z	6.721	5.38
18	MP4A	Mx	0.002	5.38
19	MP4A	X	-2.224	2
20	MP4A	Z	3.851	2
21	MP4A	Mx	-0.001	2
22	OVP	X	-3.389	1
23	OVP	Z	5.869	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 35 : Antenna Wm (240 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-4.203	1.88
2	MP2A	Z	2.427	1.88
3	MP2A	Mx	0.002	1.88
4	MP2A	X	-4.203	3.88
5	MP2A	Z	2.427	3.88
6	MP2A	Mx	0.002	3.88
7	MP1A	X	-2.052	1.88
8	MP1A	Z	1.184	1.88
9	MP1A	Mx	0.001	1.88
10	MP1A	X	-2.052	3.88
11	MP1A	Z	1.184	3.88
12	MP1A	Mx	0.001	3.88
13	MP4A	X	-3.919	0.38
14	MP4A	Z	2.263	0.38
15	MP4A	Mx	0.002	0.38
16	MP4A	X	-3.919	5.38
17	MP4A	Z	2.263	5.38
18	MP4A	Mx	0.002	5.38
19	MP4A	X	-2.639	2
20	MP4A	Z	1.524	2
21	MP4A	Mx	-0.001	2
22	OVP	X	-5.746	1
23	OVP	Z	3.318	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 36 : Antenna Wm (270 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-3.801	1.88
2	MP2A	Z	0	1.88
3	MP2A	Mx	0.002	1.88
4	MP2A	X	-3.801	3.88
5	MP2A	Z	0	3.88
6	MP2A	Mx	0.002	3.88
7	MP1A	X	-1.895	1.88
8	MP1A	Z	0	1.88
9	MP1A	Mx	0.000948	1.88
10	MP1A	X	-1.895	3.88
11	MP1A	Z	0	3.88
12	MP1A	Mx	0.000948	3.88
13	MP4A	X	-2.907	0.38
14	MP4A	Z	0	0.38
15	MP4A	Mx	0.001	0.38
16	MP4A	X	-2.907	5.38
17	MP4A	Z	0	5.38
18	MP4A	Mx	0.001	5.38
19	MP4A	X	-2.347	2
20	MP4A	Z	0	2
21	MP4A	Mx	-0.001	2
22	OVP	X	-5.866	1
23	OVP	Z	0	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 37 : Antenna Wm (300 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-4.203	1.88
2	MP2A	Z	-2.427	1.88
3	MP2A	Mx	0.002	1.88
4	MP2A	X	-4.203	3.88
5	MP2A	Z	-2.427	3.88
6	MP2A	Mx	0.002	3.88
7	MP1A	X	-2.052	1.88
8	MP1A	Z	-1.184	1.88
9	MP1A	Mx	0.001	1.88
10	MP1A	X	-2.052	3.88
11	MP1A	Z	-1.184	3.88
12	MP1A	Mx	0.001	3.88
13	MP4A	X	-3.919	0.38
14	MP4A	Z	-2.263	0.38
15	MP4A	Mx	0.002	0.38
16	MP4A	X	-3.919	5.38
17	MP4A	Z	-2.263	5.38
18	MP4A	Mx	0.002	5.38
19	MP4A	X	-2.639	2
20	MP4A	Z	-1.524	2
21	MP4A	Mx	-0.001	2
22	OVP	X	-4.537	1
23	OVP	Z	-2.62	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 38 : Antenna Wm (330 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	-3.479	1.88
2	MP2A	Z	-6.026	1.88
3	MP2A	Mx	0.002	1.88
4	MP2A	X	-3.479	3.88
5	MP2A	Z	-6.026	3.88
6	MP2A	Mx	0.002	3.88
7	MP1A	X	-1.658	1.88
8	MP1A	Z	-2.872	1.88
9	MP1A	Mx	0.000829	1.88
10	MP1A	X	-1.658	3.88
11	MP1A	Z	-2.872	3.88
12	MP1A	Mx	0.000829	3.88
13	MP4A	X	-3.88	0.38
14	MP4A	Z	-6.721	0.38
15	MP4A	Mx	0.002	0.38
16	MP4A	X	-3.88	5.38
17	MP4A	Z	-6.721	5.38
18	MP4A	Mx	0.002	5.38
19	MP4A	X	-2.224	2
20	MP4A	Z	-3.851	2
21	MP4A	Mx	-0.001	2
22	OVP	X	-2.691	1
23	OVP	Z	-4.661	1
24	OVP	Mx	0	1

