June 18, 2022

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Regarding: Notice of Exempt Modification – AT&T Site CT2109 / FA# 10034979
Address: 1590 Newfield Avenue, Stamford, CT 06905

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 153' monopole at the above-referenced address, latitude 41.1127419, longitude -73.5383600. Said monopole is operated by American Tower Asset Sub II, LLC.

AT&T desires to modify its existing telecommunications facility by swapping nine (9) antennas, swapping three (3) Remote Radio Units (RRUS), removing three (3) Remote Radio Units (RRUS), swapping one (1) surge arrestor and accompanying feedlines swapping mounts as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group, last revised June 14, 2022. The centerline height of the existing antennas is and will remain at 152 feet. This modification may include B2, B5, B17, B14, B29, B30, B66, & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned off at various times.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Caroline Simmons, Mayor of the City of Stamford, as elected official, James Lunney III, Zoning Enforcement Officer of the City of Stamford, Theresa Dell, City Planner of the City of Stamford, American Tower Asset Sub II, LLC., as tower operator, and Cellco Partnership as property owner. We have reached out to the Building and Zoning Departments for the City of Stamford who conducted a search and could not locate the original tower approval.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require an extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated April 18, 2022, and prepared by American Tower Corporation, enclosed herewith.*

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Evan Renwick

Evan Renwick
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
erenwick@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Notice Delivery Confirmations

cc: The Honorable Caroline Simmons, Mayor, City of Stamford, elected official
James Lunney III, Zoning Enforcement Officer, City of Stamford
Theresa Dell, City Planner, City of Stamford,
American Tower Asset Sub II, LLC., as tower operator
Cellco Partnership, as property owner

EXHIBIT 1

ISSUED FOR PERMITTING

PROJECT INFORMATION

SCOPE OF WORK:	<u>ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:</u> • NEW AT&T ANTENNAS: QD6616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3)(TOP). • NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3)(BOTTOM). • NEW AT&T RRUS-4449 B5/B12 (TYP. 1 PER SECTOR, TOTAL OF 3) • NEW AT&T SURGE ARRESTORS: NEW DC9-48-60-24-8C-EV (TOTAL OF 1). • RELOCATED EXISTING ANTENNA: 800-10965 @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • RELOCATED EXISTING RRUS 4478 (700) @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • RELOCATED EXISTING RRUS-32 B2 (1900) @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • RELOCATED EXISTING RRUS-32 B66A (AWS) @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • RELOCATED EXISTING RRUS-32 B30 (WCS) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • NEW AT&T (3) Y-CABLES • NEW AT&T (1) 6 AWG DC TRUNKS & (1) 24 PAIRS OF FIBER RUNS. <u>ITEMS TO BE MOUNTED IN EQUIPMENT LOCATION:</u> • INSTALL NEW (1) 6648 + XCEDE, (1) NEW 6630 FINAL = 1x6601/1x5216/2xXMU03|| xxxxx/1x6630 Mixed-Mode/xxxxx+//1x6648 + Xcede • INSTALL (3) NEW-48V RECTIFIERS <u>ITEMS TO BE REMOVED:</u> • DECOMMISSION EXISTING AT&T ANTENNA: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • DECOMMISSION EXISTING AT&T ANTENNA: OPA-65R-LCUU-H6 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • DECOMMISSION EXISTING AT&T ANTENNA: QS66512-2 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • REMOVE EXISTING AT&T RRUS-12 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • REMOVE EXISTING AT&T RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3) • DECOMMISSION EXISTING AT&T SURGE ARRESTORS DC/ONLY (TOTAL OF 1) • DECOMMISSION EXISTING AT&T TMAS: LGP21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6). • DECOMMISSION EXISTING AT&T (12) 1-5/8" COAX CABLES. <u>ITEMS TO REMAIN:</u> • (3) ANTENNAS, (15) RRU'S, (2) SURGE ARRESTOR, (6) DC POWER & (2) FIBER.
SITE ADDRESS:	1590 NEWFIELD AVENUE STAMFORD, CT 06905
LATITUDE:	41.1127419° N, 41° 6' 45.87" N
LONGITUDE:	-73.5383600° W, 73° 32' 18.09" W
TYPE OF SITE:	MONOPOLE TOWER / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	153'-0"±
RAD CENTER:	152'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	B
GN-1	GENERAL NOTES	B
A-1	COMPOUND & EQUIPMENT PLANS	B
A-2	ANTENNA LAYOUT PLANS & ELEVATION	B
A-3	DETAILS	B
G-1	GROUNDING DETAILS	B
RF-1	RF PLUMBING DIAGRAM	B

SITE NUMBER: CT2109

SITE NAME: STAMFORD NORTH

FA CODE: 10034979

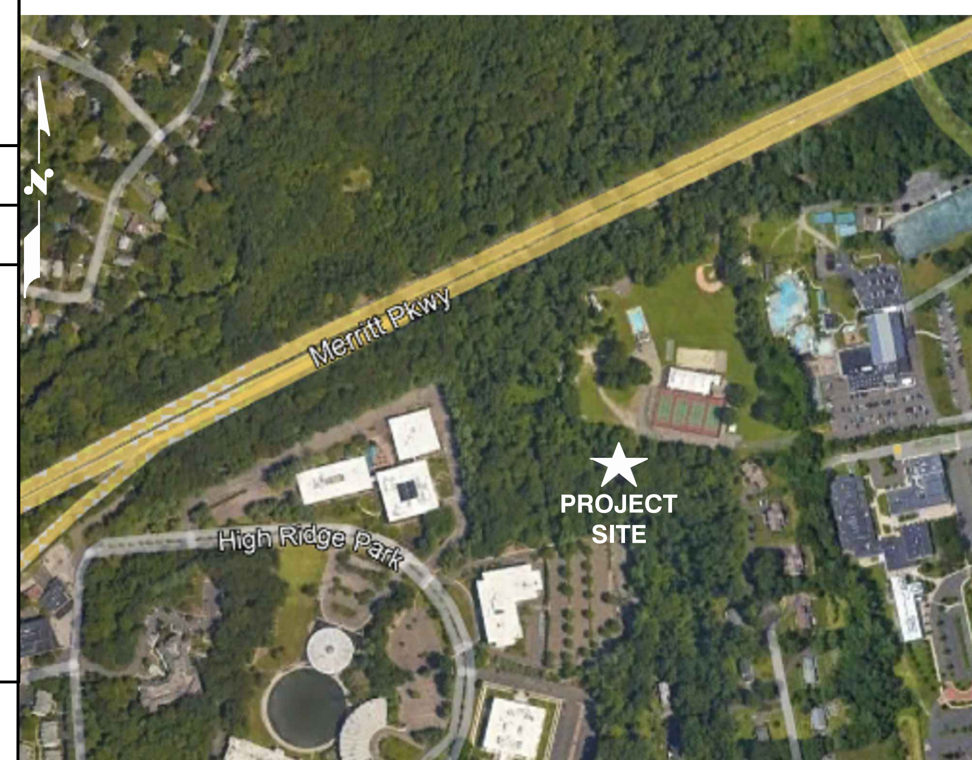
PACE ID: MRCTB056839, MRCTB056838, MRCTB056479, MRCTB055401, MRCTB053971, MRCTB055287, MRCTB053853

PROJECT: 5G NR 1DR-1 4TX4RX SOFTWARE RETROFIT BBU ADD 5G NR RADIO || 5G NR 1SR CBAND, 2022 UPGRADE

VICINITY MAP

<u>DIRECTIONS TO SITE:</u>

HEAD SOUTHEAST TOWARD CAPITAL BLVD, TURN LEFT ONTO CAPITAL BLVD, USE THE LEFT 2 LANES TO TURN LEFT ONTO STATE HWY 411, TURN LEFT TO MERGE WITH I-91 S, MERGE WITH I-91 S, TAKE EXIT 17 TO MERGE WITH CT-15 S, TAKE EXIT 36 FOR CT-106/OLD STAMFORD RD, TURN LEFT ONTO CT-106 N/OLD STAMFORD RD, TURN LEFT ONTO JELLIFF MILL RD, TURN LEFT ONTO PONUS RIDGE RD, CONTINUE ONTO HOPE ST, TURN RIGHT ONTO EDEN RD, TURN RIGHT ONTO NEWFIELD AVE, TURN LEFT, TURN LEFT, TURN RIGHT, TURN LEFT, TURN RIGHT, DESTINATION WILL BE ON THE LEFT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED
PROFESSIONAL ENGINEER

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

AT&T

TITLE SHEET
5G NR 1DR-1 4TX4RX SOFTWARE RETROFIT BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
CT2109	T-1	B

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – CENTERLINE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

    FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD CL	RADIATION CENTER LINE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	ANTENNA			
		REF	REFERENCE		

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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WEST BRIDGEWATER, MA 02379

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
5G NR 1DR-1 4TX4RX SOFTWARE RETROFIT
BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
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NOTE:

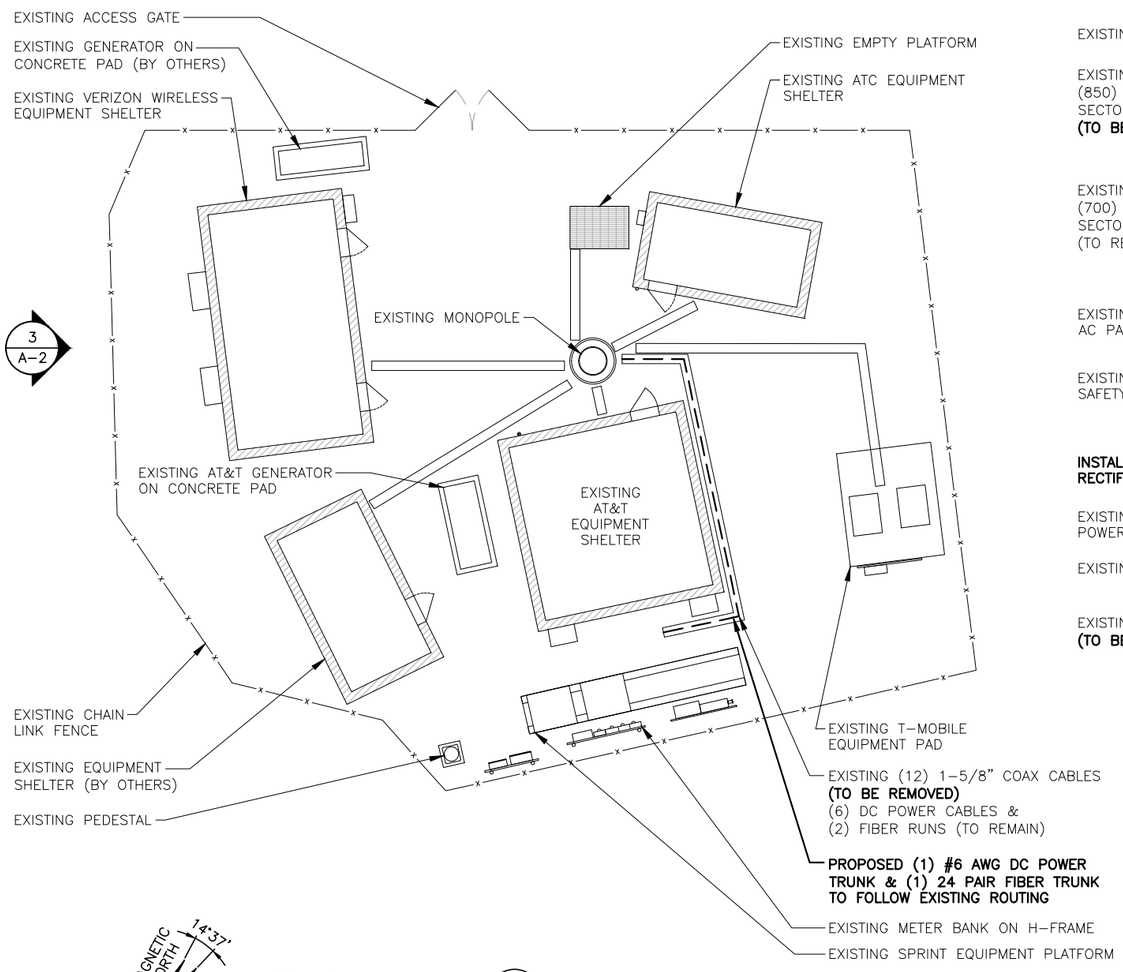
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

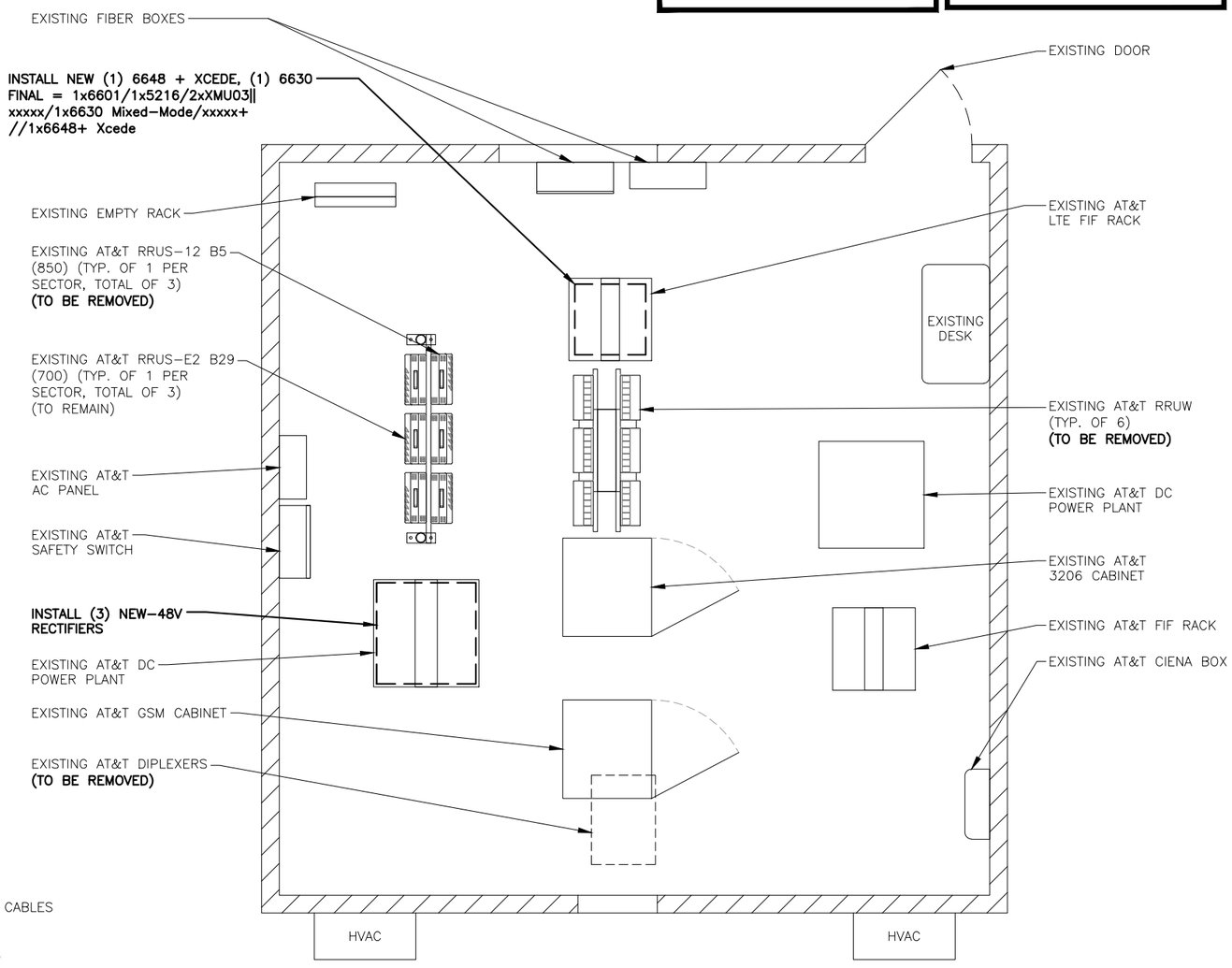
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A MOUNT STRUCTURAL ANALYSIS PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

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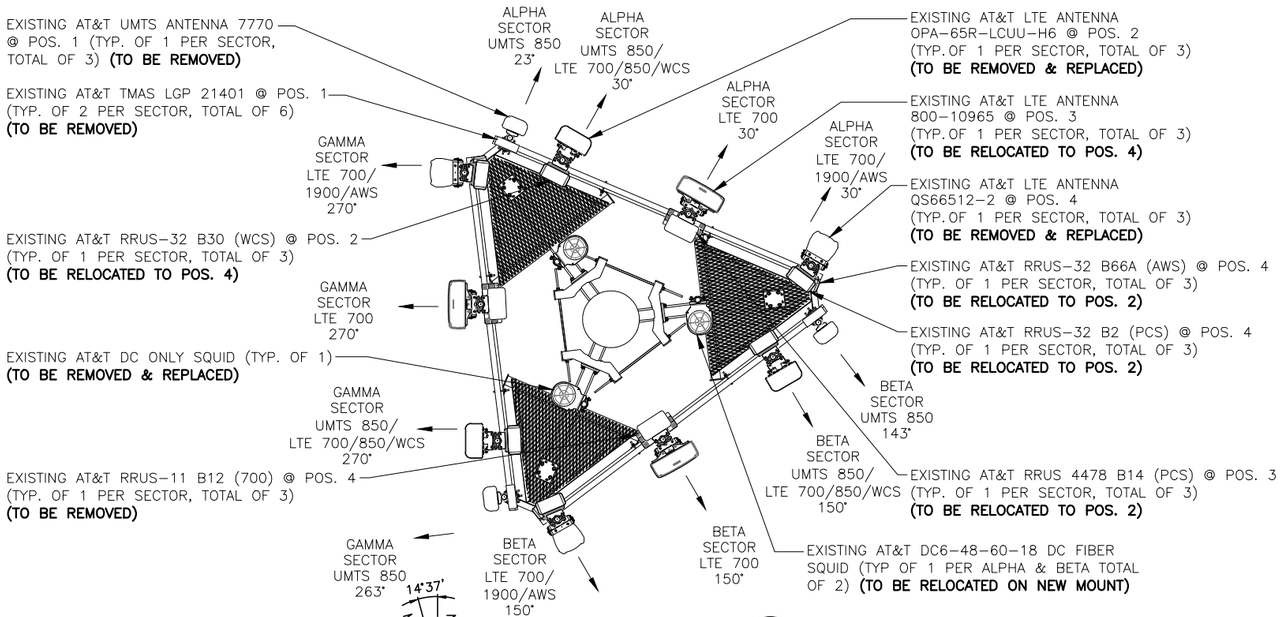
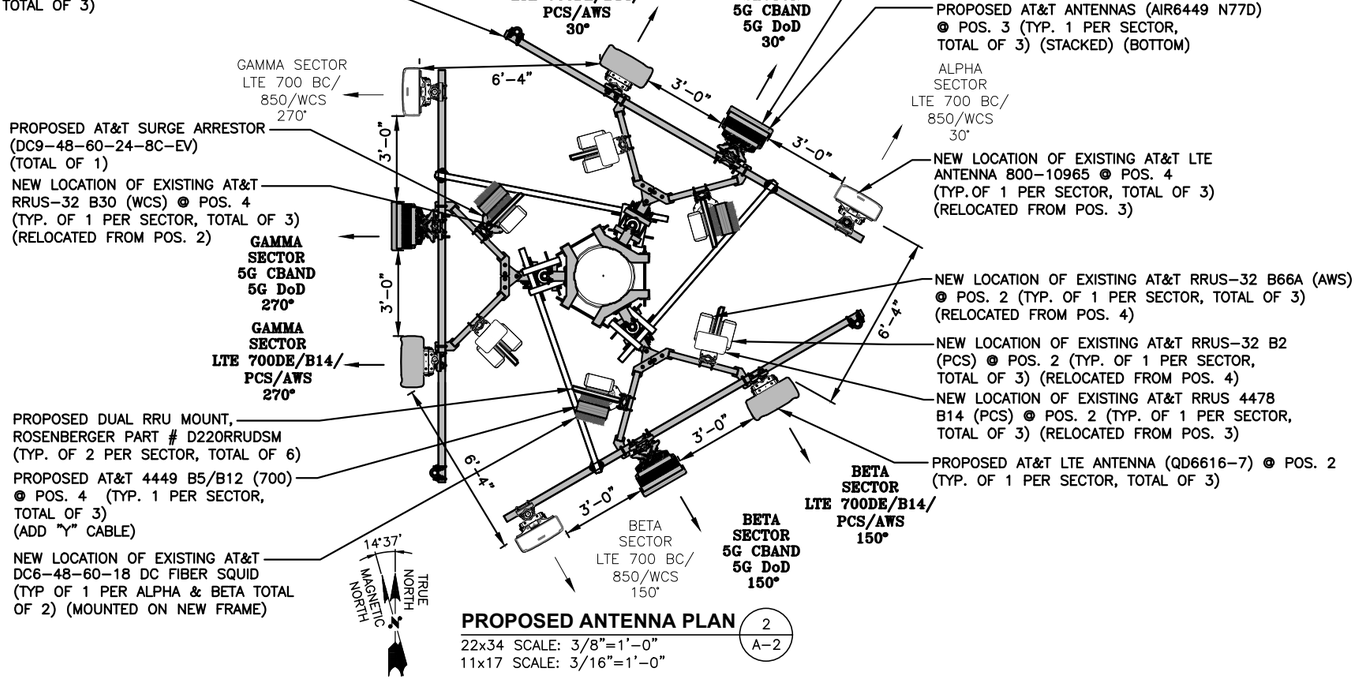


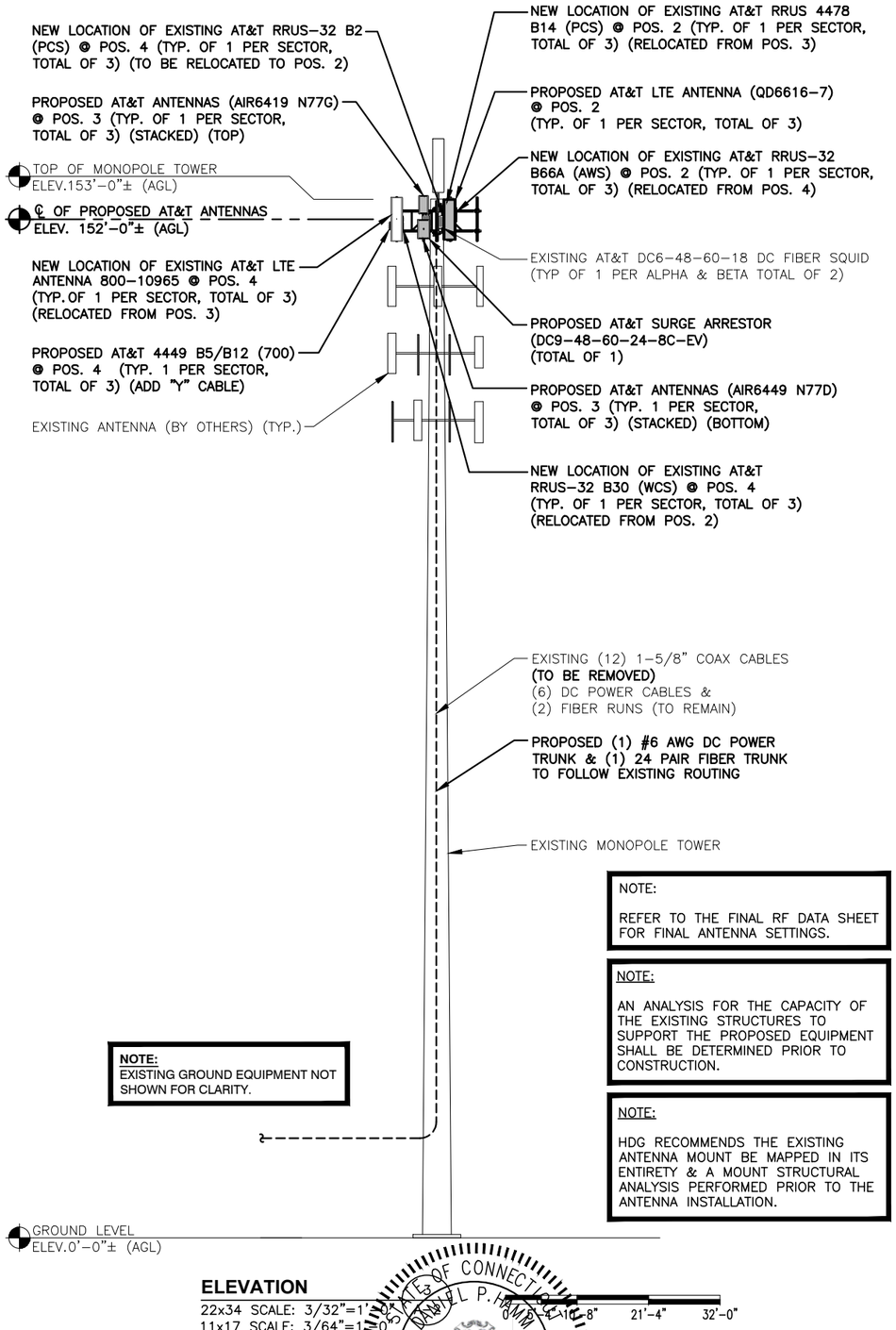
EXISTING ANTENNA PLAN (1 / A-2)

22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"



PROPOSED ANTENNA PLAN (2 / A-2)

22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"



NOTE:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A MOUNT STRUCTURAL ANALYSIS PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

ELEVATION

22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

0' 5'-4" 10'-8" 21'-4" 32'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2109
SITE NAME: STAMFORD NORTH

1590 NEWFIELD AVENUE
STAMFORD, CT 06905
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/17/22	ISSUED FOR PERMITTING	KW	MKT	DRH
A	02/28/21	ISSUED FOR REVIEW	VS	MKT	DRH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUT PLANS & ELEVATION
5G NR 1DR-1 41X4RX SOFTWARE RETROFIT
BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
CT2109	A-2	B

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18
A2	**PROPOSED**	**LTE 700DE/B14/ PCS/AWS**	**QD6616-7**	**72"X22"X9.6"**	**152'-0"±**	**30°**	–	(E)(1)RRUS-4478 B14 (700) (E)(1)RRUS-32 B2 (1900) (E)(1)RRUS-32 B66A (AWS) (E)(1)RRUS-E2 B29 (700) (SHELTER)	– – – –	(E)(2) 8AWG DC POWER & (1) 18 FIBER	
A3	**PROPOSED**	**DoD C-BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**152'-0"±**	**30°**	–	–	–	–	
A4	EXSITING	LTE 700 BC/ 850/WCS	800-10965	78.7"X20"X6.9"	152'-0"±	30°	–	**(P)(1)RRUS-4449 B5/B12 (700)** (E)(1)RRUS-32 B30 (WCS)	**17.9"x13.2"x10.4"** –	**(P)(1)(Y-CABLE)** –	
B1	–	–	–	–	–	–	–	–	–	–	(E) (1) RAYCAP DC6-48-60-18
B2	**PROPOSED**	**LTE 700DE/B14/ PCS/AWS**	**QD6616-7**	**72"X22"X9.6"**	**152'-0"±**	**150°**	–	(E)(1)RRUS-4478 B14 (700) (E)(1)RRUS-32 B2 (1900) (E)(1)RRUS-32 B66A (AWS) (E)(1)RRUS-E2 B29 (700) (SHELTER)	– – – –	(E)(2) 8AWG DC POWER & (1) 18 FIBER	
B3	**PROPOSED**	**DoD C-BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**152'-0"±**	**150°**	–	–	–	–	
B4	EXSITING	LTE 700 BC/ 850/WCS	800-10965	78.7"X20"X6.9"	152'-0"±	150°	–	**(P)(1)RRUS-4449 B5/B12 (700)** (E)(1)RRUS-32 B30 (WCS)	**17.9"x13.2"x10.4"** –	**(P)(1)(Y-CABLE)** –	
C1	–	–	–	–	–	–	–	–	–	–	(P) (1) RAYCAP DC9-48-60-24-8C-EV
C2	**PROPOSED**	**LTE 700DE/B14/ PCS/AWS**	**QD6616-7**	**72"X22"X9.6"**	**152'-0"±**	**270°**	–	(E)(1)RRUS-4478 B14 (700) (E)(1)RRUS-32 B2 (1900) (E)(1)RRUS-32 B66A (AWS) (E)(1)RRUS-E2 B29 (700) (SHELTER)	– – – –	(E)(2) 8AWG DC POWER, **(P)(1) #6 AWG DC POWER & (1) 24 PAIR FIBER**	
C3	**PROPOSED**	**DoD C-BAND**	**AIR6419 B77G AIR6449 B77D**	**31.1"X16.1"X7.3" 30.4"X15.9"X8.1"**	**152'-0"±**	**270°**	–	–	–	–	
C4	EXSITING	LTE 700 BC/ 850/WCS	800-10965	78.7"X20"X6.9"	152'-0"±	270°	–	**(P)(1)RRUS-4449 B5/B12 (700)** (E)(1)RRUS-32 B30 (WCS)	**17.9"x13.2"x10.4"** –	**(P)(1)(Y-CABLE)** –	

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-32 B2 (1900)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B66 (AWS)	27.2"x12.1"x7.0"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"
P(3)	**4449 B5/B12 (700)**	**17.9"x13.2"x10.4"**
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"

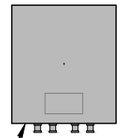
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A MOUNT STRUCTURAL ANALYSIS PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

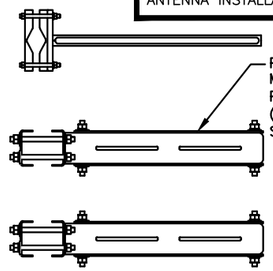
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

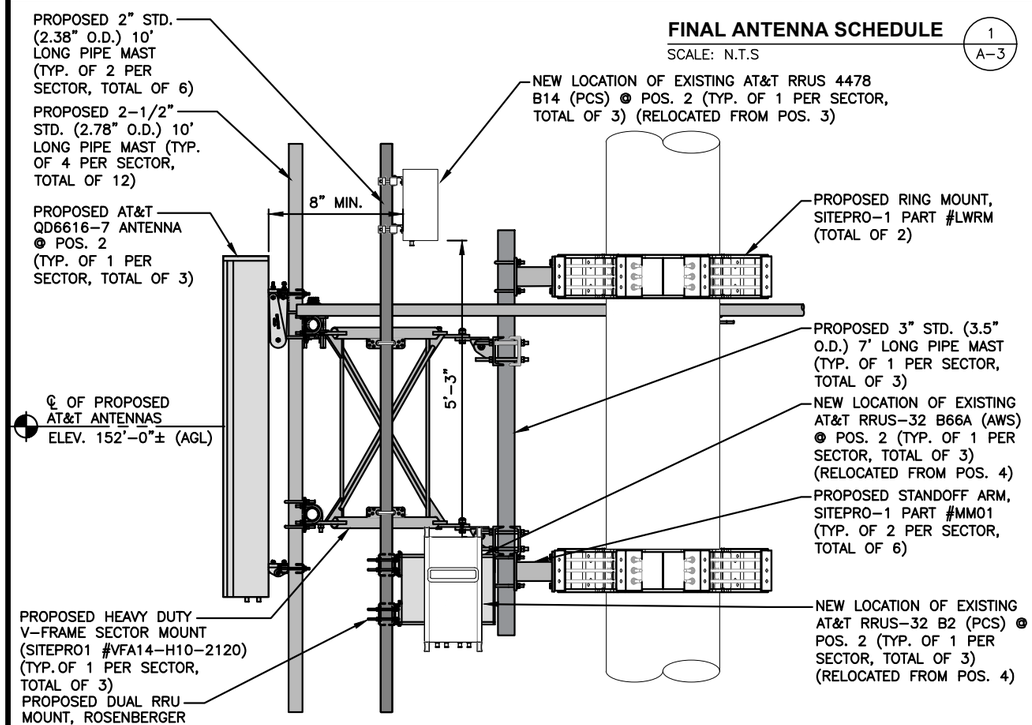
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL
SCALE: N.T.S
2 / A-3

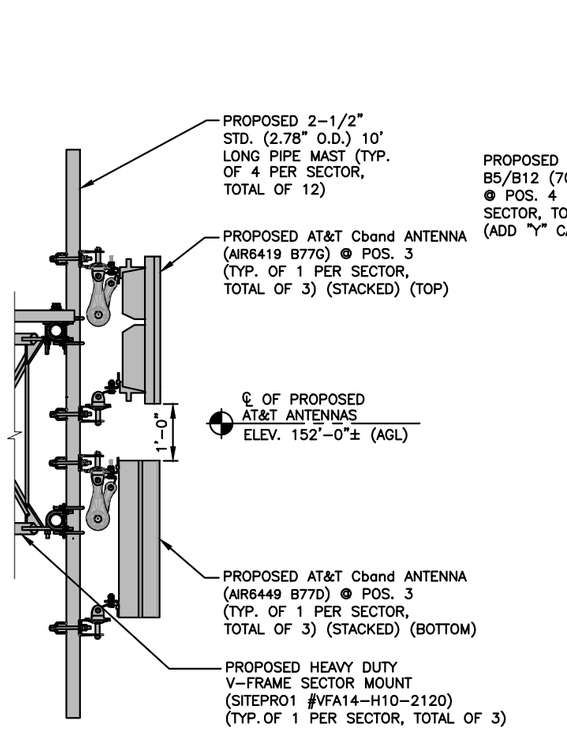


BACK TO BACK RRU MOUNT DETAIL
SCALE: N.T.S
7 / A-3

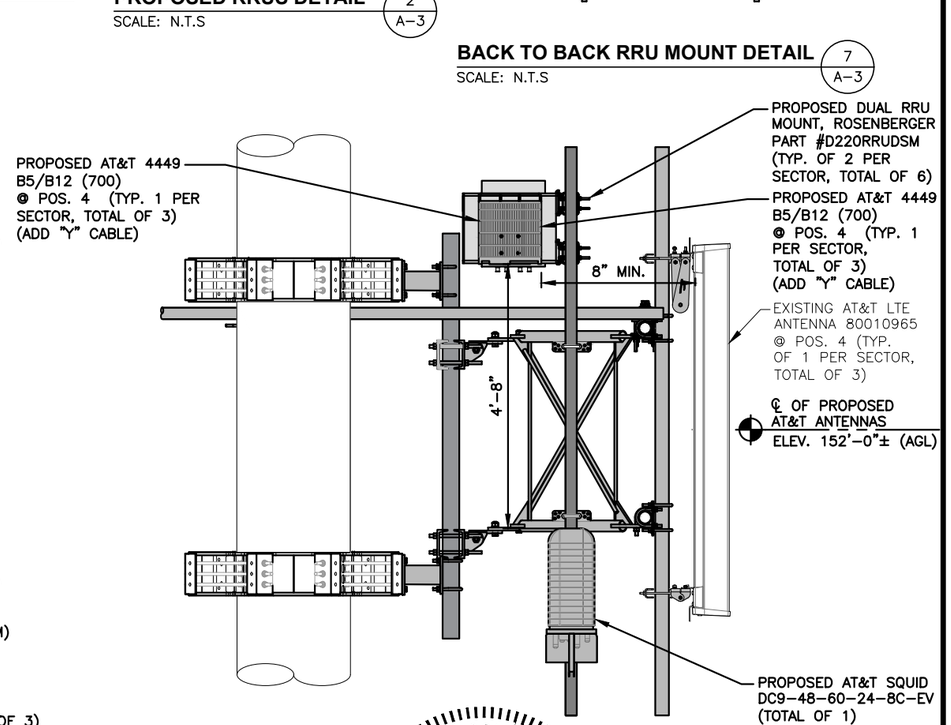
FINAL ANTENNA SCHEDULE
SCALE: N.T.S
1 / A-3



PROPOSED ANTENNA @ POS. 2
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
3 / A-3
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED ANTENNA @ POS. 3
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
4 / A-3
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED ANTENNA @ POS. 4
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
A-3
0 8" 1'-4" 2'-8" 4'-0"

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at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SITE NUMBER: CT2109
SITE NAME: STAMFORD NORTH

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FAIRFIELD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	02/28/21	ISSUED FOR REVIEW	VS	MKT	DPH

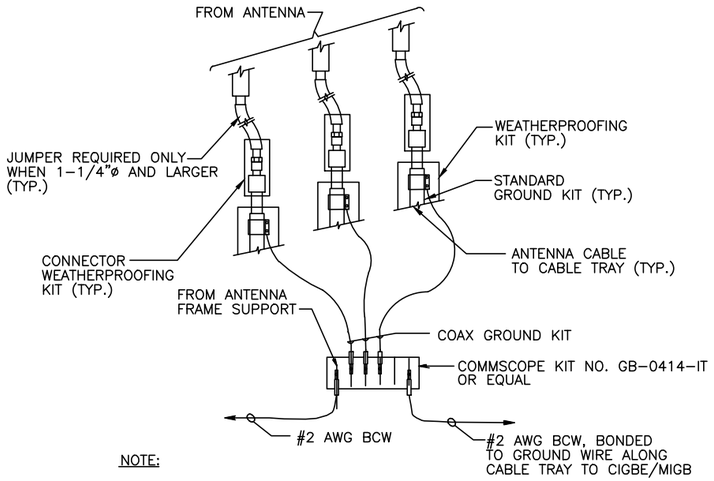
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: VS

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
5G NR 1DR-1 4TX4RX SOFTWARE RETROFIT
BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
CT2109	A-3	B



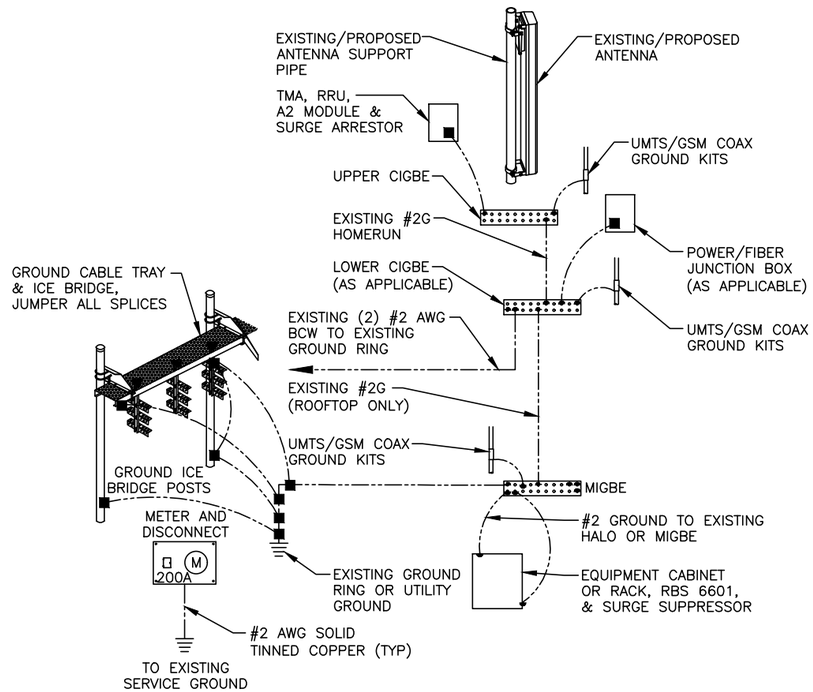
NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

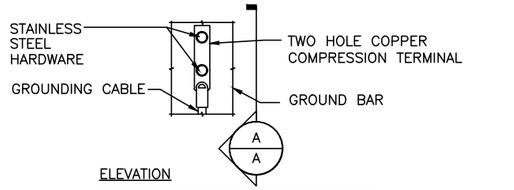
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1

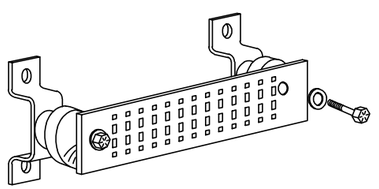
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
+24V POWER SUPPLY RETURN BAR (#2 AWG)
-48V POWER SUPPLY RETURN BAR (#2 AWG)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2 AWG)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

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STATE OF CONNECTICUT
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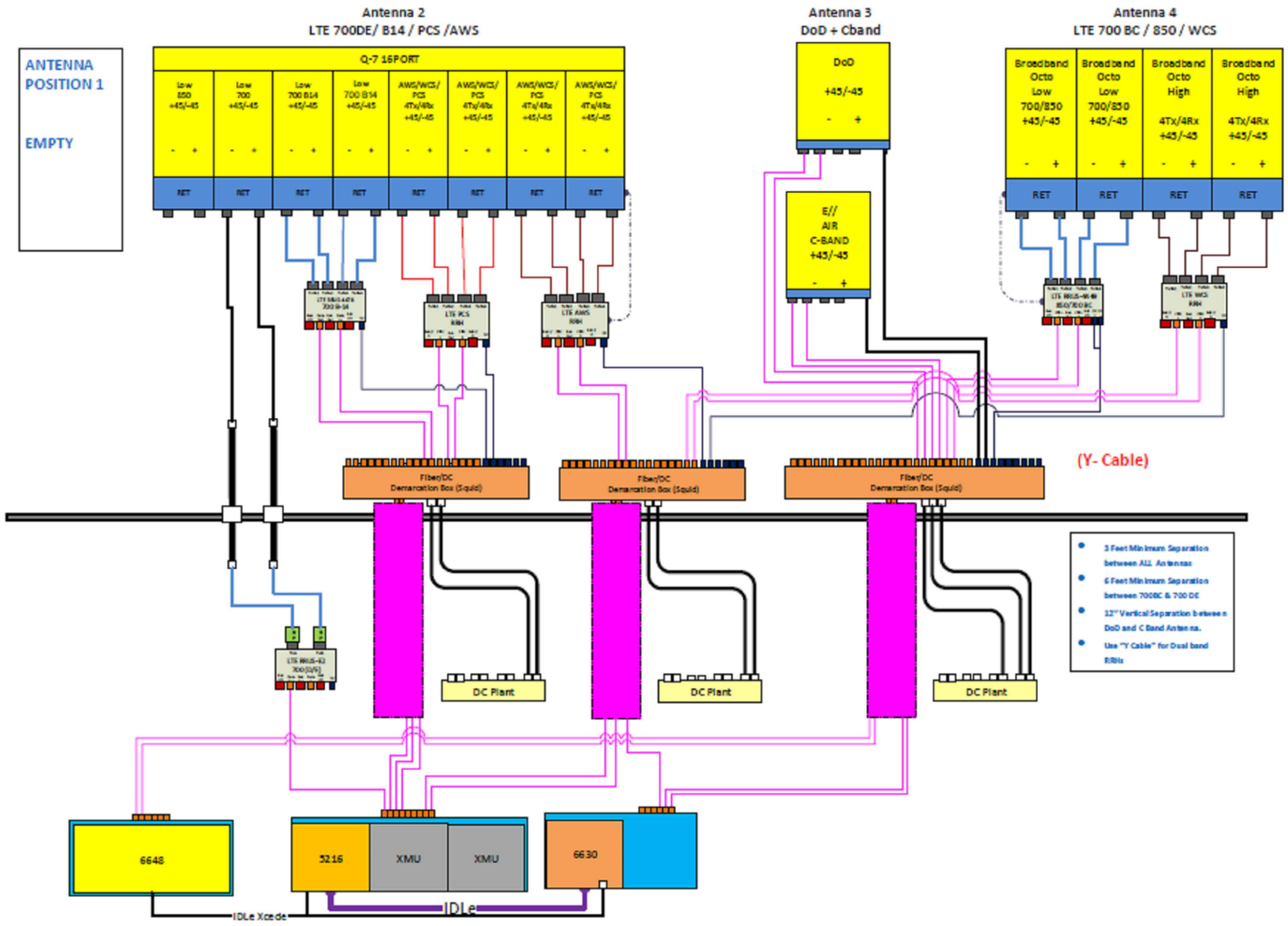
GROUNDING DETAILS
5G NR 1DR-1 4TX4RX SOFTWARE RETROFIT
BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
CT2109	G-1	B



RF PLUMBING DIAGRAM (1 / RF–1)

SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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AT&T

RF PLUMBING DIAGRAM
5G NR 1DR–1 4TX4RX SOFTWARE RETROFIT
BBU ADD 5G NR RADIO || 5G NR 1SR CBAND

SITE NUMBER	DRAWING NUMBER	REV
CT2109	RF–1	B

EXHIBIT 2

Property Location EASTOVER ROAD | Map ID 004/ 2955/ / / | Bldg Name | State Use 200
Vision ID 183864 | Account # 004-2955 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | 03-23-2022 10:17:42

CURRENT OWNER

CELLCO PARTNERSHIP
VERIZON WIRELESS
P.O. BOX 2549
ADDISON TX 75001

TOPO		UTILITIES		STRT / ROAD		LOCATION	
		6	Septic	3	Unpaved		
		5	Well	1	Paved		
		7					

SUPPLEMENTAL DATA

Alt Prcl ID	68 383 4	DSSD	
Survey1	13380	Agent Nam	
Survey2	12210	Roll	1
Census Tr	207	Common	TEL/ELEC SWITC
Census Bl	3008	Neighborh	NEWFLD:
Sewer Acct	Y		
GIS ID	E 011Z 2648	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
COM LAND	2-1	592,610	414,830
COM BLDG	2-2	28,050	19,640
COM OUTBL	2-5	384,270	268,990
	Total	1,004,930	703,460

6135
STAMFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
CELLCO PARTNERSHIP	4954	0250	03-30-1998	Q	I	594,710	00
METRO MOBILE CTS OF FAIRFIELD	3571	0172	05-23-1990	Q	I	0	00

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2021	2-1	414,830	2020	2-1	414,830	2020	2-1	414,830
	2-2	19,640		2-2	19,640		2-2	19,640
	2-5	268,990		2-5	268,990		2-5	268,990
	Total	703,460		Total	703,460		Total	703,460

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0100				

NOTES

SUBD 13380: LIST
004-1042 SPLIT INTO
004-2952 THRU
004-2955, LOTS 1-4
TELEPHONE UTILITIES BUILDING
W/CELL TOWER

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	28,050
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	384,270
Appraised Land Value (Bldg)	592,610
Special Land Value	0
Total Appraised Parcel Value	1,004,930
Valuation Method	C
Total Appraised Parcel Value	1,004,930

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
B-21-1429	08-04-2021	NV	No Value	0		0		MODIFICATIONS TO EXISTIN
B-19-891	09-04-2019	NV		0		100	06-17-2021	UPGRADE & REPLACE EQUI
B-18-1661	10-16-2018	NV	No Value			0		INSTALL 3 NEW ANTENNAS
B-17-831	08-10-2017	NV	No Value			0		UPGRADE EQUIPMENT AT E
B-17-494	03-29-2017	NV	No Value			0		UPGRADES TO EXISTING C

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
03-01-2022	ROB			61	Income and Exp
02-23-2021	ROB			61	Income and Exp
10-18-2012	SM			80	Walk Around, No one hom
08-24-2012	SM			80	Walk Around, No one hom
02-20-2004	BJ			20	Informal Hearing (C)
10-03-2003	RGB			13	Split

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Distri	District Desc.	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
1	200	Commercial MD	RA1	4		3.460	AC	357,043.50	0.47971	C	1.00	0100	1.000			0	171,273.77	592,610
		Total Card Land Units			3.46	AC	Parcel Total Land Area:	3.46									Total Land Value	592,610

Property Location EASTOVER ROAD | Map ID 004/ 2955/ / / | Bldg Name | State Use 200
Vision ID 183864 | Account # 004-2955 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | 03-23-2022 10:17:42

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	66	Telephone Bldg
Model	94	Comm/Ind
Grade	04	C
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	27	Pre-finsh Metl
Exterior Wall 2		
Roof Structure	01	Flat
Roof Cover	04	T&G/Rubber
Interior Wall 1	01	Minimum
Interior Wall 2		
Interior Floor 1	03	Concrete Slab
Interior Floor 2		
Heating Fuel	03	Oil
Heating Type	08	Radiant
AC Type	01	None
Bldg Use	300C	Industrial MDL-94
Total Rooms		
Total Bedrms	00	
Total Baths	0	
Heat/AC	00	None
Frame Type	02	Wood Frame
Baths/Plumbing	00	None
Ceiling/Wall	04	Ceil & Mn Wall
Rooms/Prtns	01	Light
Wall Height	9.00	
% Comn Wall		
1st Floor Use:	300C	

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

MIXED USE

Code	Description	Percentage
200	Commercial MDL-94	100
		0
		0

COST / MARKET VALUATION

RCN	32,999
Year Built	1994
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	15
Functional Obsol	
External Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	85
RCNLD	28,050
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

BAS (415 sf)

OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value
AP1	Fence Chn Lk	L	1,596	11.50	1993	A	75	C	1.00	13,770
CEL1	Cell Tower	L	2	195000.0	2012	E	95		0.00	370,500

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	415	415		79.52	32,999
	Ttl Gross Liv / Lease Area	415	415			32,999

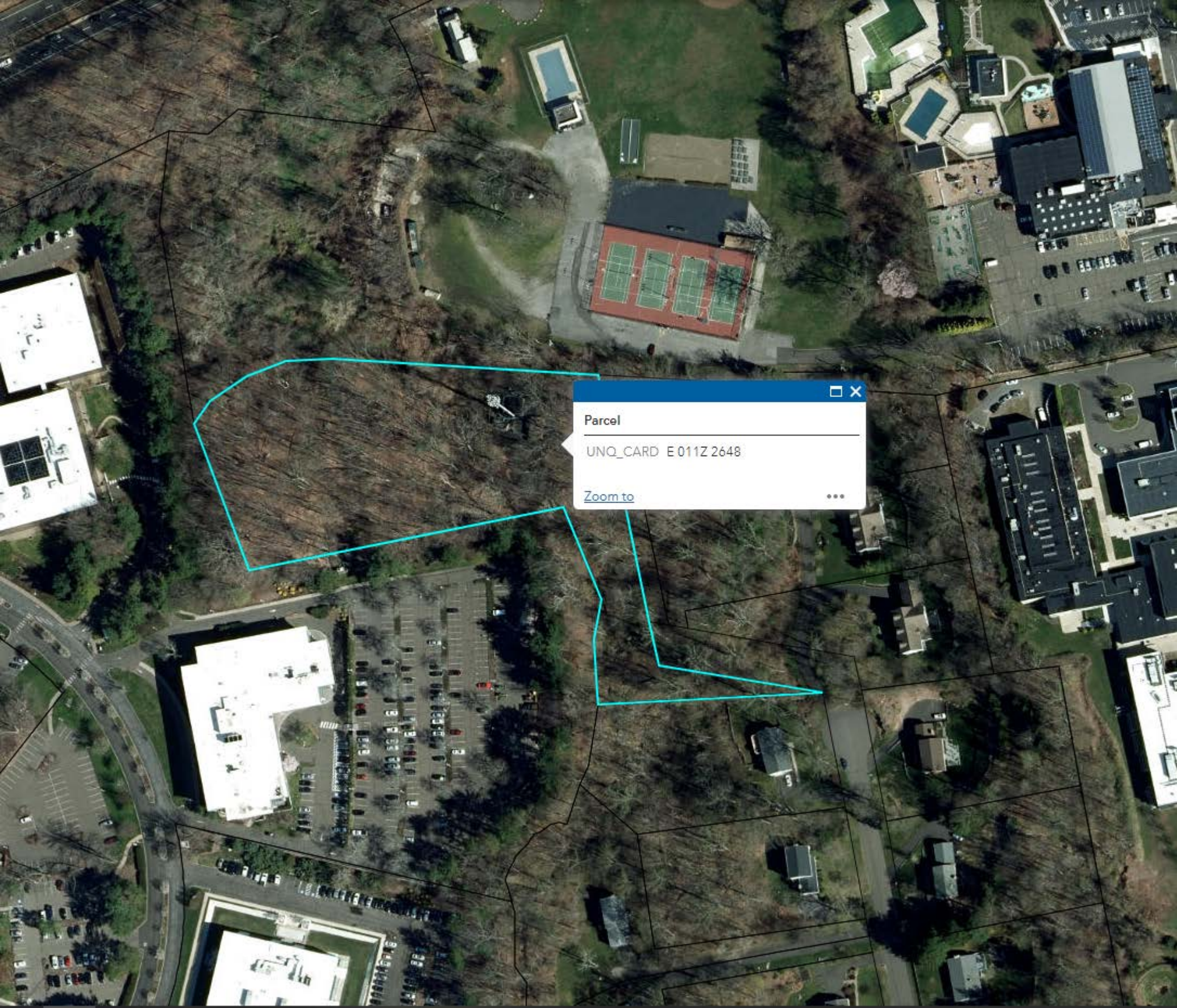
Parcel
UNQ_CARD E 011Z 2648
Zoom to

EXHIBIT 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**148 ft Monopole**
ATC Site Name	:	**SMFR - North,CT**
ATC Site Number	:	**302515**
Engineering Number	:	**OAA775839_C3_01**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**Stamford North**
Carrier Site Number	:	**CT2109**
Site Location	:	**5 High Ridge Park Road** **Stamford, CT 06905-1403** **41.1128, -73.5384**
County	:	**Fairfield**
Date	:	**April 18, 2022**
Max Usage	:	**82%**
Result	:	**Pass**

Prepared By:

Faisal Wakid
Structural Engineer

Faisal Wakid

Reviewed By:

COA : PEC.0001553

Table of Contents

Introduction....3
Supporting Documents....3
Analysis....3
Conclusion....3
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Equipment to be Removed....5
Proposed Equipment....5
Structure Usages....6
Foundations....6
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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft Monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	Engineered Endeavors Job #5591, dated November 22, 1999
Foundation Drawing	Engineered Endeavors Job #5591, dated November 17, 1999
Geotechnical Report	Dr. Clarence Welti, dated October 25, 2000
Modifications	ATC Project #43868633, dated September 1, 2009 ATC Project #51772939, dated April 11, 2013

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	116 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.26, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
160.0	3	Ericsson Radio 4449 B71 B85A	Flush	(2) 1 1/4" (1.25"-31.8mm) Fiber (3) 1 1/4" Hybriflex Cable (1) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson RRUS 4415 B25			
	3	RFS APXVAARR24_43-U-NA20			
152.0	3	Kathrein Scala 80010965	-	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax (1) 3" conduit	AT&T MOBILITY
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS 32 B66			
	3	Ericsson RRUS 32 B2			
	3	Ericsson RRUS 4478 B14			
	1	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	6	Kaelus DBC0061F1V51-2			
143.0	1	Antel BXA-80080/6CF	Triangular Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	4	Samsung B2/B66A RRH-BR049			
	4	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	4	Commscope CBC78T-DS-43-2X			
	1	Antel BXA-70063/6CF __ 2°			
	4	Commscope JAHH-65B-R3B			
	4	Commscope JAHH-45B-R3B			
	4	Samsung RT4401-48A			
	4	Samsung B5/B13 RRH-BR04C			
	4	Samsung MT6407-77A			
	2	RFS DB-T1-6Z-8AB-0Z			
	1	Amphenol Antel BXA-80063-6BF-EDIN-X			
132.0	3	Ericsson Air6449 B41	Triangular Low Profile Platform	(1) 1 1/4" (1.25"-31.8mm) Fiber (2) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson AIR-32 B2A/B66Aa			
120.0	3	Alcatel-Lucent 4x40W RRH (91 lb)	Triangular Low Profile Platform	(4) 1 1/4" Hybriflex Cable (1) 1" (25.4mm) Hybrid	SPRINT NEXTEL
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter			
	3	Alcatel-Lucent RRH2x50-08			
	3	RFS APXVSPP18-C-A20			
	3	Commscope DT465B-2XR			
105.0	1	Antel BCD-87010 ___ 4°	Side Arm	(1) 7/8" Coax	SENSUS USA INC.
94.0	3	JMA Wireless MX08FRO665-21	Triangular Platform with Handrails	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	1	Commscope RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B604			
75.0	1	PCTEL GPS-TMG-HR-26N	Side Arm	(2) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
152.0	3	Powerwave Allgon 7770.00	Triangular Platform with Handrails	-	AT&T MOBILITY
	3	Quintel QS66512-2			
	3	Ericsson RRUS 11 (Band 12) (55 lb)			
	1	Raycap DC6-48-60-18-8F			
	1	Raycap DC6-48-60-0-8F (24" Height)			
	3	CCI OPA-65R-LCUU-H6			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
152.0	3	Ericsson RRUS E2 B29	Sector Frame	(1) 0.39" (10mm) Fiber Trunk (1) 0.78" (19.7mm) 8 AWG 6	AT&T MOBILITY
	3	Ericsson AIR 6419 B77G			
	3	Ericsson Air 6449 B77D			
	1	Raycap DC9-48-60-24-8C-EV			
	3	Quintel QD6616-7			
	1	Raycap DC6-48-60-18-8F (23.5" Height)			
	3	Ericsson RRUS 4449 B5, B12			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	59%	Pass
Shaft	63%	Pass
Base Plate	36%	Pass
Reinforcement	68%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3585.4	82%
Axial (Kips)	63.8	11%
Shear (Kips)	29.4	66%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
152.0	Ericsson RRUS E2 B29	AT&T MOBILITY	0.408	0.300
	Ericsson AIR 6419 B77G			
	Ericsson Air 6449 B77D			
	Ericsson RRUS 4449 B5, B12			
	Quintel QD6616-7			
	Raycap DC6-48-60-18-8F (23.5" Height)			
	Raycap DC9-48-60-24-8C-EV			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

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

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

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

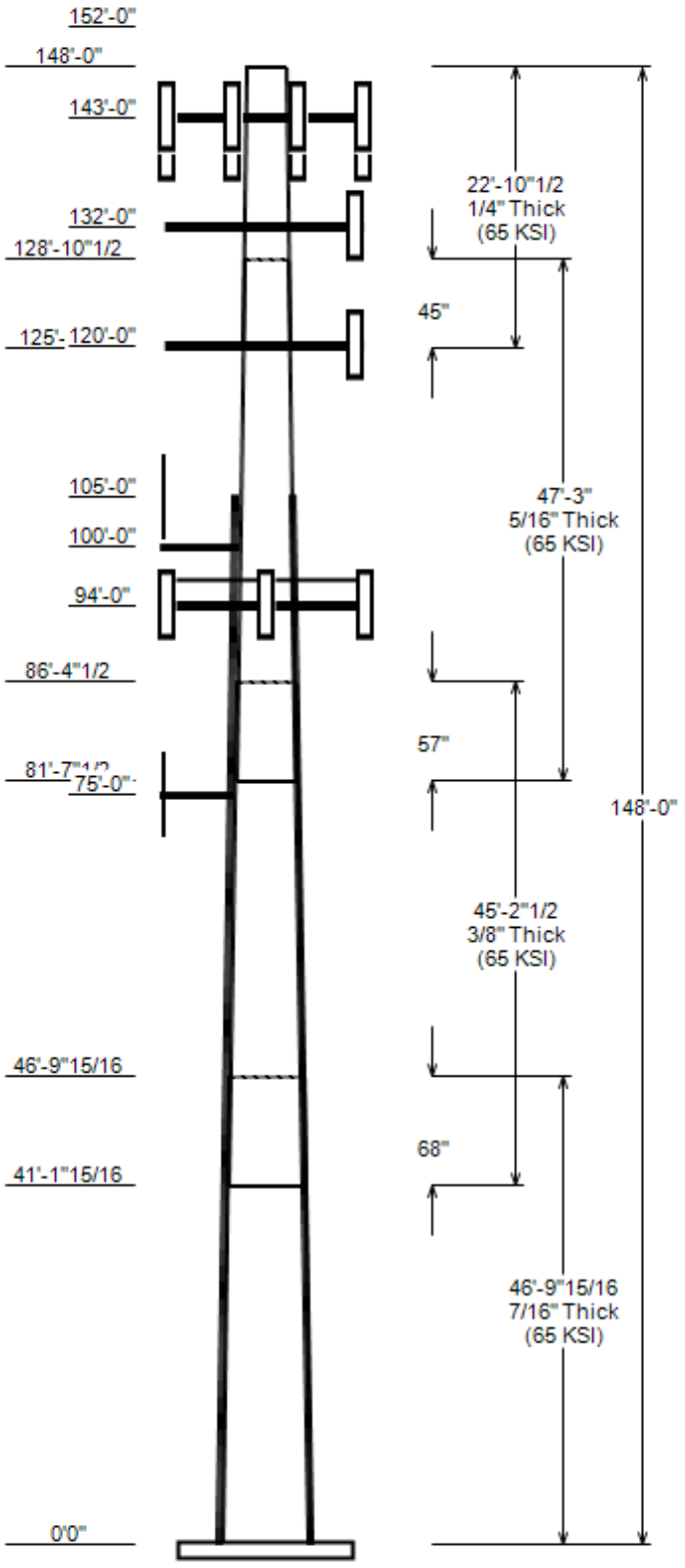
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

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

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

JOB INFORMATION

Asset :	302515, SMFR - North	Height :	148 ft
Client :	AT&T MOBILITY	Base Width :	48
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Nominal Wind: 116 mph wind with no ice **Topo Category:** 1

Ice Wind: 50 mph wind with 1" radial **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.19500(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** B **S_s :** 0.26 **S_1** : 0.058