**Member Point Loads (BLC 77 : Lm1)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	L1	Y	-250	%100

**Member Point Loads (BLC 78 : Lm2)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	L2	Y	-250	%100

**Member Point Loads (BLC 79 : Lv1)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	LV	Y	-250	%50

**Member Point Loads (BLC 80 : Lv2)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	LV	Y	-250	%100

**Member Point Loads (BLC 81 : Antenna Ev)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	Y	-2.065	1.88
2	MP2A	My	-0.001	1.88
3	MP2A	Mz	0	1.88
4	MP2A	Y	-2.065	3.88
5	MP2A	My	-0.001	3.88
6	MP2A	Mz	0	3.88
7	MP1A	Y	-1.333	1.88
8	MP1A	My	-0.000666	1.88
9	MP1A	Mz	0	1.88
10	MP1A	Y	-1.333	3.88
11	MP1A	My	-0.000666	3.88
12	MP1A	Mz	0	3.88
13	MP4A	Y	-2.016	0.38
14	MP4A	My	-0.001	0.38
15	MP4A	Mz	0	0.38
16	MP4A	Y	-2.016	5.38
17	MP4A	My	-0.001	5.38
18	MP4A	Mz	0	5.38
19	MP4A	Y	-2.568	2
20	MP4A	My	0.001	2
21	MP4A	Mz	0	2
22	OVP	Y	-1.201	1
23	OVP	My	0	1
24	OVP	Mz	0	1

**Member Point Loads (BLC 82 : Antenna Eh (0 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	Z	-5.163	1.88
2	MP2A	Mx	0	1.88
3	MP2A	Z	-5.163	3.88
4	MP2A	Mx	0	3.88
5	MP1A	Z	-3.332	1.88

**Member Point Loads (BLC 82 : Antenna Eh (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP1A	Mx	0	1.88
7	MP1A	Z	-3.332	3.88
8	MP1A	Mx	0	3.88
9	MP4A	Z	-5.041	0.38
10	MP4A	Mx	0	0.38
11	MP4A	Z	-5.041	5.38
12	MP4A	Mx	0	5.38
13	MP4A	Z	-6.42	2
14	MP4A	Mx	0	2
15	OVP	Z	-3.004	1
16	OVP	Mx	0	1

**Member Point Loads (BLC 83 : Antenna Eh (90 Deg))**

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP2A	X	5.163	1.88
2	MP2A	Mx	-0.003	1.88
3	MP2A	X	5.163	3.88
4	MP2A	Mx	-0.003	3.88
5	MP1A	X	3.332	1.88
6	MP1A	Mx	-0.002	1.88
7	MP1A	X	3.332	3.88
8	MP1A	Mx	-0.002	3.88
9	MP4A	X	5.041	0.38
10	MP4A	Mx	-0.003	0.38
11	MP4A	X	5.041	5.38
12	MP4A	Mx	-0.003	5.38
13	MP4A	X	6.42	2
14	MP4A	Mx	0.003	2
15	OVP	X	3.004	1
16	OVP	Mx	0	1

**Member Area Loads**

No Data to Print...													
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**Envelope Node Reactions**

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	N1	max	687.575	9	1138.486	50	1001.73	1	-1.737	64	2.459	12	1.865	50
2		min	-672.484	5	548.724	71	-930.481	7	-3.636	43	-2.721	5	-2.663	33
3	Totals:	max	687.575	9	1138.486	50	1001.73	1						
4		min	-672.484	5	548.724	71	-930.481	7						

**Node Reactions**

LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
1	1	N1	0	763.484	1001.73	-1.953	0.801	-0.48
2	1	Totals:	0	763.484	1001.73			
3	1	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
4	2	N1	-482.401	763.484	835.545	-2.023	-0.723	-0.236
5	2	Totals:	-482.401	763.484	835.545			
6	2	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
7	3	N1	-625.873	763.484	361.35	-2.263	-1.733	-0.153
8	3	Totals:	-625.873	763.484	361.35			