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	46.830	38.86	48.00	0.438		0.000	18 Sides	65
2	45.210	31.90	40.72	0.375	Slip Joint	68.000	18 Sides	65
3	47.250	24.23	33.45	0.312	Slip Joint	57.000	18 Sides	65
4	22.877	21.00	25.46	0.250	Slip Joint	45.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
160.0	160.0	3	Ericsson Radio 4449 B71 B85A
160.0	160.0	3	Ericsson RRUS 4415 B25
160.0	160.0	3	RFS APXVAARR24_43-U-NA20
152.0	152.0	6	Kaelus DBC0061F1V51-2
152.0	152.0	6	Powerwave Allgon LGP21401
152.0	152.0	1	Raycap DC6-48-60-18-8F (23.5"
152.0	152.0	1	Raycap DC6-48-60-18-8F (23.5"
152.0	152.0	3	Ericsson RRUS 4478 B14
152.0	152.0	3	Ericsson RRUS 4449 B5, B12
152.0	152.0	3	Ericsson RRUS 32 (50.8 lbs)
152.0	152.0	3	Ericsson RRUS 32 B2
152.0	152.0	3	Ericsson RRUS 32 B66
152.0	152.0	3	Ericsson RRUS E2 B29
152.0	152.0	3	Ericsson AIR 6419 B77G
152.0	152.0	3	Ericsson Air 6449 B77D
152.0	152.0	1	Raycap DC9-48-60-24-8C-EV
152.0	152.0	3	Kathrein Scala 80010965
152.0	152.0	3	Generic Round Sector Frame
152.0	152.0	3	Quintel QD6616-7
143.0	143.0	4	Commscope CBC78T-DS-43-2X
143.0	143.0	4	Samsung Outdoor CBRS 20W RRH –
143.0	143.0	4	Samsung RT4401-48A
143.0	143.0	4	Samsung B2/B66A RRH-BR049
143.0	143.0	4	Samsung B5/B13 RRH-BR04C
143.0	143.0	4	Samsung MT6407-77A
143.0	142.0	2	RFS DB-T1-6Z-8AB-0Z
143.0	142.0	1	Amphenol Antel BXA-80063-6BF-E
143.0	143.0	1	Antel BXA-70063/6CF __ 2°
143.0	143.0	1	Antel BXA-80080/6CF
143.0	143.0	4	Commscope JAHH-65B-R3B
143.0	143.0	4	Commscope JAHH-45B-R3B
143.0	143.0	1	Flat Low Profile Platform
132.0	132.0	3	Ericsson Air6449 B41
132.0	132.0	3	Ericsson AIR-32 B2A/B66Aa
132.0	132.0	1	Flat Low Profile Platform
120.0	120.0	3	Alcatel-Lucent RRH2x50-08
120.0	120.0	3	Alcatel-Lucent 800 MHz 2X50W R
120.0	120.0	3	Alcatel-Lucent 4x40W RRH (91 l
120.0	120.0	3	Alcatel-Lucent TD-RRH8x20-25 w
120.0	120.0	3	RFS APXVSPP18-C-A20
120.0	120.0	3	Commscope DT465B-2XR
120.0	120.0	1	Flat Low Profile Platform
105.0	105.0	1	Antel BCD-87010 ___ 4°

JOB INFORMATION

Asset :	302515, SMFR - North	Height :	148 ft
Client :	AT&T MOBILITY	Base Width :	48
Code :	ANSI/TIA-222-H	Shape :	18 Sides

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
100.0	100.0	1	Flat Side Arm
94.0	94.0	1	Commscope RDIDC-9181-PF-48
94.0	94.0	3	Fujitsu TA08025-B604
94.0	94.0	3	Fujitsu TA08025-B605
94.0	94.0	3	JMA Wireless MX08FRO665-21
94.0	94.0	1	Generic Flat Platform with Han
75.0	75.0	1	PCTEL GPS-TMG-HR-26N
75.0	75.0	1	Round Side Arm

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	160.0	1 5/8" Hybriflex	No
0.0	160.0	1 1/4" Hybriflex Cable	Yes
0.0	160.0	1 1/4" (1.25"- 31.8mm) Fiber	No
0.0	152.0	3" conduit	No
0.0	152.0	1 1/4" Coax	No
0.0	152.0	0.78" (19.7mm) 8 AWG 6	No
0.0	152.0	0.78" (19.7mm) 8 AWG 6	No
0.0	152.0	0.39" (10mm) Fiber Trunk	No
0.0	152.0	0.39" (10mm) Fiber Trunk	No
10.0	143.0	1 5/8" Hybriflex	Yes
0.0	143.0	1 5/8" Coax	No
10.0	132.0	1 1/4" (1.25"- 31.8mm) Fiber	Yes
0.0	132.0	1 5/8" Hybriflex	No
0.0	120.0	1" (25.4mm) Hybrid	No
0.0	120.0	1 1/4" Hybriflex Cable	Yes
0.0	113.3	#20 w/ Angle Brackets	Yes
0.0	113.3	#20 w/ Angle Brackets	Yes
0.0	113.3	#20 w/ Angle Brackets	Yes
0.0	113.3	#20 w/ Angle Brackets	Yes
10.0	105.0	7/8" Coax	No
0.0	94.0	1.75" (44.5mm) Hybrid	No
10.0	75.0	1/2" Coax	Yes
10.0	75.0	1/2" Coax	Yes

LOAD CASES

1.2D + 1.0W Normal	116 mph wind with no ice
0.9D + 1.0W Normal	116 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3585.43	29.44	63.81
0.9D + 1.0W Normal	3534.06	29.41	47.84
1.2D + 1.0Di + 1.0Wi Normal	938.73	7.83	84.05
1.2D + 1.0Ev + 1.0Eh Normal	199.71	1.60	64.61
0.9D - 1.0Ev + 1.0Eh Normal	196.07	1.60	43.48
1.0D + 1.0W Service Normal	851.11	7.04	53.21

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)

ANALYSIS PARAMETERS

Location:	Fairfield County,CT	**Height:**	148 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	48.00 in
Manufacturer:	EEI	**Top Diameter:**	21.00 in
K_d (non-service):	0.95	**Taper:**	0.1950 in/ft
K_e:	0.99	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	**Design Wind Speed w/o Ice:**	116 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.00 in
Crest Height:	0 ft	**HMSL:**	227.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	2.51
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.260	**S_1:**	0.058	**C_s Max:**	0.030
F_a:	1.592	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.276	**S_{d1}:**	0.093		

LOAD CASES

1.2D + 1.0W Normal	116 mph wind with no ice
0.9D + 1.0W Normal	116 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	46.83	0.4375	65		0.00	9,513	48.00	0.000	66.04	18,876.3	17.93	109.71	38.86	46.83	53.36	9,953.6	14.25	88.83	0.1951
2-18	45.21	0.3750	65	Slip	68.00	6,579	40.72	41.160	48.02	9,874.2	17.74	108.58	31.90	86.37	37.52	4,710.3	13.59	85.06	0.1951
3-18	47.25	0.3125	65	Slip	57.00	4,549	33.45	81.620	32.87	4,559.7	17.46	107.04	24.23	128.87	23.72	1,714.6	12.26	77.54	0.1951
								125.12								895.5			
4-18	22.88	0.2500	65	Slip	45.00	1,419	25.46	3	20.01	1,606.6	16.55	101.85	21.00	148.00	16.46		13.40	84.00	0.1951
				Shaft Weight		22,060													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
160.00	RFS APXVAARR24_43-U-NA20	3	1.00	0.000	127.90	20.243	0.63	389.54	22.715	0.63
160.00	Ericsson RRUS 4415 B25	3	1.00	0.000	46.00	1.842	0.50	78.68	2.440	0.50
160.00	Ericsson Radio 4449 B71 B85A	3	1.00	0.000	75.00	1.650	0.50	115.08	2.216	0.50
152.00	Quintel QD6616-7	3	0.80	0.000	130.00	51.400	0.64	324.96	58.559	0.64
152.00	Generic Round Sector Frame	3	0.75	0.000	300.00	14.400	0.67	545.15	25.432	0.67
152.00	Kathrein Scala 80010965	3	0.80	0.000	97.60	13.814	0.62	275.28	15.847	0.62
152.00	Raycap DC9-48-60-24-8C-EV	1	0.80	0.000	16.00	4.788	1.00	102.04	5.768	1.00
152.00	Ericsson Air 6449 B77D	3	0.80	0.000	81.60	4.028	0.65	150.14	4.944	0.65
152.00	Ericsson AIR 6419 B77G	3	0.80	0.000	66.10	3.797	0.65	130.76	4.675	0.65
152.00	Ericsson RRUS E2 B29	3	0.80	0.000	60.00	3.145	0.62	113.90	3.917	0.62
152.00	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.743	0.67	102.02	3.522	0.67
152.00	Ericsson RRUS 32 B66	3	0.80	0.000	53.00	2.743	0.67	102.02	3.522	0.67
152.00	Ericsson RRUS 32 (50.8 lbs)	3	0.80	0.000	50.80	2.692	0.67	98.47	3.462	0.67
152.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	113.95	2.591	0.50
152.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.842	0.50	96.75	2.440	0.50
152.00	Raycap DC6-48-60-18-8F (23.5"	1	0.80	0.000	20.00	1.260	1.00	55.09	1.699	1.00
152.00	Raycap DC6-48-60-18-8F (23.5"	1	0.80	0.000	20.00	1.260	1.00	55.09	1.699	1.00
152.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.104	0.50	30.73	1.580	0.50
152.00	Kaelus DBC0061F1V51-2	6	0.80	0.000	25.50	0.433	0.50	37.81	0.733	0.50
143.00	Amphenol Antel BXA-80063-6BF-E	1	0.80	-1.000	19.20	7.262	1.00	114.96	9.029	1.00
143.00	Antel BXA-70063/6CF __ 2°	1	0.80	0.000	17.00	7.569	0.73	110.92	9.401	0.73
143.00	Commscope CBC78T-DS-43-2X	4	0.80	0.000	20.70	0.552	0.50	35.37	0.889	0.50
143.00	Samsung Outdoor CBRS 20W RRH –	4	0.80	0.000	4.40	0.892	0.50	16.36	1.316	0.50
143.00	Samsung RT4401-48A	4	0.80	0.000	18.60	0.996	0.50	36.53	1.450	0.50
143.00	Samsung B2/B66A RRH-BR049	4	0.80	0.000	84.40	1.875	0.50	126.77	2.474	0.50
143.00	Samsung B5/B13 RRH-BR04C	4	0.80	0.000	70.30	1.875	0.50	108.29	2.474	0.50
143.00	Samsung MT6407-77A	4	0.80	0.000	81.60	4.709	0.61	149.29	5.718	0.61
143.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	-1.000	44.00	4.800	0.72	127.59	5.744	0.72
143.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1930.30	38.780	1.00
143.00	Commscope JAHH-45B-R3B	4	0.80	0.000	83.80	11.400	0.63	235.56	13.251	0.63
143.00	Antel BXA-80080/6CF	1	0.80	0.000	22.00	7.775	1.00	118.57	9.649	1.00
143.00	Commscope JAHH-65B-R3B	4	0.80	0.000	60.60	9.113	0.69	194.96	10.956	0.69
132.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1926.99	38.682	1.00
132.00	Ericsson Air6449 B41	3	0.80	0.000	104.00	5.682	0.63	193.82	6.728	0.63
132.00	Ericsson AIR-32 B2A/B66Aa	3	0.80	0.000	132.20	6.510	0.71	237.39	7.954	0.71
120.00	Alcatel-Lucent 4x40W RRH (91 l	3	0.80	0.000	91.00	3.287	0.72	162.37	4.065	0.72
120.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	0.000	70.00	4.046	0.61	131.61	4.911	0.61
120.00	RFS APXVSPP18-C-A20	3	0.80	0.000	57.00	8.024	0.69	169.45	9.842	0.69
120.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.80	0.000	64.00	2.058	0.67	114.23	2.682	0.67
120.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1922.37	38.546	1.00
120.00	Commscope DT465B-2XR	3	0.80	0.000	58.00	9.098	0.69	189.71	10.904	0.69
120.00	Alcatel-Lucent RRH2x50-08	3	0.80	0.000	52.90	1.701	0.50	91.53	2.263	0.50
105.00	Antel BCD-87010 ___ 4°	1	1.00	0.000	26.50	2.900	1.00	100.57	5.495	1.00
100.00	Flat Side Arm	1	1.00	0.000	150.00	6.300	1.00	196.81	7.873	1.00
94.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.10	2.440	1.00
94.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	114.85	2.547	0.50
94.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.00	2.547	0.50
94.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	228.01	14.277	0.64
94.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3630.13	55.742	1.00
75.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	3.61	0.202	1.00
75.00	Round Side Arm	1	1.00	0.000	150.00	5.200	1.00	195.44	6.888	1.00
Totals	Num Loadings: 51	136			15,799.60			27,911.94		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	160.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	3	0	0.5	180	0.5	Y	T-MOBILE
0.00	160.00	2	1 1/4" (1.25"- 31.8mm	1.25	1.05	N	0	0	0	0	0	N	T-MOBILE
0.00	160.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	T-MOBILE
0.00	152.00	12	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	1	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	1	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	143.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
10.00	143.00	2	1 5/8" Hybriflex	1.98	1.3	N	2	0	0.5	90	0.5	Y	VERIZON WIREL
0.00	132.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	T-MOBILE
10.00	132.00	1	1 1/4" (1.25"- 31.8mm	1.25	1.05	N	1	0	0	190	0.5	Y	T-MOBILE
0.00	120.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	2	0.5	0.5	1	0.5	Y	SPRINT NEXTEL
0.00	120.00	1	1" (25.4mm) Hybrid	1	0.65	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	113.30	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	315	0	Y	
0.00	113.30	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	45	0	Y	
0.00	113.30	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	135	0	Y	
0.00	113.30	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	225	0	Y	
10.00	105.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	SENSUS USA IN
0.00	94.00	1	1.75" (44.5mm) Hybrid	1.75	2.72	N	0	0	0	0	0	N	DISH WIRELESS
10.00	75.00	1	1/2" Coax	0.63	0.15	N	1	0	0	280	0.5	Y	SPRINT NEXTEL
10.00	75.00	1	1/2" Coax	0.63	0.15	N	1	0	0	275	0.5	Y	SPRINT NEXTEL

ADDITIONAL STEEL

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connectors Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	105.13	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	N

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	48.000	66.044	18,876.30	17.93	109.71	80.3	774.6	0.0	0.0	19.640	7,401.70	0.0
5.00		0.4375	47.024	64.689	17,738.40	17.54	107.48	80.8	743.0	0.0	1,112.1	19.640	7,141.10	334.0
10.00		0.4375	46.049	63.335	16,647.30	17.15	105.25	81.2	712.0	0.0	1,089.1	19.640	6,885.30	334.0
15.00		0.4375	45.073	61.980	15,601.80	16.76	103.02	81.7	681.8	0.0	1,066.0	19.640	6,634.10	334.0
20.00		0.4375	44.098	60.626	14,601.00	16.36	100.79	82.2	652.1	0.0	1,043.0	19.640	6,387.60	334.0
25.00		0.4375	43.122	59.271	13,644.00	15.97	98.57	82.6	623.2	0.0	1,020.0	19.640	6,145.70	334.0
30.00		0.4375	42.147	57.916	12,729.70	15.58	96.34	82.6	594.9	0.0	996.9	19.640	5,908.60	334.0
35.00		0.4375	41.171	56.562	11,857.20	15.18	94.11	82.6	567.2	0.0	973.9	19.640	5,676.10	334.0
40.00		0.4375	40.196	55.207	11,025.50	14.79	91.88	82.6	540.3	0.0	950.8	19.640	5,448.20	334.0
41.16	Bot - Section 2	0.4375	39.969	54.892	10,837.80	14.70	91.36	82.6	534.1	0.0	217.9	19.640	5,395.90	77.7
45.00		0.4375	39.220	53.852	10,233.70	14.40	89.65	82.6	513.9	0.0	1,330.9	19.640	5,396.20	256.3
46.83	Top - Section 1	0.3750	39.613	46.701	9,084.40	17.22	105.63	81.2	451.7	0.0	625.9	19.640	5,314.40	122.2
50.00		0.3750	38.995	45.965	8,661.50	16.92	103.99	81.5	437.5	0.0	499.8	19.640	5,174.10	211.8
55.00		0.3750	38.019	44.804	8,021.60	16.47	101.38	82	415.6	0.0	772.2	19.640	4,956.70	334.0
60.00		0.3750	37.043	43.643	7,414.00	16.01	98.78	82.6	394.2	0.0	752.4	19.640	4,744.00	334.0
65.00		0.3750	36.068	42.482	6,837.80	15.55	96.18	82.6	373.4	0.0	732.7	19.640	4,536.00	334.0
70.00		0.3750	35.092	41.321	6,292.40	15.09	93.58	82.6	353.2	0.0	712.9	19.640	4,332.60	334.0
75.00		0.3750	34.117	40.160	5,776.70	14.63	90.98	82.6	333.5	0.0	693.1	19.640	4,133.90	334.0
80.00		0.3750	33.141	38.999	5,290.00	14.17	88.38	82.6	314.4	0.0	673.4	19.640	3,939.80	334.0
81.62	Bot - Section 3	0.3750	32.824	38.622	5,138.10	14.02	87.53	82.6	308.3	0.0	214.4	19.640	3,877.80	108.4
85.00		0.3750	32.166	37.837	4,831.40	13.71	85.78	82.6	295.8	0.0	813.1	19.640	3,871.30	225.6
86.37	Top - Section 2	0.3125	32.523	31.947	4,187.70	16.94	104.07	81.5	253.6	0.0	326.0	19.640	3,819.20	91.7
90.00		0.3125	31.815	31.246	3,917.70	16.54	101.81	81.9	242.5	0.0	389.9	19.640	3,683.60	242.3
94.00		0.3125	31.035	30.471	3,633.70	16.10	99.31	82.5	230.6	0.0	420.0	19.640	3,536.80	267.2
95.00		0.3125	30.840	30.278	3,564.90	15.99	98.69	82.6	227.7	0.0	103.4	19.640	3,500.60	66.8
100.00		0.3125	29.864	29.310	3,233.90	15.44	95.56	82.6	213.3	0.0	506.9	19.640	3,322.20	334.0
105.00		0.3125	28.888	28.343	2,924.10	14.89	92.44	82.6	199.4	0.0	490.5	19.640	3,148.60	334.0
105.13	Reinf. Top	0.3125	28.863	28.318	2,916.30	14.88	92.36	82.6	199.0	0.0	12.5	19.640	3,144.10	8.7
110.00		0.3125	27.913	27.375	2,634.80	14.34	89.32	82.6	185.9	0.0	461.5			
115.00		0.3125	26.937	26.408	2,365.10	13.79	86.20	82.6	172.9	0.0	457.5			
120.00		0.3125	25.962	25.440	2,114.60	13.24	83.08	82.6	160.4	0.0	441.1			
125.00		0.3125	24.986	24.472	1,882.30	12.69	79.96	82.6	148.4	0.0	424.6			
125.12	Bot - Section 4	0.3125	24.962	24.449	1,876.80	12.67	79.88	82.6	148.1	0.0	10.3			
128.87	Top - Section 3	0.2500	24.731	19.425	1,470.80	16.03	98.92	82.5	117.1	0.0	558.9			
130.00		0.2500	24.511	19.250	1,431.50	15.88	98.04	82.6	115.0	0.0	74.1			
132.00		0.2500	24.120	18.941	1,363.50	15.60	96.48	82.6	111.3	0.0	130.0			
135.00		0.2500	23.535	18.476	1,265.70	15.19	94.14	82.6	105.9	0.0	191.0			
140.00		0.2500	22.560	17.702	1,113.20	14.50	90.24	82.6	97.2	0.0	307.8			
143.00		0.2500	21.974	17.238	1,027.80	14.09	87.90	82.6	92.1	0.0	178.3			
145.00		0.2500	21.584	16.928	973.40	13.81	86.34	82.6	88.8	0.0	116.3			
148.00		0.2500	20.999	16.464	895.50	13.40	83.99	82.6	84.0	0.0	170.4			
								Totals:			22,061.5			7,022.7

Load Case: 1.2D + 1.0W Normal 116 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-63.81	-29.44	0.00	-3,585.4	0.00	3,585.43	4,773.35	1,159.07	4,979.55	4,665.14	0	0	0.563
5.00	-61.62	-29.28	0.00	-3,438.2	0.00	3,438.24	4,702.37	1,135.30	4,777.40	4,500.65	0.1	-0.19	0.555
10.00	-59.46	-29.11	0.00	-3,291.8	0.00	3,291.85	4,630.26	1,111.53	4,579.44	4,337.97	0.4	-0.38	0.547
15.00	-57.30	-28.94	0.00	-3,146.3	0.00	3,146.29	4,557.02	1,087.75	4,385.67	4,177.17	0.91	-0.58	0.539
20.00	-55.17	-28.77	0.00	-3,001.6	0.00	3,001.57	4,482.66	1,063.98	4,196.09	4,018.33	1.62	-0.77	0.530
25.00	-53.07	-28.59	0.00	-2,857.7	0.00	2,857.72	4,403.54	1,040.21	4,010.70	3,858.33	2.54	-0.97	0.520
30.00	-51.00	-28.40	0.00	-2,714.8	0.00	2,714.77	4,302.90	1,016.43	3,829.49	3,683.11	3.66	-1.17	0.513
35.00	-48.95	-28.20	0.00	-2,572.8	0.00	2,572.75	4,202.25	992.66	3,652.48	3,511.96	5	-1.37	0.505
40.00	-46.98	-28.05	0.00	-2,431.7	0.00	2,431.74	4,101.61	968.88	3,479.65	3,344.88	6.55	-1.58	0.496
41.16	-46.49	-27.95	0.00	-2,399.1	0.00	2,399.11	4,078.20	963.35	3,440.04	3,306.59	6.94	-1.63	0.494
45.00	-44.24	-27.78	0.00	-2,291.9	0.00	2,291.88	4,000.97	945.11	3,311.01	3,181.88	8.31	-1.78	0.481
46.83	-43.16	-27.65	0.00	-2,241.0	0.00	2,241.05	3,410.91	819.61	2,904.91	2,749.16	9.01	-1.86	0.524
50.00	-41.99	-27.45	0.00	-2,153.4	0.00	2,153.41	3,371.30	806.69	2,814.06	2,673.99	10.29	-1.99	0.514
55.00	-40.19	-27.19	0.00	-2,016.2	0.00	2,016.15	3,307.89	786.31	2,673.71	2,556.79	12.49	-2.2	0.497
60.00	-38.42	-26.92	0.00	-1,880.2	0.00	1,880.20	3,242.46	765.93	2,536.95	2,440.62	14.91	-2.42	0.479
65.00	-36.68	-26.63	0.00	-1,745.6	0.00	1,745.61	3,156.19	745.56	2,403.77	2,311.85	17.55	-2.63	0.463
70.00	-34.96	-26.34	0.00	-1,612.4	0.00	1,612.45	3,069.93	725.18	2,274.19	2,186.56	20.42	-2.84	0.446
75.00	-33.10	-25.85	0.00	-1,480.8	0.00	1,480.76	2,983.66	704.80	2,148.20	2,064.76	23.5	-3.05	0.427
80.00	-31.47	-25.61	0.00	-1,351.5	0.00	1,351.51	2,897.40	684.42	2,025.80	1,946.46	26.8	-3.25	0.407
81.62	-30.92	-25.47	0.00	-1,309.9	0.00	1,309.94	2,869.39	677.81	1,986.83	1,908.80	27.92	-3.32	0.400
85.00	-29.39	-25.26	0.00	-1,224.0	0.00	1,223.95	2,811.13	664.05	1,906.98	1,831.65	30.31	-3.45	0.379
86.37	-28.75	-25.11	0.00	-1,189.2	0.00	1,189.25	2,342.64	560.68	1,631.27	1,549.74	31.31	-3.5	0.411
90.00	-27.67	-24.86	0.00	-1,098.2	0.00	1,098.20	2,304.38	548.36	1,560.40	1,490.62	34.03	-3.64	0.389
94.00	-22.92	-22.12	0.00	-998.8	0.00	998.77	2,261.50	534.77	1,484.05	1,426.29	37.15	-3.8	0.363
95.00	-22.61	-21.95	0.00	-976.6	0.00	976.65	2,249.50	531.38	1,465.26	1,409.62	37.95	-3.84	0.357
100.00	-21.03	-21.37	0.00	-866.9	0.00	866.89	2,177.61	514.40	1,373.12	1,320.52	42.07	-4.03	0.331
105.00	-19.64	-21.03	0.00	-760.1	0.00	760.06	2,105.72	497.42	1,283.98	1,234.33	46.37	-4.2	0.304
105.13	-19.58	-20.90	0.00	-757.3	0.00	757.33	2,103.86	496.97	1,281.70	1,232.13	46.49	-4.21	0.303
105.13	-19.58	-20.90	0.00	-757.3	0.00	757.33	2,103.86	496.97	1,281.70	1,232.13	46.49	-4.21	0.626
110.00	-18.61	-20.60	0.00	-655.6	0.00	655.56	2,033.84	480.43	1,197.82	1,151.05	50.86	-4.37	0.581
115.00	-17.65	-20.33	0.00	-552.6	0.00	552.55	1,961.95	463.45	1,114.65	1,070.68	55.61	-4.69	0.527
120.00	-13.84	-17.12	0.00	-450.9	0.00	450.92	1,890.06	446.47	1,034.48	993.22	60.69	-5	0.463
125.00	-13.08	-16.93	0.00	-365.3	0.00	365.34	1,818.18	429.49	957.30	918.67	66.06	-5.27	0.406
125.12	-13.05	-16.84	0.00	-363.3	0.00	363.26	1,816.40	429.07	955.44	916.87	66.2	-5.28	0.405
128.87	-12.19	-16.65	0.00	-300.1	0.00	300.11	1,443.05	340.90	753.84	725.17	70.41	-5.47	0.425
130.00	-12.04	-16.56	0.00	-281.4	0.00	281.35	1,430.19	337.84	740.36	712.19	71.71	-5.52	0.406
132.00	-9.31	-14.42	0.00	-248.2	0.00	248.24	1,407.19	332.41	716.74	689.35	74.04	-5.63	0.369
135.00	-8.94	-14.19	0.00	-205.0	0.00	204.99	1,372.68	324.26	682.03	655.79	77.62	-5.77	0.321
140.00	-8.36	-13.93	0.00	-134.0	0.00	134.05	1,315.17	310.67	626.08	601.71	83.76	-5.96	0.231
143.00	-4.50	-9.07	0.00	-92.2	0.00	92.25	1,280.67	302.52	593.67	570.38	87.52	-6.04	0.166
145.00	-4.30	-8.92	0.00	-74.1	0.00	74.12	1,257.66	297.09	572.54	549.96	90.06	-6.09	0.139
148.00	0.00	-8.41	0.00	-47.4	0.00	47.37	1,223.16	288.93	541.56	520.03	93.9	-6.14	0.092

Load Case: 0.9D + 1.0W Normal 116 mph wind with no ice 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-47.84	-29.41	0.00	-3,534.1	0.00	3,534.06	4,773.35	1,159.07	4,979.55	4,665.14	0	0	0.553
5.00	-46.18	-29.20	0.00	-3,387.0	0.00	3,387.01	4,702.37	1,135.30	4,777.40	4,500.65	0.1	-0.19	0.545
10.00	-44.54	-28.98	0.00	-3,241.0	0.00	3,241.04	4,630.26	1,111.53	4,579.44	4,337.97	0.4	-0.38	0.537
15.00	-42.90	-28.77	0.00	-3,096.1	0.00	3,096.13	4,557.02	1,087.75	4,385.67	4,177.17	0.9	-0.57	0.528
20.00	-41.28	-28.55	0.00	-2,952.3	0.00	2,952.31	4,482.66	1,063.98	4,196.09	4,018.33	1.6	-0.76	0.519
25.00	-39.68	-28.33	0.00	-2,809.6	0.00	2,809.58	4,403.54	1,040.21	4,010.70	3,858.33	2.5	-0.96	0.510
30.00	-38.11	-28.10	0.00	-2,667.9	0.00	2,667.94	4,302.90	1,016.43	3,829.49	3,683.11	3.61	-1.15	0.502
35.00	-36.55	-27.87	0.00	-2,527.4	0.00	2,527.43	4,202.25	992.66	3,652.48	3,511.96	4.92	-1.35	0.494
40.00	-35.06	-27.70	0.00	-2,388.1	0.00	2,388.10	4,101.61	968.88	3,479.65	3,344.88	6.44	-1.55	0.485
41.16	-34.68	-27.58	0.00	-2,355.9	0.00	2,355.88	4,078.20	963.35	3,440.04	3,306.59	6.83	-1.6	0.483
45.00	-32.98	-27.40	0.00	-2,250.1	0.00	2,250.08	4,000.97	945.11	3,311.01	3,181.88	8.18	-1.75	0.470
46.83	-32.16	-27.26	0.00	-2,199.9	0.00	2,199.94	3,410.91	819.61	2,904.91	2,749.16	8.87	-1.83	0.513
50.00	-31.27	-27.04	0.00	-2,113.5	0.00	2,113.53	3,371.30	806.69	2,814.06	2,673.99	10.12	-1.96	0.502
55.00	-29.90	-26.75	0.00	-1,978.3	0.00	1,978.34	3,307.89	786.31	2,673.71	2,556.79	12.28	-2.17	0.486
60.00	-28.56	-26.46	0.00	-1,844.6	0.00	1,844.57	3,242.46	765.93	2,536.95	2,440.62	14.66	-2.38	0.468
65.00	-27.23	-26.16	0.00	-1,712.3	0.00	1,712.27	3,156.19	745.56	2,403.77	2,311.85	17.26	-2.58	0.452
70.00	-25.93	-25.85	0.00	-1,581.5	0.00	1,581.49	3,069.93	725.18	2,274.19	2,186.56	20.08	-2.79	0.435
75.00	-24.52	-25.35	0.00	-1,452.3	0.00	1,452.26	2,983.66	704.80	2,148.20	2,064.76	23.11	-2.99	0.417
80.00	-23.29	-25.12	0.00	-1,325.5	0.00	1,325.50	2,897.40	684.42	2,025.80	1,946.46	26.35	-3.19	0.397
81.62	-22.87	-24.96	0.00	-1,284.7	0.00	1,284.73	2,869.39	677.81	1,986.83	1,908.80	27.45	-3.26	0.390
85.00	-21.71	-24.77	0.00	-1,200.4	0.00	1,200.44	2,811.13	664.05	1,906.98	1,831.65	29.8	-3.39	0.370
86.37	-21.23	-24.61	0.00	-1,166.4	0.00	1,166.42	2,342.64	560.68	1,631.27	1,549.74	30.78	-3.44	0.401
90.00	-20.41	-24.36	0.00	-1,077.2	0.00	1,077.17	2,304.38	548.36	1,560.40	1,490.62	33.45	-3.58	0.380
94.00	-16.87	-21.70	0.00	-979.7	0.00	979.73	2,261.50	534.77	1,484.05	1,426.29	36.51	-3.73	0.354
95.00	-16.63	-21.52	0.00	-958.0	0.00	958.04	2,249.50	531.38	1,465.26	1,409.62	37.3	-3.77	0.349
100.00	-15.44	-20.94	0.00	-850.4	0.00	850.45	2,177.61	514.40	1,373.12	1,320.52	41.35	-3.95	0.324
105.00	-14.40	-20.62	0.00	-745.7	0.00	745.74	2,105.72	497.42	1,283.98	1,234.33	45.58	-4.13	0.297
105.13	-14.35	-20.48	0.00	-743.1	0.00	743.06	2,103.86	496.97	1,281.70	1,232.13	45.69	-4.13	0.296
105.13	-14.35	-20.48	0.00	-743.1	0.00	743.06	2,103.86	496.97	1,281.70	1,232.13	45.69	-4.13	0.612
110.00	-13.61	-20.18	0.00	-643.3	0.00	643.31	2,033.84	480.43	1,197.82	1,151.05	49.98	-4.29	0.567
115.00	-12.87	-19.90	0.00	-542.4	0.00	542.40	1,961.95	463.45	1,114.65	1,070.68	54.65	-4.61	0.515
120.00	-10.05	-16.76	0.00	-442.9	0.00	442.91	1,890.06	446.47	1,034.48	993.22	59.63	-4.91	0.453
125.00	-9.48	-16.58	0.00	-359.1	0.00	359.13	1,818.18	429.49	957.30	918.67	64.91	-5.18	0.398
125.12	-9.45	-16.48	0.00	-357.1	0.00	357.09	1,816.40	429.07	955.44	916.87	65.04	-5.18	0.396
128.87	-8.80	-16.30	0.00	-295.3	0.00	295.28	1,443.05	340.90	753.84	725.17	69.19	-5.37	0.416
130.00	-8.69	-16.21	0.00	-276.9	0.00	276.91	1,430.19	337.84	740.36	712.19	70.46	-5.42	0.397
132.00	-6.67	-14.14	0.00	-244.5	0.00	244.49	1,407.19	332.41	716.74	689.35	72.75	-5.52	0.361
135.00	-6.39	-13.91	0.00	-202.1	0.00	202.07	1,372.68	324.26	682.03	655.79	76.26	-5.66	0.315
140.00	-5.96	-13.67	0.00	-132.5	0.00	132.51	1,315.17	310.67	626.08	601.71	82.29	-5.85	0.227
143.00	-3.16	-8.92	0.00	-91.5	0.00	91.52	1,280.67	302.52	593.67	570.38	85.99	-5.94	0.164
145.00	-3.02	-8.77	0.00	-73.7	0.00	73.69	1,257.66	297.09	572.54	549.96	88.49	-5.98	0.137
148.00	0.00	-8.41	0.00	-47.4	0.00	47.37	1,223.16	288.93	541.56	520.03	92.26	-6.04	0.092

Load Case: 1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice 23 Iterations
Gust Response Factor: 1.10 Ice Dead Load Factor 1.00
Dead load Factor: 1.20 Ice Importance Factor 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-84.05	-7.83	0.00	-938.7	0.00	938.73	4,773.35	1,159.07	4,979.55	4,665.14	0	0	0.158
5.00	-81.63	-7.79	0.00	-899.6	0.00	899.58	4,702.37	1,135.30	4,777.40	4,500.65	0.03	-0.05	0.156
10.00	-79.20	-7.74	0.00	-860.7	0.00	860.66	4,630.26	1,111.53	4,579.44	4,337.97	0.11	-0.1	0.153
15.00	-76.73	-7.69	0.00	-822.0	0.00	821.96	4,557.02	1,087.75	4,385.67	4,177.17	0.24	-0.15	0.151
20.00	-74.28	-7.64	0.00	-783.5	0.00	783.50	4,482.66	1,063.98	4,196.09	4,018.33	0.42	-0.2	0.148
25.00	-71.85	-7.59	0.00	-745.3	0.00	745.29	4,403.54	1,040.21	4,010.70	3,858.33	0.66	-0.25	0.145
30.00	-69.45	-7.54	0.00	-707.3	0.00	707.33	4,302.90	1,016.43	3,829.49	3,683.11	0.96	-0.31	0.143
35.00	-67.07	-7.48	0.00	-669.6	0.00	669.64	4,202.25	992.66	3,652.48	3,511.96	1.31	-0.36	0.141
40.00	-64.72	-7.44	0.00	-632.2	0.00	632.24	4,101.61	968.88	3,479.65	3,344.88	1.71	-0.41	0.138
41.16	-64.18	-7.41	0.00	-623.6	0.00	623.59	4,078.20	963.35	3,440.04	3,306.59	1.81	-0.42	0.138
45.00	-61.65	-7.36	0.00	-595.2	0.00	595.17	4,000.97	945.11	3,311.01	3,181.88	2.17	-0.47	0.134
46.83	-60.46	-7.32	0.00	-581.7	0.00	581.71	3,410.91	819.61	2,904.91	2,749.16	2.35	-0.48	0.146
50.00	-59.09	-7.26	0.00	-558.5	0.00	558.51	3,371.30	806.69	2,814.06	2,673.99	2.69	-0.52	0.143
55.00	-56.96	-7.18	0.00	-522.2	0.00	522.21	3,307.89	786.31	2,673.71	2,556.79	3.26	-0.57	0.138
60.00	-54.85	-7.10	0.00	-486.3	0.00	486.29	3,242.46	765.93	2,536.95	2,440.62	3.89	-0.63	0.133
65.00	-52.77	-7.02	0.00	-450.8	0.00	450.78	3,156.19	745.56	2,403.77	2,311.85	4.58	-0.68	0.129
70.00	-50.72	-6.93	0.00	-415.7	0.00	415.71	3,069.93	725.18	2,274.19	2,186.56	5.33	-0.74	0.124
75.00	-48.47	-6.79	0.00	-381.1	0.00	381.08	2,983.66	704.80	2,148.20	2,064.76	6.13	-0.79	0.119
80.00	-46.49	-6.71	0.00	-347.1	0.00	347.14	2,897.40	684.42	2,025.80	1,946.46	6.99	-0.84	0.113
81.62	-45.84	-6.67	0.00	-336.2	0.00	336.24	2,869.39	677.81	1,986.83	1,908.80	7.28	-0.86	0.111
85.00	-44.07	-6.61	0.00	-313.7	0.00	313.73	2,811.13	664.05	1,906.98	1,831.65	7.9	-0.9	0.106
86.37	-43.36	-6.56	0.00	-304.6	0.00	304.65	2,342.64	560.68	1,631.27	1,549.74	8.16	-0.91	0.114
90.00	-42.04	-6.48	0.00	-280.9	0.00	280.86	2,304.38	548.36	1,560.40	1,490.62	8.86	-0.94	0.108
94.00	-35.39	-5.79	0.00	-254.9	0.00	254.93	2,261.50	534.77	1,484.05	1,426.29	9.67	-0.99	0.100
95.00	-35.03	-5.74	0.00	-249.1	0.00	249.14	2,249.50	531.38	1,465.26	1,409.62	9.88	-1	0.099
100.00	-33.06	-5.57	0.00	-220.4	0.00	220.45	2,177.61	514.40	1,373.12	1,320.52	10.95	-1.04	0.092
105.00	-31.22	-5.46	0.00	-192.6	0.00	192.59	2,105.72	497.42	1,283.98	1,234.33	12.06	-1.09	0.084
105.13	-31.18	-5.42	0.00	-191.9	0.00	191.88	2,103.86	496.97	1,281.70	1,232.13	12.09	-1.09	0.084
105.13	-31.18	-5.42	0.00	-191.9	0.00	191.88	2,103.86	496.97	1,281.70	1,232.13	12.09	-1.09	0.171
110.00	-29.90	-5.32	0.00	-165.5	0.00	165.50	2,033.84	480.43	1,197.82	1,151.05	13.22	-1.13	0.159
115.00	-28.68	-5.24	0.00	-138.9	0.00	138.88	1,961.95	463.45	1,114.65	1,070.68	14.45	-1.21	0.144
120.00	-22.98	-4.39	0.00	-112.7	0.00	112.69	1,890.06	446.47	1,034.48	993.22	15.76	-1.29	0.126
125.00	-22.00	-4.33	0.00	-90.7	0.00	90.73	1,818.18	429.49	957.30	918.67	17.15	-1.36	0.111
125.12	-21.97	-4.30	0.00	-90.2	0.00	90.19	1,816.40	429.07	955.44	916.87	17.18	-1.36	0.111
128.87	-20.95	-4.24	0.00	-74.0	0.00	74.05	1,443.05	340.90	753.84	725.17	18.27	-1.4	0.117
130.00	-20.75	-4.22	0.00	-69.3	0.00	69.27	1,430.19	337.84	740.36	712.19	18.6	-1.42	0.112
132.00	-16.98	-3.64	0.00	-60.8	0.00	60.84	1,407.19	332.41	716.74	689.35	19.2	-1.44	0.100
135.00	-16.49	-3.57	0.00	-49.9	0.00	49.92	1,372.68	324.26	682.03	655.79	20.12	-1.48	0.088
140.00	-15.68	-3.48	0.00	-32.1	0.00	32.09	1,315.17	310.67	626.08	601.71	21.69	-1.52	0.065
143.00	-9.04	-2.23	0.00	-21.7	0.00	21.66	1,280.67	302.52	593.67	570.38	22.66	-1.54	0.045
145.00	-8.76	-2.18	0.00	-17.2	0.00	17.19	1,257.66	297.09	572.54	549.96	23.31	-1.56	0.038
148.00	0.00	-1.94	0.00	-10.6	0.00	10.65	1,223.16	288.93	541.56	520.03	24.29	-1.57	0.021

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.21	-7.04	0.00	-851.1	0.00	851.11	4,773.35	1,159.07	4,979.55	4,665.14	0	0	0.140
5.00	-51.46	-6.99	0.00	-815.9	0.00	815.90	4,702.37	1,135.30	4,777.40	4,500.65	0.02	-0.05	0.138
10.00	-49.74	-6.95	0.00	-780.9	0.00	780.93	4,630.26	1,111.53	4,579.44	4,337.97	0.1	-0.09	0.136
15.00	-48.01	-6.90	0.00	-746.2	0.00	746.19	4,557.02	1,087.75	4,385.67	4,177.17	0.22	-0.14	0.133
20.00	-46.31	-6.85	0.00	-711.7	0.00	711.69	4,482.66	1,063.98	4,196.09	4,018.33	0.38	-0.18	0.131
25.00	-44.63	-6.80	0.00	-677.4	0.00	677.44	4,403.54	1,040.21	4,010.70	3,858.33	0.6	-0.23	0.129
30.00	-42.98	-6.75	0.00	-643.4	0.00	643.43	4,302.90	1,016.43	3,829.49	3,683.11	0.87	-0.28	0.127
35.00	-41.35	-6.70	0.00	-609.7	0.00	609.67	4,202.25	992.66	3,652.48	3,511.96	1.19	-0.33	0.125
40.00	-39.74	-6.66	0.00	-576.2	0.00	576.18	4,101.61	968.88	3,479.65	3,344.88	1.55	-0.37	0.122
41.16	-39.37	-6.63	0.00	-568.4	0.00	568.43	4,078.20	963.35	3,440.04	3,306.59	1.65	-0.39	0.122
45.00	-37.53	-6.59	0.00	-543.0	0.00	542.98	4,000.97	945.11	3,311.01	3,181.88	1.97	-0.42	0.119
46.83	-36.67	-6.56	0.00	-530.9	0.00	530.92	3,410.91	819.61	2,904.91	2,749.16	2.14	-0.44	0.129
50.00	-35.75	-6.51	0.00	-510.1	0.00	510.13	3,371.30	806.69	2,814.06	2,673.99	2.44	-0.47	0.127
55.00	-34.32	-6.44	0.00	-477.6	0.00	477.59	3,307.89	786.31	2,673.71	2,556.79	2.96	-0.52	0.123
60.00	-32.91	-6.38	0.00	-445.4	0.00	445.37	3,242.46	765.93	2,536.95	2,440.62	3.54	-0.57	0.118
65.00	-31.52	-6.31	0.00	-413.5	0.00	413.50	3,156.19	745.56	2,403.77	2,311.85	4.16	-0.62	0.114
70.00	-30.15	-6.23	0.00	-382.0	0.00	381.97	3,069.93	725.18	2,274.19	2,186.56	4.84	-0.67	0.110
75.00	-28.65	-6.12	0.00	-350.8	0.00	350.81	2,983.66	704.80	2,148.20	2,064.76	5.57	-0.72	0.106
80.00	-27.32	-6.06	0.00	-320.2	0.00	320.23	2,897.40	684.42	2,025.80	1,946.46	6.36	-0.77	0.101
81.62	-26.90	-6.02	0.00	-310.4	0.00	310.39	2,869.39	677.81	1,986.83	1,908.80	6.62	-0.79	0.099
85.00	-25.64	-5.98	0.00	-290.0	0.00	290.05	2,811.13	664.05	1,906.98	1,831.65	7.19	-0.82	0.094
86.37	-25.13	-5.94	0.00	-281.8	0.00	281.84	2,342.64	560.68	1,631.27	1,549.74	7.43	-0.83	0.102
90.00	-24.27	-5.88	0.00	-260.3	0.00	260.29	2,304.38	548.36	1,560.40	1,490.62	8.07	-0.86	0.097
94.00	-20.20	-5.24	0.00	-236.8	0.00	236.77	2,261.50	534.77	1,484.05	1,426.29	8.81	-0.9	0.090
95.00	-19.97	-5.20	0.00	-231.5	0.00	231.53	2,249.50	531.38	1,465.26	1,409.62	9	-0.91	0.088
100.00	-18.68	-5.06	0.00	-205.6	0.00	205.55	2,177.61	514.40	1,373.12	1,320.52	9.98	-0.95	0.082
105.00	-17.52	-4.98	0.00	-180.3	0.00	180.26	2,105.72	497.42	1,283.98	1,234.33	11	-1	0.075
105.13	-17.49	-4.95	0.00	-179.6	0.00	179.62	2,103.86	496.97	1,281.70	1,232.13	11.03	-1	0.075
105.13	-17.49	-4.95	0.00	-179.6	0.00	179.62	2,103.86	496.97	1,281.70	1,232.13	11.03	-1	0.154
110.00	-16.73	-4.88	0.00	-155.5	0.00	155.52	2,033.84	480.43	1,197.82	1,151.05	12.06	-1.04	0.143
115.00	-16.00	-4.81	0.00	-131.1	0.00	131.13	1,961.95	463.45	1,114.65	1,070.68	13.19	-1.11	0.131
120.00	-12.68	-4.05	0.00	-107.1	0.00	107.07	1,890.06	446.47	1,034.48	993.22	14.39	-1.18	0.115
125.00	-12.07	-4.01	0.00	-86.8	0.00	86.80	1,818.18	429.49	957.30	918.67	15.67	-1.25	0.101
125.12	-12.05	-3.99	0.00	-86.3	0.00	86.30	1,816.40	429.07	955.44	916.87	15.7	-1.25	0.101
128.87	-11.35	-3.95	0.00	-71.3	0.00	71.34	1,443.05	340.90	753.84	725.17	16.7	-1.3	0.106
130.00	-11.24	-3.93	0.00	-66.9	0.00	66.90	1,430.19	337.84	740.36	712.19	17.01	-1.31	0.102
132.00	-8.83	-3.42	0.00	-59.0	0.00	59.05	1,407.19	332.41	716.74	689.35	17.56	-1.33	0.092
135.00	-8.54	-3.37	0.00	-48.8	0.00	48.78	1,372.68	324.26	682.03	655.79	18.41	-1.37	0.081
140.00	-8.07	-3.31	0.00	-32.0	0.00	31.95	1,315.17	310.67	626.08	601.71	19.87	-1.41	0.059
143.00	-4.47	-2.16	0.00	-22.0	0.00	22.02	1,280.67	302.52	593.67	570.38	20.77	-1.43	0.042
145.00	-4.30	-2.12	0.00	-17.7	0.00	17.71	1,257.66	297.09	572.54	549.96	21.37	-1.44	0.036
148.00	0.00	-2.01	0.00	-11.3	0.00	11.34	1,223.16	288.93	541.56	520.03	22.28	-1.46	0.022

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.260
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.058
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.592
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.276
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.093
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.510
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	53.220 k
Seismic Base Shear (E):	1.600 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	146.5	248	5,322	0.012	19	311
39	144	168	3,483	0.008	12	211
38	141.5	278	5,575	0.012	20	350
37	137.5	475	8,973	0.020	32	596
36	133.5	291	5,188	0.012	18	365
35	131	204	3,501	0.008	12	256
34	129.4367	116	1,941	0.004	7	145
33	126.9983	698	11,254	0.025	40	876
32	125.0617	15	232	0.000	1	19
31	122.5	610	9,149	0.020	32	765
30	117.5	649	8,966	0.020	32	815
29	112.5	728	9,209	0.020	32	913
28	107.565	756	8,742	0.019	31	948
27	105.065	29	321	0.001	1	36
26	102.5	1,128	11,852	0.026	42	1,416
25	97.5	1,145	10,880	0.024	38	1,437
24	94.5	231	2,062	0.005	7	290
23	92	941	7,964	0.018	28	1,181
22	88.1867	862	6,706	0.015	24	1,082
21	85.6867	505	3,707	0.008	13	634
20	83.3117	1,253	8,696	0.019	31	1,573
19	80.8117	426	2,781	0.006	10	534
18	77.5	1,325	7,956	0.018	28	1,663
17	72.5	1,346	7,074	0.016	25	1,689
16	67.5	1,366	6,222	0.014	22	1,714
15	62.5	1,385	5,412	0.012	19	1,739
14	57.5	1,405	4,646	0.010	16	1,764
13	52.5	1,425	3,927	0.009	14	1,788
12	48.415	914	2,141	0.005	8	1,147
11	45.915	865	1,823	0.004	6	1,086
10	43.0817	1,832	3,400	0.008	12	2,299
9	40.5817	370	609	0.001	2	464
8	37.5	1,604	2,255	0.005	8	2,013
7	32.5	1,627	1,718	0.004	6	2,042

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
6	27.5	1,650	1,248	0.003	4	2,071
5	22.5	1,673	847	0.002	3	2,099
4	17.5	1,696	519	0.001	2	2,128
3	12.5	1,719	269	0.001	1	2,157
2	7.5	1,720	97	0.000	0	2,159
1	2.5	1,743	11	0.000	0	2,188
Ericsson Radio 4449 B71 B85A	148	225	4,928	0.011	17	282
Ericsson RRUS 4415 B25	148	138	3,023	0.007	11	173
RFS APXVAARR24_43-U-NA20	148	384	8,405	0.019	30	482
Kaelus DBC0061F1V51-2	148	153	3,351	0.007	12	192
Powerwave Allgon LGP21401	148	85	1,853	0.004	7	106
Raycap DC6-48-60-18-8F (23.5" Height)	148	20	438	0.001	2	25
Raycap DC6-48-60-18-8F (23.5" Height)	148	20	438	0.001	2	25
Ericsson RRUS 4478 B14	148	180	3,936	0.009	14	226
Ericsson RRUS 4449 B5, B12	148	213	4,666	0.010	16	267
Ericsson RRUS 32 (50.8 lbs)	148	152	3,338	0.007	12	191
Ericsson RRUS 32 B66	148	159	3,483	0.008	12	200
Ericsson RRUS 32 B2	148	159	3,483	0.008	12	200
Ericsson RRUS E2 B29	148	180	3,943	0.009	14	226
Ericsson AIR 6419 B77G	148	198	4,344	0.010	15	249
Ericsson Air 6449 B77D	148	245	5,362	0.012	19	307
Raycap DC9-48-60-24-8C-EV	148	16	350	0.001	1	20
Kathrein Scala 80010965	148	293	6,413	0.014	23	368
Generic Round Sector Frame	148	900	19,714	0.044	70	1,130
Quintel QD6616-7	148	390	8,543	0.019	30	490
Commscope CBC78T-DS-43-2X	143	83	1,693	0.004	6	104
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	143	18	360	0.001	1	22
Samsung RT4401-48A	143	74	1,521	0.003	5	93
Samsung B2/B66A RRH-BR049	143	338	6,904	0.015	24	424
Samsung B5/B13 RRH-BR04C	143	281	5,750	0.013	20	353
Samsung MT6407-77A	143	326	6,675	0.015	24	410
RFS DB-T1-6Z-8AB-0Z	143	88	1,800	0.004	6	110
Amphenol Antel BXA-80063-6BF-EDIN-X	143	19	393	0.001	1	24
Antel BXA-70063/6CF __ 2°	143	17	348	0.001	1	21
Antel BXA-80080/6CF	143	22	450	0.001	2	28
Commscope JAHH-65B-R3B	143	242	4,957	0.011	17	304
Commscope JAHH-45B-R3B	143	335	6,855	0.015	24	421
Flat Low Profile Platform	143	1,500	30,674	0.068	108	1,883
Flat Low Profile Platform	132	1,500	26,136	0.058	92	1,883
Flat Low Profile Platform	120	1,500	21,600	0.048	76	1,883
Ericsson Air6449 B41	132	312	5,436	0.012	19	392
Ericsson AIR-32 B2A/B66Aa	132	397	6,910	0.015	24	498
Alcatel-Lucent RRH2x50-08	120	159	2,285	0.005	8	199
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	120	192	2,765	0.006	10	241
Alcatel-Lucent 4x40W RRH (91 lb)	120	273	3,931	0.009	14	343
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	120	210	3,024	0.007	11	264
RFS APXVSPP18-C-A20	120	171	2,462	0.005	9	215
Commscope DT465B-2XR	120	174	2,506	0.006	9	218
Antel BCD-87010 ___ 4°	105	26	292	0.001	1	33
Flat Side Arm	100	150	1,500	0.003	5	188
Commscope RDIDC-9181-PF-48	94	22	194	0.000	1	27
Fujitsu TA08025-B605	94	225	1,988	0.004	7	282
Fujitsu TA08025-B604	94	192	1,694	0.004	6	241
JMA Wireless MX08FRO665-21	94	194	1,710	0.004	6	243
Generic Flat Platform with Handrails	94	2,500	22,090	0.049	78	3,138
PCTEL GPS-TMG-HR-26N	75	1	3	0.000	0	1
Round Side Arm	75	150	844	0.002	3	188
		53,216	452,434	1.000	1,596	66,796

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	146.5	248	5,322	0.012	19	210
39	144	168	3,483	0.008	12	142
38	141.5	278	5,575	0.012	20	235
37	137.5	475	8,973	0.020	32	401
36	133.5	291	5,188	0.012	18	246
35	131	204	3,501	0.008	12	172
34	129.4367	116	1,941	0.004	7	98
33	126.9983	698	11,254	0.025	40	589
32	125.0617	15	232	0.000	1	13
31	122.5	610	9,149	0.020	32	515
30	117.5	649	8,966	0.020	32	549
29	112.5	728	9,209	0.020	32	615
28	107.565	756	8,742	0.019	31	638
27	105.065	29	321	0.001	1	25
26	102.5	1,128	11,852	0.026	42	953
25	97.5	1,145	10,880	0.024	38	967
24	94.5	231	2,062	0.005	7	195
23	92	941	7,964	0.018	28	795
22	88.1867	862	6,706	0.015	24	728
21	85.6867	505	3,707	0.008	13	427
20	83.3117	1,253	8,696	0.019	31	1,058
19	80.8117	426	2,781	0.006	10	360
18	77.5	1,325	7,956	0.018	28	1,119
17	72.5	1,346	7,074	0.016	25	1,137
16	67.5	1,366	6,222	0.014	22	1,154
15	62.5	1,385	5,412	0.012	19	1,170
14	57.5	1,405	4,646	0.010	16	1,187
13	52.5	1,425	3,927	0.009	14	1,204
12	48.415	914	2,141	0.005	8	772
11	45.915	865	1,823	0.004	6	731
10	43.0817	1,832	3,400	0.008	12	1,547
9	40.5817	370	609	0.001	2	312
8	37.5	1,604	2,255	0.005	8	1,355
7	32.5	1,627	1,718	0.004	6	1,374
6	27.5	1,650	1,248	0.003	4	1,394
5	22.5	1,673	847	0.002	3	1,413
4	17.5	1,696	519	0.001	2	1,433
3	12.5	1,719	269	0.001	1	1,452
2	7.5	1,720	97	0.000	0	1,453
1	2.5	1,743	11	0.000	0	1,473
Ericsson Radio 4449 B71 B85A	148	225	4,928	0.011	17	190
Ericsson RRUS 4415 B25	148	138	3,023	0.007	11	117
RFS APXVAARR24_43-U-NA20	148	384	8,405	0.019	30	324
Kaelus DBC0061F1V51-2	148	153	3,351	0.007	12	129
Powerwave Allgon LGP21401	148	85	1,853	0.004	7	71
Raycap DC6-48-60-18-8F (23.5" Height)	148	20	438	0.001	2	17
Raycap DC6-48-60-18-8F (23.5" Height)	148	20	438	0.001	2	17
Ericsson RRUS 4478 B14	148	180	3,936	0.009	14	152
Ericsson RRUS 4449 B5, B12	148	213	4,666	0.010	16	180
Ericsson RRUS 32 (50.8 lbs)	148	152	3,338	0.007	12	129
Ericsson RRUS 32 B66	148	159	3,483	0.008	12	134
Ericsson RRUS 32 B2	148	159	3,483	0.008	12	134
Ericsson RRUS E2 B29	148	180	3,943	0.009	14	152
Ericsson AIR 6419 B77G	148	198	4,344	0.010	15	168
Ericsson Air 6449 B77D	148	245	5,362	0.012	19	207
Raycap DC9-48-60-24-8C-EV	148	16	350	0.001	1	14
Kathrein Scala 80010965	148	293	6,413	0.014	23	247
Generic Round Sector Frame	148	900	19,714	0.044	70	760
Quintel QD6616-7	148	390	8,543	0.019	30	329
Commscope CBC78T-DS-43-2X	143	83	1,693	0.004	6	70
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	143	18	360	0.001	1	15
Samsung RT4401-48A	143	74	1,521	0.003	5	63
Samsung B2/B66A RRH-BR049	143	338	6,904	0.015	24	285
Samsung B5/B13 RRH-BR04C	143	281	5,750	0.013	20	238
Samsung MT6407-77A	143	326	6,675	0.015	24	276
RFS DB-T1-6Z-8AB-0Z	143	88	1,800	0.004	6	74
Amphenol Antel BXA-80063-6BF-EDIN-X	143	19	393	0.001	1	16
Antel BXA-70063/6CF __ 2°	143	17	348	0.001	1	14
Antel BXA-80080/6CF	143	22	450	0.001	2	19

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Commscope JAHH-65B-R3B	143	242	4,957	0.011	17	205
Commscope JAHH-45B-R3B	143	335	6,855	0.015	24	283
Flat Low Profile Platform	143	1,500	30,674	0.068	108	1,267
Flat Low Profile Platform	132	1,500	26,136	0.058	92	1,267
Flat Low Profile Platform	120	1,500	21,600	0.048	76	1,267
Ericsson Air6449 B41	132	312	5,436	0.012	19	264
Ericsson AIR-32 B2A/B66Aa	132	397	6,910	0.015	24	335
Alcatel-Lucent RRH2x50-08	120	159	2,285	0.005	8	134
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	120	192	2,765	0.006	10	162
Alcatel-Lucent 4x40W RRH (91 lb)	120	273	3,931	0.009	14	231
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	120	210	3,024	0.007	11	177
RFS APXVSPP18-C-A20	120	171	2,462	0.005	9	144
Commscope DT465B-2XR	120	174	2,506	0.006	9	147
Antel BCD-87010 ___ 4°	105	26	292	0.001	1	22
Flat Side Arm	100	150	1,500	0.003	5	127
Commscope RDIDC-9181-PF-48	94	22	194	0.000	1	19
Fujitsu TA08025-B605	94	225	1,988	0.004	7	190
Fujitsu TA08025-B604	94	192	1,694	0.004	6	162
JMA Wireless MX08FRO665-21	94	194	1,710	0.004	6	163
Generic Flat Platform with Handrails	94	2,500	22,090	0.049	78	2,112
PCTEL GPS-TMG-HR-26N	75	1	3	0.000	0	1
Round Side Arm	75	150	844	0.002	3	127
		53,216	452,434	1.000	1,596	44,957