**Node Reactions (Continued)**

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
9	3	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
10	4	N1	-554.352	763.484	0	-2.456	-1.727	-0.193
11	4	Totals:	-554.352	763.484	0			
12	4	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
13	5	N1	-672.484	763.483	-388.261	-2.648	-2.721	-0.154
14	5	Totals:	-672.484	763.483	-388.261			
15	5	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
16	6	N1	-474.765	763.483	-822.314	-2.857	-2.486	-0.253
17	6	Totals:	-474.765	763.483	-822.314			
18	6	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
19	7	N1	0	763.483	-930.481	-2.919	-0.385	-0.48
20	7	Totals:	0	763.483	-930.481			
21	7	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
22	8	N1	483.477	763.483	-837.407	-2.887	0.736	-0.722
23	8	Totals:	483.477	763.483	-837.407			
24	8	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
25	9	N1	687.575	763.483	-396.974	-2.665	1.767	-0.832
26	9	Totals:	687.575	763.483	-396.974			
27	9	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
28	10	N1	554.352	763.483	0	-2.456	1.726	-0.767
29	10	Totals:	554.352	763.483	0			
30	10	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
31	11	N1	610.782	763.483	352.637	-2.28	2.269	-0.775
32	11	Totals:	610.782	763.483	352.637			
33	11	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
34	12	N1	473.689	763.484	820.452	-2.053	2.459	-0.704
35	12	Totals:	473.689	763.484	820.452			
36	12	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
37	13	N1	0	951.271	304.487	-2.914	0.467	-0.691
38	13	Totals:	0	951.271	304.487			
39	13	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
40	14	N1	-139.16	951.271	241.031	-2.942	-0.118	-0.621
41	14	Totals:	-139.16	951.271	241.031			
42	14	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
43	15	N1	-191.426	951.271	110.52	-3.009	-0.493	-0.591
44	15	Totals:	-191.426	951.271	110.52			
45	15	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
46	16	N1	-189.926	951.271	0	-3.068	-0.615	-0.594
47	16	Totals:	-189.926	951.271	0			
48	16	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
49	17	N1	-187.142	951.27	-108.047	-3.123	-0.753	-0.6
50	17	Totals:	-187.142	951.27	-108.047			
51	17	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
52	18	N1	-136.687	951.27	-236.747	-3.186	-0.808	-0.626
53	18	Totals:	-136.687	951.27	-236.747			
54	18	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
55	19	N1	0	951.27	-304.487	-3.222	-0.466	-0.691
56	19	Totals:	0	951.27	-304.487			
57	19	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
58	20	N1	139.16	951.27	-241.031	-3.194	0.12	-0.761
59	20	Totals:	139.16	951.27	-241.031			
60	20	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
61	21	N1	191.426	951.27	-110.52	-3.128	0.493	-0.791
62	21	Totals:	191.426	951.27	-110.52			
63	21	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			

**Node Reactions (Continued)**

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
64	22	N1	189.926	951.27	0	-3.068	0.614	-0.789
65	22	Totals:	189.926	951.27	0			
66	22	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
67	23	N1	187.142	951.271	108.047	-3.014	0.751	-0.782
68	23	Totals:	187.142	951.271	108.047			
69	23	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
70	24	N1	136.687	951.271	236.747	-2.951	0.807	-0.756
71	24	Totals:	136.687	951.271	236.747			
72	24	COG (ft):	X: -0.724	Y: 0.494	Z: 1.996			
73	25	N1	0	1138.483	80.238	-3.557	0.064	-2.639
74	25	Totals:	0	1138.483	80.238			
75	25	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
76	26	N1	-35.987	1138.483	62.332	-3.564	-0.075	-2.621
77	26	Totals:	-35.987	1138.483	62.332			
78	26	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
79	27	N1	-46.817	1138.483	27.031	-3.582	-0.137	-2.615
80	27	Totals:	-46.817	1138.483	27.031			
81	27	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
82	28	N1	-44.402	1138.483	0	-3.597	-0.138	-2.617
83	28	Totals:	-44.402	1138.483	0			
84	28	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
85	29	N1	-45.608	1138.483	-26.333	-3.61	-0.159	-2.617
86	29	Totals:	-45.608	1138.483	-26.333			
87	29	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
88	30	N1	-35.289	1138.483	-61.124	-3.626	-0.161	-2.623
89	30	Totals:	-35.289	1138.483	-61.124			
90	30	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
91	31	N1	0	1138.483	-80.238	-3.636	-0.064	-2.639
92	31	Totals:	0	1138.483	-80.238			
93	31	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
94	32	N1	35.987	1138.483	-62.332	-3.629	0.075	-2.656
95	32	Totals:	35.987	1138.483	-62.332			
96	32	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
97	33	N1	46.817	1138.483	-27.031	-3.611	0.137	-2.663
98	33	Totals:	46.817	1138.483	-27.031			
99	33	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
100	34	N1	44.402	1138.483	0	-3.597	0.138	-2.661
101	34	Totals:	44.402	1138.483	0			
102	34	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
103	35	N1	45.608	1138.483	26.333	-3.584	0.159	-2.66
104	35	Totals:	45.608	1138.483	26.333			
105	35	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
106	36	N1	35.289	1138.483	61.124	-3.567	0.161	-2.655
107	36	Totals:	35.289	1138.483	61.124			
108	36	COG (ft):	X: -2.314	Y: 0.319	Z: 2.001			
109	37	N1	0	1138.484	80.238	-3.557	0.064	0.177
110	37	Totals:	0	1138.484	80.238			
111	37	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
112	38	N1	-35.987	1138.484	62.332	-3.564	-0.075	0.195
113	38	Totals:	-35.987	1138.484	62.332			
114	38	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
115	39	N1	-46.817	1138.484	27.031	-3.582	-0.137	0.201
116	39	Totals:	-46.817	1138.484	27.031			
117	39	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
118	40	N1	-44.402	1138.484	0	-3.597	-0.138	0.2