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-64.61	-1.60	0.00	-199.71	0.00	199.71	4,773.35	1,159.07	4,980	4,665.14	0.00	0.00	0.04
5.00	-62.45	-1.61	0.00	-191.70	0.00	191.70	4,702.37	1,135.30	4,777	4,500.65	0.01	-0.01	0.04
10.00	-60.29	-1.62	0.00	-183.64	0.00	183.64	4,630.26	1,111.53	4,579	4,337.97	0.02	-0.02	0.04
15.00	-58.16	-1.63	0.00	-175.53	0.00	175.53	4,557.02	1,087.75	4,386	4,177.17	0.05	-0.03	0.04
20.00	-56.06	-1.64	0.00	-167.37	0.00	167.37	4,482.66	1,063.98	4,196	4,018.33	0.09	-0.04	0.04
25.00	-53.99	-1.64	0.00	-159.19	0.00	159.19	4,403.54	1,040.21	4,011	3,858.33	0.14	-0.05	0.04
30.00	-51.95	-1.64	0.00	-150.98	0.00	150.98	4,302.90	1,016.43	3,829	3,683.11	0.20	-0.07	0.04
35.00	-49.94	-1.64	0.00	-142.76	0.00	142.76	4,202.25	992.66	3,652	3,511.96	0.28	-0.08	0.04
40.00	-49.47	-1.65	0.00	-134.55	0.00	134.55	4,101.61	968.88	3,480	3,344.88	0.36	-0.09	0.04
41.16	-47.17	-1.64	0.00	-132.64	0.00	132.64	4,078.20	963.35	3,440	3,306.59	0.39	-0.09	0.04
45.00	-46.09	-1.63	0.00	-126.36	0.00	126.36	4,000.97	945.11	3,311	3,181.88	0.46	-0.10	0.03
46.83	-44.94	-1.63	0.00	-123.38	0.00	123.38	3,410.91	819.61	2,905	2,749.16	0.50	-0.10	0.04
50.00	-43.15	-1.62	0.00	-118.22	0.00	118.22	3,371.30	806.69	2,814	2,673.99	0.57	-0.11	0.04
55.00	-41.39	-1.61	0.00	-110.13	0.00	110.13	3,307.89	786.31	2,674	2,556.79	0.70	-0.12	0.04
60.00	-39.65	-1.59	0.00	-102.11	0.00	102.11	3,242.46	765.93	2,537	2,440.62	0.83	-0.13	0.03
65.00	-37.93	-1.57	0.00	-94.16	0.00	94.16	3,156.19	745.56	2,404	2,311.85	0.98	-0.15	0.03
70.00	-36.24	-1.55	0.00	-86.30	0.00	86.30	3,069.93	725.18	2,274	2,186.56	1.13	-0.16	0.03
75.00	-34.39	-1.52	0.00	-78.55	0.00	78.55	2,983.66	704.80	2,148	2,064.76	1.30	-0.17	0.03
80.00	-33.86	-1.51	0.00	-70.95	0.00	70.95	2,897.40	684.42	2,026	1,946.46	1.49	-0.18	0.03
81.62	-32.28	-1.48	0.00	-68.50	0.00	68.50	2,869.39	677.81	1,987	1,908.80	1.55	-0.18	0.03
85.00	-31.65	-1.47	0.00	-63.50	0.00	63.50	2,811.13	664.05	1,907	1,831.65	1.68	-0.19	0.03
86.37	-30.57	-1.44	0.00	-61.49	0.00	61.49	2,342.64	560.68	1,631	1,549.74	1.73	-0.19	0.03
90.00	-29.39	-1.41	0.00	-56.25	0.00	56.25	2,304.38	548.36	1,560	1,490.62	1.88	-0.20	0.03
94.00	-25.17	-1.30	0.00	-50.60	0.00	50.60	2,261.50	534.77	1,484	1,426.29	2.05	-0.21	0.03
95.00	-23.73	-1.26	0.00	-49.30	0.00	49.30	2,249.50	531.38	1,465	1,409.62	2.10	-0.21	0.02
100.00	-22.13	-1.21	0.00	-43.02	0.00	43.02	2,177.61	514.40	1,373	1,320.52	2.32	-0.22	0.02
105.00	-22.06	-1.21	0.00	-36.99	0.00	36.99	2,105.72	497.42	1,284	1,234.33	2.55	-0.23	0.02
105.13	-21.11	-1.17	0.00	-36.83	0.00	36.83	2,103.86	496.97	1,282	1,232.13	2.56	-0.23	0.02
105.13	-21.11	-1.17	0.00	-36.83	0.00	36.83	2,103.86	496.97	1,282	1,232.13	2.56	-0.23	0.04
110.00	-20.19	-1.14	0.00	-31.13	0.00	31.13	2,033.84	480.43	1,198	1,151.05	2.79	-0.23	0.04
115.00	-19.38	-1.11	0.00	-25.42	0.00	25.42	1,961.95	463.45	1,115	1,070.68	3.05	-0.25	0.03
120.00	-15.25	-0.93	0.00	-19.87	0.00	19.87	1,890.06	446.47	1,034	993.22	3.32	-0.26	0.03
125.00	-15.23	-0.93	0.00	-15.24	0.00	15.24	1,818.18	429.49	957	918.67	3.60	-0.28	0.03
125.12	-14.36	-0.88	0.00	-15.13	0.00	15.13	1,816.40	429.07	955	916.87	3.61	-0.28	0.02
128.87	-14.21	-0.88	0.00	-11.81	0.00	11.81	1,443.05	340.90	754	725.17	3.83	-0.28	0.03

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
130.00	-13.96	-0.87	0.00	-10.82	0.00	10.82	1,430.19	337.84	740	712.19	3.90	-0.29	0.03
132.00	-10.82	-0.70	0.00	-9.09	0.00	9.09	1,407.19	332.41	717	689.35	4.02	-0.29	0.02
135.00	-10.22	-0.66	0.00	-7.00	0.00	7.00	1,372.68	324.26	682	655.79	4.20	-0.29	0.02
140.00	-9.87	-0.64	0.00	-3.69	0.00	3.69	1,315.17	310.67	626	601.71	4.51	-0.30	0.01
143.00	-5.47	-0.37	0.00	-1.77	0.00	1.77	1,280.67	302.52	594	570.38	4.70	-0.30	0.01
145.00	-5.16	-0.34	0.00	-1.03	0.00	1.03	1,257.66	297.09	573	549.96	4.83	-0.30	0.01
148.00	0.00	-0.32	0.00	0.00	0.00	0.00	1,223.16	288.93	542	520.03	5.02	-0.30	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.48	-1.60	0.00	-196.07	0.00	196.07	4,773.35	1,159.07	4,980	4,665.14	0.00	0.00	0.04
5.00	-42.03	-1.61	0.00	-188.07	0.00	188.07	4,702.37	1,135.30	4,777	4,500.65	0.01	-0.01	0.04
10.00	-40.58	-1.61	0.00	-180.04	0.00	180.04	4,630.26	1,111.53	4,579	4,337.97	0.02	-0.02	0.04
15.00	-39.15	-1.62	0.00	-171.98	0.00	171.98	4,557.02	1,087.75	4,386	4,177.17	0.05	-0.03	0.04
20.00	-37.73	-1.62	0.00	-163.89	0.00	163.89	4,482.66	1,063.98	4,196	4,018.33	0.09	-0.04	0.04
25.00	-36.34	-1.62	0.00	-155.78	0.00	155.78	4,403.54	1,040.21	4,011	3,858.33	0.14	-0.05	0.03
30.00	-34.96	-1.62	0.00	-147.67	0.00	147.67	4,302.90	1,016.43	3,829	3,683.11	0.20	-0.06	0.03
35.00	-33.61	-1.62	0.00	-139.56	0.00	139.56	4,202.25	992.66	3,652	3,511.96	0.27	-0.08	0.03
40.00	-33.30	-1.62	0.00	-131.47	0.00	131.47	4,101.61	968.88	3,480	3,344.88	0.36	-0.09	0.03
41.16	-31.75	-1.61	0.00	-129.59	0.00	129.59	4,078.20	963.35	3,440	3,306.59	0.38	-0.09	0.03
45.00	-31.02	-1.60	0.00	-123.41	0.00	123.41	4,000.97	945.11	3,311	3,181.88	0.45	-0.10	0.03
46.83	-30.25	-1.60	0.00	-120.48	0.00	120.48	3,410.91	819.61	2,905	2,749.16	0.49	-0.10	0.03
50.00	-29.04	-1.59	0.00	-115.41	0.00	115.41	3,371.30	806.69	2,814	2,673.99	0.56	-0.11	0.03
55.00	-27.85	-1.57	0.00	-107.48	0.00	107.48	3,307.89	786.31	2,674	2,556.79	0.68	-0.12	0.03
60.00	-26.68	-1.56	0.00	-99.61	0.00	99.61	3,242.46	765.93	2,537	2,440.62	0.81	-0.13	0.03
65.00	-25.53	-1.54	0.00	-91.82	0.00	91.82	3,156.19	745.56	2,404	2,311.85	0.96	-0.14	0.03
70.00	-24.39	-1.51	0.00	-84.13	0.00	84.13	3,069.93	725.18	2,274	2,186.56	1.11	-0.15	0.03
75.00	-23.15	-1.48	0.00	-76.56	0.00	76.56	2,983.66	704.80	2,148	2,064.76	1.28	-0.16	0.03
80.00	-22.79	-1.48	0.00	-69.14	0.00	69.14	2,897.40	684.42	2,026	1,946.46	1.45	-0.17	0.03
81.62	-21.73	-1.44	0.00	-66.75	0.00	66.75	2,869.39	677.81	1,987	1,908.80	1.51	-0.18	0.03
85.00	-21.30	-1.43	0.00	-61.87	0.00	61.87	2,811.13	664.05	1,907	1,831.65	1.64	-0.18	0.02
86.37	-20.57	-1.41	0.00	-59.90	0.00	59.90	2,342.64	560.68	1,631	1,549.74	1.70	-0.19	0.03
90.00	-19.78	-1.38	0.00	-54.80	0.00	54.80	2,304.38	548.36	1,560	1,490.62	1.84	-0.19	0.02
94.00	-16.94	-1.27	0.00	-49.28	0.00	49.28	2,261.50	534.77	1,484	1,426.29	2.01	-0.20	0.02
95.00	-15.97	-1.23	0.00	-48.02	0.00	48.02	2,249.50	531.38	1,465	1,409.62	2.05	-0.20	0.02
100.00	-14.89	-1.18	0.00	-41.89	0.00	41.89	2,177.61	514.40	1,373	1,320.52	2.27	-0.21	0.02
105.00	-14.84	-1.18	0.00	-36.01	0.00	36.01	2,105.72	497.42	1,284	1,234.33	2.50	-0.22	0.02
105.13	-14.21	-1.14	0.00	-35.86	0.00	35.86	2,103.86	496.97	1,282	1,232.13	2.50	-0.22	0.02
105.13	-14.21	-1.14	0.00	-35.86	0.00	35.86	2,103.86	496.97	1,282	1,232.13	2.50	-0.22	0.04
110.00	-13.59	-1.11	0.00	-30.29	0.00	30.29	2,033.84	480.43	1,198	1,151.05	2.73	-0.23	0.03
115.00	-13.04	-1.08	0.00	-24.73	0.00	24.73	1,961.95	463.45	1,115	1,070.68	2.98	-0.24	0.03
120.00	-10.26	-0.90	0.00	-19.33	0.00	19.33	1,890.06	446.47	1,034	993.22	3.24	-0.26	0.03
125.00	-10.25	-0.90	0.00	-14.82	0.00	14.82	1,818.18	429.49	957	918.67	3.52	-0.27	0.02
125.12	-9.66	-0.86	0.00	-14.71	0.00	14.71	1,816.40	429.07	955	916.87	3.53	-0.27	0.02
128.87	-9.56	-0.85	0.00	-11.49	0.00	11.49	1,443.05	340.90	754	725.17	3.74	-0.28	0.02
130.00	-9.39	-0.84	0.00	-10.52	0.00	10.52	1,430.19	337.84	740	712.19	3.81	-0.28	0.02
132.00	-7.28	-0.68	0.00	-8.84	0.00	8.84	1,407.19	332.41	717	689.35	3.92	-0.28	0.02
135.00	-6.88	-0.64	0.00	-6.81	0.00	6.81	1,372.68	324.26	682	655.79	4.10	-0.29	0.02
140.00	-6.64	-0.62	0.00	-3.59	0.00	3.59	1,315.17	310.67	626	601.71	4.41	-0.29	0.01
143.00	-3.68	-0.36	0.00	-1.72	0.00	1.72	1,280.67	302.52	594	570.38	4.59	-0.30	0.01
145.00	-3.47	-0.34	0.00	-1.01	0.00	1.01	1,257.66	297.09	573	549.96	4.72	-0.30	0.01
148.00	0.00	-0.32	0.00	0.00	0.00	0.00	1,223.16	288.93	542	520.03	4.90	-0.30	0.00

ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	29.44	0.00	63.81	0.00	0.00	3585.43	105.13	0.63
0.9D + 1.0W Normal	29.41	0.00	47.84	0.00	0.00	3534.06	105.13	0.61
1.2D + 1.0Di + 1.0Wi Normal	7.83	0.00	84.05	0.00	0.00	938.73	105.13	0.17
1.2D + 1.0Ev + 1.0Eh Normal	1.65	0.00	64.61	0.00	0.00	199.71	0.00	0.04
0.9D - 1.0Ev + 1.0Eh Normal	1.62	0.00	43.48	0.00	0.00	196.07	0.00	0.04
1.0D + 1.0W Service Normal	7.04	0.00	53.21	0.00	0.00	851.11	105.13	0.15

ADDITIONAL STEEL SUMMARY

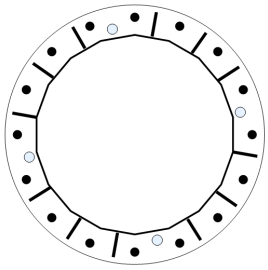
			Intermediate Connectors				Max member		
Elev From (ft)	Elev To (ft)	Member	VQ/I	Shear Applied (kips)	Shear (phiVn) (kips)	Ratio	Pu (kip)	PhiPn (kip)	Ratio
0.00	105.13	SOL #20 All Thread Bar	310.7	9.3	16.8	0.5544	224.3	330.5	0.6786

			Upper Termination Connectors					Lower Termination Connectors				
Elev From (ft)	Elev To (ft)	Member	MQ/I	phiVn (kips)	Num Reqd	Num Actual	Ratio	MQ/I (kips)	phiVn (kip)	Num Reqd	Num Actual	Ratio
0.00	105.13	SOL #20 All Thread Bar	131.5844	12	11	24	0.4569	0	12	0	0	0.0000

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 17309)

Diameter:	63	in
Shape:	Round	
Thickness:	2	in
Grade:	A871-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	c	
Clear Distance	-	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	270	°



ANCHOR ROD PARAMETERS

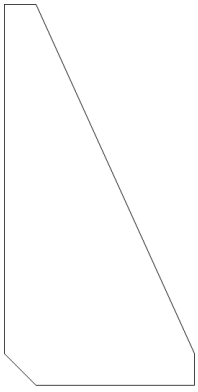
Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 17725]	Radial	16	2.25	57	A615-75	75	100	-	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	Fy (ksi)	Fu (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 1160]	#20	2.5	80	100	Angle	2.19	54.88	12

STIFFENER PARAMETERS

Arrangement:	Radial	
Quantity:	12	
Height:	12	in
Width:	6	in
Thickness:	0.75	in
Notch:	1	in
Grade:	A36	
Yield Strength:	36	ksi
Tensile Strength:	58	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.375	in
Vertical Weld Fillet Size:	0.375	in
Weld Strength:	70	ksi
Orientation Offset:	-	°



ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"ø [ID 17725]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.393	26.33	10.91	25.118	2049.848	133.09	1.12
2	0.785	20.15	20.15	19.224	1201.121	102.53	2.07
3	1.178	10.91	26.33	10.404	352.394	56.79	2.70
4	1.571	0.00	28.50	0.000	0.839	2.84	2.93
5	1.963	-10.91	26.33	-10.404	352.393	-51.10	2.70
6	2.356	-20.15	20.15	-19.224	1201.120	-96.84	2.07
7	2.749	-26.33	10.91	-25.118	2049.848	-127.40	1.12
8	3.142	-28.50	0.00	-27.188	2401.402	-138.13	0.00
9	3.534	-26.33	-10.91	-25.118	2049.847	-127.40	1.12
10	3.927	-20.15	-20.15	-19.224	1201.120	-96.84	2.07
11	4.320	-10.91	-26.33	-10.404	352.393	-51.10	2.70
12	4.712	0.00	-28.50	0.000	0.839	2.84	2.93
13	5.105	10.91	-26.33	10.404	352.394	56.79	2.70
14	5.498	20.15	-20.15	19.224	1201.120	102.53	2.07
15	5.890	26.33	-10.91	25.118	2049.847	133.09	1.12
16	6.283	28.50	0.00	27.188	2401.402	143.82	0.00

DYWIDAG BAR GEOMETRY AND APPLIED LOADS --- (4) #20 [ID 1160]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)
1	1.780	-5.70	26.84	-5.705	161.688	-42.13
2	3.351	-26.84	-5.70	-26.840	3538.200	-215.18
3	4.922	5.70	-26.84	5.705	161.687	51.29
4	0.209	26.84	5.70	26.840	3538.199	224.33

STIFFENER GEOMETRY AND APPLIED LOADS

Position	Radians	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	6.109	26.590	2386.797	85.00	0.29
2	0.576	22.644	1734.702	72.64	0.91
3	0.960	15.487	818.567	50.21	1.37
4	1.396	4.689	87.289	16.37	1.65
5	2.094	-13.500	625.271	-40.62	1.45
6	2.531	-22.117	1655.518	-67.62	0.96
7	2.967	-26.590	2386.797	-81.64	0.29
8	3.700	-22.897	1773.409	-70.07	0.89
9	4.136	-14.705	739.384	-44.40	1.40
10	4.538	-4.689	87.289	-13.01	1.65
11	5.271	14.308	700.676	46.52	1.42
12	5.672	22.117	1655.519	70.99	0.96

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	48"ø x 0.4375" (18 Sides)	2556.9	63.81	29.44	0.713
Bolt Group	Original (16) 2.25"ø	2556.9	-	29.44	0.713
Dywidag Group	(4) #20	1028.5	-	-	0.287
Stiffeners	(12) 12"H x 6"W x 0.75"T	1133.6	-	13.05	0.316
	TOTALS	**3585.43**	**63.81**	**29.44**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	48"ø x 0.4375" (18 Sides)	65.0407	-	-	18395.99	-
Bolt Group	Original (16) 2.25"ø	3.9761	3.2477	0.8393	19217.93	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	7399.77	-
Stiffeners	(12) 12"H x 6"W x 0.75"T	3.7500	3.3750	54.0000	14651.22	-

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	48.12	in
Point-to-Point Diameter:	48.87	in
Flat Width:	8.486	in
Flat Radians:	0.349	rad

PLATE PROPERTIES

Neutral Axis:	270	°
Bend Line Lower Limit:	5.688	rad
Bend Line Upper Limit:	0.596	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment Mu (k-in)	Moment Capacity ϕMn (k-in)	Ratio
Flat	36.482	4.78	41.260	730.4	2228.0	0.328
Corner	35.481	4.19	39.667	578.2	2142.0	0.270
Circumferential	46.484	11.06	57.545	1129.0	3107.5	0.363

ELASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio	Interaction
Original	16	2.25	143.8	0.0	243.6	0.590	0.590

DYWIDAG BAR ANALYSIS

Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load Pu (k)	Compressive Capacity ϕPn (k)	Ratio
4	#20	54.88	224.3	368.2	0.609

BASE PLATE STIFFENER ANALYSIS

Quantity:	12	
Height:	12	in
Width:	6	in
Effective Width:	6.000	in
Thickness:	0.75	in
Notch:	1	in
Grade:	A36	
Yield Strength:	36	ksi
Tensile Strength:	58	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.375	in
Horizontal Weld Bevel Size:		in
Vertical Weld Fillet Size:	0.375	in
Weld Strength:	70	ksi
Electrode Coefficient:	1.000	

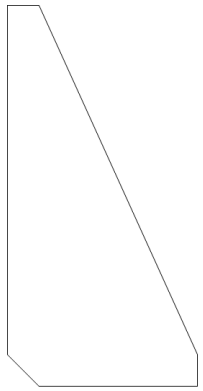


PLATE COMPRESSION

Radius of Gyration:	0.217	in^3
kl/r:	33.26	
4.71 √(E/Fy):	133.68	
Buckling Stress, Fe:	258.81	ksi
Crit. Buckling Stress, Fcr:	226.97	ksi
Applied Compression, Pu:	85.00	k
Compressive Capacity, ϕPn:	766.03	k
Pu/ϕPn:	**0.055**	

PLATE TENSION

Gross Cross Section:	3.7500	in^2
Net Cross Section:	3.3750	in^2
Applied Tension, Tu:	81.64	k
Tensile Capacity, ϕTn:	121.50	k
Tu/ϕTn:	**0.336**	

VERTICAL WELD TO POLE

Vertical Eccentricity Ratio, $a=e_x/l$:	0.167	
Spacing Ratio, k:	0.063	
Weld Coefficient, C:	3.670	
Applied Compression, Pu:	85.00	k
Compressive Capacity, ϕPn:	198.18	k
Horizontal Eccentricity Ratio, $a=e_x/l$:	0.333	
Weld Coefficient, C:	2.940	
Applied Shear, Vu	0.29	k
Shear Capacity, ϕVn:	158.76	k
Pu/ϕPn + Vu/ϕVn:	**0.431**	

HORIZONTAL WELD TO PLATE

Horizontal Eccentricity Ratio, $a=e_x/l$:	0.167	
Spacing Ratio, k:	0.125	
Weld Coefficient, C:	3.940	
Effective Fillet Size:	0.375	in
Applied Compression, Pu:	85.00	k
Compressive Capacity, ϕPn:	106.38	k
Vertical Eccentricity Ratio, $a=e_x/l$:	0.333	
Weld Coefficient, C:	3.090	
Applied Shear, Vu	0.29	k
Shear Capacity, ϕVn:	83.43	k
Pu/ϕPn + Vu/ϕVn:	**0.803**	

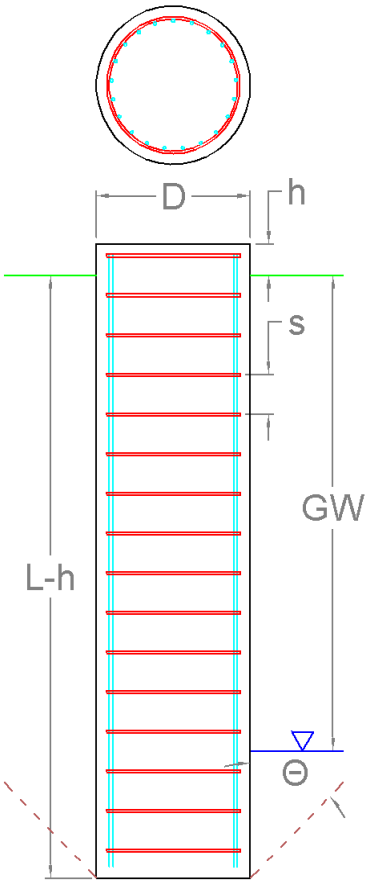
Pier Foundation Analysis (ANSI/TIA-222-H)

Foundation Analysis Parameters			
Pier Diameter	*D*	6.50	ft
Pier Embedment	*L-h*	24.0	ft
Pier Height above Ground	*H*	1.00	ft
Water Table Depth [BGL]	*GW*	22	ft
Pullout Angle	Θ	30	°
Unit Weight of Concrete		150	pcf
Uplift Skin Friction Factor		0.850	

Reactions		
Moment, M_u	3,585.4	k-ft
Shear, V_u	29.4	k
Axial, P_u	63.8	k
Uplift, T_u	0.0	k

Soil Properties

Layer Depth (ft)		Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Bearing Pressure
TOP	BTM	pcf	psf	°	psf	psf
0.0	3.0	105	0	0	0	0
3.0	5.0	110	0	30	0	0
5.0	11.0	105	0	28	213	0
11.0	16.0	119	0	32	1,405	0
16.0	22.0	127	0	37	1,857	0
22.0	27.0	134	4,587	0	2,159	21,860



Soil Strength Capacities

Volume of Concrete	829.6	ft^3
Weight of Concrete [Buoyancy Considered]	120.3	k
Average Soil Unit Weight	111.0	pcf
Skin Friction Resistance	485.2	k
Compressive Bearing Resistance	725.4	k
Pullout Weight [Minus Concrete Weight]	912.9	k
Compressive Force, P_u	96.0	k
Nominal Compressive Capacity, $\phi_s P_n$	908.0	k
$P_u / \phi_s P_n$	**10.6%**	
Total Lateral Resistance	2,034.6	k
Inflection Point [BGL]	18.6	ft
Moment at Inflection Point, M_D	4,161.6	k-ft
Nominal Moment Capacity, $\phi_s M_n$	6,468.1	k-ft
$M_D / \phi_s M_n$	**64.3%**	

Pier Strength Capacities			
Concrete Compressive Strength, f'_c		4,000	psi
Rebar Size #		11	
Rebar Area (Single)		1.56	in^2
Rebar Quantity		21	
Rebar Yield Strength, F_y		60	ksi
Vertical Rebar Clear Cover		4	in
Tie Rebar Size #		5	
Tie Rebar Area (Single)		0.31	in^2
Tie Rebar Spacing	*s*	12.0	in
Tie Rebar Yield Strength, F_y		60	ksi
Rebar Cage Diameter		67.34	in
Strength Bending/Tension Reduction Factor, ϕ_B		0.90	
Strength Shear Reduction Factor, ϕ_V		0.75	
Strength Compression Reduction Factor, ϕ_C		0.65	
Steel Elastic Modulus		29,000	ksi
Design Moment, M_u		3,620.7	k-ft
Moment Capacity, $\phi_B M_n$		4,397.8	k-ft
$M_u / \phi_B M_n$		**82.3%**	
Design Shear, V_u		399.6	k
Shear Capacity, $\phi_V V_n$		601.4	k
$V_u / \phi_V V_n$		**66.4%**	
Design Compression, P_u		96.0	k
Compression Capacity, $\phi_P P_n$		9,412.3	k
$P_u / \phi_P P_n$		**1.0%**	
Bending Reinforcement Ratio		0.007	

EXHIBIT 4

April 26, 2022 (Rev.1)
April 1, 2022

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA, 02379

RE:		
	Site Number:	CT2109
	FA Number:	10034979
	PACE Number:	MRCTB056838
	PT Number:	2051A11M87
	Site Name:	STAMFORD NORTH
	Site Address:	1590 Newfield Avenue Stamford, CT 06905

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the proposed AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)
- (3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS 32 B66A RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (2) DC6-48-60-18-8F Surge Arrestors (24.0"x9.7"Ø – Wt. = 33 lbs. /each)
- **(3) QD6616-7 Antennas (72.0"x22.0"x9.6" – Wt. = 130 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 Antennas (31.1"x16.1"x7.3" – Wt. = 66 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(1) DC9-48-60-24-8C-EV Surge Arrestor (24.0"x9.7"Ø – Wt. = 33 lbs.)**

**Proposed equipment shown in bold*

Mount fabrication drawings prepared by SitePro1, P/N VFA14-H10-2120, dated December 14, 2017, P/N MM01, dated May 10, 2010, and P/N LWRM, dated August 24, 2012, were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.00 in. An escalated ice thickness of 1.17 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.249 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.069.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mounts are to be secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the (3) Proposed SitePro1 P/N VFA14-H10-2120 mounts, (6) Proposed SitePro1 P/N MM01 standoffs, and (2) Proposed SitePro1 P/N LWRM collar mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed Mount Rating	35	LC73	84%	**PASS**

Reference Documents:

- Fabrication drawings prepared by SitePro1, P/N VFA14-H10-2120, dated December 14, 2017.
- Fabrication drawings prepared by SitePro1, P/N MM01, dated May 10, 2010.
- Fabrication drawings prepared by SitePro1, P/N LWRM, dated August 24, 2012.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The proposed mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

Daniel P. Hamm, PE
Principal

HUDSON
Design Group LLC

Wind & Ice
Calculations

ANSI/TIA-222H - WIND, ICE & SEISMIC LOAD CALCULATIONS

Site Code/Name		CT2109 - Stamford North		
State		Connecticut		
County		Fairfield		*Reference*
Structure Class		II		*Table 2-1*
Exposure Category		C		*Section 2.6.5.1.2*
Topographic Category		1 - Kzt = 1		*Section 2.6.6.2.1*
Mean Elevation of base of structure	z_s	226.51	ft	*ASCE7-16 Hazards*
Height Above Ground	z	152	ft	

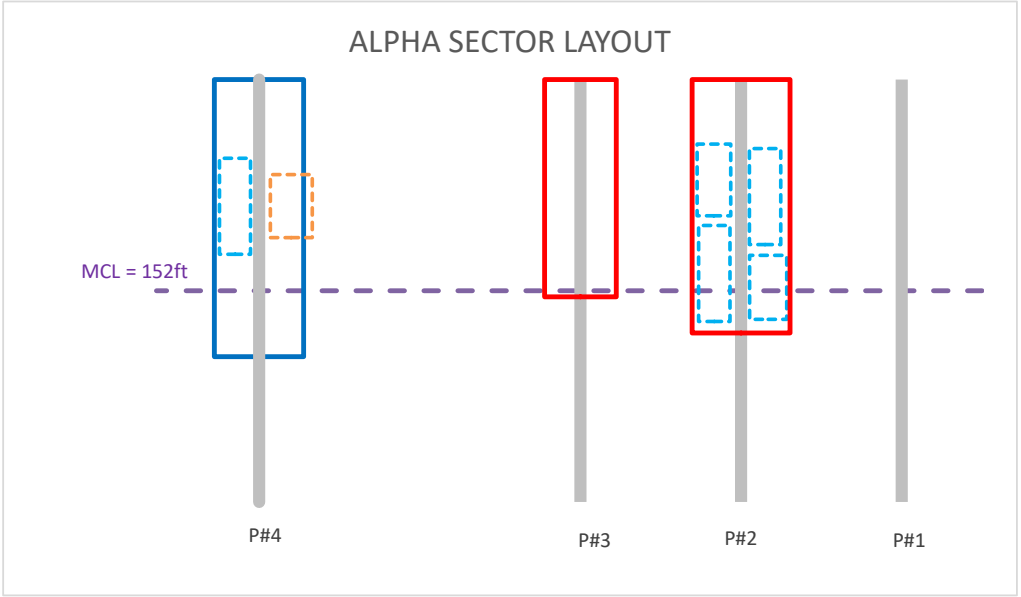
Wind Parameters				
Basic wind speed	V	120	mph	*Appendix N of Connecticut Building Code*
Wind direction probability factor	K_d	0.95		*Section 16.6*
Gust effect factor	G_h	1		*Section 16.6*
Velocity Pressure (Ka = 0.9)		43.21	psf	*Section 2.6.11.6*

Wind & Ice Parameters				
Base windspeed in conjunction with ice, V_i		50	mph	*ASCE7-16 Hazards Tool*
Base Ice thickness	t_i	1.00	in	*ASCE7-16 Hazards Tool*
Ice Velocity Pressure (Ka = 0.9)	q_{ice}	7.50	psf	*Section 2.6.11.6*
Design Ice Thickness	t_{iz}	1.17	in	*Section 2.6.10*

Seismic Parameters				
Site Soil Class		D - Default		*Table 2-10*
Seismic Design Category		B		*ASCE7-16 Hazards Tool*
Spectral Response at Short Periods	S_s	0.249		*Appendix N of Connecticut Building Code*
Spectral Response at 1sec	S_1	0.069		*Appendix N of Connecticut Building Code*
Long Period Transition Period	T_L	6		*ASCE7-16 Hazards Tool*
Seismic Importance Factor	I_s	1		*Table 2-3*
Response modification coefficient	R	2		*Section 16.7*
Short-Period Site Coefficient	F_a	1.6		*Table 2-11*
Design Spectral Response at Short Periods	S_{DS}	0.266		*Section 2.7.5*
Seismic Response Coefficient	C_s	0.133		*Section 2.7.7.1*