**Node Reactions (Continued)**

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
119	40	Totals:	-44.402	1138.484	0			
120	40	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
121	41	N1	-45.608	1138.484	-26.333	-3.61	-0.159	0.199
122	41	Totals:	-45.608	1138.484	-26.333			
123	41	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
124	42	N1	-35.289	1138.484	-61.124	-3.626	-0.161	0.194
125	42	Totals:	-35.289	1138.484	-61.124			
126	42	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
127	43	N1	0	1138.484	-80.238	-3.636	-0.064	0.177
128	43	Totals:	0	1138.484	-80.238			
129	43	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
130	44	N1	35.987	1138.484	-62.332	-3.629	0.075	0.159
131	44	Totals:	35.987	1138.484	-62.332			
132	44	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
133	45	N1	46.817	1138.484	-27.031	-3.611	0.137	0.152
134	45	Totals:	46.817	1138.484	-27.031			
135	45	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
136	46	N1	44.402	1138.484	0	-3.597	0.138	0.154
137	46	Totals:	44.402	1138.484	0			
138	46	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
139	47	N1	45.608	1138.484	26.333	-3.584	0.159	0.155
140	47	Totals:	45.608	1138.484	26.333			
141	47	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
142	48	N1	35.289	1138.484	61.124	-3.567	0.161	0.16
143	48	Totals:	35.289	1138.484	61.124			
144	48	COG (ft):	X: 0.156	Y: 0.319	Z: 2.001			
145	49	N1	0	1138.483	0	-3.597	0	-0.48
146	49	Totals:	0	1138.483	0			
147	49	COG (ft):	X: -0.42	Y: 0.319	Z: 2.001			
148	50	N1	0	1138.486	0	-3.597	0	1.865
149	50	Totals:	0	1138.486	0			
150	50	COG (ft):	X: 1.638	Y: 0.319	Z: 2.001			
151	51	N1	0	890.731	0	-2.865	0	-0.56
152	51	Totals:	0	890.731	0			
153	51	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
154	52	N1	0	787.372	59.722	-2.504	0.037	-0.495
155	52	Totals:	0	787.372	59.722			
156	52	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
157	53	N1	-29.861	787.372	51.719	-2.508	-0.064	-0.481
158	53	Totals:	-29.861	787.372	51.719			
159	53	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
160	54	N1	-51.719	787.372	29.861	-2.518	-0.148	-0.471
161	54	Totals:	-51.719	787.372	29.861			
162	54	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
163	55	N1	-59.721	787.372	0	-2.533	-0.192	-0.467
164	55	Totals:	-59.721	787.372	0			
165	55	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
166	56	N1	-51.719	787.372	-29.861	-2.547	-0.185	-0.471
167	56	Totals:	-51.719	787.372	-29.861			
168	56	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
169	57	N1	-29.861	787.372	-51.719	-2.557	-0.128	-0.481
170	57	Totals:	-29.861	787.372	-51.719			
171	57	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
172	58	N1	0	787.372	-59.722	-2.561	-0.037	-0.495
173	58	Totals:	0	787.372	-59.722			