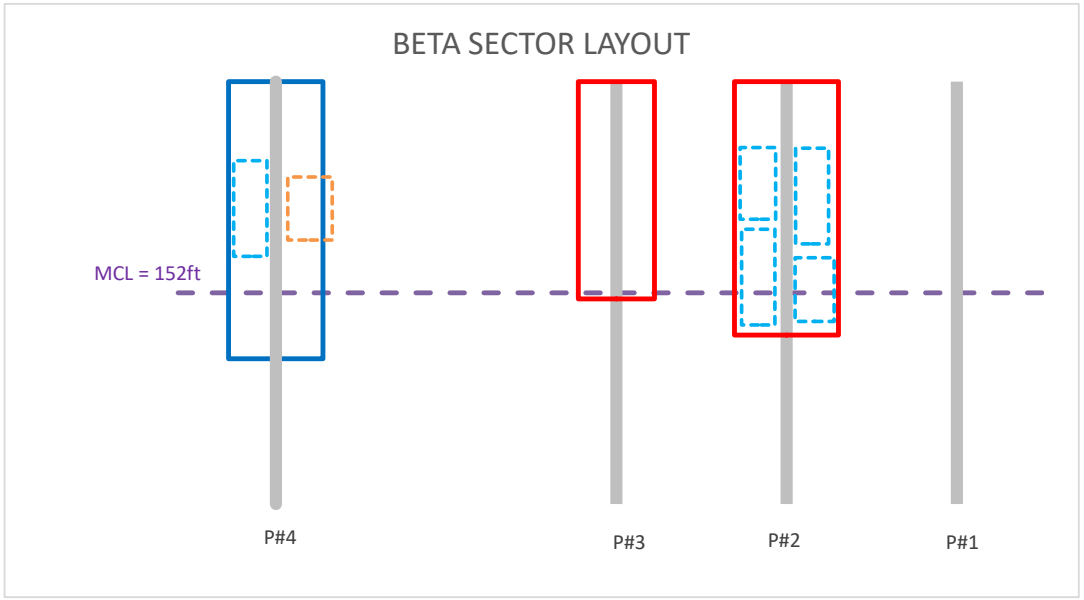
ALPHA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
2	Quintel	QD6616-7	72.0	22.0	9.6	130.0	586.7	293.8	218.4	17.3
3	Ericsson	AIR6449 + AIR6419 Stacked	61.7	16.1	10.6	148.0	375.4	264.5	152.4	19.7
4	Kathrein	800-10965	78.7	20.0	6.9	109.0	596.9	252.1	211.5	14.5
2	Ericsson	4478 B14	18.1	13.4	8.3	60.0	54.1	87.3	38.7	8.0
2	Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	72.1	118.5	51.0	8.0
2	Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	72.1	118.5	51.0	8.0
2	Ericsson	RRUS-E2 B29	20.4	18.5	7.5	53.0	55.5	135.9	54.0	7.0
4	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	60.6	85.1	39.3	9.7
4	Ericsson	RRUS- 32 B30	27.2	12.1	7.0	60.0	72.1	118.5	51.0	8.0
-	Raycap	DC6-48-60-18-8F	23.5	9.7	9.7	33.0	82.1	82.1	43.5	4.4



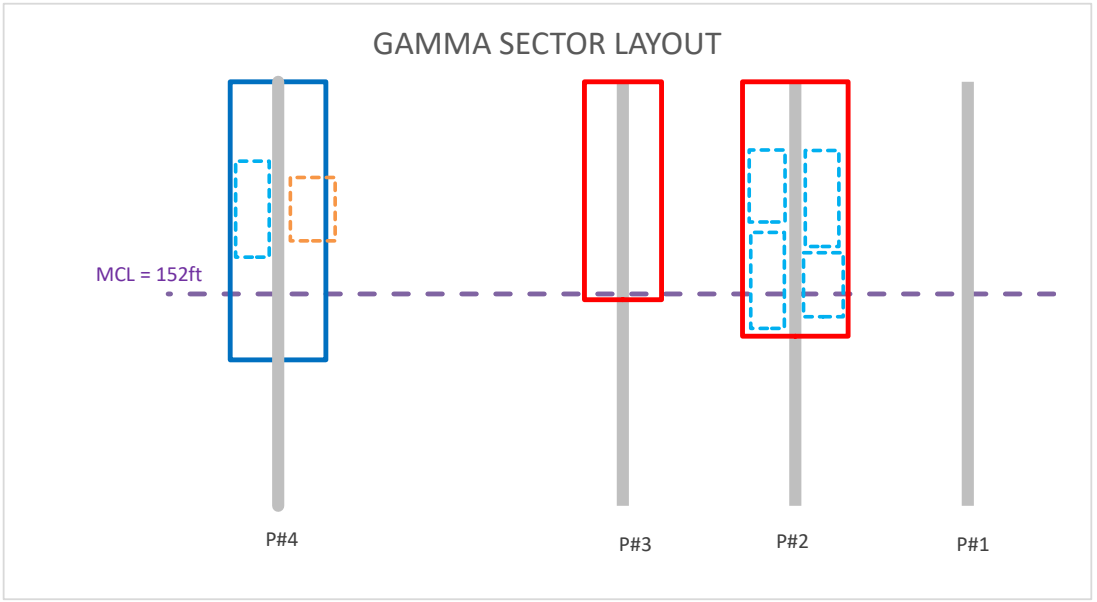
BETA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
2	Quintel	QD6616-7	72.0	22.0	9.6	130.0	367.1	513.5	218.4	17.3
3	Ericsson	AIR6449 + AIR6419 Stacked	61.7	16.1	10.6	148.0	292.2	347.6	152.4	19.7
4	Kathrein	800-10965	78.7	20.0	6.9	109.0	338.3	510.7	211.5	14.5
2	Ericsson	4478 B14	18.1	13.4	8.3	60.0	79.0	62.4	38.7	8.0
2	Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
2	Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
2	Ericsson	RRUS-E2 B29	20.4	18.5	7.5	53.0	115.8	75.6	54.0	7.0
4	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	79.0	66.7	39.3	9.7
4	Ericsson	RRUS- 32 B30	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
-	Raycap	DC6-48-60-18-8F	23.5	9.7	9.7	33.0	82.1	82.1	43.5	4.4



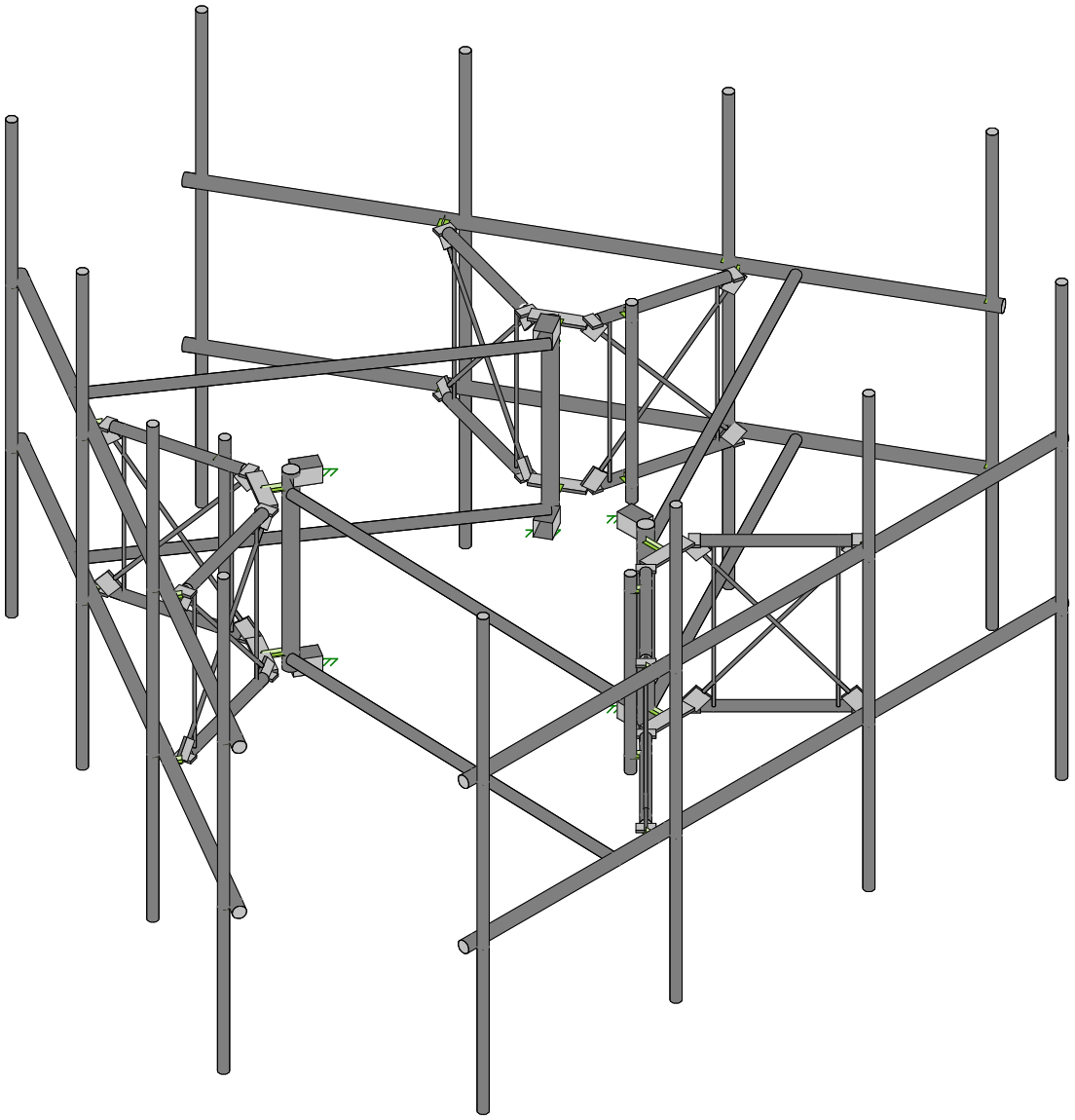
GAMMA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
2	Quintel	QD6616-7	72.0	22.0	9.6	130.0	367.1	513.5	218.4	17.3
3	Ericsson	AIR6449 + AIR6419 Stacked	61.7	16.1	10.6	148.0	292.2	347.6	152.4	19.7
4	Kathrein	800-10965	78.7	20.0	6.9	109.0	338.3	510.7	211.5	14.5
2	Ericsson	4478 B14	18.1	13.4	8.3	60.0	79.0	62.4	38.7	8.0
2	Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
2	Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
2	Ericsson	RRUS-E2 B29	20.4	18.5	7.5	53.0	115.8	75.6	54.0	7.0
4	Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	79.0	66.7	39.3	9.7
4	Ericsson	RRUS- 32 B30	27.2	12.1	7.0	60.0	106.9	83.7	51.0	8.0
-	Raycap	DC9-48-60-24-8C-EV	24.0	9.7	9.7	33.0	83.8	83.8	44.4	4.4



HUDSON
Design Group LLC

Mount Calculations
(Proposed Conditions)



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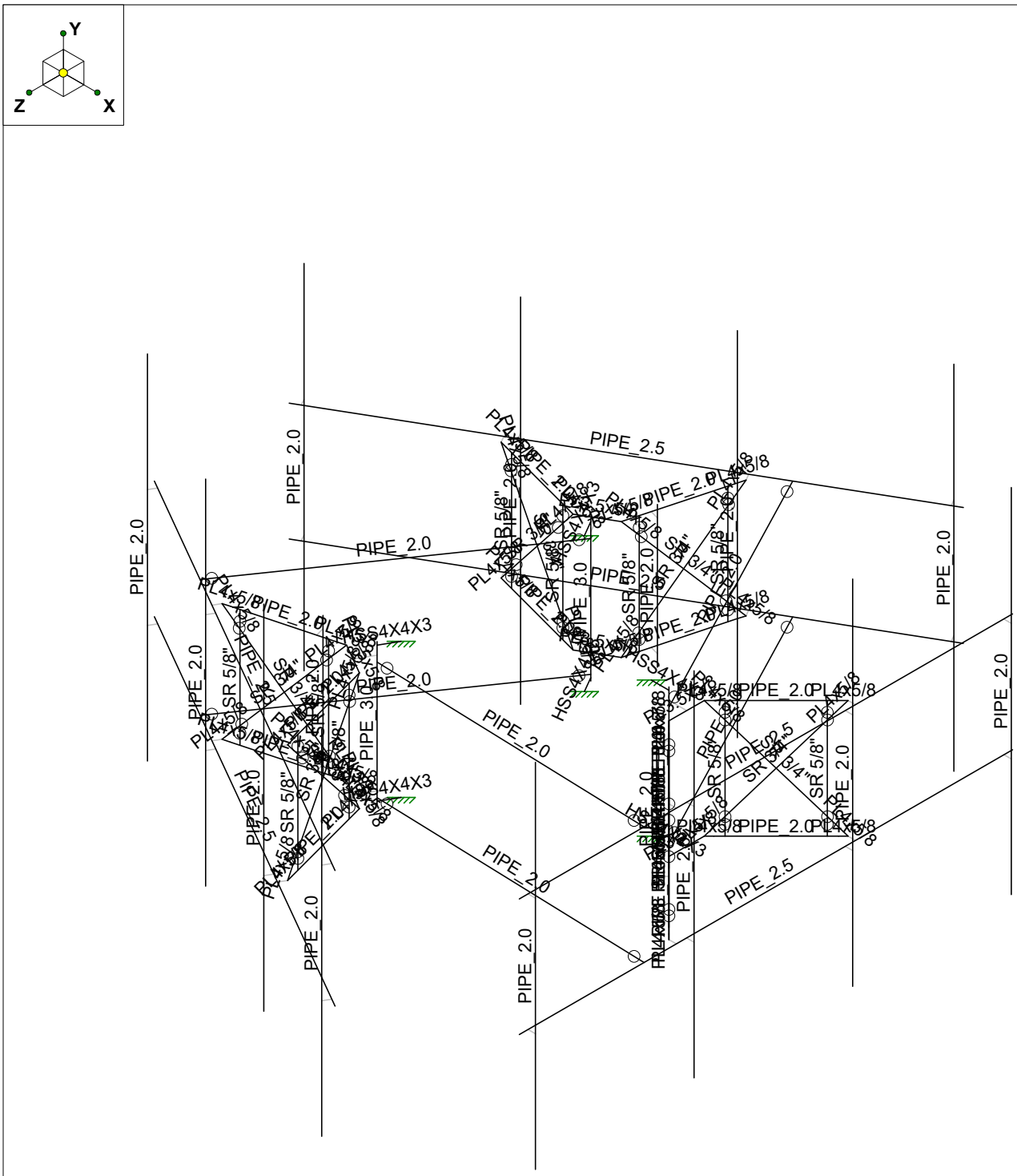

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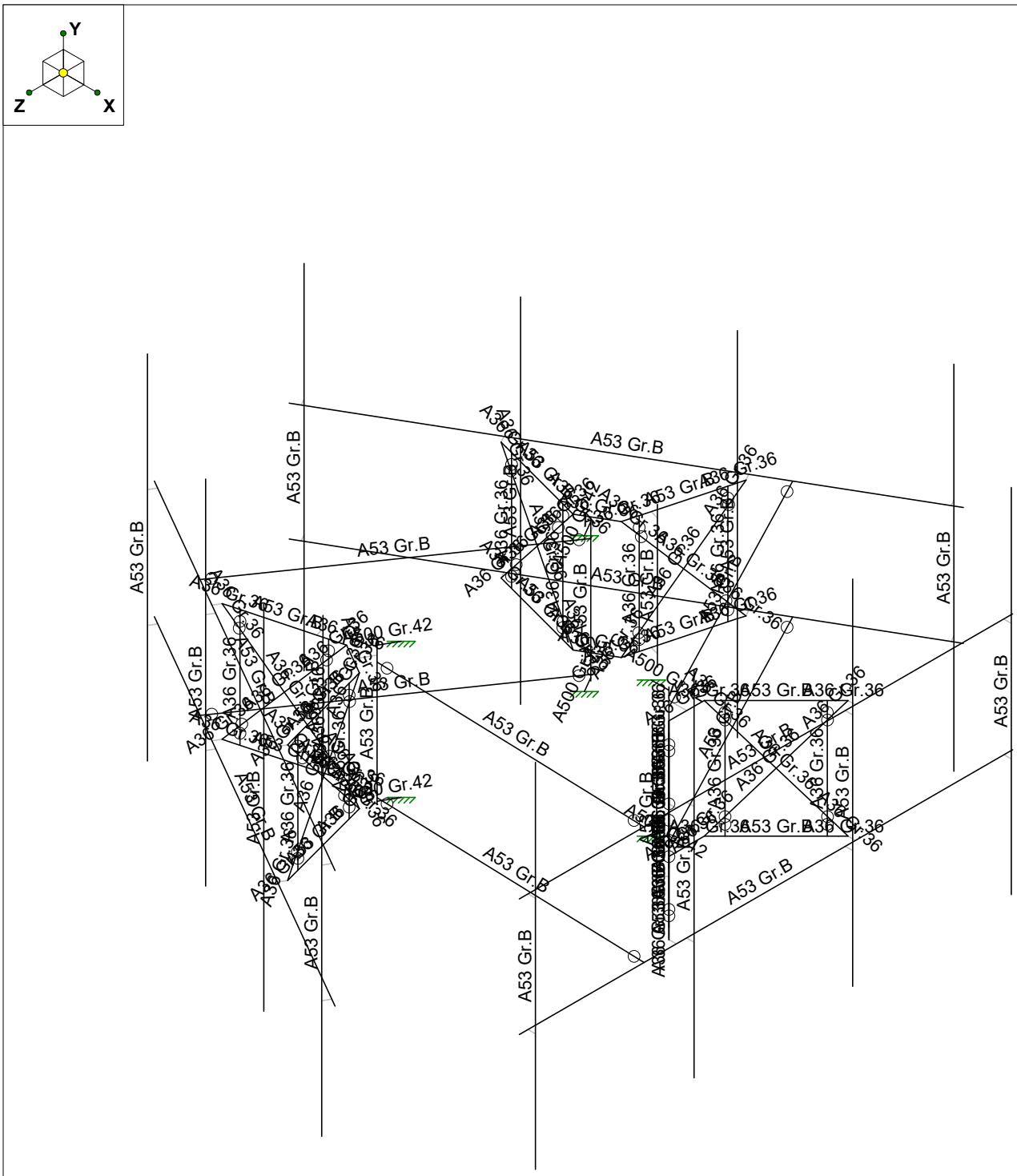

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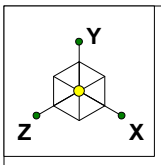

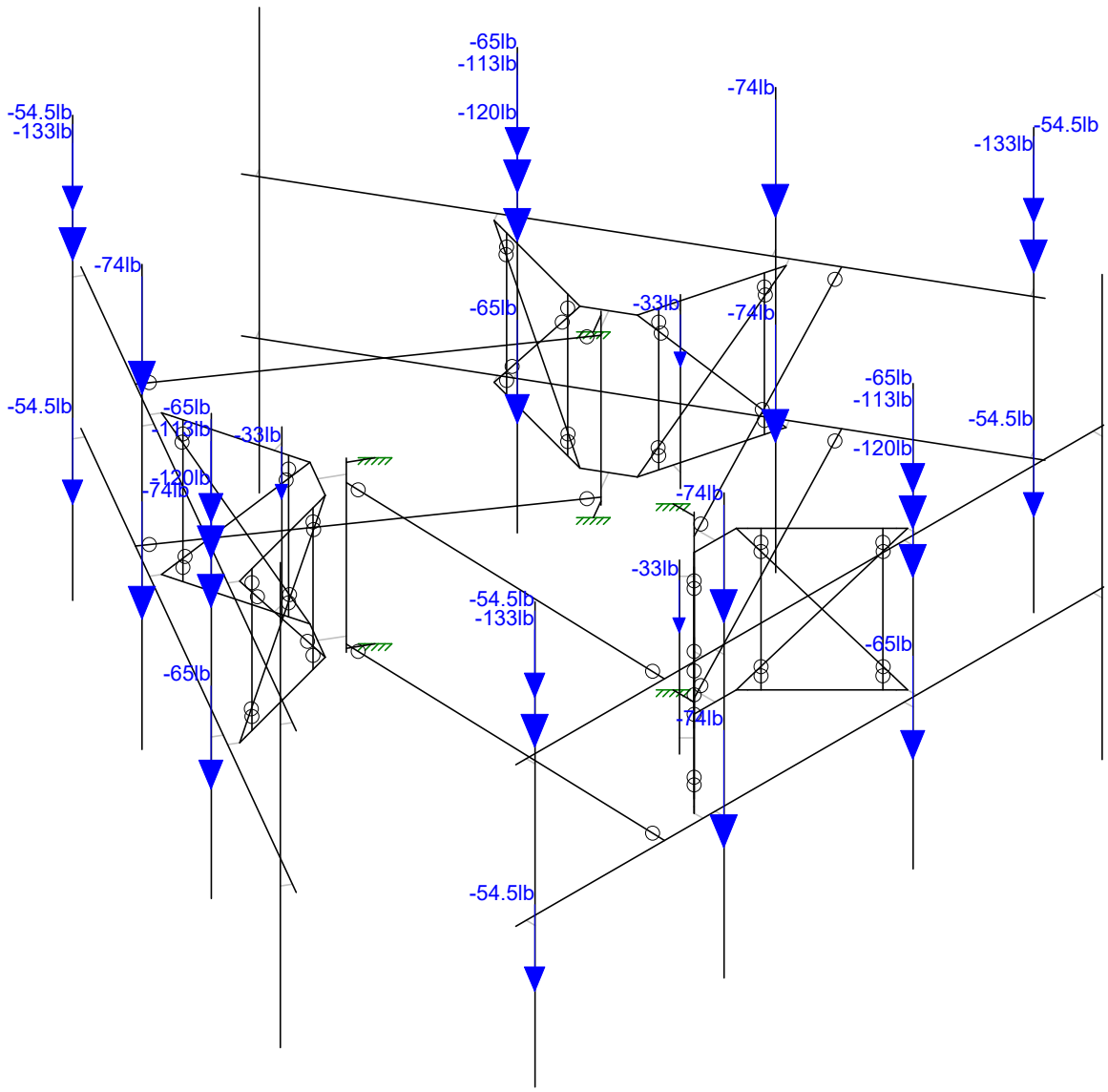

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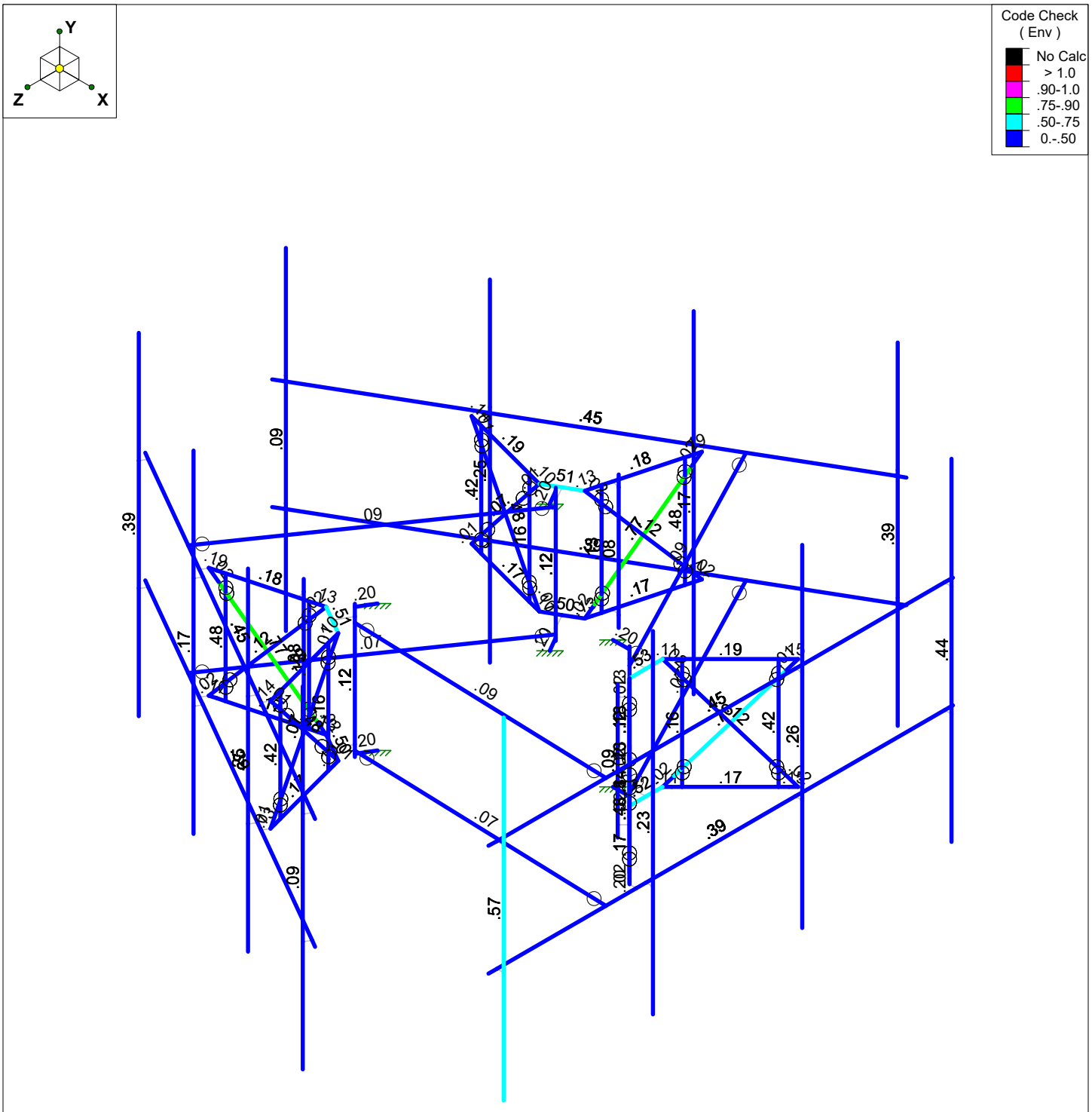

Member Code Checks Displayed (Enveloped)
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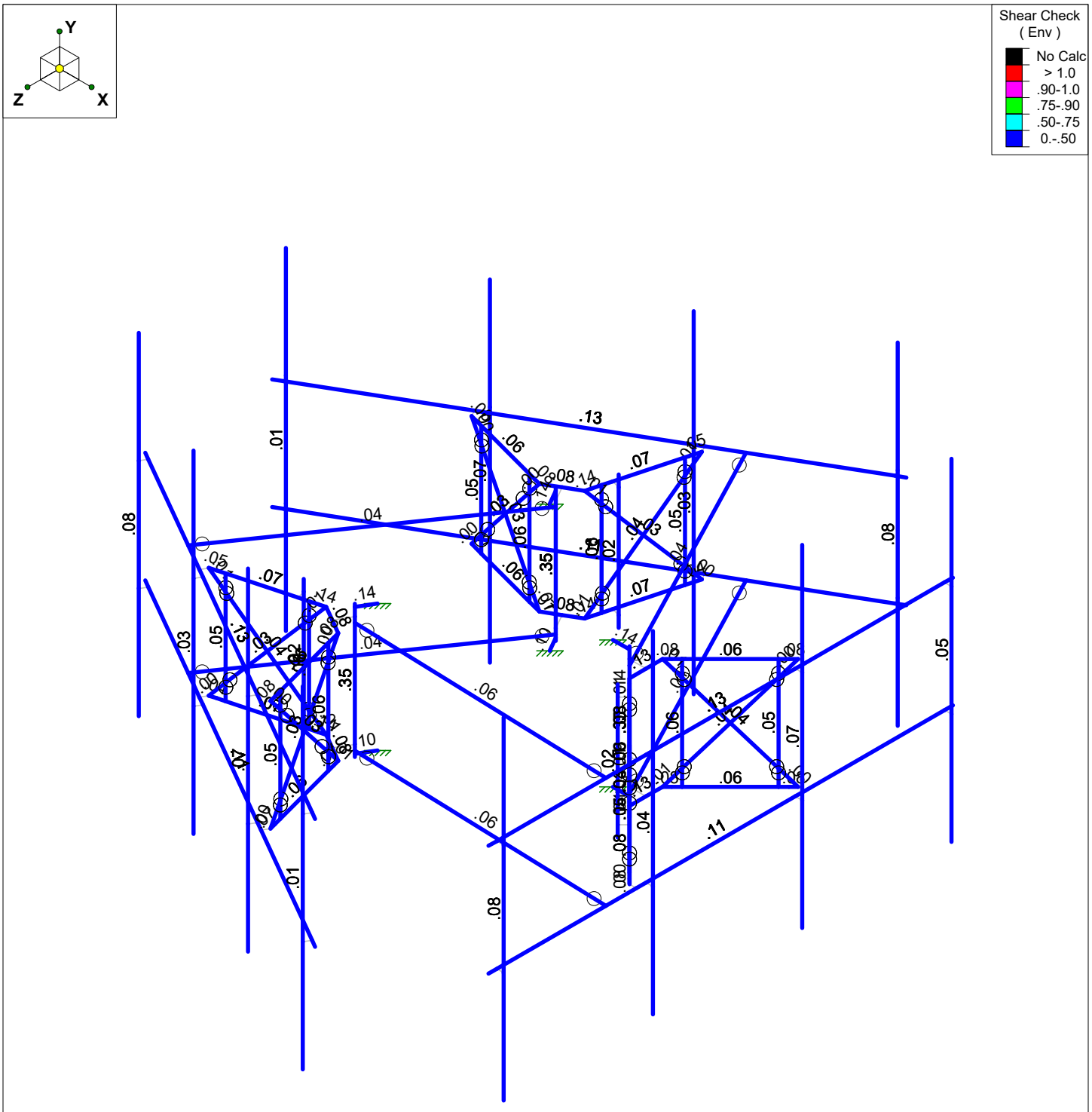

Member Shear Checks Displayed (Enveloped)
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(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	AA ADM1-15: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	PIPE_2.5	PIPE_2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	SR 5/8	SR 5/8"	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
4	SR 3/4	SR 3/4"	None	None	A36 Gr.36	Typical	.442	.016	.016	.031
5	PL4x5/8	PL4x5/8	None	None	A36 Gr.36	Typical	2.5	.081	3.333	.293
6	PL3.5x5/8	PL3.5x5/8	None	None	A36 Gr.36	Typical	2.188	.071	2.233	.253
7	PIPE 3.0	PIPE_3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
8	HSS 4X4X3	HSS4X4X3	None	None	A500 Gr.42	Typical	2.58	6.21	6.21	10

Joint Boundary Conditions

	Joint 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	N11						
2	N27						
3	N72						
4	N73						
5	N74						
6	N75						

Joint Boundary Conditions (Continued)

	Joint 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]
7	N76	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N77	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N84						
10	N85						
11	N86						
12	N97						
13	N113						
14	N152						
15	N153						
16	N154						
17	N155						
18	N156	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
19	N157	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
20	N164						
21	N175						
22	N191						
23	N230						
24	N231						
25	N232						
26	N233						
27	N234	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	N235	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
29	N243						
30	N257						
31	N271						

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		180	PIPE 2.5	None	None	A53 Gr.B	Typical
2	M2	N3	N4			RIGID	None	None	RIGID	Typical
3	M3	N5	N6		180	PIPE 2.5	None	None	A53 Gr.B	Typical
4	M4	N7	N8			RIGID	None	None	RIGID	Typical
5	M5	N9	N10			PIPE 2.0	None	None	A53 Gr.B	Typical
6	M6	N13	N15		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
7	M7	N16	N18			PIPE 2.0	None	None	A53 Gr.B	Typical
8	M8	N17	N19			PIPE_2.0	None	None	A53 Gr.B	Typical
9	M9	N20	N12			RIGID	None	None	RIGID	Typical
10	M10	N21	N14			RIGID	None	None	RIGID	Typical
11	M11	N22	N11			RIGID	None	None	RIGID	Typical
12	M12	N16	N13		90	PL4x5/8	None	None	A36 Gr.36	Typical
13	M13	N12	N18		90	PL4x5/8	None	None	A36 Gr.36	Typical
14	M14	N15	N17		90	PL4x5/8	None	None	A36 Gr.36	Typical
15	M15	N19	N14		90	PL4x5/8	None	None	A36 Gr.36	Typical
16	M16	N29	N31		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
17	M17	N32	N34			PIPE 2.0	None	None	A53 Gr.B	Typical
18	M18	N33	N35			PIPE_2.0	None	None	A53 Gr.B	Typical
19	M19	N36	N28			RIGID	None	None	RIGID	Typical
20	M20	N37	N30			RIGID	None	None	RIGID	Typical
21	M21	N38	N27			RIGID	None	None	RIGID	Typical
22	M22	N32	N29		90	PL4x5/8	None	None	A36 Gr.36	Typical
23	M23	N28	N34		90	PL4x5/8	None	None	A36 Gr.36	Typical
24	M24	N31	N33		90	PL4x5/8	None	None	A36 Gr.36	Typical
25	M25	N35	N30		90	PL4x5/8	None	None	A36 Gr.36	Typical
26	M26	N23	N39			SR 5/8	None	None	A36 Gr.36	Typical
27	M27	N25	N41			SR 5/8	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
28	M28	N24	N40			SR 5/8	None	None	A36 Gr.36	Typical
29	M29	N26	N42			SR 5/8	None	None	A36 Gr.36	Typical
30	M30	N30	N45			PL4x5/8	None	None	A36 Gr.36	Typical
31	M31	N31	N46			PL4x5/8	None	None	A36 Gr.36	Typical
32	M32	N13	N43			PL4x5/8	None	None	A36 Gr.36	Typical
33	M33	N12	N44			PL4x5/8	None	None	A36 Gr.36	Typical
34	M34	N43	N47			SR 3/4	None	None	A36 Gr.36	Typical
35	M35	N44	N48			SR 3/4	None	None	A36 Gr.36	Typical
36	M36	N45	N49			SR 3/4	None	None	A36 Gr.36	Typical
37	M37	N46	N50			SR 3/4	None	None	A36 Gr.36	Typical
38	M38	N47	N28			PL4x5/8	None	None	A36 Gr.36	Typical
39	M39	N48	N29			PL4x5/8	None	None	A36 Gr.36	Typical
40	M40	N49	N15			PL4x5/8	None	None	A36 Gr.36	Typical
41	M41	N50	N14			PL4x5/8	None	None	A36 Gr.36	Typical
42	M42	N51	N52			RIGID	None	None	RIGID	Typical
43	M43	N53	N54			RIGID	None	None	RIGID	Typical
44	M44	N55	N56			PIPE_2.0	None	None	A53 Gr.B	Typical
45	M45	N58	N59			RIGID	None	None	RIGID	Typical
46	M46	N60	N61			RIGID	None	None	RIGID	Typical
47	M47	N62	N63			PIPE_2.0	None	None	A53 Gr.B	Typical
48	M48	N72	N73			PIPE 3.0	None	None	A53 Gr.B	Typical
49	M49	N74	N76			HSS 4X4X3	None	None	A500 Gr.42	Typical
50	M50	N75	N77			HSS 4X4X3	None	None	A500 Gr.42	Typical
51	M51	N78	N80			RIGID	None	None	RIGID	Typical
52	M52	N79	N81			RIGID	None	None	RIGID	Typical
53	M53	N82	N83			PIPE_2.0	None	None	A53 Gr.B	Typical
54	M54	N57	N86			PIPE_2.0	None	None	A53 Gr.B	Typical
55	M55	N87	N88		180	PIPE_2.5	None	None	A53 Gr.B	Typical
56	M56	N89	N90			RIGID	None	None	RIGID	Typical
57	M57	N91	N92		180	PIPE_2.5	None	None	A53 Gr.B	Typical
58	M58	N93	N94			RIGID	None	None	RIGID	Typical
59	M59	N95	N96			PIPE_2.0	None	None	A53 Gr.B	Typical
60	M60	N99	N101		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
61	M61	N102	N104			PIPE_2.0	None	None	A53 Gr.B	Typical
62	M62	N103	N105			PIPE_2.0	None	None	A53 Gr.B	Typical
63	M63	N106	N98			RIGID	None	None	RIGID	Typical
64	M64	N107	N100			RIGID	None	None	RIGID	Typical
65	M65	N108	N97			RIGID	None	None	RIGID	Typical
66	M66	N102	N99		90	PL4x5/8	None	None	A36 Gr.36	Typical
67	M67	N98	N104		90	PL4x5/8	None	None	A36 Gr.36	Typical
68	M68	N101	N103		90	PL4x5/8	None	None	A36 Gr.36	Typical
69	M69	N105	N100		90	PL4x5/8	None	None	A36 Gr.36	Typical
70	M70	N115	N117		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
71	M71	N118	N120			PIPE_2.0	None	None	A53 Gr.B	Typical
72	M72	N119	N121			PIPE_2.0	None	None	A53 Gr.B	Typical
73	M73	N122	N114			RIGID	None	None	RIGID	Typical
74	M74	N123	N116			RIGID	None	None	RIGID	Typical
75	M75	N124	N113			RIGID	None	None	RIGID	Typical
76	M76	N118	N115		90	PL4x5/8	None	None	A36 Gr.36	Typical
77	M77	N114	N120		90	PL4x5/8	None	None	A36 Gr.36	Typical
78	M78	N117	N119		90	PL4x5/8	None	None	A36 Gr.36	Typical
79	M79	N121	N116		90	PL4x5/8	None	None	A36 Gr.36	Typical
80	M80	N109	N125			SR 5/8	None	None	A36 Gr.36	Typical
81	M81	N111	N127			SR 5/8	None	None	A36 Gr.36	Typical
82	M82	N110	N126			SR 5/8	None	None	A36 Gr.36	Typical
83	M83	N112	N128			SR 5/8	None	None	A36 Gr.36	Typical
84	M84	N116	N131			PL4x5/8	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
85	M85	N117	N132			PL4x5/8	None	None	A36 Gr.36	Typical
86	M86	N99	N129			PL4x5/8	None	None	A36 Gr.36	Typical
87	M87	N98	N130			PL4x5/8	None	None	A36 Gr.36	Typical
88	M88	N129	N133			SR 3/4	None	None	A36 Gr.36	Typical
89	M89	N130	N134			SR 3/4	None	None	A36 Gr.36	Typical
90	M90	N131	N135			SR 3/4	None	None	A36 Gr.36	Typical
91	M91	N132	N136			SR 3/4	None	None	A36 Gr.36	Typical
92	M92	N133	N114			PL4x5/8	None	None	A36 Gr.36	Typical
93	M93	N134	N115			PL4x5/8	None	None	A36 Gr.36	Typical
94	M94	N135	N101			PL4x5/8	None	None	A36 Gr.36	Typical
95	M95	N136	N100			PL4x5/8	None	None	A36 Gr.36	Typical
96	M96	N137	N138			RIGID	None	None	RIGID	Typical
97	M97	N139	N140			RIGID	None	None	RIGID	Typical
98	M98	N141	N142			PIPE_2.0	None	None	A53 Gr.B	Typical
99	M99	N152	N153			PIPE 3.0	None	None	A53 Gr.B	Typical
100	M100	N154	N156			HSS 4X4X3	None	None	A500 Gr.42	Typical
101	M101	N155	N157			HSS 4X4X3	None	None	A500 Gr.42	Typical
102	M102	N158	N160			RIGID	None	None	RIGID	Typical
103	M103	N159	N161			RIGID	None	None	RIGID	Typical
104	M104	N162	N163			PIPE_2.0	None	None	A53 Gr.B	Typical
105	M105	N143	N85			PIPE_2.0	None	None	A53 Gr.B	Typical
106	M106	N165	N166		180	PIPE_2.5	None	None	A53 Gr.B	Typical
107	M107	N167	N168			RIGID	None	None	RIGID	Typical
108	M108	N169	N170		180	PIPE_2.5	None	None	A53 Gr.B	Typical
109	M109	N171	N172			RIGID	None	None	RIGID	Typical
110	M110	N173	N174			PIPE_2.0	None	None	A53 Gr.B	Typical
111	M111	N177	N179		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
112	M112	N180	N182			PIPE_2.0	None	None	A53 Gr.B	Typical
113	M113	N181	N183			PIPE_2.0	None	None	A53 Gr.B	Typical
114	M114	N184	N176			RIGID	None	None	RIGID	Typical
115	M115	N185	N178			RIGID	None	None	RIGID	Typical
116	M116	N186	N175			RIGID	None	None	RIGID	Typical
117	M117	N180	N177		90	PL4x5/8	None	None	A36 Gr.36	Typical
118	M118	N176	N182		90	PL4x5/8	None	None	A36 Gr.36	Typical
119	M119	N179	N181		90	PL4x5/8	None	None	A36 Gr.36	Typical
120	M120	N183	N178		90	PL4x5/8	None	None	A36 Gr.36	Typical
121	M121	N193	N195		90	PL3.5x5/8	None	None	A36 Gr.36	Typical
122	M122	N196	N198			PIPE_2.0	None	None	A53 Gr.B	Typical
123	M123	N197	N199			PIPE_2.0	None	None	A53 Gr.B	Typical
124	M124	N200	N192			RIGID	None	None	RIGID	Typical
125	M125	N201	N194			RIGID	None	None	RIGID	Typical
126	M126	N202	N191			RIGID	None	None	RIGID	Typical
127	M127	N196	N193		90	PL4x5/8	None	None	A36 Gr.36	Typical
128	M128	N192	N198		90	PL4x5/8	None	None	A36 Gr.36	Typical
129	M129	N195	N197		90	PL4x5/8	None	None	A36 Gr.36	Typical
130	M130	N199	N194		90	PL4x5/8	None	None	A36 Gr.36	Typical
131	M131	N187	N203			SR 5/8	None	None	A36 Gr.36	Typical
132	M132	N189	N205			SR 5/8	None	None	A36 Gr.36	Typical
133	M133	N188	N204			SR 5/8	None	None	A36 Gr.36	Typical
134	M134	N190	N206			SR 5/8	None	None	A36 Gr.36	Typical
135	M135	N194	N209			PL4x5/8	None	None	A36 Gr.36	Typical
136	M136	N195	N210			PL4x5/8	None	None	A36 Gr.36	Typical
137	M137	N177	N207			PL4x5/8	None	None	A36 Gr.36	Typical
138	M138	N176	N208			PL4x5/8	None	None	A36 Gr.36	Typical
139	M139	N207	N211			SR 3/4	None	None	A36 Gr.36	Typical
140	M140	N208	N212			SR 3/4	None	None	A36 Gr.36	Typical
141	M141	N209	N213			SR 3/4	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
142	M142	N210	N214			SR 3/4	None	None	A36 Gr.36	Typical
143	M143	N211	N192			PL4x5/8	None	None	A36 Gr.36	Typical
144	M144	N212	N193			PL4x5/8	None	None	A36 Gr.36	Typical
145	M145	N213	N179			PL4x5/8	None	None	A36 Gr.36	Typical
146	M146	N214	N178			PL4x5/8	None	None	A36 Gr.36	Typical
147	M147	N215	N216			RIGID	None	None	RIGID	Typical
148	M148	N217	N218			RIGID	None	None	RIGID	Typical
149	M149	N219	N220			PIPE_2.0	None	None	A53 Gr.B	Typical
150	M150	N230	N231			PIPE 3.0	None	None	A53 Gr.B	Typical
151	M151	N232	N234			HSS 4X4X3	None	None	A500 Gr.42	Typical
152	M152	N233	N235			HSS 4X4X3	None	None	A500 Gr.42	Typical
153	M153	N236	N238			RIGID	None	None	RIGID	Typical
154	M154	N237	N239			RIGID	None	None	RIGID	Typical
155	M155	N240	N241			PIPE_2.0	None	None	A53 Gr.B	Typical
156	M156	N221	N164			PIPE_2.0	None	None	A53 Gr.B	Typical
157	M157	N242	N243			PIPE_2.0	None	None	A53 Gr.B	Typical
158	M158	N244	N245			RIGID	None	None	RIGID	Typical
159	M159	N246	N247			RIGID	None	None	RIGID	Typical
160	M160	N248	N249			PIPE_2.0	None	None	A53 Gr.B	Typical
161	M161	N250	N251			RIGID	None	None	RIGID	Typical
162	M162	N252	N253			RIGID	None	None	RIGID	Typical
163	M163	N254	N255			PIPE_2.0	None	None	A53 Gr.B	Typical
164	M164	N256	N257			PIPE_2.0	None	None	A53 Gr.B	Typical
165	M165	N258	N259			RIGID	None	None	RIGID	Typical
166	M166	N260	N261			RIGID	None	None	RIGID	Typical
167	M167	N262	N263			PIPE_2.0	None	None	A53 Gr.B	Typical
168	M168	N264	N265			RIGID	None	None	RIGID	Typical
169	M169	N266	N267			RIGID	None	None	RIGID	Typical
170	M170	N268	N269			PIPE_2.0	None	None	A53 Gr.B	Typical
171	M171	N270	N271			PIPE_2.0	None	None	A53 Gr.B	Typical
172	M172	N272	N273			RIGID	None	None	RIGID	Typical
173	M173	N274	N275			RIGID	None	None	RIGID	Typical
174	M174	N276	N277			PIPE_2.0	None	None	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9	OOOOXO					Yes	** NA **			None
10	M10	OOOOXO					Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None
19	M19	OOOOXO					Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
20	M20	OOOOXO					Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26	BenPIN	BenPIN				Yes	** NA **			None
27	M27	BenPIN	BenPIN				Yes	** NA **			None
28	M28	BenPIN	BenPIN				Yes	** NA **			None
29	M29	BenPIN	BenPIN				Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34	BenPIN	BenPIN				Yes	** NA **			None
35	M35	BenPIN	BenPIN				Yes	** NA **			None
36	M36	BenPIN	BenPIN				Yes	** NA **			None
37	M37	BenPIN	BenPIN				Yes	** NA **			None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54	BenPIN	BenPIN				Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61						Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63	OOOOXO					Yes	** NA **			None
64	M64	OOOOXO					Yes	** NA **			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes	** NA **			None
69	M69						Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73	OOOOXO					Yes	** NA **			None
74	M74	OOOOXO					Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
77	M77						Yes	** NA **			None
78	M78						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80	BenPIN	BenPIN				Yes	** NA **			None
81	M81	BenPIN	BenPIN				Yes	** NA **			None
82	M82	BenPIN	BenPIN				Yes	** NA **			None
83	M83	BenPIN	BenPIN				Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None
88	M88	BenPIN	BenPIN				Yes	** NA **			None
89	M89	BenPIN	BenPIN				Yes	** NA **			None
90	M90	BenPIN	BenPIN				Yes	** NA **			None
91	M91	BenPIN	BenPIN				Yes	** NA **			None
92	M92						Yes	** NA **			None
93	M93						Yes	** NA **			None
94	M94						Yes	** NA **			None
95	M95						Yes	** NA **			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	** NA **			None
104	M104						Yes	** NA **			None
105	M105	BenPIN	BenPIN				Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109						Yes	** NA **			None
110	M110						Yes	** NA **			None
111	M111						Yes	** NA **			None
112	M112						Yes	** NA **			None
113	M113						Yes	** NA **			None
114	M114	OOOOXO					Yes	** NA **			None
115	M115	OOOOXO					Yes	** NA **			None
116	M116						Yes	** NA **			None
117	M117						Yes	** NA **			None
118	M118						Yes	** NA **			None
119	M119						Yes	** NA **			None
120	M120						Yes	** NA **			None
121	M121						Yes	** NA **			None
122	M122						Yes	** NA **			None
123	M123						Yes	** NA **			None
124	M124	OOOOXO					Yes	** NA **			None
125	M125	OOOOXO					Yes	** NA **			None
126	M126						Yes	** NA **			None
127	M127						Yes	** NA **			None
128	M128						Yes	** NA **			None
129	M129						Yes	** NA **			None
130	M130						Yes	** NA **			None
131	M131	BenPIN	BenPIN				Yes	** NA **			None
132	M132	BenPIN	BenPIN				Yes	** NA **			None
133	M133	BenPIN	BenPIN				Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
134	M134	BenPIN	BenPIN				Yes	** NA **			None
135	M135						Yes	** NA **			None
136	M136						Yes	** NA **			None
137	M137						Yes	** NA **			None
138	M138						Yes	** NA **			None
139	M139	BenPIN	BenPIN				Yes	** NA **			None
140	M140	BenPIN	BenPIN				Yes	** NA **			None
141	M141	BenPIN	BenPIN				Yes	** NA **			None
142	M142	BenPIN	BenPIN				Yes	** NA **			None
143	M143						Yes	** NA **			None
144	M144						Yes	** NA **			None
145	M145						Yes	** NA **			None
146	M146						Yes	** NA **			None
147	M147						Yes	** NA **			None
148	M148						Yes	** NA **			None
149	M149						Yes	** NA **			None
150	M150						Yes	** NA **			None
151	M151						Yes	** NA **			None
152	M152						Yes	** NA **			None
153	M153						Yes	** NA **			None
154	M154						Yes	** NA **			None
155	M155						Yes	** NA **			None
156	M156	BenPIN	BenPIN				Yes	** NA **			None
157	M157	BenPIN	BenPIN				Yes	** NA **			None
158	M158						Yes	** NA **			None
159	M159						Yes	** NA **			None
160	M160						Yes	** NA **			None
161	M161						Yes	** NA **			None
162	M162						Yes	** NA **			None
163	M163						Yes	** NA **			None
164	M164	BenPIN	BenPIN				Yes	** NA **			None
165	M165						Yes	** NA **			None
166	M166						Yes	** NA **			None
167	M167						Yes	** NA **			None
168	M168						Yes	** NA **			None
169	M169						Yes	** NA **			None
170	M170						Yes	** NA **			None
171	M171	BenPIN	BenPIN				Yes	** NA **			None
172	M172						Yes	** NA **			None
173	M173						Yes	** NA **			None
174	M174						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	PIPE_2.5	168			Lbyy						Lateral
2	M3	PIPE_2.5	168			Lbyy						Lateral
3	M5	PIPE_2.0	120			Lbyy						Lateral
4	M6	PL3.5x5/8	12			Lbyy						Lateral
5	M7	PIPE_2.0	30			Lbyy						Lateral
6	M8	PIPE_2.0	30			Lbyy						Lateral
7	M12	PL4x5/8	2.324			Lbyy						Lateral
8	M13	PL4x5/8	2.324			Lbyy						Lateral
9	M14	PL4x5/8	2.324			Lbyy						Lateral
10	M15	PL4x5/8	2.324			Lbyy						Lateral
11	M16	PL3.5x5/8	12			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
12	M17	PIPE_2.0	30			Lbyy						Lateral
13	M18	PIPE_2.0	30			Lbyy						Lateral
14	M22	PL4x5/8	2.324			Lbyy						Lateral
15	M23	PL4x5/8	2.324			Lbyy						Lateral
16	M24	PL4x5/8	2.324			Lbyy						Lateral
17	M25	PL4x5/8	2.324			Lbyy						Lateral
18	M26	SR 5/8	40			Lbyy						Lateral
19	M27	SR 5/8	40			Lbyy						Lateral
20	M28	SR 5/8	40			Lbyy						Lateral
21	M29	SR 5/8	40			Lbyy						Lateral
22	M30	PL4x5/8	4.46			Lbyy						Lateral
23	M31	PL4x5/8	4.46			Lbyy						Lateral
24	M32	PL4x5/8	4.46			Lbyy						Lateral
25	M33	PL4x5/8	4.46			Lbyy						Lateral
26	M34	SR 3/4	44			Lbyy						Lateral
27	M35	SR 3/4	44			Lbyy						Lateral
28	M36	SR 3/4	44			Lbyy						Lateral
29	M37	SR 3/4	44			Lbyy						Lateral
30	M38	PL4x5/8	4.46			Lbyy						Lateral
31	M39	PL4x5/8	4.46			Lbyy						Lateral
32	M40	PL4x5/8	4.46			Lbyy						Lateral
33	M41	PL4x5/8	4.46			Lbyy						Lateral
34	M44	PIPE_2.0	120			Lbyy						Lateral
35	M47	PIPE_2.0	120			Lbyy						Lateral
36	M48	PIPE 3.0	48									Lateral
37	M49	HSS 4X4X3	6									Lateral
38	M50	HSS 4X4X3	6									Lateral
39	M53	PIPE_2.0	48									Lateral
40	M54	PIPE_2.0	96.158									Lateral
41	M55	PIPE_2.5	168			Lbyy						Lateral
42	M57	PIPE_2.5	168			Lbyy						Lateral
43	M59	PIPE_2.0	120			Lbyy						Lateral
44	M60	PL3.5x5/8	12			Lbyy						Lateral
45	M61	PIPE_2.0	30			Lbyy						Lateral
46	M62	PIPE_2.0	30			Lbyy						Lateral
47	M66	PL4x5/8	2.324			Lbyy						Lateral
48	M67	PL4x5/8	2.324			Lbyy						Lateral
49	M68	PL4x5/8	2.324			Lbyy						Lateral
50	M69	PL4x5/8	2.324			Lbyy						Lateral
51	M70	PL3.5x5/8	12			Lbyy						Lateral
52	M71	PIPE_2.0	30			Lbyy						Lateral
53	M72	PIPE_2.0	30			Lbyy						Lateral
54	M76	PL4x5/8	2.324			Lbyy						Lateral
55	M77	PL4x5/8	2.324			Lbyy						Lateral
56	M78	PL4x5/8	2.324			Lbyy						Lateral
57	M79	PL4x5/8	2.324			Lbyy						Lateral
58	M80	SR 5/8	40			Lbyy						Lateral
59	M81	SR 5/8	40			Lbyy						Lateral
60	M82	SR 5/8	40			Lbyy						Lateral
61	M83	SR 5/8	40			Lbyy						Lateral
62	M84	PL4x5/8	4.46			Lbyy						Lateral
63	M85	PL4x5/8	4.46			Lbyy						Lateral
64	M86	PL4x5/8	4.46			Lbyy						Lateral
65	M87	PL4x5/8	4.46			Lbyy						Lateral
66	M88	SR 3/4	44			Lbyy						Lateral
67	M89	SR 3/4	44			Lbyy						Lateral
68	M90	SR 3/4	44			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
69	M91	SR 3/4	44			Lbyy						Lateral
70	M92	PL4x5/8	4.46			Lbyy						Lateral
71	M93	PL4x5/8	4.46			Lbyy						Lateral
72	M94	PL4x5/8	4.46			Lbyy						Lateral
73	M95	PL4x5/8	4.46			Lbyy						Lateral
74	M98	PIPE_2.0	120			Lbyy						Lateral
75	M99	PIPE 3.0	48									Lateral
76	M100	HSS 4X4X3	6									Lateral
77	M101	HSS 4X4X3	6									Lateral
78	M104	PIPE_2.0	48									Lateral
79	M105	PIPE_2.0	96.158									Lateral
80	M106	PIPE_2.5	168			Lbyy						Lateral
81	M108	PIPE_2.5	168			Lbyy						Lateral
82	M110	PIPE_2.0	120			Lbyy						Lateral
83	M111	PL3.5x5/8	12			Lbyy						Lateral
84	M112	PIPE_2.0	30			Lbyy						Lateral
85	M113	PIPE_2.0	30			Lbyy						Lateral
86	M117	PL4x5/8	2.324			Lbyy						Lateral
87	M118	PL4x5/8	2.324			Lbyy						Lateral
88	M119	PL4x5/8	2.324			Lbyy						Lateral
89	M120	PL4x5/8	2.324			Lbyy						Lateral
90	M121	PL3.5x5/8	12			Lbyy						Lateral
91	M122	PIPE_2.0	30			Lbyy						Lateral
92	M123	PIPE_2.0	30			Lbyy						Lateral
93	M127	PL4x5/8	2.324			Lbyy						Lateral
94	M128	PL4x5/8	2.324			Lbyy						Lateral
95	M129	PL4x5/8	2.324			Lbyy						Lateral
96	M130	PL4x5/8	2.324			Lbyy						Lateral
97	M131	SR 5/8	40			Lbyy						Lateral
98	M132	SR 5/8	40			Lbyy						Lateral
99	M133	SR 5/8	40			Lbyy						Lateral
100	M134	SR 5/8	40			Lbyy						Lateral
101	M135	PL4x5/8	4.46			Lbyy						Lateral
102	M136	PL4x5/8	4.46			Lbyy						Lateral
103	M137	PL4x5/8	4.46			Lbyy						Lateral
104	M138	PL4x5/8	4.46			Lbyy						Lateral
105	M139	SR 3/4	44			Lbyy						Lateral
106	M140	SR 3/4	44			Lbyy						Lateral
107	M141	SR 3/4	44			Lbyy						Lateral
108	M142	SR 3/4	44			Lbyy						Lateral
109	M143	PL4x5/8	4.46			Lbyy						Lateral
110	M144	PL4x5/8	4.46			Lbyy						Lateral
111	M145	PL4x5/8	4.46			Lbyy						Lateral
112	M146	PL4x5/8	4.46			Lbyy						Lateral
113	M149	PIPE_2.0	120			Lbyy						Lateral
114	M150	PIPE 3.0	48									Lateral
115	M151	HSS 4X4X3	6									Lateral
116	M152	HSS 4X4X3	6									Lateral
117	M155	PIPE_2.0	48									Lateral
118	M156	PIPE_2.0	96.158									Lateral
119	M157	PIPE_2.0	96.158									Lateral
120	M160	PIPE_2.0	120			Lbyy						Lateral
121	M163	PIPE_2.0	120			Lbyy						Lateral
122	M164	PIPE_2.0	96.158									Lateral
123	M167	PIPE_2.0	120			Lbyy						Lateral
124	M170	PIPE_2.0	120			Lbyy						Lateral
125	M171	PIPE_2.0	96.158									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
126	M174	PIPE_2.0	120			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self We	DL		-1.1						
2	We	DL					39			
3	Ice We	DL					39	72		
4	W0	WL					39	72		
5	W30	WL					78	144		
6	W60	WL					78	144		
7	W90	WL					39	72		
8	W120	WL					78	144		
9	W150	WL					78	144		
10	W0 + Ice	WL					39	72		
11	W30 + Ice	WL					78	144		
12	W60 + Ice	WL					78	144		
13	W90 + Ice	WL					39	72		
14	W120 + Ice	WL					78	144		
15	W150 + Ice	WL					78	144		
16	500lbs LM 1	LL				1				
17	500lbs LM 2	LL				1				
18	500lbs LM 3	LL				1				
19	500lbs LM 4	LL				1				
20	250lbs LV 5	LL				1				
21	250lbs LV 6	LL				1				
22	E0	EL	-.13				39			
23	E90	EL			.13		39			

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Dead	Yes	Y		1	1.4	2	1.4	0		0															
2	Dead + Wi...	Yes	Y		1	1.2	2	1.2	4	1	0															
3	Dead + Wi...	Yes	Y		1	1.2	2	1.2	5	1	0															
4	Dead + Wi...	Yes	Y		1	1.2	2	1.2	6	1	0															
5	Dead + Wi...	Yes	Y		1	1.2	2	1.2	7	1	0															
6	Dead + Wi...	Yes	Y		1	1.2	2	1.2	8	1	0															
7	Dead + Wi...	Yes	Y		1	1.2	2	1.2	9	1	0															
8	Dead + Wi...	Yes	Y		1	1.2	2	1.2	4	-1	0															
9	Dead + Wi...	Yes	Y		1	1.2	2	1.2	5	-1	0															
10	Dead + Wi...	Yes	Y		1	1.2	2	1.2	6	-1	0															
11	Dead + Wi...	Yes	Y		1	1.2	2	1.2	7	-1	0															
12	Dead + Wi...	Yes	Y		1	1.2	2	1.2	8	-1	0															
13	Dead + Wi...	Yes	Y		1	1.2	2	1.2	9	-1	0															
14	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	1	3	1														
15	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	1	3	1														
16	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	1	3	1														
17	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	1	3	1														
18	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	1	3	1														
19	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	1	3	1														
20	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	-1	3	1														
21	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	-1	3	1														
22	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	-1	3	1														
23	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	-1	3	1														
24	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	-1	3	1														

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
25	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	-1	3	1														
26	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.063														
27	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.063														
28	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.063														
29	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.063														
30	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.063														
31	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.063														
32	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.063														
33	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.063														
34	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.063														
35	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.063														
36	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.063														
37	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.063														
38	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.063														
39	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.063														
40	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.063														
41	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.063														
42	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	.063														
43	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	.063														
44	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.063														
45	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.063														
46	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.063														
47	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.063														
48	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.063														
49	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.063														
50	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	.063														
51	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	.063														
52	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	.063														
53	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	.063														
54	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	.063														
55	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	.063														
56	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.063														
57	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.063														
58	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.063														
59	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.063														
60	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.063														
61	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.063														
62	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	.063														
63	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	.063														
64	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	.063														
65	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	.063														
66	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	.063														
67	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	.063														
68	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.063														
69	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.063														
70	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.063														
71	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.063														
72	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.063														
73	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.063														
74	Dead + LV...	Yes	Y		1	1.2	2	1.2	20	1.5	0															
75	Dead + LV...	Yes	Y		1	1.2	2	1.2	21	1.5	0															
76	Service 60...	Yes	Y		1	1	2	1	4	.25	0															
77	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	1	23															
78	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	.866	23	.5														
79	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	.5	23	.866														
80	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22		23	1														
81	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	-.5	23	.866														