**Node Reactions (Continued)**

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
174	58	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
175	59	N1	29.861	787.372	-51.719	-2.557	0.064	-0.509
176	59	Totals:	29.861	787.372	-51.719			
177	59	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
178	60	N1	51.719	787.372	-29.861	-2.547	0.148	-0.519
179	60	Totals:	51.719	787.372	-29.861			
180	60	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
181	61	N1	59.721	787.372	0	-2.533	0.192	-0.522
182	61	Totals:	59.721	787.372	0			
183	61	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
184	62	N1	51.719	787.372	29.861	-2.518	0.185	-0.519
185	62	Totals:	51.719	787.372	29.861			
186	62	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
187	63	N1	29.861	787.372	51.719	-2.508	0.128	-0.509
188	63	Totals:	29.861	787.372	51.719			
189	63	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
190	64	N1	0	548.724	59.722	-1.737	0.037	-0.345
191	64	Totals:	0	548.724	59.722			
192	64	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
193	65	N1	-29.861	548.724	51.719	-1.74	-0.064	-0.331
194	65	Totals:	-29.861	548.724	51.719			
195	65	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
196	66	N1	-51.719	548.724	29.861	-1.751	-0.148	-0.321
197	66	Totals:	-51.719	548.724	29.861			
198	66	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
199	67	N1	-59.721	548.724	0	-1.765	-0.192	-0.317
200	67	Totals:	-59.721	548.724	0			
201	67	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
202	68	N1	-51.719	548.724	-29.861	-1.779	-0.185	-0.321
203	68	Totals:	-51.719	548.724	-29.861			
204	68	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
205	69	N1	-29.861	548.724	-51.719	-1.789	-0.128	-0.331
206	69	Totals:	-29.861	548.724	-51.719			
207	69	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
208	70	N1	0	548.724	-59.722	-1.793	-0.037	-0.345
209	70	Totals:	0	548.724	-59.722			
210	70	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
211	71	N1	29.861	548.724	-51.719	-1.789	0.064	-0.358
212	71	Totals:	29.861	548.724	-51.719			
213	71	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
214	72	N1	51.719	548.724	-29.861	-1.779	0.148	-0.369
215	72	Totals:	51.719	548.724	-29.861			
216	72	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
217	73	N1	59.721	548.724	0	-1.765	0.192	-0.372
218	73	Totals:	59.721	548.724	0			
219	73	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
220	74	N1	51.719	548.724	29.861	-1.751	0.185	-0.369
221	74	Totals:	51.719	548.724	29.861			
222	74	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			
223	75	N1	29.861	548.724	51.719	-1.74	0.128	-0.358
224	75	Totals:	29.861	548.724	51.719			
225	75	COG (ft):	X: -0.627	Y: 0.476	Z: 2.001			



Company :  
 Designer :  
 Job Number :  
 Model Name :

1/28/2026  
 12:07:33 PM  
 Checked By : \_\_\_\_\_

**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks**

Member	Shape	Code	CheckLoc[ft]	LC	Shear	CheckLoc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
1	M1	HSS4X4X4	0.333	0	5	0.224	0	y	33	135171.43	139518	16.181	16.181	1.467	H1-1b
2	M2	PIPE 4.0	0	0.833	51	0	0.833		8	92415.179	93240	10.631	10.631	1	H1-1b*
3	LV	PIPE 3.0	0.655	6.25	36	0.089	6.25		7	28250.554	65205	5.749	5.749	1	H1-1b
4	OVP	PIPE 2.0	0.106	3	8	0.011	3		8	26521.424	32130	1.872	1.872	1	H1-1b
5	MP4A	PIPE 2.0	0.276	3.354	12	0.045	3.427		9	17855.085	32130	1.872	1.872	1	H1-1b
6	MP3A	PIPE 2.0	0.022	3.427	9	0.002	3.427		9	17855.085	32130	1.872	1.872	1	H1-1b
7	MP2A	PIPE 2.0	0.118	3.354	7	0.024	3.427		6	17855.085	32130	1.872	1.872	1	H1-1b
8	MP1A	PIPE 2.0	0.07	3.354	7	0.013	3.427		5	17855.085	32130	1.872	1.872	1	H1-1b



Tower Connection Weld Checks

Weld Shape:  
 Weld Stiffener Configuration:  
 Stiffener Notch Length, n (in):  
 Weld Size (1/16 in):  
 W1 (in):  
 W2 (in):  
 Weld Total Length (in):  
 Z<sub>x</sub> (in<sup>3</sup>/in):  
 Z<sub>y</sub> (in<sup>3</sup>/in):  
 J<sub>p</sub> (in<sup>4</sup>/in):  
 c<sub>x</sub> (in)  
 c<sub>y</sub> (in)  
 Required combined strength (kip/in):  
 Weld Capacity (kip/in):  
 Weld Utilization:

Yes
Rectangle
None
-
4
4
4
16.00
21.33
21.33
85.33
2.25
2.25
2.04
5.57
<b>36.7%</b>