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
82	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	-.866	23	.5												
83	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	-1	23													
84	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	-.866	23	-.5												
85	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	-.5	23	-.866												
86	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22		23	-1												
87	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	.5	23	-.866												
88	(1.2 + 0.2...	Yes	Y		1	1.253	2	1.253	22	.866	23	-.5												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-in]	LC	MY [k-in]	LC	MZ [k-in]	LC
1	N76	max	653.615	13	1701.235	19	1556.353	12	5.485	7	23.57	7	9.4	25
2		min	-3092.821	7	438.553	13	-2505.306	6	-4.464	13	-16.973	13	2.576	7
3	N77	max	2763.732	25	1657.657	25	2044.023	13	3.503	12	14.241	7	9.149	19
4		min	-200.065	7	473.198	7	-1092.008	7	-2.821	6	-21.252	13	3.81	76
5	N156	max	1116.359	4	1701.717	23	3851.946	11	8.213	17	23.564	11	.58	5
6		min	-717.091	10	438.445	5	-1266.976	5	-.512	11	-16.973	5	-6.142	22
7	N157	max	536.726	4	1658.14	17	719.928	11	7.95	22	14.233	11	-.068	10
8		min	-928.337	10	473.049	11	-3298.511	5	1.943	4	-21.253	5	-5.711	16
9	N234	max	3622.481	2	1701.222	15	-76.801	10	-3.407	8	23.564	3	3.461	3
10		min	-1579.521	8	438.626	9	-1802.027	16	-8.398	14	-16.973	9	-7.152	9
11	N235	max	1045.681	3	1657.645	21	1734.604	22	-2.94	2	14.234	3	.9	8
12		min	-3084.019	9	473.224	3	333.484	4	-8.42	20	-21.253	9	-4.954	2
13	Totals:	max	8019.843	2	9506.353	24	8019.859	11						
14		min	-8019.841	8	4083.004	76	-8019.855	5						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M35	SR 3/4"	.842	2.75	73	.036	0		7	1812.433	14313.866	2.147	2.147	3...	H1-1a
2	M89	SR 3/4"	.774	41.25	17	.036	0		11	1812.433	14313.866	2.147	2.147	3...	H1-1a
3	M140	SR 3/4"	.773	41.25	21	.036	0		3	1812.433	14313.866	2.147	2.147	3...	H1-1a
4	M37	SR 3/4"	.703	41.25	37	.038	2.75		37	1812.433	14313.866	2.147	2.147	3...	H1-1a
5	M5	PIPE_2.0	.568	40	64	.077	40		8	9836.597	32130	22.459	22.459	3...	H1-1b
6	M6	PL3.5x5/8	.528	6	66	.130	6	y	33	56150.561	70875	11.074	62.016	1...	H1-1b
7	M16	PL3.5x5/8	.524	6	72	.132	6	y	26	56150.561	70875	11.074	62.016	1...	H1-1b
8	M60	PL3.5x5/8	.513	6	22	.081	6	y	22	56150.561	70875	11.074	62.016	1...	H1-1b
9	M111	PL3.5x5/8	.513	6	14	.081	6	y	14	56150.561	70875	11.074	62.016	1...	H1-1b
10	M70	PL3.5x5/8	.499	6	16	.082	6	y	16	56150.561	70875	11.074	62.016	1...	H1-1b
11	M121	PL3.5x5/8	.499	6	20	.082	6	y	20	56150.561	70875	11.074	62.016	1...	H1-1b
12	M81	SR 5/8"	.481	34.583	6	.054	5.417		20	1057.552	9940.19	1.243	1.243	3...	H1-1a
13	M91	SR 3/4"	.481	2.75	18	.030	0		5	1812.433	14313.866	2.147	2.147	3...	H1-1a
14	M142	SR 3/4"	.481	2.75	22	.030	0		9	1812.433	14313.866	2.147	2.147	3...	H1-1a
15	M132	SR 5/8"	.481	34.583	10	.054	5.417		24	1057.552	9940.19	1.243	1.243	3...	H1-1a
16	M27	SR 5/8"	.481	34.583	2	.054	34.583		70	1057.552	9940.19	1.243	1.243	3...	H1-1a
17	M3	PIPE_2.5	.448	54.25	7	.126	43.75		3	11606.18	50715	43.155	43.155	2...	H1-1b
18	M108	PIPE_2.5	.448	54.25	3	.126	43.75		11	11606.18	50715	43.155	43.155	2...	H1-1b
19	M57	PIPE_2.5	.448	54.25	11	.126	43.75		7	11606.18	50715	43.155	43.155	2...	H1-1b
20	M44	PIPE_2.0	.445	80	29	.055	80		30	9836.597	32130	22.459	22.459	4...	H1-1b
21	M134	SR 5/8"	.418	34.583	10	.048	5.417		3	1057.552	9940.19	1.243	1.243	1...	H1-1a
22	M29	SR 5/8"	.418	34.583	2	.048	5.417		7	1057.552	9940.19	1.243	1.243	2...	H1-1a
23	M83	SR 5/8"	.418	34.583	6	.048	5.417		11	1057.552	9940.19	1.243	1.243	3...	H1-1a
24	M59	PIPE_2.0	.391	40	20	.077	40		12	9836.597	32130	22.459	22.459	4...	H1-1b
25	M110	PIPE_2.0	.391	40	24	.077	40		4	9836.597	32130	22.459	22.459	4...	H1-1b
26	M106	PIPE_2.5	.391	42	4	.110	113.75		4	11606.18	50715	43.155	43.155	2...	H1-1b
27	M55	PIPE_2.5	.391	42	12	.110	113.75		12	11606.18	50715	43.155	43.155	2...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn
28	M1	PIPE_2.5	.391	52.5	13	.110	113.75		8	11606.18	50715	43.155	43.155	2....	H1-1b
29	M160	PIPE_2.0	.260	40	8	.067	40		5	9836.597	32130	22.459	22.459	2....	H1-1b
30	M174	PIPE_2.0	.250	40	4	.067	40		13	9836.597	32130	22.459	22.459	3....	H1-1b
31	M167	PIPE_2.0	.250	40	12	.067	40		9	9836.597	32130	22.459	22.459	2....	H1-1b
32	M47	PIPE_2.0	.233	40	69	.036	40		66	9836.597	32130	22.459	22.459	4....	H1-1b
33	M13	PL4x5/8	.205	0	68	.085	0	y	62	80295.432	81000	12.656	81	1....	H1-1b
34	M49	HSS4X4X3	.204	6	7	.138	0	z	6	97434.455	97524	138.726	138.726	2....	H1-1b
35	M151	HSS4X4X3	.204	6	3	.138	0	z	2	97434.455	97524	138.726	138.726	2....	H1-1b
36	M100	HSS4X4X3	.204	6	11	.138	0	z	10	97434.455	97524	138.726	138.726	2....	H1-1b
37	M23	PL4x5/8	.201	0	62	.084	0	y	68	80295.432	81000	12.656	81	1....	H1-1b
38	M152	HSS4X4X3	.197	6	9	.104	0	z	8	97434.455	97524	138.726	138.726	2....	H1-1b
39	M101	HSS4X4X3	.197	6	5	.104	0	z	4	97434.455	97524	138.726	138.726	2....	H1-1b
40	M50	HSS4X4X3	.197	6	13	.104	0	z	12	97434.455	97524	138.726	138.726	2....	H1-1b
41	M8	PIPE_2.0	.190	0	7	.065	30		8	29810.292	32130	22.459	22.459	2....	H1-1b
42	M62	PIPE_2.0	.190	0	11	.065	30		12	29810.292	32130	22.459	22.459	2....	H1-1b
43	M113	PIPE_2.0	.190	0	3	.065	30		4	29810.292	32130	22.459	22.459	2....	H1-1b
44	M118	PL4x5/8	.186	0	4	.049	0	y	10	80295.432	81000	12.656	81	1....	H1-1b
45	M67	PL4x5/8	.186	0	12	.049	0	y	6	80295.432	81000	12.656	81	1....	H1-1b
46	M7	PIPE_2.0	.183	0	7	.075	5.938		68	29810.292	32130	22.459	22.459	3....	H1-1b
47	M112	PIPE_2.0	.183	0	3	.073	5.938		15	29810.292	32130	22.459	22.459	3....	H1-1b
48	M61	PIPE_2.0	.183	0	11	.073	5.937		23	29810.292	32130	22.459	22.459	3....	H1-1b
49	M122	PIPE_2.0	.173	0	9	.074	5.938		21	29810.292	32130	22.459	22.459	3....	H1-1b
50	M71	PIPE_2.0	.173	0	5	.074	5.937		17	29810.292	32130	22.459	22.459	3....	H1-1b
51	M17	PIPE_2.0	.173	0	13	.076	5.938		73	29810.292	32130	22.459	22.459	3....	H1-1b
52	M170	PIPE_2.0	.173	40	16	.029	40		3	9836.597	32130	22.459	22.459	4.6	H1-1b
53	M163	PIPE_2.0	.173	40	24	.029	40		11	9836.597	32130	22.459	22.459	4....	H1-1b
54	M77	PL4x5/8	.170	0	18	.041	0	y	24	80295.432	81000	12.656	81	1....	H1-1b
55	M128	PL4x5/8	.170	0	22	.041	0	y	16	80295.432	81000	12.656	81	1....	H1-1b
56	M123	PIPE_2.0	.168	0	9	.061	30		10	29810.292	32130	22.459	22.459	1....	H1-1b
57	M72	PIPE_2.0	.168	0	5	.061	30		6	29810.292	32130	22.459	22.459	1....	H1-1b
58	M18	PIPE_2.0	.168	0	13	.061	30		2	29810.292	32130	22.459	22.459	1....	H1-1b
59	M28	SR 5/8"	.164	40	8	.061	34.583		30	1057.552	9940.19	1.243	1.243	1....	H1-1b*
60	M133	SR 5/8"	.164	40	4	.056	34.583		14	1057.552	9940.19	1.243	1.243	2....	H1-1b*
61	M82	SR 5/8"	.164	40	12	.056	34.583		22	1057.552	9940.19	1.243	1.243	3....	H1-1b*
62	M15	PL4x5/8	.153	2.324	32	.084	0	y	43	80295.432	81000	12.656	81	1....	H1-1b
63	M25	PL4x5/8	.151	2.324	26	.083	0	y	38	80295.432	81000	12.656	81	1....	H1-1b
64	M34	SR 3/4"	.145	41.25	63	.034	2.75		13	1812.433	14313.866	2.147	2.147	3....	H1-1b
65	M69	PL4x5/8	.137	2.324	12	.076	0	y	23	80295.432	81000	12.656	81	1....	H1-1b
66	M120	PL4x5/8	.137	2.324	4	.076	0	y	15	80295.432	81000	12.656	81	1....	H1-1b
67	M80	SR 5/8"	.134	34.583	23	.058	34.583		14	1057.552	9940.19	1.243	1.243	2....	H1-1b
68	M26	SR 5/8"	.134	34.583	19	.058	34.583		22	1057.552	9940.19	1.243	1.243	2....	H1-1b
69	M131	SR 5/8"	.134	34.583	15	.058	34.583		18	1057.552	9940.19	1.243	1.243	4....	H1-1b
70	M22	PL4x5/8	.134	2.324	73	.144	0	y	25	80295.572	81000	12.656	81	1....	H1-1b
71	M76	PL4x5/8	.133	0	17	.144	0	y	17	80295.572	81000	12.656	81	1....	H1-1b
72	M127	PL4x5/8	.133	0	21	.144	0	y	21	80295.572	81000	12.656	81	1....	H1-1b
73	M66	PL4x5/8	.133	0	23	.143	0	y	23	80295.572	81000	12.656	81	1....	H1-1b
74	M12	PL4x5/8	.132	0	19	.143	0	y	19	80295.572	81000	12.656	81	1....	H1-1b
75	M117	PL4x5/8	.132	0	15	.143	0	y	15	80295.572	81000	12.656	81	1....	H1-1b
76	M130	PL4x5/8	.126	2.324	10	.074	0	y	22	80295.432	81000	12.656	81	1....	H1-1b
77	M79	PL4x5/8	.126	2.324	6	.074	0	y	18	80295.432	81000	12.656	81	1....	H1-1b
78	M88	SR 3/4"	.120	41.25	21	.034	2.75		5	1812.433	14313.866	2.147	2.147	3....	H1-1b
79	M139	SR 3/4"	.120	41.25	25	.034	2.75		9	1812.433	14313.866	2.147	2.147	3....	H1-1b
80	M36	SR 3/4"	.118	2.75	26	.037	41.25		31	1812.433	14313.866	2.147	2.147	3....	H1-1b
81	M99	PIPE_3.0	.116	4	22	.353	1		11	59852.693	65205	68.985	68.985	1....	H1-1b
82	M48	PIPE_3.0	.116	4	18	.353	1		7	59852.693	65205	68.985	68.985	3....	H1-1b
83	M150	PIPE_3.0	.116	4	14	.353	1		3	59852.693	65205	68.985	68.985	3....	H1-1b
84	M24	PL4x5/8	.110	0	31	.083	0	y	49	80295.572	81000	12.656	81	1	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn
85	M14	PL4x5/8	.109	0	36	.084	0	y	43	80295.572	81000	12.656	81	1....	H1-1b
86	M119	PL4x5/8	.101	0	3	.077	0	y	15	80295.572	81000	12.656	81	1....	H1-1b
87	M68	PL4x5/8	.101	0	11	.077	0	y	23	80295.572	81000	12.656	81	1....	H1-1b
88	M129	PL4x5/8	.098	0	9	.074	0	y	22	80295.572	81000	12.656	81	1....	H1-1b
89	M78	PL4x5/8	.098	0	5	.074	0	y	18	80295.572	81000	12.656	81	1....	H1-1b
90	M53	PIPE_2.0	.094	4	64	.018	4		64	26521.424	32130	22.459	22.459	2....	H1-1b
91	M105	PIPE_2.0	.090	96.158	7	.044	96.158		25	14878.53	32130	22.459	22.459	1....	H1-1b*
92	M156	PIPE_2.0	.090	96.158	11	.044	0		17	14878.53	32130	22.459	22.459	1....	H1-1b*
93	M54	PIPE_2.0	.090	96.158	3	.063	0		69	14878.53	32130	22.459	22.459	1....	H1-1b*
94	M149	PIPE_2.0	.090	80	14	.012	40		19	9836.597	32130	22.459	22.459	4....	H1-1b
95	M98	PIPE_2.0	.090	80	22	.012	40		15	9836.597	32130	22.459	22.459	4....	H1-1b
96	M104	PIPE_2.0	.085	4	20	.016	4		9	26521.424	32130	22.459	22.459	2....	H1-1b
97	M155	PIPE_2.0	.085	4	24	.016	4		13	26521.424	32130	22.459	22.459	2....	H1-1b
98	M90	SR 3/4"	.073	41.25	19	.028	44		11	1812.433	14313.866	2.147	2.147	2....	H1-1b
99	M141	SR 3/4"	.073	41.25	23	.028	44		3	1812.433	14313.866	2.147	2.147	2....	H1-1b
100	M164	PIPE_2.0	.066	48.079	9	.045	0		22	14878.53	32130	22.459	22.459	1....	H1-1b
101	M171	PIPE_2.0	.066	48.079	13	.045	0		14	14878.53	32130	22.459	22.459	1....	H1-1b
102	M157	PIPE_2.0	.066	48.079	5	.063	0		67	14878.53	32130	22.459	22.459	1....	H1-1b
103	M86	PL4x5/8	.018	0	20	.006	4.46	y	5	78435.736	81000	12.656	81	1....	H1-1b
104	M32	PL4x5/8	.018	0	16	.006	4.46	y	13	78435.736	81000	12.656	81	1....	H1-1b
105	M137	PL4x5/8	.018	0	24	.006	4.46	y	9	78435.736	81000	12.656	81	1....	H1-1b
106	M38	PL4x5/8	.018	4.46	69	.004	4.46	y	13	78436.018	81000	12.656	81	1....	H1-1b
107	M40	PL4x5/8	.018	4.46	36	.007	0	y	31	78436.018	81000	12.656	81	1....	H1-1b
108	M39	PL4x5/8	.018	4.46	73	.006	0	y	7	78436.018	81000	12.656	81	1....	H1-1b*
109	M33	PL4x5/8	.018	4.46	73	.007	0	y	7	78435.736	81000	12.656	81	1....	H1-1b*
110	M93	PL4x5/8	.017	4.46	14	.006	0	y	11	78436.018	81000	12.656	81	1....	H1-1b
111	M144	PL4x5/8	.017	4.46	18	.006	0	y	3	78436.018	81000	12.656	81	1....	H1-1b
112	M92	PL4x5/8	.016	4.46	25	.004	4.46	y	5	78436.018	81000	12.656	81	1....	H1-1b
113	M143	PL4x5/8	.016	4.46	17	.004	4.46	y	9	78436.018	81000	12.656	81	1....	H1-1b
114	M87	PL4x5/8	.016	4.46	17	.007	0	y	11	78435.736	81000	12.656	81	1....	H1-1b*
115	M138	PL4x5/8	.016	4.46	21	.007	0	y	3	78435.736	81000	12.656	81	1....	H1-1b*
116	M30	PL4x5/8	.015	0	31	.004	0	y	26	78435.736	81000	12.656	81	1....	H1-1b
117	M31	PL4x5/8	.015	0	30	.007	4.46	y	37	78435.736	81000	12.656	81	1....	H1-1b
118	M41	PL4x5/8	.015	0	26	.003	4.46	y	31	78436.018	81000	12.656	81	1....	H1-1b*
119	M145	PL4x5/8	.013	4.46	20	.005	0	y	3	78436.018	81000	12.656	81	1....	H1-1b
120	M94	PL4x5/8	.013	4.46	16	.005	0	y	11	78436.018	81000	12.656	81	1....	H1-1b
121	M136	PL4x5/8	.012	0	15	.005	4.46	y	9	78435.736	81000	12.656	81	1....	H1-1b
122	M85	PL4x5/8	.012	0	23	.005	4.46	y	5	78435.736	81000	12.656	81	1....	H1-1b
123	M95	PL4x5/8	.010	0	17	.003	4.46	y	11	78436.018	81000	12.656	81	1....	H1-1b*
124	M146	PL4x5/8	.010	0	21	.003	4.46	y	3	78436.018	81000	12.656	81	1....	H1-1b*
125	M135	PL4x5/8	.010	0	15	.002	0	y	10	78435.736	81000	12.656	81	1....	H1-1b
126	M84	PL4x5/8	.010	0	23	.002	0	y	6	78435.736	81000	12.656	81	1....	H1-1b

HUDSON
Design Group LLC

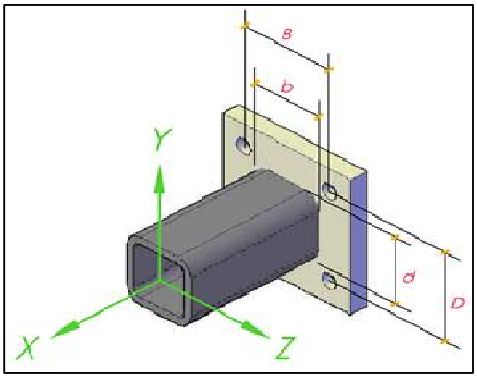
Connection Check

SITE DETAILS

Site Name/Code	CT2109 - Stamford North
Date	4/1/2022
Engineer	PS

CONNECTION PARAMETERS

Number of bolts		**4**	
b - width of member		**4**	*in*
d - height of member		**4**	*in*
B - horizontal bolt spacing		**6**	*in*
D - vertical bolt spacing		**6**	*in*
Bolt Diameter	d	**5/8**	*in*
Section Shape		**HSS**	
Weld Thickness		**3/16**	*in*
Tensile Area	A_b	0.31	in^2
Tensile Area	A_n	0.23	in^2
Grade		**A325**	
Bolt Ultimate Strength	F_{ub}	120	*ksi*
Connection length reduction factor	R_b	1	



Connection Sketch/Photo

FLANGE LOADS

Loadcase #		**7**
Bending Moment	Mzz	**2.58** *kips-in*
Bending Moment	Myy	**23.57** *kips-in*
Torsional Moment	Mxx	**5.49** *kips-in*
Shear Force	Vy	**1.21** *kips*
Shear Force	Vz	**2.34** *kips*
Axial Force	Px	**3.09** *kips*

BOLT CHECK

Bolt Tension Capacity

$\phi R_{nt} = 0.75 * F_{ub} * A_n$

ϕR_{nt}= **20.3** *kips*

Bolt Shear Capacity

$\phi R_{nv} = 0.75 * 0.625 * 0.8 * Fub * Ab * Rb$

ϕR_{nv}= **13.8** *kips*

Maximum Bolt Tension

$T_{ub} = F_{Mxx} + F_{Mzz} + T_y/4$

T_{ub}= **2.95** *kips*

Maximum Bolt Shear

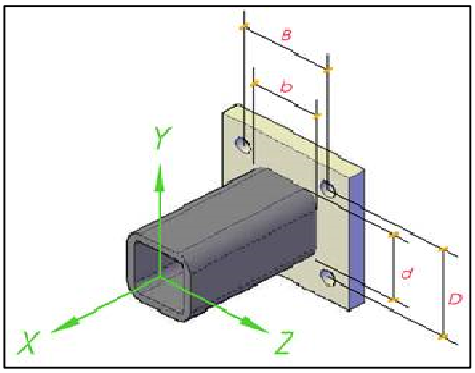
$V_{ub} = \text{sqrt}((V_x/4)^2 + (V_y/4)^2) + F_{Myy}$

V_{ub}= **0.98** *kips*

Tension Ratio:	**14.5%**	**%**	**Shear Ratio:**	**7.1%**	**%**
	PASS			PASS	
$(T_{ub} / \phi R_{nt})^2 + (V_{ub} / \phi R_{nv})^2 < 1.0$	**OK**		Ratio	**2.6%**	PASS

WELD CHECK

Filler Metal F_{EXX}	**70**	ksi	Are stiffners present? **No**
Weld Thk.	**0.1875**	in	
Base metal F_u	**58**	ksi	
Type of section	**HSS**		
Length of Section [b]	**4.0**	in	
Length of Section [d]	**4.0**	in	
I_{total}	**16.00**	in	
I_p	**85.33**	in^3	
S_z	**21.33**	in^2	
S_y	**21.33**	in^2	
R_{ux}	1.42	kips/in	
R_{uy}	0.20	kips/in	
R_{uz}	0.28	kips/in	
R_u	1.46	kips/in	
Allowable Weld Stress	**4.18**	kips/in	**35.0%** PASS



Connection Sketch

EXHIBIT 5

Radio Frequency Exposure Analysis Report

April 6, 2022

Centerline on behalf of AT&T
Centerline Communications Project Number: 566715

AT&T Site Name: STAMFORD NORTH
Site Number: CT2109
FA#: 10034979
USID: 60396

Site Address: 1590 NEWFIELD AVENUE, STAMFORD, CT 06905

Site Compliance Summary

AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	19.64547 µW/cm^2
Cumulative General Population % MPE (Ground Level):	1.9645699999999999%

April 6, 2022

Centerline
Attn: Jennifer Iliades, Project Manager
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **STAMFORD NORTH**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **1590 NEWFIELD AVENUE, STAMFORD, CT 06905** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

Data & Results

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: approximately 437' southwest of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
AT&T A 1	QUINTEL QD6616-7 V1	700	11.93	152.00	2.00	40.00	1247.90	0.00000	466.67	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	700	11.93	152.00	4.00	40.00	2495.80	0.00000	466.67	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	1900	15.11	152.00	4.00	40.00	5184.30	0.00000	1000.00	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	2100	15.50	152.00	4.00	40.00	5677.28	0.00000	1000.00	0.00000
AT&T A 2	ERICSSON AIR6449	3700	23.55	150.00	1.00	108.40	24548.74	0.00000	1000.00	0.00000
AT&T A 3	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	0.00584	1000.00	0.00058
AT&T A 3	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	0.00584	1000.00	0.00058
AT&T A 4	KATHREIN 80010965	700	11.85	152.00	4.00	40.00	2449.74	0.00000	466.67	0.00000
AT&T A 4	KATHREIN 80010965	850	13.55	152.00	4.00	40.00	3623.43	0.00000	566.67	0.00000
AT&T A 4	KATHREIN 80010965	2300	15.75	152.00	4.00	25.00	3758.37	0.00000	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	700	11.93	152.00	2.00	40.00	1247.90	0.00000	466.67	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	700	11.93	152.00	4.00	40.00	2495.80	0.00001	466.67	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	1900	15.11	152.00	4.00	40.00	5184.30	0.00001	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	2100	15.50	152.00	4.00	40.00	5677.28	0.00002	1000.00	0.00000
AT&T B 6	ERICSSON AIR6449	3700	23.55	150.00	1.00	108.40	24548.74	0.00020	1000.00	0.00002
AT&T B 7	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	4.99303	1000.00	0.49930
AT&T B 7	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	4.99303	1000.00	0.49930
AT&T B 8	KATHREIN 80010965	700	11.85	152.00	4.00	40.00	2449.74	0.00003	466.67	0.00001
AT&T B 8	KATHREIN 80010965	850	13.55	152.00	4.00	40.00	3623.43	0.00001	566.67	0.00000
AT&T B 8	KATHREIN 80010965	2300	15.75	152.00	4.00	25.00	3758.37	0.00000	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	700	11.93	152.00	2.00	40.00	1247.90	0.00001	466.67	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	700	11.93	152.00	4.00	40.00	2495.80	0.00001	466.67	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	1900	15.11	152.00	4.00	40.00	5184.30	0.00001	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	2100	15.50	152.00	4.00	40.00	5677.28	0.00000	1000.00	0.00000
AT&T C 10	ERICSSON AIR6449	3700	23.55	150.00	1.00	108.40	24548.74	0.00019	1000.00	0.00002
AT&T C 11	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	4.82352	1000.00	0.48235
AT&T C 11	ERICSSON AIR6419	3450	22.85	154.00	1.00	54.20	10447.19	4.82352	1000.00	0.48235
AT&T C 12	KATHREIN 80010965	700	11.85	152.00	4.00	40.00	2449.74	0.00002	466.67	0.00001
AT&T C 12	KATHREIN 80010965	850	13.55	152.00	4.00	40.00	3623.43	0.00001	566.67	0.00000
AT&T C 12	KATHREIN 80010965	2300	15.75	152.00	4.00	25.00	3758.37	0.00001	1000.00	0.00000
Unknown A 13	GENERIC OMNI 6FT	850	5.96	158.00	1.00	25.00	98.61	0.00000	566.67	0.00000
Verizon A 14	GENERIC PANEL 6FT	850	12.62	142.00	4.00	40.00	2924.96	0.00000	566.67	0.00000
Verizon A 15	GENERIC PANEL 6FT	1900	15.84	142.00	4.00	40.00	6139.32	0.00000	1000.00	0.00000
Verizon A 16	GENERIC PANEL 6FT	2100	16.39	142.00	4.00	40.00	6968.19	0.00000	1000.00	0.00000
Verizon A 16	GENERIC PANEL 6FT	700	12.33	142.00	4.00	40.00	2736.02	0.00000	466.67	0.00000

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
Verizon B 17	GENERIC PANEL 6FT	850	12.62	142.00	4.00	40.00	2924.96	0.00001	566.67	0.00000
Verizon B 18	GENERIC PANEL 6FT	1900	15.84	142.00	4.00	40.00	6139.32	0.00001	1000.00	0.00000
Verizon B 19	GENERIC PANEL 6FT	2100	16.39	142.00	4.00	40.00	6968.19	0.00001	1000.00	0.00000
Verizon B 19	GENERIC PANEL 6FT	700	12.33	142.00	4.00	40.00	2736.02	0.00001	466.67	0.00000
Verizon C 20	GENERIC PANEL 6FT	850	12.62	142.00	4.00	40.00	2924.96	0.00001	566.67	0.00000
Verizon C 21	GENERIC PANEL 6FT	1900	15.84	142.00	4.00	40.00	6139.32	0.00001	1000.00	0.00000
Verizon C 22	GENERIC PANEL 6FT	2100	16.39	142.00	4.00	40.00	6968.19	0.00001	1000.00	0.00000
Verizon C 22	GENERIC PANEL 6FT	700	12.33	142.00	4.00	40.00	2736.02	0.00001	466.67	0.00000
T-Mobile A 23	GENERIC PANEL 6FT	1900	15.84	132.00	2.00	60.00	4604.49	0.00000	1000.00	0.00000
T-Mobile A 23	GENERIC PANEL 6FT	2100	16.39	132.00	2.00	60.00	5226.14	0.00000	1000.00	0.00000
T-Mobile A 24	GENERIC PANEL 6FT	600	12.33	132.00	2.00	60.00	2052.02	0.00000	400.00	0.00000
T-Mobile A 24	GENERIC PANEL 6FT	700	12.33	132.00	2.00	60.00	2052.02	0.00000	466.67	0.00000
T-Mobile B 25	GENERIC PANEL 6FT	1900	15.84	132.00	2.00	60.00	4604.49	0.00001	1000.00	0.00000
T-Mobile B 25	GENERIC PANEL 6FT	2100	16.39	132.00	2.00	60.00	5226.14	0.00001	1000.00	0.00000
T-Mobile B 26	GENERIC PANEL 6FT	600	12.33	132.00	2.00	60.00	2052.02	0.00001	400.00	0.00000
T-Mobile B 26	GENERIC PANEL 6FT	700	12.33	132.00	2.00	60.00	2052.02	0.00001	466.67	0.00000
T-Mobile C 27	GENERIC PANEL 6FT	1900	15.84	132.00	2.00	60.00	4604.49	0.00001	1000.00	0.00000
T-Mobile C 27	GENERIC PANEL 6FT	2100	16.39	132.00	2.00	60.00	5226.14	0.00001	1000.00	0.00000
T-Mobile C 28	GENERIC PANEL 6FT	600	12.33	132.00	2.00	60.00	2052.02	0.00001	400.00	0.00000
T-Mobile C 28	GENERIC PANEL 6FT	700	12.33	132.00	2.00	60.00	2052.02	0.00001	466.67	0.00000
Unknown A 29	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00000	566.67	0.00000
Unknown A 30	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00000	566.67	0.00000
Unknown B 31	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 32	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown C 33	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00000	566.67	0.00000
Unknown C 34	GENERIC PANEL 6FT	850	12.62	122.00	1.00	60.00	1096.86	0.00000	566.67	0.00000
							Cumulative Power Density:	**19.64547 µW/cm²**	**Cumulative % MPE:**	**1.96457%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

EXHIBIT 6

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030303500342

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

04/22/2022

Delivered On

06/21/2022 10:42 A.M.

Delivered To

10 PRESIDENTIAL WAY
WOBURN, MA, 01801, US

Received By

ANCRI

Left At

Front Desk

Reference Number(s)

CT2109-CSC AMERICAN TOWER

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 06/24/2022 11:44 A.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030323495197

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

06/20/2022

Delivered On

06/21/2022 10:11 A.M.

Delivered To

1 VERIZON WAY
BASKING RIDGE, NJ, 07920, US

Received By

DESAI

Left At

Receiver

Reference Number(s)

CT2109-CSC CELLCO PARTNERSHIP

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 06/24/2022 11:47 A.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030317231330

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

04/22/2022

Delivered On

06/21/2022 10:39 A.M.

Delivered To

888 WASHINGTON BLVD
STAMFORD, CT, 06901, US

Received By

GUTIEREZ

Left At

Mail Room

Reference Number(s)

CT2109-CSC CITY PLANNER

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 06/24/2022 11:49 A.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030304499317

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

04/22/2022

Delivered On

06/21/2022 10:39 A.M.

Delivered To

888 WASHINGTON BLVD
STAMFORD, CT, 06901, US

Received By

GUTIEREZ

Left At

Mail Room

Reference Number(s)

CT2109-CSC MAYOR

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 06/24/2022 11:51 A.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030304364328

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

04/22/2022

Delivered On

06/21/2022 10:39 A.M.

Delivered To

888 WASHINGTON BLVD
STAMFORD, CT, 06901, US

Received By

GUTIEREZ

Left At

Mail Room

Reference Number(s)

CT2109-CSC ZEO

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 06/24/2022 11:52 A.M. EST